HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) AND NON-HTRW INVESTIGATION

JEORSE PARK BEACH

SECTION 506 ECOSYSTEM RESTORATION PROJECT

Hydraulic and Environmental Engineering Section (TS-DH)
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I. INTRODUCTION

The purpose of this report is to discuss the hazardous, toxic, and radioactive waste (HTRW) investigation for the Jeorse Park Beach Section 506 Ecosystem Restoration Project. This report identifies both HTRW and non-HTRW environmental issues, and presents appropriate measures to resolve these issues. The methods used in performing the investigation are described in detail. Conclusions and recommendations regarding potential impacts due to HTRW, non-HTRW and recognized environmental issues associated with the project site are provided.

II. AUTHORITY

Engineer Regulation (ER) 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works projects, requires that a site investigation be conducted as early as possible to identify and evaluate potential HTRW problems. According to ER 1165-2-132, non-HTRW issues that do not comply with the federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW issues. Therefore, HTRW and non-HTRW issues identified are discussed in this report.

The HTRW investigation presented in this report was conducted during the feasibility phase of the project. This report was performed at the level of detail required for a Feasibility Phase investigation and relies on existing information, observations made through database research, a site visit, and a historical aerial photograph and topographic map review. As stated in the ER 1165-2-132, for projects in the Feasibility phase, an HTRW initial assessment as appropriate for a reconnaissance study should be conducted as a first priority. If the initial assessment indicated the potential for HTRW or other environmental issues, testing, as warranted, and analysis should be conducted prior to proceeding with the project design, and at least one project alternative shall be considered that avoids the identified issue(s). No investigation can wholly eliminate uncertainty regarding the potential for recognized environmental conditions (RECs) associated with a project area. Performance of the HTRW investigation is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a project area, and this practice recognizes time and cost constraints.

III. GUIDANCE

Supplemental guidance was provided by the Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process (Designation: E 1527-13) prepared by the American Society for Testing of Materials (ASTM). The guidance defines a standard of good commercial and customary practice for conducting an environmental site assessment of a parcel of property; the goal of the process established by this practice is to identify Recognized Environmental Conditions (RECs) through a records review, site visit, interviews, and report preparation. This report followed many of the ASTM E 1527-13 guidelines but not to the same level of detail described by the ASTM E 1527-13 guidance.

Hazardous, Toxic, and Radioactive Waste
The objective of ER 1165-2-132 is to outline procedures to facilitate early identification and appropriate consideration of HTRW problems. This investigation, therefore, identifies potential HTRW problems and discusses resolutions and/or provides recommendations regarding the HTRW problems identified.

Non-Hazardous, Toxic, and Radioactive Waste
According to ER 1165-2-132, non-HTRW environmental issues that do not comply with federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW issues. For example, solid waste is a non-HTRW issue considered, in addition to petroleum releases from Leaking Underground Storage Tanks (LUSTs), because of the potential to impose environmental hazards. Non-HTRW problems identified during the investigation are also discussed in this report, along with resolutions and/or recommendations for resolving any open issues.

IV. LAWS AND REGULATIONS

Federal
The definition of HTRW according to ER 1165-2-132, page 1, paragraph 4(a) is as follows: "Except for dredged material and sediments beneath navigable waters proposed for dredging, for purposes of this guidance, HTRW includes any material listed as a 'hazardous substance' under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq (CERCLA). (See 42 U.S.C. 9601(14).) Hazardous substances regulated under CERCLA include 'hazardous wastes' under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; 'hazardous substances' identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, 'toxic pollutants' designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, 'hazardous air pollutants' designated under Section 112 of the Clean Air Act, 42 U.S.C. 7412; and 'imminently hazardous chemical substances or mixtures' on which EPA has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. (See 42 U.S.C. 9601(14).)"

As noted in 42 U.S.C. 9601(14), the term "hazardous substance" does not include crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance, nor does the term include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel. Underground Storage Tanks (USTs) are federally regulated under 40 CFR Part 280, which includes technical standards and corrective action requirements for owners and operators of USTs.

State
Indiana regulates USTs and LUSTs under 329 Indiana Administrative Code Article 9, Underground Storage Tanks. The Underground Storage Tank program is responsible for assuring that all regulated underground storage tanks meet the U.S. EPA's and Indiana's requirements for release detection, spill and overflow prevention, corrosion protection, and to ensure that tanks not meeting those requirements are properly closed or upgraded. In addition, the Indiana Department of Environmental Management (IDEM) published a Risk Integrated System of

Closure (RISC) User's Guide that provides a stand-alone resource for underground storage tank (UST) owners, operators, and consultants dealing solely with petroleum and regulated hazardous substance releases from LUSTs. The RISC guidance is applied to LUST sites, voluntary cleanup sites, and sites with RCRA corrective action.

V. SITE DESCRIPTION

Jeorse Park Beach, owned and operated by the City of East Chicago, is located along the Lake Michigan shoreline just southeast of Indiana Harbor and Shipping Canal and west of Buffington Harbor in Lake County, IN. The park is bounded to the west by the Ameristar Casino, to the north by the Ameristar breakwater and Arcelor Mittal Indiana Harbor, to the southeast by the Majestic Star Hotel and Casino and Buffington Harbor, and to the east by Lake Michigan (**Figure 1**). The project site is adjacent to railroad lines and Indiana Route 912 to the south. The site includes approximately 14.6 acres of beach and fore dune habitat, nearly 4,500 feet of shoreline, and over 62 acres of lake bottom. Although the surrounding land use is primarily industrial and commercial, Jeorse Park Beach is commonly visited by recreation users, including swimmers, birders and fishermen that take advantage of the park's natural resources.

VI. STUDY DESCRIPTION

The goal of the project is to restore the 14-acres of beach and foredune, and the 4,500 ft of lacustrine habitat to a "more natural state" while enhancing fish foraging and spawning opportunities for migratory birds and near shore fishes. Objectives for the project include: (i) providing foredune stability and enhanced opportunities for establishment, (ii) increase floristic quality and quantity of foredune and beach, (iii) increase foraging and spawning habitat for near shore fish species, and (iv) utilize longshore current patterns to induce a more natural habitat configuration (USACE, 2013). The USACE planning process for ecosystem restoration will identify a suite of potential measures (alternatives) that address the identified problems. Additionally, the project local sponsors have identified the project as an *opportunity* to address beach closures due to exceedances of Escherichia coli (E. coli) concentrations. Jeorse Park has been noted by the Natural Resources Defense Council as having one of the highest E. coli standard exceedance rates in the nation (NRDC, 2010). The U.S. Geological Survey (USGS) is conducting a concurrent study on the source of microbial contamination at the beach utilizing microbial analysis, biological and site surveys, as well as hydrologic and hydrographic analysis (USGS, 2014) in conjunction with a Michigan State University (MSU) study that is modeling the fate of E. coli bacterium at Jeorse Park.

VII. EXISTING INFORMATION REVIEW

Water Quality

The project study area includes the beach and nearshore lacustrine area of southwestern Lake Michigan. The most recent USEPA *Waterbody Report for Lake Michigan Shoreline East of Indiana Harbor Canal* (ID: INC0163G_G1074) lists the waterbody as impaired for the following designations: Full Body Contact and Human Health/Wildlife (USEPA, 2014; IDEM, 2012). The

listed causes of impairments are due to E. coli, mercury in fish tissue, and polychlorinated biphenyls in fish tissue (Attachment A).

E. coli is a facultatively anaerobic, rod-shaped bacterium that is frequently found in digestive tract of mammals, birds, and warm blooded organisms. While most strands of E. coli are not dangerous, it is considered a fecal indicator bacterium (FIB) that may signify the presence of human or animal waste and related disease causing bacteria, viruses, and protozoa (USEPA, 2014). Generally, major sources could include combined sewer overflows (CSOs), wastewater treatment plants or septic systems, agricultural runoff, animal carcasses, the presence of animal waste or runoff from animal manure. The bacterium generally does not survive long in water, and continuous elevated concentrates may indicate a sustained source (USEPA, 2014; Ishii, 2007). Elevated E. coli concentrations at Great Lakes beaches are generally associated with deer, raccoon, and bird manure and stormwater runoff (Whitman, 2004). Beach sand has been shown to act as a 'source' for E. coli contamination of lake waters in that it acts as a suitable substrate for the bacterium (Whitman, 2003; Ishii, 2007) and wave action from the lake influences colonization, homogeneous distribution, and release of E. coli from the substrate into the water column (Ishii, 2007; Whitman 2004). The influence of modern mechanical beach grooming techniques may contribute to the non-point source loading of contamination (Kinzelman, 2003) by churning elevated E. coli contaminated artifacts (i.e., gull manure, algal mats) within the substrate to depths below the natural inactivating effects of ultraviolet sunlight (Whitman, 2004).

Three sampling stations located within the project area monitor E. coli concentrations on a near-daily frequency during the swimming season under the "Beaches Environmental Assessment and Coastal Health Act of 2000" (BEACH Act). The three stations (IN708061, IN319633, IN971200) collectively accounted for 197 beach closure actions due to E. coli concentrations in 2013, resulting in approximately 125 days of beach closure. IDEM collects samples from late May through the first week of September at most beaches. Samples are taken in knee-deep water, and beach managers issue an advisory or closing if E. coli concentrations are greater than 235 colony forming units (cfu) per 100 milliliters in a single sample, or 126 cfu / 100ml as a 30-day geometric mean (USEPA,2010). In making decisions to close Jeorse Park beach, each day beach managers are given a model's predicted likelihood that the E. coli count would exceed safe limits based on recent sampling results (NRDC, 2010).

Any water body that does not meet or is not expected to meet the State's water quality standards is considered impaired and is placed on the 303(d) list in accordance with the Clean Water Act, and development of site specific Total Maximum Daily Loads (TMDL) for the waterbody are required. In 2004, TetraTech Inc. developed the *Lake Michigan Shoreline Total Maximum Daily Loads (TMDL) for E. coli Bacteria Report* on behalf of IDEM (TetraTech, 2004). The report included hydrodynamic fate and transport modeling based on inputs from observed E. coli concentrations measurements and tributary loads, including estimated wildlife, septic system, boating, beach user, algal, and beach sand loads. The TMDL report found that the most significant source of E. coli loading to the lakeshore were tributary loadings (e.g., Burns Ditch, Dunes Creek, Trail Creek, Indiana Harbor Ship Canal), and TMDL alternatives for reducing loads at tributaries and reducing beach users at select beaches were supported by the model results. The report did not include E. coli data for Jeorse Park Beach or adjacent Buffington Harbor Beach. The TMDL model included loads from wildlife sources that exceeded tributary

values, though alternatives for reducing wildlife loads were not considered, and the report recommended further study on biological wildlife markers, beach sand and algal contributions (TetraTech, 2004).

The USGS issued the *Investigation of E. coli Sources in Beach Water at Jeorse Park* report in 2011. Based on wildlife and usage surveys, biological marker testing, water chemistry, and hydrographic analysis at Jeorse Park, the report suggested that contamination is likely derived from gulls and geese, with some contributions from humans and cormorants (USGS, 2011). Laboratory analysis of biological markers found that a plurality (37%) of samples was contaminated with E. coli from gulls. The study determined that E. coli levels were highly variable, though some correlation between debris, manure, and E. coli concentrations was evident. The USGS and TMDL reports collectively suggest conflicting findings in which E. coli sources may require additional study, however a combination of tributary and wildlife factors likely contribute to E. coli loadings and stagnant flow regimes may exacerbate the issue. Further identification of the relationship between the possible sources and beach closings and flow regimes is being addressed in an ongoing MSU study conducted in conjunction with USGS through the utilization of calibrated fate and transport models for the E. coli bacterium.

As relationships between wildlife, CSO discharges, long shore current regimes, and elevated E. coli concentrations at Jeorse Park Beach are not well understood, USACE coordination with the MSU/USGS study will be necessary to quantitatively establish whether project alternatives will reduce E. coli exceedances at the beach. **However, E. coli exceedances are common at beaches throughout Lake Michigan (Whitman, 2004), daily sampling occurs at the project site for *with-project* and *without-project* conditions, beach closures prevent exposure of the bacteria to recreational users, and the environmental restoration project alternatives are very unlikely to bring construction personnel in full body contact with nearshore water, thus this water quality issue does not represent an REC for the project.**

In addition to E. coli contamination, the 2010 Water Body Report lists mercury and PCBs in fish tissue as impairments to the Indiana segment of the Lake Michigan Shoreline. The target date for adoption of TMDLs for these impairments is in 2025 (USEPA, 2014). Mercury is a liquid metal found in natural deposits such as ores; sources include erosion of natural deposits, coal mining, discharges from refineries and factories, stormwater runoff, or refuse. Mercury may be released to the atmosphere during the combustion of coal or other fossil fuels, and atmospheric mercury may deposit in water or shore areas. Atmospheric deposition of mercury is considered the primary source of mercury for much of the Great Lakes, and mercury impairments are common throughout the Great Lakes. Microorganisms can transform mercury into methylmercury, which bioaccumulates in fish and their predators. Methylmercury's negative effects on human health and ecology are well documented, and include harmful effects to vital organs, nervous system, reproductive system, development, and cognitive functions. Polychlorinated Biphenyls (PCBs) are a group of synthetic organic chemicals that include 209 possible individual compounds. There are no known natural sources and were mostly banned from production in 1979, though they're widely distributed in the environmental because of persistence and continued use. PCBs bioaccumulate in the fatty tissues of aquatic organisms and their predators, with species at the top of the food chain maintaining the highest concentrations. PCBs negative effects on human health and ecology are well documented, and include toxicity to major organs, blood, immune

system, nervous system, endocrine system, and reproductive system. Although mercury and PCB contamination in fish tissue is a 303(d) listed water quality impairment at Jeorse Park, there is no evidence of PCB or mercury contamination within the Park boundaries. Increasing migratory bird habitat at Jeorse Park beach will attract wildlife away from nearby sites that may have recognized environmental concerns, and will reduce avian exposure to contaminants. Similarly, increasing fish habitat at the beach will provide protection for maturing fish that are migrating away from less suitable shoreline habitat areas. Increasing fish and avian habitat is unlikely to catalyze further dispersion of PCBs and Mercury into the wildlife and environment, as the site is not a source of contamination and PCB and Mercury cycling in the environment is not beach dependent. Thus the TMDL listing for PCBs in fish tissue is not a recognized environmental concern for this project.

Other water quality considerations in the vicinity of Jeorse Park beach could include Indiana Harbor Canal, which discharges to Lake Michigan approximately one mile north of the project study area. Indiana Harbor is on the IDEM 303(d) list as an impaired waterway for the following impairments: Mercury, E. coli, oil and grease, Impaired Biotic Communities, and PCBs in Fish Tissue. Indiana Harbor Canal is also listed on the USEPA's Great Lakes Area of Concern (AoC) list, and is the only water body to be listed as impaired in all 14 beneficial use categories (USACE, 1999). Restoration efforts are ongoing at Indiana Harbor and its tributaries by the USACE, IDEM, and USEPA. The environmental restoration project at Jeorse Park Beach is intended to improve water quality and contribute to the long-term restoration plan of the region; conditions at Indiana Harbor and Canal are not expected to affect construction activities as the canal does not directly flow onto the site and is not physically connected to the park.

Geology & Soil Quality

The heavily populated and industrialized northern part of Lake County is an area of generally low relief that occupies the bed of glacial Lake Chicago. The geology of East Chicago, Indiana is similar to that of Chicago, Illinois, in that Niagraran Age limestone bedrock is overlain by glacial deposits associated with the Wisconsinan stages of advance and retreat. The Calumet Lacustrine plain formation extends from the shore of Lake Michigan to the Valparaiso terminal moraine. After the Wisconsin glaciation, the Lake Michigan lobe of the Laurentian ice sheet began to retreat, and the Valparaiso moraine marks the point of the ice sheets furthest southward advance before receding. The last glacial retreat from the Great Lakes began approximately 18,000 years ago. The dune and swale complex of the region is composed of parallel wetland swales and upland beach ridges found in coastal embayments and on large sand spits along the shorelines of the Great Lakes. Sediments of the Calumet Lacustrine Plain consist of a variety of materials, including fine lake silt and clay, paludal deposits of muck and peat, great expanses of sand beach with accompanying sand dunes, sand and fine gravel laid down as glacial outwash and as till inclusions, and clay-rich till units of varying thickness and areal distribution (Hartke, 1975).

