

DESIGN, DEVELOPMENT, AND IMPLEMENTATION OF A
GROUND-WATER QUALITY MONITORING NETWORK FOR
SOUTHERN NEW CASTLE COUNTY, DELAWARE

PHASE 1 - DATA COLLECTION AND ANALYSIS

January 1996

Prepared for:

New Castle County Department of Public Works
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**NEW CASTLE COUNTY
CAPITAL PROGRAM
FY 1997-2002**
(in thousands)

Department:
Activity:
Development Program:

Parks & Recreation
Land Development
Play Area Improvements

Proj. No.	Project Information	Funding Source	Prior Auth.	Avail. Balance 2/29/96	Obligated Amount 2/29/96	% 1997	1998	1999	2000	2001	2002	Bal. to Complete	Total Cost
615	PLAY AREA IMPROVEMENTS	BONDS	150	-	-	-							150
	Description: Installation of play equipment in various parks.	FEDERAL	-	-	-	-							0
		STATE	-	-	-	-							0
		OTHER	-	-	-	-							0
		TOTAL	150	150	0	0%	0	0	0	0	0	0	150
	Work Description through 1996: Play Structures as approved.						through 1997:						Balance 1998 to Completion:
		BONDS	-	-	-	-		100	155	160	170	180	150
	Description: Installation of play equipment in various parks.	FEDERAL	-	-	-	-							915
		STATE	-	-	-	-							0
		OTHER	-	-	-	-							0
		TOTAL	0	0	0	0%	100	155	160	170	180	150	0
	Work Description through 1996: Play Structures as approved.						through 1997:						Balance 1998 to Completion: Play Structures as approved.
	BONDS	-	-	-	-	-							0
	Description: Installation of play equipment in various parks.	FEDERAL	-	-	-	-							0
		STATE	-	-	-	-							0
		OTHER	-	-	-	-							0
		TOTAL	0	0	0	0%	0	0	0	0	0	0	0
	Work Description through 1996: Play Structures as approved.						through 1997:						Balance 1998 to Completion: Play Structures as approved.
	BONDS	-	-	-	-	-							0
	Description: Installation of play equipment in various parks.	FEDERAL	-	-	-	-							0
		STATE	-	-	-	-							0
		OTHER	-	-	-	-							0
		TOTAL	0	0	0	0%	0	0	0	0	0	0	0
	Work Description through 1996: Play Structures as approved.						through 1997:						Balance 1998 to Completion: Play Structures as approved.

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PHASE I - DATA COLLECTION AND ANALYSIS

INTRODUCTION

New Castle County will continue to experience increased development of its water resources, especially ground water, for public, domestic, agricultural, and industrial use. At this time, aquifers provide more than 25 million gallons of water each day for all uses. All of the potable water used in southern New Castle County (6.8 MGD) comes from aquifers (Metcalf and Eddy, 1991). Surface water from four major streams is used for water supply in northern New Castle County. Between 60 and 70 percent of water in streams throughout New Castle County is attributable to ground water that has been naturally discharged from seeps and springs. The ground- and surface-water systems function as a related and interconnected hydrologic system.

A significant amount of the ground water used in New Castle County is withdrawn from regional, shallow, water-table aquifer systems. These near-surface aquifers, which naturally receive water from infiltration of precipitation, are protected by a relatively thin soil zone that acts as a filtering mechanism. Favorable hydrologic characteristics coupled with the position of the aquifer close to land surface render it particularly susceptible to contamination. As has been documented in numerous reports (Denver, 1993; Bachman and Ferrari, 1995; Duffield Associates, Inc., 1994 and Ritter, 1987), the chemical quality of water in these systems has been adversely affected by both point and non-point sources of contamination associated with a variety of land uses.

Because most of the water in deeper confined aquifer systems passes through the shallow systems, any contamination of the near surface aquifers has the potential for affecting the quality of water in confined aquifers.

The need for a well-planned and clearly-defined assessment of ground-water quality has been demonstrated to support resolution of complex issues and for making decisions to ensure compatibility between economic development and preservation of water quality for existing and future New Castle County residents and businesses.

Systematic characterization and monitoring of New Castle County's ground-water quality and levels will improve the quality of ground-water management, protection, and development. In addition, it will result in improved access to and exchange of ground-water information among state, county, federal, and local governmental agencies and other water-user groups.

Monitoring the quality of ground water is essential to developing an understanding of southern New Castle County's ground-water resources. Development of a baseline survey of existing ground-water quality is an important first step in the implementation of a monitoring network. It can be used to determine the overall status of the resource and to identify temporal and spatial changes resulting from natural as well as anthropogenic (human-induced) factors.

Because of the costs involved and the complexity of the hydrogeologic framework, the design, development, implementation, and operation of a ground-water quality monitoring network must be carefully designed. The primary purpose should be constrained to address a few closely-related issues. The scale of interest in such a program by those who can use the data should be used to determine the level and type of effort.

A successful monitoring program must:

- Be technically feasible and economically sustainable;
- Provide useful and relevant information;
- Provide mechanisms for conveying information to those who need the data, especially those charged with water-resources management and policy making.
- Must be broad enough to obtain, store, manage, interpret, retrieve, present, and report water-quality and water-level data to those involved in water management and regulation, and the public. The program will be used for

properly evaluating the physical, chemical, and biological characteristics of ground water and the relationship of quality to public health, safety, and welfare.

The potential uses and limitations of ground-water quality information must be understood by all those who have an interest in a monitoring program. Examples of uses include:

- Assessing the vulnerability of aquifers to contamination.
- Providing water quality information that can be used in making land use decisions that will provide for maintenance of ground-water quality.
- Assessing the potential for ground-water quality degradation in general and specific areas by using water quality information in conjunction with geologic and hydrologic data and maps.
- Providing for the protection or non-degradation of ground-water quality in areas that should be preserved for development of ground-water resources (ground-water preserves).
- Identifying areas and aquifers where ground-water quality degradation is occurring as a result of human activities. (For example, salt-water intrusion.) Also identifying areas where ground-water development should be avoided.
- Identifying areas and aquifers where degradation is likely to occur as a result of human activities - emerging problems.
- Providing baseline data so that the potential impacts that land use can have on ground-water quality can be predicted.
- Characterizing the distribution of ground-water quality in regional water-table and confined aquifer systems.
- Providing information that can be used to develop conceptual flow models, both ground-water and geochemical.
- Targeting areas where more detailed geologic and hydrologic studies are needed to understand more fully the geochemical system.

Location and Geologic Setting

The area of investigation includes that portion of southern New Castle County in the Atlantic Coastal Plain Physiographic Province. The area is bounded on the north by the Chesapeake and Delaware Canal. The eastern, western, and southern portions of the study area are bounded by the Delaware River, and the Delaware-Maryland and New Castle-Kent County boundaries, respectively (Fig. 1). The study area covers more than 200 square miles and includes eleven watersheds. The Delaware River basin portion of the area includes the Chesapeake and Delaware Canal, Augustine Creek, Drawyer Creek, Appoquinimink River, Blackbird Creek, Cedar Swamp, and the Smyrna River watersheds. The Chesapeake Bay basin includes Back Creek, Bohemia Creek, Sassafras River, and the Cypress Branch watersheds. The monitoring program will include a watershed based approach to collection and presentation of data.

The area is underlain by unconsolidated gravels, sands, silts, and clays that range in age from Lower Cretaceous through Holocene (Table 1). Thickness of sedimentary rocks range from approximately 600 to 700 ft near the Chesapeake and Delaware Canal to approximately 2,300 ft in southeastern New Castle County. Within this area, the Columbia Formation overlies the truncated edges of older geologic units that dip in a seaward direction. Ground water is withdrawn from the water-table or unconfined aquifers (Columbia and underlying water-table portions of the Englishtown and Mt. Laurel formations and the Rancocas group) as well as from confined aquifers within several of these older units, including the Potomac, Magothy, Englishtown, Mt. Laurel, and Vincentown formations (Fig. 2 and Fig. 3).

MONITORING NETWORK

As indicated previously there are six aquifer systems that are presently being used for water supply for many purposes in southern New Castle County. To properly characterize ground-water quality in each of the aquifer systems, it was necessary to obtain as much information as possible over the entire area of existing or potential use of each aquifer. The spatial distribution of individual wells in a particular aquifer is very important.

- Develop a regional ground-water quality baseline (current conditions) for inorganic, organic, and radioactive materials for the various aquifer systems thereby providing a baseline on which historic as well as future trends can be documented and assessed.
- Locate areas where problems with ground-water quality are natural and areas where problems can be related to human activities.
- Document any adverse effects that wastewater management techniques such as individual and community on-site wastewater disposal systems (septic systems), and spray irrigation facilities on ground-water quality, especially nitrate, have had on ground-water quality.
- Determine historical trends for changes in ground-water quality in public water supply wells.
- Evaluate the effects that changes in land use (agricultural to residential) have on ground-water quality.
- Identify areas with existing or emerging ground-water quality problems to enable State and local officials to properly manage land use and ground-water development and use, and provide a baseline for long-term planning.
- Evaluate the effects of land use on ground-water quality and the effectiveness of best management practices and other water management programs.
- Document the historical distribution of chlorides located along the Chesapeake and Delaware Canal, and from roadway deicing salts.
- Identify high-quality ground-water resources that may be worthy of protection for future ground-water development.
- Enhance our understanding of the relationship of radon and geology.
- Identify aquifers and areas where these aquifers have been or have the potential for being adversely affected by human activities.

Table 1
Stratigraphic Nomenclature for Southern New Castle County, Delaware

SYSTEM	SERIES	GROUP AND FORMATION	
QUATERNARY	Holocene and Pleistocene	Holocene Sediments and Columbia Formation	
TERTIARY	Miocene	Calvert Formation	
	Paleocene	Rancocas Group	Vincentown Formation
			Hornerstown Formation
			Mt. Laurel Formation
	Upper Cretaceous	Mattawan Group	Marshalltown Formation
			Englishtown Formation
			Merchantville Formation
			Magothy Formation
	Lower Cretaceous		Potomac Formation

Data Collection

Existing water-quality for southern New Castle County are available from numerous sources throughout Delaware including but not limited to the Delaware Geological Survey, U.S. Geological Survey, Water Resources Center at the University of Delaware, local and county agencies, municipalities, Delaware Division of Public Health, and consultants reports. The data are associated with such entities as research projects, regulatory or public health functions, site-specific ground-water contamination investigations, siteing and operation of extractive use facilities, new developments, and spray irrigation facilities. Accordingly, a large amount of potentially useable information is available for evaluation.

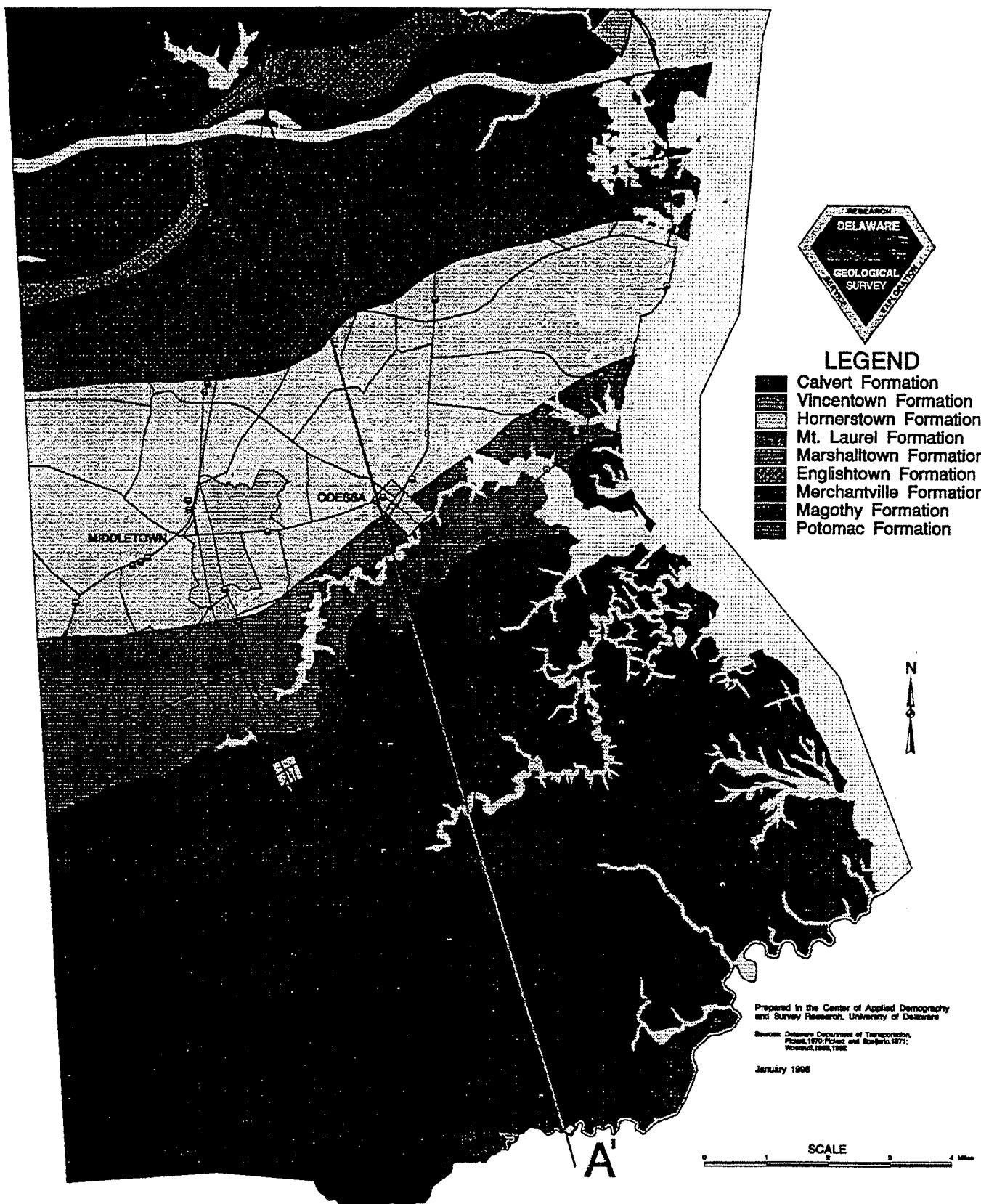


Figure 2. Generalized geology of southern New Castle County. The A-A' line indicates the location of the cross section shown in Figure 3.

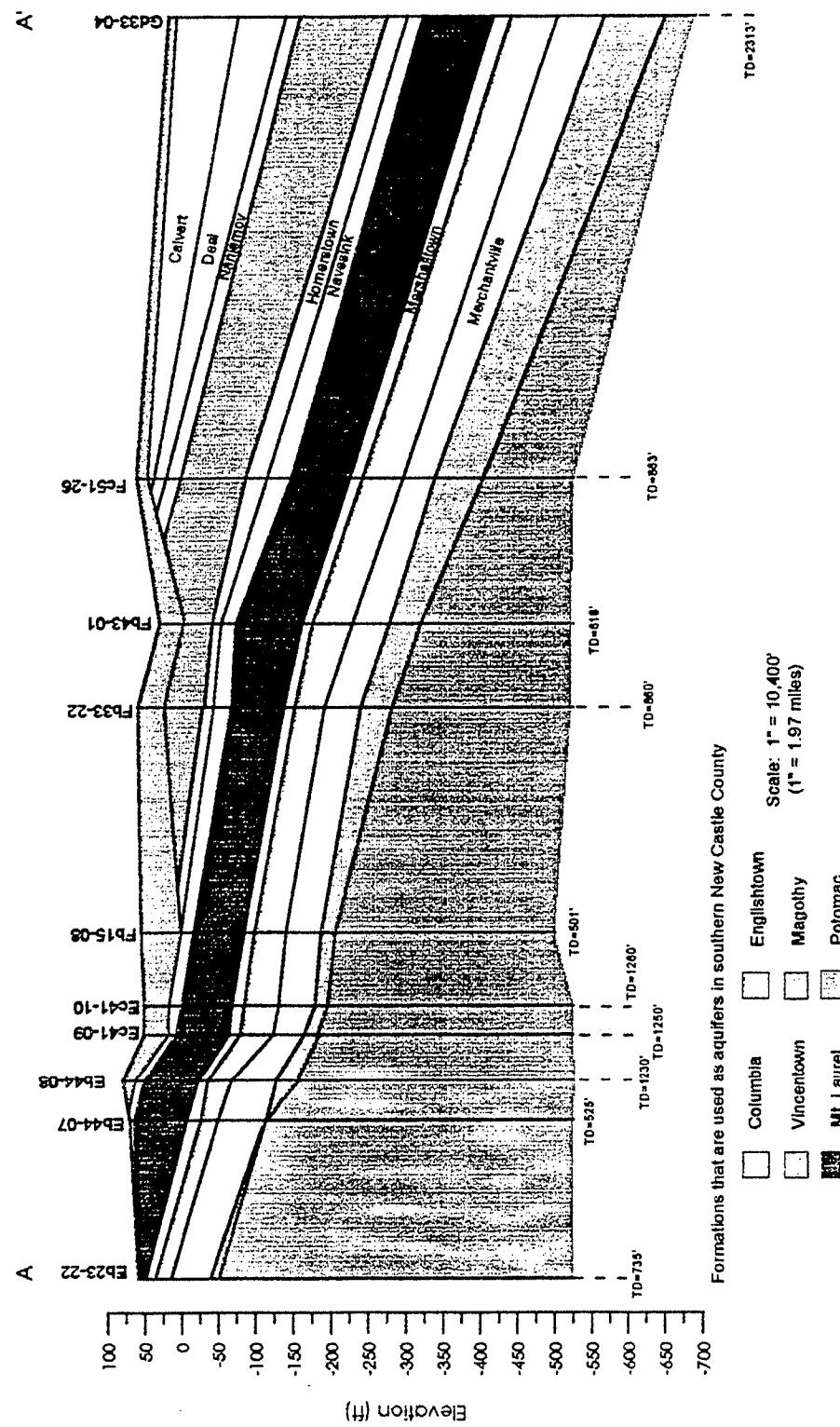


Figure 3. Geologic cross section of southern New Castle County. A-A' line is shown on Figure 2.

Criteria used to evaluate the usefulness of existing ground-water quality information included: (1) the source of the data, (2) identification of the agency that analyzed the data, (3) the date that the analysis was made, (4) the amount and adequacy of information on well locations, well depths, and well construction, and proper identification of the aquifers from which the water was withdrawn, (5) the availability of specific wells for additional analysis, and (6) professional judgment.

This investigation involved reviewing publications to compile a list of wells installed and/or used by DGS and the U.S. Geological Survey (USGS) for ground-water quality investigations that may still be available for long-term monitoring. The USGS database was searched for wells contained in the defined boundaries of this study. Other existing wells, such as public water supply wells and monitor wells associated with extractive use sites and spray irrigation facilities, were also identified.

Water quality data extracted from the publications and files of the DGS, USGS and Delaware Division of Public Health (DPH) were incorporated into a ground-water quality data base that will be used in support of characterizing ground-water quality and chemical trends in various aquifer systems. Water quality data are presented in Appendix 1.

Public water supply and monitoring wells that can be used were located accurately using a Global Positioning System (GPS; Appendix 2). The distance between wells at each site was determined using a laser theodolite. These wells, along with other wells identified for this study, were then plotted on maps to determine the spatial distribution and to determine where information gaps occur. A list of these wells which includes the watershed, aquifer, depth drilled and depth screened for each well is listed in Appendix 3. A complete bibliography of reports, publications, unpublished reports and files and maps that contain ground-water quality information was compiled.

A map showing the locations of wells for which water-quality data are available and can be used in the monitoring network are shown on Figure 4.

General Ground-Water Quality

Previous investigations have documented elevated nitrate concentrations in the unconfined aquifer in southern New Castle County as well as in the unconfined aquifer throughout Delaware (Miller, 1972; Robertson, 1979; Ritter and Chirnside, 1982; Ritter, 1993; and Bachman and Ferrari, 1995). Hamilton and others (1993) reported that nitrate concentrations of less than 0.2 mg/L are probably present as a result of natural factors whereas ground water with nitrate concentrations greater than about 0.4 mg/L have been affected by human activity. For a listing of the USEPA'S primary and secondary maximum contaminant levels refer to the front of Appendix 1.

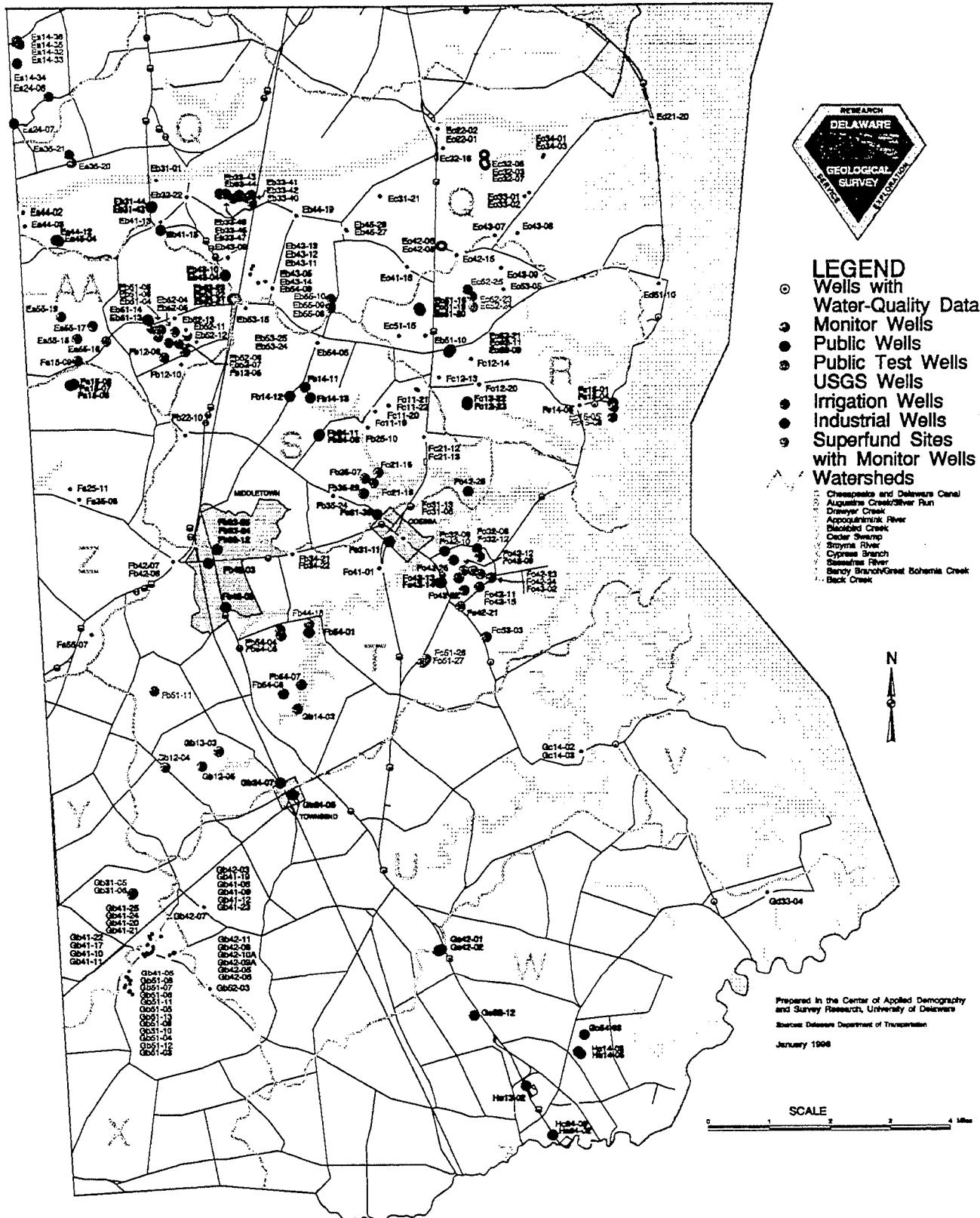


Figure 4. Map showing wells available for use in the ground-water monitoring network.

Iron and Nitrate-Nitrogen

Potomac and Magothy Aquifers

Water quality in the Potomac and Magothy aquifers does not appear to have been affected by human activities and because they are entirely confined in southern New Castle County, human-induced ground-water quality degradation is not expected to occur. Bachman (1995) reported that all of the water samples from wells in the Potomac and Magothy aquifer systems had nitrate concentrations less than 0.4 mg/L (Figure 5). From a water-use standpoint, water in these aquifers generally contains concentrations of dissolved iron that exceed the USEPA's Secondary Maximum Contaminant Level (SMCL) of 300 µg/L (Fig. 6). Thus, one can expect that use of water from these aquifers will require treatment for removal of iron.

Englishtown-Mt. Laurel Aquifer

Iron concentrations in the unconfined portion of this aquifer system are for the most part less than the MCL (Fig. 7). However, water in the confined portions generally contains iron concentrations in excess of the SMCL of 300 µg/L.

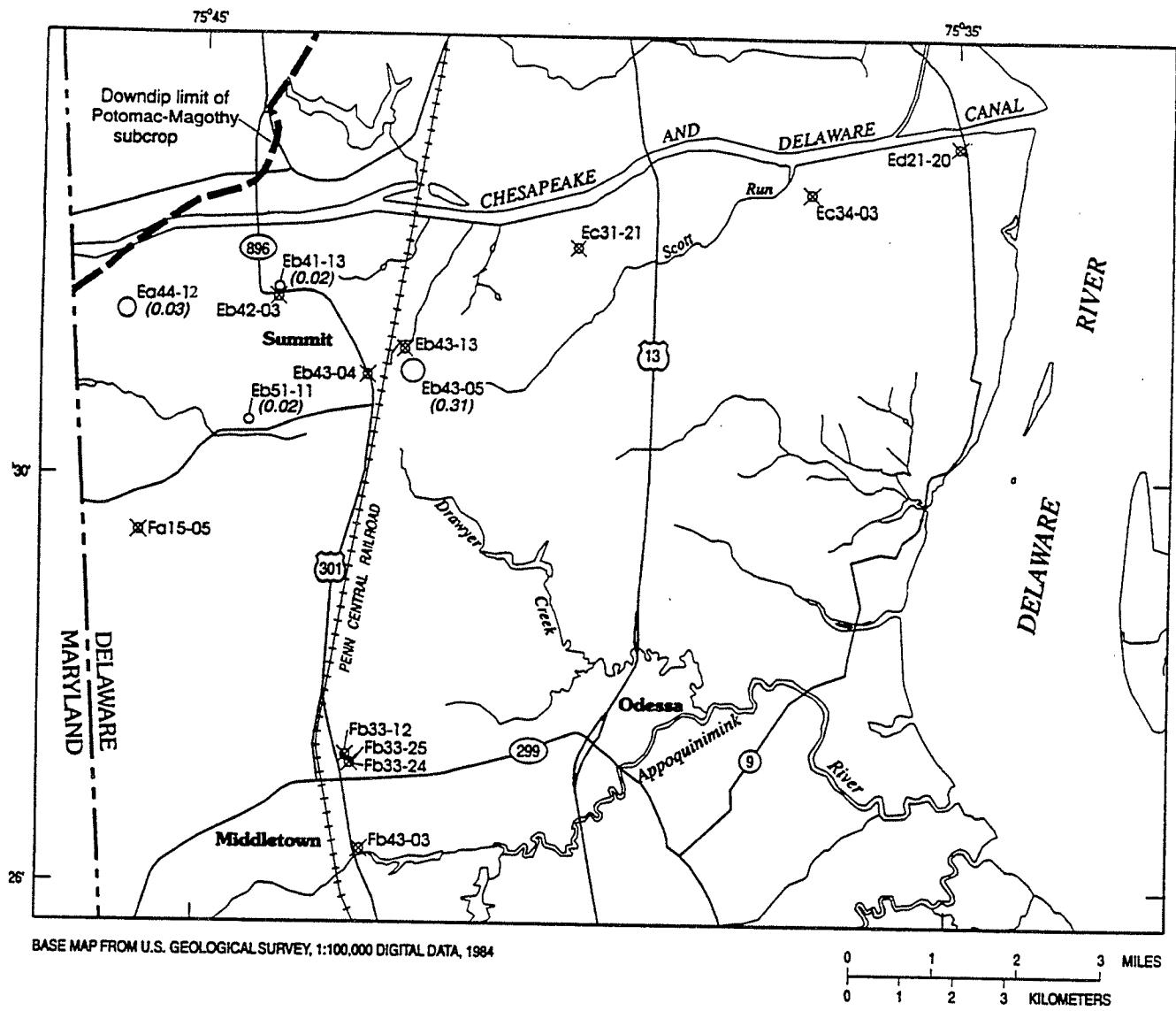
The effect of human activities has been documented in the unconfined portion of this aquifer system by the presence of elevated levels of nitrate-nitrogen. Nitrate-nitrogen concentrations are generally less than the MCL of 10 mg/L (Fig. 8). However, in many instances they are greater than what one would expect to occur under natural conditions (<0.4 mg/L). Elevated levels of nitrate-nitrogen have not been detected in the confined portion of the Englishtown-Mt. Laurel aquifer system.

Rancocas Aquifer

The concentration of iron is variable. Some measurements exceed the SMCL of 300 µg/L while others are less than 300 µg/L (Fig. 9). The effects of human activities have been found in the shallower unconfined portion of the Rancocas aquifer as evidenced by the presence of elevated concentrations of nitrate-nitrogen, >0.4 mg/L (Fig. 10).

Columbia Aquifer

Water-quality information from six projects in southern New Castle County which have shallow (less than 30 feet deep) wells constructed in the Columbia or water-table aquifer was compiled. The projects are: (1) Lea Eara Spray Irrigation Facility, (2) Back Creek, (3) Burris Extractive Use Facility, (4) Mt. Pleasant Sand and Gravel Extractive Use Facility, (5) Appoquinimink Watershed Ground-Water Monitoring, and (6) the Vandyke project.



EXPLANATION

Eb43-05 Well number

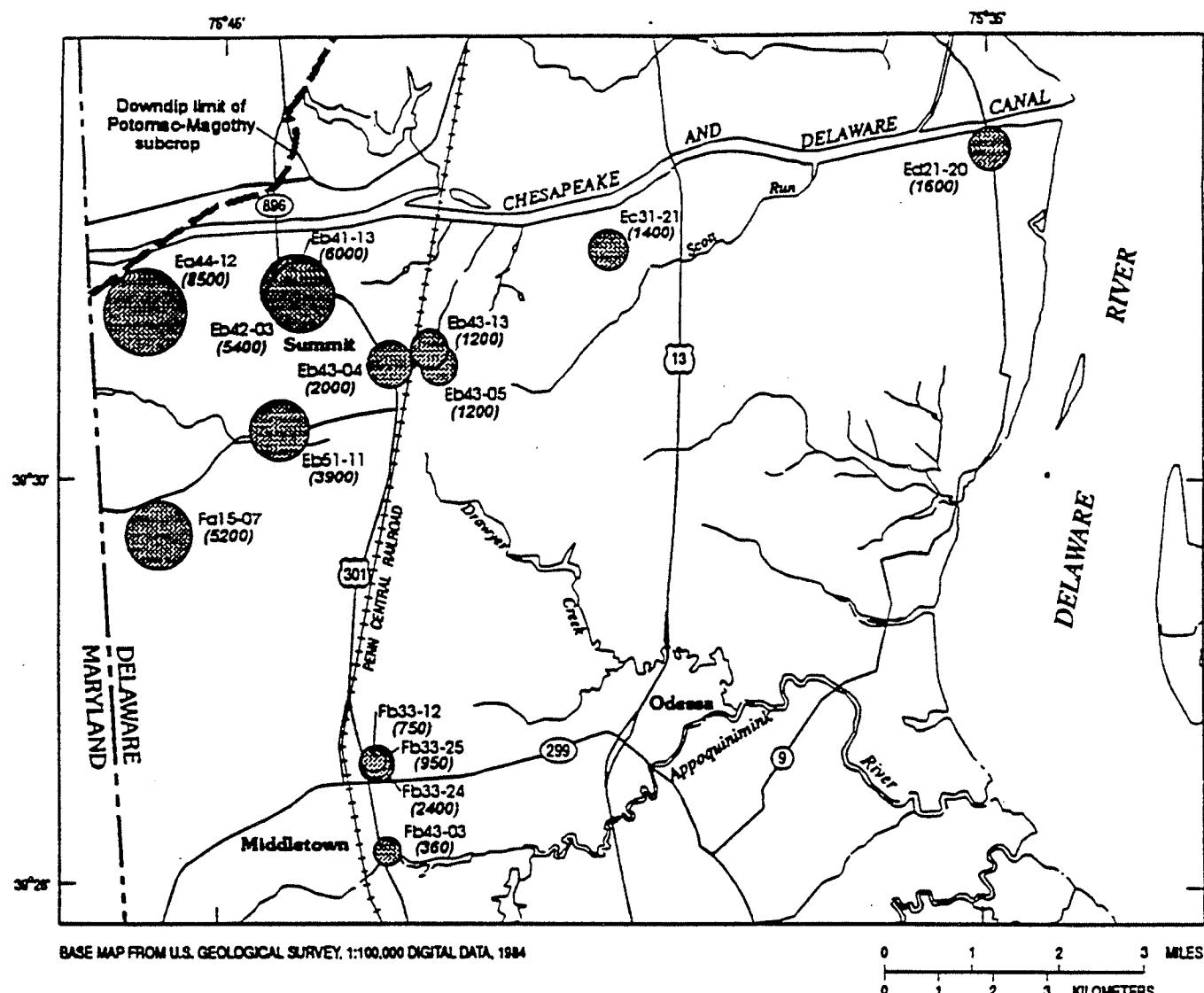
Wells with nitrate-nitrogen concentrations
in milligrams per liter (mg/L). (Area of circle
is proportional to the concentration.)

✖ Less than 0.02

○ Equal to or greater than 0.02

(0.31) Nitrate-nitrogen concentration in
mg/L as N.

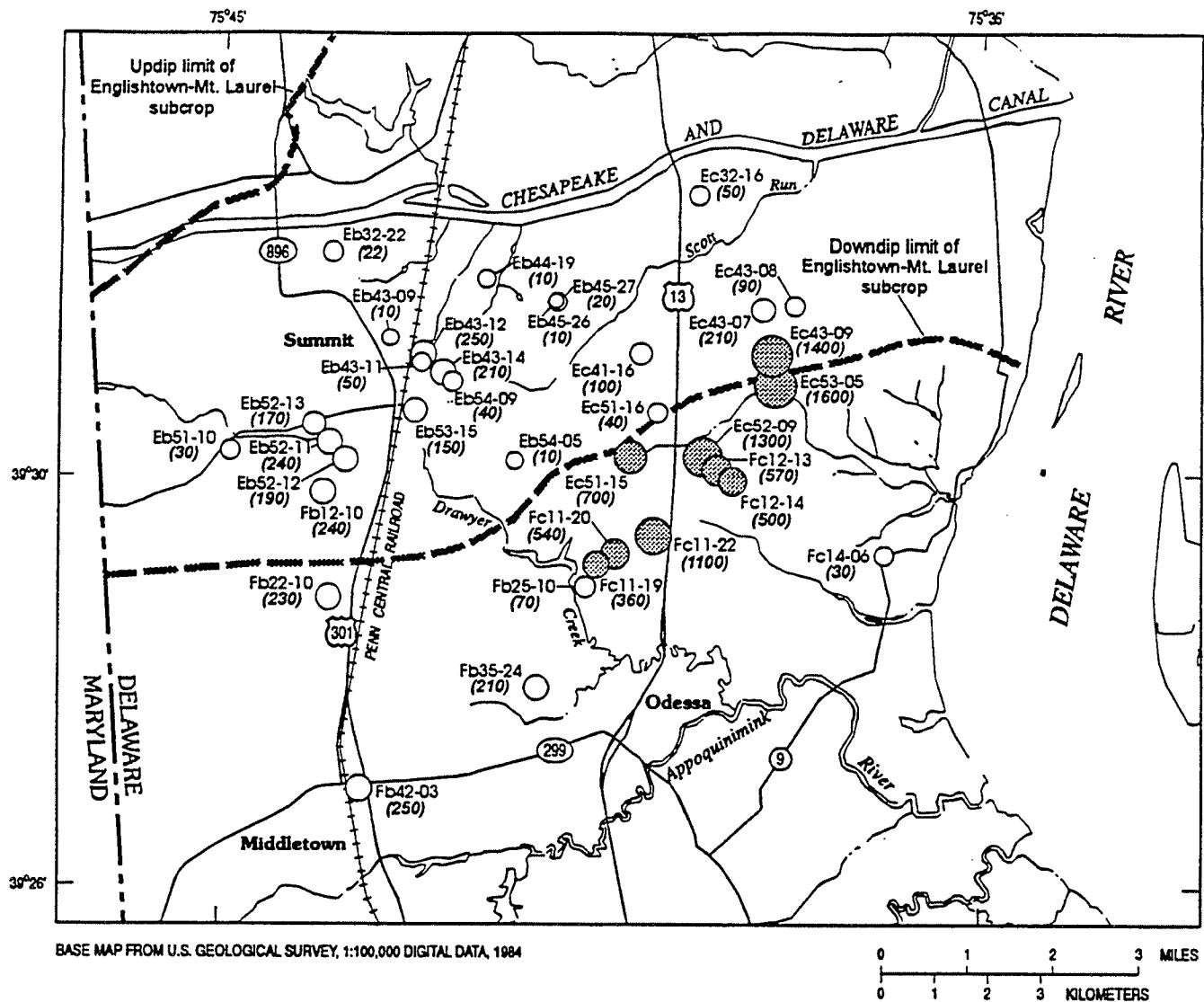
Figure 5. Map showing areal distribution of dissolved nitrate-nitrogen in the Magothy and Potomac aquifer system (from Bachman and Ferrari, 1995).



