

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

The following tables contain water-quality data from wells sampled in Pennsylvania during the second year of the Ground Water Pesticides Network project. The 5-year study is being conducted by the U.S. Geological Survey in cooperation with the Pennsylvania Department of Agriculture. Sites were selected to meet project objectives in the Annual Baseline Network, the Baseline Trends Network, and Hot-Spot Trends Networks. Twenty Annual Baseline Network sites were selected in the Eastern Lake hydrogeologic setting in Erie County to fill an existing data gap in ground-water quality; sites in this network are only sampled one time as part of an occurrence survey. Sixteen Baseline Trend Network sites were selected in four hydrogeologic settings (4 sites per setting) of predominantly carbonate bedrock where wells had previous detections of pesticides. The wells in this network are sampled yearly to evaluate trends. The three Hot-Spot Trend Network sites have well water with recorded pesticide concentrations at or above the Pennsylvania Pesticides and Ground Water Strategy action levels. These wells are sampled four times per year at: 1) declining water levels; 2) stable water levels; 3) rising water levels due to spring/summer flush; and 4) rising water levels due to winter recharge. Samples are identified by network in the third column heading within the table: Annual Baseline = AB and Annual Baseline Quality Assurance = AB-QA. Well locations are shown in Figure 6. The following analytical methods were used to determine results for the samples listed: PA Department of Environmental Protection Laboratory (PADEP)(Analyzing Agency Code 9813), pesticides - SAC USGS1 (EPA 525.2) solid phase extraction gas chromatography/mass spectrometry and (EPA 531.1) reverse phase high performance liquid chromatography column with post-column derivatization and fluorescence detection, nitrate/nitrite - colorimetry (cadmium reduction), total coliform and E. coli bacteria - Colilert Quantitray. Pesticides analyzed for this study are identified in the table which follows quality-control data. Other data for this project can be found in the annual Water Data Report PA-04-1 (Delaware River Basin) and PA-04-2 (Susquehanna and Potomac River Basins). For additional information, contact Connie Loper at the U.S. Geological Survey, 215 Limekiln Road, New Cumberland, PA 17070; 717-730-6976 (email caloper@usgs.gov).

