

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT**

Traditionally, wastewater has been treated and discharged to streams. However, a rapidly growing suburban population in southeastern Pennsylvania is generating an increasing quantity of wastewater. Discharge to streams often degrades stream-water quality. A government-wide move is underway to limit the quantity of nutrients discharged to streams. In addition, many streams are being designated as high or exceptional value streams. An alternative to stream discharge is land application of treated effluent. An increasing number of communities in Pennsylvania are implementing land-treatment systems to dispose of treated sewage effluent. Disposal of treated effluent by spraying onto the land surface recharges the ground-water system and provides an extra purifying step in the wastewater treatment process and does not directly degrade stream-water quality.

The USGS, in cooperation with the Chester County Water Resources Authority and the Pennsylvania Department of Environmental Protection (PaDEP), is currently conducting a study on the effects of treated sewage effluent sprayed on the land surface in New Garden Township, Chester County, Pennsylvania. New Garden Township is not contributing funding to the study, but is graciously allowing the use of their spray-irrigation site as a study site. The New Garden Township site lies west of Kennett Square Borough just north of Baltimore Pike (fig. 11). The site covers approximately 58 acres. The PaDEP issued a permit for a maximum application rate of 300,000 gallons of effluent per day. Application began in May of 1999.

The objectives of this study are to determine the percentage of applied effluent that recharges the ground-water system and the percentage that is lost to evapotranspiration using a monthly water-budget approach, to characterize the effect of land treatment on ground-water and surface-water quality, and to determine the fate and transport of nitrogen as it moves from effluent into soil, soil water, ground water, crops and the atmosphere by determining and quantifying a nitrogen budget.

The site has been intensively instrumented in order to reach project objectives. The USGS has drilled 6 shallow (CH5173, CH5175, CH5177, CH5179, CH5180, and CH5181) and 4 bedrock wells (CH5172, CH5174, CH5176, and CH5178) at the New Garden Township site to monitor ground-water quality and ground-water-level fluctuations within the spray application area. A deep (CH5182) and shallow (CH5183) well pair act as control wells outside the application area. Data for water year 2001 for these wells are presented in this report on pages 447-484. A system of suction lysimeters was installed at four locations in the application area with additional lysimeters installed as control lysimeters outside the application area (fig. 11). Lysimeters were installed at depths ranging from 3 to 15 feet. Lysimeter data are presented in this report, pages 370-389.

A surface-water flow-measuring station (01479678) has been installed on the stream located downgradient in respect to ground-water-flow directions to measure the quantity of streamflow leaving the approximately 45 acre site (0.07 mi²). A stilling well has been installed in a pond (station 01479677) downgradient of the spray fields to measure pond level fluctuations. A flume (station 01479676) was installed at the lowest elevation point of the field site above the pond. A swale directs overland flow from part of the study site (0.03 mi²) through the flume and stage is recorded electronically. Data for these surface-water sites can be found on pages 286-297

Ground-water and surface-water sampling on a monthly basis are used to characterize changes in ground-water and surface-water quality. Storm samples are also collected using an automatic sampler at the flume station 01479676. Treated sewage effluent and precipitation are sampled on a monthly basis to quantify nutrient inputs to the site.

Other data collected electronically at the site include precipitation amounts, numerous other meteorological parameters such as wind speed and wind direction, soil moisture, and applied effluent. Soil and plant samples are collected in the application field and in control areas in order to determine the mass of nitrogen in the soil-plant system.

System design engineers and regulators are in need of data on monthly and seasonal variations in recharge and evapotranspiration for use in designing and managing spray irrigation systems. Quantifying monthly evapotranspiration rates will provide additional field data to assist regulators in permitting new spray irrigation systems. Results from the monthly water budgets could potentially change the present regulations regarding application rates. For water managers, the monthly water budgets could provide a ground-water recharge percentage for issuances of water-use credits. Assessments of nutrient loading to ground water and surface water would quantify the percentage of nutrients applied to the land surface that enters and moves through the ground-water system to the surface-water system.

For additional information, contact Curtis Schreffler at the U.S. Geological Survey, 111 Great Valley Parkway, Malvern, PA 19355; 610-647-9008 ext 220 (email clschref@usgs.gov).