The Indiana Harbor/Grand Calumet River watershed can be broken into two primary natural or soil regions. The Calumet Lacustrine Plain covers the northern section and a portion of the Valparaiso Moraine of the southern section. The project area is within the Calumet Lacustrine Plain. Sands are very permeable and thus precipitation passes through the soils quickly to the

groundwater below without much attenuation by microorganisms or physical or chemical processes (NIRPC, 2005).

Soil within the study boundary and its immediate vicinity is primarily man-made or modified land, consisting mostly of sandy fill from the lakeward expansion of the beach, which primarily occurred in the 1950s. Thousands of acres of made-land cover original lake-bed sands along the Lake Michigan shoreline. The project site contains sand and gravel from beach and shoreline deposits for bars, spits, and beach as well as some dune sand as part of the Atherton Formation. Soil conditions are typically coarse grained, poorly graded beach sands that overlie strata of silty clays and clayey silts. The U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining, and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The information provided in the EDR database search (**Attachment B**) is based on NRCS SSURGO data. The soils found in the project area are primarily "Urban Fill".

There are no available soil quality data for the project site. Soil contamination is prevalent at nearby properties due to historical industrial activities, and is discussed in detail within the Database Search paragraphs. There is a history of using slag material as fill in northwest Indiana, but there is no indication of slag fill at Jeorse Park. Soil contamination is not expected at the project site, as the project site primarily contains coarse, sandy soils, and the site has been a recreational beach area since it was created during lakeward expansion in the 1950's. Lake bottom sediment is likely coarse grained sandy material, though if dredging or dewatering activities are necessary as part of the project alternatives, regulatory coordination will be necessary and may require sediment sampling.

Groundwater

The Calumet Aquifer has not been significantly developed because of its proximity to Lake Michigan, a fresh-water source. The Calumet region of northwestern Indiana and northeastern Illinois is one of the most industrialized areas of the United States. Current and historical industries in the region and various filling activities (with slag, dredged material, and other industrial wastes) and the subsequent chemical runoff from these sources have resulted in the general degradation of surface and groundwater resources in the region (IDNR, 1990).

The direction of groundwater flow in the Calumet Aquifer is variable and highly dependent on the proximity of local sources and sinks, which could include industrial activities, major water bodies, ditches, surface-water, dewatering systems, sewers, and other features. The general groundwater flow system of the area is represented by broad, flat water-table mounds that function as ground water divides. Groundwater in the vicinity of the project area flows toward Lake Michigan under the influence of typical lake and groundwater elevations, with groundwater flow direction exhibiting a good hydraulic connection with Lake Michigan levels. A groundwater divide exists less than ½ mile south of the project area, where groundwater flows to a localized depression most likely under the influence of a leaky sewer line or pump station (USGS, 2002). This divide has the effect of potentially isolating and protecting the project area from groundwater contamination, since advection controlled contaminant migration would follow the groundwater flow path and not cross the divide into the project area.

Groundwater chemistry data for the project site are not available. Several leaky underground storage tanks (LUSTs), brownfields, CERCLIS sites, dry cleaners, or other properties with historical groundwater contamination, controls, or environmental restrictive covenants on groundwater usage are present between 0.5-miles and 2-miles from the project site for a broad range of contaminants, as discussed in greater detail under the Database Search paragraph below. Low-level groundwater contamination is ubiquitous throughout this heavily industrialized region, and standard safety procedures should be considered during construction activities if excavation and groundwater contact is anticipated. However, because groundwater in the project study area exhibits a strong hydraulic connection to Lake Michigan, contaminants would be more dilute near the lake, and the groundwater divide also potentially protects the site from groundwater contamination. The proposed project activities do not include contact with the groundwater or a modification of the groundwater flow regime, and it is unlikely that the project is impacted by or will impact any existing groundwater conditions.

Wetlands

As data stewards, the United States Fish and Wildlife Service (FWS) is the principle Federal agency that provides wetland information to the public and other agencies. In 1986, the Emergency Wetlands Resources Act mandated that the FWS complete the mapping and digitizing of the Nation's wetlands. The result of this effort is the Wetlands Geospatial Data Layer. This data layer houses all of the Service digital geospatial wetlands data, and forms the Wetlands Spatial Data Layer of the National Spatial Data Infrastructure (NSDI). The National Spatial Data Infrastructure (NSDI) is a way of enhancing the accessibility, communication, and use of geospatial data to support a wide variety of decisions at all levels of society. The FWS Wetland Mapper Online indicates that the study area includes a lacustrine littoral unconsolidated bottom (L2UB) wetland along the shore. The project area also encompasses a historical lacustrine limnetic wetland (L1UB), in an area that was historically filled for beach expansion. Additionally, emergent palustrine wetlands are evident approximately 1-mile from the project area (**Figure 2**); the emergent wetlands will not be impacted by the proposed project. Rehabilitation and enhancement of the lacustrine wetland is included as a project objective, and project construction activities will not degrade area wetlands.

VIII. DATABASE SEARCH

A search of available environmental records was conducted utilizing Environmental Database Resources, Inc. (EDR) online. EDR searched federal and state databases using the minimum search distances issued in the ASTM E 1527-13 guidelines. **Table 2** notes the recommended ASTM search distance for federal and state databases and the actual search distances used for the subject site. The standard search was extended 0.5 mile to accommodate the size and orientation of the project site. When site status could not be confirmed with the information included in the EDR report, information available through USEPA Enviromapper and IDEM's virtual file cabinet was used, if available.

The EDR overview map displaying the project area is given in **Figure 3**. Results of the EDR database search are summarized in **Table 3**. The comprehensive EDR database report is provided as **Attachment C**. Sites that have unresolved, "open" regulatory, or unknown status are highlighted in yellow. Sites that have a 'closed' status or have no violations are considered to not

have potential project impacts, since the issues have been previously resolved or there are no known issues.

Table 2 - Minimum Search Distance for Federal and State Database Searches

Database	Minimum Search Distance (mi)	Actual Search Distance (mi)
Federal NPL Site List	1.0	1.5
Federal CERCLIS List	0.5	1
Federal CERCLIS NFRAP Site List	Immediate and Adjoining Properties	0.5
Federal RCRA CORRACTS Facilities List	1.0	1.5
Federal RCRA non-CORRACTS TSD Facilities List	0.5	1
Federal RCRA Generators List	Immediate and Adjoining Properties	0.5
Federal ERNS List	Immediate Property	0.5
State Equivalent NPL	1.0	1.5
State Equivalent CERCLIS	0.5	1.5
State Landfill/Solid Waste Disposal Site Lists	0.5	1
State LUST Lists	0.5	1
State Registered UST List	Immediate and Adjoining Properties	0.75

Table 3 – EDR Database Search Summary of Results

Database	EDR MAP ID	Site Name	Proximity to Site (Address)	Status
Federal CERCLIS list	G40	Arcelor Mittal Caustic Spill	3210 Watling St (0.928 mi)	Closed
Federal CERCLIS NFRAP list	G41	Inland Steel Company	3210 Watling St (0.928 mi)	Unresolved
Federal RCRA CORRACTS list	1	Lehigh Portland Cement	OFF N Cline Ave (0.356 mi)	Closed
	G41	Inland Steel Company	2310 Watling St (0.928 mi)	No Violations
	47	Luria Brothers	6633 W Industrial (1.355 mi)	Closed
Federal RCRA non-CORRACTS TSD list	G41	Inland Steel Company	3210 Watling St (0.928 mi)	Permitted
Federal RCRA Generators	A10	Penske Truck Leasing	4000 Cline Ave 0.473mi	Permitted
	16	Ameristar Casino	777 Ameristar Blvd 0.532mi	Permitted
	17	Harborside Apartments	3610 Alder St 0.572mi	Permitted
IN LUST	A5	Speedway #6700	3956 Guthrie 0.452	Not Active
	A8	Penske Truck Leasing	4000 Cline Ave 0.473mi	Active Permit (Discontinued Status)
	26	City of East Chicago	Not Given 0.733 mi	Undetermined

	30	Lehigh Portland Cement	Buffington Station 0.748 mi	Closed
	31	Former Sinclair AAIRO	3937 Main St 0.791 mi	Active
	E33	East Chicago FD	3428 Guthrie St 0.867 mi	Active
	F36	Lysa Services	2220 E Columbus 0.898 mi	Active
	F38	East Chicago FD	2201 E Columbus 0.908 mi	Undetermined
	H43	Shell Station 2409-01	2100 E Columbus 0.952 mi	Closed
	45	Monarch Oil & Supply G2	1719 Broadway 0.989 mi	Closed
IN UST	A5	Speedway #6700	3956 Guthrie 0.452	In Service (No Violations)
	A8	Penske Truck Leasing	4000 Cline Ave 0.473mi	Out of Service
	B13	Gas Station	3614 Guthrie St 0.505	Out of Service
	18	Robert A Pastrick Marina	3301 Aldis Ave 0.615 mi	In Service (No Violations)
	30	Lehigh Portland Cement	Buffington Station 0.748 mi	Out of Service
IN AUL	C24	Lake County Trust Co	3512 Main St 0.699 mi	Closed (Restrictive Use)
	32	Raza Debronce Grand Masonic Lo.	4031 Main St 0.855 mi	Closed (Restrictive Use)
IN BROWNFIELDS	B15	Harbor Food Center	3601 Guthrie St 0.517 mi	Undetermined
	C22	Neri Construction	3521 Main St 0.696 mi	Active
	C23	El Patio Restaurant	3524 Main St 0.697 mi	Undetermined
	C24	Lake County Trust Company	3512 Main St 0.699 mi	Closed (Restrictive Use)
	C25	Rainbow Lounge	3508 Main St 0.699 mi	Active
	32	Raza Debronce Grand Masonic Lo.	4031 Main St 0.855 mi	Restrictive Use
	34	Not Reported	1 Buffington Harbor 0.88 mi	NFA – 2013
	F37	Burger King	2204 Columbus Dr 0.906 mi	Undetermined
	39	Michigan Avenue Property	3402 Michigan Av 0.902 mi	Undetermined
IN SWRCY	H42	Sterks Superfoods	2121 E Columbus 0.944 mi	Current Recycler (No Violations)
IN SPILLS	3	Guthrie Street	3804 Guthrie St 0.393 mi	Closed
	A9	Not Reported	4000 Cline Ave 0.473mi	Closed
RCRA NonGen/NLR	1	Lehigh Portland Cement	Off N Cline Ave 0.356 mi	Permit Not Active
	A7	Speedway 6700	3956 Guthrie 0.452 mi	Active
	29	INDOT STR NO 912 45 5088A	SR912 Ovr US12 0.747 mi	Permit Not Active
US MINES	1	Lehigh Portland Cement	Off N Cline Ave 0.356 mi	N/A
FTTS	1	Lehigh Portland Cement	Off N Cline Ave	No Violations

			0.356 mi	
HIST FTTS	1	Lehigh Portland Cement	Off N Cline Ave 0.356 mi	No Violations
FINDS	1	Lehigh Portland Cement	Off N Cline Ave 0.356 mi	N/A
	A4	Speedway 6700	3656 Guthrie 0.452 mi	N/A
	A6	Speedway Super America	3656 Guthrie 0.452 mi	N/A
	A10	Penske Truck Leasing	4000 Cline Ave 0.473 mi	N/A
	11	Field Elementary School	3551 Block Ave 0.496 mi	N/A
IN MANIFEST	A7	Speedway 6700	3956 Guthrie 0.452 mi	N/A
	A10	Penske Truck Leasing	4000 Cline Ave 0.473 mi	N/A
	C21	Harborside Apartments	3610 Adler St 0.669 mi	N/A
	29	INDOT STR NO 912 45 5088A	SR912 Over US12 0.747 mi	N/A
NY MANIFEST	1	Lehigh Portland Cement	Off N Cline Ave 0.356 mi	N/A
IN TIER 2	A10	Penske Truck Leasing	4000 Cline Ave 0.473 mi	Active Permit (Discontinued)
IN SCP	3	Guthrie Street	3804 Guthrie St 0.393 mi	Undetermined
	19	East Chicago Dep of Red	2320 Broadway 0.622 mi	Undetermined
	46	Melody Cleaners East Chicago 1	2020 E Columbus 0.992 mi	Undetermined
IS Hist Auto Stat	2	Not Reported	3830 Guthrie St 0.39 mi	N/A
	D27	Not Reported	3832 Main St 0.738 mi	N/A
	D28	Not Reported	3834 Main St 0.739 mi	N/A
IN RGA LUST	A5	Speedway #6700	3956 Guthrie 0.452	Closed
	A8	Penske Truck Leasing	4000 Cline Ave 0.473mi	Active
	B12	Not Reported	3614 Guthrie St 0.499 mi	Undetermined
	26	City of East Chicago	Not Given 0.733 mi	Undetermined
	30	Lehigh Portland Cement	Buffington Station 0.748 mi	Closed
	31	Former Sinclair AAIRO	3937 Main St 0.791 mi	Active
	E33	East Chicago FD	3428 Guthrie St 0.867 mi	Active
	E35	Not Reported	3414 Guthrie St 0.892 mi	Undetermined
	F36	Lysa Services	2220 E Columbus 0.898 mi	Active
	F38	East Chicago FD	2201 E Columbus 0.908 mi	Undetermined
	H43	Shell Station 2409-01	2100 E Columbus 0.952 mi	Closed
	44	Not Reported	3210 Watling St 0.966 mi	Undetermined

	45	Monarch Oil & Supply Co #G2	1719 Broadway 0.989 mi	Closed

CERCLIS

The Comprehensive Environmental Response, Compensation, and Liability, Information System (CERCLIS) contains data on any potential hazardous waste site that has been reported by states, municipalities, private companies, or private persons pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The CERCLIS database indicates the stages of evaluation and remediation that have been completed for any given site. The CERCLIS database includes the National Priority List (NPL), which identifies over 1,200 sites for priority cleanup under the Superfund program, and the CERCLIS-No Further Remedial Action Planned (NFRAP) List, which includes a listing of sites that have been removed from CERCLIS, for various reasons. The CERCLIS database search returned one site on the Federal CERCLIS List, a Federal CERCLIS NFRAP List, or State- and Tribal- equivalent CERCLIS: Arcelor Mittal Caustic Spill. A records search indicated that approximately 6,000 gallons of sodium hypochlorite was spilled in September 2010, and the current status is listed as "cleaned up" in the CERCLIS database. The location of the spill is approximately 1-mile from the project site. Because the status is closed, and the spill occurred 1-mile from the project location, this site does not present any environmental concerns.

Federal CERCLIS NFRAP Site List

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site. There was one database return on the CERCLIS NFRAP, Inland Steel Company. The site is not currently on the CRCLIS list, however Inland Steel Co (now owned and occupied by Arcelor Mittal) is a party to the National Resource Damage Assessment settlement, as well as the Supplemental Environmental Projects under a 1993 Consent Decree for reparation of Indiana Harbor sediments. Remediation of sediments from petroleum compounds, metals, and volatile organic compounds at locations adjacent to the Inland Steel facility is an ongoing requirement of the Consent Decree. Additionally, in the past five years, numerous environmental non-compliant violations have occurred under the Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act for the site, as listed below under the separate database searches. The Inland Steel site is approximately 1-mile from the project site, and borders Lake Michigan and Indiana Harbor. Historical industrial activities at the Inland Steel site have impacted Indiana Harbor water and sediment quality, as indicated by the settlement and consent decree above. As discussed in the *Water Quality* paragraphs above, the water quality at Indiana Harbor negatively impacts the water quality of Lake Michigan, however Indiana Harbor does not discharge directly to Jeorse Park. The Jeorse Park restoration project is part of East Chicago's overall restoration plan for the region and will compliment ongoing restoration efforts along Indiana Harbor and the Grand Calumet River. Because of its distance to the project site and lack of direct discharge to the project site, the Inland Steel site is not a significant environmental concern for construction of the environmental restoration project.