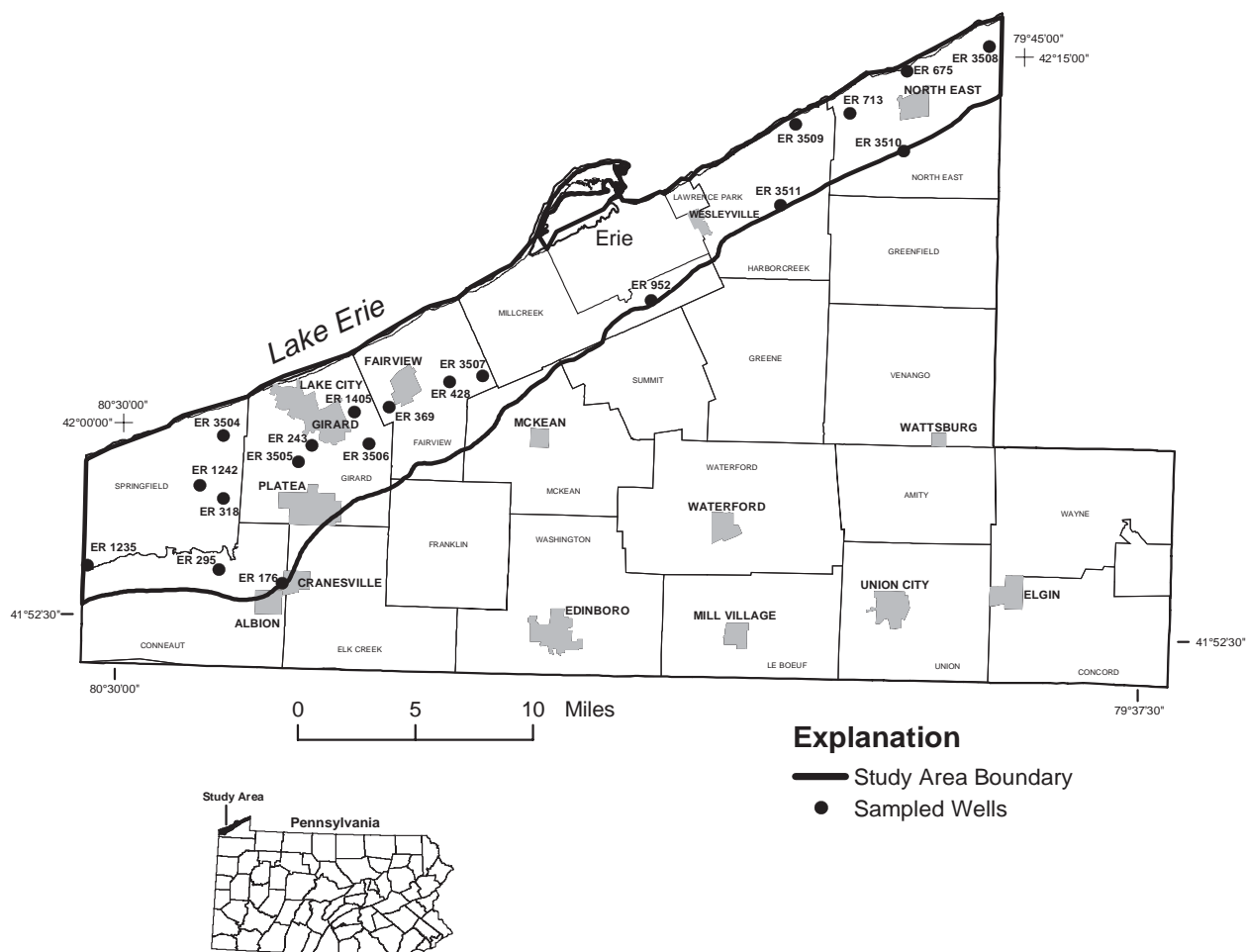


Figure 6.--Location of the Annual Baseline Network wells, in Erie County, Pennsylvania, sampled as part of the Ground Water Pesticides Network project.

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REMARKS.--Explanation of column headings--Station number: 15-digit unique identifier based on site latitude (first six digits), longitude (digits seven through thirteen), and a 2-digit sequence number suffix; Altitude of land surface: land-surface at well site in feet above sea level; $\mu\text{S}/\text{cm}$: microsiemens per centimeter at 25 degrees Celsius; deg C: degrees Celsius; $\mu\text{g}/\text{L}$: micrograms per liter (parts per billion); mg/L = milligrams per liter (parts per million); "<" = less than; ">" = more than; "E" = estimated; Network Identifier Annual Baseline = AB and Annual Baseline Quality Assurance = AB-QA. Quality-control data for replicate samples are shown for Local Well ID ER 3604 (bacteria) on August 5, 2004 at 0946 and 0947, Local Well ID ER 369 (nitrate + nitrite) and nitrite) on June 22, 2004 at 1121 and 1122, and Local Well ID ER 3510 (bacteria) on August 4, 2004 at 0821 and 0822. The pesticide sample collected at Local Well ID ER 3506 was ruined at the lab due to an instrument malfunction and was subsequently recollected October 21, 2004.

