



APPENDIX C:
METADATA AND DEFINITIONS

DATABASE MANAGER

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IDEM is currently in the process of transitioning from using its Assessment Database (ADB) to manage water quality assessment and listing information to U.S. EPA's updated The Assessment and Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS) for the 2018 cycle.

Many of the tables in Appendix A of Indiana's 2018 Integrated Report were developed prior to the migration of Indiana's data to ATTAINS and are based on information extracted from the ADB. IDEM has made significant changes to its data set since its submittal to U.S. EPA on February 8, 2018 for upload into ATTAINS. IDEM's work on the data set continues and is necessary to:

- Resolve errors flagged by ATTAINS when the data were initially uploaded
- Ensure consistency between the assessment units in IDEM's assessment and geospatial data sets
- Refine the causes and sources in the data to more accurately reflect assessments conducted to date
- Address various quality assurance issues in the data

This metadata document contains a list of all files included in IDEM's 2018 Integrated Report, the information necessary to understand the cause and source information in the Integrated Report tables, which were sourced from the ADB, and the information produced in any reports that may be obtained by querying ATTAINS.

Table C-1: Files included with Indiana’s 2018 Integrated Report submittal.

File Name	Description
IR2018_Narrative.pdf	Adobe Acrobat file containing the narrative portion of Indiana’s 2018 Integrated Report.
IR2018_AppA_Tables.pdf	Adobe Acrobat file containing the tables for the 2018 Integrated Report.
IR2018_AppB_Figures.pdf	Adobe Acrobat file containing figures for the 2018 Integrated Report.
IR2018_AppC_Metadata.pdf	Adobe Acrobat file containing filenames of all attachments and appendices and metadata needed to translate information used in the ADB and ATTAINS.
IR2018_AppD_Status ofCat4Waters.pdf	Adobe Acrobat file containing information regarding impairment status of Category 4 waters.
IR2018_AppE_TMDLPriorities.pdf	Adobe Acrobat file containing IDEM’s TMDL 2018-2020 development priorities.
IR2018_AppF_MARLSchedule.pdf	Adobe Acrobat file containing IDEM’s CWA Sections 305(b) and 303(d) water quality monitoring, assessment, reporting, and listing (MARL) schedule
IR2018_AppG_CALM.pdf	Adobe Acrobat file containing IDEM’s Consolidated Assessment and Listing Methodology for the 2018 cycle.
IR2018_AppH_CompALUS&RECR.pdf	Adobe Acrobat file containing IDEM’s comprehensive statewide water quality assessments based on probabilistic monitoring results.
IR2018_AppI_303d_ListingTables_FINAL.xlsx	MS Excel file containing tables to support Indiana’s finalized 303(d) listing, including the finalized 303(d) list and changes made since the draft 2018 303(d) list was published for public comment on April 11, 2018.
IR2018_AppJ_303dNOC_NarrativeOnly.pdf	Adobe Acrobat file containing the narrative portion of the public notice for the draft 2018 303(d) list. Supporting attachments are available online at: www.in.gov/idem/nps/2647.htm or by request from the Database Manager.
IR2018_AppK_Trend&TrophicStatus.pdf	Adobe Acrobat file containing IDEM’s Clean Water Act Section 314 assessments of lake trends and trophic state.

Table C-2: Causes of impairment identified in the ADB and summarized in the 2018 Integrated Report tables.

ADB Cause Name	IDEM Cause Definition
AMMONIA, UN-IONIZED	Exceeds 1999 U. S. EPA ammonia criteria (EPA-822-R-99-014).
ATRAZINE	Atrazine exceeds U. S. EPA 2001 aquatic life chronic criterion.
CADMIUM, DISSOLVED	Concentration of Dissolved Cadmium exceeds Indiana's water quality standards for aquatic life use support anywhere in the state (327 IAC 2-1-6 or 327 2-1.5-8) and/or concentration of Total Cadmium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
CAUSE UNKNOWN	The benthic macroinvertebrate and/or fish communities indicate an impairment of aquatic life use based on the assessment methods provided in IDEM's Consolidated Assessment and Listing Methodology (CALM).
CHLORIDE	Concentration of Total Chloride exceeds Indiana water quality standards for aquatic life use and/or public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
CHLOROPHYLL-A	Chlorophyll-a. Used interchangeably with TASTE AND ODOR.
COPPER, DISSOLVED	Concentration of Dissolved Copper exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
CYANIDE	Concentration of Total Cyanide exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of either or both Chlorine Amenable Cyanide and Free Cyanide (also known as Weak Acid Dissociable) exceed Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
DIOXIN (INCLUDING 2,3,7,8-TCDD)	Concentration of Dioxin (including 2,3,7,8-TCDD) exceeds Indiana's water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the concentration exceeds the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for fish consumption for the Ohio River.
DISSOLVED OXYGEN	Dissolved Oxygen concentration exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for aquatic life use in the Ohio River.

