Table 1. Sources and type of data provided by the U.S. Geological Survey to the Heinz Center for the 2007 edition of *The State of the Nation's Ecosystems*, and documentation of differences in analysis methods between the 2002 and 2007 editions of the report.

[VOC, volatile organic compound; PCB, polychlorinated biphenyl; SVOC, semivolatile organic compound; NA, not applicable; WY, water year (October 1 through September 30); mg/L, milligrams per liter; <, less than; >, greater than; >= greater than or equal to; lb/mi^2/yr, pounds per square mile per year; ft^3/s, cubic feet per second; NAWQA, National Water Quality Assessment Program; NWIS, National Water Information System; HH, human health]

													Difference between 2002 and 2007 analysis								Comments
Heinz Chapter	Heinz Indicator Name	Heinz Figure Caption	Media	Ecosystem	Type of data provided (units)	Class type	Class bins	Discussion location in this report	Data location in this report	Extent of data	Original data source (reference**)	2002 Period of record	2007 Period of record	2002 Number of sites	2007 Number of sites	Impact of difference between number of sites	2002 aggregation method	2007 aggregation method	Impact of difference between aggregation methods	
Core National	Movement of Nitrogen	Yield of Total Nitrogen from Major Watersheds	Streams	National	Incremental yield of total nitrogen (pounds of nitrogen per square mile per year)	NA	NA	The Movement of Nitrogen: Delivery of Total Nitrogen to Streams and Rivers from Major Watersheds	Appendix 1	Conterminous U.S.	NWIS retrieval (Charles G. Crawford, U.S. Geological Survey, written commun., 2007)	WY 1996-1999	WY 1996-2000 and 2001-2005	60	44	Several small watersheds and internally drained watersheds in the Colorado and Rio Grande River basins were dropped. The 2007 analysis included better coastal coverage in the East and Southeast.	4-year mean annual incremental yield	5-year mean annual incremental yield (2 time periods)	The 2007 analysis has greater watershed area in the > 3,000 lbs/mi^2/year yield category.	Derived from mean daily load estimates using LOADEST code.
Core National	Movement of Nitrogen	Nitrate Load Carried by Major Rivers	Streams	National	Estimated nitrate* load for 4 major U.S. rivers (thousand long tons of nitrate per year)	NA	NA	The Movement of Nitrogen: Nitrate Discharged to Coastal Waters by Major U.S. Rivers	Appendices 2 and 3	Mississippi R., St. Lawrence R., Susquehanna R., and Columbia R. watersheds	Mississippi R. 1955-1967, (17); Mississippi R. 1968-2004, Brent A. Aulenbach (U.S. Geological Survey, written commun., 2007); St. Lawrence R., Susquehanna R., and Columbia R., (1)	Mississippi R., 1955-2003; St. Lawrence R., 1976-2002; Susquehanna R., 1974-2002; Columbia R., 1974-2002	Mississippi R., 1955-2004; St. Lawrence R., 1976-2004; Susquehanna R., 1974-2004; Columbia R., 1974-2004	4	4	The 2007 report did not include the St. Lawrence R. estimates that were provided by USGS because that station was discontinued.	Mississippi R. calculated using 3 methods (see comments), Other Rivers calculated using LOADEST software.	Mississippi R. calculated using 2 methods (see comments), Other Rivers calculated using LOADEST software.	There was not much change in the overall time-series plots. Reporting units appeared to be different in the 2002 and 2005 update analysis. Units used for 2007 were thousand long tons per year.	For the 2002 analysis: Mississippi R. loads were based on composite samples for 1955-1967, load estimates using ESTIMATOR code for 1968-1978, and load estimates using LOADEST code for 1979-2003. For the 2007 analysis: Mississippi R. loads were based on composite samples for 1955-1967, and load estimates using LOADEST code for 1968-2004. The other 3 river loads were estimated using LOADEST code for the entire period of record for both the 2002 and 2007 analyses