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

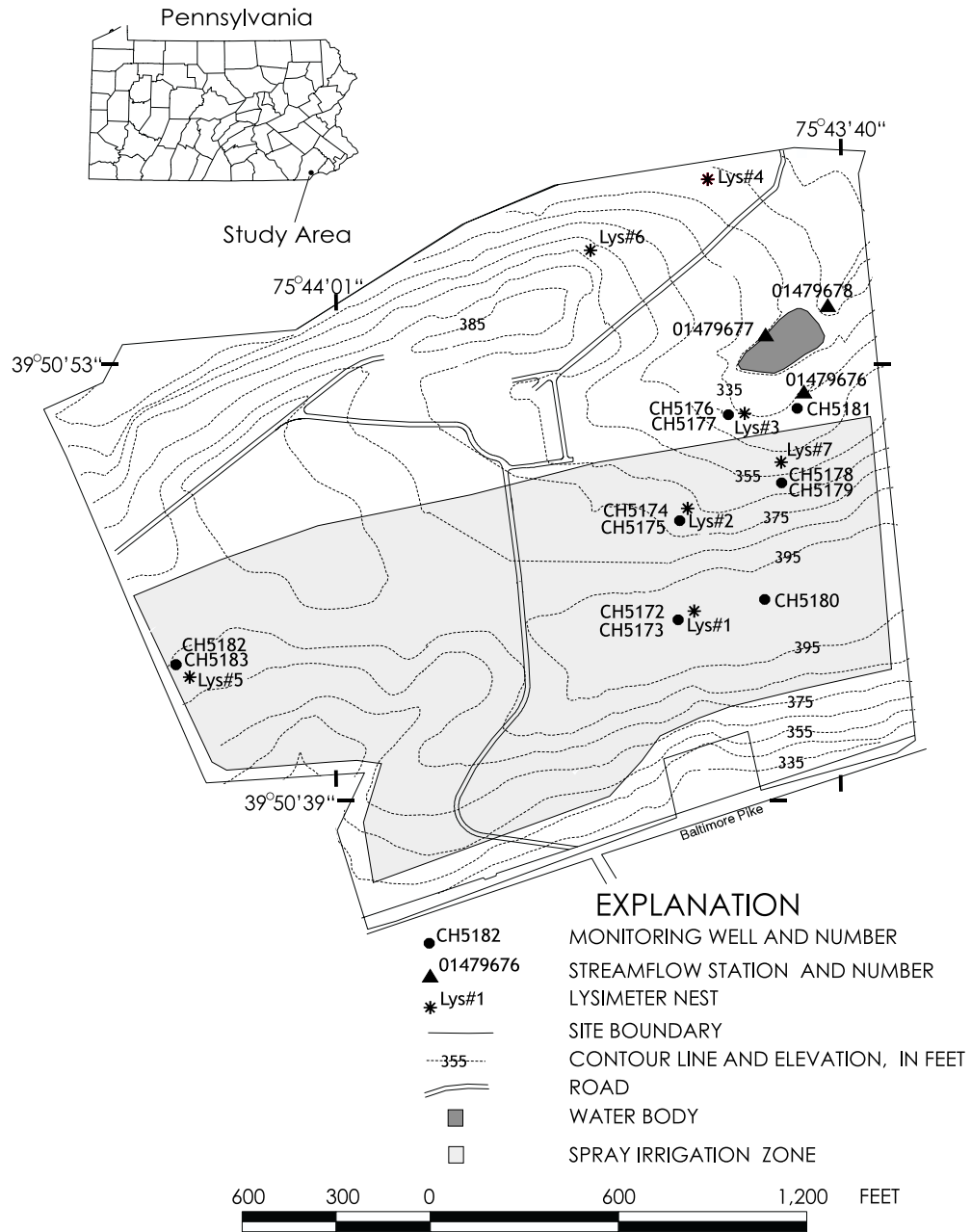


Figure 11.--Locations of ground-water wells, surface-water sites, and soil suction-lysimeter nests for the spray irrigation project in New Garden Township, Chester County, Pennsylvania.

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
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TABLE 3.--Description of soil suction lysimeters located at the Spray Irrigation Project site.

REMARKS.--Lysimeter locations Lys#1, Lys#2, and Lys#7 are located in the spray field. Lysimeter locations Lys#3, Lys#4, Lys#5, and Lys#6 are located outside of the spray zones. See figure 11 for location of lysimeters at field site.

LYSIMETER NEST	LOCAL ID	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	DEPTH OF WELL (FEET)
Lys#1	CH 5211	395045	0754347	3.0
	CH 5212	395045	0754347	7.0
	CH 5213	395045	0754347	11.0
Lys#2	CH 5215	395048	0754347	3.0
	CH 5216	395048	0754347	7.0
	CH 5217	395048	0754347	11.0
	CH 5218	395048	0754347	15.0
Lys#3	CH 5219	395052	0754345	3.0
	CH 5564	395052	0754345	6.0
	CH 5565	395052	0754345	9.5
	CH 5566	395052	0754345	13.0
Lys#4	CH 5567	395100	0754346	3.0
	CH 5568	395100	0754346	7.0
	CH 5570	395100	0754346	15.0
Lys#5	CH 5571	395043	0754407	3.0
	CH 5572	395043	0754407	7.0
	CH 5573	395043	0754407	11.0
	CH 5574	395043	0754407	15.0
Lys#6	CH 5448	395057	0754350	3.0
Lys#7	CH 5449	395049	0754344	3.0

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued

REMARKS.--Some values for dissolved nitrate-nitrogen exceed values for dissolved nitrogen. These results are within the limits of analytical precision and methods.

395045075434703 -- CH 5211

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)		
OCT 2000									
12...	0830	9813	1028	6.5	534	86.0	<.020		
NOV									
16...	0800	80020	1028	--	--	--	--		
30...	0915	9813	1028	6.2	537	82.0	<.020		
DEC									
21...	0945	9813	1028	--	--	77.8	.040		
JAN 2001									
11...	1030	9813	1028	6.4	452	83.0	<.020		
FEB									
22...	0945	9813	1028	--	--	76.0	<.020		
MAR									
22...	0820	9813	1028	6.1	514	82.5	<.020		
APR									
25...	0850	9813	1028	6.0	478	70.0	<.020		
MAY									
24...	0900	9813	1028	6.1	455	70.6	<.020		
JUN									
14...	0915	9813	1028	5.9	435	48.8	.020		
JUL									
25...	1045	9813	1028	5.8	438	49.9	<.020		
AUG									
16...	0840	9813	1028	--	--	52.6	<.020		
SEP									
20...	0845	9813	1028	6.2	451	48.1	<.020		