ADB Cause Name	IDEM Cause Definition
ESCHERICHIA COLI (E. COLI)	Concentration of Escherichia Coli (E. Coli) bacteria exceed the levels identified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for recreational use assessments.
HEXACHLOROCYCLOHEXANE	Concentration of Alpha, Beta and/or Technical Hexachlorocyclohexane (HCH) exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1.5-8).
LOW FLOW ALTERATIONS	Low flow alterations (anthropogenic sources, e.g., diversions or subsurface drainage).
MERCURY IN FISH TISSUE	The trophic level-weighted geometric mean concentration of total and/or methylmercury exceeds the benchmark criterion specified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for fish consumption assessments.
MERCURY IN WATER COLUMN	More than one result in three-year period exceeds chronic aquatic criterion (CAC) defined in Indiana's water quality standards.
NICKEL, DISSOLVED	Concentration of Dissolved Nickel exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of Total Nickel exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
NUTRIENT/EUTROPHICATION BIOLOGICAL INDICATORS	Two or more of the nutrient benchmarks identified in IDEM's consolidated Assessment and Listing Methodology (CALM) for aquatic life use are exceeded on the same day.
OIL AND GREASE	This parameter is no longer in use. It is a legacy parameter used by IDEM based on Indiana's narrative water quality standards for aquatic life use.
PH	pH value exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1 or 327 IAC 2-1.5).
PHOSPHORUS, TOTAL	Total phosphorus concentration combined with Chlorophyll <i>a</i> results exceed the benchmarks for recreational use support (aesthetics) provided in IDEM's Consolidated Assessment and Listing Methodology. Total Phosphorus.
OTHER HABITAT ALTERATIONS	Physical substrate habitat alterations.
POLYCHLORINATED BIPHENYLS (PCBS) IN FISH TISSUE	Concentration of PCBs in Fish Tissue exceeds the benchmark criterion specified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for fish consumption assessments.

ADB Cause Name	IDEM Cause Definition
POLYCHLORINATED BIPHENYLS (PCBS) IN WATER COLUMN	Concentration of Total Polychlorinated Biphenyls (PCB) (sum of all congeners) exceed Indiana water quality standards for public water supply in source waters anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside of the Great Lakes Basin (327 IAC 2-1-6).
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) (AQUATIC ECOSYSTEMS)	Concentration of Polycyclic Aromatic Hydrocarbons (PAHs) exceed Indiana's water quality standards for public water supply in source water outside the Great Lakes Basin (327 IAC 2-1-6); Includes Benzo(a)pyrene.
SEDIMENTATION/SILTATION	This parameter is no longer in use. It is a legacy parameter used by IDEM based on Indiana's narrative water quality standards for aquatic life use to indicate one of the possibly many reasons for an observed impairment to one/more biological communities. Imbeddedness and smothering of substrate in streams; Loss of depth in lakes.
SULFATE	Sulfate concentration exceeds Indiana's water quality standards for aquatic life use and/or for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5.8).
TASTE AND ODOR	This cause is no longer in use. It is a legacy parameter used by IDEM based on Indiana's narrative water quality standards for public water supply to identify lakes or reservoirs, which based on numerous public complaints regarding taste and odor, required additional treatment by the water utility.
TEMPERATURE	Temperature exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for aquatic life use in the Ohio River.
ZINC, DISSOLVED	Concentration of Dissolved Zinc exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).

Table C-3: Sources used in the ADB and reported in the 2018 Integrated Report tables to describe the sources driving water quality impairments.