Core National	Chemical Contamination	Contaminant Occurrence	Ground Water	National	Number of sites within each class bin of pesticide and VOC and nitrate* detections in ground-water samples (percent)	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Chemical Contamination: Contaminant Occurrence; Ground Water	Appendices 14 and 15	U.S.	Pesticides (15), VOCs (55), Nutrients (Bernard T. Nolan, U.S. Geological Survey, written commun., 2006)	WY 1993-1998	WY 1993-2001	917	2,282		Single sample per site from NAWQA Major Aquifer Studies and Land Use Studies. Nitrate* detections censored to "background" level of 1.0 mg/L. Early samples with high reporting levels for VOCs not included.	Single sample per site from NAWQA Major Aquifer Studies. Nitrate* detections censored to "background" level of 1.0 mg/L. VOCs censored at 0.2 mg/L to include early samples with high reporting levels.	Decrease in percentage of sites in the "5 or more" class; Increase in percentage of sites in the "none" and "1 or 2" class	In the 2002 analysis, data for VOCs were not censored and only samples analyzed with the low-level VOC analytical method were considered. Data from all three types of NAWQA studies were used in the *Core National Chemical Contamination* indicator in the 2002 analysis. In the 2007 analysis, data on VOCs in ground water were censored at 0.2 mg/L in order to include information from early NAWQA sampling that had relatively high reporting levels. In addition, only data from the NAWQA Major Aquifer Studies were used in the 2007 analysis.
Core National	Chemical Contamination	Contaminant Occurrence	Streams	National	Number of sites within each class bin of pesticide detections in stream-water samples (percent	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Chemical Contamination: Contaminant Occurrence; Stream Water	Appendices 5 and 7	U.S.	Pesticides (Jeffrey D. Martin, U.S. Geological Survey, written commun., 2006;	WY 1992-1998	WY 1992-2001	106	186	Negligible	Pesticides and nitrate data not limited to 1 year like in 2007. Nitrate detections censored at "background" level of 0.6 mg/L	Used data from the 12-month period at each site with the most samples collected and the most pesticides (Circular 1291)	The 2007 analysis did not include "detections" of nitrate; therefore, there was essentially one less contaminant detection at most sites	It was decided not to use nitrate as a contaminant for this indicator, because there was no agreeable, logical way to define a background level of nitrate in streams. A nitrate background level of 0.6 mg/L (24) was used for the 2002 repor
Core National	Chemical Contamination	Contaminant Occurrence	Streambed Sediment	National	Number of sites within each class bin of organochlorine pesticides, total PCBs, and SVOCs detections in streambed-sediment samples (percent)	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Chemical Contamination: Contaminant Occurrence; Streambed Sediment	Appendices 8 and 10	U.S.	Organochlorine Pesticides, total PCBs, and SVOCs (Lisa H. Nowell, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	486	957	Decrease in percentage of sites in the "5 or more" class; slight increase in percentage of sites in the "1 or 2" and "3 or 4" classes	Single sample per site	Single sample per site	No difference	
Core National	Chemical Contamination	Contaminants above Standards and Guidelines	Ground Water	National	Number of sites within each class bin exceeding human-health benchmarks for pesticides, VOCs, nitrate*, and trace elements in ground-water samples (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Chemical Contamination: Contaminants Exceeding Benchmarks; Ground Water	Appendices 14, 15, 16, and 21	U.S.	Pesticides (15), VOCs (55), Nutrients (Bernard T. Nolan, U.S. Geological Survey, written commun., 2006); Trace elements (JoAnn M. Gronberg, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1993-2001	917	2,282		Exceedances based on human-health benchmarks for nitrate, 72 of the 83 pesticide compounds, 55 of the 88 VOCs or groups of VOCs, and 18 trace elements.	Exceedences based on human-health benchmarks for nitrate, 46 pesticide compounds, 47 VOCs or groups of VOCs, and 19 of the 24 trace elements.	Slight decrease in the percentage of sites exceeding at least 1 HH benchmarks	In the 2002 analysis, only samples analyzed with the low-level VOC analytical method were considered. Data from all three types of NAWQA studies were used in the *Core National Chemical Contamination* indicator in the 2002 analysis. In the 2007 analysis, data was included from early NAWQA sampling that had relatively high reporting levels. In addition, only data from the NAWQA Major Aquifer Studies were used in the 2007 analysis. No censoring of data was done for determining exceedances of human-health benchmarks.