Federal RCRA CORRACTS facilities list
CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity. Three sites were returned in this database search (i) Inland Steel Company, (ii) Lehigh Portland Cement Co, and (iii) Luria Brothers & Company Incorporated. The Inland Steel site was discussed in greater detail above. It is currently owned and operated by Arcelor Mittal USA Inc., and is the largest steelmaking facility in North America. This facility industrially transforms ore, coke, limestone and scrap into steel. No active RCRA violations were uncovered in the database search for this site, though several recent (less than 5-years) violations related to financial record violations were uncovered. As discussed above, because of the distance from the project site, because there is no known contamination issues at Jeorse Park that are related to the Inland Steel activities, and because Indiana Harbor does not discharge directly to the beach, this does not represent a REC or potential issue for the project site.

Luria Brothers & Company was also returned in the database search. This facility does not have an active RCRA status, and further research indicated that facility has not had a violation in at least the past 5-years. Because this site is inactive, no recent RCRA violations were uncovered, and contamination issues from Luria Brothers and Company activities are unlikely, the site does not represent a REC.

The Lehigh Portland Cement Buffington facility is part of a 126-acres complex southeast of Buffington Harbor, the facility has an inactive RCRA status (INT19001973), and no violations within the past 5-years were uncovered. Historically, the site is associated with reprocessing of waste oils and mining, and is listed under several other database searches (below) due to historical contaminations from industrial operations. Between 2007 and 2011, approximately 4,700 tons of petroleum contaminated soil were removed from the site, underground storage tanks were removed, and groundwater monitoring wells were installed as part of cleanup operations by state and federal agencies. Notwithstanding legacy contamination of groundwater and soil samples above the Remediation Closure Guidance for Industrial/Residential levels, the Indiana Department of Environmental Management (IDEM) issued a letter of No Further Action (NFA) in 2013, and determined that the site was suitable for non-default commercial/industrial closure with an environmental restrictive covenant for certain land use restrictions. As of 2014, approximately 70-acres of the facility is scheduled for development by an adjacent facility, Carmeuse Lime, and the remaining 130-acres is being conveyed to the City of Gary to attract "clean technology business and establish an Industrial Park" . While the Lehigh Portland Cement Buffington Facility has legacy contamination issues, the sources of contamination have been removed (IDEM, 2013). The Jeorse Park Beach sand is unlikely to be affected by this facility because of the distance from the project area, and IDEM characterization of the site did not indicate that offsite contamination was a concern. Because the site has been largely remediated and is under development, and because there is no indication that contamination from discrete areas of the 126-acre industrial facility migrated to Jeorse Park Beach, this site does not represent a REC for the restoration project.

Federal RCRA non-CORRACTS TSD facilities list
The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. One database result was returned for the search: Inland Steel Company. As discussed above, Inland Steel Company is currently owned and operated by Arcelor Mittal, and no active RCRA violations were uncovered though several financial record violations were uncovered. This site does not present an environmental concern due to the distance and lack of unresolved environmental issues.

RCRA: Resource Conservation and Recovery Act

The Resource Conservation and Recovery Information System (RCRIS) lists sites which generate, transport, store, and/or dispose of hazardous waste defined by the Resource Conservation and Recovery Act (RCRA). The RCRIS database includes RCRA Corrective Action Report (CORRACTS), which identify hazardous waste handlers with RCRA corrective action activity; RCRA treatment, storage, and disposal facilities (TSDFs), RCRA conditionally exempt small quantity generators (CESQGs), RCRA small quantity generators (SQGs), and large quantity generators (LQGs) facilities. The database search returned three RCRA-CESQG sites: (i) Penske Truck Leasing Co, (ii) Ameristar Casino, and (iii) Harborside apartments. A records review did not return a RCRA violation within the past 5-years for any of the sites. None of these sites are adjacent to the project area or are physically connected in any way to the project, and RCRA status alone does not indicate the presence of a REC. These sites do not present an environmental concern as no violations were uncovered, and the sites are not at a proximity to the site that contamination would be a concern.

LUST: Leaking Underground Storage Tank Sites

The Indiana Department of Environmental Management (IDEM) maintains a listing of registered USTs as required under Subtitle I of the Resource Conservation and Recovery Act (RCRA). A review of the UST list from the EDR report revealed five UST sites and ten LUST sites. The LUST sites include: Speedway #6700 (0.45 mi), Penske Truck Leasing (0.47 mi), City of East Chicago (0.73 mi), Lehigh Portland Cement Co (0.75 mi), Former Sinclair AAIRO (0.79 mi), East Chicago Fire Department (0.87 mi), LYSA Services, East Chicago Fire Department Station 6 (0.91 mi), Shell Station 2409-01 (0.95 mi), and Monarch Oil (0.99 mi). The Speedway #6700 received a “No Further Action” (NFA) letter in 2009 which indicates that further corrective action at the site is not required, though monitoring is ongoing. This site is ruled out as a REC due to the distance and because the issues have been addressed.

The Penske site is listed as active, though it is currently listed as a “discontinued” tank and USGS groundwater monitoring indicates that the groundwater flow path in this vicinity is southward, away from the project site (USGS, 2002). Additionally, the Penske site is not located at a proximity which would affect construction activities. This site is ruled out as a REC due to distance and groundwater flow direction.

The City of East Chicago (East Chicago Marina) LUST dates back to 1988 and the most recent available records date to 1999. No documentation of an NFA was available though the site is listed as “discontinued” and thus not likely to affect construction.

Lehigh Portland Cement LUST received an NFA letter in 2004. This site is not considered to be a concern for the project due to distance and because the issues at the site have been addressed.

The Former Sinclair AAIRO site is listed as active, though it is 0.79 miles from the project site and south of the groundwater divide (USGS, 2002). The distance and the physical separation of the groundwater are sufficient justification to eliminate this site from further consideration.

The East Chicago Fire Department LUST is listed as active, though it is over 0.5 miles southwest of the site. The site is south of the apparent groundwater divide and in an apparent groundwater depression (USGS, 2002). The site is not considered a REC due its distance from the project site and because it is very unlikely that contamination would have migrated to the Lake Michigan side of the groundwater divide.

The LYSA Services LUST is active and under corrective action, though it is nearly 1-mile from the project site. Due to the distance, the LYSA Services LUST is not an environmental condition that would affect construction.

The East Chicago Fire Department Station 6 is listed as active in the EDR database, though IDEM records show site closure occurred in 2008. The site is not considered a REC because state regulatory records indicate that the site is closed.

The Shell Station 2409-01 and Monarch Oil sites have both received NFA letters. These sites are both at a distance from the project site and have had the environmental issues addressed, and are thus not considered a REC for the project.

For the UST sites, Speedway #6700 and Penske Truck Leasing are each approximately 0.5 miles from the project site, and are listed as active. These tanks are independent of the LUSTs described above, and not known to be leaking. Because the sites are currently in compliance and are at some distance from the site, they are not considered to represent an environmental issue.

A “Gas Station” and Lehigh Portland Cement Company UST are also approximately 0.5 miles away, and have a regulatory status listed as “permanently out of service”. Because these tanks are out of service, have no identified issues, and are at a distance from the project site, they do not represent an environmental concern for the project.

Three tanks are listed at Robert Pastrick Marina, adjacent to the project site, though no enforcement actions are listed. These underground storage tanks are not an environmental concern to the project because they are currently in compliance.

State and Tribal Brownfields Sites

A brownfield site is an industrial or commercial property that is abandoned, inactive, or underutilized, on which expansion or redevelopment is complicated due to the actual or perceived environmental contamination. There are nine records of databases within the search distance of the subject property. A record search indicated that reconnaissance investigations had occurred at the Harbor Food Center brownfield (0.5 miles) as early as 2013, and insufficient data was present for regulators to issue a site status. Groundwater sampling did not indicate the presence of any Contaminants of Concern (CoC) above the Remediation Closure Guide, though some metals and PAHs were present above the detection limits. This site is not considered an

REC because of its distance to the project site and low contamination levels that are unlikely to have impacted distant properties.

The former El Patio Restaurant is listed as a brownfield, though records of the site could not be located within the IDEM database. It is located approximately 0.5 miles from the project site, and unlikely to impact project activities due to the distance.

The NERI Construction site is a former apartment building with fire damage. Groundwater and soil vapor monitoring indicated the presence of VOCs and metals above closure guidance, likely due to the proximity of historical LUSTs, a dry cleaner, and a coal yard. The site is approximately 0.7 miles from project activities and does not present an REC for construction due to the distance from the project site.

Lake County Trust Company brownfield is located approximately 0.7 miles from the project site, and current site status (March, 2013) indicates that the site presents no current threat to human health or environment, though elevated levels of VOCs, SVOCs, and metals were found in groundwater and soil vapor and a restrictive covenant exists for groundwater use. This site does not present an environmental concern due to its distance from the project and only minor contamination issues. The Rainbow Lounge brownfield site is located on the same tract of land as the Lake County Trust Company site. The Rainbow Lounge is the same database listing under a former owner name, and does not indicate the presence of additional concerns. This site does not present an environmental concern due to its distance from the project site.

Raza Debronce Grand Masonic Lodge is a brownfield site approximately 0.855 miles away. The site has some groundwater contamination concerns due to the nearby LYSA LUST discussed above. Because of its distance from the project site it is not considered an environmental concern since there is no evidence that the groundwater contamination extends to the project site.

An unnamed site was also returned in the brownfields database search, approximately 0.5 miles away. The site is adjacent to Buffington Harbor Beach, as part of the 126-acres Lehigh Portland Cement Facility. A review of IDEM records indicate that a NFA letter was applied to the site in 2013, notwithstanding contaminants detected in surface soil, subsurface soil, and groundwater above RCG residential, commercial/industrial, and/or excavation screening levels. Elevated contamination levels at this site are due to historical industrial use. The facility is not considered an REC for the site because groundwater flow at the facility is predominantly northward and because sources of contamination have been removed from the facility and the site is isolated from Jeorse Park Beach.

A brownfields site is also listed at a parcel formerly occupied by a Burger King. The present status of this site could not be determined. Though the site is approximately 1-mile from the project facility and not likely to impact construction activities due to the distance.

A “Michigan Avenue Property”, approximately 1-mile from the project site, was also returned in the database search. This site is not expected to impact construction activities due to its distance from the project.

IN AUL: Indiana Institutional Controls
IN AUL is a database listing of Comfort/Site Status Letter sites that have been issued with Institutional Controls. Institutional controls can include groundwater use restrictions, deed restrictions and similar legal controls on the use of a site or the activities that occur on the property. A review of the IN AUL list, as provided by EDR, indicated that there are 2 IN AUL sites within 1 mile of the target property, Lake County Trust Company, and Raza Debronce Grand Masonic Lodge. Both sites are discussed in greater detail above, and have institutional controls related to groundwater use restrictions. The presence of institutional controls on distant properties does not represent an environmental concern for the project.

SPILLS: State spills
The SPILLS database includes a listing of properties with spill incidences report from the IDEM. There are two spills returned in the database search, a 1989 spill (Not Reported) and a 2003 spill (Guthrie Street). Neither spill reports the volume of material released. Neither spill is in a proximity to the project site which would warrant consideration as an environmental condition.

IN SWRCY
IN SWRCY is a listing of recycling facilities located in the state of Indiana. One record was returned for Sterks Superfoods as an active recycler of paper and plastic. This facility is approximately 1-mile away and not a recognized environmental condition for the project site due to the distance and lack of violations or environmental issues associated with the site.

RCRA NonGen / NLR
The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste. Lehigh Portland Cement Co is located approximately 0.35 miles south east of the project site, and discussed in greater detail above.

The INDOT STR NO 912 45 4088A is a listing for an Indiana Department of Transportation Facility approximately 0.75 miles from the project site with no recent violations. Due to the distance and lack of violations, this site does not represent a REC for the project.

The Speedway #6700 is approximately 0.45 miles from the project site, and discussed in greater detail above. It is not considered an REC for the project.

US MINE
The Mines Master Index File is the source of this Dept. of Labor, Mine Safety and Health Administration database. The Lehigh Portland Cement Company Buffington Harbor (0.35 miles) was listed as a “cement” and crushed limestone mine. The Lehigh Portland Cement Company is discussed in greater detail above. These mining activities are not active, and they are not considered an environmental concern for this project.

FTTS
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know

Act) over the previous five years. There was one FTTS record returned in the database search, Lehigh Portland Cement Co Buffington Harbor. The record was related to a TSCA inspection in June, 2000, and no violations were noted. The Lehigh Portland Cement Co is discussed in greater detail above. This FTTS tracking record does not indicate an environmental concern.

HIST FTTS:
Some EPA regions are now closing out FTTS records. Because of this, and because some EPA regions no longer provide updated records, a historical FTTS database is being maintained to preserve legacy data. One HIST FTTS record was returned in the search, Lehigh Portland Cement Co Buffington Harbor. The record is for a TSCA inspection in June, 2000, and is identical to the record described above. This HIST FTTS tracking record does not indicate an environmental concern.

FINDS: Facility Index System/Facility Registry System
FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System). The EDR report returned 5 FINDS sites (Lehigh Portland Cement Co, Speedway 6700, Speedway Super America, Penske Leasing Co, Field Elementary School). Lehigh Portland Cement Co, Speedway 6700 (also known as Speedway Super America), and Penske Leasing Co records are "pointers" to records that are discussed above. Field Elementary School is an air monitoring site used by the USEPA Air Quality System. The air monitoring site status of the school does not represent a REC.

IN and NY MANIFEST
A manifest is a document that lists and tracks hazardous waste from the generator through the transporters to a TSD facility. A review of the MANIFEST lists returned five sites within 0.75 miles of the property (Speedway 6700, Penske Truck Leasing, Harborside Apartments, INDOT STR NO 912, Lehigh Portland Cement Co). All records returned in the database search are redundant to the respective RCRA records listed above, and do not present an environmental concern for the site.

IN TIER 2
Indiana TIER 2 is a listing of facilities which store or manufacture hazardous materials that submit a chemical inventory report. One listing (Penske Truck Leasing Co) was returned in this database search. No violations are associated with the record, and it is not an environmental concern for this site.

SCP
The goals for the State Cleanup Program (SCP) are to mitigate risk to human health and the environment. There are three SCP sites within appropriate search distances (Guthrie Street, East Chicago Department of Redevelopment, Melody Cleaners East Chicago). The Guthrie Street

record matches the Facility ID and Facility Name of the SPILL record above, though no other information on this site was readily ascertainable from state or federal records. The SPILL record was in reference to a 2003 spill of an unknown volume of gasoline approximately 0.4 miles from the project site. Although no other records are available for this facility ID, this site is not considered an environmental concern for the environmental restoration project due to the distance from the site.

Additional information about The East Chicago Department of Redevelopment record could not be located in state or federal records; however the address matches the Northtown Village Senior Apartments which was constructed in late 2013. It is likely that the issues have been resolved, since the site is now used for residential purposes. The site is 0.6 miles distance from the project, and does not represent a risk to the project.

Melody Cleaners East Chicago is located approximately 1-mile from the project site, and the SCP record is related to PCE and TCE groundwater contamination, though no other records or dates of the contamination could be found in state or federal databases. Because of the distance from the project site, this record is not an environmental concern for the project.

HIST AUTO STAT

HIST AUTO STAT is a national collection of business directories and has collected listings of potential gas station/filling station/service station sites that were available. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records" (HRHR). HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches. There were three sites returned in the database site (S&S Auto, Perez Jose Auto Repair Shop, Generic Towing and Auto Storage). No violations were uncovered at these sites, and they are not considered to be an environmental concern due to the lack of issues.

