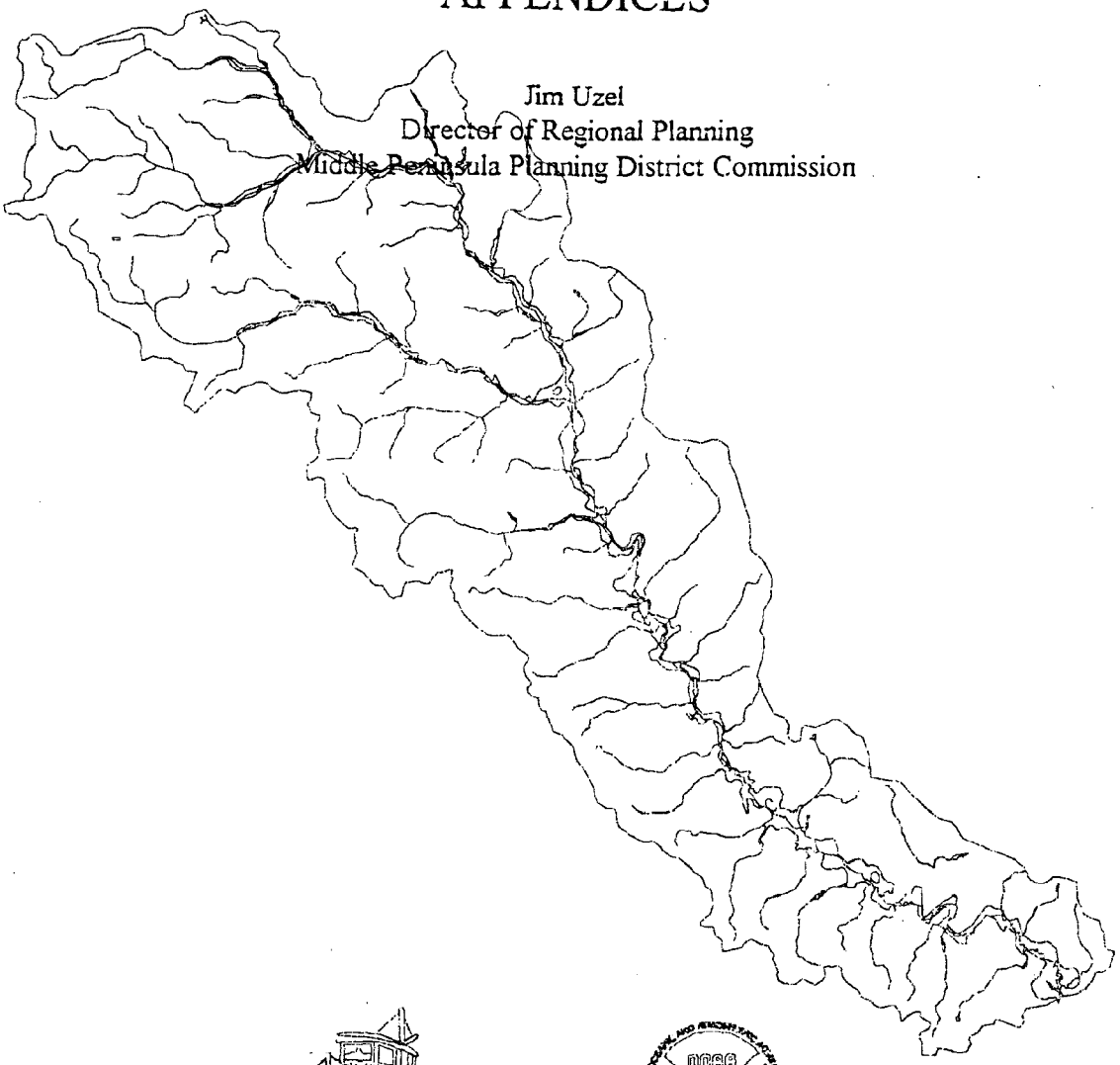
DRAGON RUN WATERSHED MANAGEMENT PROGRAM

PHASE II, OCTOBER, 1994 - - SEPTEMBER, 1995

APPENDICES

Jim Uzel
Director of Regional Planning
Middle Peninsula Planning District Commission



Prepared by the Middle Peninsula Planning District Commission
This report was funded, in part by the Virginia Coastal Resources Management Program at the Department of Environmental Quality through Grant #NA47OZ0287-01 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Management Act of 1972, as amended.

APPENDICES

A: Land Use/ Water Quality Model

B: Water Quality Monitoring Data

C: Public Information Meetings/ Citizen Participation

APPENDIX A

Land Use/ Water Quality Model

Land Use/Water Quality Model

The use of the Chesapeake Bay Program Land Use data provides the basis for the Water Quality Model described here for the Dragon Run Watershed. Three factors are pertinent to the prediction of non point source pollutant loadings. The first factor is the existing land cover classifications, and the existing farming and development practices. The second factor is the future land use as described in the counties' comprehensive plans as a means to determine the future development types and potential. Finally, the projected population growth and land value growth for each locality brings a more realistic picture of the development growth potential within the Watershed.

Based on the existing land cover, the following table shows Dragon Run Watershed land uses by locality.

Present Land Use

(In Acres)	Essex	Gloucester	King&Queen	Middlesex
Low Intensity Urban	102	51	70	51
Herbaceous Urban	6.4	32	0	134
Woody Urban	0	26	0	32
Herbaceous	6310	608	9715	4017
Woody	8678	3770	28224	11405

Present Annual Phosphorus Export

(In Pounds/Acre/Year)	Essex	Gloucester	King&Queen	Middlesex
Low Intensity Urban	672	336	461	336
Herbaceous Urban	14	71	0	299
Woody Urban	0	6	0	7
Herbaceous-Conventional till	7635	736	11756	4862
-Conservation till	4796	462	7384	3054
Woody	1041	452	3387	1369
Total Load	**14,158**	**2,063**	**22,988**	**9,927**
Total For Watershed	**49,136**			

Population Growth-Land Use

(In Acres)	Essex	Gloucester	King&Queen	Middlesex
Low Intensity Urban	104	68	75	57
Herbaceous Urban	6.5	42	0	150
Woody Urban	0	35	0	36
Herbaceous	6309	590	9713	4004
Woody	8677	3352	28222	11392

Predicted Annual Phosphous Export

(In Pounds/Acre/Year)	Essex	Gloucester	King&Queen	Middlesex
Low Intensity Urban	685	448	494	376
Herbaceous Urban	14	94	0	335
Woody Urban	0	8	0	8
Herbaceous-Conventional till	7634	714	11753	4845
-Conservation till	4795	448	7382	3043
Woody	1041	402	3387	1367
Total Load	**14,169**	**2,114**	**23,016**	**9,974**
Total For Watershed	**49,273**			

Comprehensive Plan Land Use

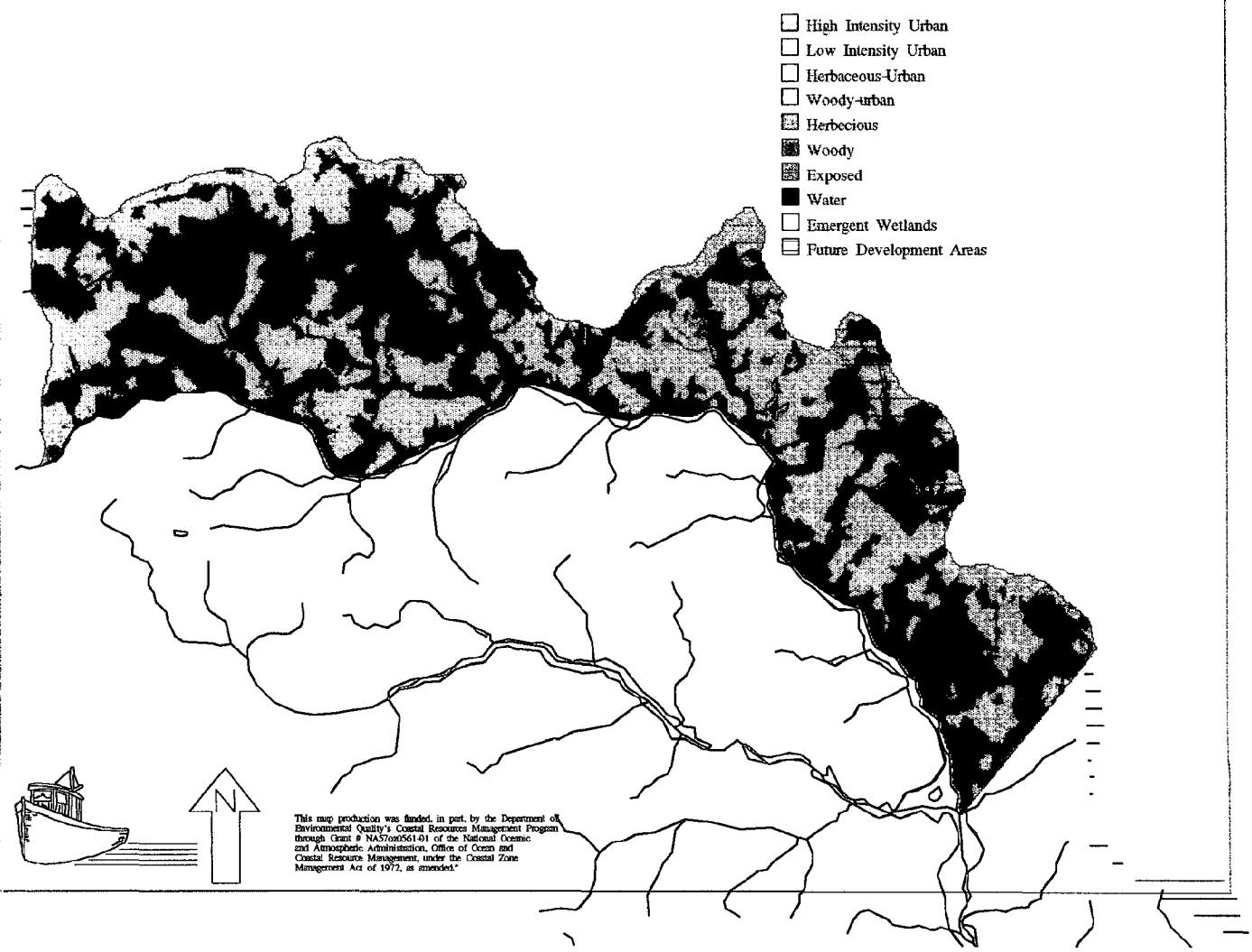
(In Acres)	Essex	Gloucester	King&Queen	Middlesex
Low Intensity Urban	102	51	70	1051
Herbaceous Urban	330	32	0	367
Woody Urban	330	26	0	265
Herbaceous	5980	608	9715	3284
Woody	8348	3770	28224	10672

Predicted Annual Phosphorus Export

(In Pounds/Acre/Year)	Essex	Gloucester	King&Queen	Middlesex
Low Intensity Urban	672	336	461	6926
Herbaceous Urban	736	71	0	818
Woody Urban	73	6	0	58
Herbaceous-Conventional till	7236	736	11756	3974
-Conservation till	4545	462	7384	2496
Woody	1002	452	3387	1281
Total Load	**14,264**	**2,063**	**22,988**	**15,553**
Total For Watershed	**54,868**			