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)	N15/N14 NO3 FRAC WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000									
12...	1.0	.750	<.040	--	<200	--	--	28	--
NOV									
16...	--	--	--	--	--	--	--	--	.80
30...	1.0	.930	<.040	1.3	--	--	--	--	--
DEC									
21...	2.3	1.82	<.040	--	--	--	--	--	--
JAN 2001									
11...	1.0	.750	<.040	--	<200	--	--	31	--
FEB									
22...	.93	.690	<.040	--	<200	--	--	32	--
MAR									
22...	1.7	1.46	<.040	--	<200	--	--	19	--
APR									
25...	2.4	2.13	<.040	--	<200	--	--	20	--
MAY									
24...	1.7	1.50	<.040	--	<200	--	--	19	--
JUN									
14...	.47	.290	<.040	1.7	<200	<20	<10.0	15	--
JUL									
25...	.35	.090	<.040	2.0	--	--	--	--	--
AUG									
16...	1.5	1.15	<.040	--	<200	--	--	33	--
SEP									
20...	.30	.230	<.040	1.6	--	--	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395045075434704 -- CH 5212

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	0840	9813	1028	6.7	424	70.0	<.020
NOV							
30...	0920	9813	1028	6.2	431	65.0	<.020
DEC							
21...	0955	9813	1028	--	--	71.0	.040
JAN 2001							
11...	1050	9813	1028	--	--	71.0	<.020
FEB							
22...	1010	9813	1028	--	--	65.0	<.020
MAR							
22...	0830	9813	1028	6.8	389	64.0	<.020
APR							
25...	0920	9813	1028	5.9	429	77.0	<.020
MAY							
24...	0920	9813	1028	--	--	89.0	<.020
JUN							
14...	0920	9813	1028	5.9	--	97.5	<.020
JUL							
25...	1030	9813	1028	5.5	461	82.9	<.020
AUG							
16...	0845	9813	1028	--	--	79.5	<.020
SEP							
20...	0855	9813	1028	5.9	439	74.5	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000								
12...	1.6	1.28	<.040	--	--	--	--	--
NOV								
30...	--	1.49	<.200	--	--	--	--	--
DEC								
21...	1.8	1.57	<.040	1.0	<200	<20	<10.0	<10
JAN 2001								
11...	1.7	1.44	<.040	--	--	--	--	--
FEB								
22...	1.6	1.36	<.040	--	<200	--	--	20
MAR								
22...	1.4	1.21	<.040	--	<200	--	--	<10
APR								
25...	1.3	1.07	<.040	--	<200	--	--	<10
MAY								
24...	1.4	1.23	<.040	--	<200	--	--	<10
JUN								
14...	1.5	1.32	<.040	--	<200	--	--	<10
JUL								
25...	1.8	1.21	<.040	2.1	<200	60	<10.0	<10
AUG								
16...	1.6	1.25	<.040	--	<200	--	--	<10
SEP								
20...	.83	.810	<.040	--	--	--	--	--

ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued

395045075434705 -- CH 5213

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	0850	9813	1028	--	--	47.0	.090
NOV							
16...	0830	80020	1028	--	--	--	--
30...	0930	9813	1028	--	--	44.3	<.020
DEC							
21...	1000	9813	1028	--	--	43.2	.100
JAN 2001							
11...	1100	1028	1028	6.2	288	--	--
FEB							
22...	1020	9813	1028	--	--	37.4	<.020
MAR							
22...	0835	9813	1028	--	--	39.6	<.020
APR							
25...	0930	9813	1028	--	--	44.8	<.020
MAY							
24...	0925	9813	1028	--	--	48.8	<.020
JUN							
14...	0930	9813	1028	5.6	402	50.0	<.020
JUL							
25...	1050	1028	1028	5.7	336	--	--
AUG							
16...	0850	9813	1028	--	--	62.2	<.020
SEP							
20...	0900	9813	1028	--	--	78.6	.030

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	N15/N14 NO3 FRAC WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000				
12...	2.6	2.01	<.040	--
NOV				
16...	--	--	--	2.30
30...	3.9	3.33	<.040	--
DEC				
21...	4.9	4.51	<.040	--
JAN 2001				
11...	--	--	--	--
FEB				
22...	7.1	6.20	<.040	--
MAR				
22...	6.4	5.70	<.040	--
APR				
25...	3.9	3.38	<.040	--
MAY				
24...	2.0	1.77	<.040	--
JUN				
14...	1.8	1.36	<.040	--
JUL				
25...	--	--	--	--
AUG				
16...	2.1	1.54	<.040	--
SEP				
20...	1.6	1.46	<.040	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395048075434703 -- CH 5215

