An Assessment of Injury to Human Uses of Fishery Resources in the Grand Calumet River and Indiana Harbor Canal, the Grand Calumet River Lagoons, and Indiana Harbor and the Nearshore Areas of Lake Michigan

Volume II - Appendices

Prepared for:

U.S. Fish and Wildlife Service
Bloomington Field Office
620 South Walker Street
Bloomington, Indiana 47403

Prepared – February 2003 – by:

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United States Geological Survey
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In Association with:
Industrial Economics, Incorporated
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Prepared – February 2003 – by:

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EDUCATION:

Bachelor of Science, Zoology
(Fisheries Biology; Environmental Physiology, Comparative Biochemistry)
University of British Columbia, 1982

SPECIALIZATION:

Principal of MacDonald Environmental Sciences Limited, which was established to provide scientific consulting services in the fields of fisheries and aquatic resource management, stream ecology, environmental quality guidelines and policy development, environmental risk and hazard assessment, and information and technology transfer.

Specialist environmental toxicology and chemistry, ecosystem-based resource management, water quality/water use interactions, and sediment quality assessment.

PROFESSIONAL MEMBERSHIPS:

American Fisheries Society

President Western Division; Past-President, Canadian Aquatic Resources Section; Nominations Committee; Chair, Wetlands Conservation Committee; Newsletter Committee; Membership Committee.

Aquaculture Association of Canada

Association of Professional Biologists of British Columbia

Canadian Association on Water Pollution Research and Control

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EXPERIENCE:

AQUATIC BIOLOGIST - February 1989 to Present

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Independent consulting on fisheries and aquatic resource management, environmental quality, stream ecology, computer data management, and information and technology transfer. Recent projects have been focussed on the development of water quality guidelines, sediment quality guidelines, tissue residue guidelines, environmental quality monitoring programs, fisheries co-management programs, and the assessment of environmental quality.

WATER QUALITY OBJECTIVES OFFICER - September 1984 to February 1989

Water Quality Branch, Inland Waters, Environment Canada
502 - 1001 West Pender Street, Vancouver, B.C. V6E 2M9

Compilation, management and statistical analysis of existing and new information generated to support the formulation of water quality objectives in waters of significant federal interest; generation of water quality criteria information through toxicological, water quality, and other studies; design and implementation of monitoring programs to assess compliance with water quality objectives; preparation of reports and other publications on information developed to formulate water quality objectives; organization of workshops and information exchange sessions on water quality guidelines and objectives; provision of information and advice to technical committees established to resolve the International Joint Commission reference on the Flathead River.

Supervisor: Dr. D. Valiela, Head Water Quality Objectives Division

TECHNICAL PLANNING COORDINATOR - November 1983 to September 1984

Water Quality Branch, Inland Waters, Environment Canada
502 - 1001 West Pender Street, Vancouver, B.C. V6E 2M9

Planning and development of regional water quality programs, including long- and short-term logistics and budgetary requirements and inter-project coordination; planning, organization, expedition, and supervision of special field studies and sampling projects for water quality analysis; pollution surveillance and sediment sampling; planning and implementation on national water quality monitoring programs to assess national trends and conditions.

Supervisor: Dr. W.E. Erlebach, Chief Water Quality Branch

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PUBLICATIONS AND TECHNICAL REPORTS:

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MacDonald, D.D. and B.G. Shepherd. 1983. A review of the Kitimat River watershed. Enhancement Services Branch, Fisheries and Oceans Canada, Vancouver, B.C. 166 pp.

MacDonald, D.D. 1982. A review of the effects of temperature on the developmental timing of East Coast Pacific anadromous salmonids. Internal Report. Enhancement Services Branch. Fisheries and Oceans Canada.

MacDonald, D.D. 1981. On the existence of, and salmonid interaction with, naturally occurring supersaturation. Internal Report. Enhancement Services Branch. Fisheries and Oceans Canada. 11 pp + appendices.

MacDonald, D.D. and B.G. Shepherd. 1980. Proceedings of the Aeration workshop. Enhancement Services Branch, Fisheries and Oceans Canada. 23 pp.

Helm, R.K., D.D. MacDonald, B. Sinclair, G. Stuart, A. Chalmers and B.G. Shepherd. 1980. A review of the Quesnel River watershed. Enhancement Services Branch, Fisheries and Oceans Canada. 72 pp. + appendices.

Helm, R.K., D.D. MacDonald, B. Sinclair, D. Chan, T. Hetherington, A. Chalmers and B.G. Shepherd. 1980. A review of the Nechako River watershed. Enhancement Services Branch, Fisheries and Oceans Canada. 90 pp. + appendices.

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EDUCATION

1974-1975	Bemidji State University, Bemidji, MN
1975-1978	Miami University, Oxford, OH, B.S. Biology Education
1980-1982	Miami University, Oxford, OH, M.S. Zoology
1982-1986	University of Wyoming, Laramie, WY, Ph.D. Zoology and Physiology

PROFESSIONAL CAREER

1977	Undergraduate Teaching Assistant, Vertebrate Zoology, Miami University, Oxford, OH
1978-1980	High School Biology Teacher, Milford Village Schools, Milford, OH
1980-1982	Graduate Teaching Assistant (Limnology, Animal Diversity), Department of Zoology, Miami University, Oxford, OH
1981-1982	Research Assistant with Dr. Robert W. Winner, Department of Zoology, Miami University, Oxford, OH
1982-1983	Graduate Teaching Assistant (Limnology, Lake and Field Ecology, and Human Anatomy and Physiology), Department of Zoology and Physiology, University of Wyoming, Laramie, WY
1983-1986	Research Assistant with Dr. Harold L. Bergman, Department of Zoology and Physiology, University of Wyoming, Laramie, WY
1986-1987	Leader, Invertebrate Toxicology Section, National Fisheries Contaminant Research Center, US Fish and Wildlife Service, Columbia, MO
1987-1996	Leader, Fish and Invertebrate Toxicology Section, National Fisheries Contaminant Research Center/Midwest Science Center/Environmental and Contaminants Research Center/Columbia Environmental Research Center, US Fish and Wildlife Service/National Biological Survey/National Biological Service/US Geological Survey, Columbia, MO
1988-	Research Associate, School of Forestry, Fisheries and Wildlife, University of Missouri, Columbia, MO
1996-	Chief, Aquatic Toxicology Branch, US Geological Survey, Columbia, MO

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PROFESSIONAL SOCIETY MEMBERSHIP AND COMMITTEE ACTIVITIES

Society of Environmental Toxicology and Chemistry (SETAC)
- Nominating Committee (1993)
- Technical Committee (Chair, 1992-1995)
- Short Course Committee (1992-1995)
- Meeting Committee (1992)
- Publications Advisory Council (1995 to present)
- Guest editor for issue 13:12 (1994) of *Environmental Toxicology and Chemistry*
- Coordinating Editor of SETAC Books (1995-2001)
- Editorial Board (1987-1990)
- Board of Directors (National: 1992-1995; 2001 to present)
- Board of Directors (Regional: 1987-1992)
- Liaison to ASTM (1992 to present)
- Membership Committee (Chair, 2001 to present)

American Society for Testing and Materials (ASTM)
- Chair of Committee E47 on Environmental Fate and Effects of Contaminants (1996-2001)
- Chair Subcommittee E47.03 on Sediment Toxicology (1988-1996)
- Subcommittee E47.03 on Sediment Toxicology (1988 to present; Task Groups E1367, E1383, E1391, E1525, E1706)
- Subcommittee E47.01 on Aquatic Toxicology (1988 to present)
- Committee on Standards (1999-2001)
- Subcommittee on the Form and Style Manual (1999-2001)
- Chair of Form and Style Subcommittee for the Committee on Standards (2000-2001)
- Chair Subcommittee E47.03 on Sediment Assessment and Toxicology (2002 to present)

Standards Engineering Society (2002-)

Archives of Environmental Contamination and Toxicology, Editorial Board (1997-)

Environmental Protection Agency Scientific Advisory Boards
- Environmental Effects and Fate Committee - Sediment Criteria Subcommittee member (1988-1996)
- ACQUIRE database review (1994)
- Ecological Risk Assessment colloquium (1994)
- Environmental Effects and Fate Committee - Ammonia Sulfate Subcommittee member (1995)
- National Sediment Inventory (1995 to present)
- Standard Methods Review (Series 835 and 850; 1997)

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National Oceanic and Atmospheric Administration
Cargo Sweeping advisory panel (1994)

Standard Methods
Editorial Board (2000 to present)

JOURNAL REVIEWER

American Society for Testing and Materials Aquatic Toxicology
Archives of Environmental Contamination and Toxicology (Editorial Board)
Canadian Journal of Fisheries and Aquatic Science
Chemosphere
Environmental Toxicology and Chemistry (Editorial Board)
Journal of Great Lakes Research
Journal of the Water Pollution Control Federation

HONORS AND DISTINCTIONS

Eagle Scout (1971)
Magna Cum Laude, Miami University (1978)
Graduate Student Achievement Award, Miami University (1981)
Outstanding Graduate Student in Zoology (awarded by Department of Zoology, Miami University; 1982)
Outstanding Graduate Student (awarded by Phi Sigma, Miami University; 1982)
US Fish and Wildlife Service/National Biological Service Quality Performance Award (awarded for a level IV performance evaluation in 1987, 1989-1994); US Fish and Wildlife Service Special Achievement Award (awarded for a level V performance evaluation in 1988)
Exceptional Service Award, ASTM Committee E47 on Biological Effects and Environmental Fate (1992)
Award for distinguished service on the USEPA GLNPO ARCS project (1993)
Special recognition from SETAC for service as Chair of the Technical Committee 1992-1994 (1994)
Nominated for EPA gold medal for development of standard methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with invertebrates (1994)
Paper by Canfield et al. 1996 in the *Journal of Great Lakes Research* selected as the first runner up for the Chandler-Misener Award for the outstanding paper in the journal in a given year (1997)
Society of Technical Communications competition award of "Excellence" for the book by Ingersoll CG, Dillon T, Biddinger RG, editors. 1997. Ecological risk assessment of contaminated sediment. Pensacola FL: SETAC Press (1998)
USGS on the spot award for serving as an editor on book: Ingersoll CG, Dillon T, Biddinger RG, editors. 1997. Ecological risk assessment of contaminated sediment. Pensacola FL: SETAC Press (1998)

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USGS on the spot award for coordinating research projects associated with the Toxicology Branch (1998)

USGS award for conducting a review of the USGS Water Resources Division NAWQA ecological study plans (1999)

EPA bronze metal for assistance in developing methods for assessing sediment contamination with freshwater invertebrates (1999)

EPA Office of Water team of the quarter (October to December of 1999) for contributions in the development of a methods manual for assessing sediment contamination with freshwater invertebrates (2000)

USGS star award for coordinating research projects associated with the Toxicology Branch (2000)

Society of Technical Communications competition award of "Excellence" for the book by DeFur PL, Crane M, Ingersoll CG, Tattersfield LJ, editors. 1999. Endocrine disruption in invertebrates: Endocrinology, testing, and assessment. Pensacola FL: SETAC Press (2001)

USGS star award for periodically serving as the acting Center Director and for assistance in coordinating the Center review (2001)

ASTM award of appreciation for serving as the Chair of Committee E47 on Biological Effects and Environmental Fate (1996 to 2001)

ASTM service award from the Committee on Standards (2001)

Nominated for the SETAC government service award (2001, 2002)

USGS star award for contribution to the BRD Contaminants Program review (2002)

ASTM Robert J. Painter meritorious award for development of standards (2002)

THESIS AND DISSERTATION

Ingersoll CG. 1982. Effect on *Daphnia pulex* (De Geer) of daily pulse exposures to copper or cadmium. Master's thesis, Miami University, Oxford, OH. 22 p.