EXPLANATION

- Fb43-03 Well number
- (360) Dissolved iron concentration in $\mu\text{g/L}$
- (360) Well with dissolved iron concentration in micrograms per liter ($\mu\text{g/L}$). (Area of circle is proportional to the concentration.)

Figure 6. Map showing areal distribution of dissolved iron in the Magothy and Potomac aquifer system (from Bachman and Ferrari, 1995).



EXPLANATION

Fc11-22 Well number

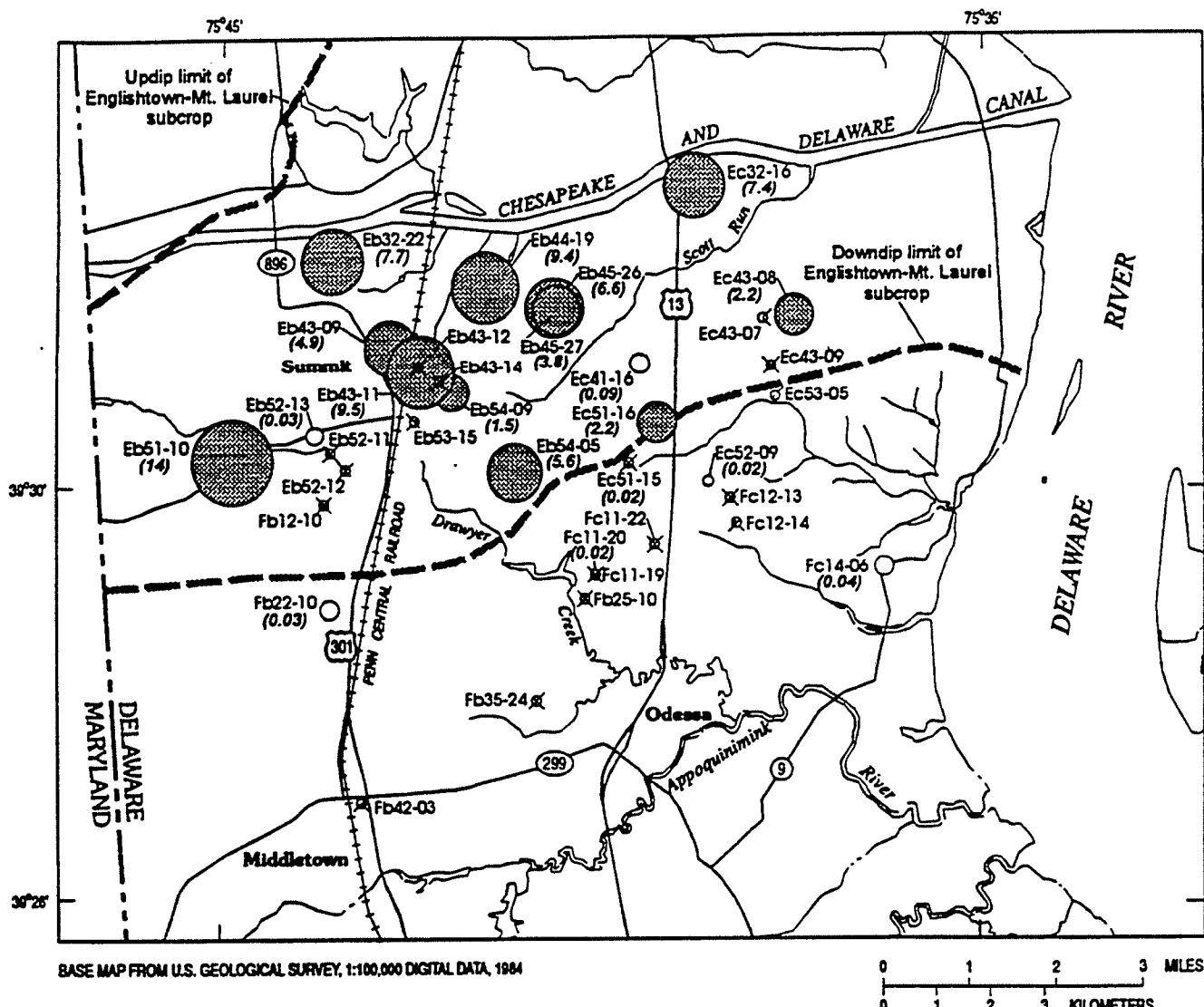
Wells with dissolved iron concentrations
in micrograms per liter ($\mu\text{g/L}$). (Area of
circle is proportional to the concentration.)

○ Less than 300

● Equal to or greater than 300

(1100) Dissolved iron concentration in
 $\mu\text{g/L}$

Figure 7. Map showing areal distribution of dissolved iron in the Englishtown-Mt. Laurel aquifer system (from Bachman and Ferrari, 1995).



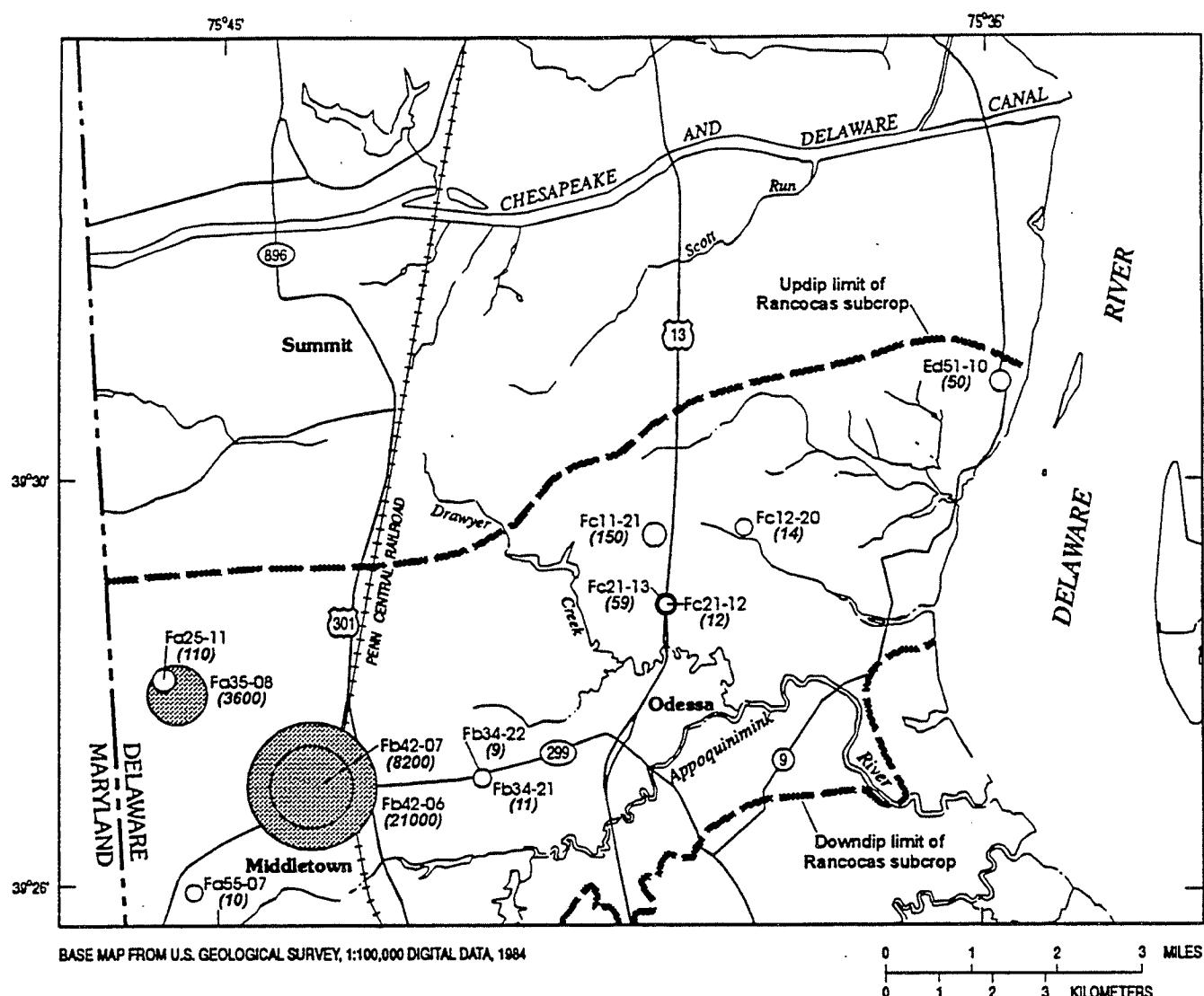
EXPLANATION

Ec43-08 Well number

Wells with nitrate-nitrogen concentrations
in milligrams per liter (mg/L). (Area of
circle is proportional to the concentration.)

- ✖ Less than 0.02
- Equal to or greater than 0.02
and less than 0.4
- Equal to or greater than 0.4
- (2.2) Nitrate-nitrogen concentration in
mg/L as N.

Figure 8. Map showing areal distribution of dissolved nitrate-nitrogen in the Englishtown-Mt. Laurel aquifer system (from Bachman and Ferrari, 1995).



EXPLANATION

Fb42-07 Well number

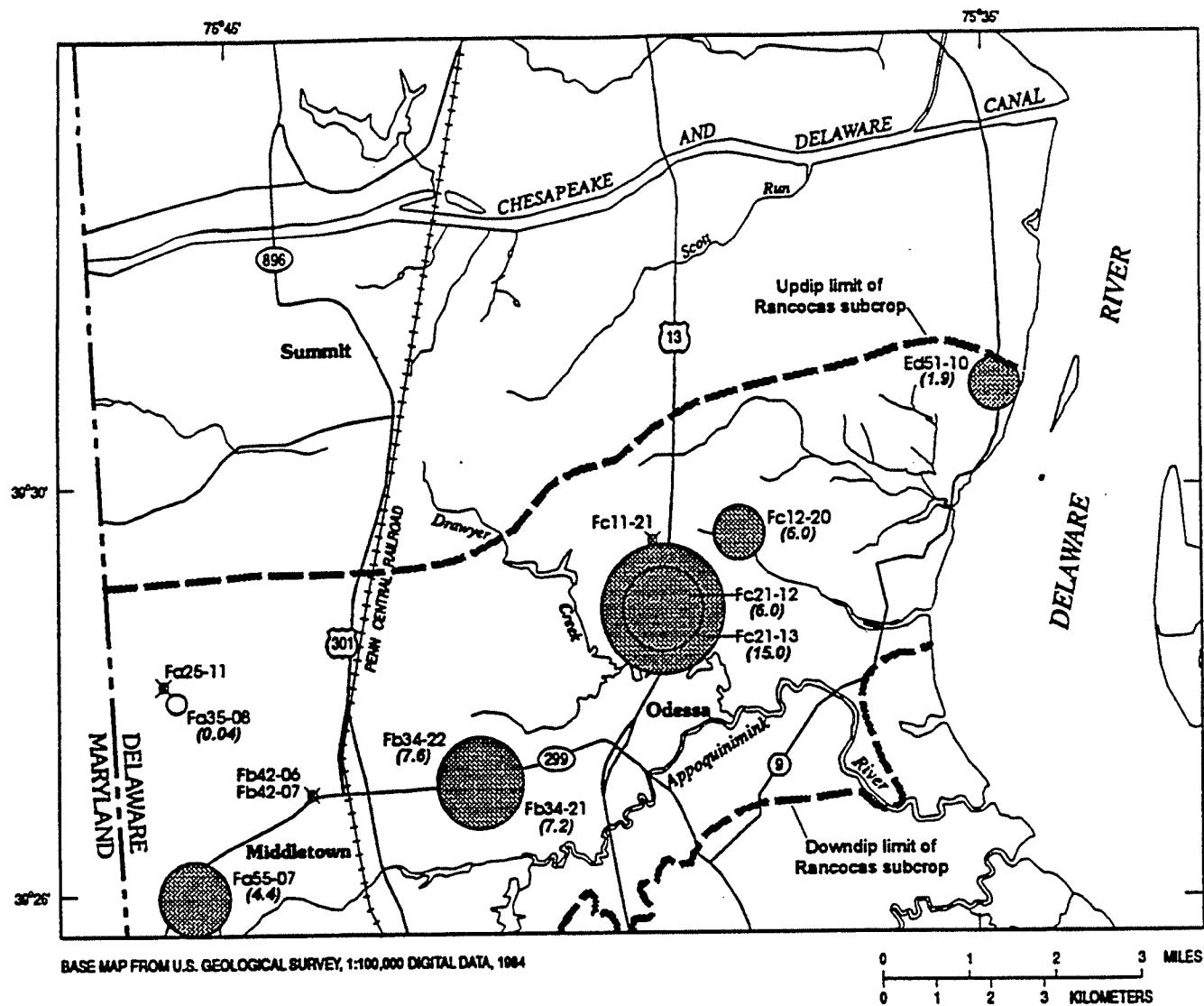
Wells with dissolved iron concentrations
in micrograms per liter ($\mu\text{g/L}$). (Area of
circle is proportional to the concentration.)

○ Less than 300

● Equal to or greater than 300

(8200) Dissolved iron concentration in
 $\mu\text{g/L}$

Figure 9. Map showing areal distribution of dissolved iron in the Rancocas aquifer (from Bachman and Ferrari, 1995).



EXPLANATION

Fo55-07 Well number

Wells with nitrate-nitrogen concentrations
in milligrams per liter (mg/L). (Area of
circle is proportional to the concentration.)

- ✖ Less than 0.02
 - Equal to or greater than 0.02 and less than 0.4
 - Equal to or greater than 0.4
- (4.4) Nitrate-nitrogen concentration in mg/L as N.

Figure 10. Map showing areal distribution of dissolved nitrate-nitrogen in the Rancocas aquifer (from Bachman and Ferrari, 1995).

Interpretation of results of ground-water quality monitoring indicates that ground water at the above described sites has been affected by human activities. Average nitrate concentrations ranged from a high of 15 mg/L to a low of 0.47 mg/L. Average nitrate concentrations exceeded 5 mg/L in 23 of the 51 wells sampled and exceeded 10 mg/L (MCL) in 11 of the 51 wells sampled.

Naturally occurring chloride concentrations in the shallow water-table aquifer in Delaware average about 10 mg/L. Average chloride concentrations from 45 wells tested as part of the Appoquinimink watershed and Vandyke projects, and at Lea Eara Farms ranged from 1.8 mg/L to 63.6 mg/L. Average concentrations exceeded 20 mg/L in 15 of the wells reflecting water-quality problems influenced by human activities (domestic effluent, road salting, agricultural activities).

Ritter (1987) in an investigation of ground-water quality on a dairy farm, two potato farms, and two grain farms in the Appoquinimink watershed concluded that approximately one half of the monitoring wells had detectable concentrations of atrazine. In the area near Vandyke in southwestern New Castle County, Denver (1993) conducted herbicide immunoassay testing of 14 wells completed in the shallow water-table aquifer and reported that samples from six wells had detectable amounts of triazine herbicides.

Based on review of water-quality analyses in the water-table aquifer, it is apparent that ground-water quality is being affected by human activities (NO_3 , Cl).

General Ground-Water Quality Radon

Locations of wells for which radon analyses are available are shown on Figure 11.

Potomac and Magothy Aquifers

Bachman and Ferrari (1995) analyzed six samples from the Potomac and Magothy aquifers for radon (Fig. 12). Radon did not exceed 200 pCi/L in any of the samples. Based on these results and our understanding of the mineralogy of the rocks which comprise these aquifers, the potential for high levels of radon in ground water is relatively low.

Englishtown-Mt Laurel Aquifer

Bachman and Ferrari (1995) reported that seven out of eight water samples from the Englishtown-Mt. Laurel aquifer exceeded the proposed EPA Maximum Contaminant Level (MCL) for radon of 300 pCi/L. Although the wells were not randomly distributed

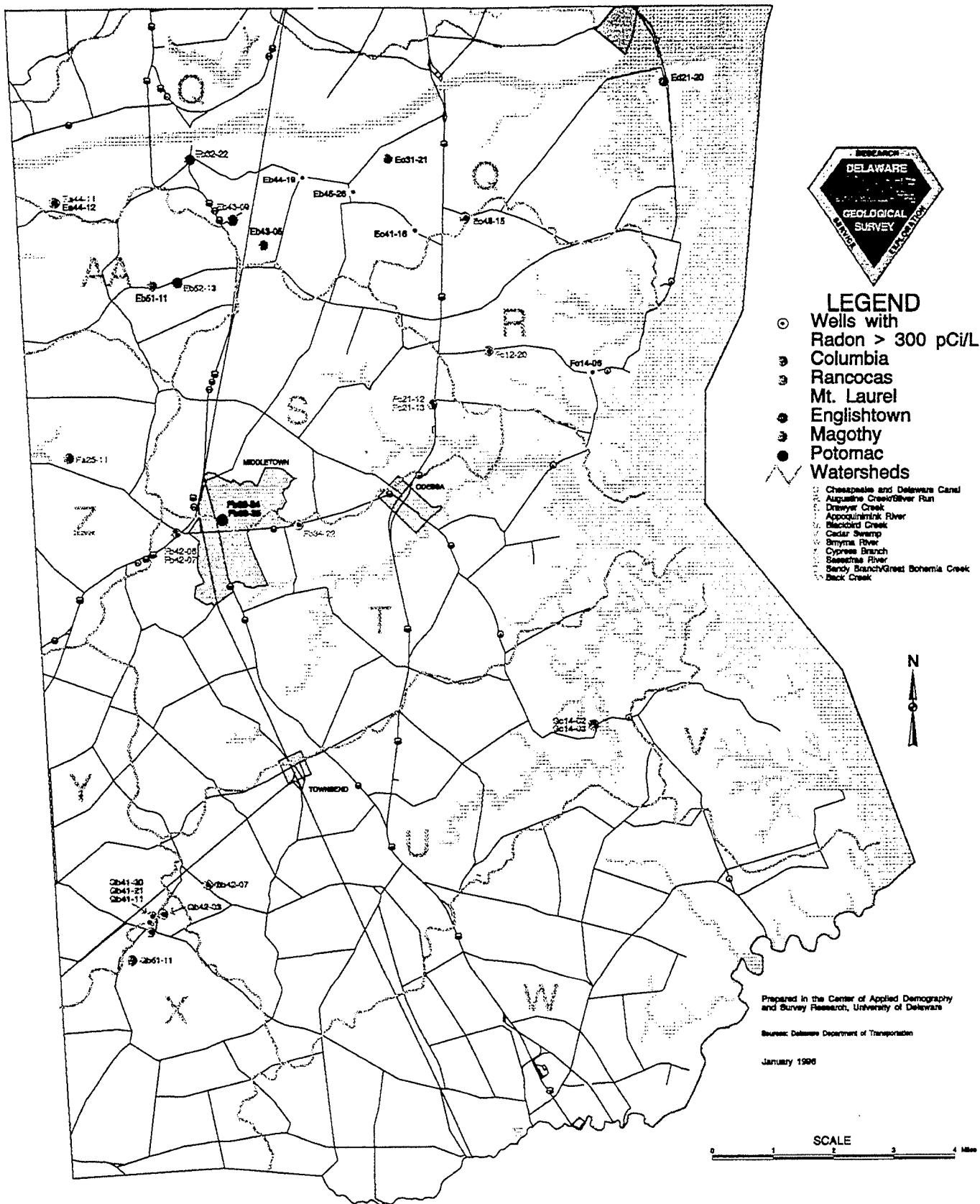


Figure 11. Locations of wells for which radon analyses are available.

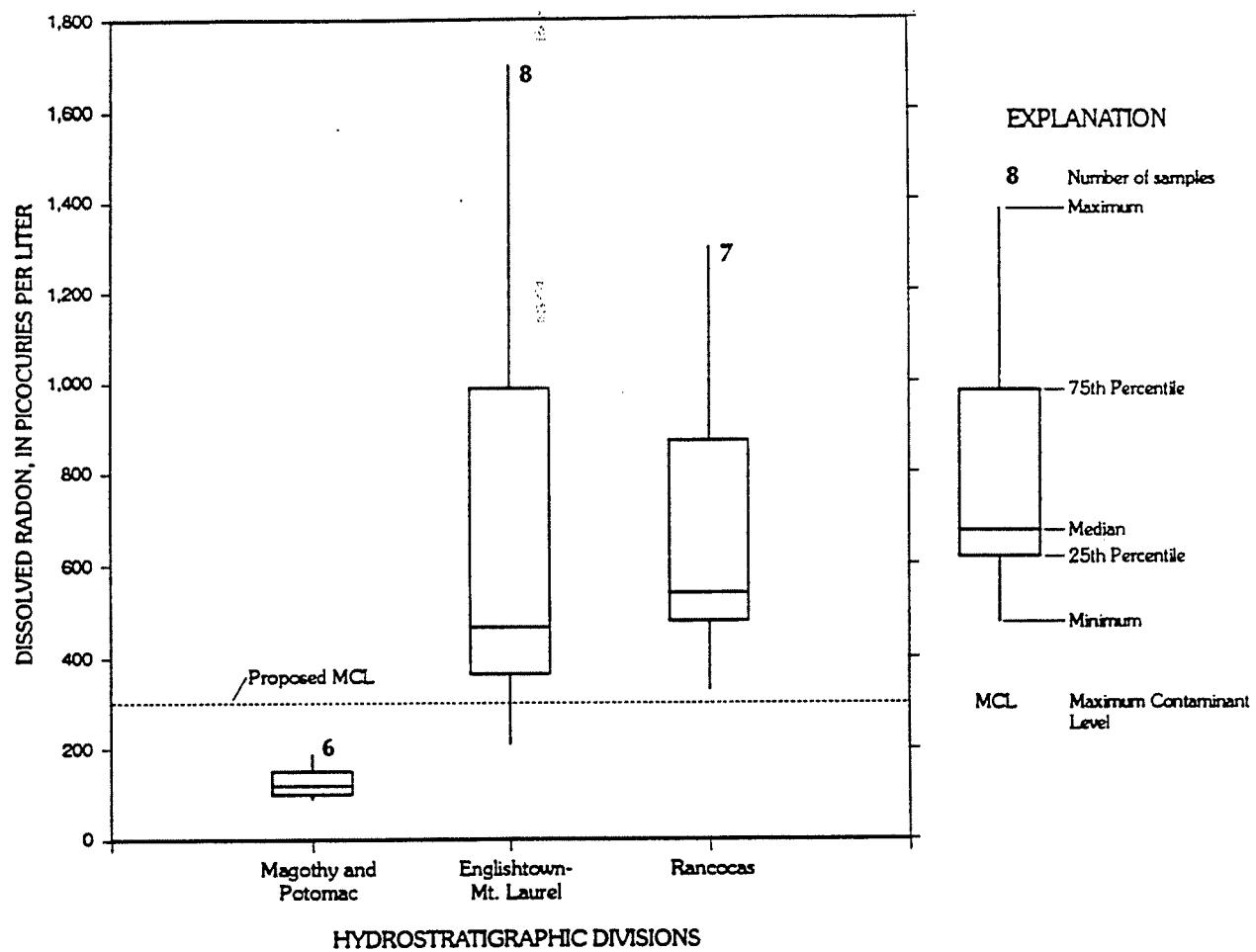


Figure 12. Boxplots showing distribution of dissolved radon among hydrostratigraphic divisions (from Bachman and Ferrari, 1995).

across the entire area where these aquifers are used and the sample population was small, it appears that elevated levels of radon in ground water might be expected to occur in these aquifers.

Rancocas Aquifer

Bachman and Ferrari (1995) reported that all seven water samples from the Rancocas aquifer exceeded the proposed EPA MCL for radon of 300 pCi/L. Although the wells were not randomly distributed across the entire area where these aquifers are used and the sample population was small, it appears that elevated levels of radon in ground water might be expected to occur in these aquifers.

General Ground-Water Quality Herbicides

There have been two investigations in southern New Castle County in which testing for herbicides have been completed. Denver (1993) conducted an investigation in an agricultural land use area near Vandyke in southwestern New Castle County. Sixteen wells were installed in the shallow water-table aquifer at this site. Denver (1993) reported that ". . . triazine herbicides were detected at least once in water from about half of the wells. . ." Denver (1993) reported that "concentrations of most herbicide detections by laboratory analyses were at or near a concentration of 0.1 μ L". Detected concentrations were low and all were less than the USEPA's maximum contaminant and health advisory levels.

Ritter (1987) conducted a ground-water quality monitoring project in the upper portion of the Appoquinimink River watershed in south-central southern New Castle County. Water-quality analyses were performed on water samples obtained from 24 shallow monitoring wells (14-39 feet deep) installed in agricultural settings. Ritter (1987) reported that approximately one half of the monitoring wells had detectable atrazine concentrations above 1.0 ppb and in March 1985, 8 wells had concentrations at or above the USEPA's maximum contaminant level of 3.0 ppb.

Sampling Strategy

Development of a sampling strategy is an important component of a monitoring program. Establishment of a credible program requires a representative spatial distribution of wells in various aquifer systems throughout southern New Castle County. It also requires the measurement of specific parameters in specific aquifers over a period of time to accurately evaluate long-term changes in ground-water quality.

The results of data compilation and analyses presented earlier in this report were used to determine aquifers that have natural water-quality problems and those that are being affected by human activities. In most instances, areas where ground-water quality is being degraded by human activities are coincident with projected high growth areas, areas where water demands are expected to increase, and excellent recharge areas. Such areas should be given high priority for monitoring.

The strategy was developed with the input of representatives from the Water Resources Agency for New Castle County, the Delaware Department of Natural Resources and Environmental Control and the Delaware Division of Public Health. It will be necessary to determine the parameters to be evaluated and/or tested for. The Water Resources Agency for New Castle County recommended that baseline monitoring should include all constituents required by the Delaware Department of Public Health in the Public Drinking Standards. Existing data to be compiled were reviewed as part of the process to evaluate whether to sample for a comprehensive list of constituents or to target a limited number of indicator constituents. In addition, the number of samples per year to be analyzed from each well was determined.

At this time, there are several individual ground-water monitoring programs in operation in southern New Castle County. They include: (1) Lea Eara Farms spray irrigation facility, (2) M-O-T spray irrigation facility, (3) Burris extractive use facility, and (4) Back Creek. The sampling schedule and constituents monitored are variable and depend upon monitoring objectives. Monitoring wells exist at the Mt. Pleasant Sand and Gravel facility which is currently being used for agricultural purposes; however, no ground-water quality monitoring is occurring at this time. The College of Agriculture at the University of Delaware in cooperation with the Water Resources Agency for New Castle County conducted an investigation of shallow ground-water quality in the upper portion of the Appoquinimink watershed during the period June 1984 to June 1987. Water quality data are available from this study. In addition, several wells from this study are available that can be used in the new network. A compilation of water quality information for each of these programs is presented by program in Appendix 1.

A monitoring program is being conducted by the Delaware Division of Public Health whereby public water supply wells are scheduled to be tested at regular intervals for a large number of constituents. In general, when multiple wells are screened in the

same aquifer at any one well field, only one well will be sampled for water quality analysis. Public water supply well fields and associated wells are shown in Figures 4 and 13. Table 2 lists public supply wells in southern New Castle County owned by Tidewater Utilities that are currently on line. Table 3 lists wells in southern New Castle County which are owned by Artesian Water Company and are proposed public supply well fields. For those wells with water-quality analyses, results are listed in Appendix 1.

The Delaware Department of Agriculture is developing a Pesticide Management Program to ensure consistent and efficient use of resources and chemical data. This program will include a monitoring component that can be incorporated into the southern New Castle Monitoring Network.

Several of the monitoring programs described above have been in existence for several years (Fig. 4 and Fig. 14). Accordingly, a substantial amount of water-quality data are available for integration into new network.

The U. S. Geological Survey in cooperation with the Delaware Geological Survey has recently completed Delaware Geological Survey Report of Investigations No. 52 entitled "Quality and Geochemistry of Ground Water in Southern New Castle County, Delaware." The purpose of the report was to describe the occurrence and distribution of selected inorganic chemical constituents and radon in aquifers underlying southern New Castle County, Delaware. The report describes water-quality analyses (inorganic and radon) that were conducted on samples collected from 63 wells. Many of the wells used in this investigation are available for additional testing. Locations of these wells are shown in Figure 4.

In 1993, the DGS published DGS Report of Investigations No. 51 entitled "Herbicides in Shallow Ground Water at Two Agricultural Sites in Delaware." The purpose of the investigation was to determine the extent of herbicides in shallow ground water at two sites, one of which is located in southwestern New Castle County and to describe environmental factors affecting herbicide concentrations. Sixteen wells were constructed at the Vandyke site in southwestern New Castle County. Many of the wells used in this investigation are available for additional testing. Locations of these wells are shown in Figure 4.

The results of testing as part of the programs and projects described above not only provide valuable background ground-water quality data, they also provide wells that can become part of a continuing and expanded integrated monitoring network.

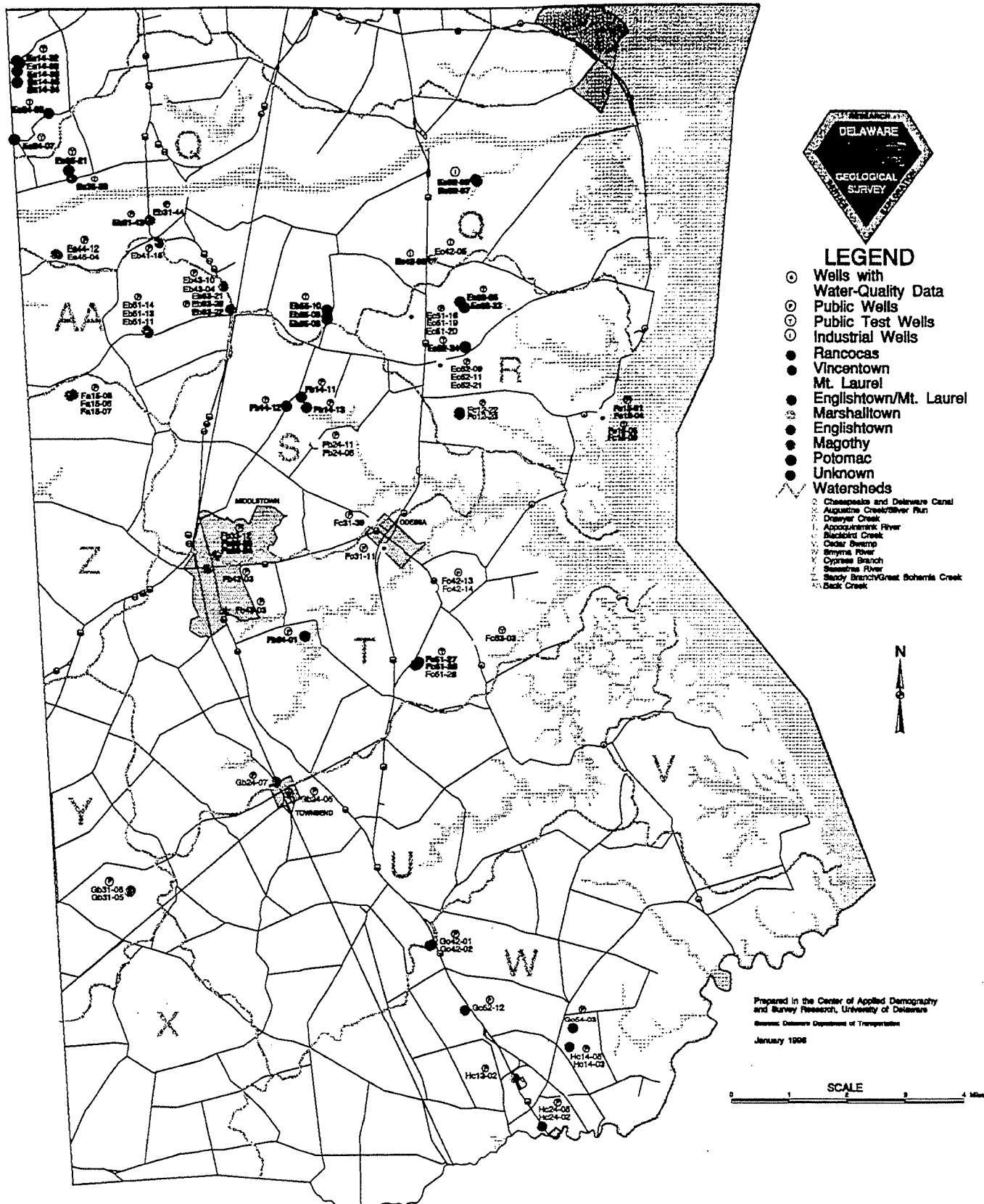


Figure 13. Public, test and industrial wells that are available for use in the ground-water monitoring network.

Table 2
Public Water Supply Wells
Tidewater Utilities

DGS ID	DNREC ID	Franchise	Depth	Aquifer	Date	Monthly	WQ Test	Date	Testing
			Screened (ft)		Activated	Production (gallons)		Tested	Agency
Ea44-12	086813	Nautical Cove	85-105	Magothy	Jan-94	110,000	Y	6/18/92	USGS
Ea45-04	100389	Nautical Cove	85-105	Magothy	Jan-94		N		-
Eb41-15	089665	Summit Bridge	135-155	Magothy	Jul-94	8,000	Y	6/18/92	USGS
Eb43-04	068945	Summit Pond	225-235	Magothy	Jun-88	325,000	Y	8/3/87 8/4/91	USGS
Eb43-10	068944	Summit Pond	210-230	Magothy	Jun-88		N		-
Eb51-11	080899	Dickerson Farms	161-177	Magothy	Jun-92		Y	6/18/92	USGS
Eb51-13	086498	Dickerson Farms	161-176	Magothy	Jun-92	153,000	N		-
Eb51-14	086499	Dickerson Farms	160-175	Magothy	Jun-92		N		-
Fa15-06	083638	Wheatland	190-210	Magothy	Mar-91		N		-
Fa15-07	083639	Wheatland	190-210	Magothy	Mar-91	480,000	Y	8/4/91	USGS
Fa15-08	083640	Wheatland	190-210	Magothy	Mar-91		N		-
Ec51-19	082242	Asbury Chase	80-95	Mt. Laurel	Oct-91	61,500	N		-
Ec51-20	082243	Asbury Chase	120-180	Mt. Laurel	Oct-91		N		-
Ec52-09	078973	Vandegrift Manor	100-160	Mt. Laurel	Mar-90		Y	8/4/91	USGS
Ec52-21	084134	Vandegrift Manor	55-60	Mt. Laurel	Mar-90	830,000	N		-
Fc12-16	078974	Vandegrift Manor	100-160	Mt. Laurel	Mar-90		N		-
Fc12-22	096299	Misty Vale	130-160	Mt. Laurel	Mar-95	0	N		-
Fb24-06	084852	Drawyer's Creek	106-198	Mt. Laurel	Aug-94		N		-
Fb24-11	089852	Drawyer's Creek	102-170	Mt. Laurel	Aug-94	204,500	N		-
Fc42-13	097960	Appoquin Farms	200-220	Mt. Laurel	Aug-94	23,000	N		-

Table 3
Public Water Supply Wells
Artesian Water Company
Test Wells

DGS ID	DNREC ID	Site	Production/	Depth	Aquifer	WQ Test	Date	Testing
			Observation	Screened			Tested	Agency
			(P/O)	(ft)				
Ea14-32	100813	Old County Rd	P	320-371	Potomac	N		
Ea14-33	095617	Old County Rd	O	332-372	Potomac	N		
Ea14-34	101100	Old County Rd	P	420-465	Potomac	N		
Ea14-35	096376	Old County Rd	O	322-372	Potomac	N		
Ea14-36	096449	Old County Rd	O	326-376	Potomac	N		
Ea24-06	097561	Old County Rd	O	220-260	Potomac	N		
Ea24-07	096500	Old County Rd	O	332-352	Potomac	N		
Ea35-20	097257	Old County Rd	O	143-163	Potomac	N		
Ea35-21	102148	Old County Rd	O	99-162	Potomac	Y	1/26/95	Artesian Labs
Eb55-08	098124	Emerson Farm	O	400-420	Potomac	N		
Eb55-09	098123	Emerson Farm	O	400-420	Potomac	N		
Eb55-10	098112	Emerson Farm	P	380-410	Potomac	Y	1/26/94 2/4/94	Artesian Labs
Ec52-23	099469	Lester Farm	P	482-532	Potomac	Y	1/26/95	Artesian Labs
Ec52-24	101153	Lester Farm	P	424-454	Potomac	N		
Ec52-25	099470	Lester Farm	O	400-450	Potomac	N		
Fb14-11	096841	Chestnut Grove	P	410-433	Potomac	Y	11/24/93 12/17/93	Artesian Labs
Fb14-12	097371	Chestnut Grove	O	415-435	Potomac	N		
Fb14-13	097370	Chestnut Grove	O	418-438	Potomac	N		
Fc15-05	096840	Bayview	P	128-178	Mt. Laurel	Y	6/30/93 6/23/94	Artesian Labs
Fc15-06	097875	Bayview	O	130-150	Mt. Laurel	N		
Fc51-26	099037	Stonefield	O	650-700 700-740	Potomac	N		
Fc51-27	099806	Stonefield	P	660-692 713-733	Potomac	N		
Fc51-28	099009	Stonefield	O	97-127	Rancocas	N		
Gb31-05	098805	Springhaven	O	120-140	Rancocas	N		
Gb31-06	098741	Springhaven	P	100-140	Rancocas	Y	4/22/94	Artesian Labs

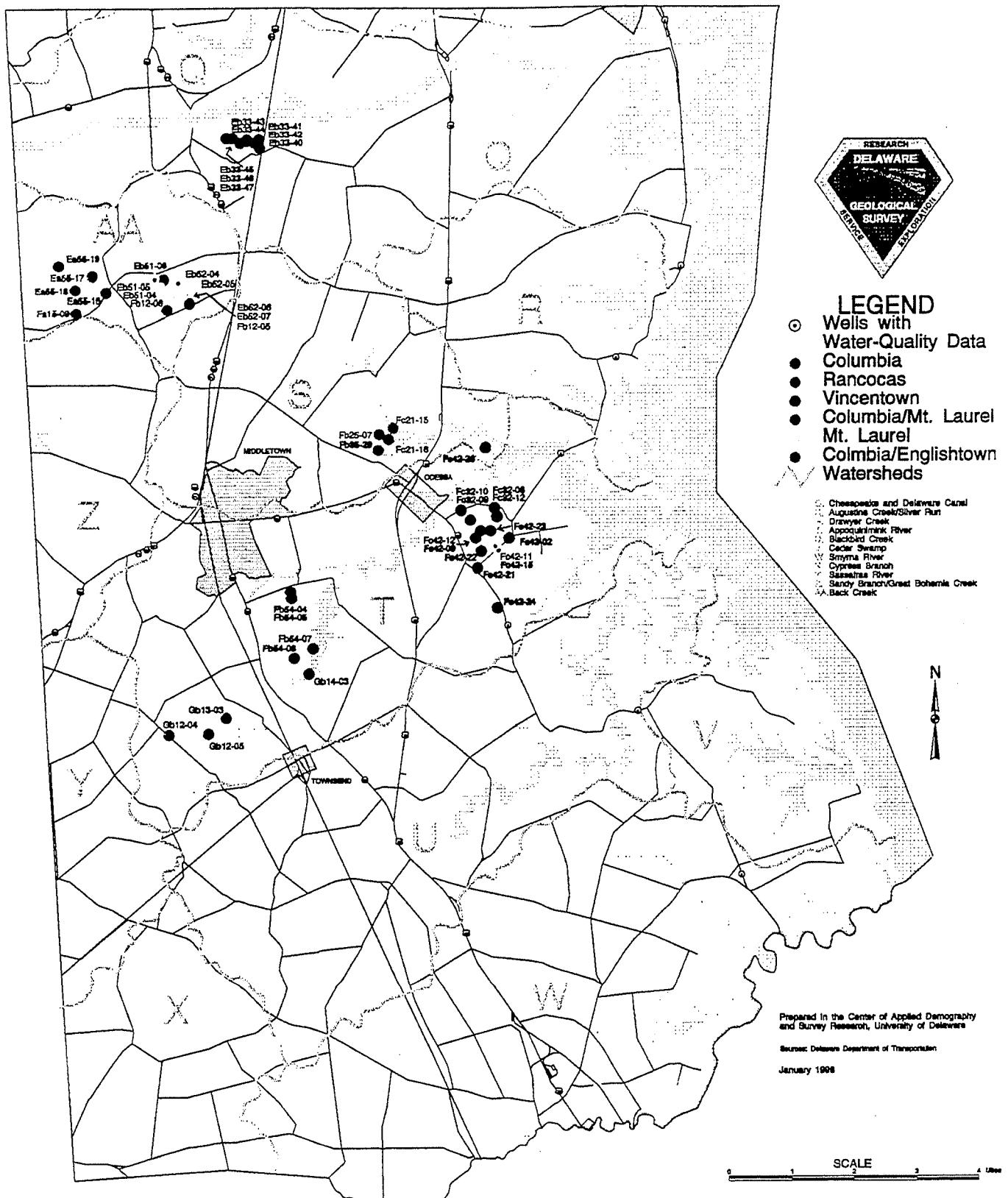


Figure 14. Monitor wells available for use in the ground-water monitoring network.