Core National	Chemical Contamination	Contaminants above Standards and Guidelines	Streams	National	Number of sites within each class bin exceeding human-health benchmarks for pesticides and nitrate* and aquatic-life benchmarks for pesticides and ammonia in stream-water samples (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Chemical Contamination: Contaminants Exceeding Benchmarks; Stream Water	Appendices 5, 6, 17, and 18	U.S.	Pesticides and Nitrate (Jeffrey D. Martin, U.S. Geological Survey, written commun., 2006); Ammonia (Gregory M. Clark, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	106	186		Exceedances based on human-health benchmarks for nitrate and 73 of the 83 pesticide compounds and aquatic-life benchmarks for ammonia and 62 pesticide compounds.	Exceedances based on human-health benchmarks for nitrate and 46 pesticide compounds, and aquatic-life benchmarks for ammonia and 31 pesticide compounds.	Slight increase in the frequency of human-health benchmark exceedances. Decrease in the frequency of aquatic-life benchmarks.	Time-weighted mean concentration of pesticides compared to human-health benchmarks. Concentration of individual nitrate samples compared to human-health benchmark. Aquatic-life benchmarks for pesticides compared to time-weighted mean, moving-day average, or individual sample concentrations depending on the benchmark. Ammonia aquatic-life criterion based on individual sample concentrations, temperature, and pH.
Core National	Chemical Contamination	Contaminants above Standards and Guidelines	Streambed Sediment	National	Number of sites within each class bin exceeding aquatic-life benchmarks for organochlorine pesticides, total PCBs, SVOCs, and trace elements in streambed-sediment samples (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Chemical Contamination: Contaminants Exceeding Benchmarks; Streambed Sediment	Appendices 8, 9, and 19	U.S.	Organochlorine Pesticides, total PCBs, SVOCs, Organic Carbon, and Trace Elements (Lisa H. Nowell, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	486	957		Exceedances based on 29 benchmarks	Exceedances based on 41 bed-sediment benchmarks for the protection of benthic aquatic organisms. Many benchmark have been lowered since the 2002 report.	Large increase in the frequency of benchmark exceedances because of the increase in the number of benchmarks and the lower benchmark values.	Trace Elements limited to 9 priority pollutants. Sample concentrations compared to streambed-sediment benchmarks for protection of benthic aquatic organisms.
Core National	Chemical Contamination	Contaminant Occurrence	Freshwater Fish	National	Number of sites within each class bin of organochlorine pesticides and total PCBs detected in fish-tissue samples (percent)	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Chemical Contamination: Contaminant Occurrence; Fish Tissue	Appendices 11 and 13	U.S.	Organochlorine Pesticides (15); total PCBs (NAWQA Data Warehouse retrieval, Moon H. Kim, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	220	700	Increase in percentage of sites with no detections, and a decrease in the percentage of sites with "5 or more" detections.	A single, composite whole-fish sample per site.	A single, composite whole-fish sample per site.	Slight increase in the percentage of sites with no detections, and a slight decrease in the percent of sites with "5 or more" detections.	