Ingersoll CG. 1986. The effects of pH, aluminum, and calcium on survival and growth of brook trout (*Salvelinus fontinalis*) early life stages. Ph.D. thesis, The University of Wyoming, Laramie, WY. 122 p.

PRESENTATIONS

Ingersoll CG, Winner RW. The effect on *Daphnia pulex* of daily, short-term exposures to copper or cadmium. Presented at the 2nd annual meeting of SETAC, Arlington, VA, November 22-25, 1981.

Ingersoll CG, Hlohowskyj I, Mundahl ND. Movements and densities of fantail (*Etheostoma flabellare*), orangethroat (*E. spectabile*), and johnny *(E. nigrum*) darters during spring spawning. Presented at the 63rd annual meeting of the American Society of Ichthyologists and Herpetologists, Florida State University, Tallahassee, FL, June 1983.

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Ingersoll CG, La Point TW, Bergman HL. An early life stage brook trout (*Salvelinus fontinalis*) bioassay testing the independent and combined effects of pH, calcium and aluminum in low conductivity water. Presented at the American Fisheries Society 1984 annual meeting, Cornell University, Ithaca, NY, August 13-16, 1984.

Meyer JS, Ingersoll CG, McDonald LL. Sensitivity analysis of population growth rates estimated from cladoceran chronic toxicity tests. Presented at the 5th annual meeting of SETAC, Arlington, VA, November 4-7, 1984.

Ingersoll CG, La Point TW, Bergman HL. The effects of pH, aluminum and calcium on brook trout (*Salvelinus fontinalis*) hatching, growth and survival. Presented at the 5th annual meeting of SETAC, Arlington, VA, November 4-7, 1984.

Marcus MD, Bergman HL, Ingersoll CG, Mattice JS. A brief summary of surface-water acidification effects on fish. Presented at the Acid Deposition Symposium, The Air Pollution Control Association, Rocky Mountain States Section, Boulder, CO, January 31, 1985.

Tietge J, Ingersoll CG, Johnson R. Histopathological analysis of brook trout *(Salvelinus fontinalis*) fry and adults exposed to pH, calcium and aluminum combinations in low conductivity water. Presented at the International Symposium on Acid precipitation, Muskoka Conference '85, Toronto, ONT, September 15-20, 1985.

Ingersoll CG, La Point TW, Fernandez J, Mount D. The long-term effects of pH, aluminum and calcium on early life stage and adult brook trout (*Salvelinus fontinalis*) survival, growth and reproduction. Presented at the International Symposium on Acid precipitation, Muskoka Conference '85, Toronto, ONT, September 15-20, 1985.

Bergman HL, Parkhurst B, Ingersoll CG, Marcus M, Mattice J. Effects of acidification on fish: Review of laboratory toxicity studies. Presented at the International Symposium on Acid precipitation, Muskoka Conference '85, Toronto, ONT, September 15-20, 1985.

Ingersoll CG, Mount DR, La Point TW, Bergman HL. A comparison of adult and early life stage brook trout (*Salvelinus fontinalis*) response to pH, calcium and aluminum exposure. Presented at the 6th annual meeting of SETAC, St. Louis, MO, November 10-13, 1985.

Breck JE, Ingersoll CG. Modeling the mortality of early life stages of brook trout in response to fluctuating levels of pH, calcium, and aluminum. Presented at the 6th annual meeting of SETAC, St. Louis, MO, November 10-13, 1985.

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Ingersoll CG, Sanchez DA, Tietge J. The effects of pH, calcium and aluminum exposure of the epidermis of brook trout (*Salvelinus fontinalis*) fry. Presented at the 6th annual meeting of SETAC, St. Louis, MO, November 10-13, 1985.

Wood CM, McDonald DG, Tin GC, Ingersoll CG, Mount DR. Evaluation of acid/aluminum stress to early life stages of brook trout by instrumental neutron activation analysis (INAA). Presented at a Ontario Ministry of Natural Resources Seminar, Toronto, ONT, January 31, 1986.

Breck JE, Beauchamp JJ, Ingersoll CG. A microcomputer model for estimating the survival of brook trout early-life stages exposed to different combinations of pH, aluminum, and calcium. Presented at the American Fisheries Society 1986 annual meeting, Providence, RI, September 14-18, 1986.

Ingersoll CG, Mount DR, Hockett JR, Gulley D, Mueller ME, Bergman HL. Relative sensitivity of two brook trout strains exposed to combinations of acidity, aluminum, and calcium. Presented at the 7th annual meeting of SETAC, Arlington, VA, November 2-5, 1986.

Mueller ME, Sanchez DA, Ingersoll CG, Bergman HL. Effects of acid and aluminum on the gills of two strains of juvenile brook trout. Presented at the 8th annual meeting of SETAC, Pensacola, FL, November 9-12, 1987.

Ingersoll CG, Nelson MK, Burton GA, Stemmer K, Winks KE. Toxicity assessment of contaminants associated with sediments from lower Lake Michigan. I: A comparison of acute and chronic test methods with amphipods and midges. Presented at the 9th annual meeting of SETAC, Arlington, VA, November 13-17, 1988.

Nelson MK, Ingersoll CG, Dwyer FJ. Use of *Hyalella azteca* in estuarine sediment toxicity testing. Presented at the 9th annual meeting of SETAC, Arlington, VA, November 13-17, 1988.

Coyle JJ, Ingersoll CG, Buckler DR, May TW. Effects of dietary and waterborne selenium on the reproductive success of bluegill sunfish (*Lepomis macrochirus*). Presented at the 9th annual meeting of SETAC, Arlington, VA, November 13-17, 1988.

Cleveland L, Ingersoll CG, Buckler DR. Effects of simulated episodic pH depressions and aluminum on whole body ions of brook trout. Presented at the 9th annual meeting of SETAC, Arlington, VA. November 13-17, 1988.

Nelson MK, Ingersoll CG. Use of *Hyalella azteca* (Amphipoda) in fresh-and saltwater toxicity testing. Presented at the Midwest Pollution Control Biologist meeting, USEPA Region V, Chicago, IL, March 15-17, 1989.

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Nelson MK, Ingersoll CG. Chronic sediment toxicity testing with *Hyalella azteca* (Amphipoda) and *Chironomus riparius* (Diptera). Presented at the 13th Symposium on Aquatic Toxicology and Risk Assessment, American Society of Testing and Materials, Atlanta, GA, April 16-18, 1989.

Burch SA, Ingersoll CG, Dwyer FJ, Nelson MK, Buckler DR. The toxicity of effluent and reconstituted drain waters from Stillwater National Wildlife Refuge, Nevada, to fish and aquatic invertebrates. Presented at the 4th annual meeting of the Ozark-Prairie Chapter of SETAC, Columbia, MO, April 29, 1989.

Ingersoll CG. Sediment toxicity test methods. Presented at the USEPA Sediment Steering Committee Meeting, Newport, OR, September, 1989.

Ingersoll CG, Dwyer FJ, Burch SA, Nelson MK, Buckler DR. Use of Fresh- and saltwater organisms for the separation of toxic effects of inorganic contaminants from the toxic effects of salinity. Presented at the 10th annual meeting of SETAC, Toronto, ONT, October 28-November 2, 1989.

Cleveland L, Little EE, Ingersoll CG, Wiedmeyer RH. Toxicity of Waterborne and dietary selenium to juvenile bluegill. Presented at the North American Lake Management Society Ninth International Symposium, Austin, TX, November 7-11, 1989.

Coyle JJ, Buckler DR, Ingersoll CG, Fairchild JF, May TW. Effects of dietary and waterborne selenium on the reproductive success of bluegill sunfish (*Lepomis macrochirus*). Presented at the 51st Midwest Fish and Wildlife Conference, Springfield, IL, December 3-6, 1989.

Ingersoll CG. Standardization of sediment toxicity testing methods. Presented at the USEPA Sediment Oversight Technical Committee, Vicksburg, MS, March 20-22, 1990.

Burch SA, Dwyer FJ, Ingersoll CG, Finger SE. Toxicity of waters associated with agricultural irrigation at Stillwater National Wildlife Refuge, Fallon, NV. Presented at Selenium V, San Francisco, CA, March 30-31, 1990.

Coyle JJ, Ingersoll CG. Factors influencing the composition and toxicity of sediment elutriate and pore-water preparations. Presented at the Midwest Pollution Control Biologist Meeting, Chicago, IL, April 10-13, 1990.

Dwyer FJ, Burch SA, Ingersoll CG, Nelson MK, Buckler DR. Toxicity of trace element and salinity mixtures to fresh- and saltwater organisms. Presented at the 14th Symposium on Aquatic Toxicology and Risk Assessment, ASTM, San Francisco, CA, April 22-24, 1990.

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Burch SA, Dwyer FJ, Ingersoll CG. Effects on aquatic organisms of ground water associated with irrigation drainage entering Stillwater Wildlife Management Area, Nevada. Presented at the 5th annual meeting of the Ozark-Prairie SETAC regional chapter, Stillwater, OK, May 12, 1990.

Ross PE, Ankley GT, Burton GA, Crecelius E, Filkins JF, Giesy JP, Ingersoll CG, Landrum PF, Mac MJ, Murphy TJ, Rathbun J, Smith VE, Tatem H, Taylor RW. Assessment and remediation of contaminated sediments: Background and approach. Presented at the International Association for Great Lakes Research, Windsor, ONT, May 13-17, 1990.

Ingersoll CG, Buckler DR, Cleveland L, Coyle JJ, La Point TW, Mehrle PM Nelson MK. Assessment and remediation of contaminated sediment (ARCS). III: Development of sediment apparent effects threshold concentrations for selected Great Lakes areas of concern. Presented at the International Association for Great Lakes Research, Windsor, ONT, May 13-17, 1990.

Ingersoll CG. An Overview of sediment toxicity and bioaccumulation testing methods. Presented to the College of Engineering at the University of Wisconsin, Milwaukee, WI, September 11-13, 1990.