RECOMMENDATIONS

We recommend that the following individual existing programs become part of the southern New Castle County Monitoring Network:

♦Lea Eara Farms Spray Irrigation Facility♦

Surficial sediments at the site are part of the Columbia Formation and range in thickness from about 10 feet to 15 feet. These sediments are underlain by those belonging to the Mt. Laurel Formation. Interpretation of descriptive logs suggests that the aquifer in the upper part of the Mt. Laurel Formation in this area is unconfined.

Eight monitoring wells were installed in the unconfined aquifer (water-table) in July 1993. Water levels in July 1993 ranged from 11 feet to 31 feet below land surface. Screen depths range from 10 feet to 40 feet.

Historically, this site was used for agricultural purposes from at least 1954 through 1989. The area is currently covered with orchard grass.

The Lea Eara Spray Irrigation Facility is designed to treat 98,700 gallons of wastewater per day. The facility includes an aerated lagoon, a polishing and storage lagoon, chlorination equipment and a solid set spray irrigation system. Quarterly ground-water sampling has been conducted since April 1994. Results through August 1994 are listed in Appendix 1. The system has a 5-year permit and is required to test ground-water quality for the operational life of the facility.

Recommendations:

- 8 monitoring wells are available. Two (2) wells located in the shallow water-table aquifer will be tested for recommended additional parameters.
- Parameters currently being tested (quarterly):
pH, specific conductivity, chloride, ammonia nitrogen, nitrate nitrogen, total phosphorous, TDS, temperature and sodium
- Recommended additional analyses (annually):
dissolved oxygen, alkalinity, calcium, magnesium, manganese, iron, potassium, silica, sulfate, orthophosphate, total organic carbon and a pesticide immunoassay test
- Duration: Lifetime of facility

♦M-O-T Spray Irrigation Facility♦

Surficial sediments at the site consist of the Columbia Formation. The Columbia is underlain by a thin section of the Calvert Formation in the southern portion of the site and by the Vincentown Formation in other portions of the site. The Calvert functions as a confining layer. The Vincentown is, in turn, underlain by the Hornerstown and Mt. Laurel formations.

The unconfined or water-table aquifer is comprised of sediments of the Columbia and Vincentown Formations. Tatman and Lee Assoc., Geo-Sci Consultants, Inc., and Schnable Engineering Associates (1992) report that the upper surface of the water-table aquifer is present in the Vincentown Formation. Recharge to the Vincentown is through the Columbia Formation.

Fifteen wells are included in the monitoring network. Thirteen monitor wells were installed in the Vincentown Formation, one in the Mt. Laurel Formation and one in the Columbia Formation as part of the hydrogeologic investigation. Four additional wells, screened in the Columbia Formation, are located on the site. They are not, however, included in the water-quality sampling schedule. These wells are Fc42-27, Fc42-28, Fc42-29 and Fc42-30. Water levels in April 1992 ranged from 2.9 feet to 10.8 feet below land surface. Screen depths range from 5 feet to 260 feet.

The major crops grown at this site have included corn, soybeans, wheat and barley. Clover, alfalfa, grass, oats and legumes have also been grown on this site.

The M-O-T Treatment Facility is designed to treat 1.7 million gallons of wastewater per day. The facility is made up of two partially-mixed aerated lagoons, one polishing and storage lagoon, chlorination equipment and five center pivot spray irrigation systems. A background check on ground-water chemistry was conducted in April 1992 and in May 1995. The results are listed in Appendix 1. The system is designed to treat and reclamate 1.2 MGD of wastewater through the year 2012 and ground-water monitoring is required for the operational life of the facility.

Recommendations:

- 15 monitoring wells are available. Three (3) wells located in the shallow water-table aquifer will be tested for recommended additional parameters.
- Parameters currently being tested: Quarterly testing is scheduled to begin in the Fall of 1995.
- The following analyses were conducted as a background level check in April, 1992: specific conductivity, TDS, TKN, nitrate nitrogen, ammonia nitrogen, total phosphorous, chloride, pH, fecal coliform, alkalinity, organic nitrogen, nitrite nitrogen, sulfate, copper, chromium, iron, manganese, lead nickel and

zinc. Additional parameters tested in 1995 include arsenic, magnesium, mercury, selenium, silver, sodium, nitrate and phosphorous.

- We recommend the following additional parameters be tested (annually): dissolved oxygen, calcium, potassium, sodium, silica, orthophosphorous, total organic carbon, total phosphorous and a pesticide immunoassay test.
- Duration: Lifetime of facility

♦ Burris Extractive Use Facility ♦

This site is underlain by surficial deposits consisting of sands and gravels belonging to the Columbia Formation. The Vincentown Formation unconformably underlies the Columbia.

Four monitoring wells were installed in May 1987. Two were drilled in the Columbia Formation and two were drilled in the Rancocas Group. Water levels in May, 1987 ranged from 9.5 feet to 47.5 feet below land surface. Screen depths range from 13 feet to 53.5 feet.

Historically, the site has been used for agricultural purposes. Crops grown have included corn, wheat, barley and soybeans. Monitoring began on a semi-annual basis in October 1988 and has been conducted on an annual basis since 1990. The results are listed in Appendix 1.

Recommendations:

- 4 monitoring wells are available. One (1) well located in the shallow water-table aquifer will be tested for recommended additional parameters.
- Constituents currently being tested (annually):
ph, TDS, total organic carbon and total carbon
- Recommended additional analyses (annually):
dissolved oxygen, alkalinity, specific conductivity, temperature, calcium, chloride, iron, magnesium, manganese, potassium, silica, sodium, sulfate, ammonia, nitrite, nitrate, total phosphorous, orthophosphorous, total organic carbon and a pesticide immunoassay test. If pH is low (<4.0) metals should be considered.
- Duration: Lifetime of facility

♦ Mt. Pleasant Sand and Gravel Extractive Use Facility ♦

Duffield Associates, Inc., (1985, 1994) report that the site is underlain by a thin veneer of sandy sediments (fine to medium-grained sands) belonging to the Columbia Formation. They report that the Columbia ranges in depth from 8.5 feet to 28.0 feet across the site. The Columbia is, in turn, underlain by the Mt. Laurel Formation which

consists of fine sands with a trace to little silt. Duffield (1994) reported that sands in the Mt. Laurel Formation are texturally similar to those near the base of the Columbia Formation.

The unconfined (water-table) aquifer is contained in the Columbia Formation and in the upper portion of the Mt. Laurel where sands in the Columbia directly overlay sands in the Mt. Laurel Formation. Depths to ground water are generally between 7 feet and 18 feet below ground surface.

The monitoring network consists of seven monitoring wells and two observation wells completed in the unconfined aquifer. One well is screened in the Columbia Formation, two wells are screened in the Columbia and Mt. Laurel Formations, and six wells are screened in the Mt. Laurel Formation. Screen depths range from 9.2 feet to 29.1 feet. Four wells were tested for water quality in April 1985. The results of these analyses are listed in Appendix 1.

This land used for agricultural purposes. Crops grown at the site include wheat, soybeans, corn and barley.

Recommendations:

- 7 monitoring wells and 2 observation wells are available.

Two(2)monitoring wells located in the shallow water-table aquifer will be tested for recommended parameters.

- Constituents currently being tested: None

- Recommended analyses (annually):

dissolved oxygen, pH, alkalinity, specific conductivity, temperature, TDS, calcium, chloride, iron, magnesium, manganese, potassium, silica, sodium, sulfate, ammonia, nitrite, nitrate, total phosphorous, orthophosphorous total organic carbon and a pesticide immunoassay test,

- Duration: Lifetime of facility

♦ Back Creek ♦

The site is underlain by a relatively thin veneer of sands and gravels belonging to the Columbia Formation which is, in turn, underlain by sands of the Mt. Laurel Formation.

The monitoring network consists of five wells with screen depths ranging from 3.5 to 45 feet below ground surface. Following well construction in October of 1993, water levels in the five wells ranged from 6 feet to 19 feet below ground surface. Four wells are screened in the Columbia Formation and one well is screened in the

Columbia/Englishtown Formation. Results of water-quality analyses are listed in Appendix 1.

To reduce the amount of nitrogen entering the groundwater, Duffield Associates developed a Crop Management Plan. This plan limits current agricultural crop production to a maximum of 50 per cent of the site acreage set aside for corn and the remaining 50 percent to soybeans or a legume crop that does not require a nitrogen fertilizer.

Recommendations:

- 5 monitoring wells are available. Two (2) wells located in the shallow water-table aquifer will be tested for recommended additional parameters.
- Constituents currently being tested (quarterly): pH, alkalinity, TDS, nitrite nitrogen, nitrate nitrogen, BOD, COD, chlorine residual and fecal coliform
- Recommended additional analyses (annually): dissolved oxygen, specific conductivity, temperature, calcium, chloride, iron, magnesium, manganese, potassium, silica, sodium, sulfate, ammonia, total phosphorous, orthophosphorous, total organic carbon and pesticide immunoassay test
- Duration: Lifetime of program

◆Appoquinimink Study◆

In 1980, the Water Resources Agency for New Castle County (WRA) acted with the College of Agricultural Sciences at the University of Delaware to monitor surface-water quality in the Appoquinimink watershed. As a follow-up to that investigation and to evaluate the impact of Best Management Practices, the WRA contracted with the College of Agricultural Sciences to monitor ground-water quality for the period of June 1984 through June 1987. A total of 23 wells were installed in the shallow, unconfined aquifer at depths ranging from 14 feet to 39 feet. Water samples were collected and analyzed four times a year for three years. As a result, a historical ground-water quality database has been established in the area. The data are listed in Appendix 1.

We have determined that eight of the original 24 wells are available for use. We propose that these eight wells be included in the SNCC monitoring network so that we take advantage of the historical data set and further evaluate the effects of Best Management Practices instituted several years ago.

The study area is located in the upper portion of the Appoquinimink River watershed. The area is underlain by surficial sediments of the Columbia Formation which are, in turn, underlain by sediments of the Vincentown Formation.

Pesticide analyses were completed by A & L Laboratories. The remaining constituents were analyzed by the Agricultural Engineering Department Water-Quality Laboratory at the University of Delaware.

Recommendations:

- 8 monitoring wells
- Parameters previously tested (1984-1987):
pH, ammonia, nitrate, chloride, TDS, atrazine and aldicarb
- Recommended analyses (annually):
dissolved oxygen, pH, alkalinity, specific conductivity, temperature, TDS, calcium, chloride, iron, magnesium, manganese, potassium, silica, sodium, sulfate, ammonia, nitrite, nitrate, total phosphorous, orthophosphorous, total organic carbon and a pesticide immunoassay test
- Duration: Lifetime of program

◆ Public Water Supply Wells ◆

Existing and proposed public water supply wells are recommended for inclusion in the network (Fig. 3 and Fig. 11). Limited water-quality analyses for these wells are currently included in the database and provide a baseline from which future test results can be compared. Many of the existing water-supply wells currently on-line have not been required to be tested by the Division of Public Health (DPH). However, these wells will eventually be tested by the DPH and should be included in the network.

◆ Shallow Water-Table Aquifers ◆

Except for the wells used in the DGS-USGS investigation pertaining to ground-water quality in southern New Castle County (DGS RI 52), most of the wells used in the above described programs are clustered in specific areas and are, therefore, not evenly distributed across southern New Castle County. Except for wells associated with DGS RI 51, most of the wells used in the DGS-USGS investigations are screened in confined aquifers or in the deeper portions of unconfined aquifers. Thus, there are relatively few spatially-distributed wells available for testing that are completed in the shallow water-table aquifer, that portion of the aquifer that is most susceptible to degradation of ground-water quality.

In order to obtain a representative sample set from the shallow water-table aquifer, we are proposing the construction of approximately 30 shallow wells throughout southern New Castle County with at least two wells in each watershed. Proposed locations of wells to be constructed are shown in Figure 15. These sites were selected based on the following criteria:

- Distribution of existing wells in each drainage basin
- Spatial distribution of existing wells in the shallow water-table aquifer in each drainage basin
- Locations of recharge areas
- Proximity to existing monitoring wells screened in deeper aquifers
- Thickness of the water-table aquifer
- Development potential based on New Castle County's Department of Planning land-use map

Recommendations:

- The installation of approximately 30 new monitor wells
- Proposed analyses (annually):
dissolved oxygen, pH, alkalinity, specific conductivity, temperature, TDS, calcium, chloride, iron, magnesium, manganese, potassium, silica, sodium, sulfate, ammonia, nitrite, nitrate, total phosphorous, orthophosphorous, total organic carbon and a pesticide immunoassay test.

♦DGS - USGS Wells♦

Bachman and Ferrari (1995) sampled 63 domestic, public, and monitoring wells in southern New Castle County for 20 constituents. The results and interpretations which are presented in their report provide baseline water-quality information for several aquifer systems.

Recommendations:

- Continued monitoring of approximately 12 monitor wells
- Proposed analyses (annually):

dissolved oxygen, pH, alkalinity, specific conductivity, temperature, TDS, calcium, chloride, iron, magnesium, manganese, potassium, silica, sodium, sulfate, ammonia, nitrite, nitrate, total phosphorous, orthophosphorous, total organic carbon and a pesticide immunoassay test.

A compilation of the wells recommended for use in the ground-water monitoring network is shown on Figure 16 and listed in Table 4. Approximately fifteen shallow water-table monitor wells are yet to be included as part of the network. The decision as to placement of these wells was not completed at the time of printing.

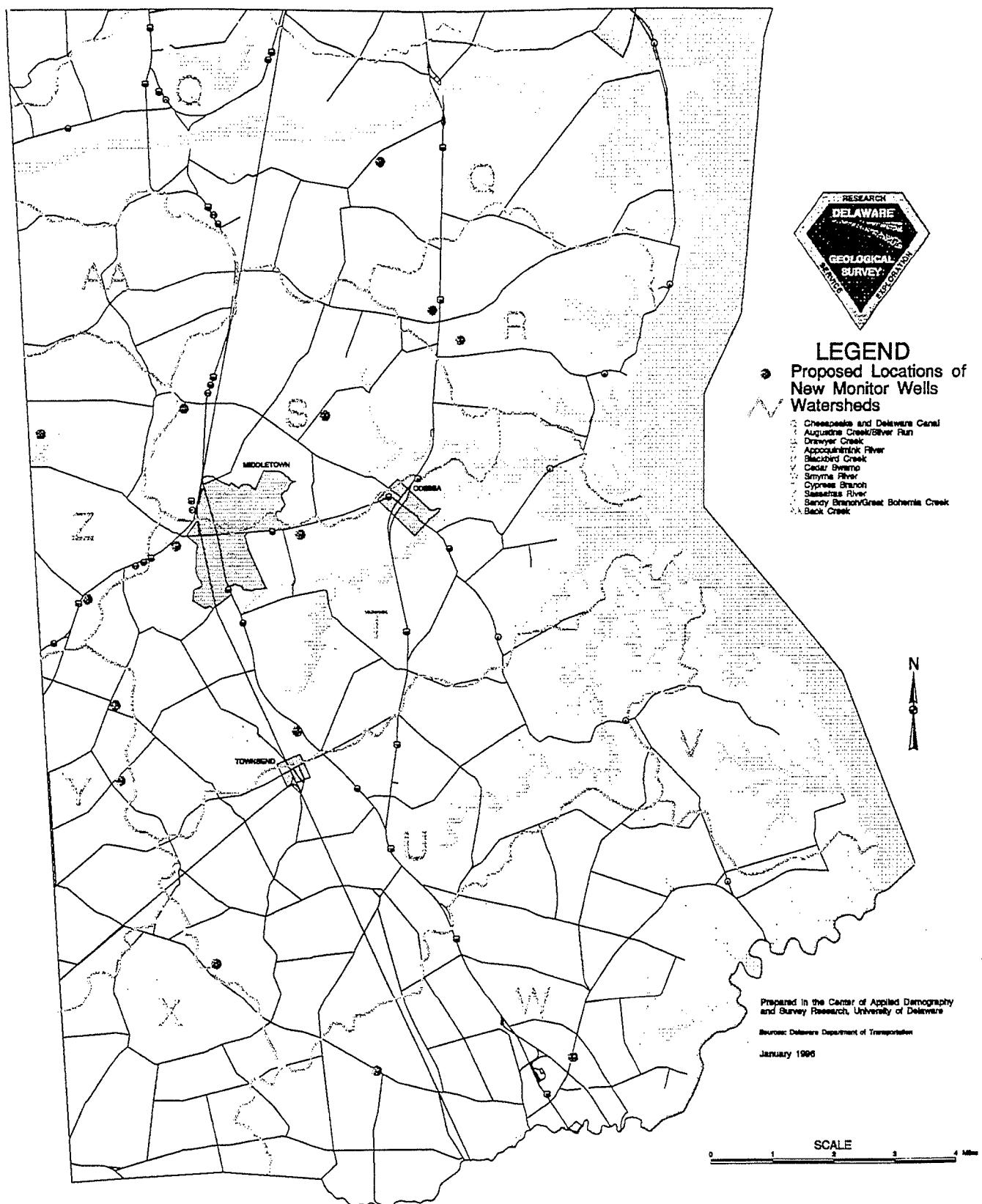


Figure 15. Proposed locations for new monitor wells.

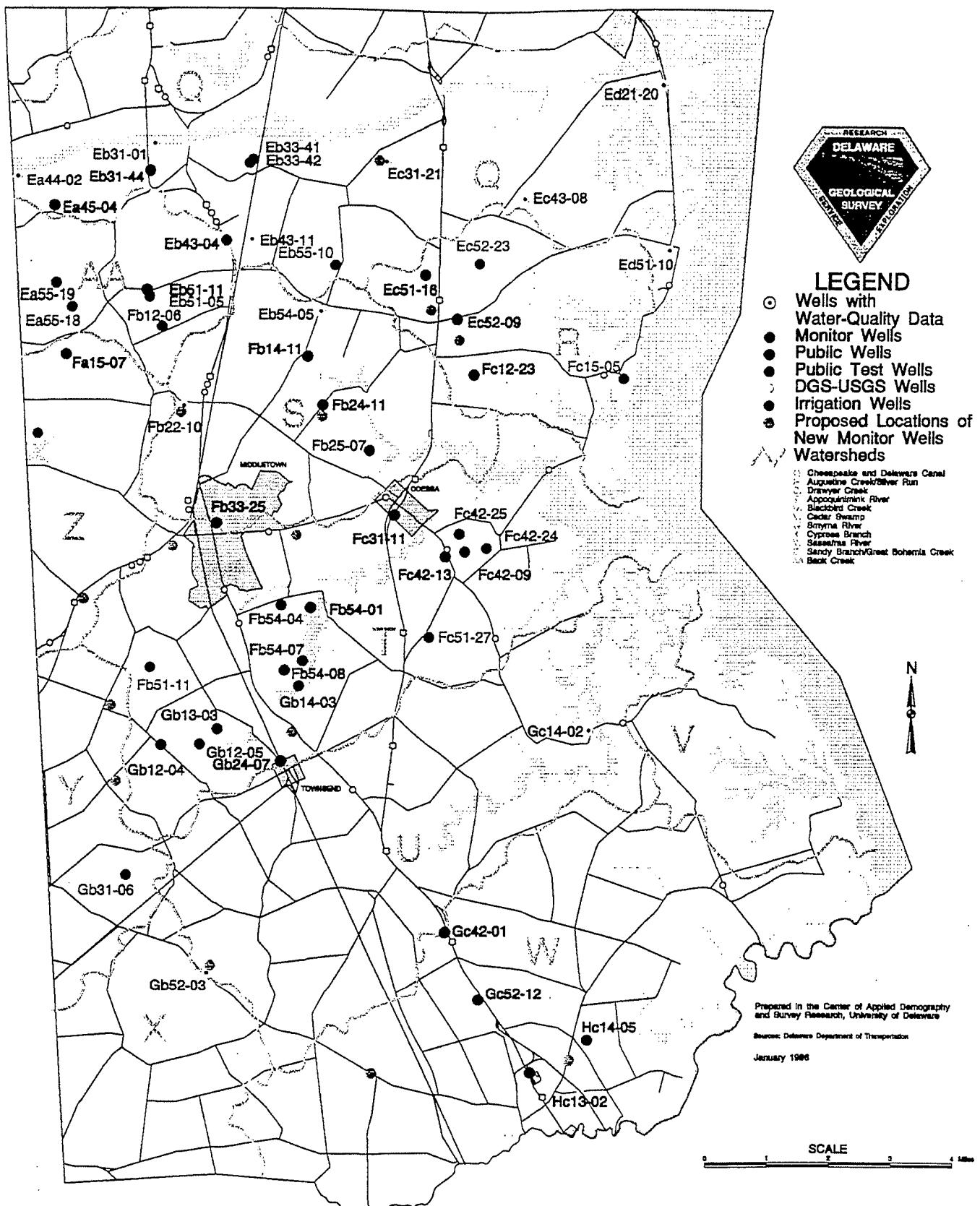


Figure 16. Map showing locations of wells recommended for use in the ground-water monitoring network.

APPENDIX 1
Ground-Water Monitoring Network Data

**US EPA'S Primary and Secondary
Maximum Contaminant Levels**

Substance (Inorganics)		<i>Primary MCL (mg/L)</i>
Antimony	(Sb)	0.006
Arsenic	(As)	0.05
Barium	(Ba)	2
Cadmium	(Cd)	0.005
Chromium	(Cr)	0.1
Cyanide	(Cn)	0.2
Fluoride	(F)	1.8
Lead	(Pb)	0.02
Mercury	(Hg)	0.002
Nickel	(Ni)	0.1
Nitrate-Nitrogen	(NO ₃ -N)	10
Nitrite-Nitrogen	(NO-N)	1
Total Nitrate Nitrogen and		
Nitrite Nitrogen		10
Selenium	(Se)	0.05
Thallium	(Tl)	0
Substance (Organics)		
Alachlor		0.002
Aldicarb		0.003
Atrazine		0.003
Simazine		0.0004

Substance		<i>Secondary MCL (mg/L)</i>
Aluminum	(Al)	0.05-0.2
Chloride	(Cl)	250
Copper	(Cu)	1
Iron	(Fe)	0.3
Manganese	(Mn)	0.05
pH		6.5-8.5
Silver	(Ag)	0.1
Sulfate	(SO ₄)	250
Total Dissolved Solids	(TDS)	500
Zinc	(Zn)	5

PLEASE NOTE: On the following pages of this appendix, a blank space indicates that a sample was not taken and that the abbreviation "ND" indicates that the substance was not detected.

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Gb21-04; DNREC ID 056570; LOCAL ID B1

Sample Date	Total Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984	<1						
spring 1984							
summer 1984			1.04	1.95	14.2	295	6.2
fall 1984			9.06	0.65	37.1	241	6.5
winter 1985			<0.05	7.92	18.7	375	6.8
spring 1985	7		<0.05	13	21.8	303	6.3
summer 1985			0.08	9.12	20.6	166	5.3
fall 1985			5.49	0.31	25.1	346	6.6
winter 1986			1.17	6.9	18.9	156	5.9
spring 1986			<0.05	8.03	13.9	582	5.6
summer 1986			0.25	7.51	16.4	207	5.1
fall 1986			dry	dry	dry	dry	dry
winter 1987			-	0.26	42.4	212	6.3
spring 1987			1.14	0.37	25.5	127	5.6
summer 1987			10.4	0.19	20.8	179	6
fall 1987							

Appoquinimink Watershed
DGS ID Gb21-05; DNREC ID 056571; LOCAL ID B2

Sample Date	Total Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	2		<0.05	22	64.5	381	6.2
fall 1984			1.95	15.6	61.6	319	6.1
winter 1985			<0.05	12.6	72	95	6.8
spring 1985	3		<0.05	23.7	70.5	712	6.6
summer 1985			0.15	13.8	53.6	325	6
fall 1985			0.3	29.7	34.4	302	5.5
winter 1986			<0.05	28.9	24.1	306	6.8
spring 1986			0.07	23.4	35.7	334	5.8
summer 1986			0.11	26.4	35.1	866	6
fall 1986			0.11	25.1	45.7	349	6
winter 1987			0.45	2.61	31.2	296	5.6
spring 1987			<0.05	7.63	30.7	231	5.7
summer 1987			<0.05	8.54	19.2	262	5.5
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Gb21-06; DNREC ID 056573; LOCAL ID B3

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	1		0.12	12.2	25.8	298	6.1
fall 1984			0.45	17.5	33.8	270	5.9
winter 1985			<0.05	14.6	43.4	354	6.1
spring 1985	3		<0.05	8.99	47	478	7.1
summer 1985			0.33	3.8	43.4	94	6.4
fall 1985			<0.05	4.15	48	244	5.7
winter 1986			<0.05	4.57	36.8	272	5.7
spring 1986			0.18	6.33	33.3	244	2.6
summer 1986			0.07	8.35	38.8	334	5.7
fall 1986			<.05	11.8	71.8	213	6.6
winter 1987			0.12	1.18	30.7	278	5.4
spring 1987			<0.05	9.71	21.5	194	5.7
summer 1987			0.29	1.66	16.9	146	6.8
fall 1987							

Appoquinimink Watershed
DGS ID Gb21-07; DNREC ID 056572; LOCAL ID B4

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	2		<0.05	8.05	14.4	184	6.1
fall 1984			0.12	12.7	17.4	130	5.8
winter 1985			<0.05	15.2	19.7	268	6.4
spring 1985	3		0.07	14.6	23.4	356	7
summer 1985			0.08	11.9	21	247	6.1
fall 1985			<.08	11.9	23.3	213	5.7
winter 1986			<0.05	6.62	19.7	234	6.1
spring 1986			0.034	9.19	16.7	232	5.8
summer 1986			<0.05	8.9	16	229	5.8
fall 1986			<0.05	8.32	15.7	189	5.6
winter 1987			<0.05	8.53	15	212	5.6
spring 1987			<0.05	3.45	10.9	131	5.8
summer 1987			0.34	1.73	17.2	105	6.9
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
LOCAL ID C2

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	1	<10	0.5	1.17	17	246	6.7
fall 1984			26.6	0.79	24.5	261	6.4
winter 1985			0.29	5.55	25.1	351	7.2
spring 1985	1	<1	<0.05	1.35	26	760	6.7
summer 1985			10.6	<0.05	24.2	895	6.4
fall 1985			1.84	0.92	26.7	260	6.1
winter 1986			<0.05	6.62	26.2	280	6.2
spring 1986			<0.05	8.62	30.2	272	6.4
summer 1986			0.56	9.7	29.5	586	6.3
fall 1986			0.11	9.43	39.4	284	5.9
winter 1987			0.34	11.91	23.1	285	6
spring 1987			<0.05	5.69	28.2	202	6.1
summer 1987			0.21	0.78	17.4	140	6.3
fall 1987							

Appoquinimink Watershed
DGS ID Gb11-03; DNREC ID 010098; LOCAL ID C3

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1	<10	0.45	0.17	14.8	210	5.8
fall 1984			0.06	0.9	6	204	6
winter 1985			<0.05	4.08	14	103	6.5
spring 1985	3	<1	0.74	6.99	25.1	253	6.5
summer 1985			0.1	6.47	28.4	213	5.7
fall 1985			0.68	0.1	9	160	6.5
winter 1986			<0.05	0.98	14.8	105	0.2
spring 1986			1.15	0.42	11.5	187	6.1
summer 1986			2.2	0.51	22	334	6.4
fall 1986			0.51	0.66	32.7	219	6.2
winter 1987			0.09	0.57	5.7	91	5.9
spring 1987			2.08	0.42	3.4	179	
summer 1987							
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Gb21-08; DNREC ID 056574; LOCAL ID B5

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	1		0.09	5.73	17.9	192	5.7
fall 1984			0.56	8.26	19.5	171	5.6
winter 1985			<0.05	10.2	17.7	222	6.2
spring 1985	1		<0.05	7.6	17.5	272	6.2
summer 1985			0.08	3.08	17.1	188	5.9
fall 1985			0.11	3.92	18.8	168	5.2
winter 1986			<0.05	3.27	16.7	201	5.5
spring 1986			<0.05	5.75	19.3	195	5.3
summer 1986			4.23	1.23	16	39	5.8
fall 1986			2.52	0.72	18	165	8.5
winter 1987			0.12	5.31	13.4	192	5.4
spring 1987			1.15	3.95	16.4	144	5.5
summer 1987			0.09	1.54	17.7	128	6.8
fall 1987							

Appoquinimink Watershed
DGS ID Gb12-04; DNREC ID 056578; LOCAL ID C1

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	9	<10	0.14	2.43	22.1	177	6.3
fall 1984	6.3		0.61	8.5	24.5	258	6.3
winter 1985			<0.05	21.5	19.7	337	6.4
spring 1985	5	<1	<0.05	17.4	17.6	404	6.4
summer 1985			dry	dry	dry	dry	dry
fall 1985			dry	dry	dry	dry	dry
winter 1986			dry	dry	dry	dry	dry
spring 1986			<0.05	9.49	28.2	339	5.9
summer 1986			dry	dry	dry	dry	dry
fall 1986			dry	dry	dry	dry	dry
winter 1987			dry	dry	dry	dry	dry
spring 1987							
summer 1987							
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Gb12-05; DNREC ID 056579; LOCAL ID C4

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1	<10	0.11	0.63	4.9	54	5.8
fall 1984			0.12	1.36	5.3	49	5.4
winter 1985			<0.05	2.77	4.6	61	5.6
spring 1985	2	<1	0.19	2.71	5.8	106	6.1
summer 1985			<0.05	2.71	4.8	56	5.7
fall 1985			0.12	3.45	7.7	55	4.9
winter 1986			0.19	1.84	7.6	70	4.6
spring 1986			<0.05	4.21	8.3	61	4.7
summer 1986			0.23	3.67	9.2	79	4.7
fall 1986			0.23	3.74	12.9	109	4.1
winter 1987			0.09	4.03	8.5	99	4.7
spring 1987			<0.05	3.21	8.8	27	4.4
summer 1987			0.16	1.31	17.3	136	6.6
fall 1987							

Appoquinimink Watershed
DGS ID Gb12-06; DNREC ID 056576; LOCAL ID C5

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1	<10	0.1	1.21	5.5	73	5.4
fall 1984			<0.05	8.56	18.7	130	5.1
winter 1985			<0.05	9.58	27.3	192	5.3
spring 1985	<1	7	<0.05	10.5	33	318	5.1
summer 1985			0.15	7.18	29.1	117	4.7
fall 1985			0.1	9.41	36.4	140	4.4
winter 1986							
spring 1986			<0.05	3.68	22.4	132	4.8
summer 1986			1.01	9.97	31	200	4.6
fall 1986			0.94	8.05	40.7	172	4.8
winter 1987			<0.05	1.41	16.9	90	4.9
spring 1987			<0.05	4.31	19.7	66	4.8
summer 1987			0.26	3.41	9.8	114	
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Gb13-03; DNREC ID 056575; LOCAL ID C6

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1	<10	0.26	1.81	13.2	70	5.9
fall 1984			<0.05	2.3	14.9	103	5.2
winter 1985			<0.05	3.76	14	103	5.6
spring 1985	<1	<1	<0.05	2.79	14.3	98	6.3
summer 1985			<0.05	3.14	14.7	57	5.2
fall 1985			0.14	2.48	16.5	58	4.9
winter 1986							
spring 1986			0.23	3.04	16	68	4.7
summer 1986			<0.05	3.19	16.9	77	4.5
fall 1986			<0.05	3.77	20.8	107	4.9
winter 1987			<0.05	3.81	18.4	70	4.6
spring 1987			<0.05	5.86	19.4	39	4.6
summer 1987			0.11	0.88	16.7	110	6.8
fall 1987							

Appoquinimink Watershed
DGS ID Fb41-04; DNREC ID 056584; LOCAL ID R1

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1	<10	0.21	11.8	21.2	436	6.5
fall 1984	2.7		2.52	12.4	29.6	300	6.3
winter 1985			<0.05	14.5	18.1	474	6.7
spring 1985	<1	<1	0.24	39.9	20.3	596	7.1
summer 1985			0.3	25.1	21.3	379	6.6
fall 1985			0.1	0.28	4.1	77	6.2
winter 1986			0.08	0.92	11.6	187	6.5
spring 1986			0.22	3.95	5.8	338	6.4
summer 1986			<0.05	0.98	2.5	108	5.8
fall 1986			-	0.41	21.6	288	6
winter 1987			0.07	1.47	3	56	5.8
spring 1987							
summer 1987							
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Fb51-08; DNREC ID 056580; LOCAL ID R3

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	5	<10	0.12	8.29	23	338	6.3
fall 1984			2.1	6.41	39.4	317	6.1
winter 1985			<0.05	3.54	40.2	514	6.6
spring 1985	<1	<1	1.57	6.4	28.7	338	7
summer 1985			0.2	3.91	21.2	218	6.6
fall 1985			28.9	0.34	29.5	339	6.3
winter 1986			49.3	0.5	11.7	349	6.5
spring 1986			16.8	0.26	72.2	228	6.4
summer 1986			5.15	0.34	19.2	111	5.7
fall 1986			9.48	0.77	13.2	153	6.1
winter 1987			0.28	0.64	6.9	64	5.2
spring 1987			<0.05	1.52	2.4	233	5.4
summer 1987			0.23	5.23	19.7	266	5.5
fall 1987							