Essex County – Dragon Rud Watershed

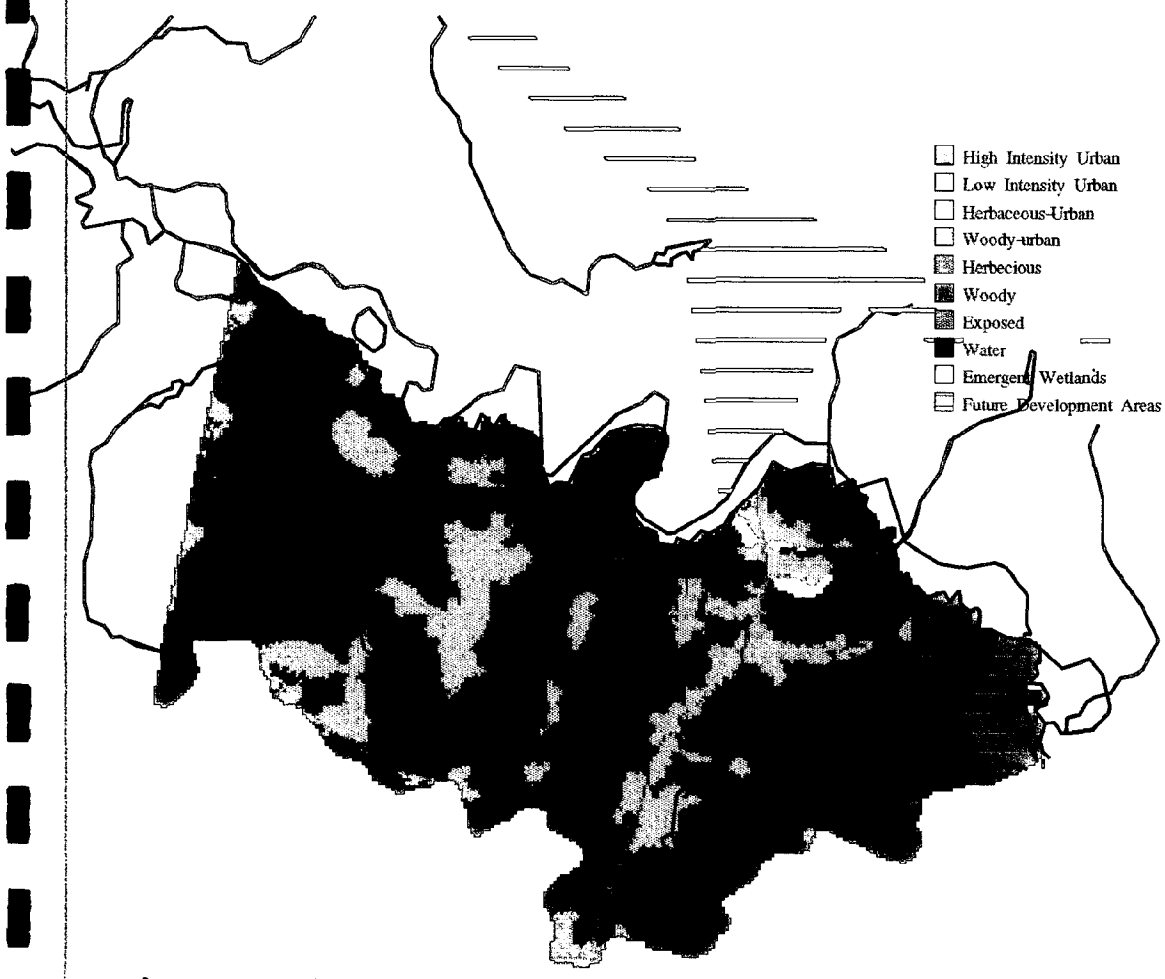
Existing and Future Land Use

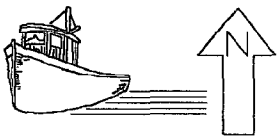


This map production was funded, in part, by the Department of Environmental Quality's Coastal Resources Management Program through Grant # NA57oz0561-01 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended.*

Gloucester County – Dragon run Watershed

Existing and Future Land Use

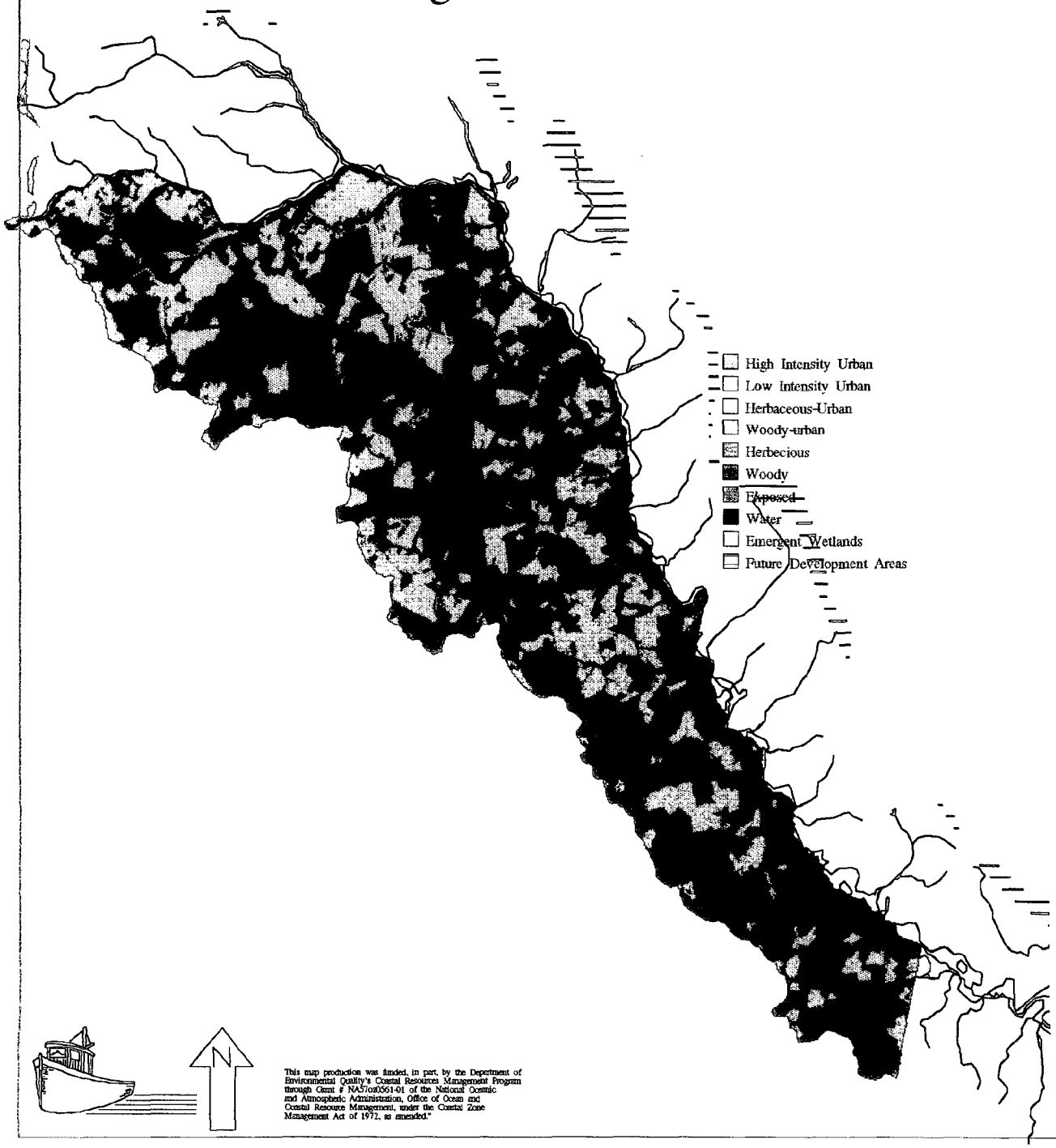




This map production was funded, in part, by the Department of Environmental Quality's Coastal Resources Management Program through Grant # NA57oz0561-01 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended."

King & Queen County – Dragon Run Watershed

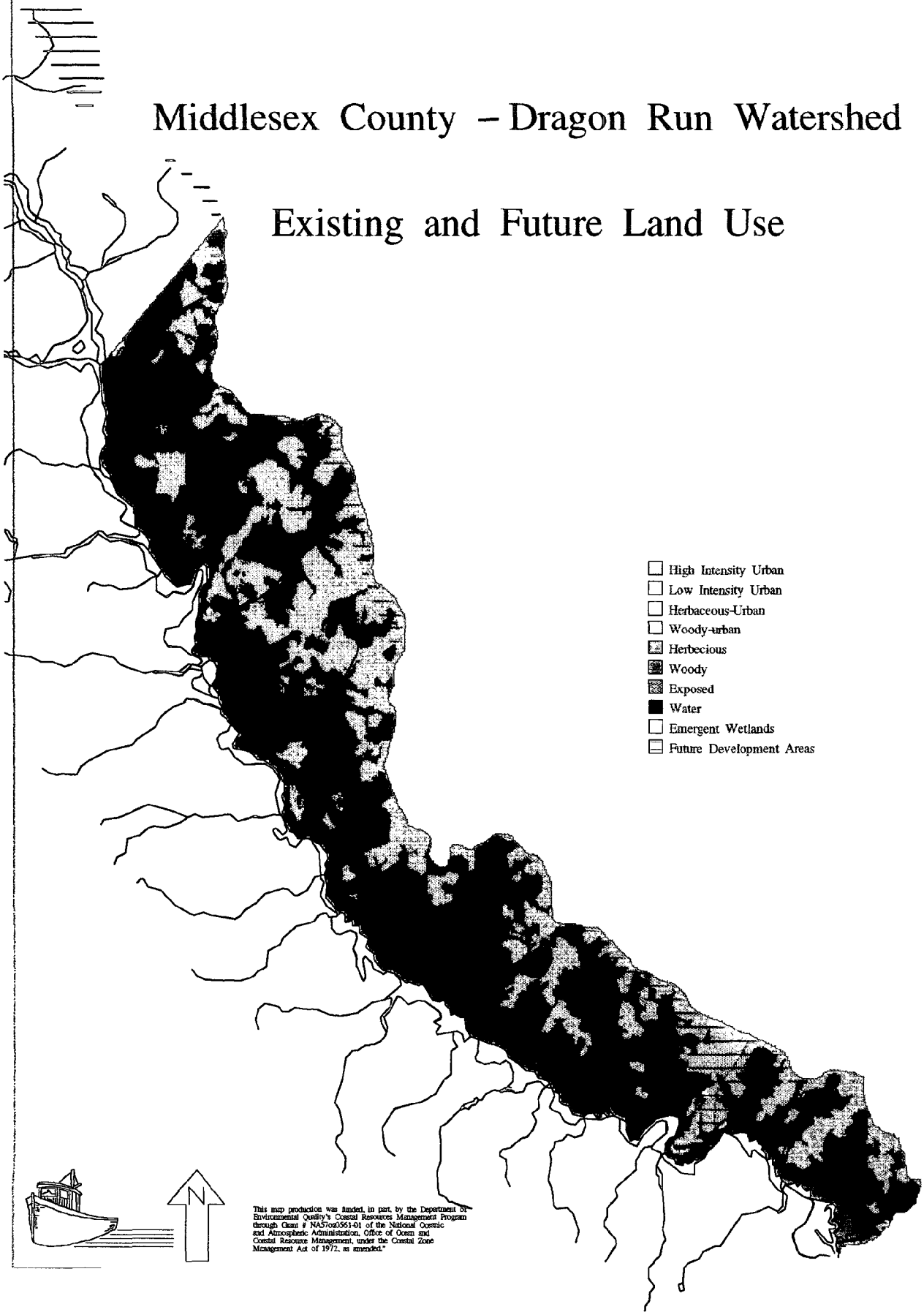
Existing and Future Land Use



This map production was funded, in part, by the Department of Environmental Quality's Coastal Resources Management Program through Grant # NA57oz0561-01 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended."

Middlesex County – Dragon Run Watershed

Existing and Future Land Use



This map production was funded, in part, by the Department of Environmental Quality's Coastal Resources Management Program through Grant # NA57oz0561-01 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, under the Coastal Zone Management Act of 1972, as amended.

APPENDIX B

Water Quality Monitoring Data

Dragon Run Watershed Management Plan

Water Quality Monitoring Data

Background

Weekly water quality monitoring began in April, 1994, along the Dragon Run. With assistance from the Richmond office of the Alliance for the Chesapeake Bay (ACB), suitable monitoring sites were selected and volunteer monitors trained. The water sampling protocols established by the ACB and the Virginia Department of Environmental Quality (DEQ) were utilized with slight modifications for the characteristics of the Dragon Run stream.

The basic data collected were:

Day	=	Day of observation
Time	=	Time of observation
WD	=	Water depth
DO	=	Dissolved oxygen
SC	=	Secchi depth
WT	=	Water temperature
AT	=	Air temperature
PH	=	pH
Color	=	Water Color

Salinity data (ACB protocol) were not collected since the Dragon Run is considered fresh water for its entire length. Also water flow observations were noted rather than tidal information since the greatest length of the Dragon Run is non-tidal.