Ingersoll CG. Potential incorporation of sediment toxicity tests as a required tier component in pesticide registration. Presented to the USEPA Aquatic Effects Dialogue Committee, Washington, DC, October 19, 1990.

Ingersoll CG. Sediment quality concentrations for selected Great Lakes areas of concern. Presented at the 17th Aquatic Toxicity Workshop, Vancouver, BC, November 4-7, 1990.

Ingersoll CG, Nelson MK, Coyle JJ. Freshwater sediment toxicity testing procedures. A short-course presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Cleveland L, Buckler DR, Coyle JJ, Ingersoll CG, La Point TW, Nelson MK. Sediment apparent effects threshold concentrations for selected Great Lakes areas of concern. Presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Dwyer FJ, Burch SA, Ingersoll CG, La Point TW, Fairchild JF. Toxicity of linear alkylbenzene sulphonate to fathead minnows and *Hyalella azteca*. Presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

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Landrum, PF, Tsymbal VN, Nelson MK, Ingersoll CG, Cossiaux DC, Burton GA, Sasson-Brickson G. Sediment-associated contaminant toxicity: Assessment by dilution experiments. Presented at the 11th annual meeting of SETAC, Arlington, VA, November 11-15, 1990.

Ingersoll CG, Cleveland L, Coyle JJ, King LB, Nelson MK. Acute and chronic effects of contaminated sediments on the amphipod *Hyalella azteca* and the midges *Chironomus riparius* and *Chironomus tentans*. Presented at the annual meeting of ASTM, Atlantic City, NJ, April 14-16, 1991.

Ingersoll CG. Activities of the ASTM subcommittee E47.03 on sediment toxicology and freshwater chronic sediment toxicity tests. USEPA Contaminated Sediment Assessment Workshop, Narragansett, RI, May 6, 1991.

Ingersoll CG, Burton GA, Cleveland L, Coyle JJ, Nelson MK. The acute and chronic effects of contaminated sediment on the amphipod *Hyalella azteca* and the midges *Chironomus riparius* and *Chironomus tentans*. Presented at the annual meeting of the International Association For Great Lakes Research, Buffalo, NY, June 2-6, 1991.

Lanchaster E, Vargo K, Tracy M, Tracy J, Rathbun J, Ingersoll CG, Burton GA, Henry M, Landrum PK. Predicting sediment toxicity in the Buffalo River from "indicator analyses". Presented at the annual meeting of the International Association For Great Lakes Research, Buffalo, NY, June 2-6, 1991.

Burton GA, Ingersoll CG, Ross P, Burnett L, Henry M, Klaine S, Landrum P, Swift M, Tuchman M. Sediment toxicity assessments: Optimal design considerations. Presented at the annual meeting of the International Association For Great Lakes Research, Buffalo, NY, June 2-6, 1991.

Ingersoll CG. Standardization of sediment toxicity testing methods. Presented to the USEPA Tiered Testing Work group, Washington, DC, September 23, 1991.

Cleveland L, Ingersoll CG, Coyle JJ, Nelson MK. Acute and chronic effects of contaminated sediment on the amphipod *Hyalella azteca* and the midges *Chironomus riparius* and *Chironomus tentans*. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Burton GA, Burnett L, Henry M, Hinman M, Ingersoll C, Klaine S, Landrum P, Nelson M, Ross P, Swift M, Tuchman M. Selecting appropriate test designs for sediment toxicity assessments. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Swift MC, Canfield TJ, La Point TW, Burton GA, Ingersoll CG. Artificial substrates vs. grab samples: Which is better in sediment toxicity assessments? Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

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Tracy, M, Lancaster E, Vargo K, Tracy J, Rathbun J, Ingersoll C, Burton A, Henry M, Landrum P. Predicting sediment toxicity in the Buffalo River from "indicator" analyses. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Nelson MK, Brunson EL, Ingersoll CG, Ellersieck MR. *Hyalella azteca* growth and development in laboratory culture and contaminated sediment. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Ingersoll CG. Short course on development of sediment criteria. Presented at the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Ingersoll CG. Evaluating bioassay performance at Superfund sites. Panel discussion during the 12th annual meeting of SETAC, Seattle, WA, November 3-7, 1991.

Ingersoll CG. Biological assessment of contaminated sediments. Presented to the personnel at the US Fish and Wildlife Bay Estuary Program, Olympia, WA, November 8, 1991.

Ingersoll CG. Use of the apparent effects threshold (AET) approach for assessing aquatic effects of contaminated sediment. Presented to the College of Engineering at the University of Wisconsin, Madison, WI, November 19, 1991.

Ingersoll CG. Whole sediment toxicity testing. Presented at the 4th annual USEPA Superfund environmental evaluation workshop, San Antonio, TX, February 25-27, 1992.

Ingersoll CG. Assessment of contaminated sediment. Presented to the Biology Department at Southwest Missouri State University, Springfield, MO, March 13, 1992.

Ingersoll CG, Cleveland L, Coyle JJ, Dwyer FJ. A comparison of methods used to assess contaminated sediment. Presented at the North American Benthological Society, Louisville, KY, May 25-29, 1992.

Ingersoll CG. Summary of ASTM Activities on freshwater and marine sediment test methods. Presented at the USEPA Tiered Testing Workshop for Freshwater and Marine sediments, USEPA Office of Water and Office of R&D, Washington, DC, September 16, 1992.

Ingersoll CG. Overview of fisheries work group studies for the Milltown Endangerment Assessment Project. Fisheries work group meeting, Denver, CO, September 29, 1992.

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Ingersoll CG. Great Lakes sediment toxicity studies. Presented to Drury College students, Columbia, MO, October 3, 1992.

Brumbaugh WG, Wiedmeyer RH, Ingersoll CG, Mount DR, Stubblefield WA. Milltown Reservoir-Clark Fork River, Montana: Chemical characterization of metals in sediments and pore Waters. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Canfield TJ, Fairchild FJ, Ingersoll CG, La Point TW. Milltown Reservoir-Clark Fork River, Montana: Assessing benthic invertebrate abundance and community structure in areas exposed to metals contaminated runoff. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Kemble NE, Ingersoll CG, Brunson EL, Dwyer FJ, Monda DP, Woodward DF. Milltown Reservoir-Clark Fork River, Montana: Assessing sediment toxicity to invertebrates and fish. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Besser JM, Brumbaugh WG, Kemble NE, Ingersoll CG. Milltown Reservoir-Clark Fork River, Montana: Factors affecting metal bioavailability in contaminated sediment. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Sappington LC, Buckler DR, Dwyer FJ, Ingersoll CG, Jones JR, Ellersieck MR, Mayer FL. Use of the surrogate species concept in assessing contaminant risk to endangered and threatened fishes. Presented at the 13th annual meeting of SETAC, Cincinnati, OH, November 8-12, 1992.

Ingersoll CG. Overview of results of studies to develop standard sediment methods. Presented to the USEPA, Duluth, MN, January 3-4, 1993.

Ingersoll CG. Approaches for assessing contaminated sediment. Presented to Eastman Kodak, Rochester, NY, January 13, 1993.

Ingersoll CG. Data interpretation: Sediment quality guidelines. Presented to the College of Engineering at the University of Wisconsin, Madison, WI, April 14, 1993.

Dwyer FJ, Ingersoll CG. Critical issues in sediment toxicology: Chronic sediment toxicity testing. Presented at the annual meeting of ASTM, Atlanta, GA, April 25-28, 1993.

Ingersoll CG. Statistical analysis of sediment toxicity tests. Presented at USEPA Headquarters, Washington, DC, June 3, 1993.

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Nelson MK, Cleveland L, Coyle JJ, King LB, Kemble NE, Crecelius EA, Ingersoll CG. Reliability of current sediment threshold concentrations and relative species sensitivity based on results of whole sediment exposures. Presented at the International Association for Great Lakes Research, Green Bay, WI, June, 6-10, 1993.

Burton GA, Ingersoll C, and Tuchman M. Evaluating the strengths and weakness of sediment toxicity tests for initial assessments of contamination. Presented at the International Association for Great Lakes Research, Green Bay, WI, June, 6-10, 1993.

Fox, RG, Crecelius E, Ingersoll C, Burton GA. Integrated sediment assessment of Saginaw Bay, Michigan for the ARCS program. Presented at the International Association on Water Pollution Research and Control, Milwaukee, WI, June 14-16, 1993.

Ingersoll CG. Overview of freshwater sediment assessment methods. Presented to the US Army Corps of Engineers, Denver, CO, June 18, 1993.

Ingersoll CG. Assessment of contaminated sediments. Short course presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Ingersoll CG, Ankley GT, Benoit DA, Burton GA, Dwyer FJ, Greer IE, Norberg-King TJ, Winger PV. Standardization of national USEPA methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Norberg-King, TJ, Ankley GT, Ingersoll CG, Burton GA, Hoke R, Kubiz NJ, Landrum PF. Choosing species and methods for standardized tests with freshwater sediments. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

Burton GA, Ankley GT, Ingersoll CG, Norberg-King TJ, Winger PV. Evaluation of sediment toxicity test methods: Round robin testing design. Presented at the 14th annual meeting of SETAC, Houston, TX, November 14-18, 1993.

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Chris Ingersoll, John Besser, and Jim Dwyer, Midwest Science Center (MSC), Biological Resources Division, U.S. Geological Survey, Columbia, Missouri.

Ingersoll CG, Canfield TJ, Dwyer FJ, Ehrhardt EA, Haverland PS, Kemble NE, MacDonald DD, Field LJ, Long ER. Predictions of sediment toxicity using sediment quality guidelines (SQGs). Presented at the 7th ASTM Symposium on Environmental Toxicology and Risk Assessment, St. Louis, MO. April 7-10, 1997.

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Ingersoll CG. Sediment toxicity testing. A presentation at a short course for the U.S. EPA Great Lakes National Research Program Office on "Collection analysis, and interpretation of sediment quality data", Chicago, IL, November 3-4, 1998.

Canfield TJ, Ingersoll CG. A case study on assessing sediment quality in the Great Lakes using the sediment quality triad. A presentation at a short course for the U.S. EPA Great Lakes National Research Program Office on "Collection analysis, and interpretation of sediment quality data", Chicago, IL, November 3-4, 1998.

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MacDonald DD, Ingersoll CG, Crane J. An ecosystem-based framework for assessing sediment quality in the Great Lakes basin. A presentation at a short course for the U.S. EPA Great Lakes National Research Program Office on "Collection analysis, and interpretation of sediment quality data", Chicago, IL, November 3-4, 1998.