ADB Source Name	IDEM Source Definition
ACID MINE DRAINAGE	Low pH, high total dissolved solids and/or sulfates.
AGRICULTURE	Agriculture. Agriculture can represent a wide array of potential Agriculture related sources. Agriculture is used when either land-use analysis or impairment point to some type of Agriculture being the source, but a specific type of Agriculture could not be identified.
ANIMAL FEEDING OPERATIONS (NPS)	When linked to E. coli impairments, this source is used in conjunction with 1050 to indicate nonpoint source pollution related to manure application from intensive animal feeding operations.
CHANNELIZATION	Indicates impacts from modifications to the channel width, depth, or shape, including straightening of the channel; may include legal drain maintenance where maintenance activities alter the stream channel width, depth or shape.
COAL MINING DISCHARGES (PERMITTED)	Impacts from coal mining activities subject to NPDES industrial permitting (usually general permits); applies only to active mining operations in new or previously mined areas, not from inactive and/or abandoned mines.
COMBINED SEWER OVERFLOWS	Impacts from combined sewer overflows (CSOs); applies only to recreational use or aquatic life use impairments downstream of CSOs.
CONTAMINATED GROUNDWATER	Impacts from contaminants leaching into surface waters from the underlying groundwater.
CONTAMINATED SEDIMENTS	Impacts related to elevated levels of pollutants in sediments.
CROP PRODUCTION (CROP LAND OR DRY LAND)	Crop Production (Crop Land or Dry Land). Insufficient information exists to identify a particular type of crop production. Can include any type of farming area planted in cropland.
CROP PRODUCTION WITH SUBSURFACE DRAINAGE	Impacts from pollutants such as nutrients and agrichemicals entering surface waters through agricultural tiles draining cropland.
DAM OR IMPOUNDMENT	An existing structure either upstream or downstream of the impairment that creates an impoundment resulting in impacts to dissolved oxygen and/or biological communities. Includes fish community impacts related to structures such as culverts to dams that limit fish passage.
DISCHARGES FROM BIOSOLIDS (SLUDGE) STORAGE, APPLICATION OR DISPOSAL	Impacts from inadequate handling or land application of sludge (now biosolids) derived from POTW wastewater treatment systems.
DREDGE MINING	A variation on placer mining, often involving the removal of materials from stream beds, usually related to gold mining.

ADB Source Name	IDEM Source Definition
DROUGHT-RELATED IMPACTS	Drought episodes, which in some cases can last several years, can deplete water supplies and accentuate pollution problems affecting human and ecological health.
GOLF COURSES	Pollution effects (usually nutrient -related) from operation of golf course facilities.
HIGHWAYS, ROADS, BRIDGES, INFRASTRUCTURE (NEW CONSTRUCTION)	New construction involving infrastructure (roads, bridges, pipelines, etc.); does not include construction of residential development or construction of other types of buildings (See SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT)).
HISTORIC BOTTOM DEPOSITS (NOT SEDIMENT)	Indicates human activities that have altered the stream bottom.
ILLEGAL DUMPS OR OTHER INAPPROPRIATE WASTE DISPOSAL	Impacts from illegal dumping and other inappropriate disposal of solid wastes or other wastes that may contain conventional or hazardous pollutants that can degrade aquatic habitats or otherwise impair aesthetic amenities.
ILLICIT CONNECTIONS/HOOK-UPS TO STORM SEWERS	Illicit connections to storm sewers in urban or semi-urban areas served by sanitary sewers; source generally applied to impairments in urban areas; does not include straightpipes or tie-ins to agricultural drainage tiles (See SEWAGE DISCHARGES IN UNSEWERED AREAS).
IMPACTS FROM ABANDONED MINE LANDS (INACTIVE)	Legacy impacts from inadequately reclaimed surface or underground mines (including strip mines); may be applied to historic coal or other mineral mining operations resulting in releases of cyanide, heavy metals, and acid generated from mine waste (also known as acid mine drainage).
IMPACTS FROM HYDROSTRUCTURE FLOW REGULATION/MODIFICATION	Impacts from flow regime alterations (anthropogenic sources, e.g., decrease in flood pulses due to hydrostructures).
IMPERVIOUS SURFACE/PARKING LOT RUNOFF	Impervious Surface/Parking Lot Runoff. Runoff from a paved or impervious surface.
INDUSTRIAL POINT SOURCE DISCHARGE	Impacts resulting from end-of-pipe discharges from NPDES-permitted industrial facilities; does not apply to thermal impacts from NPDES facilities.
LIVESTOCK (GRAZING OR FEEDING OPERATIONS)	Livestock (Grazing or Feeding Operations). Insufficient information exists to specifically identify a particular type of animal feeding operation. Includes grazing and unpermitted animal feeding operations. Also includes CAFOs until a permitted facility is identified.
LOSS OF RIPARIAN HABITAT	Impacts resulting from removal of the riparian habitat including vegetation, snags, undercut banks, etc.); May include legal drain maintenance when such maintenance results in the removal of riparian habitat.