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2004

Station number	Local Well ID	Network Identifier	Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Depth of well, feet below LSD (72008)	Depth to water level, feet below LSD (72019)	Altitude of land surface feet (72000)	Pump or flow period prior to sampling, minutes (72004)	Sampling method, code (82398)	Turbidity, water, unfltrd field, NTU (61028)
ERIE COUNTY												
415409080211201	ER 176	AB	07-22-04	0735	1028	9813	30	--	895	20	4040	1.1
415437080242301	ER 295	AB	07-29-04	1030	1028	9813	80	26.80	915	25	4040	12
415438080305801	ER 1235	AB	07-22-04	1105	1028	9813	52	38.20	850	20	4040	.7
415718080241501	ER 318	AB	07-29-04	0800	1028	9813	86	59.11	790	30	4040	7.4
415746080252701	ER 1242	AB	08-05-04	1230	1028	9813	34	--	735	20	4040	1.6
415845080203301	ER 3505	AB	08-04-04	1120	1028	9813	89	37.14	840	30	4040	3.3
415924080195301	ER 243	AB	07-21-04	1050	1028	9813	88	61.00	826	25	4040	6.7
415931080170201	ER 3506	AB	08-19-04	0830	1028	9813	111.8	77.34	875	20	4040	1.9
415941080242101	ER 3506	AB	10-21-04	0940	1028	9813	111.8	84.92	875	20	4040	--
	ER 3604	AB	08-05-04	0945	1028	9813	18	4.78	720	30	4040	.6
420042080174901	ER 3604	AB-QA	08-05-04	0947	1028	9813	18	--	720	30	4040	--
	ER 1405	AB	06-23-04	0840	1028	9813	45	23.15	784	30	4040	2.7
420055080160501	ER 369	AB	06-22-04	1120	1028	9813	49	12.86	840	50	4040	4.0
	ER 369	AB-QA	06-22-04	1121	1028	9813	49	--	840	50	4040	--
	ER 369	AB-QA	06-22-04	1122	1028	9813	49	--	840	50	4040	--
420156080130501	ER 428	AB	06-10-04	0930	1028	9813	41	--	826	40	4040	1.1
420211080112501	ER 3607	AB	06-24-04	0910	1028	9813	33	7.88	860	30	4040	3.3
420511080030401	ER 952	AB	06-09-04	1230	1028	9813	40	24.45	970	30	4040	0.0
420854079564001	ER 3511	AB	08-18-04	1225	1028	9813	39	4.85	885	25	4040	2.0
421102079503301	ER 3510	AB	08-04-04	0820	1028	9813	15	7.51	1040	20	4040	3.6
421158079560101	ER 3510	AB-QA	08-04-04	0821	1028	9813	15	--	1040	20	4040	--
	ER 3510	AB-QA	08-04-04	0822	1028	9813	15	--	1040	20	4040	--
421225079531701	ER 3509	AB	05-19-04	1050	1028	9813	80	15.41	673	30	4040	5.5
421403079502901	ER 713	AB	06-08-04	1100	1028	9813	32	8.20	740	35	4040	.8
421503079462201	ER 675	AB	06-09-04	0845	1028	9813	94	--	710	30	4040	.1
421503079462201	ER 3508	AB	08-05-04	0700	1028	9813	20	12.50	710	30	4040	3.3

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

WATER-QUALITY DATA, WATER YEARS OCTOBER 2003 TO SEPTEMBER 2004

Date	Meth- omyl, water, fltrd 0.7µ GF µg/L (49296)	Methyl para- thion, water, fltrd 0.7µ GF µg/L (82667)	Metola- chlor, water, fltrd µg/L (39415)	Metri- buzin, water, fltrd, µg/L (82630)	Oxamyl, water, fltrd 0.7µ GF µg/L (38866)	Pendi- meth- alin, water, fltrd 0.7µ GF µg/L (82683)	Phosmet water, fltrd, µg/L (61601)	Phos- pham- idon, water, fltrd, µg/L (63736)	Sima- zine, water, fltrd, µg/L (04035)	Terba- cil, water, fltrd 0.7µ GF µg/L (82665)	Tri- flur- alin, water, fltrd, µg/L (04023)	Purpose site visit, code (50280)	Sample purpose code (71999)
ERIE COUNTY													
07-22-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-29-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-22-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-29-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-04-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
07-21-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-19-04	--	--	--	--	--	--	--	--	--	--	--	2001	50.00
10-21-04	<5.00	<.100	<.10	<.10	<5.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
08-05-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
06-23-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
06-22-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
06-22-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
06-22-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
06-10-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
06-24-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
06-09-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-18-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-04-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-04-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
08-04-04	--	--	--	--	--	--	--	--	--	--	--	2098	50.00
05-19-04	--	<.100	<.10	<.10	--	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
06-08-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
06-09-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00
08-05-04	<2.00	<.100	<.10	<.10	<2.00	<.100	<.100	<.25	<.10	<.100	<.10	2001	50.00

Date	Sam- pling condi- tion, code (72006)	Type of sample related QA data, code (99111)	Type of repli- cate, code (99105)	County	Data base number	Medium code
ERIE COUNTY						
07-22-04	8.00	1	--	049	01	6
07-29-04	8.00	10	--	049	01	6
07-22-04	8.00	1	--	049	01	6
07-29-04	8.00	1	--	049	01	6
08-05-04	8.00	1	--	049	01	6
08-04-04	8.00	10	--	049	01	6
07-21-04	8.00	1	--	049	01	6
08-19-04	8.00	1	--	049	01	6
10-21-04	9.00	1	--	049	01	6
08-05-04	8.00	30	20.00	049	01	6
08-05-04	8.00	--	20.00	049	02	S
08-05-04	8.00	--	20.00	049	02	S
06-23-04	8.00	10	--	049	01	6
06-22-04	8.00	30	30.00	049	01	6
06-22-04	8.00	--	30.00	049	02	S
06-22-04	8.00	--	30.00	049	02	S
06-10-04	8.00	1	--	049	01	6
06-24-04	8.00	1	--	049	01	6
06-09-04	8.00	1	--	049	01	6
08-18-04	8.00	10	--	049	01	6
08-04-04	8.00	30	20.00	049	01	6
08-04-04	8.00	--	20.00	049	02	S
08-04-04	8.00	--	20.00	049	02	S
05-19-04	8.00	1	--	049	01	6
06-08-04	8.00	40	--	049	01	6
06-09-04	8.00	1	--	049	01	6
08-05-04	8.00	10	--	049	01	6