Berry WJ, Field LJ, Long ER, Hansen DJ, Ingersoll CG, Keating FJ, MacDonald DD, Mount DR. The best of both worlds: Improving sediment assessment by combining the use of empirically-derived and equilibrium partitioning approaches. Presented at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

Kemble NE, Dwyer FJ, Ingersoll CG, Schuerenberg HD. Relative sensitivity of endpoints measured in long-term water-only exposures with the amphipod *Hyalella azteca* and the midge *Chironomus tentans.* Presented at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

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Kemble NE, Dwyer FJ, Ingersoll CG, Williams HD. Relative sensitivity of endpoints measured in long-term water-only exposures with the amphipod *Hyalella azteca*. Presented at the 9th ASTM symposium on Environmental Toxicology and Risk Assessment, Seattle, WA, April 19-21, 1999.

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Ankley GT, Cameron K, Campbell P, Crane M, DeFur P, Huet MC, Ingersoll C, LeBlanc G, Matthiessen P, Stahl R, Tattersfield L, Vethaak D. The international SETAC workshop on endocrine disruption in invertebrates: Endocrinology, testing and assessment (EDIETA). Presented at the 9th annual meeting of SETAC-Europe, Leipzig, Germany, May 25-29, 1999.

Ingersoll CG, MacDonald DD. Approaches and tools for assessing contaminated sediments. Presented to the US Department of the Interior, Office of Environmental Policy and Compliance, Washington, DC, June 14, 1999.

Ingersoll CG. Sediment toxicity testing methods. Presented at a USEPA workshop on approaches for assessing and remediating contaminated sediments. Athens, GA, September 21-22, 1999.

Ingersoll CG, MacDonald DD, Kemble NE, Wang N, Field LJ, Severn CG. Derivation and assessment of consensus-based freshwater sediment quality guidelines. Presented at the 20th annual meeting of SETAC, Philadelphia, PA, November 14-18, 1999.

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Field LJ, MacDonald DD, Norton SB, Severn CG, Ingersoll CG. Beyond thresholds: Using logistic regression models to estimate the probability of sediment toxicity. Presented at the 20th annual meeting of SETAC, Philadelphia, PA, November 14-18, 1999.

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Norberg-King TJ, Mount DR, Burton GA, Rowland C, Ingersoll CG, Kemble NE, Dwyer FY, Sibley P, Hall TJ. Definitive Results of the Inter-laboratory Evaluation of 10-d and Life-Cycle Sediment Tests with the midge *Chironomus tentans* and the amphipod *Hyalella azteca.*

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Ingersoll CG, Hinman M. Harmonization of environmental standards for assessing biological effects and fate by ASTM Committee E47and Committee D02. Presented at the 10th Symposium on Environmental Toxicology and Risk Assessment, Toronto, Ontario, April 10-12, 2000.

Ingersoll CG, MacDonald DD, Berger T. Development and evaluation of consensus-based sediment quality guidelines for freshwater ecosystems. Presented at the 10th Symposium on Environmental Toxicology and Risk Assessment, Toronto, Ontario, April 10-12, 2000.

MacDonald DD, Crane J, Severn C, Ingersoll CG, Berger T, Linskoog R, Smorong D. Development and evaluation of numerical sediment quality objectives for the St. Louis River Area of Concern. International Association for Great Lakes Research. Presented at the 43rd Annual International Conference on Great Lakes Research, Cornwall, Ontario, May 21-26, 2000.

Ingersoll CG, Wang N, Besser JM, Haverland PS, Kemble NE, MacDonald DD, Lindskoog R, Smorong D, Field LJ, Crane J, Severn C. Prediction of sediment toxicity using consensus-based freshwater sediment quality guidelines (SQGs). Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Field LJ, Norton SB, MacDonald DD, Severn CG, Ingersoll CG. Estimating the probability of toxicity from sediment chemistry. Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

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Smorong D, Lindskoog R, MacDonald DD, Ingersoll CG, Sparks D, Smith J. Application of GIS-based tools in sediment quality assessment. Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

MacDonald DD, Smorong D, Lindskoog R, Ingersoll CG, Haverland PM, Wang N, Sparks D, Smith J. Application of a GIS-based approach for assessing sediment quality conditions. Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Besser JM, Ingersoll CG, Wang N, May TW. Site-specific thresholds for the toxicity of copper and zinc to brook trout in the upper Animas River, Colorado. Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Kemble NE, Ingersoll CG, Kunz JL. Relative sensitivity of endpoints measured in long-term water or sediment exposures with the amphipod *Hyalella azteca* and the midge *Chironomus tentans*. Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

DeForest DK, Brix KV, Dwyer FJ, Mayer FL, Buckler DR, Ingersoll CG, Sappington L, Adams W.J. Chemical risks to threatened and endangered fish species at concentrations below water quality criteria: Is it feasible to ensure protection of individuals? Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

Hayward JMR, Jones JR, Whites DW, Ingersoll CG, Mount DR, Ireland DS. Storage effects on the toxicity of DDE-spiked sediment. Presented at the 21st annual meeting of SETAC, Nashville, TN, November 12-16, 2000.

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Word JQ, Anghera M, Albrecht B, Baudo R, Bay SM, Di Toro DM, Hyland JL, Ingersoll CG, Landrum PF, Long ER, Meador J, Moore DW, O'Connor TP, J.Shine J. The use of SQGs to estimate the potential for effects, or no effects, of sediment-associated contaminants in laboratory toxicity tests and in benthic community assessments. Presented at the 23rd meeting of SETAC, Salt Lake City, UT, November 16-20, 2002.

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SESSIONS CHAIRED

Sediment methods standardization. ASTM subcommittee E47.03, spring and fall meeting, 1987-1995.

Methods standardization. ASTM Committee E47, spring and fall meeting, 1996-.

Assessment of contaminated sediment. Platform session at the 11th annual meeting of SETAC, Arlington, VA, November 13, 1990.

Contaminated sediment: Quality assurance. Platform session at the 12th annual meeting of SETAC, Seattle, WA, November 5, 1991.

Milltown Reservoir-Clark Fork River endangerment assessment. Platform session at the 13th annual meeting of SETAC, Cincinnati, OH, November 10, 1992.

Workshop entitled: Managing contaminated sediment: Measurement, interpretation, and remediation, College of Engineering, University of Wisconsin, Madison, WI, April 14, 1993.

Critical issues in sediment toxicology. Platform session at the 3rd ASTM Symposium on Environmental Toxicology and Risk Assessment, Atlanta, GA, April 27, 1993.

Scientific and regulatory issues associated with sediment contamination. Session at the American Chemical Society, San Diego, CA, March 13, 1994.

International approaches to sediment toxicity assessment. Session at the 4th ASTM Symposium on Environmental Toxicology and Risk Assessment, Montreal, Quebec, April 11-13, 1994.

Development and use of formulated sediment in toxicity testing. Session at the 15th annual meeting of SETAC, Denver, CO, October 30-November 3, 1994.

Interpretation issues in sediment assessments. Session at the 17th annual meeting of SETAC, Washington, DC, November 17-21, 1996.

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Bioaccumulation short course presented at the 6th ASTM symposium on Environmental Toxicology and Risk Assessment, Orlando, FL, April 15, 1996.

Sediment quality guideline short course presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Tribute to Rick Swartz and Dave Hanson presented at the 18th annual meeting of SETAC, San Francisco, CA, November 16-20, 1997.

Sediment toxicity testing. Session at the 19th annual meeting of SETAC, Charlotte, NC, November 15-19, 1998.

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Appendix 2

Criteria for Evaluating Candidate Data Sets

Appendix 2. Criteria for Evaluating Candidate Data Sets

1.1 Introduction

A project database was developed to support the assessment of injury to human uses of fishery resources in the Grand Calumet River and Indiana Harbor Canal, the Grand Calumet River Lagoons, and Indiana Harbor and the nearshore areas of Lake Michigan. The database is comprised of sediment chemistry and fish tissue residue data from the Assessment Area. These data were used to determine if human uses of fishery resources within the Assessment Area have been injured due to discharges of oil or releases of other hazardous substances. To assure that the data used in the assessment met project data quality objectives, all of the candidate data sets were critically evaluated prior to inclusion in the database. However, the screening process was also designed to be flexible to assure that professional judgement could also be used when necessary in the evaluation process. In this way, it was possible to include as many data sets as possible and, subsequently, use them to the extent that the data quality and quantity dictate. In total, more than 125 data sets were evaluated to obtain the information needed to accomplish these objectives.

1.2 Criteria for Evaluating Whole-Sediment and Tissue Chemistry

The whole sediment and tissue chemistry data from the Assessment Area were used to determine if human uses of fishery resources within the Assessment Area have been injured due to discharges of oil or releases of other hazardous substances. Data from individual studies were considered to be acceptable for use in this assessment if:

- Samples were collected within the study area (see Natural Resources Trustees 1997 for a complete description of the study area);
- Matching information was available on the concentrations of COPCs in sediment samples and on levels of total organic carbon (TOC);

- Tissue chemistry data was reported on a wet weight basis (or information on percent moisture was available to allow the data to be converted to a WW basis);
- Appropriate procedures were used for collecting, handling, and storing sediments (e.g., ASTM 2000d) and other samples;
- The concentrations of chemicals of concern were measured in samples (see Natural Resources Trustees 1997 for a list of hazardous substances);
- Appropriate analytical methods were used to generate chemistry data. The methods that were considered to be appropriate included USEPA approved methods, other standardized methods (e.g., ASTM methods, SW-846 methods), or methods that have been demonstrated to be equivalent or superior to standard methods; and,
- Data quality objectives (DQOs) were met. The criteria that were used to evaluate data quality included;
    - the investigator indicated that DQOs had been met,
    - analytical detection limits were reported and lower than the associated sediment or tissue benchmark (measurements with detection limits above the associated sediment or tissue benchmark were included in the project database, but not used in data analyses); accuracy and precision of the chemistry data were reported and within acceptable ranges for the method; sample contamination was not noted (i.e., analytes were not detected in method blanks),
    - in the absence of complete QA/QC information, chemistry data were considered to be acceptable if they were generated post-1985 for use in a regulatory context (i.e., it was assumed that the USEPA QA/QC guidelines were likely met for such data),
    - the results of a detailed third party review indicated that the data were acceptable, and/or,
    - professional judgement indicated that the data set was likely to be of sufficient quality to be used in the assessment (i.e., in conjunction with author communications and/or other investigations); and,

- Incomplete information was available to conduct a full evaluation or certain data quality objectives were not met, but best professional judgement indicated that the data set was likely to be of sufficient quality to be used in the assessment.