ADB Source Name	IDEM Source Definition
MUNICIPAL POINT SOURCE DISCHARGES	Impacts resulting from end-of-pipe discharges from publicly owned treatment works (POTWs).
NATURAL SOURCES	Natural Sources. Natural Sources can represent one or a combination of factors that are natural occurring, and no other potential sources can be identified; applies to impairments suspected to be driven entirely by factors natural occurring; does not apply in combination with other source codes.
NON-POINT SOURCE	Non-Point Source. Source is unknown, but there are no permitted point sources upstream.
ON-SITE TREATMENT SYSTEMS (SEPTIC SYSTEMS AND SIMILAR DECENTRALIZED SYSTEMS)	Leaking septic tanks; When linked to E. coli impairment, this source is used to indicate point source pollution related to septic tanks; Source applicable only in rural, unsewered areas.
PACKAGE PLANT OR OTHER PERMITTED SMALL FLOWS DISCHARGES	Impacts from NPDES-permitted semi-public facilities including treatment systems for small communities or rural schools that often operate only intermittently.
PERMITTED RUNOFF FROM CONFINED ANIMAL FEEDING OPERATIONS (CAFOS)	Supplemental feeding of livestock that can lead to major nutrient and other pollution concerns as animal unit densities increase. EPA, in cooperation with the USDA, is developing regulations for concentrated animal feeding operations (CAFOs).
POST-DEVELOPMENT EROSION AND SEDIMENTATION	Post-construction impacts from land development in cities or urbanized areas.
RCRA HAZARDOUS WASTE SITES	Pollution releases to receiving waters from RCRA Treatment Storage and Disposal Facilities (TSDFs).
RECLAMATION OF INACTIVE MINING	Reclamation in progress in the watershed may be the source of temporary water quality impairments.
SANITARY SEWER OVERFLOWS (COLLECTION SYSTEM FAILURES)	Pump or lift station overflow; sewer line break.
SEPTAGE DISPOSAL	Pollution from spills or other inappropriate handling of septage hauled from domestic or other onsite treatment systems.
SEWAGE DISCHARGES IN UNSEWERED AREAS	Sewage Discharges in Unsewered Areas: Impacts from failing septic systems, straightpipes and domestic waste water system tie-ins to agricultural tiles.
SITE CLEARANCE (LAND DEVELOPMENT OR REDEVELOPMENT)	Impacts from residential and/or industrial construction activities within or outside municipal boundaries; includes new construction or redevelopment in existing urbanized areas; does not include construction of highways, roads, bridges, or other infrastructure (See HIGHWAYS, ROADS, BRIDGES, INFRASTRUCTURE (NEW CONSTRUCTION)).