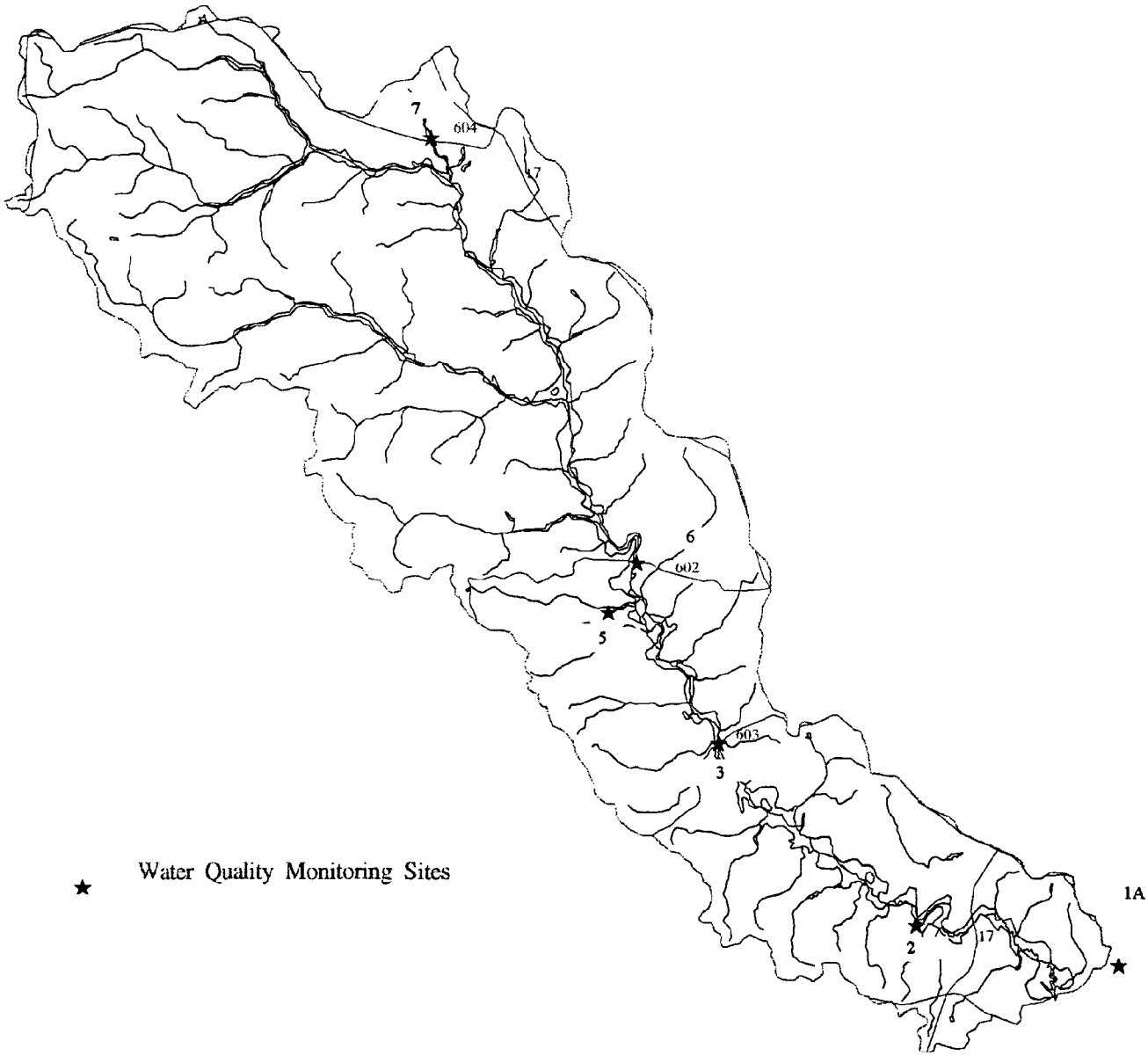
The first year of collecting water quality data included six sites from the upper reaches to the mouth of the Dragon near the Piankatank River. (See Map A) Six primary volunteer monitors and three backup monitors were trained under the ACB protocol. After one year, three new primary monitors and one backup monitor were trained to replace monitors leaving the program. Two new sites were established to replace private property sites of those departing monitors. The new sites were distributed to provide coverage of the lost sites. As with the first year, the ACB assisted in training the volunteers through organized training and quality control sessions.

Of the eight total sites established over the two year monitoring program, five have and continue to provide consistent and timely monitoring data. These sites are:

DR1A	-	at Deer Chase on Piankatank
DR2	-	at Glenns
DR3	-	at New Dragon Bridge
DR6	-	at Wares Bridge
DR7	-	at Byrds Bridge

MAP A

Dragon Run Watershed



Site Data Analysis

For the remained of this report, these five sites will be analyzed and discussed. Data from the other sites may be used to support observations at related sites.

Site: DR1A-Deer Chase Monitor: Jane Cooke

Site DR1A is located at the Deer Chase subdivision along the Piankatank River just below the confluence of the Dragon Run. This freshwater site does see tidal influence. The site has been monitored since April, 1995.

Summary for Site: DR1A

	Time	WD	DO	SC	WT	AT	PH
Average	1048	2.0	7.1	.8	20.2	21.4	7.0
Minimum	800	.3	5.6	.1	8.0	7.0	4.0
Maximum	1430	10.5	10.0	5.2	29.5	32.0	8.0

Number of observations: 30
Minimum date: 4/14/95
Maximum date: 12/06/95

Data from this site serves to show many of the dissimilarities that the Dragon Run holds with other coastal waters including the Piankatank River. This Piankatank site shows a neutral pH, relatively high summer dissolved oxygen and wide variations in Secchi depth due to tidal fluctuations and wave action.

Site DR1A replaces Site DR1.

Site DR2-Glenns Monitor: Wayne Charnick

Site DR2 is located upstream of the Route 17 bridge in Gloucester, in the vicinity of the Rappahannock Community College at Glenns. The site is remote on private property and sampled from the bank. Surrounding lands are in forest and farm crop uses. The site has been monitored since April, 1995.

Summary for Site: DR2

	Time	WD	DO	SC	WT	AT	PH
Average	1785	.6	5.0	.6	21.6	23.4	6.9
Minimum	1227	.2	1.3	.2	9.5	15.5	6.0
Maximum	1915	1.0	8.0	1.0	27.5	31.0	9.0

Number of observations: 20
Minimum date: 4/05/95
Maximum date: 8/30.95

Data at this site shows some of the characteristic qualities of the Dragon Run. Examples are low warm weather dissolved oxygen and slightly acidic pH. The low Secchi depth and water depth are due to sampling close to the shoreline.

Site: DR3-New Dragon Bridge Monitors: Jim Uzel, James Riley

Sampling of site DR3 is conducted from the New Dragon Bridge. This site has been sampled since November, 1994.

Summary for Site: DR3

	Time	WD	DO	SC	WT	AT	PH
Average	1528	1.5	6.4	1.3	16.3	18.7	6.5
Minimum	1045	.4	1.9	.4	.5	- 1.0	6.0
Maximum	1830	4.0	12.7	3.0	28.0	30.0	7.2

Number of observations: 49
Minimum date: 11/02/94
Maximum date: 11/22/95

The complete year of data for this site provides a good example of the seasonal characteristics of the swamp waters of the Dragon Run. Basic factors are low summer flow, combined with warm water temperatures result in very low dissolved oxygen readings. Conversely, the high winter flaws and cold temperatures provide high dissolved oxygen.

Site: DR6-Wares Bridge Monitors: Jim Uzel, Mark Northam

Sampling at Wares Bridge began in April of 1994. The Wares Bridge crossing is located centrally in the watershed and is generally the uppermost canoeable area of the stream.

Summary for Site: DR6

	Time	WD	DO	SC	WT	AT	PH
Average	1483	4.1	6.6	1.7	15.3	18.3	6.4
Minimum	920	4.0	3.3	.6	0.0	- 1.0	6.0
Maximum	1810	4.1	12.4	3.9	30.0	35.0	6.7

Number of observations: 49
Minimum date: 4/15/94
Maximum date: 5/01/95

The acidic pH characteristic of the Dragon Run continues at this site. Tannic acid and acids resulting from the decomposition of carbon-based materials lower the pH in swamp waters. Water depth at this site was always greater than four meters (over 12 feet) at the bridge channel.

This probably explains a slightly higher summer low DO; 3.3 verses less than 2.0 at the New Dragon Bridge. The greater volume of water at Ware Bridge provides better assimilation of oxygen demand.

Site: DR7-Byrds Bridge Monitors: Dorothy Miller, Jim Uzel

Site DR7 at Byrds Bridge is the uppermost sampling site for the Watershed program. Located at the Essex-King and Queen Counties line, the stream drains farm and forest lands. The Dragon Run at the bridge crossing is shallow and flows are generally low. Monitoring began in April, 1994.

Summary for Site: DR7

	Time	WD	DO	SC	WT	AT	PH
Average	1451	2.3	4.0	1.1	22.1	26.9	6.2
Minimum	900	1.7	1.1	.2	5.0	9.0	6.0
Maximum	1940	3.5	10.0	2.5	33.5	38.0	7.0

Number of observations: 40
Minimum date: 4/24/94
Maximum date: 11/21/95

This water quality monitoring site showed the most visible and striking seasonal change in water quality characteristics. During the summers of 1994 and 1995, at times of extreme low flow and heat, the water color changed to a dark-chocolate milk color, Secchi depth was very low and dissolved oxygen was close to 1.0. The average DO for this site is also the lowest among the sites monitored.

Summary

With a total of over 220 water quality samples from eight different monitoring stations within the Dragon Run Watershed, the six monitoring parameters begin to show the characteristic or "base-line" information on the waters. To summarize, the following general characteristics can be interpreted:

Dissolved Oxygen-

- Low of 1.1mg/ml-very close to anoxic conditions limits aquatic species in summer.
- High of 12.7mg/ml-oxygen level supportive of aquatic life.
- Seasonal pattern warm-low DO; cold-high DO.

Secchi Depth-

- Low of 0.2* meters (~8 inches)-highly turbid-algal bloom. *0.1 meter at Piankatank site due to mud suspended by storm.
- High of greater than 5 meters-very clear waters.
- Again a seasonal pattern of summer stress.

Water Temperature/Air Temperature

- Parts of the Dragon Freeze over for periods of the winter.
- Summer water temperatures as high as 33.5°C (°F).
- Water temperatures lag trends in air temperature.

pH -

- Waters of the Dragon Run are acidic; coastal tidal waters are generally slightly basic in pH.
- Swamp waters are normally acid due to acids released from biologic decomposition of carbon substances.

The collection of monitoring data for the Dragon Run is providing a starting point to evaluate and gauge the water body's health.

Site DR1

Month	Number of observations
Apr 94	1
Jun 94	3
Jul 94	2
Aug 94	1
Sep 94	2
Oct 94	1

Total observations for Site DR1 = 10

Site DR1A

Month	Number of observations
Apr 95	3
May 95	3
Jun 95	5
Jul 95	2
Aug 95	3
Sep 95	4
Oct 95	5
Nov 95	4
Dec 95	1

Total observations for Site DR1A = 30

Site DR2

Month	Number of observations
Apr 95	4
May 95	4
Jun 95	4
Jul 95	4
Aug 95	4

Total observations for Site DR2 = 20

Site DR3

Month	Number of observations
Nov 94	4
Dec 94	3
Jan 95	4
Feb 95	3
Mar 95	4

Site DR3

Month	Number of observations
Apr 95	5
May 95	4
Jun 95	4
Jul 95	5
Aug 95	3
Sep 95	4
Oct 95	3
Nov 95	3

Total observations for Site DR3 = 49

Site DR4

Month	Number of observations
Apr 94	2
May 94	5
Jun 94	3

Total observations for Site DR4 = 10

Site DR5

Month	Number of observations
May 94	3
Jun 94	5
Jul 94	4
Aug 94	1

Total observations for Site DR5 = 13

Site DR6

Month	Number of observations
Apr 94	2
May 94	5
Jun 94	3
Jul 94	3

Aug 94	5
Sep 94	4
Oct 94	4
Nov 94	5
Dec 94	3
Jan 95	4

Site DR6

Month	Number of observations
Feb 95	3
Mar 95	4
Apr 95	3
May 95	1

Total observations for Site DR6 = 49

Site DR7

Month	Number of observations
Apr 94	1
May 94	5
Jun 94	3
Jul 94	3
Aug 94	1
Mar 95	2
May 95	2
Jun 95	5
Jul 95	4
Aug 95	5
Sep 95	3
Oct 95	3
Nov 95	3

Total observations for Site DR7 = 40

Nothing to Report

Nothing to Report

1/12/96

Basic Data Report

This report indicates the amount and value of data at each site. The data are initially grouped according to site with the heading of "Site x". Whithin each site group the data is grouped according to month and the raw data displayed for each date. At the end of the month is the average values for the month. At the end of each site is a section with the heading of "Summary of site x". This section lists the number of observations, average, minimum, and maximum for each variable for the site. The end of the report contains a "Report Summary" which lists the number of observations and the minumum and maximum dates for the report. The collumn headings are as follows:

Codes

Day	= Day of observation
Time	= Time of observation
WD	= Water depth
DO	= Dissolved oxygen
SC	= Secchi depth
WT	= Water temperature
AT	= Air temperature
SL	= Salinity
AM	= Ammonia
PH	= pH
Color	= Water Color