Appendix 3

Whole-Sediment Chemistry Data Tables

Table A3.1 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1980; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	SITE 1	SITE 2	SITE 3
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC
Reach	USC	USC	USC
Sampling Year	1980	1980	1980
Depth (ft)	0-3.28	0-3.28	0-3.28
Latitude	41.65917	41.65571	41.65115
Longitude	-87.4541	-87.45867	-87.4645
Percent TOC	2.08	2.8	2.26
Percent Moisture	NR	NR	NR
Polychlorinated Biphenyls (µg/kg OC)			
Aroclor 1242	<4810	<3570	<4420
Aroclor 1248	**1490000**	**1010000**	**1120000**
Aroclor 1254	<4810	**257000**	**540000**
Aroclor 1260	<4810	<3570	<4420
Total PCBs[1]	**1490000**	**1260000**	**1650000**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported.
GCR/IHC = Grand Calumet River and Indiana Harbor Canal; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.2 Sediment chemistry data used to assess injury to human uses of fishery resources (Polls 1988; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	**E 5.4**	**E 2.7**	**E 3.8**	**E 0.6**	**E 1.3**	**A 0.2**	**A 0.5**	**A 1.0**	**A 1.5**	**A 2.0**	**A 3.0**	**B 0.2**	**B 0.5**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM
Reach	LGB	USC	USC	IH	IH	LM	LM	LM	LM	LM	LM	LM	LM
Sampling Year	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.6465	41.65603	41.64237	41.67643	41.6677	41.684	41.68567	41.69	41.6955	41.70033	41.71	41.68467	41.68983
Longitude	-87.482	-87.45783	-87.47117	-87.44103	-87.44195	-87.45016	-87.454	-87.46283	-87.46833	-87.475	-87.48333	-87.451	-87.45033
Percent TOC	4.7398	6.8859	7.1151	1.0392	2.3718	0.015	0.4295	0.0258	0.2529	0.3919	0.0652	0.0083	0.1674
Percent Moisture	73.6	70.9	76.8	52	59.2	25.1	28.9	23.9	42.7	50.6	28.5	30.2	35
Polychlorinated Biphenyls (µg/kg OC)													
Total PCBs[1]	**365000**	**147000**	**113000**	**140000**	**94000**	**267000**	**11600**	**116000**	**11900**	**23000**	**15300**	**241000**	**35800**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH = Indiana Harbor; LM = Lake Michigan; LGB = Lake George Branch; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.2 Sediment chemistry data used to assess injury to human uses of fishery resources (Polls 1988; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	B 1.0	B 2.0	B 3.0	B 5.0	C 0.5	C 1.0	C 1.5	C 3.0	D 0.3	D 2A	D 2B	D 3.0	D 5.0
Geographic Area	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM
Reach	LM	LM	LM	LM	LM	LM	LM	LM	LM	LM	LM	LM	LM
Sampling Year	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987	1987
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.69633	41.7125	41.72633	41.67733	41.68767	41.69233	41.69767	41.71333	41.68583	41.67667	41.67283	41.676	41.67733
Longitude	-87.448	-87.44833	-87.44867	-87.30617	-87.44067	-87.4345	-87.4285	-87.40517	-87.46183	-87.40067	-87.40234	-87.34517	-87.30617
Percent TOC	0.138	0.2546	0.024	0.0216	0.012	0.0159	0.0127	0.0182	0.0298	0.0126	0.0522	0.1667	0.1069
Percent Moisture	48.9	35.7	32.6	26.8	31	42.2	33.3	13	36.5	14.2	40.6	50.5	62
Polychlorinated Biphenyls (µg/kg OC)													
Total PCBs[1]	**65200**	**15700**	**83300**	**278000**	**500000**	**126000**	**394000**	**110000**	**67100**	**79400**	**38300**	**6000**	**74800**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH = Indiana Harbor; LM = Lake Michigan; LGB = Lake George Branch; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.3 Sediment chemistry data used to assess injury to human uses of fishery resources (Risatti & Ross 1989; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	**1**	**12/12A**	**2**	**3**	**6**	**7**	**9A**	**10**	**11/11A**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM
Reach	LGB	USC	USC	USC	LM	LM	LM	LM	LM
Sampling Year	1988	1988	1988	1988	1988	1988	1988	1988	1988
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.64684	41.64883	41.63963	41.65542	41.68529	41.68936	41.67646	41.68878	41.67649
Longitude	-87.481	-87.4682	-87.4711	-87.4587	-87.4501	-87.4683	-87.4018	-87.4314	-87.401
Percent TOC	12.57	10.3	16.84	12.66	0.07	0.03	2.74	1.43	1.91
Percent Moisture	60.06	39.68	84.51	63.32	24.08	20.31	53.86	16.71	53.15
Polychlorinated Biphenyls (µg/kg OC)									
Total PCBs[1]	**569**	**44.2**	**609**	**460**	**79400**	**59000**	**694**	**4790**	**25900**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH = Indiana Harbor; LM = Lake Michigan; LGB = Lake George Branch; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.4 Sediment chemistry data used to assess injury to human uses of fishery resources (USEPA 1996a; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IH 01 05	IH 01 06	IH 01 07	IH 01 08	IH 01 10	IH 01 03	IH 01 04
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	IH/LM	IH/LM
Reach	USC	USC	USC	USC	USC	IH	IH
Sampling Year	1989	1989	1989	1989	1989	1989	1989
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.66085	41.65518	41.64598	41.64676	41.63982	41.67395	41.66798
Longitude	-87.45175	-87.45998	-87.47243	-87.48051	-87.47146	-87.43911	-87.4363
Percent TOC	11.1	11.58	8.77	10.41	12.25	7.65	5.64
Percent Moisture	49.77	70.2	53.33	76.98	80.42	59.24	55.24
Polycyclic Aromatic Hydrocarbons (µg/kg OC)							
Benz[a]anthracene	**52300**	**138000**	**365000**	**288000**	**56300**	**95400**	**74500**
Benzo(a)pyrene	**51400**	**216000**	**353000**	**279000**	**75100**	**131000**	**124000**
Benzo(k)fluoranthene	**45900**	**199000**	**154000**	**202000**	**79200**	**131000**	**74500**
Chrysene	**64900**	**225000**	**582000**	**317000**	**76700**	**112000**	**92200**
Indeno(1,2,3-c,d)pyrene	**59500**	**17300**	**115000**	**183000**	**47300**	**95400**	**94000**
Polychlorinated Biphenyls (µg/kg OC)							
Aroclor 1016	<3240	<4320	<4680	<4710	<5630	<4710	<6380
Aroclor 1242	**96700**	**207000**	**490000**	**173000**	**58000**	**131000**	**53200**
Aroclor 1248	<3240	<4320	<4680	<4710	<5630	<4710	<6380
Aroclor 1254	**17000**	<4320	<4680	<4710	**24500**	<4710	**17700**
Aroclor 1260	<3240	<4320	<4680	<4710	<5630	<4710	<6380
Total PCBs[1]	**114000**	**207000**	**490000**	**173000**	**82400**	**131000**	**70900**
Pesticides (µg/kg OC)							
Chlordane[1]	**661**	**1300**	**1940**	**961**	**604**	**863**	**864**
Dieldrin	**1140**	**2850**	**547**	**2690**	<563	**3660**	<638

Table A3.4 Sediment chemistry data used to assess injury to human uses of fishery resources (USEPA 1996a; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IH 01 05	IH 01 06	IH 01 07	IH 01 08	IH 01 10	IH 01 03	IH 01 04
Pesticides (µg/kg OC; cont.)							
Endrin	<324	<432	502	<471	<563	<471	<638
Heptachlor	**480**	**864**	**3650**	**711**	<563	<627	<638
Heptachlor epoxide	**910**	**2760**	**3080**	**2500**	**645**	<471	<638
Lindane	<324	<432	<468	<471	<563	<471	<638
p,p'-DDD	<324	<432	**798**	<471	<563	<471	<638
p,p'-DDE	**778**	**864**	**2390**	**749**	**776**	**641**	<638
p,p'-DDT	**342**	**864**	<468	**961**	<563	<471	<638
Toxic Equivalents (no units)							
TCDD-TEQ[1]	**0.207**	**3.16**	**6.2**	**2.47**	**1.45**	**3.34**	**0.51**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH = Indiana Harbor; LM = Lake Michigan; LGB = Lake George Branch; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.5 Sediment chemistry data used to assess injury to human uses of fishery resources (Hoke et al. 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	UG-3	UG-4	UG-5	UG-6	UG-1	UG-2	UG-7	UG-8	UG-9	UG-10
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR II	EBGCR II	IHC	WBGCR I	WBGCR II	WBGCR II
Sampling Year	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.60829	41.61213	41.612	41.61552	41.60837	41.60953	41.61824	41.61474	41.61653	41.62592
Longitude	-87.39604	-87.42734	-87.44414	-87.46761	-87.31184	-87.34734	-87.47106	-87.47554	-87.48994	-87.52284
Percent TOC	7.2	12.5	14.3	15.9	28.1	4.4	14.7	22.3	18.8	13.4
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**29700**	**4640**	**10000**	**1040**	**9360**	**38200**	**3610**	**11900**	**8780**	**1270**
Benzo(a)pyrene	**234000**	**67500**	**319000**	**56200**	**96800**	**460000**	**12600**	**375000**	**533000**	**243000**
Benzo(k)fluoranthene	**84700**	**13100**	**28200**	**23200**	**11200**	**95000**	**22200**	**26100**	**11600**	**23100**
Chrysene	**48100**	**6640**	**29400**	**7230**	**7440**	**80900**	**20100**	**11800**	**27700**	**19200**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1248	**95700**	**7520**	**128000**	**10400**	**7720**	**33900**	**29000**	**12600**	**24500**	**59200**
Total PCBs[1]	**95700**	**7520**	**128000**	**10400**	**7720**	**33900**	**29000**	**12600**	**24500**	**59200**
Pesticides (µg/kg OC)										
Chlordane[1]	**17100**	**400**	**629**	**10300**	**3700**	**10000**	**12900**	**10800**	**11600**	**16000**
Dieldrin	**10000**	**320**	**559**	**5850**	**747**	**17300**	**4220**	**179**	**17100**	**8510**
Heptachlor	**36900**	**2880**	**8670**	**3270**	**3490**	**9550**	**9320**	**1970**	**9150**	**1420**
Lindane	**25400**	**11400**	**2030**	**2390**	**1210**	**4770**	**4350**	**3540**	**16800**	**1940**
p,p'-DDD	<139	<80.0	**4340**	**1070**	**142**	**1820**	**68**	**1030**	**53.2**	<74.6
p,p'-DDE	**34600**	**5680**	**10800**	**26600**	**8750**	**55900**	**19700**	**7980**	**24700**	**20200**
p,p'-DDT	**20000**	**2000**	**5240**	**6350**	**819**	**15200**	**5650**	**2470**	**9310**	**672**

Table A3.5 Sediment chemistry data used to assess injury to human uses of fishery resources (Hoke et al. 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	UG-3	UG-4	UG-5	UG-6	UG-1	UG-2	UG-7	UG-8	UG-9	UG-10
Toxic Equivalents (no units)										
TCDD-TEQ[1]	0.0000208	0.000016	0.0000867	0.000022	0.0000221	0.0000227	0.0000034	0.0000157	0.0000388	0.0000545