Appoquinimink Watershed
DGS ID Fb51-09; DNREC ID 056583; LOCAL ID R4

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	1	<10	0.21	3.66	9.3	111	5.7
fall 1984			0.67	3.67	22.8	128	5.8
winter 1985			<0.05	1.62	8.9	238	6.1
spring 1985	<1	<1	0.29	3.59	10.7	140	6.3
summer 1985			0.12	5.51	10.9	113	5.9
fall 1985			<0.05	5.7	19.5		6.1
winter 1986			<0.05	3.26	19.1	230	5.6
spring 1986			0.29	5.51	21	248	5.7
summer 1986			0.45	6.63	16.4	193	5.4
fall 1986			0.46	3.99	14	214	5.6
winter 1987			7.23	0.13	8.5	323	5.3
spring 1987			<0.05	3.61	29	130	5.3
summer 1987			2.88	2.35	16.7	181	5.5
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Gb11-05; DNREC ID 056582; LOCAL ID R5

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	1	<10	0.11	2.05	5.3	51	5.5
fall 1984			0.45	2.02	7	53	5.7
winter 1985			<0.05	2.21	4.5	97	5.8
spring 1985	<1	<1	0.64	2.17	8.1	91	5.5
summer 1985			dry	dry	dry	dry	dry
fall 1985			dry	dry	dry	dry	dry
winter 1986			dry	dry	dry	dry	dry
spring 1986			<0.05	2.49	32.5	203	6.4
summer 1986			9.42	3.66	7.2	171	6.2
fall 1986			dry	dry	dry	dry	dry
winter 1987			dry	dry	dry	dry	dry
spring 1987			9.46	2.27	4.8	116	6.2
summer 1987							
fall 1987							

Appoquinimink Watershed
DGS ID Gb13-04; DNREC ID 056564; LOCAL ID SA1

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1		0.15	1.88	22.6	149	5.3
fall 1984	<.10		0.06	1.69	80.3	174	4.7
winter 1985			<0.05	1.41	55.9	334	6.1
spring 1985	<1		0.5	2.3	27.8	307	5.4
summer 1985			0.05	0.84	22.2	81	5
fall 1985			0.14	1.72	17.1	128	4.5
winter 1986			<0.05	1.71	24.8	470	5.4
spring 1986			<0.05	2.49	80.2	317	4.7
summer 1986			0.06	3.29	106	394	4.4
fall 1986			<0.05	3.88	139	365	4.2
winter 1987			<0.05	1.76	59.6	219	4.4
spring 1987			<0.05	5.34	128	337	4.8
summer 1987							
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Fb53-08; DNREC ID 056569; LOCAL ID SA2

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	2		<0.15	9.8	21.7	465	5.8
fall 1984			0.16	10.4	23.2	7	5.7
winter 1985							
spring 1985							
summer 1985							
fall 1985							
winter 1986							
spring 1986							
summer 1986							
fall 1986							
winter 1987							
spring 1987							
summer 1987							
fall 1987							

Appoquinimink Watershed
DGS ID Fb44-12; DNREC ID 056568; LOCAL ID SA4

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	1		0.08	2.9	29.7	149	5.7
fall 1984			<0.05	0.07	27.4	70	6.2
winter 1985							
spring 1985							
summer 1985							
fall 1985							
winter 1986							
spring 1986							
summer 1986							
fall 1986							
winter 1987							
spring 1987							
summer 1987							
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Fb54-04; DNREC ID 056566; LOCAL ID SA5

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	2		0.54	9.3	24.5	231	6
fall 1984			<0.05	5.48	26.6	139	5.2
winter 1985			<0.05	7.45	21.1	271	5.3
spring 1985	13		0.7	13.8	20.5	271	6.3
summer 1985			<0.05	8.22	16.2	118	5
fall 1985			<0.05	10.9	19	164	4.8
winter 1986			dry	dry	dry	dry	dry
spring 1986			<0.05	4.52	17.9	206	4.6
summer 1986			0.06	28.7	45.6	273	4.2
fall 1986			<0.05	14.4	26	209	4.8
winter 1987			<0.05	17.7	41.7	273	4
spring 1987			<0.05	8.72	23.8	125	4.8
summer 1987			<0.05	12.8	25.7	122	4.4
fall 1987							

Appoquinimink Watershed
DGS ID Fb54-05; DNREC ID 056567; LOCAL ID SA6

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1			7.75	15.6	155	6.2
fall 1984			0.9	8.8	18.8	121	5.9
winter 1985			<0.05	10.8	19.6	287	6.8
spring 1985	<1		1.81	21.2	18	271	6.8
summer 1985			<0.05	20.8	15.7	165	5.8
fall 1985			0.05	11.9	19.2	137	4.8
winter 1986			dry	dry	dry	dry	dry
spring 1986			<0.05	4.53	13.6	156	4.9
summer 1986			0.09	26.4	43.7	273	4.1
fall 1986			<0.05	16.8	22.7	181	4.9
winter 1987			0.06	15.1	18	195	4.6
spring 1987			<0.05	7.27	19.5	162	5.1
summer 1987			<0.05	6.93	19.9	227	4.9
fall 1987							

Southern New Castle County Groundwater
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Fb54-06; DNREC ID 056563; LOCAL ID SA7

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984			0.06	9.18	15	125	5.6
fall 1984			0.53	7.91	17.4	87	5.2
winter 1985			<0.05	6.09	17.9	224	6.1
spring 1985	<1		0.44	12.8	16.4	213	6.2
summer 1985			<0.05	10.3	15.2	137	5.8
fall 1985			0.15	11	18.9	116	4.7
winter 1986			<0.05	5.92	17.6	167	5.2
spring 1986			<0.05	8.85	16.8	162	0.7
summer 1986			8.29	4.05	17.8	142	5.7
fall 1986			0.57	6.15	22.1	80	6
winter 1987			0.23	4.02	5.9	798	5.7
spring 1987			17.9	4.31	16.1	132	6.7
summer 1987			7.23	0.8	19.5	175	6.3
fall 1987							

Appoquinimink Watershed
DGS ID Fb54-07; DNREC ID 056562; LOCAL ID SA8

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1		0.12	6.16	11.4	99	5.8
fall 1984	0.29		0.94	3.83	10.5	45	5.2
winter 1985			<0.05	2.15	8.6	151	6.3
spring 1985	<1		0.08	6.9	8.9	150	5.8
summer 1985			0.41	9.11	8.5	69	8.5
fall 1985			0.1	5.69	9.1	116	5.4
winter 1986			0.25	5.33	9.7	109	6
spring 1986			0.08	5.24	8.5	97	5.3
summer 1986			0.3	8.63	9.8	98	4.2
fall 1986			<0.05	5.72	11.5	90	4.7
winter 1987			0.17	4.92	9.2	193	4.5
spring 1987			<.05	10.8	10.1	27	4.7
summer 1987							
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Appoquinimink Watershed
DGS ID Fb54-08; DNREC ID 056561; LOCAL ID SA9

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	<1		0.1	5.68	14.2	15	6.1
fall 1984			0.07	4.21	13.6	67	5.5
winter 1985			<0.05	2.9	11.6	189	6
spring 1985	2		0.17	7.44	15.1	169	5.9
summer 1985			<0.05	1.29	14.4	129	6.1
fall 1985			0.42	5.7	10.1	63	5.5
winter 1986			0.3	0.92	6.6	63	7.1
spring 1986			0.13	1.48	7.58	76	5.2
summer 1986			<0.05	4.16	15.6	123	4.1
fall 1986			<0.05	5.38	24.6	123	3.8
winter 1987			<0.05	2.65	15.8	207	4
spring 1987			0.06	2.01	10.2	65	4.2
summer 1987			0.06	0.29	15.3	105	7.8
fall 1987							

Appoquinimink Watershed
DGS ID Gb14-03; DNREC ID 056560; LOCAL ID SA10

Sample Date	Atrazine (ppb)	Aldicarb (ppb)	Ammonia (mg/L N)	Nitrate (mg/L N)	Chloride (mg/L)	Total Dissolved Solids (mg/L)	pH
winter 1984							
spring 1984							
summer 1984	29		0.17	0.16	4.5	190	7.4
fall 1984	45		0.08	0.42	8.6	181	7.1
winter 1985			<0.05	7.51	3.3	328	7
spring 1985	23		0.27	4.72	2.8	246	7.4
summer 1985			<0.05	6.42	2.3	170	7.3
fall 1985			33.8	0.23	4.8	131	7.9
winter 1986			2.79	1.92	3.7	231	7.1
spring 1986			13.3	0.21	3.7	213	7.1
summer 1986			0.13	1.41	5.7	209	6.9
fall 1986			0.13	0.68	6.8	213	6.87
winter 1987			0.11	0.46	5.3	160	5.3
spring 1987			<0.05	1.43	5.8	930	7
summer 1987			<0.05	0.24	16.2	121	8.4
fall 1987							

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Artesian Water Company

DGS ID	DNREC ID	Sample Date	Temperature (°C)	Specific Conductivity (μmhos/cm)	pH (field)	Alkalinity (field) (mg/L)	N, NO ₂ , NO ₃ (mg/L)	Cyanide (mg/L)
Ea35-21	102148	1/4/95	13	56	6.2	24	nd	nd
Eb55-10	098112	1/20/94		96	7.05	78	nd	nd
Ec52-23	099469	1/11/95	15	146	7.25	83	nd	nd
Fb14-11	096841	11/10/93	15	117	7	72	nd	nd
Fc15-05	096840	6/16/93		230	7.8	143	nd	nd
Gb31-06	098741	3/31/94		250	7.5	108	nd	nd

DGS ID	DNREC ID	Sample Date	Sodium (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Arsenic (mg/L)	Barium (mg/L)
Ea35-21	102148	1/4/95	3.73	3	5	0	0.001	0.042
Eb55-10	098112	1/20/94	8.36	1	9.5	0.12	nd	0.123
Ec52-23	099469	1/11/95	31.23	0	4	0.26	0.003	0.035
Fb14-11	096841	11/10/93	10.1	2	6	0.15	nd	0.118
Fc15-05	096840	6/16/93	6.8	2	3	0.79	nd	0.199
Gb31-06	098741	3/31/94	6.04	4	32	0.2	0.001	0.035

DGS ID	DNREC ID	Sample Date	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)
Ea35-21	102148	1/4/95	nd	nd	0.005	10.21	nd	0.069
Eb55-10	098112	1/20/94	nd	0.009	0.014	3.22	0.002	0.037
Ec52-23	099469	1/11/95	nd	nd	nd	0.913	0.003	0.015
Fb14-11	096841	11/10/93	nd	nd	0.006	2.94	nd	0.048
Fc15-05	096840	6/16/93	nd	nd	nd	0.661	0.001	0.007
Gb31-06	098741	3/31/94	nd	nd	0.01	1.6	nd	0.133

DGS ID	DNREC ID	Sample Date	Thallium (mg/L)	Nickel (mg/L)	Silver (mg/L)	Zinc (mg/L)	Aluminum (mg/L)	Selenium (mg/L)
Ea35-21	102148	1/4/95	nd	nd	nd	0.009	0.491	nd
Eb55-10	098112	1/20/94		nd	nd	0.027	nd	nd
Ec52-23	099469	1/11/95	nd	nd	nd	0.005	0.075	nd
Fb14-11	096841	11/10/93		nd	nd	0.017	nd	nd
Fc15-05	096840	6/16/93		nd	nd	0.08	0.069	nd
Gb31-06	098741	3/31/94		nd	nd	nd	nd	nd

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury (mg/L)	Phosphate (mg/L)
Ea35-21	102148	1/4/95	67	nd	0
Eb55-10	098112	1/20/94	74	nd	0.4
Ec52-23	099469	1/11/95	81	nd	0.47
Fb14-11	096841	11/10/93	23	nd	0.36
Fc15-05	096840	6/16/93	150	nd	<10
Gb31-06	098741	3/31/94	240	nd	0.2

Southern New Castle County
Ground-Water Monitoring Network

Back Creek
DGS ID Fa15-09; DNREC ID 097286; MW1

Sample Date	pH	Alkalinity (mg/L)		TDS (mg/L)	Nitrite Nitrogen (mg/L)	Nitrate Nitrogen (mg/L)	BOD (mg/L)	COD (mg/L)	Chlorine Residual	Fecal Coliform (/100 ml)
		To pH 4.5	To pH 8.3							
12/1/93	6.87	67.	<1.	210	<0.02	13	<2	<50	Negative	<10
3/1/94	6.9	47.	<1.	200	<0.02	15	<4	<50	Negative	<10
6/1/94	6.51	25.	<1.	170	<0.02	7.6	2	<7	Negative	<10
9/1/94	6.28	16.	<1.	170	<0.02	13	<2	<50	Negative	<10

DGS ID Ea55-16; DNREC ID 097287; MW2

Sample Date	pH	Alkalinity (mg/L)		TDS (mg/L)	Nitrite Nitrogen (mg/L)	Nitrate Nitrogen (mg/L)	BOD (mg/L)	COD (mg/L)	Chlorine Residual	Fecal Coliform (/100 ml)
		To pH 4.5	To pH 8.3							
12/1/93	7.67	100.	<1.	230	<0.02	10	<2	<50	Negative	<10
3/1/94	6.8	58.	<1.	220	<0.02	20	<4	<50	Negative	<10
6/1/94	7.16	73.	<1.	260	<0.02	10	2	<7	Negative	<10
9/1/94	7.36	83.	<1.	270	<0.02	10	<2	<50	Negative	<10

DGS ID Ea55-17; DNREC ID 097288; MW3

Sample Date	pH	Alkalinity (mg/L)		TDS (mg/L)	Nitrite Nitrogen (mg/L)	Nitrate Nitrogen (mg/L)	BOD (mg/L)	COD (mg/L)	Chlorine Residual	Fecal Coliform (/100 ml)
		To pH 4.5	To pH 8.3							
12/1/93	6.56	28.	<1.	140	<0.02	14	<2	<50	Negative	<10
3/1/94	6.56	21.	<1.	140	<0.02	13	<4	<50	Negative	<10
6/1/94	6.65	27.	<1.	150	<0.02	12	3	<7	Negative	<10
9/1/94	6.65	31.	<1.	140	<0.02	10	<2	<50	Negative	<10

DGS ID Ea55-18; DNREC ID 097289; MW4

Sample Date	pH	Alkalinity (mg/L)		TDS (mg/L)	Nitrite Nitrogen (mg/L)	Nitrate Nitrogen (mg/L)	BOD (mg/L)	COD (mg/L)	Chlorine Residual	Fecal Coliform (/100 ml)
		To pH 4.5	To pH 8.3							
12/1/93	6.24	30.	<1.	180	<0.02	14	<2	<50	Negative	<10
3/1/94	6.34	21.	<1.	180	<0.02	15	6	<50	Negative	<10
6/1/94	6.15	10.	<1.	190	<0.02	14	<2	<7	Negative	<10
9/1/94	6.01	11.	<1.	190	<0.02	12	2	<50	Negative	<10

DGS ID Ea55-19; DNREC ID 097290; MW5

Sample Date	pH	Alkalinity (mg/L)		TDS (mg/L)	Nitrite Nitrogen (mg/L)	Nitrate Nitrogen (mg/L)	BOD (mg/L)	COD (mg/L)	Chlorine Residual	Fecal Coliform (/100 ml)
		To pH 4.5	To pH 8.3							
12/1/93	6.67	50.	<1.	180	<0.02	13	2	<50	Negative	<10
3/1/94	6.77	34.	<1.	160	<0.02	13	6	<50	Negative	<10
6/1/94	6.34	12.	<1.	160	0.02	11	3	<7	Negative	<10
9/1/94	6.87	24.	<1.	190	<0.02	13	2	<50	Negative	<10

Table 4
Wells Recommended for use in the
Ground-Water Monitoring Network

DGS ID	DNREC ID	Location	Well Type	Water-shed	Depth Drilled (ft)	Depth Screened (ft)	Aquifer	
Ea44-02				DGS/USGS	Q	165.0	122-132	ptg
Ea45-04	100389	Nautical Cove	Public	Q	105.0	85-105	m	
Ea55-18	097289	Back Creek	Monitor	AA	46.0	15-30	cig	
Ea55-19	097290	Back Creek	Monitor	AA	21.0	5-20	cig	
Eb31-01				DGS/USGS	Q	207.7	93-104	m
Eb31-44	095413	Lea Eara Development	Public	Q	105.0	92-105	m	
Eb33-41	096190	Lea Eara Spray Facility	Monitor	Q	40.5	31-40	cig	
Eb33-42	096191	Lea Eara Spray Facility	Monitor	Q	30.5	19-29	cig	
Eb43-04	068945	Summit Pond	Public	Q	235.0	225-235	m	
Eb43-11	071125			DGS/USGS	Q	39.0	35-39	ml
Eb51-05	059989	Mt. Pleasant Sand & Gravel	Monitor	AA	32.0	15.4-25.4	ml	
Eb51-11	080899	Dickerson Farms	Public	AA	177.0	161-177	m	
Eb54-05	076163			DGS/USGS	S	50.0	38-45	ml
Eb55-10	098112	Emerson Farm	Public	Q	413.0	380-410	ptg	
Ec31-21	075421			DGS/USGS	Q	185.0	165-185	m
Ec43-08	057687			DGS/USGS	Q	96.0	88-96	ml
Ec51-16	082244	Asbury Chase	Public	R	180.0	80-95	ml	
Ec52-09	078973	Vandegrift Manor	Public	R	160.0	100-160	ml	
Ecs2-23	099469	Lester Farm	Public	R	534.0	482-532	ptg	
Ed21-20	076346			DGS/USGS	Q	230.0	214-230	m
Ed51-10	074236			DGS/USGS	Q	30.0	25-30	mg
Fa15-07	083639	Wheatland	Public	Z	210.0	190-210	m	
Fb12-06	059987	Mt. Pleasant Sand & Gravel	Monitor	AA	31.0	19.3-29.3	cig/ml	
Fb14-11	096841	Chestnut Grove	Public	S	443.0	410-433	ptg	
Fb22-10	080151			DGS/USGS	S	117.0	110-113	ml
Fb24-11	089852	Drawyer's Creek	Public	S	170.0	102-170	ml	
Fb25-07	069297	Burnis Pit	Monitor	S	50.5	40-50	mg	
Fb33-25	039676	Middletown	Public	S	846.0	505-846	ptg	
Fb51-11	047412			DGS/USGS	T	110.0	40-70	cig
Fb54-01		St. Andrews School	Public	T	785.0	655-675	ptg	
Fb54-04	056566	Appoquinimink	Monitor	T	39.0	34-39	cig	
Fb54-07	056562	Appoquinimink	Monitor	T	34.0	29-34	cig	
Fb54-08	056561	Appoquinimink	Monitor	T	29.0	24-29	cig	
Fc12-23	096300	Misty Vale	Public	R	170.0	140-170	et/ml	
Fc15-05	096840	Bayview	Public	R	180.0	128-178	ml	
Fc31-11		Cantwell	Public	T	168.0	98.7-163.4	mo	
Fc42-09	101196	M-O-T Spray Facility	Monitor	T	44.0	34-44	vt	
Fc42-13	097960	Appoquin Farms	Public	T	300.0	200-220	ml	
Fc42-24	101192	M-O-T Spray Facility	Monitor	T	35.0	25-35	vt	
Fc42-25	101189	M-O-T Spray Facility	Monitor	T	15.0	5-15	cig	
Fc51-27	099806	Stonefield	Public	T	812.0	660-692,713-733	ptg	
Gb12-04	056578	Appoquinimink	Monitor	T	14.0	9-14	cig	
Gb12-05	056579	Appoquinimink	Monitor	T	14.0	9-14	cig	
Gb13-03	056575	Appoquinimink	Monitor	T	29.0	24-29	cig	
Gb14-03	056560	Appoquinimink	Monitor	T	24.0	19-24	cig	
Gb24-07	010452	Townsend	Public	U	200.0	no screen	mg	
Gb31-06	098741	Springhaven	Public	Y	140.0	120-140	mg	
Gb52-03	070407	Vandyke Site	DGS/USGS	X	50.0	28-33	cig	
Gc14-02				DGS/USGS	U	100.0	13-16	cig
Gc42-01		Frederick Lodge MHP	Public	W	124.0	no screen	mg	
Gc52-12		Como Trailer Park	Public	W	unknown	unknown	mg	
Hc13-02		Smyrna Rest Stop	Public	W	340.0	175-210	mg	
Hc14-05	037285	DE Correctional Center	Public	W	220.0	unknown	mg	

Watershed Key:

- Q. Chesapeake and Delaware Canal
- R. Augustine Creek/Silver Run
- S. Drawyer Creek
- T. Appoquinimink River
- U. Blackbird Creek
- W. Smyrna River
- X. Cypress Branch
- Y. Sassafras River
- Z. Sandy Branch/Great Bohemia Creek
- AA. Back Creek

Aquifer Key:

- cig = Columbia
- mg = Rancocas
- vt = Vincentown
- cig/ml = Columbia/Mt. Laurel
- ml = Mt. Laurel
- mo = Monmouth
- et/ml = Englishtown/Mt. Laurel
- m = Magothy
- ptg = Potomac

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Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Delaware Correctional Center
DGS ID Gc54-03; DNREC ID 010497; LOCAL ID Well 1

Sample Date	pH (field)	Alkalinity (mg/L)	Chloride (mg/L)	NO ₃ (mg/L)	Fluoride (mg/L)	Iron (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)
2/16/77				<0.2		0.45	<.02	<.01	<.001
3/7/77						0.2	<.01	<.01	0.001
3/8/77						0.12	<.01	<.01	0.003
3/9/77						0.12	<.01	<.01	0.0015
2/22/78	7.8	147	6	0	0.22	0.12	<.01	<.01	<.001
2/12/79	8	145	1	0.1	0.29	0.05			
1/9/80	7.7	150		0.2		0.1			
1/14/81	7.8	155	12	0	0.59	0.1	<.01	<.01	<.001
1/7/83	7.9	156	3	0.1	0.6	0.75			
1/4/84	7.8	151	0	0	0.65	0.1	0.005	<.01	<.001
1/23/85	7.8	145	2	<0.4	0.6	0.2			
1/27/86	7.6	156	7	<0.4	0.64	0.15			
9/8/88	7.8	156	8	<0.4	0.64	0.25			
9/8/89	7.9	150	4	<0.4	0.63	0.03	<.010	<0.3	<.001
3/14/90	7.7	154	9	<0.4	0.64	0.22			

Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	TDS (mg/L)
<.01	0.12	<.001	<.005	<.01		
<.01	0.015	<.001	<.005	<.01		
<.01	0.01	<.001	<.005	<.01		
<.01	0.01	<.001	<.005	<.01		
<.001	0.006	<.001	<.002	<.005		
					8	
<.01	<.01	<.001	<.005	<.01	8	194
					8	182
<.01	<.01	<.001	<.002	<.01	8	165
					8	216
					10	151
					7	165
<.005	<.011	<.0005	<.005	<.025	5	174
					12	169

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Delaware Correctional Center
DGS ID Hc14-03; DNREC ID 010496; LOCAL ID Well 2

Sample Date	pH (field)	Alkalinity (mg/L)	Chloride (mg/L)	NO ₃ (mg/L)	Fluoride (mg/L)	Iron (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)
2/16/77				<.02	0.23		<.02	<.01	0.004
2/22/78	8	150	8	0	0.68	0.26	<.01	<.01	<.001
2/12/79	7.8	146	3	0	0.42	0.35			
1/9/80	7.8	150		0.2		0.1			
1/14/81	7.7	152	8	0	0.57	0.15	<.01	<.01	<.001
1/7/83	7.9	149	6	0	0.7	0.2			
1/4/84	7.8	157	0	0	0.72	0.15	0.005	<.01	<.001
1/23/85	7.8	146	2	<.4	0.62	0.2			
1/27/86	7.8	162	4	<.4	0.63	0.15			
9/8/88	7.8	159	6	<.4	0.7	0.25			
9/8/89	8.2	155	8	<.4	0.7	0.06	<.010	<.03	<.001
3/14/90	7.8	157	7	<.4	0.69	0.28			

Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	TDS (mg/L)
<.01	<.01	<.001	<.005	<.01		
<.001	0.004	<.001	<.002	<.005		
					8	
					8	
<.01	0.01	<.001	<.005	<.01	8	
					9	181
<.01	0.01	<.001	<.002	<.01	9	165
					9	60
					9	162
					8	166
<.005	0.026	<.0005	<.005	<.025	5	155
					11	165

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Townsend Water Department
DGS ID Gb24-07; DNREC ID 010452; LOCAL ID Well 1

Sample Date	pH (field)	Alkalinity (mg/L)	Chloride (mg/L)	NO ₃ (mg/L)	Fluoride (mg/L)	Iron (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)
11/28/77	7.8	125	8	0	0.15	0.35			
11/14/79	7.4	127		0	0.12	0.3			
11/18/80	7.8	130	10	0	0.22	0.05			
11/4/81	7.8	65	3	0	0.16	0.2			
11/26/82	7.8	128	3	0.1	0.17	0.15	<.02	<0.1	<.001
11/14/83	7.7	135		0	0.15	0.35			
12/3/85	7.4	138	3	<0.4	0.18	0.1	<.01	<0.1	<.001
3/31/87	7	124	6	<0.4	0.17	0.2			
3/15/88	7.7	119	6	<0.4	<0.2	0.2	<.01	<0.1	<.002
6/6/89	8	115	1	<0.4	<0.2	0.45			
4/24/90	7.7	122	10	<0.4	<0.2	0.13			

Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	TDS (mg/L)
					4	
					4	
					2	144
<.01	<.01	<.001	<.001	<.01	4	179
					3	189
<.01	<.01	<.001	<.002	<.01	4	187
					3	179
<.01	<.01	<.001	<.005	<.01	3	153
					4	144
					5	134

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Townsend Water Department
DGS ID Gb24-05; DNREC ID 030148; LOCAL ID Well 2

Sample Date	pH (field)	Alkalinity (mg/L)	Chloride (mg/L)	NO ₃ (mg/L)	Fluoride (mg/L)	Iron (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)
11/28/77	7.9	120	7	0	0.22	0.43			
11/14/79	7.5	118		0		0.45			
1/23/80									
1/25/80	7.8	125							
1/28/80	7.2	122							
11/18/80	7.9	127	8	0	0.19	0.1			
11/4/81	7.8	60	1	0	0.18	0.3			
11/26/82	7.9	119	0	0	0.16	0.45	<.02	<0.1	<.001
11/14/83	7.7	122	0	0	0.14	0.35			
12/3/85	7.5	132	4	<0.4	0.17	0.1	<.01	<0.1	<.001
3/31/87	7	124	6	<0.4	0.19	0			
3/15/88	7.7	135	3	<0.4	<0.2	0.2	<.01	<0.1	<.002
6/6/89	7.8	112	1	<0.4	<0.2	0.45			
4/24/90	7.8	122	8	<0.4	<0.2	0.09			

Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)	Sodium (mg/L)	TDS (mg/L)
					4	
0.003						
0.003					4	
0.003						
					4	140
					2	121
<.01	<.01	<.001	<.001	<.01	4	160
					3	177
<.01	<.01	<.001	<.002	<.01	4	178
					3	167
<.01	<.01	<.001	<.005	<.01	3	159
					4	158
					4	129

Southern New Castle County
Ground-Water Monitoring Network

Lea Eara Farms Spray Irrigation Facility
DGS ID Eb33-40; DNREC ID 096189; LOCAL ID MW1

Sample Date	Specific Conduct. (µmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	254	16.8	150	0.58	<.05	0.21	8.9	4	8.19
5/27/94	230	14.0	130	1.1	<1	1.1	5.55	<1.0	8.30
8/23/94	394	15.9	220	0.42	<.05	0.15	8.4	7	7.05
11/28/94	234	13.4	150	0.22	<.05	0.26	5.86	3	7.04
2/14/95	321	11.4	260	0.24	<.05	0.16	4.92	4	6.40
5/23/95	260	13.1	170	0.3	<.05	0.12	5.43	4	6.47

DGS ID Eb33-41; DNREC ID 096190; LOCAL ID MW2

Sample Date	Specific Conduct. (µmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	154	15.3	130	6.09	<.05	<.10	6.14	14	6.76
5/27/94	180	14.0	81	6.5	<1	1.9	6.61	17	6.30
8/23/94	157	13.7	110	5.74	<.05	<.10	5.29	23	6.21
11/28/94	154	12.3	120	4.76	<.05	<.10	16.3	18	6.43
2/14/95	170	11.2	150	4.34	<.05	<.10	6.38	13	7.23
5/23/95	131	14.3	110	4.46	<.05	0.12	5.7	16	5.82

DGS ID Eb33-42; DNREC ID 096191; LOCAL ID MW3

Sample Date	Specific Conduct. (µmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	123	14.0	80	1.64	<.05	0.11	3.72	6	6.98
5/27/94	110	15.0	96	2.5	<1	2.2	3.88	9	6.50
8/23/94	115	13.8	76	1.49	<.05	0.12	3.32	27	5.88
11/28/94	82.6	13.5	57	0.59	<.05	0.22	5.68	4	6.08
2/14/95	109	11.5	90	0.52	<.05	0.18	3.99	4	5.89
5/23/95	102	14.6	78	0.47	<.05	0.21	3.46	4	5.42

DGS ID Eb33-43; DNREC ID 096192; LOCAL ID MW4

Sample Date	Specific Conduct. (µmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph., (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	388	13.8	240	0.25	<.05	0.12	7.36	2	7.44
5/27/94	330	15.0	190	1.1	<1	2.3	4.14	2.5	7.00
8/23/94	244	14.5	150	0.054	<.05	0.11	1.77	1	6.09
11/28/94	365	13.3	210	0.23	<.05	0.16	2.53	3	6.99
2/14/95	217	11.8	160	0.2	<.05	0.12	2.36	6	6.40
5/23/95	195	13.9	130	0.2	<.05	0.13	1.78	4	6.34

Southern New Castle County
Ground-Water Monitoring Network

Lea Eara Farms Spray Irrigation Facility
DGS ID Eb33-44; DNREC ID 096193; LOCAL ID MW5

Sample Date	Specific Conduct. (μmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	411	15.1	280	1.09	<.05	0.19	2.63	3	6.88
5/27/94	430	13.0	260	2	<1	2.1	2.84	<1	7.20
8/23/94	532	15.3	300	1.42	<.05	0.1	2.74	5	6.41
11/28/94	553	14.8	380	2.76	<.05	0.15	3.06	3	6.83
2/14/95	501	12.5	310	1.34	<.05	0.15	3.17	3	6.62
5/23/95	424	13.5	290	3.06	<.05	0.19	2.68	5	6.57

DGS ID Eb33-45; DNREC ID 096194; LOCAL ID MW6

Sample Date	Specific Conduct. (μmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	492	17.0	320	4.37	<.05	<.1	11.4	14	7.51
5/27/94	530	16.0	300	4.4	<1	17	9.32	25	6.90
8/23/94	496	13.6	280	4.04	<.05	<.1	6.12	9	6.96
11/28/94	500	14.1	320	3.29	<.05	<.1	14.4	10	5.03
2/14/95	451	11.4	310	2.93	<.05	<.1	4.58	6	6.55
5/23/95	379	14.1	250	2.16	<.05	0.3	3.94	10	6.58

DGS ID Eb33-46; DNREC ID 096195; LOCAL ID MW7

Sample Date	Specific Conduct. (μmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	270	17.8	190	0.89	<.05	0.1	6.31	3	6.62
5/27/94	270	15.0	170	1.6	<1	1.7	6.07	2	6.90
8/23/94	294	15.9	160	0.64	<.05	<.1	5.48	5	6.52
11/28/94	312	14.9	190	1.06	<.05	0.27	5.63	5	6.54
2/14/95	306	12.3	220	0.98	<.05	0.21	6.79	4	5.25
5/23/95	280	16.8	190	0.96	<.05	0.13	5.81	5	5.55

DGS ID Eb33-47; DNREC ID 096196; LOCAL ID MW8

Sample Date	Specific Conduct. (μmhos/cm)	Temp. (°C)	TDS (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Total Phosph. (mg/L)	Sodium (mg/L)	Chloride (mg/L)	pH
4/28/94	234	14.1	180	3.32	<.05	0.1	9.79	3	6.37
5/27/94	220	15.0	130	3.6	<1	1.5	9.68	3.5	7.00
8/23/94	221	14.8	150	4.26	<.05	<.1	8.69	10	5.80
11/28/94	249	14.6	160	4.35	<.05	0.15	11.7	5	5.46
2/14/95	277	11.8	200	4.03	<.05	<.1	14.2	6	5.28
5/23/95	260	19.3	180	4.67	<.05	0.12	15.1	4	5.38

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-12; DNREC ID 010453; LOCAL ID Well 4

Sample Date	Temp (°C)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	pH (lab)	pH (field)	Nitrogen, Ammonia (mg/L)	NO_3 (mg/L)	N, Ammonia Organic (mg/L)	Field Alkalinity (mg/L)	Alkalinity (mg/L)
1/15/62		226*	7.5		0.2				
1/16/62		226*			0.2				
1/16/62		226		7.5				109	
9/8/69									
8/17/70									
6/14/77			6.7			0			121
7/27/78			7.8			0			93
9/20/79			7.5			0			109
9/2/80			7.8			0			105
9/14/81			7.5			0			
12/30/81			7.7			0.1			
8/16/82			7.3			0			119
6/14/83									
8/9/83			7.4			0			106
6/19/84			7.5			0			110
6/26/85			7.4			<.4			111
3/26/86						0			
6/23/86			7.3			<.4			124
6/2/87			7.5			<.4			116
6/1/88			7.4			<.4			105
6/13/89			7.5			<.4			98
6/18/90			7.3			<.4			48
9/5/91		206		7.22	0.2	<.02	0.37		

Sample Date	Dissolved Oxygen (mg/L)	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
1/15/62		133		12	17	1.4	4.7	22	6
1/16/62		133	0.2	12	17	1.4	4.7	22	6
1/16/62				12	17	1.4	4.7	22	6
9/8/69						10			
8/17/70				25		<10			
6/14/77			0.22			5			
7/27/78			0.32			5			
9/20/79			0.18			0			
9/2/80			0.21			5		23	
9/14/81			0.23			6		27	

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown

Sample Date	Dissolved Oxygen (mg/L)	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
12/30/81								20	
8/16/82			0.23			2		23	
6/14/83									
8/9/83			0.24			7		30	
6/19/84			0.28			0		22	
6/26/85			0.21			2		21	
3/26/86			0.25			5		22	
6/23/86			0.25			6		23	
6/2/87			0.24			2		17	
6/1/88			0.23			3		23	
6/13/89			0.2			1		17	
6/18/90			0.31			7		18	
9/5/91	0.9	142.7	0.2	9	18	0.9	4.1	22	7

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-12; DNREC ID 010453; LOCAL ID Well 4 (continued)

Sample Date	Iron (mg/L)	Aluminum (µg/L)	Phosphorous (mg/L)	Manganese (µg/L)	Silica (mg/L)	Organic Carbon (mg/L)	Incremental Alkalinity (mg/L)	Arsenic (µg/L)	Barium (µg/L)
6/18/90	0.23								
9/5/91	0.75		0.05	10	7.8	0.6			

Sample Date	Cadmium (µg/L)	Chromium (µg/L)	Lead (µg/L)	Silver (µg/L)	Selenium (µg/L)	TDS (mg/L)
1/15/62						
1/16/62						140
1/16/62						
9/8/69						
8/17/70						
6/14/77						
7/27/78						
9/20/79						
9/2/80						139
9/14/81						119
12/30/81						117
8/16/82						140
6/14/83	<.001	<.01	0.005	<.001	<.004	
8/9/83						106
6/19/84	0.006	<.01	<.01	<.01	<.002	105
6/26/85	<.001	<.01	<.01	<.01	<.002	133
3/26/86						137
6/23/86						126
6/2/87						134
6/1/88	<.002	<.01	<.01	<.01	<.005	
6/13/89						182
6/18/90						143
9/5/91						

* Units are ppm.