US HIST Cleaners

US HIST Cleaners is a listing of potential dry cleaner sites. The categories included, but were not limited to dry cleaners, cleaners, laundry, laundromats, or cleaning/laundry facilities. Two records were returned in this database search, Sunnyside Laundromat and 138th Street Laundry Mat. Both sites are approximately 0.5 miles from the project site. No violations or records of environmental contamination were found. Because of the distance from the site and the lack of environmental issues, neither site indicates the presence of an environmental concern.

IN RGA LUST

Recovered Government Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and may include records that no longer appear in current government lists. The database search returned listings for Speedway #6700, Penske Truck Leasing, “not reported”, City of East Chicago, Lehigh Portland Cement Company, Former Sinclair AAIRO, East Chicago Fire Department, “not reported”, LYSA Services, East Chicago Fire Dept Station, Shell Station 2409-01, “not reported”, and Monarch Oil & Supply. Of these, all sites are identical to those described in the IN LUST paragraph above, except for the listings

with “not reported” facility identifiers. The first “not reported” listing is identical to the “gas station” listing under the IN UST paragraph above, the second “not reported” listing has the same address as the City of East Chicago Fire Department Station, and the third “not reported” listing is attributable to the Inland Steel site at 3210 Watling Street. These sites are all listed within the above LUST paragraphs where they are described in greater detail; none of the sites present an environmental concern to the project.

Orphan Sites

Orphan sites given in the EDR report were reviewed and no sites were identified as possible sites of concern. None of the sites with identifiable addresses could be located within the minimum search distances.

Others

Various other databases are searched by EDR that include additional information to supplement information provided in the above databases or contain other environmental related information that may be significant. These databases include, but are not limited to: CERCLA consent decrees, National Priority list deletions, Nuclear Regulatory Commission’s database of sites possessing radioactive materials, Superfund Liens, PCB Activity Database, Department of Defense sites, Department of Transportation Office of Pipeline Safety, Clandestine Drug Labs, DOD, FUDS, and Navy Land Use Control, open dump and mine inventory, electric transmission lines, sensitive receptors, flood zone data, and the national wetlands inventory. These databases did not indicate any sites of significance.

IX. AERIAL PHOTOGRAPH AND HISTORICAL REVIEW

Reviewing documents such as aerial photographs, USGS topographic maps, and historical accounts can identify potential HTRW issues. Indications of potential HTRW issues can be determined by identifying the past land use and site activities at the project area and surrounding areas. Identifying industrial and residential areas, observing any evidence of dumping activities, and locating extensive areas that lack vegetation can determine indications of potential HTRW issues. A historical topographic map review shows that in 1900 the shoreline began where the current railroad lines are located, approximately 500-feet south of the current shoreline. By 1953, lakeward expansion had created land for “Lees Park” (approximately where the East Chicago Marina is currently located), and a public water supply facility. The 1960 topographic data shows further lakeward expansion and the formation of “Jeorse Park”, which encompassed both the beach area and an open plot of land and parking lot which jettied into the lake. Aerial photography in 1987 shows construction of the Marina, two breakwaters, and additional lakeward expansion of the Jeorse Park beach area. Construction on the open plot of land is evident in 1992, leaving only the beach area for Jeorse Park. In 1998, formation of the Showboat Mardi Gras Casino complex (currently Ameristar Casino) is evident, and breakwaters were constructed around the casino vessel. Little change has occurred near the project site since 1998. Aerial photography indicates that Jeorse Park has been operated as a recreational area since land formation in the 1960’s. No development or significant topography changes were evident in the project area since this time. Aerial photography and topographic maps did not indicate the presence of an environmental concern.

X. SITE VISIT

On September 16, 2014, TS-DH staff (B. O'Neil) and other members of the Jeorse Park PDT team (M. Shanks, L. Vanden Berg, and J. Wethington) conducted a site visit in order to identify potential RECs. The temperature was 66º F, winds were 7mph out of the northwest, and a wave height of 1- to 2-feet was observed. Photographs of the site visit are provided in **Figures 4 -12**, and a photograph map is provided as **Figure 13**. Overall, no RECs that would affect construction of the ecosystem restoration project were observed. Protruding rock fill was observed along the beach, and appeared to be legacy fill from the lakeward beach expansion in the early 1900's. An accumulation of debris and refuse was noted within the crevasses of the rip-rap breakwater – where a sluice gate is being proposed as a project alternative to enhance the flow regimes. The refuse appeared to be household-type refuse, and mostly seemed to be litter though trash bags were also seen. The debris and refuse did not appear to be significant enough to pose a REC for construction activities along the breakwater, although the local sponsor should be encouraged to clean up the litter prior to construction. A small man-made berm or swale was noted along the perimeter of the parking lot near the project boundary though no stained soil was evident and no other signs of dumping were noted. Regarding the proposed project benefit of reducing E. coli exceedances, factors that potentially exacerbate the bacterium's concentration were observed, including a large population of seagulls, several decaying animal carcasses (four large bird carcasses and three small to large fish carcasses), and refuse accumulation within the beach sand and breakwater (a seagull and rodent attractant). As noted above, litter and waste should be removed from the project site by the local sponsor. There was not a significant accumulation of algal mats at Jeorse Park beach observed during this site visit, however the quiescent harbor northwest of the breakwater had a significant accumulation of algal mats, woody debris, and rubbish. During the visit, two anglers were at the site to utilize the pier. The site visit did not indicate the presence of any RECs that would affect construction activities.

XI. SUMMARY AND CONCLUSIONS

The HTRW investigation was performed to determine if the selected measures for Jeorse Park Environmental Restoration project will have an impact on any REC occurrences that may exist in the surrounding areas, and if any identified RECs will have an impact on the implementation of the project. According to ER 1165-2-132, non-HTRW environmental issues that do not comply with federal, state, and local regulations should be discussed in the HTRW evaluation along with HTRW issues.

- *Project Location* – Jeorse Park is located in East Chicago, Indiana, along the Lake Michigan shoreline southeast of Indiana Harbor and Shipping Canal and west of Buffington Harbor. The park is adjacent to railroad lines to the south, a parking lot and parking garage for Ameristar Casino to the west, Lake Michigan to the East, and Buffington Harbor and Beach to the east. The project site is a recreational beach frequented by birders, swimmers, fishermen, and other recreational users. The site includes approximately 14.6 acres of beach and fore dune habitat, nearly 4,500 feet of shoreline, and over 62 acres of lake bottom.

- *Project Description* – The goal of the project is to restore the 14-acres of beach and foredune, and the 4,500 ft of lacustrine habitat to a "more natural state" while enhancing fish foraging and spawning opportunities for migratory birds and near shore fishes. Objectives for the project include: (i) providing foredune stability and enhance opportunities for establishment, (ii) increase floristic quality and quantity of foredune and beach, (iii) increase foraging and spawning habitat for near shore fish species, and (iv) utilize longshore current patterns to induce a more natural habitat configuration. Additionally, an interest has been expressed to reduce beach closures due to E. coli contamination at the site as a project benefit.

- *Water Quality* – The 303(d) listed causes of impairments at the Jeorse Park section of the Lake Michigan shoreline are E. coli, mercury in fish tissue, and polychlorinated biphenyls in fish tissue. Three beach monitoring stations monitor for E. coli at Jeorse Park beach, and exceedances or federal standards are frequent, with approximately 125 days of beach closures listed in 2013 for E. coli exceedances. Generally, major sources or E. coli could include combined sewer overflows (CSOs), wastewater treatment plants or septic systems, agricultural runoff, animal carcasses, or runoff from animal manure. Additionally, E. coli concentrations may be exacerbated by beach grooming practices and the build-up of debris such as algal mats. A Total Maximum Daily Load (TMDL) report was developed in 2004 for E. coli impairment along this portion of the Lake Michigan Shoreline. The report primarily attributed elevated E. coli to tributary loadings (e.g., Burns Ditch, Dunes Creek, Trail Creek, Indiana Harbor Ship Canal), and TMDL alternatives for reducing loads at tributaries and reducing beach users at select beaches were supported by the model results. However, E. coli concentrations at Jeorse Park were not included in the calibrated fate and transport model. A 2011 investigation of E. coli sources was conducted by USGS, the investigation suggested that contamination is likely derived from gulls and geese, with some contributions from humans and cormorants with a plurality from gulls. However, the results were highly variable and suggested a combination of factors, including upstream sources. A USGS/MSU study is ongoing to develop a calibrated fate and transport model of E. coli for Jeorse Park. As relationships between wildlife, CSO discharges, long shore current regimes, and elevated E. coli concentrations at Jeorse Park Beach are not well understood at the present time, significant USACE coordination with an ongoing MSU/USGS study will be necessary to quantitatively establish whether project alternatives will reduce E. coli beach closings. The E. coli levels will not impact the project implementation, since construction workers will not contact the water in a manner which would expose them to bacteria. The proposed project will potentially help reduce E. coli levels. The project is not expected to increase E. coli since it appears that the most likely source of the bacteria is related to seagulls and rubbish, and the project will seek to replace seagull habitat with migratory bird habitat, and requirements for long-term maintenance of the beach area will be required as part of the project agreement.

  Mercury and PCBs in fish tissue is also listed as impairments to this segment of the Lake Michigan Shoreline. The target date for adoption of TMDLs for these impairments is in 2025. Although mercury and PCB contamination in fish tissue is a 303(d) listed water quality impairment at Jeorse Park, there is no evidence of PCB or mercury contamination

at the site and increasing avian habitat is unlikely to catalyze further dispersion of these contaminants into the wildlife and environment. Mercury is a common contaminant of concern at Lake Michigan beaches near metropolitan areas, in part due to atmospheric deposition. Other water quality considerations in the vicinity of Jeorse Park beach could include Indiana Harbor Canal, which discharges to Lake Michigan approximately one mile north of the project study area. Indiana Harbor is on the IDEM 303(d) list as an impaired waterway for the following impairments: Mercury, E. coli, oil and grease, Impaired Biotic Communities, and PCBs in Fish Tissue. The environmental restoration project at Jeorse Park Beach is intended to improve water quality and contribute to the long-term restoration plan of the region, and will compliment the various other restoration efforts within Indiana Harbor and the region

- *Geology and Soil Quality* – The project area is within the Calumet Lacustrine Plain. Sands are very permeable and thus precipitation passes through the soils quickly to the groundwater below without much attenuation by microorganisms or physical or chemical processes (NIRPC, 2005). Soil within the study boundary and its immediate vicinity is primarily man-made or modified land, consisting mostly of sandy fill from the lakeward expansion of the beach, which primarily occurred in the 1950s. The project site contains sand and gravel from beach and shoreline deposits for bars, spits, and beach as well as some dune sand as part of the Atherton Formation. There are no available soil quality data for the project site, but there is no indication that the existing soil is contaminated or that it contains slag or other undesirable fill materials. Soil contamination is prevalent at nearby (0.5 to 2 miles) properties due to historical industrial activities. Soil contamination is not expected at the project site, as the project site primarily contains coarse, sandy soils, and the site has been a recreational beach area since lakeward expansion in the 1960's.

- *Groundwater* – The Calumet region of northwestern Indiana and northeastern Illinois is one of the most industrialized areas of the United States. Current and historical industries in the region and various filling activities (with slag, dredged material, and other industrial wastes) and the subsequent chemical runoff from these sources have resulted in the general degradation of surface and groundwater resources in the region (IDNR, 1990). Groundwater chemistry data for the project site is not available. Several leaky underground storage tanks (LUSTs), brownfields, CERCLIS sites, dry cleaners, or other properties with historical groundwater contamination, controls, or environmental restrictive covenants on groundwater usage are present between 0.5-miles and 2-miles from the project site for a broad range of contaminants. These sites do not represent a REC for the site, due to their distance from the project site, the presence of a groundwater flow divide which isolates some of the sites from Jeorse Park, groundwater near the lake exhibits a strong hydraulic connection to lake water, and because contact with groundwater is unlikely for this project scope.

- *Wetlands* - The FWS Wetland Mapper Online indicates that the study area includes a lacustrine littoral unconsolidated bottom (L2UB) wetland along the shore. The project area also encompasses a lacustrine limnetic wetland (L1UB). Rehabilitation and

enhancement of the lacustrine wetland is included as a project objective, and project construction activities will not degrade area wetlands.

- *Database Search* - A search of available environmental records was conducted utilizing Environmental Database Resources, Inc. (EDR) online. The standard search was extended 0.5 miles to accommodate the size and orientation of the project site. When the site status could not be confirmed with the information included in the EDR report, information available through USEPA Enviromapper and IDEMs virtual file cabinet was used, if available. The EDR Database search returned one CERCLIS site, one CERCLIS NFRAP site, three RCRA CORRACTS sites, one RCRA non-CORRACTS TSD site, three RCRA generators, fifteen LUST/UST sites, two IN AUL sites, nine IN Brownfields sites, one IN SWRCY site, two IN SPILLS sites, three RCRA NonGen sites, one US MINES site, one FTTS site, five FINDS sites, four IN MANIFEST site, one NY MANIFEST site, one IN TIER2 site, three IN SCP site, three IN Hist Auto Stat sites, and thirteen IN RGA LUST sites. The amount of sites returned in the database search reflects the industrial nature of the area. While a number of the sites returned during the database search have outstanding regulatory and environmental issues, none of the sites present an environmental concern that would affect project activities due to distance or isolation from the site. Project activities will not negatively affect ongoing pollution issues at these sites. The sites with outstanding issues and their distance to the project site are summarized in Table 3. The Jeorse Park site has not been associated with industrial activity, and the project will serve to attract migratory wildlife away from otherwise contaminated areas.

- *Aerial and Historic Photograph Review* - A historical topographic map review shows that in 1900 the shoreline began where the current railroad lines are located, approximately 500-feet south of the current shoreline. By 1953, lakeward expansion had created land for "Lees Park" (approximately where the East Chicago Marina is currently located), and a public water supply facility. The 1960 topographic data shows further lakeward expansion and the formation of "Jeorse Park", which encompassed both the beach area and an open plot of land and parking lot which jettied into the lake. Aerial photography in 1987 shows construction of the Marina, two breakwaters, and additional lakeward expansion of the Jeorse Park beach area. In 1998, formation of the Showboat Mardi Gras Casino complex (currently Ameristar Casino) is evident, and breakwaters were constructed around the casino vessel. Little change has occurred near the project site since 1998. Aerial photography indicates that Jeorse Park has been operated as a recreational area since land formation in the 1960's. No development or significant topography changes were evident in the project area since this time. Aerial photography and topographic maps did not indicate the presence of an environmental concern.

- *Site Visit* – A site visit was conducted on September 16, 2014. While some accumulation of rubbish was noted, no major indication of dumping or other RECs were noted. A large presence of waterfowl was observed, and several decaying animal carcasses were noted. This may suggest that more frequent beach maintenance activities, such as park cleanups, could potentially improve E. coli related beach closure frequencies. Two anglers were

present during the site visit. The local sponsor should remove rubbish and litter from the site prior to the start of construction.

No investigation can wholly eliminate uncertainty regarding the potential for encountering a REC associated with a project area. Performance of this investigation is intended to reduce, but not eliminate, uncertainty regarding the potential for encountering a REC in connection with a project area.