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-036/36A	GC-SD-XX-037/37A	GC-SD-XX-037/37B	GC-SD-XX-038/38A	GC-SD-XX-038/38B	GC-SD-XX-039/39A	GC-SD-XX-040/40A	GC-SD-XX-040/40B	GC-SD-XX-041/41A	GC-SD-XX-041/41B
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9
Latitude	41.6097	41.609	41.609	41.6087	41.6087	41.60878	41.60973	41.60973	41.6092	41.6092
Longitude	-87.3867	-87.388	-87.388	-87.3889	-87.3889	-87.39791	-87.4085	-87.4085	-87.4112	-87.4112
Percent TOC	2.1	1.3	2.2	2.225	1.5	3.1	3.1	7	4	3
Percent Moisture	47.1	42.9	46.9	39.4125	37.7	49.725	42.15	46.7	51.8	35.9
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	1290	<19200	<455	<27000	<1330	<645	**28800**	**34500**	<500	<667
Benz[a]anthracene	**158000**	<424000	<375000	**224000**	<277000	<439000	**684000**	**323000**	<155000	<174000
Benzo(a)pyrene	**98600**	<565000	<500000	**222000**	<370000	<587000	**487000**	**203000**	<206000	<232000
Benzo(k)fluoranthene	**72400**	<565000	<500000	<380000	<370000	<587000	**442000**	**166000**	<206000	<232000
Chrysene	**193000**	<424000	<375000	**231000**	<277000	<439000	**710000**	**337000**	<155000	<174000
Dibenz[a,h]anthracene	<87100	<678000	<600000	<454000	<444000	<703000	<419000	<150000	<248000	<278000
Indeno(1,2,3-c,d)pyrene	**108000**	<678000	<600000	<454000	<444000	<703000	<419000	<150000	<248000	<278000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	NR	<7690	<4550	<4490	<6670	<3230	<32300	NR	NR	<3330
Aroclor 1242	NR	<7690	<4550	<4490	<6670	<3230	<32300	NR	NR	<3330
Aroclor 1248	NR	**108000**	<4550	**8990**	<6670	<3230	**1500000**	NR	NR	**84000**
Aroclor 1254	NR	<7690	<4550	**8430**	<6670	<3230	<32300	NR	NR	<3330
Aroclor 1260	NR	<7690	<4550	<4490	<6670	<3230	<32300	NR	NR	<3330
Total PCBs[1]	NR	**108000**	NR	**17400**	NR	NR	**1500000**	NR	NR	**84000**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-042/42A	GC-SD-XX-042/42B	GC-SD-XX-043/43A	GC-SD-XX-043/43B	GC-SD-XX-044/44A	GC-SD-XX-044/44B	GC-SD-XX-045/45A	GC-SD-XX-045/45B	GC-SD-XX-048/48A	GC-SD-XX-048/48B
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9
Latitude	41.6092	41.6092	41.6131	41.6131	41.61315	41.61315	41.6133	41.6133	41.61247	41.61247
Longitude	-87.4115	-87.4115	-87.4321	-87.4321	-87.43239	-87.43239	-87.4341	-87.4341	-87.45117	-87.45117
Percent TOC	5.15	2.7	5.4	4.85	2.6	4.15	4.2	2.1	2.2	7.2
Percent Moisture	44.425	38.4	60.7	58.75	57.4	63.1	35.3	55.3	58.025	72.1
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	<11700	<7410	2910	454	4360	735	<143000	<476	<909	<139
Benz[a]anthracene	**140000**	<187000	<108000	<98100	**320000**	**181000**	**2430000**	<221000	<518000	<158000
Benzo(a)pyrene	<194000	<250000	<144000	<131000	**242000**	**177000**	**1880000**	<295000	<691000	<211000
Benzo(k)fluoranthene	<194000	<250000	<144000	<131000	**216000**	**166000**	**1430000**	<295000	<691000	<211000
Chrysene	**169000**	<187000	**117000**	<98100	**402000**	**200000**	**2270000**	<221000	<518000	<158000
Dibenz[a,h]anthracene	<233000	<300000	<173000	<157000	<323000	<233000	<166000	<354000	<827000	<253000
Indeno(1,2,3-c,d)pyrene	<233000	<300000	<173000	<157000	<323000	<233000	**1130000**	<354000	<827000	<253000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<1940	<3700	<1850	<2060	<3850	<2410	<2380	<4760	<4550	<1390
Aroclor 1242	<1940	<3700	<1850	<2060	<3850	<2410	<2380	<4760	<4550	<1390
Aroclor 1248	**17300**	<3700	<1850	<2060	<3850	<2410	**42400**	<4760	<4550	<1390
Aroclor 1254	<1940	<3700	<1850	<2060	<3850	<2410	<2380	<4760	<4550	<1390
Aroclor 1260	<1940	<3700	<1850	<2060	<3850	<2410	<2380	<4760	<4550	<1390
Total PCBs[1]	**17300**	NR	NR	NR	NR	NR	**42400**	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-049/49A	GC-SD-XX-049/49B	GC-SD-XX-049/49C	GC-SD-XX-050/50A	GC-SD-XX-050/50B	GC-SD-XX-052/52A	GC-SD-XX-052/52B	GC-SD-XX-001/01A	GC-SD-XX-002/02A	GC-SD-XX-003/03A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	8-12.9	13-?	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	0-7.9	0-7.9
Latitude	41.6167	41.6167	41.6167	41.61639	41.61639	41.6144	41.6144	41.6085	41.6085	41.6085
Longitude	-87.4552	-87.4552	-87.4552	-87.46011	-87.46011	-87.4613	-87.4613	-87.3012	-87.3042	-87.3069
Percent TOC	5.8	7.4	6.7	3.85	1.1	3.1	3.2	4.2	2.2	9.4
Percent Moisture	41.4	63	70.7	56.4	41.8	54.75	66.2	31.7	20.15	49.3
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	<345	<135	<149	961	<909	<645	<312	**37900**	**632000**	**162000**
Benz[a]anthracene	**422000**	<133000	<193000	**397000**	<460000	<266000	<356000	**379000**	**93200**	**270000**
Benzo(a)pyrene	<178000	<178000	<257000	**373000**	<614000	<355000	<475000	**426000**	**127000**	**294000**
Benzo(k)fluoranthene	<178000	<178000	<257000	**273000**	<614000	<355000	<475000	<383000	**87300**	**228000**
Chrysene	**955000**	<133000	<193000	**588000**	<460000	<266000	<356000	**405000**	**132000**	**353000**
Dibenz[a,h]anthracene	<214000	<214000	<307000	<366000	<736000	<426000	<569000	<460000	<54500	**114000**
Indeno(1,2,3-c,d)pyrene	<214000	<214000	<307000	<366000	<736000	<426000	<569000	<460000	**73600**	<12800
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<1720	<1350	<1490	<2600	<9090	<3230	<3120	<23800	<4550	<1060
Aroclor 1242	<1720	<1350	<1490	<2600	<9090	<3230	<3120	<23800	<4550	<1060
Aroclor 1248	<1720	<1350	<1490	**95800**	<9090	<3230	<3120	**179000**	**45500**	**62000**
Aroclor 1254	<1720	<1350	<1490	<2600	<9090	<3230	<3120	<23800	<4550	<1060
Aroclor 1260	<1720	<1350	<1490	<2600	<9090	<3230	<3120	<23800	<4550	<1060
Total PCBs[1]	NR	NR	NR	**95800**	NR	NR	NR	**179000**	**45500**	**62000**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-003/03B	GC-SD-XX-004/04A	GC-SD-XX-004/04B	GC-SD-XX-005/05A	GC-SD-XX-005/05B	GC-SD-XX-006/06A	GC-SD-XX-006/06B	GC-SD-XX-007/07A	GC-SD-XX-007/07B
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9
Latitude	41.6085	41.6086	41.6086	41.6082	41.6082	41.608	41.608	41.6076	41.6076
Longitude	-87.3069	-87.3109	-87.3109	-87.3144	-87.3144	-87.3176	-87.3176	-87.3211	-87.3211
Percent TOC	4.6	9.2	6.5	10.4	5	10	1.2	10.1	12
Percent Moisture	44.1	46	36.1	50.25	34.9	58.05	28.1	60.8	38.2
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benzene	**135000**	**7590000**	**7980000**	**3430000**	**3020000**	**2070000**	**11600000**	**2750000**	**883000**
Benz[a]anthracene	**5650000**	**9460000**	**1530000**	**9380000**	**18600000**	**4500000**	**50800000**	**13900000**	**313000**
Benzo(a)pyrene	**5220000**	**7610000**	**1270000**	**7550000**	**15200000**	**4500000**	**52500000**	**9210000**	**219000**
Benzo(k)fluoranthene	**4350000**	**6520000**	**809000**	**4760000**	**13000000**	**3900000**	**44200000**	**8710000**	**200000**
Chrysene	**6520000**	**10400000**	**1850000**	**4950000**	**10000000**	**2400000**	**25800000**	**13900000**	**333000**
Dibenz[a,h]anthracene	**957000**	**1520000**	**243000**	**745000**	**1280000**	<3000000	<25000000	<1190000	<68300
Indeno(1,2,3-c,d)pyrene	**2830000**	**4670000**	**723000**	**3650000**	**7000000**	<3000000	**29200000**	**6440000**	**175000**
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<21700	<10900	<1540	<9620	<20000	<20000	<83300	<9900	<8330
Aroclor 1242	<21700	<10900	<1540	<9620	<20000	<20000	<83300	<9900	<8330
Aroclor 1248	**5240000**	**2040000**	**772000**	**990000**	**1680000**	**882000**	**5490000**	**24300**	**213000**
Aroclor 1254	<21700	<10900	<1540	**160000**	**258000**	<20000	**658000**	<9900	<8330
Aroclor 1260	<21700	<10900	<1540	<9620	<20000	<20000	<83300	<9900	<8330
Total PCBs[1]	**5240000**	**2040000**	**772000**	**1150000**	**1940000**	**882000**	**6150000**	**24300**	**213000**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-008/08A	GC-SD-XX-008/08B	GC-SD-XX-009/09A	GC-SD-XX-009/09B	GC-SD-XX-010/10A	GC-SD-XX-010/10B	GC-SD-XX-011/11A	GC-SD-XX-012/12A	GC-SD-XX-013/13A	GC-SD-XX-014/14A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	0-7.9	0-7.9	0-7.9
Latitude	41.6076	41.6076	41.6076	41.6076	41.6076	41.6076	41.6076	41.6077	41.6077	41.6076
Longitude	-87.3229	-87.3229	-87.3244	-87.3244	-87.3266	-87.3266	-87.3282	-87.3303	-87.3317	-87.3332
Percent TOC	16.73	5.79	16.7	1.8	8.2	1.3	2.3	1.6	1.2	2.37
Percent Moisture	47.15	36.9	53.1	15.7	42.5	16.8	35	22.9	25.9	26.25
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	**163000**	**3130000**	**1710000**	**7440000**	**2820000**	**7460000**	<174000	<50000	**40600**	<422