Core National	Chemical Contamination	Contaminants above Standards and Guidelines	Freshwater Fish	National	Number of sites within each class bin exceeding whole-fish benchmarks for the protection of fish-eatign wildlife for organochlorine pesticides and total PCBs (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Chemical Contamination: Contaminants Exceeding Benchmarks; Fish Tissue	Appendices 11, 12, and 20	U.S.	Organochlorine Pesticides (15); total PCBs (NAWQA Data Warehouse retrieval, Moon H. Kim, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	220	700		Exceedances based on 9 benchmarks.	Exceedances based on two sets of 15 benchmarks; $Benchmark_{low}$ and $Benchmark_{high}$.	Increased the rate of exceedances when 2002 results are compared to the $Benchmark_{low}$ results but not much change when compared to the $Benchmark_{high}$ results.	Uses $Benchmark_{low}$ and $Benchmark_{high}$ values of whole-fish benchmarks for protection of fish-eating wildlife from Gilliom and others (2006)
Farmlands	Nitrate in Farmland Streams and Groundwater	Nitrate in Farmland Streams	Streams	Farmland	Number of sites within each class bin of nitrate* concentration in stream-water samples (percent)	Concentration	< 2 mg/L, 2 to 6 mg/L, 6 to 10 mg/L, >= 10 mg/L	Nutrients in Stream Water; Nitrate	Appendix 23	Conterminous U.S.	Nutrients (28)	WY 1992-1998	WY 1992-2001	105	130	Slight decrease in "< 2 mg/L" class	Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Farmlands	Nitrate in Farmland Streams and Groundwater	Ecosystem Comparison: Nitrate in Streams	Streams	Farmland, Forest, Urban & Suburban	Number of sites in each ecosystem with each class bin of nitrate* concentration in stream-water samples (percent)	Concentration	< 2 mg/L, 2 to 6 mg/L, 6 to 10 mg/L, >= 10 mg/L	Nutrients in Stream Water; Nitrate	Appendix 23	U.S.	Nutrients (28)	WY 1992-1998	WY 1992-2001	na	na		Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Farmlands	Nitrate in Farmland Streams and Groundwater	Nitrate in Farmland Ground Water	Ground Water	Farmland	Number of sites within each class bin of nitrate* concentration in ground-water samples (percent)	Concentration	< 2 mg/L, 2 to 6 mg/L, 6 to 10 mg/L, >= 10 mg/L	Nitrate in Ground Water; Farmland	Appendices 14 and 25	Conterminous U.S.	Nutrients (Bernard T. Nolan, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2003	1,222	1,423	Negligible	Single sample per site	Single sample per site	No difference	Data from Cycle I Agricultural Land-use Studies
Farmlands	Nitrate in Farmland Streams and Groundwater	Ecosystem Comparison: Nitrate in Ground Water	Ground Water	Farmland, Forest, Urban & Suburban, Grasslands & Shrublands	Number of sites in each ecosystem within each class bin of nitrate* concentration in ground-water samples (percent)	Concentration	< 2 mg/L, 2 to 6 mg/L, 6 to 10 mg/L, >= 10 mg/L	Nitrate in Ground Water; Farmland	Appendices 14 and 25	Conterminous U.S.	Nutrients (Bernard T. Nolan, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2003	na	na		Single sample per site	Single sample per site	No difference	
Farmlands	Phosphorus in Farmland Streams	Total Phosphorus in Farmland Streams	Streams	Farmland	Number of sites within each class bin of total phosphorus concentration in stream-water samples (percent)	Concentration	< 0.1 mg/L, 0.1 to 0.3 mg/L, 0.3 to 0.5 mg/L, >= 0.5 mg/L	Nutrients in Stream Water; Phosphorus	Appendix 23	Conterminous U.S.	Nutrients (28)	WY 1992-1998	WY 1992-2001	107	129	Negligible	Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Farmlands	Phosphorus in Farmland Streams	Ecosystem Comparison: Total Phosphorus in Streams	Streams	Farmland, Forest, Urban & Suburban	Number of sites in each ecosystem within each class bin of total phosphorus concentration in stream-water samples (percent)	Concentration	< 0.1 mg/L, 0.1 to 0.3 mg/L, 0.3 to 0.5 mg/L, >= 0.5 mg/L	Nutrients in Stream Water; Phosphorus	Appendix 23	U.S.	Nutrients (28)	WY 1992-1998	WY 1992-2001	na	na		Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Farmlands	Pesticides in Farmland Streams and Groundwater	Pesticide Occurrence	Streams	Farmland	Number of sites within each class bin of pesticide detections in stream-water samples (percent)	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Pesticides in Farmland; Stream Water	Appendices 5 and 7	Conterminous U.S.	Pesticides (15) and (Jeffrey D. Martin, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	49	83	Slight increase in percentage of sites in the "5 or more" class	Pesticides and nitrate data not limited to a 12-month period. All available data were used	Used data from the 12-month period at each site with the most samples collected and the most pesticides (Circular 1291).	No difference	