Site: DR1

Apr 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	26	1645	.5	5.6	.5	22.5	29.0		.1	6.5	Normal
Avg.	26	1645	.5	5.6	.5	22.5	29.0		.1	6.5	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1645	.5	6.2	.5	21.0	22.0		.1	7.0	Normal
	11	900	.5	5.5	.5	20.0	21.0		.1	6.5	Normal
	19	1645	0.0	8.0	0.0	26.5	31.0		.1	7.0	Abnormal
Avg.	10	1397	.3	6.6	.3	22.5	24.7		.1	6.8	

Jul 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1220	0.0	5.1	0.0	25.0	27.0		.1	6.5	Normal
	20	1600	0.0	6.5	0.0	24.0	27.0		.1	6.5	Normal
Avg.	12	1410	0.0	5.8	0.0	24.5	27.0		.1	6.5	

Aug 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	16	1415	0.0	7.6	0.0	22.0	23.0		.1	6.0	Normal
Avg.	16	1415	0.0	7.6	0.0	22.0	23.0		.1	6.0	

Sep 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	14	1520	0.0	6.7	0.0	22.0	26.0		.5	6.5	Normal
	29	1615	.5	6.7	.5	17.0	19.0		.5	6.8	Normal
Avg.	21	1568	.3	6.7	.3	19.5	22.5		.5	6.7	

Oct 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	12	1545	.2	6.0	.2	12.0	15.0		.5	6.5	Normal
Avg.	12	1545	.2	6.0	.2	12.0	15.0		.5	6.5	

Summary for site: DR1

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1475	.2	6.4	.2	21.2	24.0		.2	6.6
Minumum	900	0.0	5.1	0.0	12.0	15.0		.1	6.0
Maximum	1645	.5	8.0	.5	~~12.0~~ 26.5	31.0		.5	7.0

Number of observations: 10
Minimum date: 4/26/94

Maximum date: 10/12/94

Site: DR1A

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	14	1020	.7	7.7	.5	15.0	12.5			7.0	Normal
	21	1130	.5	7.4	.5	20.0	24.0			7.0	Normal
	29	935	6.0	7.1	5.2	17.0	20.0			7.0	Normal
Avg.	21	1028	2.4	7.4	2.1	17.3	18.8			7.0	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1025	6.0	6.1	5.0	17.0	19.0			7.0	Normal
	19	1140	.5	6.3	.5	22.0	21.5			7.0	
	28	1210	.5	6.1	.4	22.0	20.0			7.0	Normal
Avg.	17	1125	2.3	6.2	2.0	20.3	20.2			7.0	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	950	.5	5.8	.4	24.0	26.0			7.0	Normal
	9	1020	8.5	6.0	.4	26.0	25.5			7.0	Normal
	16	1045	.4	6.8	.3	24.0	25.5			7.0	
	23	1020	.8	5.7	.4	27.0	27.0			7.0	
	30	1030	.9	6.0	.4	26.0	25.0			7.0	Normal
Avg.	16	1013	2.2	6.1	.4	25.4	25.8			7.0	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1430	.7	7.5	.5	29.5	32.0			7.2	Normal
	29	1100	.6		.3	28.5	30.1			8.0	
Avg.	18	1265	.7	7.5	.4	29.0	31.1			7.6	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	13	1150	1.0	9.7	.5	28.0	30.5			4.0	
	19	1153	1.2	7.0	.5	27.0	27.0			8.0	
	28	800	.8	5.6	.5	25.0	24.5			7.0	
Avg.	20	1034	1.0	7.4	.5	26.7	27.3			6.3	

Sep 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1015	9.5	6.2	.4	25.0	28.0			8.0	
	13	810	.5	6.0	.4	23.0	22.0			7.0	
	18	950		6.0	.5	22.0	23.0			7.0	
	25	1120	1.3	7.0	.6	20.0	23.5			7.0	

Avg.	15	974	3.8	6.3	.5	22.5	24.1			7.3	

Oct 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	920	10.5	5.9	.6	22.0	22.0			7.0	
	11	910	.7	6.8	.5	19.5	19.5			7.0	
	17	1100	.3	7.0	.3	16.0	17.5			7.0	
	24	915	.8	6.0	.4	17.0	20.0			7.0	
	31	935	.4	6.2	.4	15.0	18.0			7.0	

Avg.	17	956	2.5	6.4	.4	17.9	19.4			7.0	

Nov 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	8	1100	.8	8.7	.6	11.0	11.0			7.0	
	15	1030	.5	10.0	.3	8.0	8.0			7.0	Abnormal
	22	1200	.8	10.0	.8	8.0	7.0			7.0	Normal
	28	1030	.3	10.0	.1	11.5	19.5			7.0	Abnormal
Avg.	18	1090	.6	9.7	.5	9.6	11.4			7.0	

Dec 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1250	.8	9.6	.8	9.5	12.5			7.0	Normal
Avg.	6	1250	.8	9.6	.8	9.5	12.5			7.0	

Summary for site: DR1A

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1048	2.0	7.1	.8	20.2	21.4			7.0
Minumum	800	.3	5.6	.1	8.0	7.0			4.0
Maximum	1430	10.5	10.0	5.2	29.5	32.0			8.0

Number of observations: 30
Minimum date: 4/14/95
Maximum date: 12/06/95

Site: DR2

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1800	.7		.7	15.0	15.5			6.0	Normal
	12	1745	1.0	7.9	1.0	17.5	23.0			7.0	Normal
	19	1747	.5	2.7	.5	23.0	31.0			6.0	
	26	1837	.2	7.6	.2	17.5	16.5			7.0	
Avg.	15	1782	.6	6.1	.6	18.3	21.5			6.5	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1745				17.5	24.0			9.0	
	10	1800	.5		.5	9.5	23.5			6.5	Normal
	17	1645		6.3	.6	20.0	26.0			7.0	
	23		.8	5.0	.8		20.0			7.0	
Avg.	13	1730	.7	5.6	.6	15.7	23.4			7.4	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1900	.5	1.3	.5	24.0	25.0			7.0	
	14	1858	.7		.7	20.0	18.5			6.0	Normal
	21	1832	.8	4.6	.8	24.0	25.0			7.0	Normal
	28	1227	1.0	5.4	1.0	24.5	22.5			7.0	
Avg.	17	1704	.8	3.7	.8	23.1	22.8			6.8	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1858	.7	4.7	.7		25.5			7.0	Normal
	12	1837	.7	4.6	.7	24.0	24.0			7.0	Normal
	19	1915	.4	3.4	.4	26.0	23.4			7.0	Normal
	26	1900	.7	4.6	.7	24.0	24.5			7.0	Normal
Avg.	15	1878	.6	4.3	.6	24.7	24.4			7.0	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2		.2	5.0	.2	27.5	28.5			7.0	
	9	1846	.2	4.6	.2	24.5	25.0			7.0	
	23			4.8		25.0	22.0			7.0	
	30	1853		8.0		25.5	24.5			7.0	
Avg.	16	1850	.2	5.6	.2	25.6	25.0			7.0	

Summary for site: DR2

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1785	.6	5.0	.6	21.6	23.4			6.9
Minumum	1227	.2	1.3	.2	9.5	15.5			6.0
Maximum	1915	1.0	8.0	1.0	~~25.5~~ 27.5	31.0			9.0

Number of observations: 20
Minimum date: 4/05/95
Maximum date: 8/30/95

Site: DR3

Nov 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1500	1.9	5.9	1.1	14.5	21.0			6.2	
	9	1540	1.4	6.6	1.4	15.0	25.0			6.2	Normal
	18	1120	1.4	6.6	1.4		16.0			6.2	Normal
	30	1520	3.0	8.8	1.5	10.0	12.0			6.2	Normal
Avg.	14	1420	1.9	7.0	1.4	13.2	18.5			6.2	

Dec 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1455	1.9	7.9	1.7	14.0	21.0			6.4	Normal
	16	1510	1.9	10.0	1.8	7.5	8.5			6.7	Normal
	21	1520	1.5	10.8	1.5	5.0	11.0			6.5	Normal
Avg.	14	1495	1.8	9.6	1.7	8.8	13.5			6.5	

Jan 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1400	1.0	11.6	1.0	.5	-1.0			6.5	Normal
	11	1440	1.5	11.7	1.5	4.5	13.0			7.2	Normal
	19	1545	1.8	9.6	1.6	9.0	8.0			6.5	Normal
	26	1555	2.1	12.5	1.9	3.0	3.5			6.6	Normal

Avg.	15	1485	1.6	11.3	1.5	4.3	5.9			6.7	

Feb 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1515	2.4	11.0	2.4	5.0	2.5			6.7	Normal
	13	1530	2.8	12.7	2.8	1.0	2.0			6.7	Abnormal
	23	1505	2.5	11.0	2.5	10.5	22.0			6.7	Normal
Avg.	13	1517	2.6	11.6	2.6	5.5	8.8			6.7	

Mar 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1515	1.5	10.2	1.5	8.5	6.5			6.7	Normal
	10	1410	2.8	10.8	2.1	8.0	7.0			6.7	Normal
	17	1045	3.0	8.5	3.0	14.5	24.0			6.3	Normal
	23	1545	2.8	9.4	2.8	10.5	8.0			6.7	Normal
Avg.	12	1379	2.5	9.7	2.4	10.4	11.4			6.6	

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1540	1.0	10.2	1.0	15.0	18.0			6.8	Normal
	7	1045	1.3	8.6	1.3	12.5	23.5			7.0	Normal
	14	1430	1.3	7.2	1.3	14.5	15.0			7.0	Normal
	21	1700	1.3	6.0	1.3	22.5	30.0			7.0	Normal
	29	1715	1.4	6.6	1.3	19.5	22.5			7.0	Normal
Avg.	14	1486	1.3	7.7	1.2	16.8	21.8			7.0	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1400	1.8	6.4	1.3	17.0	21.0			6.5	Normal
	12	1745	1.3	4.9	1.1	20.0	20.5			6.5	Normal
	21	1510	1.5	3.7	1.4	21.5	28.0			6.5	Normal

	29	1215	1.4	4.5	1.2	19.5	24.5			6.5	Normal
Avg.	17	1468	1.5	4.9	1.3	19.5	23.5			6.5	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1445	1.1	5.1	1.1	24.0	26.0			7.0	Normal
	11	1400	.9	3.0	.9	26.5	30.0			6.5	Normal
	18	1615	.6	4.0	.6	23.0	26.0			6.5	Normal
	28	1830	1.3	3.0	1.0	23.0	24.0			6.5	Normal
Avg.	15	1573	1.0	3.8	.9	24.1	26.5			6.6	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1750	1.4	3.1	1.1	24.0	23.0			6.5	Normal
	9	1830	1.2	2.9	1.2	24.0	25.0			6.5	Normal
	15	1800	1.1	2.3	1.0	26.0	27.0			6.5	Normal
	22	1800	.8	3.3	.8	26.5	27.5			6.5	Normal
	29	1730	1.5	1.9	1.0	28.0	29.5			6.5	Normal
Avg.	15	1782	1.2	2.7	1.0	25.7	26.4			6.5	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1800	.8	3.6	.8	27.5	29.5			6.5	Normal
	20	1130	.4	3.2	.4	23.5	26.5			7.0	Normal
	27	1630	.4	3.2	.4	23.5	25.0			7.0	Normal
Avg.	17	1520	.5	3.3	.5	24.8	27.0			6.8	

Sep 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1730	1.3	3.4	1.0	22.0	24.0			6.0	Normal
	10	1630	.6	3.0	.6	23.5	23.5			6.0	Normal
	17	1630	1.0	4.0	.9	20.0	19.5			6.0	Normal
	24	1630	1.0	4.9	1.0	17.5	18.5			6.5	Normal
Avg.	13	1655	1.0	3.8	.9	20.8	21.4			6.1	

Oct 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1330	.9	3.4	.9	22.5	23.0			6.0	Normal
	15	1530	1.4	3.8	1.3	18.0	18.0			6.5	Normal
	22	1700	1.4	4.2	1.4	14.0	15.0			6.0	Normal
Avg.	12	1520	1.2	3.8	1.2	18.2	18.7			6.2	

Nov 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1600	1.3	3.5	1.2	18.5	22.0			6.0	Normal
	12	1330	1.5	5.5	1.4	9.5	10.5			6.0	Normal
	22	1530	4.0	6.9	.8	13.0	12.5			6.2	Normal
Avg.	12	1487	2.3	5.3	1.1	13.7	15.0			6.1	

Summary for site: DR3

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1528	1.5	6.4	1.3	16.3	18.7			6.5
Minumum	1045	.4	1.9	.4	.5	-1.0			6.0
Maximum	1830	4.0	12.7	3.0	13.0	30.0			7.2

Number of observations: 49
Minimum date: 11/02/94
Maximum date: 11/22/95

Site: DR4

Apr 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	15	1520	1.6	5.5	1.6	22.0	35.5			6.5	Normal
	23	1205	1.3	7.4	.8	14.0	23.0			6.5	Normal