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (June 8, 2004 at 12:45) was sent to the USGS National Water Quality Laboratory lab as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1300) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.37	.40	92
46342	Alachlor	<0.10	0.38	.40	95
39632	Atrazine	<0.10	0.43	.40	108
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.35	.40	88
38933	Chlorpyrifos (Dursban)	<0.10	0.33	.40	82
49300	Diuron	<0.10	0.41	.40	102
34386	Hexachlorocyclopentadiene	<0.10	0.12	.40	30
82686	Methyl azinphos	<0.50	E0.44	.40	110
82667	Methyl parathion	<0.10	0.35	.40	88
39415	Metolachlor	<0.10	0.36	.40	90
82630	Metribuzin	<0.10	0.29	.40	72
82683	Pendimethalin	<0.10	0.40	.40	100
check	Phosphamidon	<0.25	0.49	.40	122
04035	Simazine	<0.10	0.39	.40	98
82665	Terbacil	<0.10	0.44	.40	110
82661	Trifluralin	<0.10	0.33	.40	82
Carbamates:					
49310	Carbaryl	<2.0	2.42	3.2	76
49296	Methomyl	<2.0	2.61	3.2	82
38866	Oxamyl	<2.0	2.69	3.2	84

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
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401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (6/8/04 at 12:45) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1310) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.34	.40	85
46342	Alachlor	<0.10	0.32	.40	80
39632	Atrazine	<0.10	0.34	.40	85
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.31	.40	78
38933	Chlorpyrifos (Dursban)	<0.10	0.33	.40	82
49300	Diuron	<0.10	0.36	.40	90
34386	Hexachlorocyclopentadiene	<0.10	0.12	.40	30
82686	Methyl azinphos	<0.50	E0.39	.40	98
82667	Methyl parathion	<0.10	0.34	.40	85
39415	Metolachlor	<0.10	0.34	.40	85
82630	Metribuzin	<0.10	0.28	.40	70
82683	Pendimethalin	<0.10	0.36	.40	90
check	Phosphamidon	<0.25	0.46	.40	115
04035	Simazine	<0.10	0.41	.40	102
82665	Terbacil	<0.10	0.42	.40	105
82661	Trifluralin	<0.10	0.27	.40	68
Carbamates					
49310	Carbaryl	<2.0	2.60	3.2	81
49296	Methomyl	<2.0	3.14	3.2	98
38866	Oxamyl	<2.0	2.45	3.2	77

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
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401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample(6/8/04 at 12:45) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Concentration, in micrograms per liter					
Parameter code	Constituent	Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1320) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.30	.40	75
46342	Alachlor	<0.10	0.34	.40	85
39632	Atrazine	<0.10	0.36	.40	90
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.30	.40	75
38933	Chlorpyrifos (Dursban)	<0.10	0.30	.40	75
49300	Diuron	<0.10	0.35	.40	88
34386	Hexachlorocyclopentadiene	<0.10	0.12	.40	30
82686	Methyl azinphos	<0.50	0.39	.40	98
82667	Methyl parathion	<0.10	0.35	.40	88
39415	Metolachlor	<0.10	0.34	.40	85
82630	Metribuzin	<0.10	0.27	.40	68
82683	Pendimethalin	<0.10	0.36	.40	90
check	Phosphamidon	<0.25	0.47	.40	118
04035	Simazine	<0.10	0.38	.40	95
82665	Terbacil	<0.10	0.39	.40	98
82661	Trifluralin	<0.10	0.26	.40	65
Carbamates					
49310	Carbaryl	<2.0	2.68	3.2	84
49296	Methomyl	<2.0	2.92	3.2	91
38866	Oxamyl	<2.0	2.78	3.2	87