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH	SPE-	CHLO-	NITRO-
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CIFIC CON- DUCT- ANCE (µS/CM) (00095)	RIDE, DIS- SOLVED (MG/L AS CL) (00940)	GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1015	9813	1028	6.7	617	92.0	<.020
NOV							
30...	0940	9813	1028	6.4	624	101	<.020
DEC							
21...	1015	9813	1028	--	--	80.8	<.020
JAN 2001							
11...	1105	9813	1028	--	--	78.0	<.020
FEB							
22...	1030	9813	1028	--	--	50.4	<.020
MAR							
22...	0845	9813	1028	6.7	417	52.0	<.020
APR							
25...	0950	9813	1028	6.2	411	48.3	<.020
MAY							
24...	0940	9813	1028	6.5	476	56.9	<.020
JUN							
14...	0940	9813	1028	6.2	515	65.0	<.020
JUL							
25...	1100	9813	1028	6.0	618	51.4	<.020
AUG							
16...	0915	9813	1028	6.2	668	97.8	<.020
SEP							
20...	0915	9813	1028	6.4	642	114	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
	OCT 2000							
12...	2.0	1.73	<.040	1.8	--	--	--	--
NOV								
30...	1.5	1.34	<.040	1.6	--	--	--	--
DEC								
21...	1.4	1.16	<.040	1.4	<200	<20	<10.0	<10
JAN 2001								
11...	1.7	1.41	<.040	--	<200	--	--	<10
FEB								
22...	1.8	1.53	<.040	1.2	<200	<20	<10.0	<10
MAR								
22...	2.7	2.22	<.040	4.2	<200	<20	<10.0	<10
APR								
25...	1.4	1.06	<.040	--	--	--	--	--
MAY								
24...	.66	.440	<.040	1.5	--	--	--	--
JUN								
14...	.50	.280	<.040	2.2	<200	<20	<10.0	<10
JUL								
25...	.75	.440	<.040	2.1	<200	<20	78.0	<10
AUG								
16...	.72	.340	<.040	2.5	--	--	--	--
SEP								
20...	.66	.520	<.040	1.7	--	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395048075434704 -- CH 5216

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH	SPE-	CHLO-	NITRO-		
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CIFIC CON- DUCT- ANCE (µS/CM) (00095)	RIDE, DIS- SOLVED (MG/L AS CL) (00940)	GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)		
OCT 2000									
12...	1030	9813	1028	--	--	86.0	<.020		
NOV									
30...	0950	9813	1028	7.1	805	94.0	<.020		
DEC									
21...	1030	9813	1028	--	--	92.2	<.020		
JAN 2001									
11...	1115	9813	1028	--	--	83.0	<.020		
FEB									
22...	1040	9813	1028	--	--	46.7	<.020		
MAR									
22...	0900	9813	1028	6.8	592	50.3	<.020		
APR									
25...	1000	9813	1028	6.7	570	57.0	<.020		
MAY									
24...	0950	9813	1028	6.9	618	68.7	<.020		
JUN									
14...	0950	9813	1028	6.8	640	69.0	<.020		
JUL									
18...	1020	80020	1028	--	--	--	--		
25...	1110	9813	1028	6.7	--	79.3	<.020		
AUG									
16...	0920	9813	1028	7.0	837	91.0	<.020		
SEP									
20...	0925	9813	1028	--	775	103	<.020		
DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)	N15/N14 NO3 FRAC WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000									
12...	3.0	2.32	<.040	--	--	--	--	--	--
NOV									
30...	2.7	2.44	<.040	--	<200	--	--	<10	--
DEC									
21...	3.4	2.92	<.040	1.7	<200	150	<10.0	18	--
JAN 2001									
11...	3.3	2.90	<.040	--	--	--	--	--	--
FEB									
22...	2.0	1.69	<.040	--	<200	--	--	<10	--
MAR									
22...	2.1	1.72	<.040	1.8	<200	<20	<10.0	<10	--
APR									
25...	2.1	1.78	<.040	--	--	--	--	--	--
MAY									
24...	1.4	1.11	<.040	--	<200	--	--	<10	--
JUN									
14...	2.5	2.08	<.040	1.9	--	--	--	--	--
JUL									
18...	--	--	--	--	--	--	--	--	15.10
25...	2.3	1.86	<.040	2.0	<200	<20	<10.0	<10	--
AUG									
16...	1.9	1.44	<.040	--	<200	--	--	<10	--
SEP									
20...	.98	.690	<.040	--	--	--	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395048075434705 -- CH 5217

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1040	9813	1028	6.6	312	47.2	<.020
NOV							
30...	1000	9813	1028	--	--	49.6	<.020
DEC							
21...	1040	9813	1028	--	--	50.0	<.020
JAN 2001							
11...	1125	9813	1028	--	--	57.0	<.020
FEB							
22...	1050	9813	1028	--	--	81.0	<.020
MAR							
22...	0905	9813	1028	6.7	499	86.0	<.020
APR							
25...	1010	9813	1028	--	--	101	<.020
MAY							
24...	1000	9813	1028	--	--	106	<.020
JUN							
14...	1000	9813	1028	6.6	672	107	<.020
JUL							
25...	1120	9813	1028	6.4	617	52.3	<.020
AUG							
16...	0925	9813	1028	--	--	53.0	<.020
SEP							
20...	0930	9813	1028	6.5	594	74.8	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	BORON, DIS- SOLVED (µG/L AS B) (01020)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000					
12...	2.8	2.27	<.040	--	--
NOV					
30...	2.6	2.29	<.040	--	--
DEC					
21...	3.1	2.66	<.040	--	--
JAN 2001					
11...	4.0	3.61	<.040	--	--
FEB					
22...	3.4	3.01	<.040	--	--
MAR					
22...	3.4	2.99	<.040	--	--
APR					
25...	2.9	2.49	<.040	--	--
MAY					
24...	2.9	2.58	<.040	--	--
JUN					
14...	3.4	2.82	<.040	--	--
JUL					
25...	2.6	2.25	<.040	<200	<10
AUG					
16...	2.5	2.13	<.040	--	--
SEP					
20...	1.8	1.65	<.040	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395048075434706 -- CH 5218