Avg.	19	1363	1.5	6.5	1.2	18.0	29.3			6.5	

May 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1350	1.4		.6	20.5	25.5			6.5	Normal
	8	1329	1.6	6.0	.9	15.0	18.0			6.0	Normal
	15	1621	1.3	6.0	.6	19.0	29.0			6.5	Normal
	22	1615	.9	7.0	.6	16.0	25.0			6.0	
	30	1540	1.3	5.8	.6	19.0	26.0			6.5	Normal
Avg.	15	1491	1.3	6.2	.7	17.9	24.7			6.3	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1220	1.3	4.4	.9	19.0	26.0				Normal
	12	1148	1.1	3.6	.6	21.0	26.0			6.5	Normal
	26	1425	1.3	4.3	.8	25.0	34.0			6.0	Normal
Avg.	14	1264	1.2	4.1	.8	21.7	28.7			6.3	

Summary for site: DR4

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1397	1.3	5.6	.8	19.1	26.8			6.3
Minumum	1148	.9	3.6	.6	14.0	18.0			6.0
Maximum	1621	1.6	7.4	1.6	25.0	35.5			6.5

Number of observations: 10
Minimum date: 4/15/94
Maximum date: 6/26/94

Site: DR5

May 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	11	1550	.3	6.5	.3	17.0	25.5			6.5	Normal
	18	1545	.3	6.1	.3	18.0	22.5			6.0	Normal
	25	1905	.3	6.2	.3					6.5	Normal
Avg.	18	1667	.3	6.3	.3	17.5	24.0			6.3	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1320	4.5	6.1	3.5	26.5	29.0			6.0	Normal
	8	1420	2.3	5.9	2.3	26.0	31.5			6.0	Normal
	14	1330	.3	4.7	.3	24.5	33.0			6.5	Normal
	22	1405	.2	5.2	.2	25.0	34.0			6.5	Normal
	29	1425	1.8	5.3	2.2	26.2	32.0			6.0	Normal
Avg.	14	1380	1.8	5.4	1.7	25.6	31.9			6.2	

Jul 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1410	2.7	5.2	2.7	27.0	32.0			6.5	Normal
	13	1400	2.0	4.7	2.0	27.6	32.0			6.5	Normal
	20	1440	2.3	4.6	2.3	29.0	34.0			6.0	Normal
	27										
Avg.	16	1417	2.3	4.8	2.3	27.9	32.7			6.3	

Aug 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1415	2.8	6.2	2.8	26.0	32.0			6.5	Normal
Avg.	3	1415	2.8	6.2	2.8	26.0	32.0			6.5	

Summary for site: DR5

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1464	1.7	5.6	1.6	24.8	30.7			6.3
Minumum	1320	.2	4.6	.2	17.0	22.5			6.0
Maximum	1905	4.5	6.5	3.5	26.0	34.0			6.5

Number of observations: 13
Minimum date: 5/11/94
Maximum date: 8/03/94

Site: DR6

Apr 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	15	1335	4.1	6.1	1.3	21.0	30.5			6.5	Normal
	26	920	4.1	4.1	.9	17.5	21.0			6.5	Normal
Avg.	20	1128	4.1	5.1	1.1	19.3	25.8			6.5	

May 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1150	4.1	5.0	.6	16.0	12.5			6.5	Normal
	9	1430	4.1	6.9	.9	16.5	22.0			6.5	Normal
	17	1405	4.1	5.1	.9	17.0	16.0			6.5	Normal
	23	1810	4.1	5.1	1.7	21.5	31.0			6.0	Normal
	31	1525	4.1	4.9	1.6	20.0	27.0			6.5	Normal
Avg.	16	1464	4.1	5.4	1.1	18.2	21.7			6.4	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1600	4.1	4.4	1.5	23.0	28.0			6.5	Normal
	14	1545	4.1	4.0	.8	30.0	34.0			6.5	Normal
	21	1515	4.1	3.3	.6	29.0	31.5			6.5	Abnormal
Avg.	13	1553	4.1	3.9	1.0	27.3	31.2			6.5	

Jul 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1610	4.1	3.5	.7	26.0	35.0			6.0	Abnormal
	12	1500	4.1	3.3	.8	27.5	29.0			6.5	Normal
	19	1645	4.1	3.3	.9	25.0	25.5			6.0	Normal
Avg.	12	1585	4.1	3.4	.8	26.2	29.8			6.2	

Aug 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1520	4.1	3.4	1.6	25.0	29.5			6.0	Normal
	9	1810	4.1	4.8	1.6	21.0	26.5			6.5	Normal
	16	1600	4.1	3.8	1.4	21.0	22.0			6.0	Normal
	23	1540	4.1	3.9	1.5	22.5	23.0			6.5	Normal
	30	1530	4.1	3.8	1.2	25.5	25.0			6.0	Normal
Avg.	16	1600	4.1	3.9	1.5	23.0	25.2			6.2	

Sep 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1315	4.1	4.1	1.3	20.0	23.5			6.5	Normal
	13	1525	4.1	4.5	1.2	22.0	29.5			6.5	Normal
	21	1335	4.1	4.2	1.4	20.0	21.0			6.5	Normal
	30	1545	4.1	5.4	1.3	16.0	22.0			6.2	Normal
Avg.	17	1430	4.1	4.5	1.3	19.5	24.0			6.4	

Oct 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color

4	1540	4.1	5.3	2.0	15.0	18.0			6.2	Normal
12	1545	4.1	6.1	1.6	14.0	17.5			6.6	Normal
18	1535	4.1	6.5	1.5	13.0	21.5			6.2	Normal
25	1500	4.1	5.0	1.4	14.5	19.0			6.2	Normal

vg.	14	1530	4.1	5.7	1.6	14.1	19.0			6.3

Nov 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1535	4.1		1.6	14.0	17.0			6.2	Normal
	9	1610	4.1	5.8	2.1	13.0	18.0			6.2	Normal
	18	1145	4.1	5.5	1.6	13.0	15.5			6.2	Normal
	22	1600	4.1	6.7	1.2	13.0	12.0			6.2	Normal
	30	1550	4.1		1.9	10.0	10.0			6.2	Normal
vg.	16	1488	4.1	6.0	1.7	12.6	14.5			6.2	

Dec 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1520	4.1	7.0	2.3	14.0	17.0			6.2	Normal
	16	1540	4.1	10.0	2.0	6.0	6.0			6.5	Normal
	21	1545	4.1	10.3	2.7	4.5	8.5			6.5	Normal
Avg.	14	1535	4.1	9.1	2.3	8.2	10.5			6.4	

n 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1445	4.1	10.7	2.6	0.0	-1.0			6.5	Normal
	11	1515	4.0	11.7	2.6	4.0	11.0			6.5	Normal
	19	1515	4.0	9.4	2.9	8.5	9.0			6.6	Normal
	26	1515	4.0	12.4	2.2	2.5	4.5			6.5	Normal
vg.	15	1498	4.0	11.0	2.6	3.8	5.9			6.5	

Feb 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1445	4.0	11.2	2.6	4.5	4.5			6.7	Normal
	13	1500	4.0	12.0	2.8	.5	2.0			6.7	Abnormal
	23	1440	4.0	11.0	2.7	8.0	20.0			6.7	Normal
Avg.	13	1462	4.0	11.4	2.7	4.3	8.8			6.7	

r 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1440	4.0	9.0	2.5	8.5	7.0			6.7	Normal
	10	1340	4.0	11.0	2.7	7.0	4.0			6.5	Normal
	17	1015	4.0	6.0	3.0	14.5	18.0			6.1	Normal
	23	1515	4.0	8.1	3.9	10.0	10.5			6.5	Normal
vg.	12	1328	4.0	8.5	3.0	10.0	9.9			6.5	

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1505	4.0	9.9	2.2	11.0	18.0			6.5	Normal
	11	1550	4.0	7.9	2.0	14.0	16.5			6.7	Normal
	24	1545	4.0	6.3	1.7	12.5	10.0			6.7	Normal

Avg.	12	1533	4.0	8.0	2.0	12.5	14.8			6.6	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1510	4.0	7.6	1.3	15.0	18.0			6.6	Normal
Avg.	1	1510	4.0	7.6	1.3	15.0	18.0			6.6	

Summary for site: DR6

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1483	4.1	6.6	1.7	15.3	18.3			6.4
Minumum	920	4.0	3.3	.6	0.0	-1.0			6.0
Maximum	1810	4.1	12.4	3.9	15.0	35.0			6.7

20.0

Number of observations: 49
Minimum date: 4/15/94
Maximum date: 5/01/95

Site: DR7

Apr 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	24	1940	2.2	6.9	.9	19.0	21.0		.1	6.5	Normal
Avg.	24	1940	2.2	6.9	.9	19.0	21.0		.1	6.5	

May 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1450	3.3	4.9	.9	20.1	30.1			7.0	Normal
	8	1500	2.3	6.4	1.1	16.0	19.0			6.0	Normal
	15	1500	2.2	5.7	1.3	20.0	33.0		.1	6.0	Normal
	22	1520	2.1	6.8	1.5	17.0	26.0			6.3	Normal
	29	1300	2.2	6.6	1.9	17.5	30.5			6.0	Normal
Avg.	15	1454	2.4	6.1	1.3	18.1	27.7		.1	6.3	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	12	1430	2.1	4.6	.7	24.0	32.5		.1	6.0	Normal
	19	1530	2.1	3.1	.4	30.0	38.0			6.0	Abnormal
	26	1630	2.1	3.8	.5	26.0	31.5			6.0	Abnormal
Avg.	19	1530	2.1	3.8	.5	26.7	34.0		.1	6.0	

Jul 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1600	2.2	3.1	.8	25.0	28.0		.1	6.2	Normal
	11	1800	1.9	3.1	.9	25.0	28.0			6.2	Normal
	31	1215	2.1	4.4	1.1	25.0	30.0			6.5	Normal
Avg.	15	1538	2.1	3.5	.9	25.0	28.7		.1	6.3	

Aug 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1845	2.2	3.7	1.2	21.5	22.0		.1	6.0	Normal

Avg.	7	1845	2.2	3.7	1.2	21.5	22.0		.1	6.0	

Mar 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	19	1620	1.7	9.2	1.6	16.0	16.0			6.6	Normal
	26	1645	2.4	10.0	2.0	16.5	18.0			6.7	Normal
Avg.	22	1633	2.1	9.6	1.8	16.3	17.0			6.7	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	19	1530		4.3		22.0	24.0			6.1	Normal
	26	1340	2.1	3.0	1.6	21.0	22.0			6.2	Normal
Avg.	22	1435	2.1	3.7	1.6	21.5	23.0			6.2	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1500	2.2	4.0	1.8	22.0	28.0			6.2	Normal
	8	1540	2.0	2.2	1.2	25.0	33.5			6.2	
	16	1530	2.3	3.7	1.3	22.0	30.0			6.2	
	23	1420	2.2	2.2	.6	25.5	26.5			6.2	Abnormal

	30	1140	2.2	2.1	1.5	23.0	26.0			6.0	Normal
Avg.	15	1426	2.2	2.8	1.3	23.5	28.8			6.2	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1600	2.4	2.2	1.0	25.0	29.5			6.2	Normal
	14	1530	2.3	1.3	.7	28.0	37.0			6.2	Normal
	21	930	2.2	1.3	.2	26.0	30.0			6.2	Abnormal
	28	1515	2.3	1.2	.8	29.0	34.0			6.2	Abnormal
Avg.	17	1394	2.3	1.5	.7	27.0	32.6			6.2	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1400	2.2	4.7	.2	33.5	35.0			6.2	Abnormal
	11	1530	2.4	2.1	.5	27.0	34.0			6.2	Normal
	18	1250	2.3	1.3	.2	28.0	34.5			6.2	Abnormal
	25	935	2.2	1.1	.3	23.0	23.0			6.2	Abnormal
	31	1535	2.3	3.3	.3	27.5	36.0			6.2	Normal
Avg.	17	1330	2.3	2.5	.3	27.8	32.5			6.2	

Sep 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	8	1500	2.3	2.8	.6	24.0	30.0			6.2	Normal
	15	1315	2.3	1.9	.3	24.5	27.5			6.2	Abnormal
	25	1610	2.5	3.7	1.5	17.0	17.5			6.2	Normal
Avg.	16	1475	2.4	2.8	.8	21.8	25.0			6.2	

Oct 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1345	3.5	2.5	2.5	22.5	27.5			6.2	Normal

	16	1530	2.4	4.8	1.3	14.9	19.5			6.2	Normal
	24	1120	2.5	5.2	1.8		20.0			6.0	Normal
Avg.	14	1332	2.8	4.2	1.9	18.7	22.3			6.1	

Nov 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1530	2.5	4.5	1.5	20.0	22.5			6.2	Normal
	13	1430	2.5	8.9	1.3	6.5	14.0			6.2	Normal
	21	900	2.5		1.7	5.0	9.0			6.0	Normal
Avg.	12	1287	2.5	6.7	1.5	10.5	15.2			6.1	

Summary for site: DR7

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1451	2.3	4.0	1.1	22.1	26.9		.1	6.2
Minumum	900	1.7	1.1	.2	5.0	9.0		.1	6.0
Maximum	1940	3.5	10.0	2.5	~~5.0~~ 35.5	38.0		.1	7.0

Number of observations: 40
Minimum date: 4/24/94
Maximum date: 11/21/95

Report Summary

Total number of observations for this report: 221
Minimum Date: 4/15/94
Maximum Date: 12/06/95

1/12/96 Comments Report

Introduction: This report lists all comments for selected sites.