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-24; DNREC ID 039685; LOCAL ID Well 9

Sample Date	Temp (°C)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	pH (lab)	pH (field)	Nitrogen, Ammonia (mg/L)	NO_3 (mg/L)	N, Ammonia Organic (mg/L)	Field Alkalinity (mg/L)	Alkalinity (mg/L)
7/27/78			7.1			0			77
8/3/78									
9/20/79			7			0			80
3/26/80			8.1			0			82
3/26/80			7.8			0			110
3/21/86			7.4			<0.4			90
6/23/86			7.1			<0.4			100
8/6/86			7			<0.4			82
6/2/87			7.2			<0.4			90
6/1/88			7			<0.4			80
6/13/89			7.1			<0.4			70
1/31/90	15.6	174		6.97	0.14	<.10	0.5		
6/18/90			7			<0.4			37
8/30/91	17.4	180		6.94	0.18	<.02	0.25		

Sample Date	Dissolved Oxygen (mg/L)	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
7/27/78			0.19			5			
8/3/78									
9/20/79			0.12			0			
3/26/80			0.21			5		19	
3/26/80			0.25			5		22	
3/21/86			<0.1			9		12	
6/23/86			0.18			6		15	
8/6/86			0.18			6		8	
6/2/87			0.16			2		10	
6/1/88			<0.2			4		14	
6/13/89			<0.2			1		10	
1/31/90	0.5	107	0.2	7	15	1.2	3.4	14	5.5
6/18/90			0.2			5		13	
8/30/91	0.6	108.5	0.2	7.3	14	1	3.3	14	6.1

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-24; DNREC ID 039685; LOCAL ID Well 9 (continued)

Sample Date	Iron (mg/L)	Aluminum (µg/L)	Phosphorous (mg/L)	Manganese (µg/L)	Silica (mg/L)	Organic Carbon (mg/L)	Incremental Alkalinity (mg/L)	Arsenic (µg/L)	Barium (µg/L)
7/27/78	1								
8/3/78	7.5								
9/20/79	2.3								
3/26/80	3								
3/26/80	2.8								
3/21/86	0.55							<.01	0.2
6/23/86	3								
8/6/86	1.3								
6/2/87	0.85								
6/1/88	1.9								
6/13/89	0.27								
1/31/90	2.4	<10	0.33	50	8.5	0.7	88	<1.0	0.5
6/18/90	0.09								
8/30/91	2.4	<10	0.02	50	7.8	1.2	89		

Sample Date	Cadmium (µg/L)	Chromium (µg/L)	Silver (µg/L)	Selenium (µg/L)	Mercury (µg/L)
7/27/78					
8/3/78					
9/20/79					
3/26/80					
3/26/80					
3/21/86	<.001	<.01	<.01	<.002	<.001
6/23/86					
8/6/86					
6/2/87					
6/1/88					
6/13/89					
1/31/90	<1.00	<5.00	<1.0	<1.0	<.10
6/18/90					
8/30/91					

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-25; DNREC ID 039676; LOCAL ID Well 8

Sample Date	Temp (°C)	Specific Conductivity ($\mu\text{S}/\text{cm}$)	pH (lab)	pH (field)	Nitrogen, Ammonia (mg/L)	NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Field Alkalinity (mg/L)	Alkalinity (mg/L)
7/27/78			7.5			0.4			78
8/3/78									
9/20/79			2.4			0			93
3/26/80			7.9			0			84
9/2/80			7.5			0			83
9/14/81			7.4			0			44
12/30/81			7.7			0			42
8/16/82			7.4			0.1			98
10/14/82			7.7			0			42
8/9/83			7.5			0			86
6/19/84			7.5			0			91
6/26/85			7.3			<.4			86
6/23/86			7.3			<.4			94
6/2/87			7.3			<.4			90
6/1/88			7.4			<.4			82
6/13/89			7.4			<.4			80
1/31/90	18.3	177		7.18	0.1	<.1	<.2		
1/31/90									
6/18/90			7.3			<.4			57
9/3/91	19.5	180		7.21	0.08	<.02	0.2		

Sample Date	Dissolved Oxygen (mg/L)	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
7/27/78			0.22			5			
8/3/78									
9/20/79			0.25			2			
3/26/80			0.23			5		40	
9/2/80			0.18			6		41	
9/14/81			0.19			9		37	
12/30/81								36	
8/16/82			0.21			1		41	
10/14/82								36	
8/9/83			0.21			6		55	
6/19/84			0.26			0		38	
6/26/85			0.18			4		37	
6/23/86			0.22			5		43	
6/2/87			0.22			2		30	

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-25; DNREC ID 039676; LOCAL ID Well 8 (continued)

Sample Date	Dissolved Oxygen (mg/L)	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
6/1/88			0.21			5		41	
6/13/89			<.2			1		34	
1/31/90	1.2	99	0.2	8	2.1	1.3	0.41	39	2.2
1/31/90									
6/18/90			0.22			5		33	
9/3/91	0.8	101.2	0.2	8.7	2.1	1.8	0.4	38	2.7

Sample Date	Iron (mg/L)	Aluminum (μg/L)	Phosphorous (mg/L)	Manganese (μg/L)	Silica (mg/L)	Organic Carbon (mg/L)	Arsenic (μg/L)	Barium (μg/L)	Cadmium (μg/L)
7/27/78	0.5								
8/3/78	0.85								
9/20/79	2.3								
3/26/80	2.6								
9/2/80	0.93								
9/14/81	0.8								
12/30/81	0.75								
8/16/82	0.65								
10/14/82	0.75								
8/9/83	0.5								
6/19/84	0.6					<.01	0.1	<.001	
6/26/85	0.75					<.01	<.1	0.001	
6/23/86	1.1								
6/2/87	0.85								
6/1/88	0.85					<.01	0.1	<.002	
6/13/89	0.55								
1/31/90	0.95	<10	0.13	21	9.1	0.7	<1	15	<1
1/31/90	0.9	10							
6/18/90	0.52								
9/3/91	0.95	<10	0.12	30	8.6	0.6			

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb33-25; DNREC ID 039676; LOCAL ID Well 8 (continued)

Sample Date	Chromium ($\mu\text{g/L}$)	Lead ($\mu\text{g/L}$)	Silver ($\mu\text{g/L}$)	Selenium ($\mu\text{g/L}$)
7/27/78				
8/3/78				
9/20/79				
3/26/80				
9/2/80				
9/14/81				
12/30/81				
8/16/82				
10/14/82				
8/9/83				
6/19/84	<.01	0.01	<.01	<.002
6/26/85	<.01	<.01	<.01	<.002
6/23/86				
6/2/87				
6/1/88	<.01	<.01	<.01	<.005
6/13/89				
1/31/90	<5	<10	<1	<1
1/31/90				
6/18/90				
9/3/91				

DGS ID Fb42-03; DNREC ID 010455; LOCAL ID Well 5

Sample Date	Temp ($^{\circ}\text{C}$)	Specific Conductivity ($\mu\text{S/cm}$)	pH (lab)	pH (field)	Nitrogen, Ammonia (mg/L)	NO_3 (mg/L)	Field Alkalinity (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
10/17/61	14.4	238*				0			
10/17/61	14.5	238		7.5			112		
9/8/69								100	
6/14/77			7			0		130	
7/27/78			7.8			0		106	
9/14/81			8.2			0		52	
6/14/83									
8/9/83			7.8			0		113	
6/19/84			7.5			0		96	
6/19/84			7.7			0		116	
6/26/85			7.8			<.04		112	
6/2/87			8.2		<.4			120	
1/10/90									
9/5/91	16.1	239		7.64	0.04	<.02			0.9

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb42-03; DNREC ID 010455; LOCAL ID Well 5 (continued)

Sample Date	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (mg/L)
10/17/61		0.2	11	42	2.6	3.4	2.9	3.2	0.21
10/17/61		0.2	11	42	2.6	3.4	2.9	3.2	
9/8/69			25	10	10				0.2
6/14/77		0.19			5				0.25
7/27/78		0.22			9				0.25
9/14/81		0.2			12		10		1
6/14/83									
8/9/83		0.22			7		3		0.2
6/19/84		0.26			0		24		0.65
6/19/84		0.26			0		3		0.45
6/26/85		0.18			3		3		0.1
6/2/87		0.19			3		2		0.2
1/10/90									0.1
9/5/91	114.6	0.2	9.6	38	2.2	3.5	3.1	3.8	0.25

Sample Date	Aluminum ($\mu\text{g/L}$)	Phosphorous (mg/L)	Silica (mg/L)	Organic Carbon (mg/L)	Arsenic ($\mu\text{g/L}$)	Barium ($\mu\text{g/L}$)	Cadmium ($\mu\text{g/L}$)	Chromium ($\mu\text{g/L}$)	Lead ($\mu\text{g/L}$)
10/17/61			19						
10/17/61			19						
9/8/69									
6/14/77									
7/27/78									
9/14/81									
6/14/83				<.02	0.6	<.001	<.01	0.001	
8/9/83				<.01	0.6	<.001	<.01	0.01	
6/19/84				<.01	0.6	<.001	<.01	0.01	
6/19/84									
6/26/85				<.01	0.5	<.001	<.01	<.01	
6/2/87									
1/10/90									
9/5/91	10	0.01	17	0.4					

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb42-03; DNREC ID 010455; LOCAL ID Well 5 (continued)

Sample Date	Silver (µg/L)	Selenium (µg/L)	TDS (mg/L)	Mercury (µg/L)
10/17/61				
10/17/61			156	
9/8/69				
6/14/77				
7/27/78				
9/14/81				
6/14/83	0.003	<.004		<.001
8/9/83	<.003	<.004		0.001
6/19/84	<.01	<.002	93	<.001
6/19/84			93	
6/26/85	<.01	<.002	136	<.001
6/2/87				
1/10/90				
9/5/91				

* Units are ppm.

DGS ID Fb43-03; DNREC ID 010454; LOCAL ID Well 6

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (lab)	pH (field)	Nitrogen, Ammonia (mg/L)	NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Field Alkalinity (mg/L)	Alkalinity (mg/L)
10/11/68				7.1		0.1			128
10/11/68				7.6		0			118
9/8/69									100
6/14/77			7.2			0			132
7/27/78			7.7			0			108
9/20/79			7.7			0.1			112
5/4/81			7.3			0			116
9/14/81			7.8			0			
6/14/83									
8/9/83			7.6			0.2			110
4/14/86			7.7			<.4			116
6/23/86			7.6			<.4			120
6/2/87			7.8			<.4			124
1/10/90									
1/30/90									
2/8/90									
6/18/90			7.7			<.4			
9/5/91	15.8	235	7.54		0.17	<.02	0.3		112

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb43-03; DNREC ID 010454; LOCAL ID Well 6 (continued)

Sample Date	Dissolved Oxygen (mg/L)	Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)
10/11/68						6			
10/11/68						4			
9/8/69			Low			10			
6/14/77			0.24			5			
7/27/78			0.34			5			
9/20/79			0.23			2			
5/4/81			0.31			6		40	
9/14/81			0.29			5		44	
6/14/83									
8/9/83			0.28			0		57	
4/14/86			0.33			5		37	
6/23/86			0.32			4		44	
6/2/87			0.28			2		31	
1/10/90									
1/30/90									
2/8/90									
6/18/90			0.31			7		35	
9/5/91	0.7	117.1	0.3	9.6	8.4	0.8	2	40	5

Sample Date	Iron (mg/L)	Aluminum (μ g/L)	Phosphorous (mg/L)	Manganese (μ g/L)	Silica (mg/L)	Organic Carbon (mg/L)	Incremental Alkalinity (mg/L)	Arsenic (μ g/L)	Barium (μ g/L)
10/11/68	0.13			50					
10/11/68	0.2			50					
9/8/69	0.1								
6/14/77	0.25								
7/27/78	0.1								
9/20/79	0.15								
5/4/81	0.8								
9/14/81	0.55						57		
6/14/83								<.02	0.1
8/9/83	0.3								
4/14/86	0.85								
6/23/86	0.35								
6/2/87	0.3								
1/10/90	0.08								
1/30/90	0.13								
2/8/90	0.13								
6/18/90	0.16								
9/5/91	0.36	<10	0.11	<10	7.6	0.4	96		

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Town of Middletown
DGS ID Fb43-03; DNREC ID 010454; LOCAL ID Well 6 (continued)

Sample Date	Cadmium ($\mu\text{g}/\text{L}$)	Chromium ($\mu\text{g}/\text{L}$)	Lead ($\mu\text{g}/\text{L}$)	Silver ($\mu\text{g}/\text{L}$)	Selenium ($\mu\text{g}/\text{L}$)	TDS (mg/L)
10/11/68						
10/11/68						
9/8/69						
6/14/77						
7/27/78						
9/20/79						
5/4/81						150
9/14/81						114
6/14/83	<.001	<.01	0.001	<.001	<.004	
8/9/83						112
4/14/86						135
6/23/86						140
6/2/87						139
1/10/90						
1/30/90						
2/8/90						
6/18/90						
9/5/91						148

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-21; DNREC ID 101195; LOCAL ID MW1A

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	140	5.2	<1	<1	<0.05	1	n/a	<0.05
TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
81	0.06		4	<0.003	<0.004	<0.008	0.724	
Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.024	<0.011	0.028	<0.001	5.45	0.0007	0.001	0.01	8.82
Nitrate (ppm)	Phosphorus (ppm)							
9.1	<0.02							

DGS ID Fc42-22; DNREC ID 101194; LOCAL ID MW2

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	310	3.8	<1	<1	<0.05	<1	n/a	<0.05
TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
220	<0.03		52	<0.003	<0.004	0.36	80	
Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.024	0.03	0.244	0.114	15.4	<0.0002	<0.001	<0.01	13.4
Nitrate (ppm)	Phosphorus (ppm)							
21	0.62							

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-11; DNREC ID 090403; LOCAL ID MW3

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	380	7.42	0.08	0.87	0.79	130	18.3	<0.01
5/23/95	320	7.7	<1	<1	<0.05	180	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
198	23.5	<20	1.5	<0.1	<0.02	<0.01	0.5	<0.05
250	<0.03		1.8	0.004	<0.004	<0.008	1.13	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01	<0.2	<0.05						
0.04	<0.011	0.033	0.002	14.9	<0.0002	<0.001	<0.01	8.22

Nitrate (ppm)	Phosphorus (ppm)
<0.5	2.2

DGS ID Fc42-15; DNREC ID 090407; LOCAL ID MW4

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	170	5.52	0.36	1.81	1.45	80	8.08	0.03
5/23/95	160	4.30	<1	<1	<0.05	<1.00	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
96	6.6	<20	17	<0.1	<0.01	0.068	119	0.884
140	<0.03		9.80	0.007	<0.004	0.012	2.35	

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-15; DNREC ID 090407; LOCAL ID MW4 (*continued*)

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
0.076	<0.2	0.326						
0.03	<0.011	0.066	0.001	7.76	<0.0002	<0.001	<0.01	6.26

Nitrate (ppm)	Phosphorus (ppm)
16	<0.02

DGS ID Fc43-02; DNREC ID 090408; LOCAL ID MW5

Sample Date	Specific Conductivity (μ mhos/cm)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/ Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	240	5.63	0.61	1.27	0.66	70	7.02	3.38
5/23/95	150	4.00	<1	<1	<0.05	<1	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
94	13.2	<20	31	<0.1	<0.01	0.052	13.7	0.239
110	<0.03		24	0.007	<0.004	<0.008	0.076	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
0.043	<0.2	0.703						
<0.024	<0.011	0.079	<0.001	2.77	<0.0002	<0.001	<0.01	5.23

Nitrate (ppm)	Phosphorus (ppm)
9.4	<0.02

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-23; DNREC ID 101193; LOCAL ID MW6

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	190	4.50	<1	<1	<0.05	<1	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
180	<0.03		23	<0.003	<0.004	0.015	2.23	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.024	0.03	0.08	0.001	10.2	<0.0002	<0.001	0.02	6.03

Nitrate (ppm)	Phosphorus (ppm)
18	<0.02

DGS ID Fc32-08; DNREC ID 090409; LOCAL ID MW7

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	190	6.39	0.07	1.89	1.82	75	2.14	0.89
5/23/95	170	5.40	<1	<1	<0.05	6.5	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
106	3.43	<20	17	<0.1	<0.01	0.043	39.4	0.474
17	<0.03		25	0.006	<0.004	0.025	3.89	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
0.034	<0.2	0.184						
<0.024	<0.011	0.032	0.001	8.12	<0.0002	<0.001	<0.01	4.92

Nitrate (ppm)	Phosphorus (ppm)
14	<0.02

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-09; DNREC ID 101196; Local ID MW8

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	180	4.50	<1.00	<1.00	<0.05	<1.00	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
160	<0.03		23	0.012	<0.004	1.24	59.3	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
0.04	0.04	0.136	0.018	10.5	<0.0002	<0.001	<0.01	8.26

Nitrate (ppm)	Phosphorus (ppm)
18	0.63

DGS ID Fc32-09; DNREC ID 090410; Local ID MW9

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	300	7.59	0.24	1.26	1.02	110	2.48	0.04
5/23/95	170	7.70	<1	<1	<0.05	108	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
156	<1	<20	5	<0.1	<0.01	<0.02	11.3	0.113
130	0.08		34	<0.003	<0.004	0.022	2.73	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
0.018	<0.2	0.139						
<0.024	<0.011	0.003	0.002	2.22	<0.0002	<0.001	<0.01	7.98

Nitrate (ppm)	Phosphorus (ppm)
<0.5	0.43

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc32-10; DNREC ID 090622; LOCAL ID MW10

Sample Date	Specific Conductivity ($\mu\text{mhos}/\text{cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	130	6.18	0.17	1.36	1.19	135	2.64	0.02
5/23/95	100	5.10	<1	<1	<0.05	<1	7.80	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
80	2.38	<20	16	<0.1	<0.01	<0.02	0.7	0.156
71	0.05		24	<0.003	<0.004	0.013	3.56	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01	<0.2	0.073						
<0.024	<0.011	0.026	<0.001	8.23	<0.0002	<0.001	<0.01	5.56

Nitrate (ppm)	Phosphorus (ppm)
7.8	0.02

DGS ID Fc42-12; DNREC ID 090623; LOCAL ID MW11

Sample Date	Specific Conductivity ($\mu\text{mhos}/\text{cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	220	5.82	<.01	1.34	1.34	90	10.4	0.04
5/23/95	140	4.80	<1	<1	<0.05	1	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
142	2.11	<20	23	<0.1	<0.01	0.028	0.9	0.106
99	0.05		20	<0.003	<0.004	0.01	0.59	

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-12; DNREC ID 090623; LOCAL ID MW11 (*continued*)

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01	<0.2	0.077						
<0.024	<0.011	0.007	<0.001	9.78	0.0003	<0.001	<0.01	3.56

Nitrate (ppm)	Phosphorus (ppm)
11	0.07

DGS ID Fc42-25; DNREC ID 101189; LOCAL ID MW12

Sample Date	Specific Conductivity (μ mhos/cm)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	140	5.40	<1	<1	<0.05	5	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
99	0.04		24	<0.003	<0.004	<0.008	0.29	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.024	<0.011	0.01	<0.001	10	<0.0002	<0.001	<0.01	3.93

Nitrate (ppm)	Phosphorus (ppm)
8.2	<0.02

DGS ID Fc42-26; DNREC ID 101190; LOCAL ID MW13

Sample Date	Specific Conductivity (μ mhos/cm)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	240	6.30	<1	<1	<0.05	36	n/a	<0.05

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-26; DNREC ID 101190; LOCAL ID MW13 (continued)

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
210	<0.03		36	<0.003	<0.004	0.301	54.40	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.024	<0.011	0.05	0.002	11.4	0.0003	<0.001	<0.01	5.43

Nitrate (ppm)	Phosphorus (ppm)
17	0.33

DGS ID Fc32-12; DNREC ID 101191; LOCAL ID MW14

Sample Date	Specific Conductivity (μ mhos/cm)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/ Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	95	5.1	<1	<1	<0.05	5	n/a	<0.05

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
110	<0.03		10	<0.003	<0.004	<0.008	0.41	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.024	0.02	0.04	<0.001	2.52	<0.0002	<0.001	<0.01	9.56

Nitrate (ppm)	Phosphorus (ppm)
8.8	<0.02

DGS ID Fc42-24; DNREC ID 101192; LOCAL ID MW15

Sample Date	Specific Conductivity (μ mhos/cm)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/ Nitrite (ppm)	Nitrogen, Nitrite (ppm)
5/23/95	240	4.70	<1	1.50	1.50	<1	n/a	<0.05

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-24; DNREC ID 101192; LOCAL ID MW15 (continued)

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
140	<0.03		24	0.07	0.01	17.5	1140	

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
0.99	0.3	1.59	0.23	89.5	<0.0004	<0.001	0.02	7.39

Nitrate (ppm)	Phosphorus (ppm)
16	1.8

DGS ID Fc42-10; DNREC ID 090406; LOCAL ID MW1

Sample Date	Specific Conductivity (μ mhos/cm)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/ Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	150	6.44	0.25	3.68	3.43	95	6.75	0.09

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
80	5.81	<20	9	<0.1	<0.01	<0.02	6.2	0.2

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01	<0.2	0.052						

Nitrate (ppm)	Phosphorus (ppm)

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc42-16; LOCAL ID EW20

Sample Date	Specific Conductivity ($\mu\text{mhos}/\text{cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	380	7.01	0.78	2.09	1.31	30	0.82	<.01

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
217	20.2	<1	4	<1	<0.05	<0.02	0.5	<0.05

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01		<0.1						

Nitrate (ppm)	Phosphorus (ppm)

DGS ID Fc43-03; LOCAL ID EW34

Sample Date	Specific Conductivity ($\mu\text{mhos}/\text{cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	360	6.78	1.03	1.73	0.7	29	1.2	<0.01

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
222	25.9	<1	9.5	<1	<0.05	<0.02	1	<0.05

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01		0.134						

Nitrate (ppm)	Phosphorus (ppm)

Southern New Castle County
Ground-Water Monitoring Network

M-O-T Treatment Facility
DGS ID Fc32-11; LOCAL ID EW42

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	400	6.28	0.62	2.24	1.62	7	0.82	0.14

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
254	5.55	52	23	<1.0	<0.05	<0.02	<.2	0.182

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01		<0.1						

Nitrate (ppm)	Phosphorus (ppm)

DGS ID Fc32-07; DNREC ID 071852; LOCL ID EW43

Sample Date	Specific Conductivity ($\mu\text{mhos/cm}$)	pH	Ammonia (ppm)	TKN (ppm)	Nitrogen Organic (ppm)	Alkalinity (ppm)	Nitrate/Nitrite (ppm)	Nitrogen, Nitrite (ppm)
4/18/92	250	7.12	0.44	1.62	1.18	25	0.82	<0.01

TDS (ppm)	Sulfate (ppm)	Coliform per 100 ml	Chloride (ppm)	Copper (ppm)	Cadmium (ppm)	Chromium (ppm)	Iron (ppm)	Manganese (ppm)
146	4.49	<1	3.5	<1	<0.05	<0.02	0.5	<0.05

Lead (ppm)	Nickel (ppm)	Zinc (ppm)	Arsenic (ppm)	Magnesium (ppm)	Mercury (ppm)	Selenium (ppm)	Silver (ppm)	Sodium (ppm)
<0.01		<0.1						

Nitrate (ppm)	Phosphorus (ppm)

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Nautical Cove
DGS ID Ea44-11; DNREC ID 086812

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
6/18/92	13.5	135	5.77	0.03	0.03	0.25	49	0.15

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
59.8	0.2	5	10	1.9	4	3.9	2.7	8500

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
10	0.07	180	18	110	-

Nautical Cove
DGS ID Ea44-12; DNREC ID 086813

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
6/18/92	13.3	225	5.42	0.02	12	<0.20	4.2	8.1

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
5.1	<0.10	22	12	15	12	4	3	44

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
30	<.01	44	14	490	<0.2

Summit Bridge
DGS ID Eb41-15; DNREC ID 089665

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
6/18/92	13.9	176	6.12	0.04	<.02	0.21	71.6	0.15

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
87.3	0.2	7	20	5.2	3.7	4	2.4	5400

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
20	0.07	130	16	150	<.2

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Summit Pond
DGS ID Eb43-04; DNREC ID 068945

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
9/3/87	15.3	215	7.1	0.12	<.10	0.5	92	0.1
9/4/91	14	226	7.01	0.09	<.02	0.25	111	1.4

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
112	0.2	5.7	29		5.3	3.7	3.8	2100
135	0.2	4.7	31	1.7	5.6	3.6	3.9	2000

Aluminum (µg/L)	Phos. (mg/L)	Org. Carbon (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Chromium (µg/L)	Copper (µg/L)	Lead (µg/L)
<10.0	<.01	0.9	32	8.4		<5.0	<10.0	<10
<10.0	0.02	0.4	30	7.6				

Nickel (µg/L)	Silver (µg/L)	Strontium (µg/L)	Zinc (µg/L)	Antimony (µg/L)	Selenium (µg/L)	Simazine (µg/L)	Atrazine (µg/L)	Cyanazine (µg/L)
<10.0	3	500	11	<1.0	<1.0	<0.1	<0.1	<0.1

Metolachlor (µg/L)
<0.1

Dickerson Farms
DGS ID Eb51-11; DNREC ID 080899

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
6/18/92	14.1	177	6.7	0.05	0.02	<0.2	85.2	3.9

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
103.9	0.2	5.4	24	2.3	4.4	3	2.8	3900

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
30	0.01	75	12	190	<0.20

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Asbury Chase
DGS ID Ec51-16; DNREC ID 082244

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
9/4/91	13	206	7.07	0.01	2.2	<0.2	94	3.3

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
114.6	0.3	4.1	35	4.5	1.6	3.4	1.1	40

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
<10.0	0.01	<10.0	16		1.9

Vandegrift Manor
DGS ID Ec52-09; DNREC ID 078973

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
9/4/91	16.7	258	6.65	0.04	0.02	0.22	118	1

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
143.9	0.4	8.7	42	3.9	3.4	3.6	4	1300

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
10	0.09	50	22		0.5

Wheatland
DGS ID Fa15-07; DNREC ID 083639

Sample Date	Temp (°C)	Specific Conductivity (µS/cm)	pH (field)	Nitrogen, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	N, Ammonia Organic (mg/L)	Alkalinity (mg/L)	Dissolved Oxygen (mg/L)
9/4/91	14.6	162	6.7	0.04	<.02	<.2	67	1.1

Bicarbonate (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (µg/L)
81.7	0.3	6.8	19	1.9	4.1	2.7	2.6	5200

Aluminum (µg/L)	Phos. (mg/L)	Manganese (µg/L)	Silica (mg/L)	Radon (pCi/L)	Org. Carbon (mg/L)
<10	0.1	110	13		0.5

Southern New Castle County
Ground-Water Monitoring Network

Public Water Supply Wells
Saint Andrews School
DGS ID Fb54-01; LOCAL ID Well 1

Sample Date	N, NO ₂ , NO ₃ (mg/L)	Alkalinity (mg/L)	Fluoride (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)	Potassium (mg/L)	Iron (mg/L)
Jan-70	<.01	100		<10	<.1			<.3
7/1/71								0.3
12/20/79	0	96				43		0.2
10/28/82	0	95	0.26	0		41		0.25
2/26/86	<.4	100	0.31	7		42		0.15
6/21/89	<.4	95	0.3	1		40		0.28

Sample Date	Increm. Alkalinity (mg/L)	TDS (mg/L)
Jan-70		151
7/1/71		
12/20/79	96	
10/28/82	95	12
2/26/86	100	124
6/21/89		

Cantwell Water Company
DGS ID Fc31-11

Sample Date	Specific Conductivity ($\mu\text{S}/\text{cm}$)	pH (field)	Fluoride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Magnesium (mg/L)	Sodium (mg/L)
11/1/60	298	7.3	0.5	39	47	14	5.8	3.3

Potassium (mg/L)	Silica (mg/L)	TDS (mg/L)
5.2	21	201

Southern New Castle County
Ground-Water Monitoring Network

**Mt. Pleasant Sand and Gravel
Extractive Use Site
DGS ID Eb51-05; DNREC ID 059989**

Sample Date	pH (lab)	Org. Carbon (mg/L)	TDS (mg/L)
4/2/85	5.9	3.4	118

DGS ID Eb52-04; DNREC ID 059991

Sample Date	pH (lab)	Org. Carbon (mg/L)	TDS (mg/L)
4/2/85	6.05	2	100

DGS ID Fb12-05; DNREC ID 059986

Sample Date	pH (field)
4/2/85	6.2

DGS ID Fb12-06; DNREC ID 059987

Sample Date	pH (lab)	Org. Carbon (mg/L)	TDS (mg/L)
4/2/85	6.2	12	174

Southern New Castle County
Ground-Water Monitoring Network

Industrial Wells
Union Carbide

DGS ID	Sample Date	pH (lab)	Alkalinity (mg/L)	Iron ($\mu\text{g}/\text{L}$)	Manganese ($\mu\text{g}/\text{L}$)	Chloride (mg/L)	TDS (mg/L)
Ec32-03	10/14/66	6.7	70	1.5*	0	7	100
Ec32-05	10/14/66	6.8	59	5.8	0.05	1	96
Ec32-07	8/19/66	7	75	1.9	0.02	12	116
Ec32-07	8/30/66					10	
Ec42-05	10/14/66	6.8	59	5.8*	0.05*	1	96
Ec42-06	8/19/66	6.8	74	1.5-2*		6	
Ec42-06	8/30/66	6.9	68	1.9*	0.02*	10	110

* Units are ppm.

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	Temper-ature (°C)	Specific Conductivity (µS/cm)	Oxygen (mg/L)	pH (field)	pH (lab)	Alkalinity (field) (mg/L)	Alkalinity (increm.) (mg/L)
Ea44-02		01-05-56	13.0	63		6.1		22	
Ea44-02		02-21-56	11.5	87		6.9		23	
Ea44-02		07-02-56		77		7.2		31	
Ea44-02		09-18-56	14.0	85		7.4		29	
Ea44-02		09-16-57		78					
Ea44-03		01-14-56	13.0	80		7.1		31	
Ea44-03		02-21-56	11.5	84		7.6		31	
Ea44-03		07-02-56		87		7.3		34	
Ea44-03		09-18-56	13.5	82		7.5		35	
Ea44-03		09-16-57		109					
Eb31-01		12-15-55	12.0	57		6.3		15	
Eb31-01		02-21-56		65		6.1		19	
Eb31-01		05-17-56		68		7.0		24	
Eb31-01		07-02-56		73		6.4		17	
Eb31-01		10-04-56	13.0	77		5.9		7	
Eb31-01		09-16-57		85					
Eb32-22		06-17-92	15.1	295	5.8	6.0	6.3		16
Eb41-13	063041	09-06-91	15.1	137	0.8	6.5	6.8		52
Eb43-05	081063	06-17-92	16.6	229	0.1	7.2	7.5		115
Eb43-09	066705	09-10-91	16.0	311	4.6	5.6	5.9		15
Eb43-11	071125	09-09-91	15.0	186	7.0	6.3	6.9		45
Eb43-12	073261	09-03-91	15.1	261		7.7	7.9		127
Eb43-13	083069	09-12-91	14.3	236		7.3	7.5		117
Eb43-14	070315	09-06-91	14.2	252	0.6	7.7	8.0		112
Eb44-19	091778	11-09-92							
Eb45-26	071016	09-10-91	17.4	128	9.7	6.0	6.3		39
Eb45-27	084603	08-30-91	16.5	132	5.0	6.4	6.6		41
Eb51-10		08-29-91	16.2	342	8.6	6.5	6.7		43
Eb52-11	070688	09-09-91	13.8	253	0.2	7.5	7.9		97
Eb52-12	069572	08-29-91	18.7	235	0.8	6.3	7.8		99
Eb52-13	083251	09-11-91	15.6	215	1.3	7.5	8.0		100
Eb53-15	071045	09-06-91	15.6	208	0.7	7.7	8.0		87
Eb54-05	076163	08-29-91	15.8	210	5.7	6.3	6.6		33
Eb54-09	076619	09-09-91	13.9	199	1.6	7.4	7.9		84
Ec22-01		02-16-53		392		6.2		30	
Ec22-01		11-1-60		581		6.2			
Ec22-02		11-01-60		534		6.9		21	
Ec31-21	075421	09-11-91	16.7	207	0.5	7.0	7.4		89
Ec32-16	076670	09-10-91	14.9	1130	9.2	5.7	6.5		16
Ec33-01		02-16-53		175		5.9		9	
Ec33-02		11-01-60		75		6.2		10	
Ec34-01		11-01-60		330		6.2		25	
Ec34-03		09-10-91	15.8	160		6.7	6.9		80

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	Temper-ature (°C)	Specific Conductivity (µS/cm)	Oxygen (mg/L)	pH (field)	pH (lab)	Alkalinity (field) (mg/L)	Alkalinity (increm.) (mg/L)
Ec41-16	091777	11-09-92							
Ec42-15		07-07-88	12.9	262	11	6.0	6.3	18	
Ec42-15		07-19-90							
Ec42-15		07-19-90	13.0	275	10.1	6.0	6.1		
Ec43-07	074206	09-09-91	13.7	272	0.2	7.6	8.0		120
Ec43-08	057687	09-11-91	16.0	246	2.9	7.2	7.7		91
Ec43-09	075144	09-05-91	14.5	277	0.6	7.4	7.9		139
Ec51-15	084585	09-12-91	14.1	261	0.1	7.5	7.9		120
Ec53-05	065124	09-05-91	14.5	254	0.5	7.6	7.9		124
Ed21-20	076346	09-10-91	15.1	276		7.3	7.6		93
Ed51-10	074236	09-12-91	14.2	260		5.2	5.4		11
Fa25-11	071418	06-17-92	14.9	236	0.1	7.3	7.9		87
Fa35-08	083232	09-06-91	15.5	165	0.7	7.5	7.7		84
Fa55-07	060462	09-09-91	18.4	86	3.4	5.9	6.3		27
Fb12-10	079752	09-11-91	15.1	242	3.1	7.6	7.9		109
Fb22-10	080151	08-29-91	15.6	252	0.6	7.5	7.9		86
Fb25-07	069297	6-4-87					5.5		
Fb25-07	069297	9-24-88					5.0		
Fb25-07	069297	3-15-89					5.6		
Fb25-07	069297	9-22-89					4.9		
Fb25-07	069297	9-18-90					5.1		
Fb25-07	069297	3-19-90					5.3		
Fb25-07	069297	3-26-91					5.9		
Fb25-07	069297	1-27-92					6.2		
Fb25-07	069297	12-10-93					5.1		
Fb25-10	084229	09-03-91	19.2	268	1.7	7.9	7.9		124
Fb34-22	091773	11-04-92	14.6	340	10.5	5.8	5.9		18
Fb34-22	091773	11-04-92	14.6	340	10.5	5.8	5.9		27
Fb35-24	081527	09-09-91	14.9	256	1.2	7.6	8.0		120
Fb42-06	091768	11-02-92	13.6	173	0.5	6.6	6.5		55
Fb42-06	091768	11-02-92	13.6	173	0.5	6.6	6.5		55
Fb42-07	091769	11-03-92							
Fc11-19		09-04-91	13.7	261	0.5	7.4	7.9		131
Fc11-20	071263	08-30-91	14.4	254	0.7	7.8	7.9		117
Fc11-21		09-03-91	15.4	203	0.9	7.8	7.9		108
Fc11-22	063967	09-05-91	15.3	183	0.7	7.6	7.9		97
Fc12-13		09-06-91	14.6	236	0.6	7.6	7.9		96
Fc12-14	063156	09-06-91	15.6	241	0.7	7.5	7.9		126
Fc12-20	091779	11-09-92	14.9	166	8.4	5.2	5.5		5
Fc14-06	071628	09-11-91	18.8	268	1.0	7.6	7.9		124
Fc21-12	091775	11-04-92	14.8	109	4.4	5.5	5.9	11	
Fc21-13	091776	11-04-92	14.0	446	5.5	5.1	5.6	9	
Fc31-06		08-20-54	14.5	233		7.9		66	

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Fc31-13		11-01-60		247		7.9		127	
Fc41-01		08-20-54	15.0	244		7.8		90	
Gb41-05	070420	03-16-88	12.4	254	4.4	6.5	6.9		71
Gb41-08	073433	08-26-88	20.0	117	4.4	4.9	5.4		7
Gb41-08	073433	06-15-89	15.0	121	5.1	5.1	5.5		9
Gb41-09	073434	08-26-88	20.0	166	6.0		6.0		
Gb41-09	073434	11-29-88	15.6	156	7.9	5.2	6.2		7
Gb41-09	073434	06-15-89	14.6	175	7.3	5.6	6.0		11
Gb41-09	073434	01-30-90	12.5	230	9.3	5.7			12
Gb41-10	073435	08-26-88	19.0	144	6.9	6.9	5.3		
Gb41-10	073435	06-15-89	14.4	166	6.5	5.3	5.5		8
Gb41-10	073435	01-31-90	13.3	154	9.3	5.2			7
Gb41-11	073436	08-26-88	20.5	62	4.1		6.4		
Gb41-11	073436	04-11-89							
Gb41-11	073436	04-11-89	11.1	230	1.9	6.4	7.0		48
Gb41-11	073436	06-21-89	16.4	203	51.0	6.3	6.7		42
Gb41-11	073436	06-21-89							
Gb41-11	073436	01-23-90							
Gb41-11	073436	01-23-90	11.9	234	5.4	6.1	6.3		40
Gb41-12	073440	08-26-88	17.1	198	7.0	4.1	6.2		
Gb41-12	073440	11-29-88	15.3	205	8.6	5.1	6.4		2
Gb41-12	073440	11-29-88							
Gb41-12	073440	06-14-89	12.9	196	8.3	5.5	5.7		5
Gb41-12	073440	01-30-90		220		5.6			5
Gb41-12	073440	11-08-90	16.1	260	9.1	5.4	5.7		4
Gb41-17	077260	06-15-89	15.6	102	6.0	5.5	5.8		9
Gb41-19	074131	06-14-89	13.3	225	5.7	5.5	5.6		15
Gb41-20	074130	12-01-88	12.2	139	8.1	5.8	6.1		2
Gb41-20	074130	12-01-88							
Gb41-20	074130	06-21-89							
Gb41-20	074130	06-21-89	14.6	168	4.4	5.6	6.0		8
Gb41-20	074130	01-31-90	9.5	135	0.5	5.5			22
Gb41-21	074133	04-11-89							
Gb41-21	074133	04-11-89	11.0	79	0.8	4.7	5.3		
Gb41-21	074133	06-21-89	14.3	133	1.7	5.4	5.5		
Gb41-21	074133	06-21-89							
Gb41-21	074133	01-23-90							
Gb41-21	074133	01-25-89	10.7	110		5.4	6.2	8	
Gb41-21	074133	01-23-90	11.3	91	0.5	5.4	5.4		
Gb41-22	080627	01-30-90	13.4	114	9.7	5.5	5.8		8
Gb41-23	077948	01-15-90	14.3	120	9.2	5.7	5.7		6
Gb41-24	077947	01-23-90	12.7	59	0.0	5.5	5.8		10
Gb41-25	077946	01-30-90	11.8	137	10.4	4.6	5.2		1