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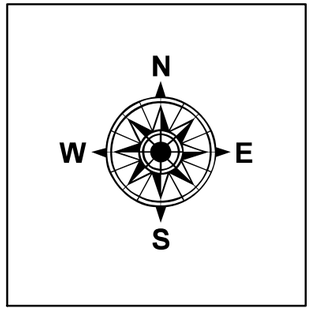
FIGURES

Figure 1 - Jeorse Park - Section 506 - Study Area

US. ARMY CORPS of ENGINEERS
CHICAGO DISTRICT

Legend

Jeorse Park Study Area



Date: 6/19/2014

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Figure 2 - Jeorse Park Wetland Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Jeorse Park Beach
Sec 506

Mar 23, 2014

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

Riparian

- Herbaceous
- Forested/Shrub

Riparian Status

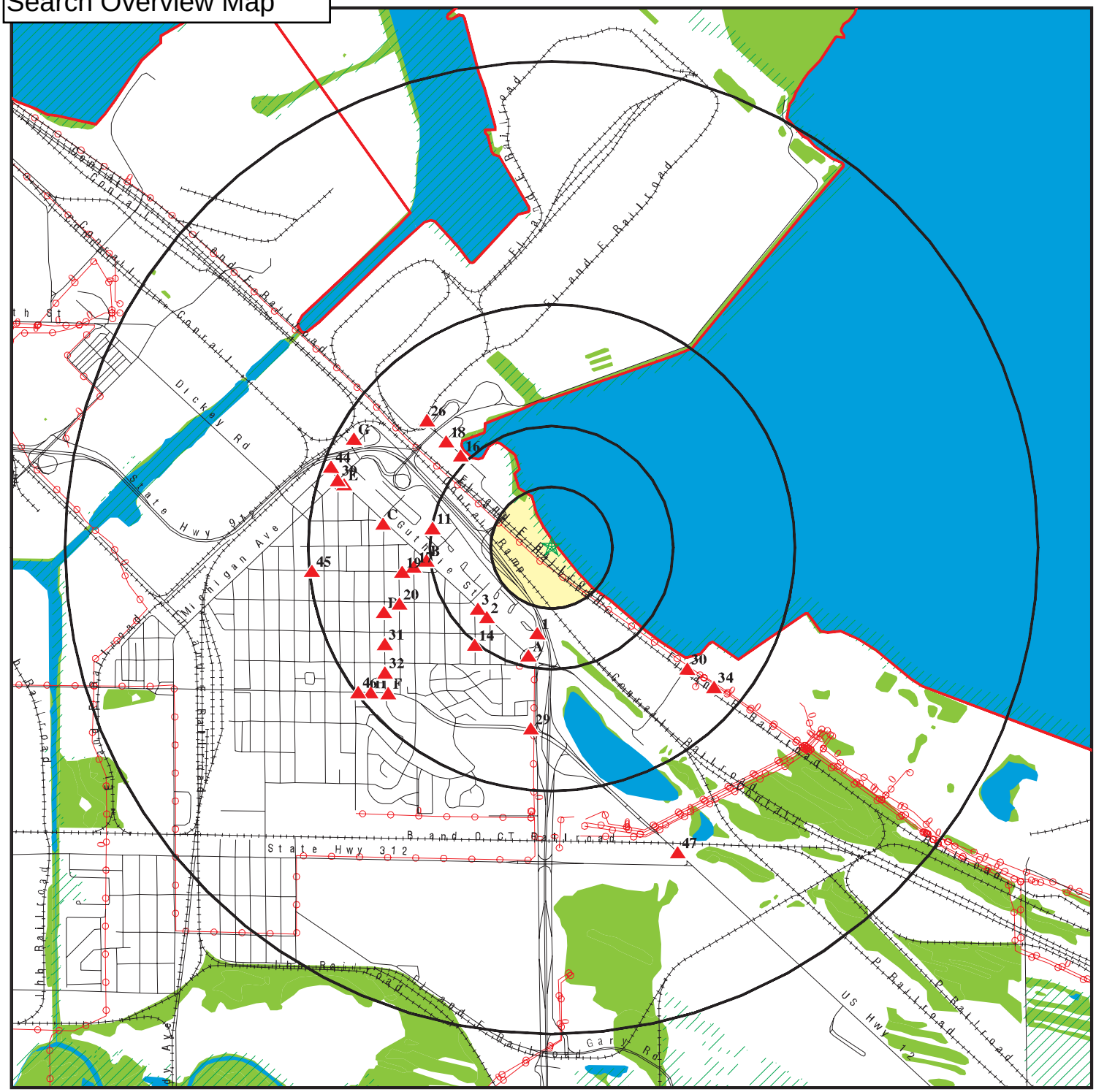
- Digital Data

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Figure 3 - Database Search Overview Map

OVERVIEW MAP - 3852396.2s



0 1/2 1 2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- County Boundary
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Jeorse Park SEC 506	CLIENT: U.S. Army Corps of Engineers
ADDRESS: 3599 Ameristar BLVD Approximate Address Gary IN 46406	CONTACT: Ben Oneil
LAT/LONG: 41.6476 / 87.4317	INQUIRY #: 3852396.2s
	DATE: February 10, 2014 7:03 pm

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Figure 4 – Looking northwest across the site, a large seagull population presence is evident at Jeorse Park Beach. Small boulders are protruding from the beach and shoreline in the foreground, the boulders are possibly remnants of lakeward land expansion in the early 1900s.

Figure 5 – Looking southeast across the project site.

Figure 6 – Ameristar Breakwater separating Jeorse Park Beach and Ameristar Casino Harbor.

Figure 7 – Looking southeast across the project site from the Ameristar Breakwater.

Figure 8 – Looking northeast from the Ameristar Breakwater, algal mats, woody debris, and refuse accumulating in the quiescent Ameristar harbor. Photo depicts conditions outside of the project area, near where a sluice gate is being proposed for increased circulation within the project area.

Figure 9 – Photo of rubbish accumulating between rip rap boulders of the Ameristar Breakwater. Photo is looking southeast and within the project limits. Rubbish is typical within breakwater crevasses. Photo shows what is potentially a household plastic trash bag.

Figure 10 – Seven animal carcasses (three fish and four birds) were discovered within the project footprint during the site visit. Photo is looking northwest toward the Ameristar Breakwater and shows three decaying bird carcasses. The presence of dead animals is not necessarily an indication of an REC, especially considering the presence of large waterfowl populations, though it could function as a source for E. coli contamination.

Figure 11 – Foredune system looking northwest across project area.

Figure 12 – Foredune system looking southeast across project area.

Figure 13 – Photo of the southeast corner of the parking lot, just outside of the project limits. A tire pile, coarse aggregate staging, torn plastic tarps, and apparently discarded floating blocks are present. Multiple coarse aggregate and gravel piles may be for future parking lot repaving.

ATTACHMENT A: IEPA 303(D) LISTING

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER WABASH	5120107010010	HOWARD CO	INB0711_00	GRASSY FORK DITCH - HARPER DITCH	E. COLI
UPPER WABASH	5120107010030	TIPTON CO	INB0713_00	MUD CREEK - HEADWATERS (TIPTON)	E. COLI
UPPER WABASH	5120107010040	TIPTON CO	INB0714_00	MUD CREEK	E. COLI
UPPER WABASH	5120107010040	TIPTON CO	INB0714_T1001	ROSS DITCH	E. COLI
UPPER WABASH	5120107010040	TIPTON CO	INB0714_T1002	NORTH CREEK	E. COLI
UPPER WABASH	5120107010040	TIPTON CO	INB0714_T1003	OFF DITCH	E. COLI
UPPER WABASH	5120107010060	TIPTON CO	INB0716_00	TURKEY CREEK - ASKREN/ ROUND PRAIRIE DITCHES	E. COLI
UPPER WABASH	5120107010060	TIPTON CO	INB0716_T1030	TURKEY CREEK	E. COLI
UPPER WABASH	5120107010070	HOWARD CO	INB0717_00	MUD CREEK	E. COLI
UPPER WABASH	5120107010070	HOWARD CO	INB0717_T1001	WILDCAT CREEK	E. COLI
UPPER WABASH	5120107010070	HOWARD CO	INB0717_T1001	WILDCAT CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107010070	HOWARD CO	INB0717_T1031	MUD CREEK - IRWIN CREEK	E. COLI
UPPER WABASH	5120107010080	HOWARD CO	INB0718_T1002	WILDCAT CREEK - JEROME	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_00	STAHL DITCH	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1005	PRAIRIE CREEK DITCH - UPPER	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1006	WILDCAT CREEK - MAINSTEM	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1006	WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1025	WILDCAT CREEK - UPSTREAM OF WATER INTAKE	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1025	WILDCAT CREEK - UPSTREAM OF WATER INTAKE	PCBS IN FISH TISSUE
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1032	PRAIRIE CREEK DITCH - LOWER	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1033	CANNON - GOYER DITCH	E. COLI
UPPER WABASH	5120107010100	HOWARD CO	INB071A_T1034	WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107010110	HOWARD CO	INB071B_00	FINN DITCH AND OTHER TRIBUTARIES	E. COLI
UPPER WABASH	5120107010110	HOWARD CO	INB071B_T1007	KOKOMO CREEK - HEADWATERS	E. COLI
UPPER WABASH	5120107010120	HOWARD CO	INB071C_00	MARTIN - YOUNGMAN DITCH BASIN	E. COLI

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER WABASH	5120107010100	HOWARD CO	INB071C_T1026	KOKOMO CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1008	WILDCAT CREEK (UPSTREAM OF SPRING RUN)	E. COLI
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1008	WILDCAT CREEK (UPSTREAM OF SPRING RUN)	MERCURY IN FISH TISSUE
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1008	WILDCAT CREEK (UPSTREAM OF SPRING RUN)	PCBS IN FISH TISSUE
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1009	WILDCAT CREEK (DOWNSTREAM OF SPRING RUN)	E. COLI
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1009	WILDCAT CREEK (DOWNSTREAM OF SPRING RUN)	MERCURY IN FISH TISSUE
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1009	WILDCAT CREEK (DOWNSTREAM OF SPRING RUN)	PCBS IN FISH TISSUE
UPPER WABASH	5120107020010	HOWARD CO	INB0721_T1011	HALIHAN DITCH	E. COLI
UPPER WABASH	5120107020020	HOWARD CO	INB0722_00	LITTLE WILDCAT CREEK - EAST FORK	E. COLI
UPPER WABASH	5120107020020	HOWARD CO	INB0722_00	LITTLE WILDCAT CREEK - EAST FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107020020	HOWARD CO	INB0722_00B	EAST FORK LITTLE WILDCAT CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107020020	TIPTON CO	INB0722_T1009	KELLY WEST DITCH	E. COLI
UPPER WABASH	5120107020020	TIPTON CO	INB0722_T1009	KELLY WEST DITCH	PCBS IN FISH TISSUE
UPPER WABASH	5120107020020	TIPTON CO	INB0722_T1035	UNNAMED TRIBUTARY	DISSOLVED OXYGEN
UPPER WABASH	5120107020020	TIPTON CO	INB0722_T1035	UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020020	TIPTON CO	INB0722_T1035	UNNAMED TRIBUTARY	NUTRIENTS
UPPER WABASH	5120107020020	TIPTON CO	INB0722_T1035	UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107020020	HOWARD CO	INB0722_T1036	LITTLE WILDCAT CREEK - WEST FORK	E. COLI
UPPER WABASH	5120107020020	HOWARD CO	INB0722_T1036	LITTLE WILDCAT CREEK - WEST FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107020020	HOWARD CO	INB0722_T1036A	WEST FORK LITTLE WILDCAT CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107020020	HOWARD CO	INB0722_T1036B	WEST FORK LITTLE WILDCAT CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107020030	HOWARD CO	INB0723_00	VOGUS DITCH	E. COLI
UPPER WABASH	5120107020030	HOWARD CO	INB0723_T1001	LYNN RUN	E. COLI
UPPER WABASH	5120107020030	HOWARD CO	INB0723_T1002	BUTLER DITCH	E. COLI
UPPER WABASH	5120107020030	HOWARD CO	INB0723_T1010	LITTLE WILDCAT CREEK (UPSTREAM OF VOGUS DITCH)	E. COLI

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER WABASH	5120107020040	HOWARD CO	INB0724_00	WEST HONEY CREEK	E. COLI
UPPER WABASH	5120107020050	HOWARD CO	INB0725_00	HONEY CREEK	E. COLI
UPPER WABASH	5120107020050	HOWARD CO	INB0725_T1011	WILDCAT CREEK - MAINSTEM	E. COLI
UPPER WABASH	5120107020050	HOWARD CO	INB0725_T1011	WILDCAT CREEK - MAINSTEM	MERCURY IN FISH TISSUE
UPPER WABASH	5120107020050	HOWARD CO	INB0725_T1011	WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107020060	HOWARD CO	INB0726_T1012	DEARINGER DITCH-KIDDLE DITCH	E. COLI
UPPER WABASH	5120107020060	HOWARD CO	INB0726_T1012	DEARINGER DITCH-KIDDLE DITCH	PCBS IN FISH TISSUE
UPPER WABASH	5120107020060	HOWARD CO	INB0726_T1038	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020060	HOWARD CO	INB0726_T1039	WILDCAT CREEK-UNNAMED TRIBUTARIES	E. COLI
UPPER WABASH	5120107020060	HOWARD CO	INB0726_T1040	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020060	HOWARD CO	INB0726_T1041	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020070	HOWARD CO	INB0727_00	PETES RUN	E. COLI
UPPER WABASH	5120107020070	HOWARD CO	INB0727_T1010	DAVISON DITCH	E. COLI
UPPER WABASH	5120107020070	HOWARD CO	INB0727_T1011	MCDOWELL DITCH	E. COLI
UPPER WABASH	5120107020070	HOWARD CO	INB0727_T1012	MOORE DITCH	E. COLI
UPPER WABASH	5120107020070	HOWARD CO	INB0727_T1013	WILDCAT CREEK	E. COLI
UPPER WABASH	5120107020070	HOWARD CO	INB0727_T1013	WILDCAT CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107020070	CARROLL CO	INB0727_T1037	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020070	CARROLL CO	INB0727_T1038	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020070	CARROLL CO	INB0727_T1039	WILDCAT CREEK (BURLINGTON)-UNNAMED TRIBUTARIES	E. COLI
UPPER WABASH	5120107020070	CARROLL CO	INB0727_T1040	WILDCAT CREEK - MAINSTEM	E. COLI
UPPER WABASH	5120107020070	CARROLL CO	INB0727_T1040	WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107020080	CARROLL CO	INB0728_00	WILDCAT CREEK - HURRICANE CREEK	E. COLI
UPPER WABASH	5120107020080	CARROLL CO	INB0728_T1014	WILDCAT CREEK - MAINSTEM	E. COLI
UPPER WABASH	5120107020080	CARROLL CO	INB0728_T1014	WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1001	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1002	WILDCAT CREEK (PRINCE WM RD)-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1003	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1004	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1015	WILDCAT CREEK (U/S OF UNNAMED TRIBUTARY AT PRINCE WM RD)	E. COLI
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1015	WILDCAT CREEK (U/S OF UNNAMED TRIBUTARY AT PRINCE WM RD)	PCBS IN FISH TISSUE
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1016	WILDCAT CREEK (D/S OF UNNAMED TRIBUTARY AT PRINCE WM RD)	E. COLI
UPPER WABASH	5120107020090	CARROLL CO	INB0729_T1016	WILDCAT CREEK (D/S OF UNNAMED TRIBUTARY AT PRINCE WM RD)	PCBS IN FISH TISSUE
UPPER WABASH	5120107020100	TIPPECANOE CO	INB072A_00	TRIBUTARIES OF WILDCAT CREEK	E. COLI
UPPER WABASH	5120107020100	TIPPECANOE CO	INB072A_T1016	WILDCAT CREEK - MAINSTEM	E. COLI
UPPER WABASH	5120107020100	TIPPECANOE CO	INB072A_T1016	WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107030010	CLINTON CO	INB0731_00	WILDCAT CREEK, MIDDLE FORK	E. COLI
UPPER WABASH	5120107030010	CLINTON CO	INB0731_T1041	WILDCAT CREEK, MIDDLE FORK HEADWATERS	E. COLI
UPPER WABASH	5120107030010	CLINTON CO	INB0731_T1042	WILDCAT CREEK, MIDDLE FORK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107030010	CLINTON CO	INB0731_T1043	WHITEMAN DITCH	E. COLI
UPPER WABASH	5120107030010	CLINTON CO	INB0731_T1044	HARNESS DITCH	E. COLI
UPPER WABASH	5120107030020	CARROLL CO	INB0732_00	WILDCAT CREEK, MIDDLE FORK	E. COLI
UPPER WABASH	5120107030020	CLINTON CO	INB0732_T1040	WILDCAT CREEK, MIDDLE FORK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107030020	CARROLL CO	INB0732_T1042	WILDCAT CREEK, MIDDLE FORK	E. COLI
UPPER WABASH	5120107030020	CARROLL CO	INB0732_T1043	MIDDLE FORK BRANCH-SCOFIELD DITCH	DISSOLVED OXYGEN
UPPER WABASH	5120107030020	CARROLL CO	INB0732_T1043	MIDDLE FORK BRANCH-SCOFIELD DITCH	E. COLI
UPPER WABASH	5120107030020	CLINTON CO	INB0732_T1044	ROBERTSON BRANCH	E. COLI
UPPER WABASH	5120107030030	CLINTON CO	INB0733_00	MIDDLE FORK WILDCAT CREEK AND OTHER TRIBUTARIES	E. COLI
UPPER WABASH	5120107030030	CLINTON CO	INB0733_T1027	SILVERTHORN BRANCH DOWNSTREAM OF ROSSVILLE STP	E. COLI
UPPER WABASH	5120107030040	CLINTON CO	INB0734_00	CAMPBELLS RUN AND TRIBUTARIES	E. COLI