ADB Source Name	IDEM Source Definition
SOURCE UNKNOWN	Source Unknown; insufficient data exists to be able to identify a source at this time; associated primarily with fish tissue impairments and biological community impairments.
SOURCES OUTSIDE STATE JURISDICTION OR BORDERS	Sources Outside State Jurisdiction or Borders. The source of the impairment is beyond the borders of the State. Therefore, the state has no jurisdiction over the management of that source.
STREAMBANK MODIFICATIONS/DESTABILIZATION	Indicates human activities resulting in bank erosion and/or undercutting, including legal drain maintenance.
UNRESTRICTED CATTLE ACCESS	Impacts resulting from unrestricted cattle access; includes pathogen-related impairments and impacts to aquatic communities such as destruction of aquatic habitat, streambank instability and erosion.
UNSPECIFIED URBAN STORMWATER	Unspecified Urban Stormwater: Generalized Impacts from stormwater in urban areas. IDEM applies this code only to aquatic life use impairments.
UPSTREAM IMPOUNDMENTS (E.G., PL-566 NRCS STRUCTURES)	Used interchangeably with DAM OR IMPOUNDMENT, which refers to an existing structure either upstream or downstream of the impairment that creates an impoundment resulting in impacts to dissolved oxygen and/or biological communities. Includes fish community impacts related to structures such as culverts to dams that limit fish passage.
UPSTREAM SOURCE	Upstream Source. For impairments where the source is attributable in part or whole to sources upstream of the boundaries of the Assessment Unit.
UPSTREAM/DOWNSTREAM SOURCE	Used interchangeably with UPSTREAM SOURCE; may refer to sources attributable in part or whole to sources upstream or downstream of the boundaries of the Assessment Unit
URBAN RUNOFF/STORM SEWERS	Wet Weather Discharges (Non-Point Source). Usually associated with elevated Pathogen counts during wet weather events where a specific point source could not be identified.
WASTES FROM PETS	Pathogen-related pollution impacts from pet wastes in urbanized areas where contaminants can enter storm sewers or otherwise introduce pollutants into receiving waters.
WATERFOWL	Pollution impacts (often pathogen indicators-related) from waterfowl (e.g., ducks, geese, swans, etc.).
WET WEATHER DISCHARGES (POINT SOURCE AND COMBINATION OF STORMWATER, SSO OR CSO)	Complex situation involving combinations of receiving water impacts from point source end-of-pipe discharges with wet weather contributions from CSOs, SSOs or storm sewer inputs -- this combined with other diffuse (nonpoint source) wet weather pollutant.
WILDLIFE OTHER THAN WATERFOWL	Pollution impacts (often pathogen indicators-related) from wildlife other than waterfowl (e.g., deer, rodents, etc.).
TEST SOURCE	This source represents data entry errors, which need to be resolved.

Table C-4: User-defined fields in the ADB that may have transferred into ATTAINS.

Flag	Description
Partial	A relict impairment transferred from the ADBv1; Flag will be eliminated when questionable assessment is resolved through database QAQC.
Not Attainable	Applies to aquatic life use assessments on limited use waters.
IIFA – PCB	Used to indicate where data are available but insufficient for assessment; Applied only to fish tissue data.
IIFA – Hg	Used to indicate where data are available but insufficient for assessment; Applied only to fish tissue data.
Aesthetics	Used to distinguish recreational use for aesthetics (chlorophyll a, phosphorus, etc.) versus recreational use for human health (<i>E. coli</i>).
QAQC-RI	Need to map verify that this reach exists. May have been reindexed and not properly retired.
QAQC	QAQC needed for one/more assessments related to this AUID

Table C-5: Common abbreviations used in comment fields in both the ADB and ATTAINS.

Abbreviation	Definition	Abbreviation	Definition
ALUS	Aquatic life use	IBI	Fish community index of biotic integrity
RECR	Recreational use	mIBI	Macroinvertebrate community index of biotic integrity
FISH	Fish consumption	mHAB	Multihabitat sampling method (macroinvertebrates)
PWS	Public water supply	KICK	Kick sampling method (macroinvertebrates)
DW	Drinking water	HD	Hester-Dendy sampling method (macroinvertebrates)
FS	Fully supporting	QHEI	Qualitative habitat evaluation index
NS	Not supporting (impaired)	DO	Dissolved oxygen
NA	Not assessed or Not applicable	NH3	Ammonia
WS	Watershed	N or N+N	Nitrogen or Nitrogen as N+N
HW	Headwater	TP	Total phosphorus
MS	Mainstem	HG	Mercury
US	Upstream	PCB	Polychlorinated biphenyls
DS	Downstream	BM	Benchmarks
BPJ	Best professional judgment	WTP or WWTP	Wastewater treatment plant
NPS	Nonpoint source	POTW	Publicly owned treatment works
FCA	Fish consumption advisory	RSD	Regional sewer district
GM	Geometric mean	SSO	Sanitary sewer overflow
FWS or USFWS	U.S. Fish and Wildlife Service	CSO	Combined sewer overflow
USGS	U.S. Geological Survey	CFO	Confined feeding operation
BMP	Best management practice	CAFO	Confined animal feeding operation

Table C-6: Parameters Codes used in ATTAINS to describe causes of water quality impairments. Parameters Codes used in ATTAINS to describe causes of water quality impairments. Not all of these codes are presently in use. Rather, they represent all the codes available to IDEM to describe impairment based on those parameters for which Indiana has one or more water quality criteria in its water quality standards (327 IAC Article 2).