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1050	9813	1028	--	--	43.6	<.020
NOV							
30...	1010	9813	1028	--	--	43.4	<.020
DEC							
21...	1050	9813	1028	--	--	40.4	<.020
JAN 2001							
11...	1135	9813	1028	--	--	38.6	<.020
FEB							
22...	1100	9813	1028	--	--	34.3	<.020
MAR							
22...	0910	9813	1028	6.6	239	33.2	<.020
APR							
25...	1030	9813	1028	--	--	47.0	<.020
MAY							
24...	1005	9813	1028	--	--	63.3	<.020
JUN							
14...	1005	9813	1028	6.2	338	52.0	<.020
JUL							
25...	1130	9813	1028	6.0	329	50.0	<.020
AUG							
16...	0930	9813	1028	--	--	53.8	<.020
SEP							
20...	0935	9813	1028	--	--	60.0	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000						
12...	2.1	1.86	<.040	<1.0	--	--
NOV						
30...	1.9	1.75	<.040	--	--	--
DEC						
21...	2.1	1.77	<.040	<1.0	--	--
JAN 2001						
11...	1.9	1.72	<.040	--	--	--
FEB						
22...	1.8	1.56	<.040	--	--	--
MAR						
22...	1.9	1.57	<.040	--	--	--
APR						
25...	2.5	2.23	<.040	--	--	--
MAY						
24...	3.5	3.19	<.040	--	--	--
JUN						
14...	2.7	2.43	<.040	--	<200	<10
JUL						
25...	2.2	1.92	<.040	--	<200	<10
AUG						
16...	2.3	1.93	<.040	--	--	--
SEP						
20...	1.9	1.89	<.040	--	<200	<10

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395052075434503 -- CH 5219

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH	SPE-	CHLO-	NITRO-
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CIFIC CON- DUCT- ANCE (µS/CM) (00095)	RIDE, DIS- SOLVED (MG/L AS CL) (00940)	GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1100	9813	1028	6.9	312	.7	<.020
NOV							
16...	0900	1028	1028	--	--	--	--
30...	1030	9813	1028	6.5	263	<.5	<.020
DEC							
21...	1100	9813	1028	--	--	<.5	<.020
JAN 2001							
11...	1140	9813	1028	6.5	240	<.5	<.020
FEB							
22...	1105	9813	1028	--	--	.6	<.020
MAR							
22...	0940	9813	1028	6.7	224	.6	<.020
APR							
25...	1040	9813	1028	6.4	231	<.5	<.020
MAY							
24...	1020	9813	1028	6.7	355	.5	<.020
JUN							
14...	1030	9813	1028	6.7	258	1.8	<.020
JUL							
25...	1155	9813	1028	6.4	323	.5	<.020
AUG							
16...	1040	9813	1028	6.3	324	.6	<.020
SEP							
20...	0955	9813	1028	6.7	314	.5	<.020

DATE	NITRO-	NITRO-	NITRO-	CARBON,	BORON,	IRON,	MANGA-	ZINC,
	GEN DIS- SOLVED (MG/L AS N) (00602)	GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	ORGANIC DIS- SOLVED (MG/L AS C) (00681)	DIS- SOLVED (µG/L AS B) (01020)	DIS- SOLVED (µG/L AS FE) (01046)	NESE, DIS- SOLVED (µG/L AS MN) (01056)	DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000								
12...	.11	<.040	<.040	1.2	--	--	--	--
NOV								
16...	--	--	--	--	--	--	--	--
30...	<.06	<.040	<.040	1.1	--	--	--	--
DEC								
21...	<.06	<.040	<.040	1.3	<200	<20	<10.0	<10
JAN 2001								
11...	.14	<.040	<.040	1.2	--	--	--	--
FEB								
22...	<.06	<.040	<.040	1.3	--	--	--	--
MAR								
22...	.09	<.040	<.040	2.1	<200	<20	<10.0	<10
APR								
25...	.16	<.040	<.040	1.1	--	--	--	--
MAY								
24...	.16	<.040	<.040	--	<200	--	--	<10
JUN								
14...	.26	.120	<.040	1.7	<200	<20	<10.0	<10
JUL								
25...	.27	.040	<.040	--	<200	--	--	<10
AUG								
16...	.11	<.040	<.040	1.6	--	--	--	--
SEP								
20...	<.06	<.040	<.040	1.3	--	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395057075435001 -- CH 5448

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000						
12...	1220	9813	1028	--	6.4	<.020
NOV						
16...	1100	80020	1028	--	--	--
DEC						
21...	1200	9813	1028	--	2.3	.080
JAN 2001						
11...	1210	9813	1028	--	1.9	.040
FEB						
22...	1130	9813	1028	--	2.5	.040
MAR						
22...	1015	9813	1028	--	2.2	.020
APR						
25...	1120	9813	1028	--	2.5	<.020
MAY						
24...	1100	9813	1028	--	2.3	--
JUN						
14...	1130	1028	1028	7.1	--	--
JUL						
18...	1050	80020	1028	--	--	--
25...	1255	9813	1028	--	2.1	--
AUG						
16...	1120	1028	1028	7.4	--	--