Site Number DR1

Date	Comments
6/19/94	very low tide - water darker than normal
[illegible]/16/94	low tide

Site Number DR1

Date	Comments
6/30/95	Saw Skinks (3) at house.
7/07/95	Water slightly muddy. Jane and Jim are on vacation.
7/29/95	I couldn't get the oxygen test to turn blue. I was missing a step.
8/19/95	unusually high tide due to "Felix"!
9/25/95	unusually high tide
10/17/95	unusually low tide
11/15/95	Muddy from choppy water. Extremely windy and water very turbulent.
11/28/95	Extremely muddy due to strong winds
4/21/95	Secchi depth more than .5 but low tide was only .5m deep.

Site Number DR2

Date	Comments
/12/95	Redid test 1
5/10/95	Water Color was stirred up. Redid dissolved oxygen test 3 times could not get a reaction.
/17/95	Lot of pollen in water. Very humid

Site Number DR3

Date	Comments
4/07/95	RCC canoe trip
4/14/95	one canoe on dragon
5/29/95	three fishermen at bridge
7/22/95	muddy
7/29/95	current was stronger than usual
8/05/95	muddy
8/20/95	muddy
1/11/95	high pH, retested 1/13/95 at 6.5 su.
2/13/95	some ice

Site Number DR5

Date	Comments
5/25/94	storm
/22/94	film on water w/ small particles
/27/94	beaver dam broke - flow too high to sample

Site Number DR6

Date	Comments
4/26/94	hot days ~90
6/21/94	drought - brown water
7/06/94	low flow
2/13/95	frozen water - had to break ice to sample.

Site Number DR7

Date	Comments
/01/95	swallows under bridge
6/08/95	hot day
/23/95	brown
/30/95	loud frogs
7/07/95	Slighty muddy moving fast, Jim on vacation, 6 dead boxwood turtles on K&Q side of bridge
/21/95	brown red w/scum, water color and surface scum notable different from last week
8/04/95	brown algen on surface
/11/95	color better
/18/95	chocolate color
8/25/95	choco color
/24/94	nitrate 0.25ppm
/15/94	nitrate .25ppm
6/12/94	nitrate .25ppm
6/19/94	reddish brown water color
/26/94	Reddish brown water color

7/04/94	nitrate 0.25ppm
8/07/94	nitrate .25ppm
3/19/95	1 crane, 1 mud turtle, 1 buzzard
3/26/95	heard 1st frog calling, woodpecker,ducks

1/12/96

Water Quality Criteria Report

This report indicates the amount and value of data which violates state water quality criteria or standards. The data are screened for violation of the state dissolved oxygen standard as well as the Ph, Water temperature and Ammonia criteria. The data are grouped according to site. Whithin each site, the data is grouped according to month and the violations displayed for each date.

At the end of each site is a section with the heading of "Summary of site x". This section lists the number of violations, average, minimum, and maximum for each criteria/standard for the site.The end of the report contains a Summary" which lists the number of violations and the minumum and maximum dates for the report. The collumn headings are as follows:

Codes

Date = Date of the observation
Time = Time of observation
DO = Dissolved oxygen
Viol = Standard/Criteria violation indicator
% = Percent above the ammonia criteria
W = Water temperature
AM = Ammonia
P = pH
Comments = Water Color

Site: DR2

Date	Time	DO	Viol	WT	Viol	AM	Viol	%	Ph	Viol	Comments
4/19/95	1747	2.7	Y	23.0							

Summary for site: DR2

	Time	DO	WT	AM	%	Ph
N. Viol		1	0	0		0
Average	1747	2.7	23.0			
Minumum	1747	2.7	23.0			
Maximum	1747	2.7	23.0			

Number of observations: 1
Minimum date: 4/19/95
Maximum date: 4/19/95

Report Summary

	Time	DO	WT	AM	%	Ph
N. Viol		1	0	0		0
Average	1747	2.7	23.0			
Minimum	1747	2.7	23.0			
Maximum	1747	2.7	23.0			

Number of observations: 1
Minimum Date: 4/19/95
Maximum Date: 4/19/95

Nothing to Report

River:

Monitor Number	Site Number	Monitor Name	Site Name	Monitor Type
14		Charles		Backup

River: Dragon Run

Monitor Number	Site Number	Monitor Name	Site Name	Monitor Type
1	DR1	Carter	Carter	Primary
10	DR2	Charnick	Glenns	Primary
11	DR3	Riley	New Dragon Bridge	Primary
13	DR6	Northam	Wares Bridge	Primary
3	DR7	Uzel	Bird Bridge	Primary
4	DR4	Herrin	Herrin	Primary
5	DR5	Williams	Calhoon	Backup
6	DR7	Uzel	Bird Bridge	Primary
7	DR7	Miller	Bird Bridge	Primary

River: Dragon/Piankatank

Monitor Number	Site Number	Monitor Name	Site Name	Monitor Type
12	DR1A	Cooke	Deer Chase	Primary

River: James

Monitor Number	Site Number	Monitor Name	Site Name	Monitor Type
30	30	Citizen	Westover	Primary
30a	30	Citizen	Westover	Backup

Monitor Number: 1
Monitor Type: Primary
Date Trained: 4/26/94
Date Begin: 4/26/94

Last Name: Carter
First Name: Michelle
Street: Rt 1 Box 1905
City: Saluda
State: VA
Zip Code: 23149
Phone (h): 758-4400
Phone (w):

Site Number: DR1
Site Name: Carter
River: Dragon Run

Monitor Number: 10
Monitor Type: Primary
Date Trained: 4/04/95
Date Begin: 4/09/95

Last Name: Charnick
First Name: Wayne
Street: HCR Box 990
City: Urbanna
State: VA
Zip Code: 23175
Phone (h): 758-2447
Phone (w):

Site Number: DR2
Site Name: Glenns
River: Dragon Run

Monitor Number: 11
Monitor Type: Primary
Date Trained: 4/07/95
Date Begin: 4/07/95

Last Name: Riley
First Name: James
Street: P.O.Box 94
City: Saluda
State: VA
Zip Code: 12149
Phone (h): 758-2906
Phone (w):

Site Number: DR3
Site Name: New Dragon Bridge
River: Dragon Run

Monitor Number: 12
Monitor Type: Primary
Date Trained: 4/20/95
Date Begin: 4/20/95

Last Name: Cooke
First Name: Jane
Street: POBox 59
City: Saluda
State: VA
Zip Code: 23149
Phone (h): 758-3909
Phone (w):

Site Number: DR1A
Site Name: Deer Chase
River: Dragon/Piankatank

Monitor Number: 13
Monitor Type: Primary
Date Trained: 5/08/95
Date Begin: 5/08/95

Last Name: Northam
First Name: Mark
Street: General Delivery
City: Church View
State: VA
Zip Code: 23032
Phone (h): 758-5423
Phone (w):

Site Number: DR6
Site Name: Wares Bridge
River: Dragon Run

Monitor Number: 14
Monitor Type: Backup
Date Trained:
Date Begin:

Last Name: Charles
First Name: Heath
Street: MPPDC

Site Number:
Site Name:
River:

City: Saluda
State: VA
Zip Code: 23149
Phone (h): 758-2311
Phone (w):

Monitor Number: 3
Monitor Type: Primary
Date Trained:
Date Begin:

Last Name: Uzel
First Name: Jim
Street: Mppdc
City: Saluda
State: VA
Zip Code: 23149
Phone (h): 758-2311
Phone (w): 758-2311

Site Number: DR7
Site Name: Bird Bridge
River: Dragon Run

Monitor Number: 30
Monitor Type: Primary
Date Trained: 1/15/92
Date Begin: 2/01/92

Last Name: Citizen
First Name: Concerned
Street: 123 Anyplace Road
City: Everwhere
State: VA
Zip Code: 12229
Phone (h): (804)527-5152
Phone (w): (804)740-5269

Site Number: 30
Site Name: Westover
River: James

Monitor Number: 30a
Monitor Type: Backup

Site Number: 30
Site Name: Westover

Date Trained: 1/15/92 River: James
Date Begin: 2/01/92

Last Name: Citizen
First Name: Informed
Street: 123 Anyplace Road
City: Everwhere
State: VA
Zip Code: 12229
Phone (h): (804)527-5152
Phone (w): (804)740-5269

Monitor Number: 4 Site Number: DR4
Monitor Type: Primary Site Name: Herrin
Date Trained: River: Dragon Run
Date Begin: 4/15/94

Last Name: Herrin
First Name: Frank
Street: Hcr 74 Box 74
City: Mascot
State: VA
Zip Code: 23108
Phone (h): 785-6607
Phone (w):

Monitor Number: 5 Site Number: DR5
Monitor Type: Backup Site Name: Calhoon
Date Trained: River: Dragon Run
Date Begin:

Last Name: Williams
First Name: Russell
Street: Box 20
City: Mascot
State: VA
Zip Code: 23108
Phone (h): 785-2981
Phone (w):

Monitor Number: 6
Monitor Type: Primary
Date Trained:
Date Begin: 4/26/94

Last Name: Uzel
First Name: Jim
Street: POB 286
City: Saluda
State: VA
Zip Code: 23149
Phone (h):
Phone (w): 758-2311

Site Number: DR7
Site Name: Bird Bridge
River: Dragon Run

Monitor Number: 7
Monitor Type: Primary
Date Trained:
Date Begin: 4/24/94

Last Name: Miller
First Name: Dorothy
Street: Pob 26
City: Center Cross
State: VA
Zip Code: 22437
Phone (h): 443-3291
Phone (w):

Site Number: DR7
Site Name: Bird Bridge
River: Dragon Run

Site Number: 30
Site Name: Westover
River: James
Primary Monitor Number: 30
Backup Monitor Number 1: 30a
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 1/21/90
Date End: 6/30/91
Parameter Suite: primary
HUC Code: 2080206
Waterbody Code: 09E
Latitude: 12:13:14
Longitude: 15:15:17

Site Number: DR1
Site Name: Carter
River: Dragon Run
Primary Monitor Number: 1
Backup Monitor Number 1:
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 4/26/94
Date End:
Parameter Suite: Enhanced
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Site Number: DR1A
Site Name: Deer Chase
River: Dragon/Piankatank
Primary Monitor Number: 12
Backup Monitor Number 1:
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 4/14/95
Date End:
Parameter Suite: Basic
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Site Number: DR2
Site Name: Glenns
River: Dragon Run
Primary Monitor Number: 10
Backup Monitor Number 1:
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 4/09/95
Date End:
Parameter Suite: Basic
HUC Code:

Waterbody Code:
Latitude:
Longitude:

Site Number: DR3
Site Name: New Dragon Bridge
River: Dragon Run
Primary Monitor Number: 11
Backup Monitor Number 1:
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin:
Date End:
Parameter Suite:
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Site Number: DR4
Site Name: Herrin
River: Dragon Run
Primary Monitor Number: 4
Backup Monitor Number 1:
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 4/15/94
Date End:
Parameter Suite: Basic
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Site Number: DR5
Site Name: Calhoon
River: Dragon Run
Primary Monitor Number: 5
Backup Monitor Number 1:

Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 5/11/94
Date End:
Parameter Suite: Basic
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Site Number: DR6
Site Name: Wares Bridge
River: Dragon Run
Primary Monitor Number: 13
Backup Monitor Number 1: 6
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 4/26/94
Date End:
Parameter Suite: Basic
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Site Number: DR7
Site Name: Bird Bridge
River: Dragon Run
Primary Monitor Number: 6
Backup Monitor Number 1:
Backup Monitor Number 2:
Backup Monitor Number 3:
Date Begin: 4/24/94
Date End:
Parameter Suite: Basic
HUC Code:
Waterbody Code:
Latitude:
Longitude:

Nothing to Report

Nothing to Report

Equipment Inventory Report

Status of Equipment Data Base as of: 1/12/96

Basic Equipment	
Bucket:	9
Secchi disk:	8
DO kit:	9
Thermometer:	8
Ph Kit, narrow:	9
Ph Kit, wide:	9
Hydrometer jar:	8
Hydrometer:	8
Thermometer:	8

D.O. Supplies	
Sulfamic Acid:	8
Sodium Thiosulfate:	-2
Starch indicator:	8
Alkali iodide azide:	8
Manganous sulfate:	8
Eye dropper:	8
Titrating syringe:	8

pH Supplies	
pH comparator:	9
pH reagent:	9
pH test tube:	9
Creasol red:	9

Ammonia Supplies	
Ammonia comparator:	7
Ammonia tube:	7
Ammonia reagent 1:	7
Ammonia reagent 2:	7

Nutrient Supplies	
Nutrient bottle:	40

4/12/96

Basic Data Report - All Sites and Dates

This report indicates the amount and value of data at each site. The data are initially grouped according to site with the heading of "Site x". Whithin each site group the data is grouped according to month and the raw data displayed for each date. At the end of the month is the average values for the month. At the end of each site is a section with the heading of "Summary of site x". This section lists the number of observations, average, minimum, and maximum for each variable for the site. The end of the report contains a "Report Summary" which lists the number of observations and the minumum and maximum dates for the report. The collumn headings are as follows:

Codes

Day = Day of observation
Time = Time of observation
WD = Water depth
DO = Dissolved oxygen
SD = Secchi depth
WT = Water temperature
AT = Air temperature
SL = Salinity
AM = Ammonia
PH = pH
Color = Water Color

Site: DR1

Apr 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	26	1645	.5	5.6	.5	22.5	29.0		.1	6.5	Normal
Avg.	26	1645	.5	5.6	.5	22.5	29.0		.1	6.5	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1645	.5	6.2	.5	21.0	22.0		.1	7.0	Normal
	11	900	.5	5.5	.5	20.0	21.0		.1	6.5	Normal
	19	1645	0.0	8.0	0.0	26.5	31.0		.1	7.0	Abnormal
Avg.	10	1397	.3	6.6	.3	22.5	24.7		.1	6.8	

Jul 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1220	0.0	5.1	0.0	25.0	27.0		.1	6.5	Normal
	20	1600	0.0	6.5	0.0	24.0	27.0		.1	6.5	Normal
Avg.	12	1410	0.0	5.8	0.0	24.5	27.0		.1	6.5	

Aug 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	16	1415	0.0	7.6	0.0	22.0	23.0		.1	6.0	Normal
Avg.	16	1415	0.0	7.6	0.0	22.0	23.0		.1	6.0	

Sep 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	14	1520	0.0	6.7	0.0	22.0	26.0		.5	6.5	Normal
	29	1615	.5	6.7	.5	17.0	19.0		.5	6.8	Normal
Avg.	21	1568	.3	6.7	.3	19.5	22.5		.5	6.7	

Oct 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	12	1545	.2	6.0	.2	12.0	15.0		.5	6.5	Normal
Avg.	12	1545	.2	6.0	.2	12.0	15.0		.5	6.5	

Summary for site: DR1

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1475	.2	6.4	.2	21.2	24.0		.2	6.6
Minumum	900	0.0	5.1	0.0	12.0	15.0		.1	6.0
Maximum	1645	.5	8.0	.5	12.0	31.0		.5	7.0

Number of observations: 10
Minimum date: 4/26/94

Maximum date: 10/12/94

Site: DR1A

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	14	1020	.7	7.7	.5	15.0	12.5			7.0	Normal
	21	1130	.5	7.4	.5	20.0	24.0			7.0	Normal
	29	935	6.0	7.1	5.2	17.0	20.0			7.0	Normal
Avg.	21	1028	2.4	7.4	2.1	17.3	18.8			7.0	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1025	6.0	6.1	5.0	17.0	19.0			7.0	Normal
	19	1140	.5	6.3	.5	22.0	21.5			7.0	
	28	1210	.5	6.1	.4	22.0	20.0			7.0	Normal
Avg.	17	1125	2.3	6.2	2.0	20.3	20.2			7.0	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	950	.5	5.8	.4	24.0	26.0			7.0	Normal
	9	1020	8.5	6.0	.4	26.0	25.5			7.0	Normal
	16	1045	.4	6.8	.3	24.0	25.5			7.0	
	23	1020	.8	5.7	.4	27.0	27.0			7.0	
	30	1030	.9	6.0	.4	26.0	25.0			7.0	Normal
Avg.	16	1013	2.2	6.1	.4	25.4	25.8			7.0	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1430	.7	7.5	.5	29.5	32.0			7.2	Normal
	29	1100	.6		.3	28.5	30.1			8.0	
Avg.	18	1265	.7	7.5	.4	29.0	31.1			7.6	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	13	1150	1.0	9.7	.5	28.0	30.5			4.0	
	19	1153	1.2	7.0	.5	27.0	27.0			8.0	
	28	800	.8	5.6	.5	25.0	24.5			7.0	
Avg.	20	1034	1.0	7.4	.5	26.7	27.3			6.3	

Sep 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1015	9.5	6.2	.4	25.0	28.0			8.0	
	13	810	.5	6.0	.4	23.0	22.0			7.0	
	18	950		6.0	.5	22.0	23.0			7.0	
	25	1120	1.3	7.0	.6	20.0	23.5			7.0	

Avg.	15	974	3.8	6.3	.5	22.5	24.1			7.3	

Oct 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	920	10.5	5.9	.6	22.0	22.0			7.0	
	11	910	.7	6.8	.5	19.5	19.5			7.0	
	17	1100	.3	7.0	.3	16.0	17.5			7.0	
	24	915	.8	6.0	.4	17.0	20.0			7.0	
	31	935	.4	6.2	.4	15.0	18.0			7.0	

Avg.	17	956	2.5	6.4	.4	17.9	19.4			7.0	

Nov 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	8	1100	.8	8.7	.6	11.0	11.0			7.0	
	15	1030	.5	10.0	.3	8.0	8.0			7.0	Abnormal
	22	1200	.8	10.0	.8	8.0	7.0			7.0	Normal
	28	1030	.3	10.0	.1	11.5	19.5			7.0	Abnormal
Avg.	18	1090	.6	9.7	.5	9.6	11.4			7.0	

Dec 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1250	.8	9.6	.8	9.5	12.5			7.0	Normal
Avg.	6	1250	.8	9.6	.8	9.5	12.5			7.0	

Summary for site: DR1A

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1048	2.0	7.1	.8	20.2	21.4			7.0
Minumum	800	.3	5.6	.1	8.0	7.0			4.0
Maximum	1430	10.5	10.0	5.2	9.5	32.0			8.0

Number of observations: 30
Minimum date: 4/14/95
Maximum date: 12/06/95

Site: DR2

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1800	.7		.7	15.0	15.5			6.0	Normal
	12	1745	1.0	7.9	1.0	17.5	23.0			7.0	Normal
	19	1747	.5	2.7	.5	23.0	31.0			6.0	
	26	1837	.2	7.6	.2	17.5	16.5			7.0	
Avg.	15	1782	.6	6.1	.6	18.3	21.5			6.5	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1745				17.5	24.0			9.0	
	10	1800	.5		.5	9.5	23.5			6.5	Normal
	17	1645		6.3	.6	20.0	26.0			7.0	
	23		.8	5.0	.8		20.0			7.0	
Avg.	13	1730	.7	5.6	.6	15.7	23.4			7.4	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1900	.5	1.3	.5	24.0	25.0			7.0	
	14	1858	.7		.7	20.0	18.5			6.0	Normal
	21	1832	.8	4.6	.8	24.0	25.0			7.0	Normal
	28	1227	1.0	5.4	1.0	24.5	22.5			7.0	
Avg.	17	1704	.8	3.7	.8	23.1	22.8			6.8	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1858	.7	4.7	.7		25.5			7.0	Normal
	12	1837	.7	4.6	.7	24.0	24.0			7.0	Normal
	19	1915	.4	3.4	.4	26.0	23.4			7.0	Normal
	26	1900	.7	4.6	.7	24.0	24.5			7.0	Normal
Avg.	15	1878	.6	4.3	.6	24.7	24.4			7.0	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2		.2	5.0	.2	27.5	28.5			7.0	
	9	1846	.2	4.6	.2	24.5	25.0			7.0	
	23			4.8		25.0	22.0			7.0	
	30	1853		8.0		25.5	24.5			7.0	
Avg.	16	1850	.2	5.6	.2	25.6	25.0			7.0	

Summary for site: DR2

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1785	.6	5.0	.6	21.6	23.4			6.9
Minumum	1227	.2	1.3	.2	9.5	15.5			6.0
Maximum	1915	1.0	8.0	1.0	25.5	31.0			9.0

Number of observations: 20
Minimum date: 4/05/95
Maximum date: 8/30/95

Site: DR3

	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
Nov 94	2	1500	1.9	5.9	1.1	14.5	21.0			6.2	
	9	1540	1.4	6.6	1.4	15.0	25.0			6.2	Normal
	18	1120	1.4	6.6	1.4		16.0			6.2	Normal
	30	1520	3.0	8.8	1.5	10.0	12.0			6.2	Normal
Avg.	14	1420	1.9	7.0	1.4	13.2	18.5			6.2	

	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
Dec 94	6	1455	1.9	7.9	1.7	14.0	21.0			6.4	Normal
	16	1510	1.9	10.0	1.8	7.5	8.5			6.7	Normal
	21	1520	1.5	10.8	1.5	5.0	11.0			6.5	Normal
Avg.	14	1495	1.8	9.6	1.7	8.8	13.5			6.5	

	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
Jan 95	5	1400	1.0	11.6	1.0	.5	-1.0			6.5	Normal
	11	1440	1.5	11.7	1.5	4.5	13.0			7.2	Normal
	19	1545	1.8	9.6	1.6	9.0	8.0			6.5	Normal
	26	1555	2.1	12.5	1.9	3.0	3.5			6.6	Normal

Avg.	15	1485	1.6	11.3	1.5	4.3	5.9			6.7	

Feb 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1515	2.4	11.0	2.4	5.0	2.5			6.7	Normal
	13	1530	2.8	12.7	2.8	1.0	2.0			6.7	Abnormal
	23	1505	2.5	11.0	2.5	10.5	22.0			6.7	Normal
Avg.	13	1517	2.6	11.6	2.6	5.5	8.8			6.7	

Mar 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1515	1.5	10.2	1.5	8.5	6.5			6.7	Normal
	10	1410	2.8	10.8	2.1	8.0	7.0			6.7	Normal
	17	1045	3.0	8.5	3.0	14.5	24.0			6.3	Normal
	23	1545	2.8	9.4	2.8	10.5	8.0			6.7	Normal
Avg.	12	1379	2.5	9.7	2.4	10.4	11.4			6.6	

Apr 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1540	1.0	10.2	1.0	15.0	18.0			6.8	Normal
	7	1045	1.3	8.6	1.3	12.5	23.5			7.0	Normal
	14	1430	1.3	7.2	1.3	14.5	15.0			7.0	Normal
	21	1700	1.3	6.0	1.3	22.5	30.0			7.0	Normal
	29	1715	1.4	6.6	1.3	19.5	22.5			7.0	Normal
Avg.	14	1486	1.3	7.7	1.2	16.8	21.8			7.0	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1400	1.8	6.4	1.3	17.0	21.0			6.5	Normal
	12	1745	1.3	4.9	1.1	20.0	20.5			6.5	Normal
	21	1510	1.5	3.7	1.4	21.5	28.0			6.5	Normal

	29	1215	1.4	4.5	1.2	19.5	24.5			6.5	Normal
Avg.	17	1468	1.5	4.9	1.3	19.5	23.5			6.5	

Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1445	1.1	5.1	1.1	24.0	26.0			7.0	Normal
	11	1400	.9	3.0	.9	26.5	30.0			6.5	Normal
	18	1615	.6	4.0	.6	23.0	26.0			6.5	Normal
	28	1830	1.3	3.0	1.0	23.0	24.0			6.5	Normal
Avg.	15	1573	1.0	3.8	.9	24.1	26.5			6.6	

Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1750	1.4	3.1	1.1	24.0	23.0			6.5	Normal
	9	1830	1.2	2.9	1.2	24.0	25.0			6.5	Normal
	15	1800	1.1	2.3	1.0	26.0	27.0			6.5	Normal
	22	1800	.8	3.3	.8	26.5	27.5			6.5	Normal
	29	1730	1.5	1.9	1.0	28.0	29.5			6.5	Normal
Avg.	15	1782	1.2	2.7	1.0	25.7	26.4			6.5	

Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1800	.8	3.6	.8	27.5	29.5			6.5	Normal
	20	1130	.4	3.2	.4	23.5	26.5			7.0	Normal
	27	1630	.4	3.2	.4	23.5	25.0			7.0	Normal
Avg.	17	1520	.5	3.3	.5	24.8	27.0			6.8	

Sep 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	2	1730	1.3	3.4	1.0	22.0	24.0			6.0	Normal
	10	1630	.6	3.0	.6	23.5	23.5			6.0	Normal
	17	1630	1.0	4.0	.9	20.0	19.5			6.0	Normal
	24	1630	1.0	4.9	1.0	17.5	18.5			6.5	Normal
Avg.	13	1655	1.0	3.8	.9	20.8	21.4			6.1	

Oct 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1330	.9	3.4	.9	22.5	23.0			6.0	Normal
	15	1530	1.4	3.8	1.3	18.0	18.0			6.5	Normal
	22	1700	1.4	4.2	1.4	14.0	15.0			6.0	Normal
Avg.	12	1520	1.2	3.8	1.2	18.2	18.7			6.2	

Nov 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1600	1.3	3.5	1.2	18.5	22.0			6.0	Normal
	12	1330	1.5	5.5	1.4	9.5	10.5			6.0	Normal
	22	1530	4.0	6.9	.8	13.0	12.5			6.2	Normal
Avg.	12	1487	2.3	5.3	1.1	13.7	15.0			6.1	

Summary for site: DR3

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1528	1.5	6.4	1.3	16.3	18.7			6.5
Minumum	1045	.4	1.9	.4	.5	-1.0			6.0
Maximum	1830	4.0	12.7	3.0	13.0	30.0			7.2

Number of observations: 49
Minimum date: 11/02/94
Maximum date: 11/22/95

Site: DR4

Apr 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	15	1520	1.6	5.5	1.6	22.0	35.5			6.5	Normal
	23	1205	1.3	7.4	.8	14.0	23.0			6.5	Normal

Avg.	19	1363	1.5	6.5	1.2	18.0	29.3			6.5	

May 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1350	1.4		.6	20.5	25.5			6.5	Normal
	8	1329	1.6	6.0	.9	15.0	18.0			6.0	Normal
	15	1621	1.3	6.0	.6	19.0	29.0			6.5	Normal
	22	1615	.9	7.0	.6	16.0	25.0			6.0	
	30	1540	1.3	5.8	.6	19.0	26.0			6.5	Normal
Avg.	15	1491	1.3	6.2	.7	17.9	24.7			6.3	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	5	1220	1.3	4.4	.9	19.0	26.0				Normal
	12	1148	1.1	3.6	.6	21.0	26.0			6.5	Normal
	26	1425	1.3	4.3	.8	25.0	34.0			6.0	Normal
Avg.	14	1264	1.2	4.1	.8	21.7	28.7			6.3	

Summary for site: DR4

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1397	1.3	5.6	.8	19.1	26.8			6.3
Minumum	1148	.9	3.6	.6	14.0	18.0			6.0
Maximum	1621	1.6	7.4	1.6	25.0	35.5			6.5

Number of observations: 10
Minimum date: 4/15/94
Maximum date: 6/26/94

Site: DR5

May 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	11	1550	.3	6.5	.3	17.0	25.5			6.5	Normal
	18	1545	.3	6.1	.3	18.0	22.5			6.0	Normal
	25	1905	.3	6.2	.3					6.5	Normal
Avg.	18	1667	.3	6.3	.3	17.5	24.0			6.3	

Jun 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1320	4.5	6.1	3.5	26.5	29.0			6.0	Normal
	8	1420	2.3	5.9	2.3	26.0	31.5			6.0	Normal
	14	1330	.3	4.7	.3	24.5	33.0			6.5	Normal
	22	1405	.2	5.2	.2	25.0	34.0			6.5	Normal
	29	1425	1.8	5.3	2.2	26.2	32.0			6.0	Normal
Avg.	14	1380	1.8	5.4	1.7	25.6	31.9			6.2	

Jul 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	6	1410	2.7	5.2	2.7	27.0	32.0			6.5	Normal
	13	1400	2.0	4.7	2.0	27.6	32.0			6.5	Normal
	20	1440	2.3	4.6	2.3	29.0	34.0			6.0	Normal
	27										
Avg.	16	1417	2.3	4.8	2.3	27.9	32.7			6.3	

Aug 94	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1415	2.8	6.2	2.8	26.0	32.0			6.5	Normal
Avg.	3	1415	2.8	6.2	2.8	26.0	32.0			6.5	

Summary for site: DR5

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1464	1.7	5.6	1.6	24.8	30.7			6.3
Minumum	1320	.2	4.6	.2	17.0	22.5			6.0
Maximum	1905	4.5	6.5	3.5	26.0	34.0			6.5

Number of observations: 13
Minimum date: 5/11/94
Maximum date: 8/03/94

Avg.	12	1533	4.0	8.0	2.0	12.5	14.8			6.6	

May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1510	4.0	7.6	1.3	15.0	18.0			6.6	Normal
Avg.	1	1510	4.0	7.6	1.3	15.0	18.0			6.6	

Summary for site: DR6

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1483	4.1	6.6	1.7	15.3	18.3			6.4
Minumum	920	4.0	3.3	.6	0.0	-1.0			6.0
Maximum	1810	4.1	12.4	3.9	15.0	35.0			6.7

umber of observations: 49
Minimum date: 4/15/94
Maximum date: 5/01/95

Site: DR7

	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
Apr 94											
	24	1940	2.2	6.9	.9	19.0	21.0		.1	6.5	Normal
Avg.	24	1940	2.2	6.9	.9	19.0	21.0		.1	6.5	
May 94											
	1	1450	3.3	4.9	.9	20.1	30.1			7.0	Normal
	8	1500	2.3	6.4	1.1	16.0	19.0			6.0	Normal
	15	1500	2.2	5.7	1.3	20.0	33.0		.1	6.0	Normal
	22	1520	2.1	6.8	1.5	17.0	26.0			6.3	Normal
	29	1300	2.2	6.6	1.9	17.5	30.5			6.0	Normal
Avg.	15	1454	2.4	6.1	1.3	18.1	27.7		.1	6.3	
Jun 94											
	12	1430	2.1	4.6	.7	24.0	32.5		.1	6.0	Normal
	19	1530	2.1	3.1	.4	30.0	38.0			6.0	Abnormal
	26	1630	2.1	3.8	.5	26.0	31.5			6.0	Abnormal
Avg.	19	1530	2.1	3.8	.5	26.7	34.0		.1	6.0	
Jul 94											
	4	1600	2.2	3.1	.8	25.0	28.0		.1	6.2	Normal
	11	1800	1.9	3.1	.9	25.0	28.0			6.2	Normal
	31	1215	2.1	4.4	1.1	25.0	30.0			6.5	Normal
Avg.	15	1538	2.1	3.5	.9	25.0	28.7		.1	6.3	
Aug 94											
	7	1845	2.2	3.7	1.2	21.5	22.0		.1	6.0	Normal

Avg.	7	1845	2.2	3.7	1.2	21.5	22.0		.1	6.0	
Mar 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	19	1620	1.7	9.2	1.6	16.0	16.0			6.6	Normal
	26	1645	2.4	10.0	2.0	16.5	18.0			6.7	Normal
Avg.	22	1633	2.1	9.6	1.8	16.3	17.0			6.7	
May 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	19	1530		4.3		22.0	24.0			6.1	Normal
	26	1340	2.1	3.0	1.6	21.0	22.0			6.2	Normal
Avg.	22	1435	2.1	3.7	1.6	21.5	23.0			6.2	
Jun 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	1	1500	2.2	4.0	1.8	22.0	28.0			6.2	Normal
	8	1540	2.0	2.2	1.2	25.0	33.5			6.2	
	16	1530	2.3	3.7	1.3	22.0	30.0			6.2	
	23	1420	2.2	2.2	.6	25.5	26.5			6.2	Abnormal

	30	1140	2.2	2.1	1.5	23.0	26.0			6.0	Normal
Avg.	15	1426	2.2	2.8	1.3	23.5	28.8			6.2	
Jul 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	7	1600	2.4	2.2	1.0	25.0	29.5			6.2	Normal
	14	1530	2.3	1.3	.7	28.0	37.0			6.2	Normal
	21	930	2.2	1.3	.2	26.0	30.0			6.2	Abnormal
	28	1515	2.3	1.2	.8	29.0	34.0			6.2	Abnormal
Avg.	17	1394	2.3	1.5	.7	27.0	32.6			6.2	
Aug 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	4	1400	2.2	4.7	.2	33.5	35.0			6.2	Abnormal
	11	1530	2.4	2.1	.5	27.0	34.0			6.2	Normal
	18	1250	2.3	1.3	.2	28.0	34.5			6.2	Abnormal
	25	935	2.2	1.1	.3	23.0	23.0			6.2	Abnormal
	31	1535	2.3	3.3	.3	27.5	36.0			6.2	Normal
Avg.	17	1330	2.3	2.5	.3	27.8	32.5			6.2	
Sep 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	8	1500	2.3	2.8	.6	24.0	30.0			6.2	Normal
	15	1315	2.3	1.9	.3	24.5	27.5			6.2	Abnormal
	25	1610	2.5	3.7	1.5	17.0	17.5			6.2	Normal
Avg.	16	1475	2.4	2.8	.8	21.8	25.0			6.2	
Oct 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1345	3.5	2.5	2.5	22.5	27.5			6.2	Normal

	16	1530	2.4	4.8	1.3	14.9	19.5			6.2	Normal
	24	1120	2.5	5.2	1.8		20.0			6.0	Normal
Avg.	14	1332	2.8	4.2	1.9	18.7	22.3			6.1	

Nov 95	Day	Time	WD	DO	SC	WT	AT	SL	AM	PH	Color
	3	1530	2.5	4.5	1.5	20.0	22.5			6.2	Normal
	13	1430	2.5	8.9	1.3	6.5	14.0			6.2	Normal
	21	900	2.5		1.7	5.0	9.0			6.0	Normal
Avg.	12	1287	2.5	6.7	1.5	10.5	15.2			6.1	

Summary for site: DR7

	Time	WD	DO	SC	WT	AT	SL	AM	PH
Average	1451	2.3	4.0	1.1	22.1	26.9		.1	6.2
Minumum	900	1.7	1.1	.2	5.0	9.0		.1	6.0
Maximum	1940	3.5	10.0	2.5	5.0	38.0		.1	7.0

Number of observations: 40
Minimum date: 4/24/94
Maximum date: 11/21/95

Report Summary

Total number of observations for this report: 221
Minimum Date: 4/15/94
Maximum Date: 12/06/95

APPENDIX C

Public Information Meetings/ Citizen Participation

Dragon Run Watershed Management Plan

Public Information Meetings/Citizen Participation

One of the most important tasks of the Dragon Run Watershed Management Program is to involve the public in the decision making process at an early stage of plan development. The Dragon Run Steering Committee is the cornerstone of this approach, with landowners and boards of supervisors members. However, it is also important to provide information and opportunity for input to the public at large. In 1995 the effort of public outreach took the form of published and open DRSC meetings, and the water quality monitoring program.

Meeting notices are sent to all local and regional newspapers in advance of each DRSC meeting. The newspapers publish the notices as space permits. The papers include the Tidewater Review, Southside Sentinel, Gazette-Journal, Rappahannock Times, Daily Press, and Richmond Times-Dispatch. DRSC meetings usually attract one to five interested citizens (in addition to DRSC members) who are welcome to participate in the agenda discussion.

For the year 1995, citizen involvement included participation at the Dragon Run Steering Committee Meetings. The following people attended one or more meetings and presented their interests as noted.

Lorna Waas- Concerns of the destruction of bird and other wildlife habitat in the Dragon Run. Ms. Waas conducts inventories of plant and animal species at the Friends of the Dragon Run properties.

Breck Montague- Mr. Montague issued concerns that the DRSC does not have enough oversite of activities in the watershed. In reference to the Hedrick Forestry operation, he suggested that the DRSC should plug a more active role in coordinating enforcement from county and Department of Forestry.

Tim Blackwood- Representing the Piankatank Watershed Project. Suggested coordination with Dragon Run activities.

Hoyt Wheelland- Piankatank Watershed Coordinator, attended meetings to examine steering committee structure and function.

Rachel Williams- Voiced concerns over King and Queen County landfill which operates within the Dragon Run Watershed.

Bill DeHardit- Supported the concept of open space preservation through clustering development into traditional patterns.

George Hayfield- King and Queen County Zoning Administrator, toured the Hedrick forestry area.

The meeting notice and mailing list for DRSC activities includes 27 persons including members. These mailings include meeting notices and minutes.