Farmlands	Pesticides in Farmland Streams and Groundwater	Pesticide Occurrence	Ground Water	Farmland	Number of sites within each class bin of pesticide detections in ground-water samples (percent)	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Pesticides in Farmland; Ground Water	Appendix 22	Conterminous U.S.	Pesticides (15)	WY 1993-1998	WY 1993-2003	1,014	1,412	Negligible	Single sample per site	Single sample per site	No difference	Data from Cycle I Agricultural Land-use Studies
Farmlands	Pesticides in Farmland Streams and Groundwater	Pesticides above Standards or Guidelines	Streams	Farmland	Number of sites within each class bin exceeding human-health and aquatic-life benchmarks for pesticides in stream-water samples (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Pesticides in Farmland; Stream Water	Appendices 5, 6, 17, and 18	Conterminous U.S.	Pesticides (15) and (Jeffrey D. Martin, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	49	83		Exceedances based on human health benchmarks for 46 pesticide compounds, and aquatic life benchmarks for 31 pesticide compounds.	Exceedances based on human health benchmarks for 73 of the 83 pesticide compounds and aquatic-life benchmarks for 62 pesticide compounds.	Slight increase in the frequency of human-health benchmark exceedances. Decrease in the frequency of aquatic-life benchmarks.	Time-weighted mean concentration of pesticides compared to human-health benchmarks. Aquatic-life benchmarks for pesticides compared to time-weighted mean, moving-day average, or individual sample concentrations depending on th benchmark.
Farmlands	Pesticides in Farmland Streams and Groundwater	Pesticides above Standards or Guidelines	Ground Water	Farmland	Number of sites within each class bin exceeding human-health benchmarks for pesticides in ground-water samples (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Pesticides in Farmland; Ground Water	Appendix 22	Conterminous U.S.	Pesticides (15)	WY 1993-1998	WY 1993-2003	1,014	1,412		Exceedances based on human health benchmarks for 46 pesticide compounds.	Exceedances based on human health benchmarks for 73 of the 83 pesticide compounds.	Negligible	Data from Cycle I Agricultural Land-use Studies
Forest	Nitrate in Forest Streams	Nitrate in Forest Streams	Streams	Forest	Number of sites within each class bin of nitrate* concentration in stream-water samples (percent)	Concentration	< 0.1 mg/L, 0.1 to 0.5 mg/L, 0.5 to 1 mg/L, >= 1 mg/L	Nutrients in Stream Water; Nitrate	Appendix 23	Conterminous U.S.	Nutrients (28)	WY 1992-1998	WY 1992-2001	36	117		Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Freshwater	Phosphorus in Lakes, Reservoirs and Large Rivers	Phosphorus in Large Rivers	Streams	Freshwater	Number of sites within each class bin of total phosphorus concentration in large river water samples (percent)	Concentration	< 0.02 mg/L, 0.02 to 0.05 mg/L, 0.05 to 0.1 mg/L, >= 0.1 mg/L	Nutrients in Stream Water; Phosphorus in Large Rivers	Appendix 24	Conterminous U.S.	NWIS retrieval (Charles G. Crawford, U.S. Geological Survey, written commun., 2007)	WY 1991-1996	WY 1996-2000 and 2001-2005	140	86	Decrease in the number of sites in the > 0.1 mg/L class, and increase in the < 0.02 mg/L class.	Time-weighted mean annual concentration	Time-weighted mean annual concentration	No difference	Calculated by Charlie Crawford, USGS. Criteria: Rivers with flow > 1000 ft^3/s, and sites with at least 4 samples/120 days and samples collected in 4 of 5 years. There was a decrease in the number of sites for the 2007 analysis because only those sites which had data for both the 1996-2000 and 2001-2005 time period were used.