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Gb42-03	073437	08-25-88	14.3	94	4.5	5.4	5.2		7
Gb42-03	073437	11-29-88	15.0	94	7.2	5.0	5.9		2
Gb42-03	073437	11-29-88							
Gb42-03	073437	04-11-89							
Gb42-03	073437	04-11-89	12.9	98	10.2	4.4	5.3		
Gb42-03	073437	06-20-89							
Gb42-03	073437	06-20-89	14.3	97	8.4	4.8	5.2		3
Gb42-03	073437	01-23-90							
Gb42-03	073437	01-23-90	14.5	92	4.3	5.0	5.3		1
Gb42-05	084312	11-08-90	14.7	173	8.8	5.4	5.8		5
Gb42-05	084312	03-04-91	12.6	180	9.0	5.5	5.9		5
Gb42-05	084312	04-24-91	12.7	175	11.0	5.6			
Gb42-05	084312	05-29-91	14.2	164	9.1	5.5	6.0		4
Gb42-05	084312	06-18-91	13.3	166	11.0	5.6	5.9		
Gb42-05	084312	06-26-91	13.8	131	8.9	5.8			
Gb42-05	084312	07-23-91	15.0	166	9.4	5.6			
Gb42-05	084312	08-19-91	15.6	165	8.8	5.8			
Gb42-05	084312	09-17-91	16.2	166	9.2	5.3			
Gb42-05	084312	10-16-91	16.1	168	8.7	5.3			
Gb42-05	084312	11-13-91	15.4	166	11.4	5.5			
Gb42-05	084312	12-10-91	15.0	166	8.8	5.6			
Gb42-05	084312	01-07-92	13.5	165	9.7	5.5			
Gb42-05	084312	02-04-92	13.7	165	8.8	5.5			
Gb42-05	084312	03-03-92	12.3	164	13.2	5.3			
Gb42-05	084312	03-30-92	12.4	160	13.0	5.7			
Gb42-06	084313	11-08-90	14.4	179	9.5	5.0	4.9		1
Gb42-06	084313	03-05-91	12.2	195	9.6	4.9	5.1		2
Gb42-06	084313	04-24-91	11.6	204	11.8				
Gb42-06	084313	05-29-91	12.7	219	9.9	4.8	5.1		1
Gb42-06	084313	10-16-91	15.9	227	7.5	5.4			
Gb42-07	074358	11-08-90	14.7	65	5.9	5.8	6.1		14
Gb42-07	074358	03-05-91	11.9	73	6.6	5.8	6.0		31
Gb42-07	074358	04-24-91	12.6	85	7.4	5.7			
Gb42-07	074358	05-29-91	16.3	84	6.6	5.8	6.1		8
Gb42-07	074358	06-26-91	17.5	70	5.4	6.0			
Gb42-07	074358	07-23-91	20.3	86	4.9	5.7			
Gb42-07	074358	08-19-91	21.3	99	1.3	5.9			
Gb42-07	074358	09-17-91	20.6	103	4.1	5.8			
Gb42-07	074358	10-16-91	16.4	111	0.3	5.7			
Gb42-07	074358	11-13-91	12.6	106	1.6	6.0			
Gb42-07	074358	12-10-91	11.5	104	0.8	6.0			
Gb42-07	074358	01-07-92	10.7	106	9.8	5.8			
Gb42-07	074358	02-04-92	9.6	108	8.6	6.0			

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Gb42-07	074358	03-03-92	10.0	90	12.8	5.3			
Gb42-07	074358	03-30-92	11.8	93	13.2	6.0			
Gb42-08		11-08-90	16.3	252	8.8	5.5	5.7		3
Gb42-08		03-04-91	9.2	284	8.1	6.1	6.0		12
Gb42-08		04-24-91	11.1	278	9.3	5.9			
Gb42-08		05-29-91	16.2	249	8.9	6.0	6.2		4
Gb42-08		06-18-91	16.7	235	11.3	6.4	5.9		
Gb42-08		06-26-91	17.6	198	9.3	3.1			
Gb42-08		07-23-91	20.7	233	8.0	6.1			
Gb42-08		08-19-91	21.0	237	8.7	6.3			
Gb42-08		09-17-91	21.0	231	8.7	6.0			
Gb42-08		10-16-91	19.7	234	8.5	5.9			
Gb42-08		11-13-91	15.9	222	9.4	6.4			
Gb42-08		12-10-91	13.9	223	9.1	6.4			
Gb42-08		01-07-92	10.8	217	10.2	6.0			
Gb42-08		02-04-92	9.5	232	11.0	6.5			
Gb42-08		03-03-92	8.5	232	13.6	6.3			
Gb42-08		03-30-92	9.3	229	11.9	6.3			
Gb42-09A		03-05-91	13.0	107	8.0	6.1	6.3		24
Gb42-09A		05-29-91	14.8	122	8.0	6.2	6.3		17
Gb42-10A		03-12-91	9.0	245	2.1	5.8	5.6		7
Gb42-10A		04-24-91	11.3	228	7.6	5.6			
Gb42-10A		05-29-91	20.0	222	6.1	5.6	5.7		
Gb42-10A		06-18-91	17.4	227	8.4	5.5	5.5		
Gb42-10A		06-18-91	17.7	224	8.0	5.4	5.2		
Gb42-10A		06-26-91	22.4	217	7.2	5.4			
Gb42-10A		07-23-91	23.3	222	5.0	6.0			
Gb42-10A		08-19-91	23.3	227	4.4	6.0			
Gb42-10A		09-17-91	23.2	230	4.5	5.9			
Gb42-10A		10-16-91	19.0	225	5.1	5.7			
Gb42-10A		11-13-91	15.1	227	12.0	6.1			
Gb42-10A		12-10-91	13.0	214	6.4	6.0			
Gb42-10A		01-07-92	10.8	216	6.2	6.1			
Gb42-10A		02-04-92	9.7	230	5.2	6.6			
Gb42-10A		03-03-92	8.6	223	7.9	6.3			
Gb42-10A		03-30-92	9.0	225	9.3	5.9			
Gb42-11		10-16-91	16.9	157		6.3	6.4		52
Gb51-03	070414	09-03-87	17.9	71		5.1	5.7		13
Gb51-03	070414	10-01-87	15.0	57	2.6	5.2	6.8		10
Gb51-03	070414	03-14-88	9.4	54	4.4	5.2	5.4		12
Gb51-04	070416	07-17-87	16.0	46		4.7	5.0		2
Gb51-04	070416	10-01-87	14.8	48	1.9	4.6	4.9		1
Gb51-04	070416	03-14-88	9.3	29	1.7	4.6	4.7		2

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Gb51-04	070416	06-08-90	12.5	38	1.5	4.6	4.9		2
Gb51-04	070416	06-08-90							
Gb51-05	070415	10-01-87	15.5	90	2.8	5.6	6.1		10
Gb51-05	070415	03-16-88	9.5	71	7.0	5.4	5.8		2
Gb51-06	070417	10-01-87	14.0	45	5.2	5.4	6.6		10
Gb51-06	070417	03-15-88	10.0	45	5.8	5.5	6.1		11
Gb51-07	070418	10-01-87	12.4	30	5.7	5.6	6.0		10
Gb51-07	070418	03-15-88	11.3	37	7.8	5.8	6.3		11
Gb51-08	070419	10-02-87	15.3	52	1.0	5.2	5.4		8
Gb51-08	070419	03-15-88	9.5	44	1.8	4.6	4.9		2
Gb51-08	070419	11-29-88	13.2	41	1.1	4.9	5.7		1
Gb51-08	070419	11-29-88							
Gb51-09	072108	03-15-88	11.1	85	2.4	6.0	5.8		38
Gb51-10	072109	03-14-88	7.2	58	4.4	5.6	5.7		18
Gb51-11	072110	03-16-88	9.3	74	1.3	5.1	8.7		6
Gb51-12	070421	03-14-88	11.7	63	1.2	5.7	5.8		34
Gb51-12	070421	11-20-90	13.1	53	0.1	5.5	5.6		13
Gb51-13	070422	03-15-88	11.7	66	1.8	6.0	5.8		19
Gb52-03	070407	09-04-87	14.2	103	5.2	6.1	6.8		38
Gc14-02		07-06-88	16.9	380	2.4	7.4	7.6		143
Gc14-03	058110	07-06-88	13.8	396	1.4	7.3	7.6		164
Gd33-04		09-14-70	15.0	402		7.8		198	
Hd11-03		09-04-87	16.9	218	7.5	4.6	5.2		

DGS ID	DNREC ID	Sample Date	Bicar-bonate (mg/L)	N, Ammonia (mg/L)	N, C, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	Phos-phorus (mg/L)	Organic Carbon (mg/L)	Calcium (mg/L)
Ea44-02		01-05-56							
Ea44-02		02-21-56							8.2
Ea44-02		07-02-56							7.5
Ea44-02		09-18-56							
Ea44-02		09-16-57							
Ea44-03		01-14-56							8.7
Ea44-03		02-21-56							9.4
Ea44-03		07-02-56							8.6
Ea44-03		09-18-56							
Ea44-03		09-16-57							
Eb31-01		12-15-55							4.7
Eb31-01		02-21-56							4.5
Eb31-01		05-17-56							5.5
Eb31-01		07-02-56							4.7
Eb31-01		10-04-56							

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Eb32-22		06-17-92	19	0.02	<0.20	7.70	<0.01	0.7	18
Eb41-13	063041	09-06-91	63	0.02	<0.20	0.020	0.45	0.6	14
Eb43-05	081063	06-17-92	141	0.15	0.51	0.310	0.02	<0.2	31
Eb43-09	066705	09-10-91	18	<0.01	<0.20	4.90	0.05	0.6	19
Eb43-11	071125	09-09-91	59	0.01	<0.20	9.50	0.11	0.3	26
Eb43-12	073261	09-03-91	155	0.03	<0.20	<0.020	0.01	0.4	46
Eb43-13	083069	09-12-91	143	0.11	<0.20	<0.020	0.03	0.4	33
Eb43-14	070315	09-06-91	137	0.06	0.20	<0.020	0.02	0.8	41
Eb44-19	091778	11-09-92							
Eb45-26	071016	09-10-91	48	0.01	<0.20	6.60	0.14	0.3	12
Eb45-27	084603	08-30-91	50	0.01	0.20	3.80	0.38	0.3	16
Eb51-10		08-29-91	52	0.01	<0.20	14.0	0.47	0.5	38
Eb52-11	070688	09-09-91	118	0.01	<0.20	<0.020	0.01	0.3	47
Eb52-12	069572	08-29-91	120	0.02	<0.20	<0.020	0.03	1.4	43
Eb52-13	083251	09-11-91	122	0.01	<0.20	0.030	0.01	0.2	39
Eb53-15	071045	09-06-91	106	0.02	<0.20	<0.020	0.02	0.4	37
Eb54-05	076163	08-29-91	40	0.01	<0.20	5.60	0.10	0.4	25
Eb54-09	076619	09-09-91	102	0.01	<0.20	1.50	0.07	0.3	35
Ec22-01		02-16-53				63.0			32
Ec22-01		11-1-60				100.0			34
Ec22-02		11-01-60							34
Ec31-21	075421	09-11-91	109	0.14	0.30	<0.020	0.05	0.5	24
Ec32-16	076670	09-10-91	20	0.01	<0.20	7.40	0.02	0.7	32
Ec33-01		02-16-53							13
Ec33-02		11-01-60							4.5
Ec34-01		11-01-60							26
Ec34-03		09-10-91	98	0.07	<0.20	<0.020	0.01	0.5	13
Ec41-16	091777	11-09-92							
Ec42-15		07-07-88	22		0.30			0.9	22
Ec42-15		07-19-90							
Ec42-15		07-19-90	9	0.02	0.60	15.0	0.06	1.0	16
Ec43-07	074206	09-09-91	148	0.07	<0.20	<0.020	0.01	0.4	44
Ec43-08	057687	09-11-91	111	<0.01	<0.20	2.20	0.01	0.2	43
Ec43-09	075144	09-05-91	170	0.01	<0.20	<0.020	0.04	0.5	50
Ec51-15	084585	09-12-91	146	0.01	<0.20	<0.020	0.02	0.5	46
Ec53-05	065124	09-05-91	151	0.01	<0.20	<0.020	0.05	0.3	45
Ed21-20	076346	09-10-91	113	0.15	<0.20	<0.020	0.13	0.6	12
Ed51-10	074236	09-12-91	14	0.01	<0.20	1.90	0.02	0.8	8.4
Fa25-11	071418	06-17-92	106	0.03	<0.20	<0.020	0.01	<0.2	41
Fa35-08	083232	09-06-91	102	0.02	<0.20	0.040	0.02	0.8	36
Fa55-07	060462	09-09-91	33	0.01	<0.20	4.40	0.03	0.4	5.3
Fb12-10	079752	09-11-91	133	0.02	<0.20	<0.020	0.01	0.3	43
Fb22-10	080151	08-29-91	105	0.01	<0.20	0.030	0.09	0.4	44

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DGS ID	DNREC ID	Sample Date	Bicarbonate (mg/L)	N, Ammonia (mg/L)	N, C, Ammonia (mg/L)	N, NO ₂ , NO ₃ (mg/L)	Phosphorus (mg/L)	Organic Carbon (mg/L)	Calcium (mg/L)
Fb25-07	069297	6-4-87						<2.0	
Fb25-07	069297	9-24-88						7.0	
Fb25-07	069297	3-15-89						1.0	
Fb25-07	069297	9-22-89						8.0	
Fb25-07	069297	9-18-90						3.0	
Fb25-07	069297	3-19-90						nd	
Fb25-07	069297	3-26-91						4.0	
Fb25-07	069297	1-27-92						8.0	
Fb25-07	069297	12-10-93						16.0	
Fb25-10	084229	09-03-91	151	0.05	<0.20	<0.020	0.01	0.5	42
Fb34-22	091773	11-04-92	22	0.05	<0.20	7.6	<0.01	1.3	11
Fb34-22	091773	11-04-92	33	0.05	<0.20	7.60	<0.01	1.7	11
Fb35-24	081527	09-09-91	146	0.05	<0.20	<0.020	0.02	0.3	43
Fb42-06	091768	11-02-92	67	0.01	<0.20	<0.020	0.04		11
Fb42-06	091768	11-02-92	67	0.01	<0.20	<0.020	0.03	1.5	11
Fb42-07	091769	11-03-92							
Fc11-19		09-04-91	160	0.02	0.25	<0.020	0.02	2.7	45
Fc11-20	071263	08-30-91	143	0.02	<0.20	0.020	0.07	1.2	44
Fc11-21		09-03-91	132	0.01	<0.20	<0.020	0.06	0.4	40
Fc11-22	063967	09-05-91	118	0.02	<0.20	<0.020	0.05	0.3	37
Fc12-13		09-06-91	117	0.02	<0.20	<0.020	0.02	0.4	40
Fc12-14	063156	09-06-91	154	0.02	<0.20	<0.020	0.04	0.4	41
Fc12-20	091779	11-09-92	6	<0.01	<0.20	2.10	0.02	0.3	10
Fc14-06	071628	09-11-91	151	0.10	<0.20	0.040	0.01	0.6	40
Fc21-12	091775	11-04-92	13	0.01	<0.20	6.00	0.01	<0.1	8
Fc21-13	091776	11-04-92	11	0.05	<0.20	15.00	<0.01	<0.1	28
Fc31-06		08-20-54							37
Fc31-13		11-01-60							40
Fc41-01		08-20-54							40
Gb41-05	070420	03-16-88	85	0.03		5.90	<0.01	1.6	26
Gb41-08	073433	08-26-88	8	0.01	0.20	3.10	<0.01	0.7	6
Gb41-08	073433	06-15-89		<0.01	0.50	1.60	0.02		7.2
Gb41-09	073434	08-26-88		<0.01	<0.20	2.10	<0.01	0.6	9.0
Gb41-09	073434	11-29-88	8	<0.01	0.30	2.20	<0.01	0.5	13
Gb41-09	073434	06-15-89		<0.01	0.40	5.50	<0.01		10
Gb41-09	073434	01-30-90							
Gb41-10	073435	08-26-88		<0.01	0.30	1.40	<0.01	0.7	6.3
Gb41-10	073435	06-15-89		0.06	0.30	1.20	<0.01		8.0
Gb41-10	073435	01-31-90							
Gb41-11	073436	08-26-88		0.08	0.40	0.56	0.02	2.6	3.3
Gb41-11	073436	04-11-89							
Gb41-11	073436	04-11-89	58	0.08	0.50	0.29	0.03	4.7	8.0
Gb41-11	073436	06-21-89	51	0.19	0.60	0.71	0.03	2.1	11

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Gb41-11	073436	06-21-89							
Gb41-11	073436	01-23-90							
Gb41-11	073436	01-23-90	48	0.14	0.70	2.50	0.02	1.2	13
Gb41-12	073440	08-26-88		<0.01	0.70	7.70	<0.01	0.7	13
Gb41-12	073440	11-29-88	2	0.02	0.30	9.40	<0.01	0.5	14
Gb41-12	073440	11-29-88							
Gb41-12	073440	06-14-89		<0.01	13	8.10	<0.01		14
Gb41-12	073440	01-30-90							
Gb41-12	073440	11-08-90	5	<0.01	0.60	15.00	<0.01	1.2	20
Gb41-17	077260	06-15-89		0.02	0.30	3.50	0.02		6.1
Gb41-19	074131	06-14-89		0.07	16	5.80	0.03		11
Gb41-20	074130	12-01-88	3	0.02	<0.20	1.60	<0.01	2.4	13
Gb41-20	074130	12-01-88							
Gb41-20	074130	06-21-89							
Gb41-20	074130	06-21-89	9	0.02	0.3	1.00	<0.01	0.8	15
Gb41-20	074130	01-31-90	72015						
Gb41-21	074133	04-11-89							
Gb41-21	074133	04-11-89	10	0.01	0.20	0.45	<0.01	0.7	4.6
Gb41-21	074133	06-21-89	7	<0.01	0.50	5.00	0.02	0.5	8.4
Gb41-21	074133	06-21-89							
Gb41-21	074133	01-23-90							
Gb41-21	074133	01-25-89		0.01	<0.20	1.70	0.01		6.5
Gb41-21	074133	01-23-90	21	0.02	0.70	<0.100	0.01	1.6	6.4
Gb41-22	080627	01-30-90		0.02	0.30	6.60	<0.01		7.0
Gb41-23	077948	01-15-90		0.02	0.70	8.20	<0.01		8.8
Gb41-24	077947	01-23-90	8	0.01	<0.20	1.30	0.03		2.5
Gb41-25	077946	01-30-90		0.02	<0.20	9.30	<0.01		4.8
Gb42-03	073437	08-25-88	9	<0.01	0.30	4.70	<0.01	0.4	3.9
Gb42-03	073437	11-29-88	2	<0.01	0.40	4.70	<0.01	0.4	4.0
Gb42-03	073437	11-29-88							
Gb42-03	073437	04-11-89							
Gb42-03	073437	04-11-89		<0.01	0.70	4.60	<0.01	0.4	4.2
Gb42-03	073437	06-20-89							
Gb42-03	073437	06-20-89	4	<0.01	<0.20	3.40	<0.01	0.4	4.0
Gb42-03	073437	01-23-90							
Gb42-03	073437	01-23-90		0.01	0.50	4.40	0.01	0.4	3.4
Gb42-05	084312	11-08-90	6	<0.01	0.60	10.0	<0.01	0.9	8.5
Gb42-05	084312	03-04-91	6	<0.01	0.40	10.0	<0.01	0.5	8.8
Gb42-05	084312	04-24-91		0.03	0.50	9.40	<0.01		
Gb42-05	084312	05-29-91	5	<0.01	1.00	9.88	<0.01	0.7	8.3
Gb42-05	084312	06-18-91		0.02	0.40	9.30	0.02	1.6	8.2
Gb42-05	084312	06-26-91		<0.01	0.40	9.70	<0.01		
Gb42-05	084312	07-23-91		0.02	1.50	9.00	<0.01		

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Gb42-05	084312	08-19-91		<0.01	0.60	8.90	0.02		
Gb42-05	084312	09-17-91		0.02	0.30	9.43	<0.01		
Gb42-05	084312	10-16-91		<0.01		9.60	<0.01		
Gb42-05	084312	11-13-91		0.01	<0.20	9.20	<0.01		
Gb42-05	084312	12-10-91		<0.01	<0.20	9.50	<0.01		
Gb42-05	084312	01-07-92		<0.01	<0.20	8.90	0.01		
Gb42-05	084312	02-04-92		<0.01	<0.20	9.20	<0.01		
Gb42-05	084312	03-03-92		<0.01	<0.20	9.30	<0.01		
Gb42-05	084312	03-30-92		0.01	<0.20	9.10	<0.01		
Gb42-06	084313	11-08-90	1	0.01	0.60	9.30	<0.01	0.6	6.3
Gb42-06	084313	03-05-91	2	<0.01	0.50	9.30	<0.01	0.8	7.3
Gb42-06	084313	04-24-91		0.02	0.70	9.40	<0.01		
Gb42-06	084313	05-29-91	1	0.02	0.60	12.0	<0.01	0.5	8.1
Gb42-06	084313	10-16-91		0.16	0.30	13.0	0.04		
Gb42-07	074358	11-08-90	16	<0.01	<0.20	2.50	0.02	1.3	3.8
Gb42-07	074358	03-05-91	37	<0.01	0.30	4.50	<0.01	0.3	4.8
Gb42-07	074358	04-24-91		0.02	0.20	4.60	<0.01		
Gb42-07	074358	05-29-91	10	<0.01	0.50	4.90	<0.01	0.4	5.1
Gb42-07	074358	06-26-91		0.01	1.30	4.20	<0.01		
Gb42-07	074358	07-23-91		0.05	0.70	3.80	0.04		
Gb42-07	074358	08-19-91		0.01	<0.20	2.40	0.03		
Gb42-07	074358	09-17-91		0.03	0.20	2.70	0.02		
Gb42-07	074358	10-16-91		<0.01		1.20	0.02		
Gb42-07	074358	11-13-91		0.01	<0.20	0.95	0.01		
Gb42-07	074358	12-10-91		0.01	<0.20	1.70	0.03		
Gb42-07	074358	01-07-92		0.02	<0.20	7.30	0.01		
Gb42-07	074358	02-04-92		<0.01	<0.20	7.70	<0.01		
Gb42-07	074358	03-03-92		<0.01	<0.20	6.10	<0.01		
Gb42-07	074358	03-30-92		0.02	<0.20	6.30	<0.01		
Gb42-08		11-08-90	4	0.03	0.60	13.0	<0.01	0.8	19
Gb42-08		03-04-91	15	0.02	0.60	14.0	<0.01	1.0	24
Gb42-08		04-24-91		0.05	0.70	11.0	<0.01		
Gb42-08		05-29-91	5	0.03	0.80	11.0	<0.01	1.0	22
Gb42-08		06-18-91		0.04	0.60	10.0	<0.01	0.9	20
Gb42-08		06-26-91		0.04	0.80	11.0	<0.01		
Gb42-08		07-23-91		0.05	1.4	9.70	<0.01		
Gb42-08		08-19-91		0.03	0.70	9.50	0.01		
Gb42-08		09-17-91		0.06	0.40	9.95	<0.01		
Gb42-08		10-16-91		0.02		10.0	<0.01		
Gb42-08		11-13-91		0.04	<0.20	9.30	<0.01		
Gb42-08		12-10-91		0.03	<0.20	9.30	0.02		
Gb42-08		01-07-92		0.03	<0.20	9.90	0.02		
Gb42-08		02-04-92		0.01	<0.20	10.0	0.01		

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Gb42-08		03-03-92		0.03	<0.20	12.0	<0.01		
Gb42-08		03-30-92		0.04	0.50	10.0	<0.01		
Gb42-09A		03-05-91	29	0.01	0.30	6.8	<0.01	0.3	6.9
Gb42-09A		05-29-91	21	0.07	0.40	7.20	<0.01	0.3	7.6
Gb42-10A		03-12-91	9	0.09	0.80	5.80	<0.01	1.0	19
Gb42-10A		04-24-91		0.09	0.80	10.0	<0.01		
Gb42-10A		05-29-91		0.12	0.80	11.0	<0.01	0.8	18
Gb42-10A		06-18-91		0.06	0.30	11.0	<0.01	1.1	17
Gb42-10A		06-18-91		0.11	1.00	11.0	<0.01	1.0	17
Gb42-10A		06-26-91		0.04	0.50	11.0	<0.01		
Gb42-10A		07-23-91		0.11	1.00	9.70	<0.01		
Gb42-10A		08-19-91		0.13	0.50	9.60	0.03		
Gb42-10A		09-17-91		0.18	0.40	9.10	<0.01		
Gb42-10A		10-16-91		0.07	0.30	7.90	<0.01		
Gb42-10A		11-13-91		0.06	<0.20	9.10	<0.01		
Gb42-10A		12-10-91		0.04	<0.20	8.50	<0.01		
Gb42-10A		01-07-92		0.04	<0.20	7.50	<0.01		
Gb42-10A		02-04-92		0.04	0.30	7.20	<0.01		
Gb42-10A		03-03-92		0.07	<0.20	7.90	<0.01		
Gb42-10A		03-30-92		0.05	0.30	8.20	<0.01		
Gb42-11		10-16-91		0.45	0.80	<0.100	0.28	6.1	11
Gb51-03	070414	09-03-87	15	0.07	0.80	<0.100	<0.01	6.6	2.3
Gb51-03	070414	10-01-87	13	0.11	<0.20	<0.100	0.04	5.7	2.2
Gb51-03	070414	03-14-88	14	0.06	0.30	<0.100	<0.01	4.7	2.1
Gb51-04	070416	07-17-87	2	0.05	0.50	<0.100		7.2	0.83
Gb51-04	070416	10-01-87	1	0.04	<0.20	<0.100	<0.01	8.7	0.55
Gb51-04	070416	03-14-88	3	0.06	<0.20		0.01	6.3	0.80
Gb51-04	070416	06-08-90	2	0.06	0.80	<0.100	<0.01	5.2	1.1
Gb51-04	070416	06-08-90							
Gb51-05	070415	10-01-87	12	0.04	<0.20	<0.100	0.01	2.3	6.2
Gb51-05	070415	03-16-88	3	<0.01	<0.20	<0.100	<0.01	1.6	3.4
Gb51-06	070417	10-01-87	12	0.05	<0.20	<0.100	0.02	1.4	0.94
Gb51-06	070417	03-15-88	13	<0.01		<0.100	<0.01	1.4	1.7
Gb51-07	070418	10-01-87	12	0.03	<0.20	<0.100	<0.01	1.4	1.0
Gb51-07	070418	03-15-88	13	0.03	<0.20	<0.100	<0.01	1.4	1.7
Gb51-08	070419	10-02-87	10	0.09		<0.100	<0.01	6.6	1.9
Gb51-08	070419	03-15-88	2	0.03	0.30	<0.100	<0.01	4.4	1.4
Gb51-08	070419	11-29-88	1	0.03		<0.100	<0.01	2.7	1.3
Gb51-08	070419	11-29-88							
Gb51-09	072108	03-15-88	49	0.04	0.30	<0.100	0.04	6.2	6.0
Gb51-10	072109	03-14-88	23	0.20	0.40	<0.100	0.02	5.1	5.7
Gb51-11	072110	03-16-88	8	0.02		<0.100	<0.01	3.4	4.6
Gb51-12	070421	03-14-88	43	0.09	0.40	0.27	<0.01	6.8	3.3

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Gb51-12	070421	11-20-90	16	0.12	0.50	<0.100	0.01	2.9	2.3
Gb51-13	070422	03-15-88	23	0.03	<0.20	<0.100	<0.01	2.6	3.8
Gb52-03	070407	09-04-87	46	0.08	<0.20	<0.100	0.04	3.3	8.1
Gc14-02		07-06-88	174	0.03	0.30	3.60	0.02	1.4	70
Gc14-03	058110	07-06-88	200	0.01	0.30	3.80	<0.01	1.0	76
Gd33-04		09-14-70							29
Hd11-03		09-04-87		<0.01	0.40	10.0	<0.01	1.2	10

DGS ID	DNREC ID	Sample Date	Magne-sium (mg/L)	Sodium (mg/L)	Potas-sium (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	Silica (mg/L)
Ea44-02		01-05-56			2.0				
Ea44-02		02-21-56	2.5		2.5	16	0.1	3.3	
Ea44-02		07-02-56	2.8		3.0	5.4	0.1	5.1	
Ea44-02		09-18-56			4.5	7.8			
Ea44-02		09-16-57			1.5				
Ea44-03		01-14-56	2.0		2.0	6.0	0.1	12.0	
Ea44-03		02-21-56	2.8		5.0	11	0.2	1.0	
Ea44-03		07-02-56	3.8		4.5	4.9	0.1	0.9	
Ea44-03		09-18-56			3.3	1.6			
Ea44-03		09-16-57			4.0				
Eb31-01		12-15-55	1.6		2.8	4.2	<0.1	17	
Eb31-01		02-21-56	2.0		1.5	12	0.1	16	
Eb31-01		05-17-56	2.3		2.1	6.3	0.1	16	
Eb31-01		07-02-56	2.7		3.0	16	0.1	14	
Eb31-01		10-04-56			3.4	23			
Eb31-01		09-16-57			2.5				
Eb32-22		06-17-92	13	13	5.1	28	42	<0.1	10
Eb41-13	063041	09-06-91	3.1	3.3	2.1	1.7	6.4	0.2	15
Eb43-05	081063	06-17-92	6.3	5.2	5.1	1.6	4.0	0.2	8.8
Eb43-09	066705	09-10-91	8.3	14	16	41	35	<0.1	12
Eb43-11	071125	09-09-91	1.7	4.6	1.6	10	8.1	0.2	17
Eb43-12	073261	09-03-91	2.5	3.2	2.2	2.0	6.6	0.2	17
Eb43-13	083069	09-12-91	6.2	4.6	4.6	1.6	3.9	0.2	8.8
Eb43-14	070315	09-06-91	4.1	3.1	3.2	1.8	6.4	0.2	15
Eb44-19	091778	11-09-92							
Eb45-26	071016	09-10-91	2.3	5.6	2.3	12	1.6	<0.1	14
Eb45-27	084603	08-30-91	1.2	5.2	1.9	7.3	1.9	0.2	15
Eb51-10		08-29-91	1.9	22	2.5	23	28	0.2	13
Eb52-11	070688	09-09-91	1.4	2.9	1.7	3.3	13	0.2	15
Eb52-12	069572	08-29-91	1.3	2.7	1.8	4.2	11	0.4	18
Eb52-13	083251	09-11-91	1.2	2.8	1.5	3.3	15	0.2	14

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Eb53-15	071045	09-06-91	1.5	2.4	1.4	2.8	9.2	0.4	15
Eb54-05	076163	08-29-91	5.7	3.8	2.4	15	18	0.1	14
Eb54-09	076619	09-09-91	1.5	3.0	1.4	5.2	5.4	0.5	15
Ec22-01		02-16-53	14	3.9		25	26		10
Ec22-01		11-1-60	18	44	13	38	99		
Ec22-02		11-01-60	24	21	11	44	41	<0.1	13
Ec31-21	075421	09-11-91	5.0	5.8	4.7	1.4	5.5	0.2	7.8
Ec32-16	076670	09-10-91	16	160	3.9	300	28	<0.1	11
Ec33-01		02-16-53	3.9			28	4.6		17
Ec33-02		11-01-60	1.9	6.0	1.6	8.0	0.8	0.1	17
Ec34-01		11-01-60	12	14	2.1	34	6.9	<0.1	22
Ec34-03		09-10-91	3.3	4.0	3.1	1.9	2.3	0.2	8.1
Ec41-16	091777	11-09-92							
Ec42-15		07-07-88	10	5.8	1.7	24	13	0.2	14.0
Ec42-15		07-19-90							
Ec42-15		07-19-90	12	6.1	2.0	23	10	<0.1	14.0
Ec43-07	074206	09-09-91	4.1	4.0	3.3	5.1	8.4	0.3	12
Ec43-08	057687	09-11-91	1.8	3.0	1.3	6.2	8.7	0.3	12
Ec43-09	075144	09-05-91	1.8	3.2	1.4	6.1	8.2	0.4	16
Ec51-15	084585	09-12-91	2.4	3.1	1.7	3.2	9.1	0.4	18
Ec53-05	065124	09-05-91	1.6	3.1	1.8	5.5	9.6	0.4	18
Ed21-20	076346	09-10-91	2.8	40	5.0	19	6.9	0.2	7.6
Ed51-10	074236	09-12-91	5.0	28	4.0	28	48	<0.1	28
Fa25-11	071418	06-17-92	2.0	3.3	4.0	6.1	22	0.5	28
Fa35-08	083232	09-06-91	2.3	3.3	3.8	3.6	20	0.5	27
Fa55-07	060462	09-09-91	2.7	4.9	2.3	4.3	<0.2	<0.1	24
Fb12-10	079752	09-11-91	2.3	2.6	2.2	3.9	10	0.3	21
Fb22-10	080151	08-29-91	1.8	3.2	3.7	7.2	20	0.2	30
Fb25-07	069297	6-4-87							
Fb25-07	069297	9-24-88							
Fb25-07	069297	3-15-89							
Fb25-07	069297	9-22-89							
Fb25-07	069297	9-18-90							
Fb25-07	069297	3-19-90							
Fb25-07	069297	3-26-91							
Fb25-07	069297	1-27-92							
Fb25-07	069297	12-10-93							
Fb25-10	084229	09-03-91	4.2	6.7	4.1	2.5	3.2	0.3	17
Fb34-22	091773	11-04-92	9.1	34	3.2	63	15	<0.1	14
Fb34-22	091773	11-04-92	9.1	34	3.1	64	15	<0.1	14
Fb35-24	081527	09-09-91	3.4	3.0	3.7	2.2	8.4	0.3	23
Fb42-06	091768	11-02-92	4.8	2.8	2.7	2.4	10	0.3	24
Fb42-06	091768	11-02-92	4.7	2.8	2.7	2.5	10	0.3	24

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Fb42-07	091769	11-03-92							
Fc11-19		09-04-91	3.0	3.3	3.2	2.9	9.5	0.4	19
Fc11-20	071263	08-30-91	2.8	3.3	2.5	2.2	4.8	0.4	18
Fc11-21		09-03-91	2.1	3.5	1.5	6.0	5.9	0.3	13
Fc11-22	063967	09-05-91	1.9	3.1	1.6	4.4	4.4	0.3	15
Fc12-13		09-06-91	2.6	3.0	2.6	2.2	5.3	0.4	18
Fc12-14	063156	09-06-91	2.5	3.4	2.4	2.4	4.2	0.4	17
Fc12-20	091779	11-09-92	4.1	7.5	3.7	39	0.5	<0.1	15
Fc14-06	071628	09-11-91	5.5	7.5	4.8	2.2	3.2	0.4	15
Fc21-12	091775	11-04-92	2.3	5.3	3.4	10	2.2	<0.1	16
Fc21-13	091776	11-04-92	9.5	32	4.0	88	0.3	<0.1	15
Fc31-06		08-20-54	1.4	1.9	3.9	10	18	0.1	16
Fc31-13		11-01-60	5.5	4.5	5.0	2.0	8.2	0.3	16
Fc41-01		08-20-54	2.5	2.8	3.2	3.5	17	0.1	23
Gb41-05	070420	03-16-88	6.5	9.9	2.2	12	9.2	0.1	21
Gb41-08	073433	08-26-88	3.6	4.7	4.2	10	13	<0.1	18
Gb41-08	073433	06-15-89	3.3	5.7	4.8	13		<0.1	16
Gb41-09	073434	08-26-88	7.8	4.5	1.7	21	19	<0.1	12
Gb41-09	073434	11-29-88	8.8	6.4	1.9	30	17	<0.1	12
Gb41-09	073434	06-15-89	8.9	4.6	2.4	14		<0.1	10
Gb41-09	073434	01-30-90							
Gb41-10	073435	08-26-88	8.7	2.9	1.9	22	18	<0.1	7
Gb41-10	073435	06-15-89	8.9	3.3	3.7	25		<0.1	7
Gb41-10	073435	01-31-90							
Gb41-11	073436	08-26-88	2.5	1.9	4.0	2.9	11	0.1	13
Gb41-11	073436	04-11-89							
Gb41-11	073436	04-11-89	4.1	36	2.3	31	5.8	0.1	7
Gb41-11	073436	06-21-89	5.6	16	3.3	14	12	0.1	12
Gb41-11	073436	06-21-89							
Gb41-11	073436	01-23-90							
Gb41-11	073436	01-23-90	6.5	11	2.3	25	14	<0.1	14
Gb41-12	073440	08-26-88	9.5	4.6	1.3	17	26	<0.1	18
Gb41-12	073440	11-29-88	10.0	4.8	1.5	19	22	<0.1	19
Gb41-12	073440	11-29-88							
Gb41-12	073440	06-14-89	9.2	4.4	1.3	15		<0.1	17
Gb41-12	073440	01-30-90							
Gb41-12	073440	11-08-90	11.0	5.0	1.6	21	18	<0.1	18
Gb41-17	077260	06-15-89	2.1	7.2	1.1	12		0.1	21
Gb41-19	074131	06-14-89	7.6	13	2.5	14		<0.1	23
Gb41-20	074130	12-01-88	4.3	4.6	0.50	27	6.7	<0.1	6.5
Gb41-20	074130	12-01-88							
Gb41-20	074130	06-21-89							
Gb41-20	074130	06-21-89	4.8	4.7	0.40	32	5.0	<0.1	6.3