Parameter Name	IDEM Definition
1,1,1-TRICHLOROETHANE	Concentration of 1,1,1-Trichloroethane exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
1,1,2,2-TETRACHLOROETHANE	Concentration of 1,1,2,2-Tetrachloroethane exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
1,1,2-TRICHLOROETHANE	Concentration of 1,2-Trichloroethane exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
1,1-DICHLOROETHYLENE	Concentration of 1,1-Dichloroethylene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
1,2,4,5-TETRACHLOROBENZENE	Concentration of 1,2,4,5-Tetrachlorobenzene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
1,2-DICHLOROETHANE	Concentration of 1,2-Dichloroethane exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN	Concentration of 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (also known as 2,3,7,8-TCDD or Dioxin) exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
2,4,5-TRICHLOROPHENOL	Concentration of 2,4,5-Trichlorophenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
2,4,6-TRICHLOROPHENOL	Concentration of 2,4,6-Trichlorophenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
2,4-DICHLOROPHENOL	Concentration of 2,4-Dichlorophenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
2,4-DIMETHYLPHENOL	Concentration of 2,4-Dimethylphenol exceeds Indiana's water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8).
2,4-DINITROPHENOL	Concentration of 2,4-Dinitrophenol exceeds Indiana's water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8).

Parameter Name	IDEM Definition
2,4-DINITROTOLUENE	Concentration of 2,4-Dinitrotoluene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ACROLEIN	Concentration of Acrolein exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ACRYLONITRILE	Concentration of Acrylonitrile exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ALDRIN	Concentration of Aldrin exceeds Indiana water quality standards for aquatic life use anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
AMMONIA NITROGEN	Concentration of Ammonia Nitrogen exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
ANTIMONY	Concentration of Total Antimony exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ARSENIC, TRIVALENT	Concentration of Dissolved Trivalent Arsenic (Arsenic III) exceeds Indiana's water quality standards for aquatic life use support anywhere in the state (327 IAC 2-1-6 or 327 2-1.5-8) and/or concentration of Total Trivalent Arsenic (Arsenic III) exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ATRAZINE	Did I decide we were going to use this one? I think there's one we have to QAQC, but I'm not sure we have a basis for its use going forward.
BARIUM	Concentration of Total Barium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
BENZENE	Concentration of Benzene exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
BENZIDINE	Concentration of Benzidine exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
BERYLLIUM	Concentration of Total Beryllium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6(a)).

Parameter Name	IDEM Definition
BIOLOGICAL INTEGRITY	The benthic macroinvertebrate and/or fish communities indicate an impairment of aquatic life use based on the assessment methods provided in IDEM's Consolidated Assessment and Listing Methodology (CALM).
BIS-2-CHLOROETHYL ETHER	Concentration of Bis (2-chloroethyl) Ether (also known as Dichloroethyl Ether) exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
CADMIUM	Concentration of Dissolved Cadmium exceeds Indiana's water quality standards for aquatic life use support anywhere in the state (327 IAC 2-1-6 or 327 2-1.5-8) and/or concentration of Total Cadmium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
CARBON TETRACHLORIDE	Concentration of Carbon Tetrachloride exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
CHLORDANE	Concentration of Total Chlordane exceeds Indiana water quality standards for public water supply in source waters anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).
CHLORIDE	Concentration of Total Chloride exceeds Indiana water quality standards for aquatic life use and/or public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
CHLORINE, RESIDUAL (CHLORINE DEMAND)	Concentration of Intermittent Total Residual Chlorine exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
CHLOROBENZENE (MONO)	Concentration of Chlorobenzene (also known as Monochlorobenzene) exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
CHLOROFORM	Concentration of Chloroform exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
COPPER, DISSOLVED	Concentration of Dissolved Copper exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
CYANIDE	Concentration of Total Cyanide exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of either or both Chlorine Amenable Cyanide and Free Cyanide (also known as Weak Acid Dissociable) exceed Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).