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	N15/N14 NO3 FRAC WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000				
12...	71	63.0	<.040	--
NOV				
16...	--	--	--	6.40
DEC				
21...	69	70.0	<.040	--
JAN 2001				
11...	78	76.0	<.040	--
FEB				
22...	61	51.0	<.040	--
MAR				
22...	58	55.0	<.040	--
APR				
25...	47	48.0	<.040	--
MAY				
24...	58	48.8	<.040	--
JUN				
14...	--	--	--	--
JUL				
18...	--	--	--	6.40
25...	54	49.4	<.040	--
AUG				
16...	--	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395049075434401 -- CH 5449

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)		
SEP 2001 20...	1030	9813	1028	6.6	623	22.4	<.020		
DATE		NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	IRON, DIS- SOLVED (µG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (µG/L AS MN) (01056)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
SEP 2001 20...	1.4	<.040	.190	8.6	<200	<20	459	140	

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395052075434504 -- CH 5564

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH	SPE-	CHLO-	NITRO-
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CIFIC CON- DUCT- ANCE (µS/CM) (00095)	RIDE, DIS- SOLVED (MG/L AS CL) (00940)	GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1115	9813	1028	6.4	207	2.2	<.020
NOV							
30...	1040	9813	1028	6.3	212	2.5	<.020
DEC							
21...	1110	9813	1028	--	--	2.1	<.020
JAN 2001							
11...	1145	9813	1028	6.3	197	2.5	<.020
MAR							
22...	0955	9813	1028	6.7	179	1.4	<.020
APR							
25...	1050	9813	1028	6.2	194	1.4	<.020
MAY							
24...	1030	9813	1028	6.2	340	3.0	<.020
JUN							
14...	1100	9813	1028	6.4	234	3.4	<.020
JUL							
25...	1215	9813	1028	6.0	242	6.1	<.020
AUG							
16...	1050	9813	1028	5.9	252	8.9	<.020
SEP							
20...	1005	9813	1028	6.0	236	9.5	<.020

DATE	NITRO-	NITRO-	NITRO-	CARBON,	BORON,	IRON,	MANGA-	ZINC,
	GEN- DIS- SOLVED (MG/L AS N) (00602)	GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	ORGANIC DIS- SOLVED (MG/L AS C) (00681)	DIS- SOLVED (µG/L AS B) (01020)	DIS- SOLVED (µG/L AS FE) (01046)	NESE, DIS- SOLVED (µG/L AS MN) (01056)	DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000								
12...	6.1	6.00	<.040	<1.0	--	--	--	--
NOV								
30...	6.2	6.26	<.040	<1.0	<200	20	<10.0	<10
DEC								
21...	5.7	5.60	<.040	<1.0	<200	<20	<10.0	<10
JAN 2001								
11...	6.5	6.60	<.040	<1.0	<200	<20	<10.0	<10
MAR								
22...	2.9	2.47	<.040	1.5	<200	50	<10.0	<10
APR								
25...	4.0	3.53	<.040	1.0	--	--	--	--
MAY								
24...	7.8	>4.00	<.040	<1.0	<200	<20	<10.0	<10
JUN								
14...	8.4	7.46	<.040	1.0	<200	20	<10.0	<10
JUL								
25...	6.5	6.78	<.040	1.4	<200	<20	<10.0	48
AUG								
16...	6.6	5.47	<.040	--	<200	--	--	<10
SEP								
20...	4.9	4.50	<.040	1.0	<200	<20	<10.0	<10

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395052075434505 -- CH 5565

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH	SPE-	CHLO-	NITRO-		
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CIFIC CON- DUCT- ANCE (µS/CM) (00095)	RIDE, DIS- SOLVED (MG/L AS CL) (00940)	GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)		
OCT 2000									
12...	1130	9813	1028	--	--	8.4	<.020		
NOV									
16...	0930	80020	1028	--	--	--	--		
30...	1050	9813	1028	--	--	12.0	<.020		
DEC									
21...	1120	9813	1028	--	--	--	<.020		
JAN 2001									
11...	1150	9813	1028	--	--	13.8	<.020		
FEB									
22...	1110	9813	1028	--	--	14.3	<.020		
MAR									
22...	1000	9813	1028	6.7	328	14.9	<.020		
APR									
25...	1100	9813	1028	6.4	345	16.0	<.020		
MAY									
24...	1040	9813	1028	--	--	17.8	<.020		
JUN									
14...	1115	9813	1028	--	--	19.8	<.020		
JUL									
25...	1230	9813	1028	6.2	352	20.7	<.020		
AUG									
16...	1100	9813	1028	6.2	363	22.0	<.020		
SEP									
20...	1010	9813	1028	--	--	22.3	<.020		