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Gb41-20	074130	01-31-90							
Gb41-21	074133	04-11-89							
Gb41-21	074133	04-11-89	2.8	2.3	1.5	13	4.4	0.1	6.2
Gb41-21	074133	06-21-89	4.7	3.9	2.0	17	2.0	<0.1	5.8
Gb41-21	074133	06-21-89							
Gb41-21	074133	01-23-90							
Gb41-21	074133	01-25-89	3.5	2.6	1.3	21	5.4	0.1	5.4
Gb41-21	074133	01-23-90	3.1	2.8	1.7	11	4.0	.	5.8
Gb41-22	080627	01-30-90	3.5	5.5	1.5	9.0	2.0	<0.1	22
Gb41-23	077948	01-15-90	3.9	4.9	0.90	6.9	5.0	<0.1	19
Gb41-24	077947	01-23-90	0.92	7.2	1.2	8.1	<1.0	<0.1	24
Gb41-25	077946	01-30-90	4.6	9.8	1.5	12	3.0	0.1	14
Gb42-03	073437	08-25-88	3.4	5.9	1.0	11	0.8	<0.1	15
Gb42-03	073437	11-29-88	3.2	6.1	1.3	11	0.8	<0.1	16
Gb42-03	073437	11-29-88							
Gb42-03	073437	04-11-89							
Gb42-03	073437	04-11-89	3.4	6.1	1.2	12	<1.0	0.1	15
Gb42-03	073437	06-20-89							
Gb42-03	073437	06-20-89	3.1	5.9	1.1	12	<1.0	<0.1	15
Gb42-03	073437	01-23-90							
Gb42-03	073437	01-23-90	2.8	5.6	1.3	11	<1.0	<0.1	15
Gb42-05	084312	11-08-90	2.5	18	1.4	24	<1.0	<0.1	22
Gb42-05	084312	03-04-91	2.6	18	1.2	22	<1.0	<0.1	21
Gb42-05	084312	04-24-91							
Gb42-05	084312	05-29-91	2.3	17	1.5	23	0.2	<0.1	22
Gb42-05	084312	06-18-91	2.4	17	1.4	21	0.6	<0.1	23
Gb42-05	084312	06-26-91							
Gb42-05	084312	07-23-91							
Gb42-05	084312	08-19-91							
Gb42-05	084312	09-17-91							
Gb42-05	084312	10-16-91							
Gb42-05	084312	11-13-91							
Gb42-05	084312	12-10-91							
Gb42-05	084312	01-07-92							
Gb42-05	084312	02-04-92							
Gb42-05	084312	03-03-92							
Gb42-05	084312	03-30-92							
Gb42-06	084313	11-08-90	9.6	4.7	1.9	26	3.4	<0.10	17
Gb42-06	084313	03-05-91	10	4.9	2.1	24	9.1	<0.10	15
Gb42-06	084313	04-24-91							
Gb42-06	084313	05-29-91	12	4.9	1.9	28	3.1	<0.10	16
Gb42-06	084313	10-16-91							
Gb42-07	074358	11-08-90	1.1	6.5	0.8	5.6	<1.0	<0.10	27

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Gb42-07	074358	03-05-91	1.3	7.5	0.9	5.2	<1.0	<0.10	24
Gb42-07	074358	04-24-91							
Gb42-07	074358	05-29-91	1.4	8.1	1.1	6.3	0.4	<0.10	28
Gb42-07	074358	06-26-91							
Gb42-07	074358	07-23-91							
Gb42-07	074358	08-19-91							
Gb42-07	074358	09-17-91							
Gb42-07	074358	10-16-91							
Gb42-07	074358	11-13-91							
Gb42-07	074358	12-10-91							
Gb42-07	074358	01-07-92							
Gb42-07	074358	02-04-92							
Gb42-07	074358	03-03-92							
Gb42-07	074358	03-30-92							
Gb42-08		11-08-90	7.6	4.5	1.6	21	20	<0.10	19
Gb42-08		03-04-91	12	3.9	1.4	21	26	<0.10	16
Gb42-08		04-24-91							
Gb42-08		05-29-91	10	3.8	1.8	19	28	<0.10	18
Gb42-08		06-18-91	8.9	3.9	1.6	21	20	0.1	18
Gb42-08		06-26-91							
Gb42-08		07-23-91							
Gb42-08		08-19-91							
Gb42-08		09-17-91							
Gb42-08		10-16-91							
Gb42-08		11-13-91							
Gb42-08		12-10-91							
Gb42-08		01-07-92							
Gb42-08		02-04-92							
Gb42-08		03-03-92							
Gb42-08		03-30-92							
Gb42-09A		03-05-91	1.8	9.2	1.1	6.4	<0.1	<0.1	24
Gb42-09A		05-29-91	1.9	11	1.2	6.8	<0.1	<0.1	25
Gb42-10A		03-12-91	11	2.2	1.2	13	28	0.2	8.1
Gb42-10A		04-24-91							
Gb42-10A		05-29-91	10	2.3	1.6	14	30	<0.1	9.3
Gb42-10A		06-18-91	10	2.3	1.5	14	31	0.1	10
Gb42-10A		06-18-91	10	2.4	1.5	12	24	0.1	10
Gb42-10A		06-26-91							
Gb42-10A		07-23-91							
Gb42-10A		08-19-91							
Gb42-10A		09-17-91							
Gb42-10A		10-16-91							
Gb42-10A		11-13-91							

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Gb42-10A		12-10-91							
Gb42-10A		01-07-92							
Gb42-10A		02-04-92							
Gb42-10A		03-03-92							
Gb42-10A		03-30-92							
Gb42-11		10-16-91	4.1	6.7	1.6	11	4.9	<0.1	14
Gb51-03	070414	09-03-87	0.71	4.0	1.7		12	<0.1	11
Gb51-03	070414	10-01-87	0.70	3.1	1.3		15		11
Gb51-03	070414	03-14-88	0.81	3.1	1.6	3.4	9.6	0.1	9.1
Gb51-04	070416	07-17-87	1.0	1.9	1.0	2.2	11		6.8
Gb51-04	070416	10-01-87	1.1	1.8	1.3	2.1	13	0.1	7.4
Gb51-04	070416	03-14-88	1.2	1.6	4.5	2	13	0.1	6.2
Gb51-04	070416	06-08-90	1.5	2.4	0.7	2.7	11	<0.1	5.8
Gb51-04	070416	06-08-90							
Gb51-05	070415	10-01-87	2.3	5.5		4.7	19	0.1	22.0
Gb51-05	070415	03-16-88	2.1	5.2	0.90	5.5	20	0.1	18
Gb51-06	070417	10-01-87	0.65	4.2	0.60	2.9	0.5	0.1	21
Gb51-06	070417	03-15-88	0.71	4.4	0.50	3.9	1.6	0.1	20
Gb51-07	070418	10-01-87	0.48	4.0	0.80	2.2	0.3	0.1	18
Gb51-07	070418	03-15-88	0.63	4.2	0.80	2.7	1.8	0.1	17
Gb51-08	070419	10-02-87	0.61	2.5	0.70	2.9	11	0.1	13
Gb51-08	070419	03-15-88	0.45	2.0	0.40	3.5	9.9	0.1	11
Gb51-08	070419	11-29-88	0.51	2.7	0.50	4.1	7.9	0.1	12
Gb51-08	070419	11-29-88							
Gb51-09	072108	03-15-88	2.7	8.8	3.7	5.6	10	0.1	25
Gb51-10	072109	03-14-88	1.9	3.6	0.70	2.6	18	0.1	25
Gb51-11	072110	03-16-88	1.4	2.7	0.60	3.0	16	0.1	13
Gb51-12	070421	03-14-88	1.2	2.4	1.8	3.6	10	0.1	11
Gb51-12	070421	11-20-90	0.91	2.3	1.4	1.4	4.6	<0.1	11
Gb51-13	070422	03-15-88	1.5	2.5	1.5	3.4	7.8	0.1	11
Gb52-03	070407	09-04-87	2.9	7.2	1.7	2.9	7.8	0.1	21
Gc14-02		07-06-88	3.2	5.8	1.7	8.7	19	0.3	21
Gc14-03	058110	07-06-88	1.6	5.4	1.5	11	11	0.2	27
Gd33-04		09-14-70	3.6	58	9.1	7.9	8.2	0.6	6.8
Hd11-03		09-04-87	11	4.6	5.4	12	30	0.1	11

DGS ID	DNREC ID	Sample Date	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)
Ea44-02		01-05-56							
Ea44-02		02-21-56							
Ea44-02		07-02-56							
Ea44-02		09-18-56							
Ea44-02		09-16-57							

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Ea44-03		01-14-56							
Ea44-03		02-21-56							
Ea44-03		07-02-56							
Ea44-03		09-18-56							
Ea44-03		09-16-57							
Eb31-01		12-15-55							
Eb31-01		02-21-56							
Eb31-01		05-17-56							
Eb31-01		07-02-56							
Eb31-01		10-04-56							
Eb31-01		09-16-57							
Eb32-22		06-17-92							20
Eb41-13	063041	09-06-91							6000
Eb43-05	081063	06-17-92							1200
Eb43-09	066705	09-10-91							10
Eb43-11	071125	09-09-91							50
Eb43-12	073261	09-03-91							250
Eb43-13	083069	09-12-91							1200
Eb43-14	070315	09-06-91							210
Eb44-19	091778	11-09-92							
Eb45-26	071016	09-10-91							10
Eb45-27	084603	08-30-91							20
Eb51-10		08-29-91							30
Eb52-11	070688	09-09-91							240
Eb52-12	069572	08-29-91							190
Eb52-13	083251	09-11-91							170
Eb53-15	071045	09-06-91							150
Eb54-05	076163	08-29-91							10
Eb54-09	076619	09-09-91							40
Ec22-01		02-16-53							
Ec22-01		11-1-60							
Ec22-02		11-01-60							
Ec31-21	075421	09-11-91							1400
Ec32-16	076670	09-10-91							50
Ec33-01		02-16-53							
Ec33-02		11-01-60							
Ec34-01		11-01-60							
Ec34-03		09-10-91							14000
Ec41-16	091777	11-09-92							
Ec42-15		07-07-88	<1	110	<0.5	<1	<5	100	
Ec42-15		07-19-90							<10
Ec42-15		07-19-90	<1	120	<0.5	<1			
Ec43-07	074206	09-09-91							210
Ec43-08	057687	09-11-91							90

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DGS ID	DNREC ID	Sample Date	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (µg/L)
Ec43-09	075144	09-05-91							1400
Ec51-15	084585	09-12-91							700
Ec53-05	065124	09-05-91							1600
Ed21-20	076346	09-10-91							1600
Ed51-10	074236	09-12-91							50
Fa25-11	071418	06-17-92							110
Fa35-08	083232	09-06-91							3600
Fa55-07	060462	09-09-91							10
Fb12-10	079752	09-11-91							240
Fb22-10	080151	08-29-91							230
Fb25-07	069297	6-4-87							
Fb25-07	069297	9-24-88							
Fb25-07	069297	3-15-89							
Fb25-07	069297	9-22-89							
Fb25-07	069297	9-18-90							
Fb25-07	069297	3-19-90							
Fb25-07	069297	3-26-91							
Fb25-07	069297	1-27-92							
Fb25-07	069297	12-10-93							
Fb25-10	084229	09-03-91							70
Fb34-22	091773	11-04-92							10
Fb34-22	091773	11-04-92							10
Fb35-24	081527	09-09-91							210
Fb42-06	091768	11-02-92							21700
Fb42-06	091768	11-02-92							21400
Fb42-07	091769	11-03-92							
Fc11-19		09-04-91							360
Fc11-20	071263	08-30-91							540
Fc11-21		09-03-91							150
Fc11-22	063967	09-05-91							1100
Fc12-13		09-06-91							570
Fc12-14	063156	09-06-91							500
Fc12-20	091779	11-09-92							10
Fc14-06	071628	09-11-91							30
Fc21-12	091775	11-04-92							12
Fc21-13	091776	11-04-92							59
Fc31-06		08-20-54							
Fc31-13		11-01-60							
Fc41-01		08-20-54							
Gb41-05	070420	03-16-88	<1.0	48	<0.5	<1	<5.0	<10	80
Gb41-08	073433	08-26-88	<1.0	120	1.9	<1	<5.0	<10	<10
Gb41-08	073433	06-15-89							10
Gb41-09	073434	08-26-88	<1.0	85	<0.5	<1	<5.0	<10	20
Gb41-09	073434	11-29-88	<1.0	97	<0.5	<1	<5.0	<10	<10

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Gb42-03	073437	01-23-90	<1.0	120	0.7	1	<5.0	<10	<10
Gb42-05	084312	11-08-90	<1.0	27	0.6	<1	<5.0	<10	10
Gb42-05	084312	03-04-91	<1.0	26	1.0	<1	<5.0	<10	10
Gb42-05	084312	04-24-91							
Gb42-05	084312	05-29-91	<1.0	23	0.7	<1	<5.0	<10	
Gb42-05	084312	06-18-91	<1.0	25	0.6	<1	<5.0	<10	
Gb42-05	084312	06-26-91							
Gb42-05	084312	07-23-91							
Gb42-05	084312	08-19-91							
Gb42-05	084312	09-17-91							
Gb42-05	084312	10-16-91							
Gb42-05	084312	11-13-91							
Gb42-05	084312	12-10-91							
Gb42-05	084312	01-07-92							
Gb42-05	084312	02-04-92							
Gb42-05	084312	03-03-92							
Gb42-05	084312	03-30-92							
Gb42-06	084313	11-08-90	<1.0	310	1.1	<1	<5.0	<10	
Gb42-06	084313	03-05-91	<1.0	240	0.9	<1	<5.0	<10	20
Gb42-06	084313	04-24-91							
Gb42-06	084313	05-29-91	<1.0	290	1.2	1	<5.0	<10	10
Gb42-06	084313	10-16-91							
Gb42-07	074358	11-08-90	<1.0	54	0.5	<1	<5.0	<10	110
Gb42-07	074358	03-05-91	<1.0	69	<0.5	<1	<5.0	<10	110
Gb42-07	074358	04-24-91							
Gb42-07	074358	05-29-91	<1.0	74	0.8	<1	<5.0	<10	100
Gb42-07	074358	06-26-91							
Gb42-07	074358	07-23-91							
Gb42-07	074358	08-19-91							
Gb42-07	074358	09-17-91							
Gb42-07	074358	10-16-91							
Gb42-07	074358	11-13-91							
Gb42-07	074358	12-10-91							
Gb42-07	074358	01-07-92							
Gb42-07	074358	02-04-92							
Gb42-07	074358	03-03-92							
Gb42-07	074358	03-30-92							
Gb42-08		11-08-90	<1	100	<0.5	<1	<5.0	<10	390
Gb42-08		03-04-91	<1	100	0.8	2	<5.0	<10	670
Gb42-08		04-24-91							
Gb42-08		05-29-91	<1	120	0.9	<1	<5.0	10	1000
Gb42-08		06-18-91	<1	120	0.5	<1	<5.0	10	1300
Gb42-08		06-26-91							
Gb42-08		07-23-91							

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Gb42-08		08-19-91							
Gb42-08		09-17-91							
Gb42-08		10-16-91							
Gb42-08		11-13-91							
Gb42-08		12-10-91							
Gb42-08		01-07-92							
Gb42-08		02-04-92							
Gb42-08		03-03-92							
Gb42-08		03-30-92							
Gb42-09A		03-05-91	<1.0	76	<0.5	2	<5.0	<10	170
Gb42-09A		05-29-91	<1.0	85	0.5	<1	<5.0	<10	390
Gb42-10A		03-12-91	<1.0	120	2.5	<1	<5.0	<10	940
Gb42-10A		04-24-91							
Gb42-10A		05-29-91	<1.0	140	2.6	<1	<5.0	<10	2700
Gb42-10A		06-18-91	<1.0	170	3.4	<1	<5.0	<10	1400
Gb42-10A		06-18-91	<1.0	150	2.0	<1	<5.0	<10	3000
Gb42-10A		06-26-91							
Gb42-10A		07-23-91							
Gb42-10A		08-19-91							
Gb42-10A		09-17-91							
Gb42-10A		10-16-91							
Gb42-10A		11-13-91							
Gb42-10A		12-10-91							
Gb42-10A		01-07-92							
Gb42-10A		02-04-92							
Gb42-10A		03-03-92							
Gb42-10A		03-30-92							
Gb42-11		10-16-91	3.0	71	<0.5	<1	<5.0	<10	7300
Gb51-03	070414	09-03-87	<1.0	96	0.8	3	18	<10	4000
Gb51-03	070414	10-01-87		94	<0.5	<1	<5.0	<10	4100
Gb51-03	070414	03-14-88	<1.0	72	<0.5	<1	<5.0	<10	2800
Gb51-04	070416	07-17-87							1600
Gb51-04	070416	10-01-87		68	0.6	<1	<5.0	<10	1700
Gb51-04	070416	03-14-88	<1.0	53	<0.5	<1	<5.0	<10	360
Gb51-04	070416	06-08-90	<1.0	36	<0.5	<1	<5.0	<10	500
Gb51-04	070416	06-08-90							440
Gb51-05	070415	10-01-87		51	<0.5	<1	<5.0	<10	560
Gb51-05	070415	03-16-88	<1.0	56	<0.5	<1	<5.0	<10	10
Gb51-06	070417	10-01-87		18	0.6	<1	<5.0	<10	20
Gb51-06	070417	03-15-88	<1.0	20	<0.5	<1	<5.0	<10	10
Gb51-07	070418	10-01-87		16	<0.6	<1	<5.0	<10	10
Gb51-07	070418	03-15-88	<1.0	15	<0.5	5	<5.0	<10	20
Gb51-08	070419	10-02-87		77	1.1	<1	<5.0	<10	4400
Gb51-08	070419	03-15-88	<1.0	54	<0.5	<1	<5.0	<10	1500

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Gb51-08	070419	11-29-88	<1.0	74	<0.5	<1	<5.0	<10	1500
Gb51-08	070419	11-29-88							1400
Gb51-09	072108	03-15-88	<1.0	62	<0.5	<1	<5.0	<10	5000
Gb51-10	072109	03-14-88	1.0	59	<0.5	<1	<5.0	<10	5500
Gb51-11	072110	03-16-88	<1.0	150	<0.5	<1	<5.0	<10	380
Gb51-12	070421	03-14-88	<1.0	48	<0.5	<1	<5.0	<10	12000
Gb51-12	070421	11-20-90	<1.0	61	0.6	1	<5.0	<10	5500
Gb51-13	070422	03-15-88	<1.0	38	<0.5	<1	<5.0	<10	4500
Gb52-03	070407	09-04-87	<1.0	21	<0.5	1	<5.0	<10	530
Gc14-02		07-06-88	1.0	7	<0.5	<1	<5.0	90	
Gc14-03	058110	07-06-88	<1.0	7	<0.5	<1	<5.0	<10	10
Gd33-04		09-14-70							
Hd11-03		09-04-87	<1.0	120	<0.5	<1	<5.0	<10	90

DGS ID	DNREC ID	Sample Date	Lead (µg/L)	Manganese (µg/L)	Nickel (µg/L)	Silver (µg/L)	Strontium (µg/L)	Zinc (µg/L)	Antimony (µg/L)
Ea44-02		01-05-56							
Ea44-02		02-21-56							
Ea44-02		07-02-56							
Ea44-02		09-18-56							
Ea44-02		09-16-57							
Ea44-03		01-14-56							
Ea44-03		02-21-56							
Ea44-03		07-02-56							
Ea44-03		09-18-56							
Ea44-03		09-16-57							
Eb31-01		12-15-55							
Eb31-01		02-21-56							
Eb31-01		05-17-56							
Eb31-01		07-02-56							
Eb31-01		10-04-56							
Eb31-01		09-16-57							
Eb32-22		06-17-92		<5.0					
Eb41-13	063041	09-06-91		120					
Eb43-05	081063	06-17-92		14					
Eb43-09	066705	09-10-91		10					
Eb43-11	071125	09-09-91		10					
Eb43-12	073261	09-03-91		10					
Eb43-13	083069	09-12-91		10					
Eb43-14	070315	09-06-91		10					
Eb44-19	091778	11-09-92							
Eb45-26	071016	09-10-91		30					
Eb45-27	084603	08-30-91		10					

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Eb51-10		08-29-91		10					
Eb52-11	070688	09-09-91		10					
Eb52-12	069572	08-29-91		40					
Eb52-13	083251	09-11-91		20					
Eb53-15	071045	09-06-91		20					
Eb54-05	076163	08-29-91		<10					
Eb54-09	076619	09-09-91		10					
Ec22-01		02-16-53							
Ec22-01		11-1-60							
Ec22-02		11-01-60							
Ec31-21	075421	09-11-91		30					
Ec32-16	076670	09-10-91		10					
Ec33-01		02-16-53							
Ec33-02		11-01-60							
Ec34-01		11-01-60							
Ec34-03		09-10-91		140					
Ec41-16	091777	11-09-92							
Ec42-15		07-07-88	<10	5.0	<10	2	180	15	<1
Ec42-15		07-19-90							
Ec42-15		07-19-90	<10	4.0	<10	1	200	9.0	<1
Ec43-07	074206	09-09-91		10					
Ec43-08	057687	09-11-91		10					
Ec43-09	075144	09-05-91		30					
Ec51-15	084585	09-12-91		20					
Ec53-05	065124	09-05-91		20					
Ed21-20	076346	09-10-91		10					
Ed51-10	074236	09-12-91		60					
Fa25-11	071418	06-17-92		8.0					
Fa35-08	083232	09-06-91		40					
Fa55-07	060462	09-09-91		<10					
Fb12-10	079752	09-11-91		20					
Fb22-10	080151	08-29-91		20					
Fb25-07	069297	6-4-87							
Fb25-07	069297	9-24-88							
Fb25-07	069297	3-15-89							
Fb25-07	069297	9-22-89							
Fb25-07	069297	9-18-90							
Fb25-07	069297	3-19-90							
Fb25-07	069297	3-26-91							
Fb25-07	069297	1-27-92							
Fb25-07	069297	12-10-93							
Fb25-10	084229	09-03-91		20					
Fb34-22	091773	11-04-92		290					

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Fb34-22	091773	11-04-92		330					
Fb35-24	081527	09-09-91		10					
Fb42-06	091768	11-02-92		170					
Fb42-06	091768	11-02-92		170					
Fb42-07	091769	11-03-92							
Fc11-19		09-04-91		10					
Fc11-20	071263	08-30-91		20					
Fc11-21		09-03-91		50					
Fc11-22	063967	09-05-91		60					
Fc12-13		09-06-91		10					
Fc12-14	063156	09-06-91		10					
Fc12-20	091779	11-09-92		41					
Fc14-06	071628	09-11-91		10					
Fc21-12	091775	11-04-92		29					
Fc21-13	091776	11-04-92		390					
Fc31-06		08-20-54							
Fc31-13		11-01-60							
Fc41-01		08-20-54							
Gb41-05	070420	03-16-88	<10	250	<10	<1	150	<3.0	<1
Gb41-08	073433	08-26-88	<10	39	10	<1	130	<3.0	<1
Gb41-08	073433	06-15-89		66					
Gb41-09	073434	08-26-88	<10	37	<10	3	90	<3.0	<1
Gb41-09	073434	11-29-88	<10	15	<10	<1	100	10	<1
Gb41-09	073434	06-15-89		40					
Gb41-09	073434	01-30-90							
Gb41-10	073435	08-26-88	<10	12	<10	5	80	3.0	<1
Gb41-10	073435	06-15-89		41					
Gb41-10	073435	01-31-90							
Gb41-11	073436	08-26-88	<10	59	<10	<1	30	<3.0	<1
Gb41-11	073436	04-11-89							
Gb41-11	073436	04-11-89	<10	53	<10	<1	20	5.0	<1
Gb41-11	073436	06-21-89	<10	400	<10	2	40	<3.0	<1
Gb41-11	073436	06-21-89							
Gb41-11	073436	01-23-90							
Gb41-11	073436	01-23-90	<10	380	<10	<1	70	8.0	<1
Gb41-12	073440	08-26-88	<10	170	<10	2	170	4.0	<1
Gb41-12	073440	11-29-88	<10	92	<10	<1	190	33.0	<1
Gb41-12	073440	11-29-88							
Gb41-12	073440	06-14-89		15					
Gb41-12	073440	01-30-90							
Gb41-12	073440	11-08-90	<10	10	<10	<1	250	<3.0	<1
Gb41-17	077260	06-15-89		26					
Gb41-19	074131	06-14-89		120					

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Gb41-20	074130	12-01-88	10	110	20	<1	140	90	<1
Gb41-20	074130	12-01-88							
Gb41-20	074130	06-21-89							
Gb41-20	074130	06-21-89	<10	120	<10	<1	170	55	<1
Gb41-20	074130	01-31-90							
Gb41-21	074133	04-11-89							
Gb41-21	074133	04-11-89	<10	110	<10	<1	50	18	<1
Gb41-21	074133	06-21-89	<10	190	<10	<1	80	14	<1
Gb41-21	074133	06-21-89							
Gb41-21	074133	01-23-90							
Gb41-21	074133	01-25-89	<10	160	<10	<1	60	26	<1
Gb41-21	074133	01-23-90	<10	160	<10	1	60	11	<1
Gb41-22	080627	01-30-90		100					
Gb41-23	077948	01-15-90		7.0					
Gb41-24	077947	01-23-90		44					
Gb41-25	077946	01-30-90		40					
Gb42-03	073437	08-25-88	<10	51	<10	<1	100	<3.0	<1
Gb42-03	073437	11-29-88	<10	60	<10	<1	100	13	<1
Gb42-03	073437	11-29-88							
Gb42-03	073437	04-11-89							
Gb42-03	073437	04-11-89	<10	41	<10	<1	100	6.0	<1
Gb42-03	073437	06-20-89							
Gb42-03	073437	06-20-89	<10	40	<10	3	100	<3.0	<1
Gb42-03	073437	01-23-90							
Gb42-03	073437	01-23-90	10	34	<10	<1	90	<3.0	<1
Gb42-05	084312	11-08-90	<10	15	<10	<1	100	<3.0	<1
Gb42-05	084312	03-04-91	<10	20	<10	<1	110	<3.0	<1
Gb42-05	084312	04-24-91							
Gb42-05	084312	05-29-91	<10	10	<10	<1	100	<3.0	<1
Gb42-05	084312	06-18-91	<10	7.0	<10	<1	100	<3.0	1
Gb42-05	084312	06-26-91							
Gb42-05	084312	07-23-91							
Gb42-05	084312	08-19-91							
Gb42-05	084312	09-17-91							
Gb42-05	084312	10-16-91							
Gb42-05	084312	11-13-91							
Gb42-05	084312	12-10-91							
Gb42-05	084312	01-07-92							
Gb42-05	084312	02-04-92							
Gb42-05	084312	03-03-92							
Gb42-05	084312	03-30-92							
Gb42-06	084313	11-08-90	<10	150	<10	<1	170	8.0	<1
Gb42-06	084313	03-05-91	<10	170	<10	<1	170	<3.0	<1

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Gb42-06	084313	04-24-91							
Gb42-06	084313	05-29-91	<10	180	<10	<1	200	8.0	<1
Gb42-06	084313	10-16-91							
Gb42-07	074358	11-08-90	<10	3.0	<10	<1	37	3.0	<1
Gb42-07	074358	03-05-91	<10	4.0	<10	<1	50	<3.0	<1
Gb42-07	074358	04-24-91							
Gb42-07	074358	05-29-91	<10	3.0	<10	<1	50	<3.0	<1
Gb42-07	074358	06-26-91							
Gb42-07	074358	07-23-91							
Gb42-07	074358	08-19-91							
Gb42-07	074358	09-17-91							
Gb42-07	074358	10-16-91							
Gb42-07	074358	11-13-91							
Gb42-07	074358	12-10-91							
Gb42-07	074358	01-07-92							
Gb42-07	074358	02-04-92							
Gb42-07	074358	03-03-92							
Gb42-07	074358	03-30-92							
Gb42-08		11-08-90	<10	13	<10	<1	400	5.0	<1
Gb42-08		03-04-91	<10	26	20	<1	490	8.0	<1
Gb42-08		04-24-91							
Gb42-08		05-29-91	10	23	20	<1	480	7.0	<1
Gb42-08		06-18-91	<10	26	10	<1	430	12	2
Gb42-08		06-26-91							
Gb42-08		07-23-91							
Gb42-08		08-19-91							
Gb42-08		09-17-91							
Gb42-08		10-16-91							
Gb42-08		11-13-91							
Gb42-08		12-10-91							
Gb42-08		01-07-92							
Gb42-08		02-04-92							
Gb42-08		03-03-92							
Gb42-08		03-30-92							
Gb42-09A		03-05-91	<10	14	<10	<1	60	9.0	<1
Gb42-09A		05-29-91	<10	30	<10	<1	70	8.0	<1
Gb42-10A		03-12-91	<10	76	70	<1	160	21.0	<1
Gb42-10A		04-24-91							
Gb42-10A		05-29-91	<10	76	30	<1	160	13.0	<1
Gb42-10A		06-18-91	<10	53	10	<1	160	13.0	<1
Gb42-10A		06-18-91	<10	76	30	<1	150	18.0	<1
Gb42-10A		06-26-91							
Gb42-10A		07-23-91							

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Gb42-10A		08-19-91							
Gb42-10A		09-17-91							
Gb42-10A		10-16-91							
Gb42-10A		11-13-91							
Gb42-10A		12-10-91							
Gb42-10A		01-07-92							
Gb42-10A		02-04-92							
Gb42-10A		03-03-92							
Gb42-10A		03-30-92							
Gb42-11		10-16-91	<10	120	<10	<1	130	7.0	<1
Gb51-03	070414	09-03-87	<10	33	10	2	50	98	<1
Gb51-03	070414	10-01-87	<10	26	<10	<1	52	4.0	
Gb51-03	070414	03-14-88	<10	25	<10	<1	50	10	<1
Gb51-04	070416	07-17-87							
Gb51-04	070416	10-01-87	<10	74	<10	<1	10	5.0	
Gb51-04	070416	03-14-88	<10	77	<10	<1	10	8.0	<1
Gb51-04	070416	06-08-90	<10	64	<10	<1	10	6.0	<1
Gb51-04	070416	06-08-90							
Gb51-05	070415	10-01-87	<10	85	<10	<1	60	15.0	
Gb51-05	070415	03-16-88	<10	9	<10	<1	50	4.0	<1
Gb51-06	070417	10-01-87	<10	15	<10	<1	20	7.0	
Gb51-06	070417	03-15-88	<10	28	80	<1	20	9.0	<1
Gb51-07	070418	10-01-87	10	30	<10	<1	20	5.0	
Gb51-07	070418	03-15-88	<10	25	40	<1	30	6.0	<1
Gb51-08	070419	10-02-87	<10	39	20	<1	30	24	
Gb51-08	070419	03-15-88	<10	24	<10	<1	20	7.0	<1
Gb51-08	070419	11-29-88	<10	22	<10	<1	20	7.0	<1
Gb51-08	070419	11-29-88							
Gb51-09	072108	03-15-88	<10	130	<10	<1	100	27	<1
Gb51-10	072109	03-14-88	<10	220	<10	<1	70	4.0	<1
Gb51-11	072110	03-16-88	<10	110	<10	<1	80	24	<1
Gb51-12	070421	03-14-88	<10	170	<10	<1	40	4.0	<1
Gb51-12	070421	11-20-90	<10	91	<10	<1	40	4.0	<1
Gb51-13	070422	03-15-88	<10	300	<10	<1	40	11	<1
Gb52-03	070407	09-04-87	20	360	<10	<1	80	68	<1
Gc14-02		07-06-88	<10	11	<10	<1	150	55	<1
Gc14-03	058110	07-06-88	<10	<1.0	<10	<1	140	<3.0	<1
Gd33-04		09-14-70							
Hd11-03		09-04-87	<10	52	10	<1	150	13	<1

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Ea44-02		01-05-56							
Ea44-02		02-21-56							
Ea44-02		07-02-56							
Ea44-02		09-18-56							
Ea44-02		09-16-57							
Ea44-03		01-14-56							
Ea44-03		02-21-56							
Ea44-03		07-02-56							
Ea44-03		09-18-56							
Ea44-03		09-16-57							
Eb31-01		12-15-55							
Eb31-01		02-21-56							
Eb31-01		05-17-56							
Eb31-01		07-02-56							
Eb31-01		10-04-56							
Eb31-01		09-16-57							
Eb32-22		06-17-92	30						
Eb41-13	063041	09-06-91	<10						
Eb43-05	081063	06-17-92	30						
Eb43-09	066705	09-10-91	<10						
Eb43-11	071125	09-09-91	<10						
Eb43-12	073261	09-03-91	<10						
Eb43-13	083069	09-12-91	<10						
Eb43-14	070315	09-06-91	<10						
Eb44-19	091778	11-09-92							
Eb45-26	071016	09-10-91	10						
Eb45-27	084603	08-30-91	10						
Eb51-10		08-29-91	<10						
Eb52-11	070688	09-09-91	<10						
Eb52-12	069572	08-29-91	<10						
Eb52-13	083251	09-11-91	10						
Eb53-15	071045	09-06-91	<10						
Eb54-05	076163	08-29-91	10						
Eb54-09	076619	09-09-91	<10						
Ec22-01		02-16-53							
Ec22-01		11-1-60							
Ec22-02		11-01-60							
Ec31-21	075421	09-11-91	<10						
Ec32-16	076670	09-10-91	<10						
Ec33-01		02-16-53							
Ec33-02		11-01-60							
Ec34-01		11-01-60							
Ec34-03		09-10-91	10						

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Ec41-16	091777	11-09-92							
Ec42-15		07-07-88	<10	7	0.5	<0.1	0.4		
Ec42-15		07-19-90	10						
Ec42-15		07-19-90	<10	7		<0.1	0.8		
Ec43-07	074206	09-09-91	<10						
Ec43-08	057687	09-11-91	<10						
Ec43-09	075144	09-05-91	10						
Ec51-15	084585	09-12-91	<10						
Ec53-05	065124	09-05-91	<10						
Ed21-20	076346	09-10-91	<10						
Ed51-10	074236	09-12-91	<10						
Fa25-11	071418	06-17-92	30						
Fa35-08	083232	09-06-91	<10						
Fa55-07	060462	09-09-91	<10						
Fb12-10	079752	09-11-91	<10						
Fb22-10	080151	08-29-91	10						
Fb25-07	069297	6-4-87							
Fb25-07	069297	9-24-88							
Fb25-07	069297	3-15-89							
Fb25-07	069297	9-22-89							
Fb25-07	069297	9-18-90							
Fb25-07	069297	3-19-90							
Fb25-07	069297	3-26-91							
Fb25-07	069297	1-27-92							
Fb25-07	069297	12-10-93							
Fb25-10	084229	09-03-91	10						
Fb34-22	091773	11-04-92	<20						
Fb34-22	091773	11-04-92	<20						
Fb35-24	081527	09-09-91	<10						
Fb42-06	091768	11-02-92	<20						
Fb42-06	091768	11-02-92	<20						
Fb42-07	091769	11-03-92							
Fc11-19		09-04-91	10						
Fc11-20	071263	08-30-91	<10						
Fc11-21		09-03-91	<10						
Fc11-22	063967	09-05-91	<10						
Fc12-13		09-06-91	<10						
Fc12-14	063156	09-06-91	<10						
Fc12-20	091779	11-09-92	<20						
Fc14-06	071628	09-11-91	<10						
Fc21-12	091775	11-04-92							
Fc21-13	091776	11-04-92							
Fc31-06		08-20-54							

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Fc31-13		11-01-60							
Fc41-01		08-20-54							
Gb41-05	070420	03-16-88	<10	1					
Gb41-08	073433	08-26-88	40	1		<0.10	<0.10		
Gb41-08	073433	06-15-89							
Gb41-09	073434	08-26-88	<10	1		<0.10	<0.10		
Gb41-09	073434	11-29-88	<10	1		<0.10	<0.10		
Gb41-09	073434	06-15-89							
Gb41-09	073434	01-30-90							
Gb41-10	073435	08-26-88	50	2		<0.10	<0.10		
Gb41-10	073435	06-15-89							
Gb41-10	073435	01-31-90							
Gb41-11	073436	08-26-88	<10	<1		0.50	0.20		
Gb41-11	073436	04-11-89	20						
Gb41-11	073436	04-11-89	70	<1		<0.10	<0.10		
Gb41-11	073436	06-21-89	20	<1		0.10	0.10		
Gb41-11	073436	06-21-89	<10						
Gb41-11	073436	01-23-90	<10						
Gb41-11	073436	01-23-90	<10	<1		<0.10	<0.10		
Gb41-12	073440	08-26-88	20	<1		<0.10	<0.10		
Gb41-12	073440	11-29-88	20	<1		<0.10			
Gb41-12	073440	11-29-88					<0.10		
Gb41-12	073440	06-14-89				<0.10	<0.10		
Gb41-12	073440	01-30-90							
Gb41-12	073440	11-08-90	<10	<1	<0.1			<0.05	0.05
Gb41-17	077260	06-15-89							
Gb41-19	074131	06-14-89				0.10	0.10		
Gb41-20	074130	12-01-88	<10	<1		<0.10	<0.10		
Gb41-20	074130	12-01-88							
Gb41-20	074130	06-21-89	20						
Gb41-20	074130	06-21-89	<10	<1		<0.10	<0.10		
Gb41-20	074130	01-31-90							
Gb41-21	074133	04-11-89	20						
Gb41-21	074133	04-11-89	30	<1		<0.10	0.30		
Gb41-21	074133	06-21-89	20	<1		<0.10	0.40		
Gb41-21	074133	06-21-89	20						
Gb41-21	074133	01-23-90	20						
Gb41-21	074133	01-25-89		<1					
Gb41-21	074133	01-23-90	20	<1		0.40	0.70		
Gb41-22	080627	01-30-90							
Gb41-23	077948	01-15-90							
Gb41-24	077947	01-23-90							
Gb41-25	077946	01-30-90							