Parameter Name	IDEM Definition
DDT (DICHLORODIPHYNYTRICHLOROETHANE)	Concentration of Dichlorodiphenyltrichloroethane (DDT) exceeds Indiana water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
DIBUTYL PHTHALATE	Concentration of Dibutyl Phthalate exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
DICHLOROBENZENE (MIXED ISOMERS)	Concentration of Dichlorobenzenes (all isomers) exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
DIELDRIN	Concentration of Dieldrin exceeds Indiana's water quality standards for aquatic life use support and/or for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
DIMETHYL PHTHALATE	Concentration of Dimethyl Phthalate exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
DIOXIN (INCLUDING 2,3,7,8-TCDD)	Concentration of Dioxin (including 2,3,7,8-TCDD) exceeds Indiana's water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the concentration exceeds the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for fish consumption for the Ohio River.
DISSOLVED OXYGEN	Dissolved Oxygen concentration exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for aquatic life use in the Ohio River.
ENDOSULFAN	Concentration of Endosulfan (Hexachlorocyclopentadiene) (sum of all isomers) exceeds Indiana water quality standards for public water supply and/or aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).
ENDRIN	Concentration of Endrin exceeds Indiana water quality standards for aquatic life use anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ESCHERICHIA COLI (E. COLI)	Concentration of Escherichia Coli (E. Coli) bacteria exceed the levels identified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for recreational use assessments.
ETHYLBENZENE	Concentration of Ethylbenzene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
FLUORANTHENE	Concentration of Fluoranthene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).

Parameter Name	IDEM Definition
FLUORIDE	Concentration of Fluoride exceeds Indiana water quality standards for aquatic life use anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
HARMFUL ALGAL BLOOMS	Concentration of Cylindrospermopsis and/or Microcystin-LR in source waters exceed the benchmarks provided in Indiana's Consolidated Assessment and Listing Methodology (CALM) for water quality assessments of public water supply.
HEPTACHLOR	Concentration of Heptachlor exceeds Indiana water quality standards for aquatic life use and/or for public water supply in waters outside the Great Lakes Basin (327 IAC 2-1-6); Does not apply to waters within the Great Lakes Basin.
HEXACHLOROBENZENE	Concentration of Hexachlorobenzene exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
HEXACHLOROBUTADIENE	Concentration of Hexachlorobutadiene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
HEXACHLOROCYCLOPENTADIENE	Concentration of Hexachlorocyclopentadiene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
HEXACHLOROETHANE	Concentration of Hexachloroethane exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
ISOPHORONE	Concentration of Isophorone exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
LEAD	Concentration of Dissolved Lead exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of Total Lead exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
MERCURY IN FISH TISSUE	The trophic level-weighted geometric mean concentration of total and/or methylmercury exceeds the benchmark criterion specified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for fish consumption assessments.
MERCURY, DISSOLVED	The concentration of Dissolved Mercury exceeds Indiana's water quality standards for aquatic life use in waters within the Great Lakes Basin (327 IAC 2-1.5-8). Does not apply to waters outside the Great Lakes Basin.