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER WABASH	5120107030040	CLINTON CO	INB0734_T1045	CAMPBELLS RUN - MAINSTEM	E. COLI
UPPER WABASH	5120107030050	CLINTON CO	INB0735_00	CRIPE RUN	E. COLI
UPPER WABASH	5120107030050	CLINTON CO	INB0735_T1046	CAMPBELLS RUN	E. COLI
UPPER WABASH	5120107030060	TIPPECANOE CO	INB0736_00	WILDCAT CREEK (UPSTREAM OF TRIBUTARIES)	E. COLI
UPPER WABASH	5120107030060	CLINTON CO	INB0736_01	WILDCAT CREEK (DOWNSTREAM OF TRIBUTARIES)	E. COLI
UPPER WABASH	5120107030060	TIPPECANOE CO	INB0736_T1001	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107030060	TIPPECANOE CO	INB0736_T1002	WILDCAT CREEK-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107030060	TIPPECANOE CO	INB0736_T1003	HOG RUN-UNNAMED TRIBUTARY	E. COLI
UPPER WABASH	5120107030060	CLINTON CO	INB0736_T1004	HOG RUN	E. COLI
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_00	MIDDLE FORK WILDCAT CREEK - PETTIT	E. COLI
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_01	WILDCAT CREEK, MIDDLE FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_01A	WILDCAT CREEK, MIDDLE FORK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_01B	WILDCAT CREEK, MIDDLE FORK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_01C	WILDCAT CREEK, MIDDLE FORK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_01D	WILDCAT CREEK, MIDDLE FORK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107030070	TIPPECANOE CO	INB0737_01E	WILDCAT CREEK, MIDDLE FORK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107040010	CLINTON CO	INB0741_00	WILDCAT CREEK, SOUTH FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040010	CLINTON CO	INB0741_02	TALBERT DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER WABASH	5120107040020	CLINTON CO	INB0742_01	WILDCAT CREEK, SOUTH FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040020	CLINTON CO	INB0742_02	WILDCAT CREEK, SOUTH FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040020	CLINTON CO	INB0742_03	WILDCAT CREEK, SOUTH FORK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040040	CLINTON CO	INB0744_T1019	SOUTH FORK WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107040040	CLINTON CO	INB0744_T1019E	WILDCAT CREEK, SOUTH FORK- UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER WABASH	5120107040100	CLINTON CO	INB074A_T1020	SOUTH FORK WILDCAT CREEK - MAINSTEM	PCBS IN FISH TISSUE
UPPER WABASH	5120107040100	CLINTON CO	INB074A_T1048	HEAVILON DITCH - HEADWATER	DISSOLVED OXYGEN

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER WABASH	5120107040110	TIPPECANOE CO	INB074B_T1021	SOUTH FORK WILDCAT CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040130	TIPPECANOE CO	INB074D_T1022	SOUTH FORK WILDCAT CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040130	TIPPECANOE CO	INB074D_T1029	SOUTH FORK WILDCAT CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107040140	TIPPECANOE CO	INB074E_T1023	SOUTH FORK WILDCAT CREEK	PCBS IN FISH TISSUE
UPPER WABASH	5120107050010	TIPPECANOE CO	INB0751_00	DRY RUN AND OTHER TRIBUTARIES	E. COLI
UPPER WABASH	5120107050010	TIPPECANOE CO	INB0751_T1024	WILDCAT CREEK - OSRW	E. COLI
UPPER WABASH	5120107050010	TIPPECANOE CO	INB0751_T1024	WILDCAT CREEK - OSRW	PCBS IN FISH TISSUE
UPPER WABASH	5120107050010	TIPPECANOE CO	INB0751_T1028	WILDCAT CREEK	E. COLI
UPPER WABASH	5120107050010	TIPPECANOE CO	INB0751_T1028	WILDCAT CREEK	PCBS IN FISH TISSUE
LOWER WABASH	5120111160030	SULLIVAN CO	INB11G3_01	BUSSERON CREEK, WEST FORK	E. COLI
LOWER WABASH	5120111160040	SULLIVAN CO	INB11G4_00	BUSSERON CREEK-WEST TRIBUTARY/SULPHER CREEK	MERCURY IN FISH TISSUE
LOWER WABASH	5120111160040	SULLIVAN CO	INB11G4_T1024	SULPHER CREEK	DISSOLVED OXYGEN
LOWER WABASH	5120111160040	SULLIVAN CO	INB11G4_T1024	SULPHER CREEK	IMPAIRED BIOTIC COMMUNITIES
LOWER WABASH	5120111160040	SULLIVAN CO	INB11G4_T1024	SULPHER CREEK	PH
LOWER WABASH	5120111160070	SULLIVAN CO	INB11G7_00	KETTLE CREEK	DISSOLVED OXYGEN
LOWER WABASH	5120111160100	SULLIVAN CO	INB11GA_00	BUSSERON CREEK-ROBBINS CREEK	NUTRIENTS
GREAT LAKES	4040001020010	LAKE CO	INC0121_00	INDIANA HARBOR CANAL-LAKE GEORGE BR	E. COLI
GREAT LAKES	4040001020010	LAKE CO	INC0121_00	INDIANA HARBOR CANAL - LAKE GEORGE BR	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001020010	LAKE CO	INC0121_00	INDIANA HARBOR CANAL - LAKE GEORGE BR	OIL AND GREASE
GREAT LAKES	4040001020010	LAKE CO	INC0121_00	INDIANA HARBOR CANAL - LAKE GEORGE BR	PCBS IN FISH TISSUE
GREAT LAKES	4040001020010	LAKE CO	INC0121_T1001	INDIANA HARBOR CANAL MAIN CHANNEL	E. COLI
GREAT LAKES	4040001020010	LAKE CO	INC0121_T1001	INDIANA HARBOR CANAL MAIN CHANNEL	PCBS IN FISH TISSUE
GREAT LAKES	4040001020010	LAKE CO	INC0121G_G1074	LAKE MICHIGAN SHORELINE EAST OF IHC	MERCURY IN FISH TISSUE
GREAT LAKES	4040001020010	LAKE CO	INC0121G_G1074	LAKE MICHIGAN SHORELINE EAST OF IHC	PCBS IN FISH TISSUE
GREAT LAKES	4040001020010	LAKE CO	INC0121G_G1075	LAKE MICHIGAN SHORELINE WEST OF IHC	MERCURY IN FISH TISSUE

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT LAKES	4040001020010	LAKE CO	INC0121G_G1075	LAKE MICHIGAN SHORELINE WEST OF IHC	PCBS IN FISH TISSUE
GREAT LAKES	4040001020010	LAKE CO	INC0121G_G1078	INDIANA HARBOR	MERCURY IN FISH TISSUE
GREAT LAKES	4040001020010	LAKE CO	INC0121G_G1078	INDIANA HARBOR	PCBS IN FISH TISSUE
GREAT LAKES	4040001020020	LAKE CO	INC0122_00	GRAND CALUMET RIVER - HEADWATERS	AMMONIA
GREAT LAKES	4040001020020	LAKE CO	INC0122_00	GRAND CALUMET RIVER - HEADWATERS	CYANIDE
GREAT LAKES	4040001020020	LAKE CO	INC0122_00	GRAND CALUMET RIVER - HEADWATERS	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001020020	LAKE CO	INC0122_00	GRAND CALUMET RIVER - HEADWATERS	OIL AND GREASE
GREAT LAKES	4040001020020	LAKE CO	INC0122_00	GRAND CALUMET RIVER - HEADWATERS	PCBS IN FISH TISSUE
GREAT LAKES	4040001020020	LAKE CO	INC0122_T1097	GRAND CALUMET RIVER - GARY TO INDIANA HARBOR CANAL	CYANIDE
GREAT LAKES	4040001020020	LAKE CO	INC0122_T1097	GRAND CALUMET RIVER - GARY TO INDIANA HARBOR CANAL	E. COLI
GREAT LAKES	4040001020020	LAKE CO	INC0122_T1097	GRAND CALUMET RIVER - GARY TO INDIANA HARBOR CANAL	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001020020	LAKE CO	INC0122_T1097	GRAND CALUMET RIVER - GARY TO INDIANA HARBOR CANAL	OIL AND GREASE
GREAT LAKES	4040001020020	LAKE CO	INC0122_T1097	GRAND CALUMET RIVER - GARY TO INDIANA HARBOR CANAL	PCBS IN FISH TISSUE
GREAT LAKES	4040001030010	LAKE CO	INC0131_T1003	TURKEY CREEK MAINSTEM	E. COLI
GREAT LAKES	4040001030010	LAKE CO	INC0131_T1003	TURKEY CREEK MAINSTEM	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001030020	LAKE CO	INC0132_T1004	TURKEY CREEK - MERRILLVILLE	E. COLI
GREAT LAKES	4040001030030	LAKE CO	INC0133_T1005	MAIN BEAVER DAM DT - ABOVE CROWN POINT WWTP	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001030040	LAKE CO	INC0134_T1006	MAIN BEAVER DAM DITCH ABOVE NILES DT	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001030040	LAKE CO	INC0134_T1068	NILES DITCH	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001030050	LAKE CO	INC0135_T1069	DEEP RIVER U/S US30	E. COLI
GREAT LAKES	4040001030050	LAKE CO	INC0135_T1069	DEEP RIVER U/S US30	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001030050	LAKE CO	INC0135_T1094	DEEP RIVER TRIBUTARY MERRILLVILLE	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001030050	LAKE CO	INC0135_T1094	DEEP RIVER TRIBUTARY MERRILLVILLE	SILTATION
GREAT LAKES	4040001030060	LAKE CO	INC0136_T1070	DEEP RIVER	E. COLI
GREAT LAKES	4040001040020	LAKE CO	INC0142_T1008	DEEP RIVER - BURNS DITCH	IMPAIRED BIOTIC COMMUNITIES

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT LAKES	4040001040020	LAKE CO	INC0142_T1009	LITTLE CALUMET RIVER	PCBS IN FISH TISSUE
GREAT LAKES	4040001040030	PORTER CO	INC0143_01	BURNS DITCH	PCBS IN FISH TISSUE
GREAT LAKES	4040001040030	PORTER CO	INC0143_02	BURNS DITCH (OSRW)	PCBS IN FISH TISSUE
GREAT LAKES	4040001040030	PORTER CO	INC0143_03	BURNS DITCH	PCBS IN FISH TISSUE
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1002	WILLOW CREEK (UPSTREAM OF CHRISMAN DITCH)	DISSOLVED OXYGEN
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1002	WILLOW CREEK (UPSTREAM OF CHRISMAN DITCH)	E. COLI
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1002	WILLOW CREEK (UPSTREAM OF CHRISMAN DITCH)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1002A	WILLOW CREEK - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1002B	WILLOW CREEK - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1002C	CHRISMAN DITCH	E. COLI
GREAT LAKES	4040001040030	PORTER CO	INC0143_T1003	WILLOW CREEK (UPSTREAM OF CHRISMAN DITCH)	E. COLI
GREAT LAKES	4040001050010	PORTER CO	INC0151_00	SALT CREEK TRIBUTARIES	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050010	PORTER CO	INC0151_T1012	SALT CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_01	SALT CREEK (VALPARAISO, IN)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_02	SALT CREEK (UPSTREAM OF CLARK DITCH)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_03	SALT CREEK (DOWNSTREAM OF CLARK DITCH)	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_03	SALT CREEK (DOWNSTREAM OF CLARK DITCH)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1001	BEAUTY CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1002	SALT CREEK - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1002	SALT CREEK - UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1003	SALT CREEK - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1003A	CLARK DITCH - UNNAMED HEADWATER TRIBUTARY	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1003B	CLARK DTICH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1004	CLARK DITCH	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1004	CLARK DITCH	IMPAIRED BIOTIC COMMUNITIES

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1004A	CLARK DITCH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1005B	SALT CREEK - UNNAMED TRIBUTARY (LAKE LOUISE)	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1005B	SALT CREEK - UNNAMED TRIBUTARY (LAKE LOUISE)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1006	SALT CREEK - UNNAMED TRIBUTARY (SEDLEY, IN)	E. COLI
GREAT LAKES	4040001050020	PORTER CO	INC0152_T1006	SALT CREEK - UNNAMED TRIBUTARY (SEDLEY, IN)	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050030	PORTER CO	INC0153_T1015	SALT CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050040	PORTER CO	INC0154_00	DAMON RUN - SWANSON LAMPORTE DITCH	E. COLI
GREAT LAKES	4040001050040	PORTER CO	INC0154_T1095	DAMON RUN AND TRIBUTARY	E. COLI
GREAT LAKES	4040001050050	PORTER CO	INC0155_00	GUSTAFSON DITCH - OTHER TRIBUTARIES	E. COLI
GREAT LAKES	4040001050050	PORTER CO	INC0155_00	GUSTAFSON DITCH - OTHER TRIBUTARIES	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050050	PORTER CO	INC0155_T1017	SALT CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001050050	PORTER CO	INC0155_T1098	SQUIRREL CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001060020	PORTER CO	INC0162_T1104	RICE LAKE TRIB AND OUTLET STREAMS	E. COLI
GREAT LAKES	4040001060030	PORTER CO	INC0163_T1105	COFFEE CREEK BASIN	E. COLI
GREAT LAKES	4040001060040	PORTER CO	INC0164_T1018	LITTLE CALUMET RIVER - EAST ARM	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001060040	PORTER CO	INC0164_T1018	LITTLE CALUMET RIVER - EAST ARM	PCBS IN FISH TISSUE
GREAT LAKES	4040001060040	PORTER CO	INC0164_T1086	LITTLE CALUMET RIVER	PCBS IN FISH TISSUE
GREAT LAKES	4040001060040	PORTER CO	INC0164_T1108	PORTAGE BURNS WATERWAY	PCBS IN FISH TISSUE
GREAT LAKES	4040001070010	LA PORTE CO	INC0171_01	TRAIL CREEK, EAST BRANCH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001070010	LA PORTE CO	INC0171_T1004	TRAIL CREEK, EAST BRANCH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001070010	LA PORTE CO	INC0171_T1005	TRAIL CREEK, EAST BRANCH - UNNAMED TRIBUTARY	E. COLI
GREAT LAKES	4040001070010	LA PORTE CO	INC0171_T1010	DINGLER LAKE INLET	E. COLI
GREAT LAKES	4040001070030	LA PORTE CO	INC0173_T1020	TRAIL CREEK	MERCURY IN FISH TISSUE
GREAT LAKES	4040001070030	LA PORTE CO	INC0173_T1020	TRAIL CREEK	PCBS IN FISH TISSUE
GREAT LAKES	4040001080010	PORTER CO	INC0181G_G1093	LAKE MICHIGAN SHORELINE-DUNES	MERCURY IN FISH TISSUE