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water June 8, 2004 at 13:00, 13:10, and 13:20 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. One liter of the same spiked sample (time = 12:45) and was sent to the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) in Denver, Colorado as an interlab quality-assurance check. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (06/08/04 at 1245) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.44	.40	110
46342	Alachlor	<0.10	0.46	.40	115
39632	Atrazine	<0.10	0.60	.40	151
61582	Captan	<0.10	Not analyzed in USGS NWQL SH2001		
49306	Chlorothalonil	<0.10	Not analyzed in USGS NWQL SH2001		
38933	Chlorpyrifos (Dursban)	<0.10	0.39	.40	98
49300	Diuron	<0.10	Not analyzed in USGS NWQL SH2001		
34386	Hexachlorocyclopentadiene	<0.10	Not analyzed in USGS NWQL SH2001		
82686	Methyl azinphos	<0.50	E0.59	.40	148
82667	Methyl parathion	<0.10	0.46	.40	115
39415	Metolachlor	<0.10	0.45	.40	113
82630	Metribuzin	<0.10	0.38	.40	95
82683	Pendimethalin	<0.10	0.46	.40	115
check	Phosphamidon	<0.25	Not analyzed in USGS NWQL SH2001		
04035	Simazine	<0.10	0.49	.40	122
82665	Terbacil	<0.10	0.48	.40	120
82661	Trifluralin	<0.10	0.30	.40	75

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water July 21, 2004 at 12:50, 13:00, and 13:10 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (7/21/04 at 1250) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1250) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.43	.40	108
46342	Alachlor	<0.10	0.43	.40	108
39632	Atrazine	<0.10	0.45	.40	112
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.36	.40	90
38933	Chlorpyrifos (Dursban)	<0.10	0.38	.40	95
49300	Diuron	<0.10	0.47	.40	118
34386	Hexachlorocyclopentadiene	<0.10	0.32	.40	80
82686	Methyl azinphos	<0.50	0.86	.40	215
82667	Methyl parathion	<0.10	0.40	.40	100
39415	Metolachlor	<0.10	0.45	.40	112
82630	Metribuzin	<0.10	0.38	.40	95
82683	Pendimethalin	<0.10	0.50	.40	125
check	Phosphamidon	<0.25	0.48	.40	120
04035	Simazine	<0.10	0.47	.40	118
82665	Terbacil	<0.10	0.44	.40	110
82661	Trifluralin	<0.10	0.36	.40	90
Carbamates					
49310	Carbaryl	<2.0	2.67	3.3	81
49296	Methomyl	<2.0	3.33	3.3	100
38866	Oxamyl	<2.0	3.28	3.3	99

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water (July 21, 2004 at 1250, 1300, and 1310) to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (7/21/04 at 1250) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in $\mu\text{g}/\text{L}$) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 --Continued

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1300) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.46	.40	115
46342	Alachlor	<0.10	0.47	.40	118
39632	Atrazine	<0.10	0.54	.40	135
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.27	.40	68
38933	Chlorpyrifos (Dursban)	<0.10	0.50	.40	125
49300	Diuron	<0.10	0.40	.40	100
34386	Hexachlorocyclopentadiene	<0.10	0.25	.40	62
82686	Methyl azinphos	<0.50	1.04	.40	260
82667	Methyl parathion	<0.10	0.44	.40	110
39415	Metolachlor	<0.10	0.57	.40	142
82630	Metribuzin	<0.10	0.39	.40	98
82683	Pendimethalin	<0.10	0.82	.40	205
check	Phosphamidon	<0.25	0.60	.40	150
04035	Simazine	<0.10	0.52	.40	130
82665	Terbacil	<0.10	0.56	.40	140
82661	Trifluralin	<0.10	0.38	.40	95
Carbamates					
49310	Carbaryl	<2.0	2.86	3.3	87
49296	Methomyl	<2.0	3.00	3.3	91
38866	Oxamyl	<2.0	2.81	3.3	85