DATE	NITRO-	NITRO-	NITRO-	CARBON,	BORON,	IRON,	MANGA-	ZINC,	N15/N14
	GEN, DIS- SOLVED (MG/L AS N) (00602)	GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	ORGANIC DIS- SOLVED (MG/L AS C) (00681)	DIS- SOLVED (µG/L AS B) (01020)	DIS- SOLVED (µG/L AS FE) (01046)	NESE, DIS- SOLVED (µG/L AS MN) (01056)	DIS- SOLVED (µG/L AS ZN) (01090)	FRAC NO3 WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000									
12...	11	10.1	<.040	1.5	--	--	--	--	--
NOV									
16...	--	--	--	--	--	--	--	--	8.10
30...	8.7	8.48	<.040	--	--	--	--	--	--
DEC									
21...	--	--	--	1.3	--	--	--	--	--
JAN 2001									
11...	8.1	--	<.040	--	<200	--	--	<10	--
FEB									
22...	7.8	6.60	<.040	--	<200	--	--	<10	--
MAR									
22...	7.6	6.60	<.040	--	<200	--	--	<10	--
APR									
25...	6.6	6.30	<.040	--	--	--	--	--	--
MAY									
24...	6.0	5.58	<.040	--	<200	--	--	10	--
JUN									
14...	5.5	4.72	<.040	1.4	--	--	--	--	--
JUL									
25...	5.4	4.15	<.040	1.6	<200	<20	<10.0	28	--
AUG									
16...	4.4	3.78	<.040	--	--	--	--	--	--
SEP									
20...	3.5	3.33	<.040	--	--	--	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395052075434506 -- CH 5566

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1140	9813	1028	--	--	9.3	<.020
NOV							
30...	1100	9813	1028	6.2	324	12.3	<.020
DEC							
21...	1130	9813	1028	--	--	13.1	.040
JAN 2001							
11...	1155	9813	1028	6.2	305	14.2	<.020
FEB							
22...	1120	9813	1028	--	--	16.5	<.020
MAR							
22...	1005	9813	1028	6.5	301	18.1	<.020
APR							
25...	1110	9813	1028	6.1	314	19.7	<.020
MAY							
24...	1050	9813	1028	6.1	373	20.6	<.020
JUN							
14...	1115	9813	1028	6.3	306	22.4	<.020
JUL							
25...	1240	9813	1028	5.8	315	23.1	<.020
AUG							
16...	1110	9813	1028	5.9	313	24.0	<.020
SEP							
20...	1020	9813	1028	6.0	314	24.7	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000						
12...	11	10.6	<.040	1.6	--	--
NOV						
30...	9.4	9.04	<.040	--	<200	<10
DEC						
21...	8.5	8.20	<.040	--	<200	<10
JAN 2001						
11...	7.8	7.80	<.040	--	<200	<10
FEB						
22...	7.0	6.07	<.040	1.4	--	--
MAR						
22...	6.3	5.70	<.040	--	<200	<10
APR						
25...	5.9	5.30	<.040	--	<200	<10
MAY						
24...	5.4	4.90	<.040	--	<200	<10
JUN						
14...	5.6	4.55	<.040	--	<200	<10
JUL						
25...	5.5	4.14	<.040	1.2	--	--
AUG						
16...	4.4	3.69	<.040	1.3	--	--
SEP						
20...	3.3	3.30	<.040	1.2	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395100075434603 -- CH 5567

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1155	1028	1028	7.6	299	--	--
DEC							
21...	1145	9813	1028	--	--	.5	.040
JAN 2001							
11...	1215	9813	1028	--	--	4.3	<.020
FEB							
22...	1140	9813	1028	--	--	1.0	<.020
MAR							
22...	1045	9813	1028	6.9	232	.8	<.020
APR							
25...	1130	9813	1028	--	--	.6	<.020
JUN							
14...	1200	9813	1028	--	--	1.6	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	BORON, DIS- SOLVED (µG/L AS B) (01020)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)
OCT 2000						
12...	--	--	--	--	--	--
DEC						
21...	.51	.040	<.040	4.1	--	--
JAN 2001						
11...	.86	.240	<.040	--	--	--
FEB						
22...	.59	.070	<.040	--	--	--
MAR						
22...	.77	.170	<.040	--	<200	<10
APR						
25...	.63	.130	<.040	--	--	--
JUN						
14...	.68	<.040	<.040	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395100075434604 -- CH 5568

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (µS/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1200	1028	1028	7.2	295	--	--
NOV							
16...	1000	80020	1028	--	--	--	--
30...	1130	1028	1028	7.1	254	--	--
JAN 2001							
11...	1220	9813	1028	--	--	.6	<.020
FEB							
22...	1145	9813	1028	--	--	.6	<.020
MAR							
22...	1055	9813	1028	6.9	278	.6	<.020
APR							
25...	1140	9813	1028	6.9	335	.6	<.020
MAY							
24...	1130	9813	1028	--	--	.7	<.020
JUN							
14...	1205	9813	1028	--	--	.6	--
JUL							
25...	1320	1028	1028	6.9	405	--	--
AUG							
16...	1130	9813	1028	--	--	.8	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	BORON, DIS- SOLVED (µG/L AS B) (01020)	ZINC, DIS- SOLVED (µG/L AS ZN) (01090)	N15/N14 NO3 FRAC WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000						
12...	--	--	--	--	--	--
NOV						
16...	--	--	--	--	--	-2.10
30...	--	--	--	--	--	--
JAN 2001						
11...	1.0	.770	<.040	--	--	--
FEB						
22...	1.1	.840	<.040	<200	<10	--
MAR						
22...	1.2	.880	<.040	<200	<10	--
APR						
25...	.98	.730	<.040	--	--	--
MAY						
24...	1.1	.710	<.040	--	--	--
JUN						
14...	.81	.570	<.040	--	--	--
JUL						
25...	--	--	--	--	--	--
AUG						
16...	1.3	.840	<.040	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395100075434606 -- CH 5570

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
JUN 2001 14...	1230	1028	1028	7.4