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Gb42-03	073437	08-25-88	20	<1		<0.10	<0.10		
Gb42-03	073437	11-29-88	30	<1		<0.10	<0.10		
Gb42-03	073437	11-29-88							
Gb42-03	073437	04-11-89	20						
Gb42-03	073437	04-11-89	20	<1		<0.10	<0.10		
Gb42-03	073437	06-20-89	20						
Gb42-03	073437	06-20-89	20	<1		0.10	0.10		
Gb42-03	073437	01-23-90	10						
Gb42-03	073437	01-23-90	20	<1		<0.10	<0.10		
Gb42-05	084312	11-08-90	<10	<1	<0.1			<0.05	0.06
Gb42-05	084312	03-04-91	<10	<1	<0.1			<0.05	<0.05
Gb42-05	084312	04-24-91			<0.1			<0.05	<0.05
Gb42-05	084312	05-29-91	<10	<1	<0.1			<0.05	<0.05
Gb42-05	084312	06-18-91	<10	<1	<0.1			<0.05	<0.05
Gb42-05	084312	06-26-91			<0.1			<0.05	<0.05
Gb42-05	084312	07-23-91			<0.1			<0.05	<0.05
Gb42-05	084312	08-19-91			<0.1			<0.05	<0.05
Gb42-05	084312	09-17-91			<0.1			<0.05	<0.05
Gb42-05	084312	10-16-91			<0.1			<0.05	<0.05
Gb42-05	084312	11-13-91			<0.1			<0.05	<0.05
Gb42-05	084312	12-10-91			<0.1			<0.05	<0.05
Gb42-05	084312	01-07-92			<0.1			<0.05	<0.05
Gb42-05	084312	02-04-92			<0.1			<0.05	<0.05
Gb42-05	084312	03-03-92			<0.1			<0.05	<0.05
Gb42-05	084312	03-30-92			<0.1			<0.05	<0.05
Gb42-06	084313	11-08-90	160	4	<0.1			<0.05	<0.1
Gb42-06	084313	03-05-91	100	7	<0.1			<0.05	<0.1
Gb42-06	084313	04-24-91			<0.1			<0.05	<0.1
Gb42-06	084313	05-29-91	160	6	<0.1			<0.05	<0.1
Gb42-06	084313	10-16-91			1.1			4.20	<0.1
Gb42-07	074358	11-08-90		<1	0.1			<0.05	<0.1
Gb42-07	074358	03-05-91	10	<1	<0.1			<0.05	0.1
Gb42-07	074358	04-24-91			<0.1			<0.05	<0.1
Gb42-07	074358	05-29-91	10	<1	<0.1			<0.05	<0.1
Gb42-07	074358	06-26-91			<0.1			<0.05	<0.1
Gb42-07	074358	07-23-91			<0.1			<0.05	<0.1
Gb42-07	074358	08-19-91			<0.1			<0.05	<0.1
Gb42-07	074358	09-17-91			<0.1			<0.05	<0.1
Gb42-07	074358	10-16-91			<0.1			<0.05	<0.1
Gb42-07	074358	11-13-91			<0.1			<0.05	<0.1
Gb42-07	074358	12-10-91			<0.1			<0.05	<0.1
Gb42-07	074358	01-07-92			<0.1			<0.05	<0.1
Gb42-07	074358	02-04-92			<0.1			<0.05	<0.1

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Gb42-07	074358	03-03-92			<0.1			<0.05	<0.1
Gb42-07	074358	03-30-92			<0.1			<0.05	<0.1
Gb42-08		11-08-90	<10	2	<0.1			<0.05	0.1
Gb42-08		03-04-91	<10	1	<0.1			<0.05	<0.1
Gb42-08		04-24-91			<0.1			<0.05	<0.1
Gb42-08		05-29-91	<10	1	<0.1			<0.05	<0.1
Gb42-08		06-18-91	<10	<1	<0.1			<0.05	<0.1
Gb42-08		06-26-91			<0.1			<0.05	<0.1
Gb42-08		07-23-91			<0.1			<0.05	<0.1
Gb42-08		08-19-91			<0.1			<0.05	<0.1
Gb42-08		09-17-91			<0.1			<0.05	<0.1
Gb42-08		10-16-91			<0.1			<0.05	<0.1
Gb42-08		11-13-91			<0.1			<0.05	<0.1
Gb42-08		12-10-91			<0.1			<0.05	<0.1
Gb42-08		01-07-92			<0.1			<0.05	<0.1
Gb42-08		02-04-92			<0.1			<0.05	<0.1
Gb42-08		03-03-92			<0.1			<0.05	<0.1
Gb42-08		03-30-92			<0.1			<0.05	<0.1
Gb42-09A		03-05-91	<10	<1	<0.1			<0.05	<0.1
Gb42-09A		05-29-91	<10	<1	<0.1			<0.05	<0.1
Gb42-10A		03-12-91	10	2	<0.1			<0.05	<0.1
Gb42-10A		04-24-91			<0.1			<0.05	<0.1
Gb42-10A		05-29-91	<10	<1	<0.1			<0.05	<0.1
Gb42-10A		06-18-91	40	<1	<0.1			<0.05	<0.1
Gb42-10A		06-18-91	30	<1	<0.1			<0.05	<0.1
Gb42-10A		06-26-91			<0.1			<0.05	<0.1
Gb42-10A		07-23-91			<0.1			<0.05	<0.1
Gb42-10A		08-19-91			<0.1			<0.05	<0.1
Gb42-10A		09-17-91			<0.1			<0.05	<0.1
Gb42-10A		10-16-91			<0.1			<0.05	<0.1
Gb42-10A		11-13-91			<0.1			<0.05	<0.1
Gb42-10A		12-10-91			<0.1			<0.05	<0.1
Gb42-10A		01-07-92			<0.1			<0.05	<0.1
Gb42-10A		02-04-92			<0.1			<0.05	<0.1
Gb42-10A		03-03-92			<0.1			<0.10	<0.1
Gb42-10A		03-30-92			<0.1			<0.05	<0.1
Gb42-11		10-16-91	<10	<1	0.2			<0.05	<0.1
Gb51-03	070414	09-03-87	60	<1					
Gb51-03	070414	10-01-87	40						
Gb51-03	070414	03-14-88	40	<1					
Gb51-04	070416	07-17-87	780						
Gb51-04	070416	10-01-87	840						
Gb51-04	070416	03-14-88	900	<1					

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	Alum- inum ($\mu\text{g/L}$)	Selenium ($\mu\text{g/L}$)	Meto- lachlor ($\mu\text{g/L}$)	Simazine ($\mu\text{g/L}$)	Atrazine, unfiltered ($\mu\text{g/L}$)	Atrazine, dissolved ($\mu\text{g/L}$)	Alachlor ($\mu\text{g/L}$)
Gb51-04	070416	06-08-90	870	<1		<0.10	<0.10		
Gb51-04	070416	06-08-90	870						
Gb51-05	070415	10-01-87	20						
Gb51-05	070415	03-16-88	<10	<1					
Gb51-06	070417	10-01-87	<10						
Gb51-06	070417	03-15-88	<10	<1					
Gb51-07	070418	10-01-87	<10						
Gb51-07	070418	03-15-88	<10	<1					
Gb51-08	070419	10-02-87	140						
Gb51-08	070419	03-15-88	170	<1					
Gb51-08	070419	11-29-88	190	<1		<0.10	<0.10		
Gb51-08	070419	11-29-88	180						
Gb51-09	072108	03-15-88	30	<1					
Gb51-10	072109	03-14-88	30	<1					
Gb51-11	072110	03-16-88	80	<1					
Gb51-12	070421	03-14-88	60	<1					
Gb51-12	070421	11-20-90	130	<1					
Gb51-13	070422	03-15-88	<10	<1					
Gb52-03	070407	09-04-87	20	<1		<0.10	<0.10		
Gc14-02		07-06-88	<10	2		<0.10	<0.10		
Gc14-03	058110	07-06-88	<10	1		<0.10	<0.10		
Gd33-04		09-14-70							
Hd11-03		09-04-87	50	<1		<0.10	<0.10		

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury ($\mu\text{g/L}$)	Radon (pCi/L)
Ea44-02		01-05-56			
Ea44-02		02-21-56	52		
Ea44-02		07-02-56	56		
Ea44-02		09-18-56			
Ea44-02		09-16-57			
Ea44-03		01-14-56	48		
Ea44-03		02-21-56			
Ea44-03		07-02-56	48		
Ea44-03		09-18-56			
Ea44-03		09-16-57			
Eb31-01		12-15-55	50		
Eb31-01		05-17-56	55		
Eb31-01		07-02-56	64		
Eb31-01		10-04-56			
Eb31-01		09-16-57			
Eb32-22		06-17-92			210
Eb41-13	063041	09-06-91			

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury ($\mu\text{g}/\text{L}$)	Radon (pCi/L)
Eb43-05	081063	06-17-92			100
Eb43-09	066705	09-10-91			1700
Eb43-11	071125	09-09-91			
Eb43-12	073261	09-03-91			
Eb43-13	083069	09-12-91			
Eb43-14	070315	09-06-91			
Eb44-19	091778	11-09-92			440
Eb45-26	071016	09-10-91			1400
Eb45-27	084603	08-30-91			
Eb51-10		08-29-91			
Eb52-11	070688	09-09-91			
Eb52-12	069572	08-29-91			
Eb52-13	083251	09-11-91			360
Eb53-15	071045	09-06-91			
Eb54-05	076163	08-29-91			
Eb54-09	076619	09-09-91			
Ec22-01		02-16-53			
Ec22-01		11-1-60	401		
Ec22-02		11-01-60	371		
Ec31-21	075421	09-11-91			130
Ec32-16	076670	09-10-91			
Ec33-01		02-16-53			
Ec33-02		11-01-60	74		
Ec34-01		11-01-60	253		
Ec34-03		09-10-91			
Ec41-16	091777	11-09-92			150
Ec42-15		07-07-88		<0.1	480
Ec42-15		07-19-90			
Ec42-15		07-19-90		<0.1	
Ec43-07	074206	09-09-91			
Ec43-08	057687	09-11-91			
Ec43-09	075144	09-05-91			
Ec51-15	084585	09-12-91			
Ec53-05	065124	09-05-91			
Ed21-20	076346	09-10-91			89
Ed51-10	074236	09-12-91			
Fa25-11	071418	06-17-92			540
Fa35-08	083232	09-06-91			
Fa55-07	060462	09-09-91			
Fb12-10	079752	09-11-91			
Fb22-10	080151	08-29-91			
Fb25-07	069297	6-4-87	150		
Fb25-07	069297	9-24-88	420		
Fb25-07	069297	3-15-89	140		

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury (µg/L)	Radon (pCi/L)
Fb25-07	069297	9-22-89	170		
Fb25-07	069297	9-18-90	150		
Fb25-07	069297	3-19-90	120		
Fb25-07	069297	3-26-91	130		
Fb25-07	069297	1-27-92	100		
Fb25-07	069297	12-10-93	130		
Fb25-10	084229	09-03-91			
Fb34-22	091773	11-04-92			
Fb34-22	091773	11-04-92			33
Fb35-24	081527	09-09-91			
Fb42-06	091768	11-02-92			
Fb42-06	091768	11-02-92			470
Fb42-07	091769	11-03-92			490
Fc11-19		09-04-91			
Fc11-20	071263	08-30-91			
Fc11-21		09-03-91			
Fc11-22	063967	09-05-91			
Fc12-13		09-06-91			
Fc12-14	063156	09-06-91			
Fc12-20	091779	11-09-92			820
Fc14-06	071628	09-11-91			370
Fc21-12	091775	11-04-92			1300
Fc21-13	091776	11-04-92			920
Fc31-06		08-20-54	152		
Fc31-13		11-01-60	151		
Fc41-01		08-20-54	162		
Gb41-05	070420	03-16-88			
Gb41-08	073433	08-26-88			
Gb41-08	073433	06-15-89			
Gb41-09	073434	08-26-88			
Gb41-09	073434	11-29-88			
Gb41-09	073434	06-15-89			
Gb41-09	073434	01-30-90			
Gb41-10	073435	08-26-88			
Gb41-10	073435	06-15-89			
Gb41-10	073435	01-31-90			
Gb41-11	073436	08-26-88			
Gb41-11	073436	04-11-89			
Gb41-11	073436	04-11-89			
Gb41-11	073436	06-21-89			
Gb41-11	073436	06-21-89			
Gb41-11	073436	01-23-90			
Gb41-11	073436	01-23-90			360
Gb41-12	073440	08-26-88			

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury (µg/L)	Radon (pCi/L)
Gb41-12	073440	11-29-88			
Gb41-12	073440	11-29-88			
Gb41-12	073440	06-14-89			
Gb41-12	073440	01-30-90			
Gb41-12	073440	11-08-90			
Gb41-17	077260	06-15-89			
Gb41-19	074131	06-14-89			
Gb41-20	074130	12-01-88			
Gb41-20	074130	12-01-88			
Gb41-20	074130	06-21-89			
Gb41-20	074130	06-21-89			340
Gb41-20	074130	01-31-90			
Gb41-21	074133	04-11-89			
Gb41-21	074133	04-11-89			
Gb41-21	074133	06-21-89			
Gb41-21	074133	06-21-89			
Gb41-21	074133	01-23-90			
Gb41-21	074133	01-25-89			
Gb41-21	074133	01-23-90			320
Gb41-22	080627	01-30-90			
Gb41-23	077948	01-15-90			
Gb41-24	077947	01-23-90			
Gb41-25	077946	01-30-90			
Gb42-03	073437	08-25-88			
Gb42-03	073437	11-29-88			
Gb42-03	073437	11-29-88			
Gb42-03	073437	04-11-89			
Gb42-03	073437	04-11-89			
Gb42-03	073437	06-20-89			
Gb42-03	073437	06-20-89			
Gb42-03	073437	01-23-90			
Gb42-03	073437	01-23-90			460
Gb42-05	084312	11-08-90			
Gb42-05	084312	03-04-91			
Gb42-05	084312	04-24-91			
Gb42-05	084312	05-29-91			
Gb42-05	084312	06-18-91			
Gb42-05	084312	06-26-91			
Gb42-05	084312	07-23-91			
Gb42-05	084312	08-19-91			
Gb42-05	084312	09-17-91			
Gb42-05	084312	10-16-91			
Gb42-05	084312	11-13-91			
Gb42-05	084312	12-10-91			

Southern New Castle County
Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury (µg/L)	Radon (pCi/L)
Gb42-05	084312	01-07-92			
Gb42-05	084312	02-04-92			
Gb42-05	084312	03-03-92			
Gb42-05	084312	03-30-92			
Gb42-06	084313	11-08-90			
Gb42-06	084313	03-05-91			
Gb42-06	084313	04-24-91			
Gb42-06	084313	05-29-91			
Gb42-06	084313	10-16-91			
Gb42-07	074358	11-08-90			
Gb42-07	074358	03-05-91			
Gb42-07	074358	04-24-91			
Gb42-07	074358	05-29-91			
Gb42-07	074358	06-26-91			
Gb42-07	074358	07-23-91			
Gb42-07	074358	08-19-91			
Gb42-07	074358	09-17-91			
Gb42-07	074358	10-16-91			
Gb42-07	074358	11-13-91			
Gb42-07	074358	12-10-91			
Gb42-07	074358	01-07-92			
Gb42-07	074358	02-04-92			
Gb42-07	074358	03-03-92			
Gb42-07	074358	03-30-92			
Gb42-08		11-08-90			
Gb42-08		03-04-91			
Gb42-08		04-24-91			
Gb42-08		05-29-91			
Gb42-08		06-18-91			
Gb42-08		06-26-91			
Gb42-08		07-23-91			
Gb42-08		08-19-91			
Gb42-08		09-17-91			
Gb42-08		10-16-91			
Gb42-08		11-13-91			
Gb42-08		12-10-91			
Gb42-08		01-07-92			
Gb42-08		02-04-92			
Gb42-08		03-03-92			
Gb42-08		03-30-92			
Gb42-09A		03-05-91			
Gb42-09A		05-29-91			
Gb42-10A		03-12-91			
Gb42-10A		04-24-91			

Southern New Castle County
 Ground-Water Monitoring Network
DGS-USGS Wells

DGS ID	DNREC ID	Sample Date	TDS (mg/L)	Mercury (µg/L)	Radon (pCi/L)
Gb42-10A		05-29-91			
Gb42-10A		06-18-91			
Gb42-10A		06-18-91			
Gb42-10A		06-26-91			
Gb42-10A		07-23-91			
Gb42-10A		08-19-91			
Gb42-10A		09-17-91			
Gb42-10A		10-16-91			
Gb42-10A		11-13-91			
Gb42-10A		12-10-91			
Gb42-10A		01-07-92			
Gb42-10A		02-04-92			
Gb42-10A		03-03-92			
Gb42-10A		03-30-92			
Gb42-11		10-16-91			
Gb51-03	070414	09-03-87			
Gb51-03	070414	10-01-87			
Gb51-03	070414	03-14-88			
Gb51-04	070416	07-17-87			
Gb51-04	070416	10-01-87			
Gb51-04	070416	03-14-88			
Gb51-04	070416	06-08-90			
Gb51-04	070416	06-08-90			
Gb51-05	070415	10-01-87			
Gb51-05	070415	03-16-88			
Gb51-06	070417	10-01-87			
Gb51-06	070417	03-15-88			
Gb51-07	070418	10-01-87			
Gb51-07	070418	03-15-88			
Gb51-08	070419	10-02-87			
Gb51-08	070419	03-15-88			
Gb51-08	070419	11-29-88			
Gb51-08	070419	11-29-88			
Gb51-09	072108	03-15-88			
Gb51-10	072109	03-14-88			
Gb51-11	072110	03-16-88			
Gb51-12	070421	03-14-88			
Gb51-12	070421	11-20-90			
Gb51-13	070422	03-15-88			
Gb52-03	070407	09-04-87			
Gc14-02		07-06-88	<0.1	930	
Gc14-03	058110	07-06-88	<0.1	<80	
Gd33-04		09-14-70	304		
Hd11-03		09-04-87			

APPENDIX 2
Southern New Castle County
Ground-Water Monitoring Network
Wells Located on Ground-Water Monitoring Network Maps

DGS ID	DNREC ID	Water-shed	Depth Drilled (ft)	Depth Screened (ft)	Aquifer
Ea14-32	100813	Q	393.0	320-371	ptg
Ea14-33	095617	Q	375.0	332-371	ptg
Ea14-34	101100	Q	471.0	420-465	ptg
Ea14-35	096376	Q	375.0	322-372	ptg
Ea14-36	096449	Q	387.0	326-376	ptg
Ea24-06	097561	Q	345.0	220-260	ptg
Ea24-07	096500	Q	400.0	332-352	ptg
Ea35-20	097257	Q	435.0	143-163	ptg
Ea35-21	102148	Q	163.0	99-162	ptg
Ea44-02		Q	165.0	122-132	ptg
Ea44-03		Q	165.0	115-142	ptg
Ea44-11	086812	Q	30.0	25-30	clg
Ea44-12	086813	Q	105.0	85-105	m
Ea45-04	100389	Q	105.0	85-105	m
Ea55-16	097287	AA	31.0	3-18	clg
Ea55-17	097288	AA	51.0	5-45	clg
Ea55-18	097289	AA	46.0	15-30	clg
Ea55-19	097290	AA	21.0	5-20	clg
Eb31-01		Q	207.7	93-104	m
Eb31-43	095414	Q	326.0	311-326	ptg
Eb31-44	095413	Q	105.0	92-105	m
Eb32-22		Q	26.0	unknown	et
Eb33-40	096189	Q	25.5	14-20	clg
Eb33-41	096190	Q	40.5	31-40	clg
Eb33-42	096191	Q	30.5	19-29	clg
Eb33-43	096192	Q	30.5	19-29	clg
Eb33-44	096193	Q	20.5	10-20	clg
Eb33-45	096194	Q	32.0	22-32	clg
Eb33-46	096195	Q	55.0	12-22	clg
Eb33-47	096196	Q	26.0	16-26	clg
Eb41-13	063041	Q	145.0	125-145	m
Eb41-15	089665	AA	200.0	135-155	m
Eb43-04	068945	Q	235.0	225-235	m
Eb43-05	081063	Q	195.0	180-190	m
Eb43-09	066705	Q	38.0	28-38	et
Eb43-10	068944	Q	230.0	210-230	m
Eb43-11	071125	Q	39.0	35-39	ml
Eb43-12	073261	Q	110.0	90-110	et
Eb43-13	083069	Q	177.0	165-177	m
Eb43-14	070315	Q	138.0	128-138	et
Eb44-19	091778	Q	45.0	40-45	ml
Eb45-26	071016	Q	65.0	55-65	ml
Eb45-27	084603	Q	80.0	70-80	ml
Eb51-04	059988	AA	31.0	17-27	ml
Eb51-05	059989	AA	32.0	15.4-25.4	ml
Eb51-06	059990	AA	31.0	15.9-25.9	clg
Eb51-10		AA	60.0	50-60	et
Eb51-11	080899	AA	177.0	161-177	m
Eb51-13	086499	AA	176.0	161-176	m
Eb51-14	086498	AA	172.0	160-175	m
Eb52-04	059991	AA	24.0	11.9-21.9	ml
Eb52-05	059992	AA	24.0	13.3-23.3	ml
Eb52-06	059993	AA	41.0	17.7-27.7	ml
Eb52-07	059994	AA	21.0	8.9-18.9	ml
Eb52-11	070688	AA	80.0	60-80	et
Eb52-12	069572	AA	90.0	70-90	et
Eb52-13	083251	AA	70.0	50-70	et
Eb53-15	071045	AA	75.0	65-75	et
Eb53-21		Q	unknown	unknown	unknown
Eb53-22		Q	unknown	unknown	unknown
Eb53-23		Q	unknown	unknown	unknown

Watershed Key:

Q. Chesapeake and Delaware Canal
 R. Augustine Creek/Silver Run
 S. Drawyer Creek
 T. Appoquinimink River
 U. Blackbird Creek
 W. Smyrna River
 X. Cypress Branch
 Y. Sassafras River
 Z. Sandy Branch/Great Bohemia Creek
 AA. Back Creek

Aquifer Key:

clg = Columbia
 mg = Rancocas
 vt = Vincentown
 ht = Hornerstown
 clg/ml = Columbia/Mt. Laurel
 ml = Mt. Laurel
 mo = Monmouth
 mag = Matawan
 et/ml = Englishtown/Mt. Laurel
 et = Englishtown
 m = Magothy
 ptg = Potomac

APPENDIX 2
Southern New Castle County
Ground-Water Monitoring Network
Wells Located on Ground-Water Monitoring Network Maps

DGS ID	DNREC ID	Water-shed	Depth Drilled (ft)	Depth Screened (ft)	Aquifer
Eb53-24		Q	15.0	5-15	clg
Eb53-25		Q	25.0	15-25	clg
Eb54-05	076163	S	50.0	38-45	ml
Eb54-09	076619	S	75.0	65-75	ml
Eb55-08	098124	Q	420.0	400-420	ptg
Eb55-09	098123	Q	420.0	400-420	ptg
Eb55-10	098112	Q	413.0	380-410	ptg
Ec22-01		Q	30.0	unk	clg
Ec22-02		Q	35.0	unk	clg
Ec31-21	075421	Q	185.0	165-185	m
Ec32-03		Q	420.0	318-328	ptg
Ec32-05		Q	416.0	unk	ptg
Ec32-07		Q	752.0	586-596	ptg
Ec32-16	076670	Q	70.0	60-70	ml
Ec33-01		Q	95.0	unk	ml
Ec33-02		Q	96.0	unk	ml
Ec34-01		Q	40.0	unk	clg
Ec34-03		Q	317.0	300-317	ptg
Ec41-16	091777	Q	50.0	39-44	ml
Ec42-05		Q	142.0	72-82	mt
Ec42-06		Q	408.0	unk	ptg
Ec42-15		Q	38.0	unk	clg
Ec43-07	074206	Q	130.0	120-130	ml
Ec43-08	057687	Q	96.0	88-96	ml
Ec43-09	075144	R	120.0	110-120	ml
Ec51-15	084585	R	141.0	76-141	ml
Ec51-16	082244	R	180.0	80-95	ml
Ec51-19	082242	R	180.0	70-80	ml
Ec51-20	082243	R	180.0	120-180	et
Ec52-09	078973	R	160.0	100-160	ml
Ec52-21	084134	R	60.0	55-60	ml
Ec52-23	099469	R	534.0	482-532	ptg
Ec52-24	101153	R	505.0	424-454	ptg
Ec52-25	099470	R	610.0	400-450	ptg
Ec53-05	065124	R	73.0	63-73	ml
Ed21-20	076346	Q	230.0	214-230	m
Ed51-10	074236	Q	30.0	25-30	rng
Fa15-06	083638	Z	210.0	190-210	m
Fa15-07	083639	Z	210.0	190-210	m
Fa15-08	083640	Z	210.0	190-210	m
Fa15-09	097286	AA	56.0	15-30	clg
Fa25-11	071418	Z	90.0	80-90	rng
Fa35-08	083232	Z	95.0	87-95	rng
Fa55-07	060462	Z	100.0	20-100	rng
Fb12-05	059986	AA	31.0	17.5-27.5	clg/ml
Fb12-06	059987	AA	31.0	19.3-29.3	clg/ml
Fb12-10	079752	AA	105.0	90-100	ml
Fb14-11	096841	S	443.0	410-433	ptg
Fb14-12	097371	S	438.0	415-435	ptg
Fb14-13	097370	S	440.0	418-438	ptg
Fb22-10	080151	S	117.0	110-113	ml
Fb24-06	084852	S	198.0	106-198	et/ml
Fb24-11	089852	S	170.0	102-170	ml
Fb25-07	069297	S	50.5	40-50	rng
Fb25-10	084229	S	152.0	130-150	ml
Fb33-12	010453	S	345.0	271-345	m
Fb33-24	039685	S	540.0	420-526	ptg
Fb33-25	039676	S	846.0	505-846	ptg
Fb34-21	091772	T	80.0	67-72	rng
Fb34-22	091773	T	40.0	35-40	rng
Fb35-24	081527	S	155.0	145-155	ml
Fb35-29	069296	S	23.0	13-23	clg

Watershed Key:

Q. Chesapeake and Delaware Canal
 R. Augustine Creek/Silver Run
 S. Drawyer Creek
 T. Appoquinimink River
 U. Blackbird Creek
 W. Smyrna River
 X. Cypress Branch
 Y. Sassafras River
 Z. Sandy Branch/Great Bohemia Creek
 AA. Back Creek

Aquifer Key:

clg = Columbia
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 clg/ml = Columbia/Mt. Laurel
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APPENDIX 2
 Southern New Castle County
 Ground-Water Monitoring Network
 Wells Located on Ground-Water Monitoring Network Maps

DGS ID	DNREC ID	Water-shed	Depth Drilled (ft)	Depth Screened (ft)	Aquifer
Fb42-03	010455	T	206.0	133-206	ml
Fb42-06	091768	T	85.0	1-66	mg
Fb42-07	091769	T	40.0	35-40	mg
Fb43-03	010454	T	375.0	270-375	m
Fb44-18	089381	T	125.0	100-120	ml
Fb51-11	047412	T	110.0	40-70	clg
Fb53-08	056569	T	39.0	34-39	clg
Fb54-01		T	785.0	655-675	ptg
Fb54-04	056566	T	39.0	34-39	clg
Fb54-05	056567	T	39.0	34-39	clg
Fb54-06	056563	T	34.0	29-34	clg
Fb54-07	056562	T	34.0	29-34	clg
Fb54-08	056561	T	29.0	24-29	clg
Fc11-19		S	194.0	184-194	ml
Fc11-20	071263	S	117.0	107-117	ml
Fc11-21		S	54.0	47-54	mg
Fc11-22	063967	S	155.0	145-155	ml
Fc12-13		R	68.5	110-120	ml
Fc12-14	063156	R	170.0	150-170	ml
Fc12-16	078974	R	160.0	100-160	ml
Fc12-20	091779	R	38.0	30-35	mg
Fc12-22	096299	R	160.0	130-160	et/ml
Fc12-23	096300	R	170.0	140-170	et/ml
Fc14-06	071628	R	160.0	140-150	ml
Fc15-01		R	180.0	unknown	ml
Fc15-04		R	165.0	no screen	ml
Fc15-05	096840	R	180.0	128-178	ml
Fc15-06	097875	R	150.0	130-150	ml
Fc21-12	091775	S	75.0	60-65	rng
Fc21-13	091776	S	40.0	35-40	mg
Fc21-15	069299	S	53.5	44-54	mg
Fc21-16	069298	S	32.5	23-33	clg
Fc31-06		T	164.0	no screen	mo
Fc31-11		T	168.0	98.7-163.4	mo
Fc31-13		T	203.0	unknown	mag
Fc31-39	071254	S	163.0	143-163	ml
Fc32-07	071852	T	221.0	unknown	ml
Fc32-08	090409	T	90.0	30-45	vt
Fc32-09	090410	T	90.0	64-69	vt
Fc32-10	090622	T	21.0	5-20	vt
Fc32-11		T	40.0	unknown	vt
Fc32-12	101191	T	65.0	55-65	vt
Fc41-01		T	113.0	no screen	mg
Fc42-09	101196	T	44.0	34-44	vt
Fc42-10	090406	T	90.0	27-92	vt
Fc42-11	090403	T	278.0	220-260	ml
Fc42-12	090623	T	90.0	3-18	vt
Fc42-13	097960	T	300.0	200-220	ml
Fc42-14	098133	T	79.0	60-70	vt
Fc42-15	090407	T	51.0	35-50	vt
Fc42-16		T	240.0	unknown	ml
Fc42-21	101195	T	47.0	37-47	vt
Fc42-22	101194	T	54.0	44-54	vt
Fc42-23	101193	T	50.0	40-50	vt
Fc42-24	101192	T	35.0	25-35	vt
Fc42-25	101189	T	15.0	5-15	clg
Fc42-26	101190	T	44.0	34-44	vt
Fc42-27	101183	T	15.0	12.5-15	clg
Fc42-28	101184	T	15.0	12.5-15	clg
Fc42-29	101185	T	12.0	9.5-12	clg
Fc42-30	101196	T	10.0	7.5-10	clg
Fc43-02	090408	T	90.0	30-45	vt
Fc43-03		T	180.0	unknown	ht

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APPENDIX 2
 Southern New Castle County
 Ground-Water Monitoring Network
 Wells Located on Ground-Water Monitoring Network Maps

DGS ID	DNREC ID	Water-shed	Depth Drilled (ft)	Depth Screened (ft)	Aquifer
Fc51-26	099037	T	863.0	650-700,700-740	ptg
Fc51-27	099806	T	812.0	660-692,713-733	ptg
Fc51-28	099009	T	128.0	97-127	mg
Fc53-03	102217	T	200.0	180-200	ml
Gb12-04	056578	T	14.0	9-14	clg
Gb12-05	056579	T	14.0	9-14	clg
Gb13-03	056575	T	29.0	24-29	clg
Gb14-03	056560	T	24.0	19-24	clg
Gb24-05	030148	T	200.0	86-206	mg
Gb24-07	010452	U	200.0	no screen	mg
Gb31-05	098805	Y	153.0	120-140	mg
Gb31-06	098741	Y	140.0	120-140	mg
Gb41-05	070420	X	100.0	27-30	clg
Gb41-08	073433	X	15.0	8-11	clg
Gb41-09	073434	X	35.0	12-15	clg
Gb41-10	073435	X	20.0	12-15	clg
Gb41-11	073436	X	15.0	10-13	clg
Gb41-12	073440	X	40.0	15-18	clg
Gb41-17	077260	X	9.0	6-9	clg
Gb41-19	074131	X	12.8	10.75-12.75	clg
Gb41-20	074130	X	11.5	9.5-11.5	clg
Gb41-21	074133	X	9.0	7.0-9.0	clg
Gb41-22	080627	X	35.0	20-25	clg
Gb41-23	077948	X	35.0	27-30	clg
Gb41-24	077947	X	35.0	30-37	clg
Gb41-25	077946	X	20.0	10-13	clg
Gb42-03	073437	X	50.0	20-23	clg
Gb42-05	084312	X	20.0	15-18	clg
Gb42-06	084313	X	20.0	15-18	clg
Gb42-07	074358	X	120.0	105-120	clg
Gb42-08		X	9.0	6-9	clg
Gb42-09A		X	11.0	8-11	clg
Gb42-10A		X	9.0	6-9	clg
Gb42-11		X	1.6	unknown	clg
Gb51-03	070414	X	8.7	6.2-8.7	clg
Gb51-04	070416	X	10.4	7.9-10.3	clg
Gb51-05	070415	X	8.6	6.1-8.4	clg
Gb51-06	070417	X	12.6	10.1-12.6	clg
Gb51-07	070418	X	20.0	17.5-20	clg
Gb51-08	070419	X	8.5	6.0-8.5	clg
Gb51-09	072108	X	12.7	9.9-12.3	clg
Gb51-10	072109	X	8.5	5.9-8.3	clg
Gb51-11	072110	X	11.4	8.8-11.2	clg
Gb51-12	070421	X	35.0	24-27	clg
Gb51-13	070422	X	35.0	17-22	clg
Gb52-03	070407	X	50.0	28-33	clg
Gc14-02		U	100.0	13-16	clg
Gc14-03	058110	U	80.0	60-80	clg
Gc42-01		W	124.0	no screen	mg
Gc42-02		W	145.0	no screen	mg
Gc52-12		W	unknown	unknown	mg
Gc54-03	010497	W	263.0	159-247	mg
Gd33-04		W	2313.0	394.8-427.4	mog
Hc13-02		W	340.0	175-210	mg
Hc14-03	010496	W	276.0	188-268	mg
Hc14-05	037285	W	220.0	unknown	mg
Hc24-02		W	211.5	185-211	mg
Hc24-05		W	215.0	205-215	mg

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APPENDIX 3

Southern New Castle County
Ground-Water Monitoring Network
Wells Located Using GPS

DGS ID	DNREC ID	Latitude	Longitude
Ea14-32	100813	393422.11	754647.76
Ea14-33	095617	393422.35	754648.28
Ea14-34	101100	393403.53	754646.94
Ea24-07	096500	393314.16	754649.68
Ea35-21	102148	393241.37	754545.30
Ea44-11	086812	393133.99	754601.58
Ea44-12	086813	393133.88	754601.49
Ea45-04	100389	393133.61	754559.87
Ea55-16	097287	393008.93	754504.78
Ea55-17	097288	393021.49	754520.44
Ea55-18	097289	393009.56	754537.68
Ea55-19	097290	393029.05	754555.65
Eb31-43	095414	393202.98	754414.57
Eb31-44	095413	393203.26	754414.69
Eb33-40	096189	393206.28	754220.98
Eb33-41	096190	393212.85	754221.98
Eb33-42	096191	393210.28	754226.11
Eb33-43	096192	393211.90	754234.93
Eb33-46	096195	393214.31	754250.15
Eb33-47	096196	393210.24	754242.38
Eb41-15	089665	393143.08	754403.84
Eb43-04	068945	393103.84	754249.57
Eb43-10	068944	393103.77	754249.78
Eb51-11	080899	393024.31	754416.20
Eb51-13	086499	393025.76	754416.99
Eb51-14	086498	393027.26	754417.78
Eb55-08	098124	393036.97	754042.73
Eb55-09	098123	393039.46	754050.74
Eb55-10	098112	393045.40	754050.65
Ec51-16	082244	393035.04	753911.89
Ec51-19	082242	393035.36	753911.67
Ec51-20	082243	393035.43	753911.58
Ec52-09	078973	393001.16	753838.46
Ec52-21	084134	393000.58	753839.01
Ec52-23	099469	393047.58	753814.19
Ec52-24	101153	393037.67	753813.37
Ec52-25	099470	393053.23	753818.40
Fa15-06	083638	392930.27	754545.05
Fa15-07	083639	392930.50	754543.72
Fa15-08	083640	392931.20	754541.18
Fa15-09	097286	392951.09	754537.34
Fb14-12	097371	392920.59	754137.07
Fb14-13	097370	392919.56	754114.21
Fb24-06	084852	392847.32	754104.02
Fb43-03	010454	392618.12	754247.20
Fc12-16	078974	392959.06	753840.08
Fc12-16	089852	392847.68	754102.47
Fc12-22	096299	392915.71	753818.53
Fc12-23	096300	392914.64	753819.06
Fc15-05	096840	392910.86	753535.48
Fc15-06	097875	392902.97	753535.85
Fc31-39	071254	392739.5	753958.26
Fc32-08	090409	392709.16	753806.53

DGS ID	DNREC ID	Latitude	Longitude
Fc32-09	090410	392707.16	753843.05
Fc32-10	090622	392707.05	753843.25
Fc42-10	090406	392618.07	753829.81
Fc42-13	097960	392639.76	753847.58
Fc42-14	098133	392639.84	753847.47
Fc42-15	090407	392635.61	753804.17
Fc43-02	090408	392644.62	753750.97
Fc51-27	099806	392531.48	753906.23
Fc51-28	099009	392531.35	753906.62
Gb31-05	098805	392210.54	754431.43
Gb31-06	098741	392210.05	754431.80