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water July 21, 2004 at 1250, 1300, and 1310 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. An additional 1-L spiked sample (7/21/04 at 1250) was sent to the USGS National Water Quality Laboratory as an interlab quality-assurance sample. Triplicate spiked samples are used to determine both precision and accuracy. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1310) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.49	.40	122
46342	Alachlor	<0.10	0.48	.40	120
39632	Atrazine	<0.10	0.43	.40	108
61582	Captan	<0.10	<0.10	.40	0
49306	Chlorothalonil	<0.10	0.40	.40	100
38933	Chlorpyrifos (Dursban)	<0.10	0.47	.40	118
49300	Diuron	<0.10	0.53	.40	132
34386	Hexachlorocyclopentadiene	<0.10	0.30	.40	75
82686	Methyl azinphos	<0.50	0.97	.40	242
82667	Methyl parathion	<0.10	0.43	.40	108
39415	Metolachlor	<0.10	0.57	.40	142
82630	Metribuzin	<0.10	0.42	.40	105
82683	Pendimethalin	<0.10	0.68	.40	170
check	Phosphamidon	<0.25	0.59	.40	148
04035	Simazine	<0.10	0.40	.40	100
82665	Terbacil	<0.10	0.56	.40	140
82661	Trifluralin	<0.10	0.44	.40	110
Carbamates					
49310	Carbaryl	<2.0	3.04	3.3	92
49296	Methomyl	<2.0	2.91	3.3	88
38866	Oxamyl	<2.0	3.12	3.3	94

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

401435076540910 - QUALITY-ASSURANCE RESULTS

REMARKS.--A commercially-available mixture of pesticides and herbicides was spiked into three 3-liter bottles of organic-free blank water July 21, 2004 at 1250, 1300, and 1310 to create triplicate quality-assurance samples (2 1-liter bottles for EPA 525.2 and 1 40-mL bottle for EPA 531.1 per sample) which were analyzed at the Pennsylvania Department of Environmental Protection Bureau of Laboratories. One liter of the same spiked sample (time = 1320) and was sent to the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) in Denver, Colorado as an interlab quality-assurance check. Concentrations of analytes in blank water were assumed to be less than the reporting limits for purposes of calculations. Concentrations of pesticides and herbicides (in µg/L) and calculated recoveries (in percent) are shown in the table below for estimation of accuracy. Less-than values were set equal to zero for calculations; "<" = less than.

QUALITY-CONTROL DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--Continued

Parameter code	Constituent	Concentration, in micrograms per liter			
		Assumed concentration of blank A	Laboratory results for spiked sample (07/21/04 at 1320) B	Calculated ^a concentration in spiked sample C	Recovery in percent [(B-A)/C] x 100
49260	Acetochlor	<0.10	0.42	.40	105
46342	Alachlor	<0.10	0.41	.40	102
39632	Atrazine	<0.10	0.48	.40	120
61582	Captan	<0.10	Not analyzed in USGS NWQL SH2001		
49306	Chlorothalonil	<0.10	Not analyzed in USGS NWQL SH2001		
38933	Chlorpyrifos (Dursban)	<0.10	0.34	.40	85
49300	Diuron	<0.10	Not analyzed in USGS NWQL SH2001		
34386	Hexachlorocyclopentadiene	<0.10	Not analyzed in USGS NWQL SH2001		
82686	Methyl azinphos	<0.50	E0.52	.40	130
82667	Methyl parathion	<0.10	0.36	.40	90
39415	Metolachlor	<0.10	0.41	.40	102
82630	Metribuzin	<0.10	0.35	.40	88
82683	Pendimethalin	<0.10	0.35	.40	88
check	Phosphamidon	<0.25	Not analyzed in USGS NWQL SH2001		
04035	Simazine	<0.10	0.40	.40	100
82665	Terbacil	<0.10	E0.38	.40	95
82661	Trifluralin	<0.10	0.25	.40	62

a Calculated concentration of spike in sample equals the concentration of the spike solution, in micrograms per milliliter x amount of spike added, in milliliters, divided by the spiked sample volume, in liters.

**GROUND-WATER DATA COLLECTED AT SPECIAL-STUDY SITES
GROUND WATER PESTICIDES NETWORK PROJECT**

Compounds analyzed at the Pennsylvania Department of Environmental Protection Laboratory

Pesticide Schedule used for Annual Baseline Network (SAC USGS1)	
Analyte	NWIS Parameter Code
EPA 525.2	
Acetochlor	49260
Alachlor	46342
Atrazine	39632
Captan	61582
Chlorothalonil	49306
Chlorpyrifos (Dursban)	38933
Dichlobenil (added after April 2004)	63009
Fenpropathrin (added after April 2004)	64044
Diuron	49300
Hexachlorocyclopentadiene	34386
Methyl parathion	82667
Metolachlor	39415
Metribuzin	82630
Pendimethalin	82683
Phosmet (added after April 2004)	61601
Phosphamidon	63736
Simazine	04035
Terbacil	82665
Trifluralin (added after April 2004)	04023
EPA 531.1	
Carbaryl	49310
Methomyl	49296
Oxamyl	38866