395043075440703 -- CH 5571

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY	AGENCY	PH	SPE-	CHLO-	NITRO-
		ANA- LYZING SAMPLE (CODE NUMBER) (00028)	COL- LECTING SAMPLE (CODE NUMBER) (00027)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	CIFIC CON- DUCT- ANCE (µS/CM) (00095)	RIDE, DIS- SOLVED (MG/L AS CL) (00940)	GEN, DIS- SOLVED (MG/L AS N) (00608)
OCT 2000 12...	1230	1028	1028	7.6	827	--	--
NOV 30...	1140	9813	1028	--	--	9.2	<.020
DEC 21...	1210	9813	1028	--	--	5.7	.340
JAN 2001 11...	1225	1028	1028	7.0	716	--	--
FEB 22...	1200	9813	1028	--	--	4.9	<.020
MAR 22...	1120	9813	1028	6.7	629	4.2	<.020
APR 25...	1150	9813	1028	--	--	1.6	<.020
JUN 14...	1235	9813	1028	--	--	3.9	<.020
AUG 16...	1150	1028	1028	6.7	550	--	--

DATE	NITRO-	NITRO-	NITRO-
	GEN DIS- SOLVED (MG/L AS N) (00602)	GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT 2000 12...	--	--	--
NOV 30...	2.9	2.22	<.040
DEC 21...	1.1	.440	<.040
JAN 2001 11...	--	--	--
FEB 22...	.98	.390	<.040
MAR 22...	.93	.310	<.040
APR 25...	.68	.060	<.040
JUN 14...	1.8	.950	<.040
AUG 16...	--	--	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395043075440704 -- CH 5572

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (μ S/CM) (00095)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000							
12...	1235	1028	1028	6.6	764	--	--
NOV							
30...	1150	9813	1028	--	--	5.3	<.020
JAN 2001							
11...	1230	1028	1028	6.6	712	--	--
FEB							
22...	1210	9813	1028	--	--	3.6	<.020
MAR							
22...	1125	9813	1028	6.7	731	2.8	<.020
APR							
25...	1200	9813	1028	--	--	2.0	<.020
MAY							
24...	1200	9813	1028	--	--	1.3	<.020
JUN							
14...	1240	9813	1028	--	--	2.1	<.020
JUL							
18...	1100	80020	1028	--	--	--	--
AUG							
16...	1200	9813	1028	--	--	.8	<.020

DATE	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	N15/N14 NO3 FRAC WATER FLTRD 0.45 μ PER MIL (82690)
OCT 2000				
12...	--	--	--	--
NOV				
30...	3.1	2.20	<.040	--
JAN 2001				
11...	--	--	--	--
FEB				
22...	.96	.320	<.040	--
MAR				
22...	.90	.190	<.040	--
APR				
25...	.81	.130	<.040	--
MAY				
24...	1.0	.230	<.040	--
JUN				
14...	.74	.040	<.040	--
JUL				
18...	--	--	--	5.10
AUG				
16...	1.2	.260	<.040	--

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395043075440705 -- CH 5573

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000					
12...	1250	9813	1028	5.1	<.020
NOV					
30...	1155	9813	1028	5.2	<.020
DEC					
21...	1220	9813	1028	4.9	.020
JAN 2001					
11...	1235	9813	1028	4.8	<.020
MAR					
22...	1130	9813	1028	4.4	<.020
APR					
25...	1210	9813	1028	4.6	<.020
MAY					
24...	1210	9813	1028	4.6	.520
JUN					
14...	1250	9813	1028	4.7	.200

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT 2000			
12...	7.6	4.60	<.040
NOV			
30...	5.7	5.04	<.040
DEC			
21...	5.6	5.00	<.040
JAN 2001			
11...	5.7	5.10	<.040
MAR			
22...	6.8	5.60	<.040
APR			
25...	7.0	4.92	<.040
MAY			
24...	5.8	4.16	<.040
JUN			
14...	5.3	3.91	<.040

**ANALYSIS OF SAMPLES COLLECTED AT SPECIAL-STUDY SITES
NEW GARDEN TOWNSHIP, CHESTER COUNTY, SPRAY IRRIGATION PROJECT--Continued**

395043075440706 -- CH 5574

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
OCT 2000					
12...	1300	9813	1028	4.2	<.020
NOV					
16...	1030	80020	1028	--	--
30...	1200	9813	1028	4.8	<.020
DEC					
21...	1230	9813	1028	4.8	<.020
JAN 2001					
11...	1240	9813	1028	4.4	<.020
MAR					
22...	1135	9813	1028	5.3	<.020
APR					
25...	1215	9813	1028	4.7	<.020
MAY					
24...	1215	9813	1028	4.3	<.020
JUN					
14...	1300	9813	1028	4.3	<.020
AUG					
16...	1210	9813	1028	3.7	<.020

DATE	NITRO- GEN DIS- SOLVED (MG/L AS N) (00602)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	N15/N14 NO3 FRAC WATER FLTRD 0.45 µ PER MIL (82690)
OCT 2000				
12...	11	10.0	<.040	--
NOV				
16...	--	--	--	5.90
30...	10	9.86	<.040	--
DEC				
21...	10	10.1	<.040	--
JAN 2001				
11...	11	10.2	<.040	--
MAR				
22...	11	9.90	<.040	--
APR				
25...	10	9.40	<.040	--
MAY				
24...	9.7	8.83	<.040	--
JUN				
14...	10	8.21	<.040	--
AUG				
16...	10	7.76	<.040	--