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT LAKES	4040001080010	PORTER CO	INC0181G_G1093	LAKE MICHIGAN SHORELINE-DUNES	PCBS IN FISH TISSUE
GREAT LAKES	4040001080020	PORTER CO	INC0182_00	DUNES CREEK	E. COLI
GREAT LAKES	4040001080020	PORTER CO	INC0182_00	DUNES CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001080020	PORTER CO	INC0182_T1089	DUNES CREEK	E. COLI
GREAT LAKES	4040001080020	PORTER CO	INC0182_T1089	DUNES CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001080020	PORTER CO	INC0182_T1091	MUNSON DITCH	E. COLI
GREAT LAKES	4040001080020	PORTER CO	INC0182_T1091	MUNSON DITCH	IMPAIRED BIOTIC COMMUNITIES
GREAT LAKES	4040001080040	PORTER CO	INC0184_00	KINTZELE DITCH AND TRIBS	E. COLI
GREAT LAKES	4040001080040	PORTER CO	INC0184_T1080	KINZELE DITCH AND TRIBS	E. COLI
GREAT LAKES	4040001090010	LA PORTE CO	INC0191G_G1092	LAKE MICHIGAN SHORELINE-LAPORTE	MERCURY IN FISH TISSUE
GREAT LAKES	4040001090010	LA PORTE CO	INC0191G_G1092	LAKE MICHIGAN SHORELINE-LAPORTE	PCBS IN FISH TISSUE
GREAT LAKES	4040001100050	LA PORTE CO	INC01A5_T1071	GALENA RIVER	E. COLI
GREAT MIAMI	5080003010010	WAYNE CO	ING0311_T1001	WHITEWATER RIVER, WF	E. COLI
GREAT MIAMI	5080003010020	WAYNE CO	ING0312_T1002	WHITEWATER RIVER, WEST FORK	E. COLI
GREAT MIAMI	5080003010030	WAYNE CO	ING0313_00	NETTLE CREEK	E. COLI
GREAT MIAMI	5080003010040	WAYNE CO	ING0314_00	WHITEWATER RIVER - PRONGHORN RUN	PCBS IN FISH TISSUE
GREAT MIAMI	5080003010040	WAYNE CO	ING0314_T1003	WHITEWATER RIVER, WEST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003010060	WAYNE CO	ING0316_00	WHITEWATER RIVER - CRIETZ CREEK	E. COLI
GREAT MIAMI	5080003010060	WAYNE CO	ING0316_T1004	WHITEWATER RIVER, WEST FORK	E. COLI
GREAT MIAMI	5080003010060	WAYNE CO	ING0316_T1004	WHITEWATER RIVER, WEST FORK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003010100	WAYNE CO	ING031A_00	MARTINDALE CREEK - ECONOMY	E. COLI
GREAT MIAMI	5080003010080	WAYNE CO	ING031B_00	MORGAN CREEK - WEST BROOK	E. COLI
GREAT MIAMI	5080003010120	WAYNE CO	ING031C_00	MARTINDALE CREEK - BEARD RUN	E. COLI
GREAT MIAMI	5080003010140	WAYNE CO	ING031E_T1005	WHITEWATER RIVER - MILTON	E. COLI
GREAT MIAMI	5080003020040	WAYNE CO	ING0324_00	GREENS FORK CREEK - WILLIAMSBURG CREEK	E. COLI

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT MIAMI	5080003020040	WAYNE CO	ING0324_00	GREENS FORK CREEK - WILLIAMSBURG CREEK	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003020050	WAYNE CO	ING0325_00	GREENS FORK	E. COLI
GREAT MIAMI	5080003020060	WAYNE CO	ING0326_00	GREENS FORK	E. COLI
GREAT MIAMI	5080003020060	WAYNE CO	ING0326_T1001	FRANKLIN CREEK	E. COLI
GREAT MIAMI	5080003020070	FAYETTE CO	ING0327_T1001	MIXED CREEK	E. COLI
GREAT MIAMI	5080003020070	WAYNE CO	ING0327_T1006	WHITEWATER RIVER, WEST FORK	E. COLI
GREAT MIAMI	5080003020070	WAYNE CO	ING0327_T1006	WHITEWATER RIVER, WEST FORK	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_00	NOLANDS FORK	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1001	BOWEN DITCH	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1002	CRETE DRAIN	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1003	NOLANDS FORK-UNNAMED TRIBUTARY	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1004	KELLY DITCH	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1005	NOLANDS FORK-UNNAMED TRIBUTARIES	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1006	NOLANDS FORK-UNNAMED TRIBUTARY	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1007	POLE CREEK	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1008	LINE BROOK	E. COLI
GREAT MIAMI	5080003030010	WAYNE CO	ING0331_T1009	SLOW RUN	E. COLI
GREAT MIAMI	5080003030020	WAYNE CO	ING0332_01	NOLANDS FORK	E. COLI
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_00	NOLANDS FORK	E. COLI
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_00	NOLANDS FORK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1001	WEBSTER CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1002	WEB BRANCH	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1003	SINGLE CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1004	LONG CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1005	CAIN DITCH	IMPAIRED BIOTIC COMMUNITIES

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1006	RICH CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1007	FORK CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1008	NOLANDS FORK-UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1010	GEPHART DITCH	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030030	WAYNE CO	ING0333_T1011	CROWN CREEK	IMPAIRED BIOTIC COMMUNITIES
GREAT MIAMI	5080003030050	FAYETTE CO	ING0335_00	NOLANDS FORK	E. COLI
GREAT MIAMI	5080003040010	FAYETTE CO	ING0341_T1007	WHITEWATER RIVER, WEST FORK	E. COLI
GREAT MIAMI	5080003040060	FAYETTE CO	ING0346_00	WILLIAMS CREEK	E. COLI
GREAT MIAMI	5080003040070	FAYETTE CO	ING0347_00	LITTLE WILLIAMS CREEK	E. COLI
GREAT MIAMI	5080003040070	FAYETTE CO	ING0347_01	WILLIAMS CREEK	E. COLI
GREAT MIAMI	5080003040080	FAYETTE CO	ING0348_T1010	WHITEWATER RIVER, WEST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003040090	FRANKLIN CO	ING0349_T1011	WHITEWATER RIVER, WEST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003040110	FRANKLIN CO	ING034B_00	WHITEWATER RIVER	PCBS IN FISH TISSUE
GREAT MIAMI	5080003040130	FRANKLIN CO	ING034D_00	WHITEWATER RIVER	PCBS IN FISH TISSUE
GREAT MIAMI	5080003040130	FRANKLIN CO	ING034D_01	WHITEWATER CANAL	E. COLI
GREAT MIAMI	5080003050050	FRANKLIN CO	ING0355_00	BULL FORK SALT CREEK	DISSOLVED OXYGEN
GREAT MIAMI	5080003060020	FRANKLIN CO	ING0362_00	WHITEWATER RIVER	PCBS IN FISH TISSUE
GREAT MIAMI	5080003060020	FRANKLIN CO	ING0362_01	WHITEWATER CANAL	E. COLI
GREAT MIAMI	5080003070060	WAYNE CO	ING0376_00	SHORT CREEK AND OTHER TRIBS	PCBS IN FISH TISSUE
GREAT MIAMI	5080003070060	WAYNE CO	ING0376_T1013	WHITEWATER RIVER, EAST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003070060	WAYNE CO	ING0376_T1027	WHITEWATER RIVER, EAST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003070110	UNION CO	ING037B_T1016	WHITEWATER RIVER, EAST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003070120	UNION CO	ING037C_T1017	WHITEWATER RIVER, EAST FORK	PCBS IN FISH TISSUE
GREAT MIAMI	5080003080030	FRANKLIN CO	ING0383_00	BLUE CREEK - NEUKAM BRANCH	E. COLI
GREAT MIAMI	5080003080040	FRANKLIN CO	ING0384_T1001	WOLF CREEK	E. COLI

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
GREAT MIAMI	5080003080040	FRANKLIN CO	ING0384_T1002	BLUE CREEK	E. COLI
GREAT MIAMI	5080003080080	FRANKLIN CO	ING0388_00	BIG CEDAR CREEK	E. COLI
GREAT MIAMI	5080003080080	FRANKLIN CO	ING0388_T1001	BIG CEDAR CREEK-UNNAMED TRIBUTARY (SLEEPY HOLLOW)	E. COLI
GREAT MIAMI	5080003080080	FRANKLIN CO	ING0388_T1002	BIG CEDAR CREEK-UNNAMED TRIBUTARIES	E. COLI
GREAT MIAMI	5080003080090	DEARBORN CO	ING0389_T1019	WHITEWATER RIVER (UPSTREAM OF WHISTLE CREEK)	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080090	DEARBORN CO	ING0389_T1019	WHITEWATER RIVER (UPSTREAM OF WHISTLE CREEK)	PCBS IN FISH TISSUE
GREAT MIAMI	5080003080090	DEARBORN CO	ING0389_T1020	WHITEWATER RIVER (DOWNSTREAM OF WHISTLE CREEK)	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080090	DEARBORN CO	ING0389_T1020	WHITEWATER RIVER (DOWNSTREAM OF WHISTLE CREEK)	PCBS IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_00	LOGAN CREEK AND OTHER TRIBS	E. COLI
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_00	LOGAN CREEK AND OTHER TRIBS	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_00	LOGAN CREEK AND OTHER TRIBS	PCBS IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1001	LOGAN CREEK - UNNAMED TRIBUTARY (DEARBORN-FRANKLIN COUNTY LINE)	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1002	LOGAN CREEK - UNNAMED TRIBUTARY	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1003	LOGAN CREEK - UNNAMED TRIBUTARY (NORTH OF BISCHOFF ROAD)	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1004	LOGAN CREEK - UNNAMED TRIBUTARY (CHAPPELOW RIDGE)	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1005	LOGAN CREEK - UNNAMED TRIBUTARIES (SR 48)	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1006	LOGAN CREEK - UNNAMED TRIBUTARY	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1007	MCCANN CREEK	MERCURY IN FISH TISSUE
GREAT MIAMI	5080003080100	DEARBORN CO	ING038A_T1008	BULL RUN	MERCURY IN FISH TISSUE
OHIO RIVER	5090203	SWITZERLAND CO	INH1_00	OHIO RIVER - OHIO STATE LINE TO MARKLAND DAM	DIOXINS
OHIO RIVER	5090203	SWITZERLAND CO	INH1_00	OHIO RIVER - OHIO STATE LINE TO MARKLAND DAM	E. COLI
OHIO RIVER	5090203	SWITZERLAND CO	INH1_00	OHIO RIVER - OHIO STATE LINE TO MARKLAND DAM	PCBS IN FISH TISSUE
OHIO RIVER	5090203	SWITZERLAND CO	INH2_00	OHIO RIVER - MARKLAND TO KENTUCKY RIVER	E. COLI
OHIO RIVER	5090203	SWITZERLAND CO	INH2_00	OHIO RIVER - MARKLAND TO KENTUCKY RIVER	PCBS IN FISH TISSUE

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
OHIO RIVER	5140101	CLARK CO	INH3_00	OHIO RIVER - KENTUCKY R TO BATTLE CR	E. COLI
OHIO RIVER	5140101	CLARK CO	INH3_00	OHIO RIVER - KENTUCKY R TO BATTLE CR	PCBS IN FISH TISSUE
OHIO RIVER	5140101	CLARK CO	INH3_M01	OHIO RIVER - BATTLE CR TO MCALPINE DAM	E. COLI
OHIO RIVER	5140101	CLARK CO	INH3_M01	OHIO RIVER - BATTLE CR TO MCALPINE DAM	PCBS IN FISH TISSUE
OHIO RIVER	5140101	HARRISON CO	INH4_00	OHIO RIVER - MCALPINE TO GREENWOOD, KY	E. COLI
OHIO RIVER	5140101	HARRISON CO	INH4_00	OHIO RIVER - MCALPINE TO GREENWOOD, KY	PCBS IN FISH TISSUE
OHIO RIVER	5140101	HARRISON CO	INH4_M01	OHIO RIVER - GREENWOOD, KY TO SALT CR	DIOXINS
OHIO RIVER	5140101	HARRISON CO	INH4_M01	OHIO RIVER - GREENWOOD, KY TO SALT CR	E. COLI
OHIO RIVER	5140101	HARRISON CO	INH4_M01	OHIO RIVER - GREENWOOD, KY TO SALT CR	PCBS IN FISH TISSUE
OHIO RIVER	5140201	PERRY CO	INH5_00	OHIO RIVER - SALT CR TO CANNELTON	DIOXINS
OHIO RIVER	5140201	PERRY CO	INH5_00	OHIO RIVER - SALT CR TO CANNELTON	E. COLI
OHIO RIVER	5140201	PERRY CO	INH5_00	OHIO RIVER - SALT CR TO CANNELTON	PCBS IN FISH TISSUE
OHIO RIVER	5140201	WARRICK CO	INH6_00	OHIO RIVER - CANNELTON TO NEWBURGH	MERCURY IN FISH TISSUE
OHIO RIVER	5140201	WARRICK CO	INH6_00	OHIO RIVER - CANNELTON TO NEWBURGH	PCBS IN FISH TISSUE
OHIO RIVER	5140201	VANDERBURGH CO	INH7_00	OHIO RIVER - NEWBURGH TO GREEN R	DIOXINS
OHIO RIVER	5140201	VANDERBURGH CO	INH7_00	OHIO RIVER - NEWBURGH TO GREEN R	PCBS IN FISH TISSUE
OHIO RIVER	5140202	VANDERBURGH CO	INH8_00	OHIO RIVER - GREEN RIVER TO EVANSVILLE	E. COLI
OHIO RIVER	5140202	VANDERBURGH CO	INH8_00	OHIO RIVER - GREEN RIVER TO EVANSVILLE	MERCURY IN FISH TISSUE
OHIO RIVER	5140202	VANDERBURGH CO	INH8_00	OHIO RIVER - GREEN RIVER TO EVANSVILLE	PCBS IN FISH TISSUE
OHIO RIVER	5140202	POSEY CO	INH8_M01	OHIO RIVER - EVANSVILLE TO UNIONTOWN	E. COLI
OHIO RIVER	5140202	POSEY CO	INH8_M01	OHIO RIVER - EVANSVILLE TO UNIONTOWN	MERCURY IN FISH TISSUE
OHIO RIVER	5140202	POSEY CO	INH8_M01	OHIO RIVER - EVANSVILLE TO UNIONTOWN	PCBS IN FISH TISSUE
OHIO RIVER	5140202	POSEY CO	INH9_00	OHIO RIVER - UNIONTOWN TO WABASH R	E. COLI
OHIO RIVER	5140202	POSEY CO	INH9_00	OHIO RIVER - UNIONTOWN TO WABASH R	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001010060	ST JOSEPH CO	INK0116_00	GEYER DITCH - GORDON AIRPORT/ CRUMSTOWN	PCBS IN FISH TISSUE