Benz[a]anthracene	**717000**	**18400000**	**5990000**	**6670000**	**11600000**	**19200000**	**25800000**	**2710000**	**13100000**	**116000**
Benzo(a)pyrene	**458000**	**14100000**	**3410000**	**4650000**	**6410000**	**12500000**	**16700000**	**1770000**	**7170000**	**78100**
Benzo(k)fluoranthene	**403000**	**11900000**	**2570000**	**4480000**	**4160000**	**9310000**	**12300000**	**1170000**	**5660000**	**69600**
Chrysene	**736000**	**19000000**	**5750000**	**6670000**	**11000000**	**19400000**	**25500000**	**2520000**	**12500000**	**58500**
Dibenz[a,h]anthracene	**85200**	**1810000**	**556000**	<3940000	<1280000	<4690000	<4690000	<1110000	<1480000	<50600
Indeno(1,2,3-c,d)pyrene	**361000**	**10500000**	**2510000**	**4030000**	**5220000**	**9770000**	**14700000**	**1240000**	**4330000**	**42200**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<5980	<17300	<5990	<55600	<12200	NR	<43500	NR	<83300	<4220
Aroclor 1242	<5980	<17300	<5990	<55600	<12200	NR	<43500	NR	<83300	<4220
Aroclor 1248	**129000**	**2960000**	**123000**	<55600	**4170000**	NR	**830000**	NR	**1130000**	**78100**
Aroclor 1254	<5980	<17300	<5990	<55600	<12200	NR	<43500	NR	<83300	<4220
Aroclor 1260	<5980	<17300	<5990	<55600	<12200	NR	<43500	NR	<83300	<4220
Total PCBs[1]	**129000**	**2960000**	**123000**	NR	**4170000**	NR	**830000**	NR	**1130000**	**78100**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-015/15A	GC-SD-XX-016/16A	GC-SD-XX-016/16B	GC-SD-XX-017/17A	GC-SD-XX-017/17B	GC-SD-XX-018/18A	GC-SD-XX-018/18B	GC-SD-XX-019/19A	GC-SD-XX-019/19B	GC-SD-XX-020/20A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9
Latitude	41.6077	41.6079	41.6079	41.6086	41.6086	41.6093	41.6093	41.6098	41.6098	41.61
Longitude	-87.3353	-87.3385	-87.3385	-87.3394	-87.3394	-87.3401	-87.3401	-87.3412	-87.3412	-87.3428
Percent TOC	2.7	3.6	1.6	3.4	5.1	4.95	2.1	2.1	2.8	2.8
Percent Moisture	36.95	42.3	29.5	35.95	48.9	46.4	31.6	33.3	40.5	48.2
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	<111000	**15300**	<18700	<176000	<118000	<60600	<14300	<14300	**9210**	**12300**
Benz[a]anthracene	**1000000**	**333000**	**4440000**	**14100000**	**4710000**	**2220000**	**1180000**	**1370000**	**282000**	**457000**
Benzo(a)pyrene	**685000**	**200000**	**3310000**	**9120000**	**3330000**	**1520000**	**857000**	**1150000**	**225000**	**361000**
Benzo(k)fluoranthene	**626000**	**183000**	**3600000**	**5880000**	**3140000**	**1490000**	**614000**	**910000**	**229000**	**300000**
Chrysene	**511000**	**189000**	**2460000**	**7350000**	**2350000**	**1140000**	**581000**	**667000**	**179000**	**239000**
Dibenz[a,h]anthracene	**122000**	<33300	<750000	**2150000**	**588000**	**99000**	**176000**	**152000**	**71400**	**78600**
Indeno(1,2,3-c,d)pyrene	**411000**	**100000**	**1490000**	**6470000**	**1720000**	**706000**	**590000**	**805000**	**179000**	**225000**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<3700	<2780	<6250	<2940	<1960	<2020	<4760	<4760	<3570	<3570
Aroclor 1242	<3700	<2780	<6250	<2940	<1960	<2020	<4760	<4760	<3570	<3570
Aroclor 1248	<3700	**35800**	**494000**	**1620000**	**62700**	**153000**	**475000**	**1200000**	<3570	**107000**
Aroclor 1254	<3700	<2780	<6250	**206000**	**19600**	<2020	<4760	<4760	<3570	**42900**
Aroclor 1260	<3700	<2780	<6250	<2940	<1960	<2020	<4760	<4760	<3570	<3570
Total PCBs[1]	NR	**35800**	**494000**	**1820000**	**82400**	**153000**	**475000**	**1200000**	NR	**150000**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-021/21A	GC-SD-XX-022/22A	GC-SD-XX-023/23A	GC-SD-XX-023/23B	GC-SD-XX-024/24A	GC-SD-XX-024/24B	GC-SD-XX-025/25A	GC-SD-XX-025/25B	GC-SD-XX-025/25C	GC-SD-XX-026/26A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	0-7.9	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	13-?	0-7.9
Latitude	41.6096	41.6088	41.6079	41.6079	41.6074	41.6074	41.607	41.607	41.607	41.6073
Longitude	-87.3472	-87.3488	-87.3501	-87.3501	-87.3519	-87.3519	-87.3539	-87.3539	-87.3539	-87.3585
Percent TOC	2.5	11	3.3	1.2	4.4	3	3.5	1.6	3.7	1.6
Percent Moisture	40.9	31.95	33.5	21.4	55.3	35.7	42.2	39.6	45.5	37.4
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	<400	**9450**	<1210	4420	<13600	<667	<28600	<250000	297	<1250
Benz[a]anthracene	**56000**	**639000**	**485000**	**708000**	**132000**	**143000**	**4860000**	**444000**	**114000**	**231000**
Benzo(a)pyrene	**48000**	**536000**	**379000**	**600000**	**114000**	**110000**	**4000000**	**387000**	**97300**	**194000**
Benzo(k)fluoranthene	<40000	**435000**	**306000**	**392000**	**79500**	**93300**	**3430000**	**294000**	**81100**	**162000**
Chrysene	**32800**	**317000**	**270000**	**392000**	**77300**	**90000**	**2540000**	**5240000**	**67600**	**131000**
Dibenz[a,h]anthracene	<48000	**90000**	<36400	**100000**	<27300	<40000	**371000**	<75000	<32400	<75000
Indeno(1,2,3-c,d)pyrene	<48000	**265000**	**176000**	**433000**	**81800**	**80000**	**1840000**	**219000**	**73000**	**112000**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<4000	<909	<3030	<8330	<2270	<3330	<28600	<6250	<27000	<6250
Aroclor 1242	<4000	<909	<3030	<8330	<2270	<3330	<28600	<6250	<27000	<6250
Aroclor 1248	**148000**	**19100**	**45200**	**373000**	**12700**	<3330	**291000**	<6250	<27000	**93700**
Aroclor 1254	<4000	**8180**	<3030	<8330	<2270	<3330	**51400**	<6250	<27000	<6250
Aroclor 1260	<4000	<909	<3030	<8330	<2270	<3330	<28600	<6250	<27000	<6250
Total PCBs[1]	**148000**	**27300**	**45200**	**373000**	**12700**	NR	**343000**	NR	NR	**93700**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-026/26B	GC-SD-XX-026/26C	GC-SD-XX-027/27A	GC-SD-XX-027/27B	GC-SD-XX-028/28A	GC-SD-XX-029/29A	GC-SD-XX-029/29B	GC-SD-XX-030/30A	GC-SD-XX-031/31A	GC-SD-XX-031/31B
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	8-12.9	13-?	0-7.9	8-12.9	0-7.9	0-7.9	8-12.9	0-7.9	0-7.9	8-12.9
Latitude	41.6073	41.6073	41.608	41.608	41.6087	41.6087	41.6087	41.6091	41.6066	41.6066
Longitude	-87.3585	-87.3585	-87.361	-87.361	-87.3637	-87.3681	-87.3681	-87.3724	-87.3769	-87.3769
Percent TOC	1.6	4.7	3.8	3.3	4.1	6.45	4.85	2.23	2.395	2.63
Percent Moisture	40.9	56.5	47	50.6	50.8	49.5	53.2	42.4	53.8	49.9
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	1310	1300	<26300	<1210	854	550	<825	942	731	<760
Benz[a]anthracene	**137000**	**279000**	**321000**	**694000**	**768000**	**405000**	**295000**	**3630000**	**1180000**	**185000**
Benzo(a)pyrene	**93700**	**230000**	<342000	**745000**	**568000**	**259000**	**149000**	**2430000**	**657000**	**121000**
Benzo(k)fluoranthene	**93700**	**177000**	<342000	**561000**	**322000**	**173000**	**125000**	**1810000**	**453000**	**97000**
Chrysene	**106000**	**155000**	<258000	**376000**	**744000**	**390000**	**349000**	**3850000**	**1100000**	**222000**
Dibenz[a,h]anthracene	<75000	<48900	<421000	<576000	**87800**	**29500**	<53600	<852000	**66800**	<76000
Indeno(1,2,3-c,d)pyrene	<75000	**179000**	<421000	<576000	**537000**	**258000**	**133000**	**2100000**	**537000**	**114000**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<6250	<2130	<2630	<3030	NR	<1550	<2060	NR	<41800	<38000
Aroclor 1242	<6250	<2130	<2630	<3030	NR	<1550	<2060	NR	<41800	<38000
Aroclor 1248	<6250	<2130	**240000**	<3030	NR	**89000**	**5770**	NR	<41800	<38000
Aroclor 1254	<6250	<2130	<2630	<3030	NR	<1550	<2060	NR	<41800	<38000
Aroclor 1260	<6250	<2130	<2630	<3030	NR	<1550	<2060	NR	<41800	<38000
Total PCBs[1]	NR	NR	**240000**	NR	NR	**89000**	**5770**	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-032/32A	GC-SD-XX-032/32B	GC-SD-XX-032/32C	GC-SD-XX-033/33A	GC-SD-XX-033/33B	GC-SD-XX-033/33C	GC-SD-XX-034/34A	GC-SD-XX-034/34B	GC-SD-XX-034/34C	GC-SD-XX-035/35A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	0-7.9	8-12.9	13-?	0-7.9	8-12.9	13-?	0-7.9	8-12.9	13-?	0-7.9
Latitude	41.6068	41.6068	41.6068	41.6089	41.6089	41.6089	41.6103	41.6103	41.6103	41.6116
Longitude	-87.37963	-87.37963	-87.37963	-87.3806	-87.3806	-87.3806	-87.3807	-87.3807	-87.3807	-87.3852
Percent TOC	5.02	2.56	1.55	6.2	4.6	2.8	6.4	4.8	2.9	5.4
Percent Moisture	58.9	61.7	30	59.05	48.3	50.1	53.3	60.6	56.4	54.8
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	7030	2930	1100	6130	**21500**	<286000	891	<167000	**13200**	**38300**
Benz[a]anthracene	**857000**	**191000**	**355000**	**1110000**	**557000**	**3140000**	**2170000**	**606000**	**386000**	**604000**
Benzo(a)pyrene	**592000**	**102000**	**219000**	**866000**	**252000**	**1440000**	**2000000**	**398000**	**192000**	**231000**