Grasslands & Shrublands	Nitrate in Groundwater	Nitrate in Grassland and Shrubland Ground Water	Ground Water	Grasslands & Shrublands	Number of sites within each class bin of nitrate* concentration in ground-water samples (percent)	Concentration	< 2 mg/L, 2 to 6 mg/L, 6 to 10 mg/L, >= 10 mg/L	Nitrate in Ground Water; Grasslands and Shrublands	Appendices 14 and 25	Western conterminous U.S.	Nutrients (Bernard T. Nolan, U.S. Geological Survey, written commun., 2006)	na	WY 1994-2003	na	219		No analysis done in 2002	Single sample per site		Data from Cycle I Major Aquifer Studies
Urban & Suburban	Nitrate in Urban and Suburban Streams	Nitrate in Urban/Suburban Streams	Streams	Urban & Suburban	Number of sites within each class bin of nitrate* concentration in stream-water samples (percent)	Concentration	< 0.1 mg/L, 0.1 to 0.5 mg/L, 0.5 to 1 mg/L, >= 1 mg/L	Nutrients in Stream Water; Nitrate	Appendix 23	U.S.	Nutrients (28)	WY 1992-1998	WY 1992-2001	38	54	Decrease in the < 2 mg/L and increase in the 2 to 6 mg/L classes.	Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Urban & Suburban	Phosphorus in Urban and Suburban Streams	Total Phosphorus in Urban/Suburban Streams	Streams	Urban & Suburban	Number of sites within each class bin of total phosphorus concentration in stream-water samples (percent)	Concentration	< 0.1 mg/L, 0.1 to 0.3 mg/L, 0.3 to 0.5 mg/L, >= 0.5 mg/L	Nutrients in Stream Water; Phosphorus	Appendix 23	U.S.	Nutrients (28)	WY 1992-1998	WY 1994-2001	38	53	Slight differences in all classes.	Flow-weighted mean annual concentration	Flow-weighted mean annual concentration	No difference	
Urban & Suburban	Chemical Contamination	Contaminant Occurrence in Urban/Suburban Streams	Streams	Urban & Suburban	Number of sites within each class bin of pesticide detections in stream-water samples (percent)	Number of detections	none, 1 or 2, 3 or 4, 5 or more	Chemical Contamination: Contaminant Occurrence; Stream Water	Appendices 5 and 7	U.S	Pesticides (15) and (Jeffrey D. Martin, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	21	30		Pesticides and nitrate data not limited to 1 year like in 2007. Nitrate detections censored at "background" level of 0.6 mg/L.	Used data from the 12-month period at each site with the most samples collected and the most pesticides (Circular 1291).	Slight decrease in the "5 or more" class and slight increases in the "1 or 2", and "3 or 4" classes. The 2007 analysis does not include "detections" of nitrate.	It was decided not to use nitrate as a contaminant for this indicator, because there was no agreeable, logical way to define a background level of nitrate in streams. A nitrate background level of 0.6 mg/L (24) was used for the 2002 report.
Urban & Suburban	Chemical Contamination	Contaminants above Standards or Guidelines in Urban/Suburban Streams	Streams	Urban & Suburban	Number of sites within each class bin exceeding human-health benchmarks for nitrate and pesticide compounds, and aquatic-life benchmarks for ammonia and pesticide compounds in stream-water samples (percent)	Number of exceedances	none, 1, 2 or 3, 4 or more	Chemical Contamination: Contaminants Exceeding Benchmarks; Stream Water	Appendices 5, 6, 17, and 18	U.S.	Pesticides (15) and Nitrate (Jeffrey D. Martin, U.S. Geological Survey, written commun., 2006)	WY 1992-1998	WY 1992-2001	21	30		Exceedances based on human health benchmarks for nitrate and 46 pesticide compounds, and aquatic-life benchmarks for ammonia and 31 pesticide compounds.	Exceedances based on human health benchmarks for nitrate and 73 of the 83 pesticide compounds and aquatic-life benchmarks for ammonia and 62 pesticide compounds.	Negligible change in frequency of human-health benchmark exceedances, and a decrease in the frequency of aquatic-life exceedances.	Time-weighted mean concentration of pesticides compared to human-healtl benchmarks. Concentration of individual nitrate samples compared to human-health benchmark. Aquatic-life benchmarks for pesticides compared to time-weighted mean, moving-day average, or individual sample concentrations depending on the benchmark. Ammonia aquatic-life criterion based on individual sample concentrations, temperature, and pH.

* nitrate plus nitrite

** Number in parenthesis indicates the citation reference number in the Reference section of this report.