Parameter Name	IDEM Definition
MERCURY, TOTAL	The concentration of Total Mercury exceeds Indiana's water quality standards for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6) and/or the concentration of Total Mercury exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
METHYLENE CHLORIDE	Concentration of Menthylene Chloride (also known as Dichloromethane) exceeds Indiana's water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8).
METHYLMERCURY	Total Methylmercury exceeds Indiana water quality standards for public water supply in source waters within the Great Lakes Basin (327 IAC 2-1.5-8(b))
NICKEL	Concentration of Dissolved Nickel exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or concentration of Total Nickel exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
NITRATE/NITRITE (NITRITE+NITRATE AS N)	Concentration of Nitrogen (Nitrate + Nitrite) exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
NITROBENZENE	Concentration of Nitrobenzene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Laks Basin (327 IAC 2-1-6).
NITROGEN, NITRITE	Concentration of Nitrogen (Nitrite) exceeds Indiana water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
NUTRIENTS	Two or more of the nutrient benchmarks identified in IDEM's consolidated Assessment and Listing Methodology (CALM) for aquatic life use are exceeded on the same day.
PARATHION	Concentration of Parathion exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1 or 327 IAC 2-1.5).
PCBS IN FISH TISSUE	Concentration of PCBs in Fish Tissue exceeds the benchmark criterion specified in IDEM's Consolidated Assessment and Listing Methodology (CALM) for fish consumption assessments.
PENTACHLOROBENZENE	Concentration of Pentachlorobenzene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
PENTACHLOROPHENOL (PCP)	Concentration of Pentachlorophenol (PCP) exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
PH	pH value exceeds Indiana water quality standards for aquatic life use (327 IAC 2-1 or 327 IAC 2-1.5).

Parameter Name	IDEM Definition
PHENOL	Concentration of Phenol exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
PHOSPHORUS, TOTAL	Total phosphorus concentration combined with Chlorophyll <i>a</i> results exceed the benchmarks for recreational use support (aesthetics) provided in IDEM's Consolidated Assessment and Listing Methodology.
POLYCHLORINATED BIPHENYLS (PCBS)	Concentration of Total Polychlorinated Biphenyls (PCB) (sum of all congeners) exceed Indiana water quality standards for public water supply in source waters anywhere in the state (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside of the Great Lakes Basin (327 IAC 2-1-6).
POLYCYCLIC AROMATIC HYDROCARBONS (PAHS) (AQUATIC ECOSYSTEMS)	Concentration of Polycyclic Aromatic Hydrocarbons (PAHs) exceed Indiana's water quality standards for public water supply in source water outside the Great Lakes Basin (327 IAC 2-1-6); Includes Benzo(a)pyrene.
SELENIUM	Concentration of Dissolved Selenium exceeds Indiana's water quality standards for aquatic life use support for waters within the Great Lakes Basin (327 IAC 2-1.5-8).
SELENIUM, TOTAL	Concentration of Total Selenium exceeds Indiana's water quality standards for aquatic life use and/or public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
SILVER	Concentration of Dissolved Silver exceeds Indiana's water quality standards for aquatic life use support and/or concentration of Total Silver exceeds Indiana water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6); Not applicable to waters within the Great Lakes Basin.
SULFATE	Sulfate concentration exceeds Indiana's water quality standards for aquatic life use and/or for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5.8).
TEMPERATURE	Temperature exceeds Indiana's water quality standards for aquatic life use (327 IAC 2-1-6 or 327 IAC 2-1.5-8) or the Ohio River Valley Sanitation Commission (ORSANCO) Pollution Control Standards (PCS) for aquatic life use in the Ohio River.
TETRACHLOROETHYLENE	Concentration of Tetrachloroethylene exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
THALLIUM	Concentration of Total Thallium exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6(a)).
TOLUENE	Concentration of Toluene exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).

Parameter Name	IDEM Definition
TOTAL DISSOLVED SOLIDS (TDS)	Concentration of Total Dissolved Solids (TDS) exceeds Indiana's water quality standards for public water supply (327 IAC 2-1-6 or 327 IAC 2-1.5.8).
TOXAPHENE	Concentration of Toxaphene exceeds Indiana water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8) and/or for aquatic life use in waters outside the Great Lakes Basin (327 IAC 2-1-6).
TRICHLOROETHYLENE (TCE)	Concentration of Tetrachloroethylene (also known as Trichloroethene or TCE) exceeds Indiana's water quality standards for public water supply in source waters (327 IAC 2-1-6 or 327 IAC 2-1.5-8).
VINYL CHLORIDE	Concentration of Vinyl Chloride exceeds Indiana's water quality standards for public water supply in source waters outside the Great Lakes Basin (327 IAC 2-1-6).
ZINC, DISSOLVED	Concentration of Dissolved Zinc exceeds Indiana's water quality standards for aquatic life use support (327 IAC 2-1-6 or 327 IAC 2-1.5-8).