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120001010100	ST JOSEPH CO	INK011A_00	KANKAKEE RIVER-SOUSLEY LAKE-TASCHER DT	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001010100	LA PORTE CO	INK011A_T1001	KANKAKEE RIVER-MAINSTEM	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001010110	LA PORTE CO	INK011B_01	COLLINS DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001010110	LA PORTE CO	INK011B_T1001	COLLINS DITCH - UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001010130	LA PORTE CO	INK011D_T1002	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001020040	ST JOSEPH CO	INK0124_02	POTATO CREEK (DOWNSTREAM OF WORSTER LAKE)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001020050	ST JOSEPH CO	INK0125_03	POTATO CREEK	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001030010	LA PORTE CO	INK0131_T1003	KANKAKEE RIVER-MAINSTEM	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001030030	LA PORTE CO	INK0133_T1004	KANKAKEE RIVER-MAINSTEM	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001030040	LA PORTE CO	INK0134_T1005	KANKAKEE RIVER-MAINSTEM	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001030040	LA PORTE CO	INK0134_T1005	KANKAKEE RIVER-MAINSTEM	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001030080	LA PORTE CO	INK0138_T1006	KANKAKEE RIVER-MAINSTEM	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001030080	LA PORTE CO	INK0138_T1006	KANKAKEE RIVER-MAINSTEM	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001030120	LA PORTE CO	INK013C_T1007	KANKAKEE RIVER-MAINSTEM	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001030120	LA PORTE CO	INK013C_T1007	KANKAKEE RIVER-MAINSTEM	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001040060	LA PORTE CO	INK0146_T1008	KANKAKEE RIVER	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001040060	LA PORTE CO	INK0146_T1008	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001040070	LA PORTE CO	INK0147_T1009	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001050070	MARSHALL CO	INK0157_T1001	BUNCH DITCH, EAST BRANCH (HEADWATER)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001050100	KOSCIUSKO CO	INK015A_T1002	LAKE ARM	DISSOLVED OXYGEN
UPPER ILLINOIS	7120001050100	KOSCIUSKO CO	INK015A_T1002	LAKE ARM	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001050100	KOSCIUSKO CO	INK015A_T1002	LAKE ARM	NUTRIENTS
UPPER ILLINOIS	7120001050100	KOSCIUSKO CO	INK015A_T1002	LAKE ARM	PH
UPPER ILLINOIS	7120001060050	MARSHALL CO	INK0165_00	YELLOW RIVER - LISTENBERGER/CLIFFTON DITCHES	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_01	YELLOW RIVER	PCBS IN FISH TISSUE

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1001	YELLOW RIVER - UNNAMED TRIBUTARY (MARSHALL CO)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1002	YELLOW RIVER - UNNAMED TRIBUTARY (MARSHALL CO)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1003	UNNAMED DITCH (OAK GROVE, IN)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1004	YELLOW RIVER - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1005	YELLOW RIVER - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1006	BICKLE DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1006A	SARBER DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060060	STARKE CO	INK0166_T1006B	BOLEN DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060100	STARKE CO	INK016A_01	YELLOW RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060100	STARKE CO	INK016A_T1001	YELLOW RIVER - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060100	STARKE CO	INK016A_T1002	CANNON DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060100	STARKE CO	INK016A_T1002A	CANNON DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001060100	STARKE CO	INK016A_T1003	CAVANAUGH DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001080030	LA PORTE CO	INK0183_M1011	KANKAKEE RIVER-ENGLISH LAKE	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001080030	LA PORTE CO	INK0183_M1011	KANKAKEE RIVER-ENGLISH LAKE	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001080070	LA PORTE CO	INK0187_M1012	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001080070	PORTER CO	INK0187_M1112	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001080090	PORTER CO	INK0189_M1103	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001090050	PORTER CO	INK0195_T1013	CROOKED CREEK	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001090050	PORTER CO	INK0195_T1013	CROOKED CREEK	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001090060	PORTER CO	INK0196_01	CROOKED CREEK, WEST BRANCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001090070	PORTER CO	INK0197_T1014	CROOKED CREEK	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001090070	PORTER CO	INK0197_T1014	CROOKED CREEK	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001090090	PORTER CO	INK0199_T1015	CROOKED CREEK	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001090100	PORTER CO	INK019A_01	COBB DITCH (UPSTREAM OF SELVERS DITCH)	IMPAIRED BIOTIC COMMUNITIES

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BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120001090110	PORTER CO	INK019B_02	LUDINGTON DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001090130	PORTER CO	INK019D_M1105	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001090150	PORTER CO	INK019F_01	BREYFOGEL DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001090150	PORTER CO	INK019F_M1104	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001090150	PORTER CO	INK019F_T1005B	COBB CREEK - UNNAMED TRIBUTARY (HEBRON, IN)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_01	WOLF CREEK (UPSTREAM OF SR 49)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_02	WOLF CREEK (DOWNSTREAM OF SR 49)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1003	LATERAL NO 77	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1004	WOLF CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1005	WOLF CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1006	SCRADER DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1006A	SCHRADER DITCH - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1007	WOLF CREEK - UNNAMED TRIBUTARY (WHEATFIELD, IN)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100010	JASPER CO	INK01A1_T1008	WOLF CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100020	JASPER CO	INK01A2_00	WOLF CREEK-HICKAM LATERAL	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001100030	JASPER CO	INK01A3_01	HODGE DITCH (DOWNSTREAM OF JAMES DITCH)	DISSOLVED OXYGEN
UPPER ILLINOIS	7120001110020	LAKE CO	INK01B2_M1019	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001110030	NEWTON CO	INK01B3_M1020A	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001110030	NEWTON CO	INK01B3_M1020B	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001120040	LAKE CO	INK01C4_M1021	KANKAKEE RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001120050	LAKE CO	INK01C5_T1106	WILLIAMS DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001120050	LAKE CO	INK01C5_T1106	WILLIAMS DITCH	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120001130010	LAKE CO	INK01D1_02	STONY RUN, EAST BRANCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130010	LAKE CO	INK01D1_03	STONY RUN, MIDDLE BRANCH	CHLORIDES
UPPER ILLINOIS	7120001130010	LAKE CO	INK01D1_03	STONY RUN, MIDDLE BRANCH	NUTRIENTS

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120001130020	LAKE CO	INK01D2_01	STONY RUN HEADWATER	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130030	LAKE CO	INK01D3_02	SINGLETON DITCH (DOWNSTREAM OF BRYANT DITCH)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130030	LAKE CO	INK01D3_T1007	BRYANT DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130060	LAKE CO	INK01D6_02	CEDAR CREEK (DOWNSTREAM OF CEDAR LAKE)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130060	LAKE CO	INK01D6_03	FOSS DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130070	LAKE CO	INK01D7_01	CEDAR CREEK	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130080	LAKE CO	INK01D8_03	BRUCE DITCH (DOWNSTREAM OF BELSHAW, IN)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130080	LAKE CO	INK01D8_04	BAILEY DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001130090	LAKE CO	INK01D9_01	BROWN DITCH (NE OF SHELBY, IN	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140010	LAKE CO	INK01E1_00	WEST CREEK-BULL RUN	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140010	LAKE CO	INK01E1_T1108	BULL RUN BASIN	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140010	LAKE CO	INK01E1_T1108	BULL RUN BASIN	NUTRIENTS
UPPER ILLINOIS	7120001140020	LAKE CO	INK01E2_01	WEST CREEK (NORTH OF 165TH AVE)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140020	LAKE CO	INK01E2_T1002	WEST CREEK - UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140020	LAKE CO	INK01E2_T1004	WEST CREEK - UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140020	LAKE CO	INK01E2_T1005	WEST CREEK - UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140030	LAKE CO	INK01E3_02	WEST CREEK (MIDDLE WATERSHED)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120001140030	LAKE CO	INK01E3_T1002	WEST CREEK - UNNAMED TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002020010	JASPER CO	INK0221_T1017	ROWAN DITCH TRIBUTARY	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002020010	JASPER CO	INK0221_T1017	ROWAN DITCH TRIBUTARY	NUTRIENTS
UPPER ILLINOIS	7120002020050	JASPER CO	INK0225_01	RYAN DITCH	NUTRIENTS
UPPER ILLINOIS	7120002020060	JASPER CO	INK0226_T1004A	IROQUOIS RIVER (UPSTREAM OF RENSSELAER, IN)	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002020060	JASPER CO	INK0226_T1004A	IROQUOIS RIVER (UPSTREAM OF RENSSELAER, IN)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002020060	JASPER CO	INK0226_T1004B	IROQUOIS RIVER (DOWNSTREAM OF RENSSELAER, IN)	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002020060	JASPER CO	INK0226_T1004B	IROQUOIS RIVER (DOWNSTREAM OF RENSSELAER, IN)	PCBS IN FISH TISSUE

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120002030050	JASPER CO	INK0235_00	BICE DITCH (LOWER) - OTHER TRIBUTARIES	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002030050	JASPER CO	INK0235_T1019	SLOUGH CREEK	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002030060	JASPER CO	INK0236_02	CARPENTER CREEK (DOWNSTREAM OF REMINGTON, IN)	CHLORIDES
UPPER ILLINOIS	7120002030060	JASPER CO	INK0236_02	CARPENTER CREEK (DOWNSTREAM OF REMINGTON, IN)	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002030060	JASPER CO	INK0236_02	CARPENTER CREEK (DOWNSTREAM OF REMINGTON, IN)	NUTRIENTS
UPPER ILLINOIS	7120002030070	JASPER CO	INK0237_00	CARPENTER CREEK	CHLORIDES
UPPER ILLINOIS	7120002030070	JASPER CO	INK0237_00	CARPENTER CREEK	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002030070	JASPER CO	INK0237_00	CARPENTER CREEK	NUTRIENTS
UPPER ILLINOIS	7120002030070	JASPER CO	INK0237_T1001	CARPENTER CREEK - UNNAMED TRIBUTARY	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002030070	JASPER CO	INK0237_T1001	CARPENTER CREEK - UNNAMED TRIBUTARY	NUTRIENTS
UPPER ILLINOIS	7120002030070	JASPER CO	INK0237_T1003	MAY DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002040030	JASPER CO	INK0243_00	CURTIS CREEK-YEOMAN DITCH	CHLORIDES
UPPER ILLINOIS	7120002040030	JASPER CO	INK0243_00	CURTIS CREEK-YEOMAN DITCH	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002040030	JASPER CO	INK0243_00	CURTIS CREEK-YEOMAN DITCH	NUTRIENTS
UPPER ILLINOIS	7120002040030	JASPER CO	INK0243_T1005	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002040030	JASPER CO	INK0243_T1005	IROQUOIS RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002040040	NEWTON CO	INK0244_T1006	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002040040	NEWTON CO	INK0244_T1006	IROQUOIS RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002040060	NEWTON CO	INK0246_00	MOSQUITO CREEK-SIMONIN DITCH	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002040060	NEWTON CO	INK0246_T1007	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002040060	NEWTON CO	INK0246_T1007	IROQUOIS RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002040070	NEWTON CO	INK0247_T1008	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002040070	NEWTON CO	INK0247_T1008	IROQUOIS RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002040080	NEWTON CO	INK0248_T1009	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002040080	NEWTON CO	INK0248_T1009	IROQUOIS RIVER	PCBS IN FISH TISSUE

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120002040090	NEWTON CO	INK0249_T1006	WEIS DITCH	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002040090	NEWTON CO	INK0249_T1006	WEIS DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050010	NEWTON CO	INK0251_T1010	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002050010	NEWTON CO	INK0251_T1010	IROQUOIS RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002050020	NEWTON CO	INK0252_01	CLARK DITCH	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002050020	NEWTON CO	INK0252_01	CLARK DITCH	NUTRIENTS
UPPER ILLINOIS	7120002050030	NEWTON CO	INK0253_00	THOMPSON DITCH-HAMBRIDGE DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050040	NEWTON CO	INK0254_T1011	IROQUOIS RIVER	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002050040	NEWTON CO	INK0254_T1011	IROQUOIS RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002050050	NEWTON CO	INK0255_02	MONTGOMERY DITCH (DOWNSTREAM OF COUNTY LINE)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050050	NEWTON CO	INK0255_T1001	MONTGOMERY DITCH - UNNAMED HEADWATER TRIBUTARY	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050060	NEWTON CO	INK0256_01A	TALLEY DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050060	NEWTON CO	INK0256_02A	KENT DITCH (KENTLAND, IN)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_01	MONTGOMERY DITCH - UNNAMED TRIBUATARY (KENTLAND, IN)	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_02	MORRSION DITCH	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_02	MORRSION DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_02	MORRSION DITCH	NUTRIENTS
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_02A	MORRISON DITCH - UNNMAED TRIBUTARY	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_02A	MORRISON DITCH - UNNMAED TRIBUTARY	NUTRIENTS
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_03	MONTGOMERY DITCH	DISSOLVED OXYGEN
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_03	MONTGOMERY DITCH	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002050070	NEWTON CO	INK0257_03	MONTGOMERY DITCH	NUTRIENTS
UPPER ILLINOIS	7120002050100	NEWTON CO	INK025A_T1012	IROQUOIS RIVER-SOUTH CONCORD BRANCH (ILL)	MERCURY IN FISH TISSUE
UPPER ILLINOIS	7120002050100	NEWTON CO	INK025A_T1012	IROQUOIS RIVER-SOUTH CONCORD BRANCH (ILL)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_01	SUGAR CREEK (UPSTREAM OF EARL PARK, IN)	PCBS IN FISH TISSUE

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_02	SUGAR CREEK (DOWNSTREAM OF EARL PARK, IN)	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_T1001	SUGAR CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_T1002	SUGAR CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_T1003	SUGAR CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_T1004	SUGAR CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_T1005	SUGAR CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002070020	BENTON CO	INK0272_T1006	SUGAR CREEK - UNNAMED TRIBUTARY	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002150030	NEWTON CO	INK02F3_00	DEARDURFF DITCH AND OTHER TRIBUTARYS	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120002150030	NEWTON CO	INK02F3_T1014	BEAVER CREEK	IMPAIRED BIOTIC COMMUNITIES
UPPER ILLINOIS	7120002150030	NEWTON CO	INK02F3_T1014	BEAVER CREEK	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1004	LITTLE CALUMET RIVER	CHLORIDES
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1004	LITTLE CALUMET RIVER	CYANIDE
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1004	LITTLE CALUMET RIVER	DISSOLVED OXYGEN
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1004	LITTLE CALUMET RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1005	LITTLE CALUMET RIVER	CHLORIDES
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1005	LITTLE CALUMET RIVER	DISSOLVED OXYGEN
UPPER ILLINOIS	7120003030050	LAKE CO	INK0335_T1005	LITTLE CALUMET RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120003030060	LAKE CO	INK0336_T1002	LITTLE CALUMET RIVER	CHLORIDES
UPPER ILLINOIS	7120003030060	LAKE CO	INK0336_T1002	LITTLE CALUMET RIVER	DISSOLVED OXYGEN
UPPER ILLINOIS	7120003030060	LAKE CO	INK0336_T1002	LITTLE CALUMET RIVER	PCBS IN FISH TISSUE
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	AMMONIA
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	CHLORIDES
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	CYANIDE
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	DISSOLVED OXYGEN
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	IMPAIRED BIOTIC COMMUNITIES

Table A3: Waterbody impairments removed from Category 5 due to resegmentation. Assessment information for all AUs resegmented were reevaluated and/or applied to the resulting new AUs as appropriate. The application of impairment information to new AUs may be tracked through the segmentation process with the information in Attachment 1, Table A2 (available as a spreadsheet in electronic format only).

BASIN	HYDROLOGIC UNIT CODE	COUNTY	ASSESSMENT UNIT ID	ASSESSMENT UNIT NAME	CAUSE OF IMPAIRMENT
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	NUTRIENTS
UPPER ILLINOIS	7120003050010	LAKE CO	INK0351_T1001	GRAND CALUMET RIVER - ILLINOIS TO INDIANA HARBOR CANAL	PCBS IN FISH TISSUE

ATTACHMENT B: NRCS SOIL MAP

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Lake County, Indiana

June 11, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:9,080 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lake County, Indiana
Survey Area Data: Version 15, Dec 21, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2012—Mar 28, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Lake County, Indiana (IN089)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Ur	Urban land	29.8	22.2%
Subtotals for Soil Survey Area		**29.8**	**22.2%**
Totals for Area of Interest		**134.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County, Indiana

Ur—Urban land

Map Unit Setting

Elevation: 570 to 790 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 51 degrees F
Frost-free period: 170 to 180 days

Map Unit Composition

Urban land: 100 percent

Description of Urban Land

Interpretive groups

Farmland classification: Not prime farmland
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Other vegetative classification: Trees/Timber (Woody Vegetation)

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ATTACHMENT C: EDR DATABASE SEARCH REPORT

(Found electronically within project folder)