Benzo(k)fluoranthene	**367000**	**85900**	**200000**	**600000**	**215000**	**1240000**	**1500000**	**252000**	**153000**	**159000**
Chrysene	**823000**	**258000**	**445000**	**1140000**	**550000**	**2970000**	**2120000**	**604000**	**417000**	**591000**
Dibenz[a,h]anthracene	**87600**	<82000	<116000	<424000	<52200	<696000	<439000	**51700**	<79700	<45700
Indeno(1,2,3-c,d)pyrene	**576000**	**93800**	**200000**	**679000**	**172000**	**911000**	**1340000**	**408000**	**150000**	**256000**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<19900	NR	<64500	<16100	NR	NR	NR	NR	NR	NR
Aroclor 1242	<19900	NR	<64500	<16100	NR	NR	NR	NR	NR	NR
Aroclor 1248	**77500**	NR	<64500	**182000**	NR	NR	NR	NR	NR	NR
Aroclor 1254	<19900	NR	<64500	<16100	NR	NR	NR	NR	NR	NR
Aroclor 1260	<19900	NR	<64500	<16100	NR	NR	NR	NR	NR	NR
Total PCBs[1]	**77500**	NR	NR	**182000**	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-035/35B	GC-SD-XX-035/35C	GC-SD-XX-053/53A	GC-SD-XX-053/53B	GC-SD-XX-057/57A	GC-SD-XX-057/57B	GC-SD-XX-058/58A	GC-SD-XX-059/59A	GC-SD-XX-060/60A	GC-SD-XX-061/61A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	IHC	IHC	IHC	IHC	IHC	IHC	IHC	IHC
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	8-12.9	13-?	0-7.9	8-12.9	0-7.9	8-12.9	0-7.9	0-7.9	0-7.9	0-7.9
Latitude	41.6116	41.6116	41.61808	41.61808	41.61873	41.61873	41.6229	41.62712	41.63125	41.63535
Longitude	-87.3852	-87.3852	-87.47089	-87.47089	-87.47114	-87.47114	-87.47117	-87.47108	-87.47114	-87.47121
Percent TOC	4.6	3.3	0.86	3.2	0.9	1	1.6	1.4	1.07	3.9
Percent Moisture	58.2	60.6	30.4	49.7	30.85	24.6	60	26.6	21.05	51.65
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	**8930**	**33900**	**17200**	<625	**47000**	<30000	<2500	<1430	6730	**69500**
Benz[a]anthracene	**204000**	**403000**	**1150000**	<167000	**3420000**	**1080000**	**1180000**	**1060000**	**594000**	**390000**
Benzo(a)pyrene	**89200**	**266000**	<628000	<223000	**2920000**	<555000	**806000**	<943000	<1010000	<305000
Benzo(k)fluoranthene	**54600**	**213000**	**650000**	<223000	**2100000**	<555000	**552000**	<943000	<1010000	<305000
Chrysene	**239000**	**473000**	**1720000**	<167000	**4010000**	**1920000**	**2460000**	**1190000**	**975000**	**518000**
Dibenz[a,h]anthracene	<50400	<80900	<753000	<268000	<1280000	<666000	<495000	<1130000	<1210000	<367000
Indeno(1,2,3-c,d)pyrene	**96200**	**283000**	<753000	<268000	**1510000**	<666000	<495000	<1130000	<1210000	<367000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<2170	<3030	<11600	<3120	<11100	NR	<6250	<7140	<9350	<2560
Aroclor 1242	<2170	<3030	<11600	<3120	<11100	NR	<6250	<7140	<9350	<2560
Aroclor 1248	**123000**	<3030	<11600	<3120	**283000**	NR	**650000**	<7140	<9350	<2560
Aroclor 1254	<2170	<3030	<11600	<3120	<11100	NR	<6250	<7140	<9350	<2560
Aroclor 1260	<2170	<3030	<11600	<3120	<11100	NR	<6250	<7140	<9350	<2560
Total PCBs[1]	**123000**	NR	NR	NR	**283000**	NR	**650000**	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-061/61B	GC-SD-XX-062/62A	GC-SD-XX-062/62B	GC-SD-XX-054/54A	GC-SD-XX-054/54B	GC-SD-XX-054/54C	GC-SD-XX-055/55A	GC-SD-XX-055/55B	GC-SD-XX-055/55C	GC-SD-XX-056/56A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	IHC	IHC	IHC	WBGCR I	WBGCR I	WBGCR I	WBGCR I	WBGCR I	WBGCR I	WBGCR I
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	8-12.9	0-7.9	8-12.9	0-7.9	8-12.9	13-?	0-7.9	8-12.9	13-?	0-7.9
Latitude	41.63535	41.6385	41.6385	41.61803	41.61803	41.61803	41.61409	41.61409	41.61409	41.6142
Longitude	-87.47121	-87.4712	-87.4712	-87.47142	-87.47142	-87.47142	-87.47974	-87.47974	-87.47974	-87.4801
Percent TOC	0.95	13	11.45	4.3	4.1	3.9	4.75	2.85	2	1.3
Percent Moisture	31.2	57.1	42.2	50.2	57.1	67.4	58.575	51.4	50.4	69.2
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	3580	1370	380	**22400**	**42200**	1540	5740	<10500	<500	<30800
Benz[a]anthracene	<643000	**242000**	**406000**	**765000**	<226000	<272000	**3940000**	<342000	<426000	**1410000**
Benzo(a)pyrene	<858000	**166000**	**303000**	**388000**	<302000	<362000	**974000**	<456000	<570000	<650000
Benzo(k)fluoranthene	<858000	**131000**	**199000**	<270000	<302000	<362000	**682000**	<456000	<570000	<650000
Chrysene	**805000**	**368000**	**602000**	**1800000**	<226000	<272000	**6540000**	**380000**	<426000	**2950000**
Dibenz[a,h]anthracene	<1030000	<77700	**58400**	<323000	<361000	<433000	**337000**	<547000	<680000	<777000
Indeno(1,2,3-c,d)pyrene	<1030000	**97700**	**185000**	<323000	<361000	<433000	**314000**	<547000	<680000	<777000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10500	<769	<873	<2330	<2440	<2560	<2110	<3510	<5000	<7690
Aroclor 1242	<10500	<769	<873	<2330	<2440	<2560	<2110	<3510	<5000	<7690
Aroclor 1248	<10500	<769	**34500**	<2330	<2440	<2560	<2110	<3510	<5000	<7690
Aroclor 1254	<10500	<769	<873	<2330	<2440	<2560	<2110	<3510	<5000	<7690
Aroclor 1260	<10500	<769	<873	<2330	<2440	<2560	<2110	<3510	<5000	<7690
Total PCBs[1]	NR	NR	**34500**	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.6 Sediment chemistry data used to assess injury to human uses of fishery resources (Floyd-Browne 1993; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC-SD-XX-056/56B	GC-SD-XX-056/56C
Geographic Area	GCR/IHC	GCR/IHC
Reach	WBGCR I	WBGCR I
Sampling Year	1991	1991
Depth (ft)	8-12.9	13-?
Latitude	41.6142	41.6142
Longitude	-87.4801	-87.4801
Percent TOC	6.9	4.9
Percent Moisture	66.2	65.5
Polycyclic Aromatic Hydrocarbons (µg/kg OC)		
Benzene	**8610**	<408
Benz[a]anthracene	**396000**	<196000
Benzo(a)pyrene	**267000**	<261000
Benzo(k)fluoranthene	**249000**	<261000
Chrysene	**610000**	<196000
Dibenz[a,h]anthracene	<188000	<314000
Indeno(1,2,3-c,d)pyrene	<188000	<314000
Polychlorinated Biphenyls (µg/kg OC)		
Aroclor 1016	<1450	<2040
Aroclor 1242	<1450	<2040
Aroclor 1248	<1450	<2040
Aroclor 1254	<1450	<2040
Aroclor 1260	<1450	<2040
Total PCBs[1]	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; IHC = Indiana Harbor Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.7 Sediment chemistry data used to assess injury to human uses of fishery resources (USEPA 1991; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	S08	S09	S10	S11	D11	S12	S13	S14	S15	S16	S17	S18
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	USC	USC	USC	USC	USC	USC	USC	USC	USC	USC	USC	USC
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.65942	41.65883	41.65818	41.65554	41.65554	41.65481	41.65377	41.65304	41.65206	41.65104	41.64856	41.64823
Longitude	-87.45333	-87.45407	-87.45573	-87.45943	-87.45943	-87.46023	-87.46056	-87.4618	-87.4631	-87.46642	-87.46892	-87.46875
Percent TOC	4.1	31	37	28	18	17	38	12	26	23	22	23
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)												
Benz[a]anthracene	**163000**	**58100**	**97300**	**4640**	**22800**	**20600**	**145000**	**158000**	**92300**	**87000**	**114000**	**95700**
Benzo(a)pyrene	**129000**	**41900**	**64900**	**7140**	**22800**	**19400**	**145000**	**91700**	**80800**	**91300**	**118000**	**113000**
Benzo(k)fluoranthene	**56100**	**11900**	**19700**	**2750**	**10000**	**5590**	**60500**	**39200**	**42300**	**35700**	**54500**	**60900**
Chrysene	**17100**	**74200**	**130000**	**7140**	**41700**	**31800**	**211000**	**225000**	**131000**	**126000**	**159000**	**135000**
Dibenz[a,h]anthracene	**19300**	**8060**	**8920**	<17500	<20000	<25300	**19700**	**18300**	**12700**	**13000**	**18600**	**11700**
Indeno(1,2,3-c,d)pyrene	**82900**	**24200**	**37800**	**5710**	<20000	**10600**	**92100**	**66700**	**57700**	**73900**	**95500**	**87000**

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH = Indiana Harbor; LM = Lake Michigan; USC = United States Canal.

Table A3.7 Sediment chemistry data used to assess injury to human uses of fishery resources (USEPA 1991; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	S19	S01	S02	S03	S04	D04	S05	S06	S07
Geographic Area	GCR/IHC	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM
Reach	USC	IH	IH	IH	IH	IH	IH	IH	IH
Sampling Year	1991	1991	1991	1991	1991	1991	1991	1991	1991
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.64979	41.66865	41.66617	41.66536	41.66484	41.66484	41.66567	41.66693	41.66886
Longitude	-87.46766	-87.43647	-87.43829	-87.43798	-87.438	-87.438	-87.43906	-87.44065	-87.43814
Percent TOC	23	31	27	15	18	32	16	18	17
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**65200**	**41900**	**21500**	**66700**	**167000**	**71900**	**81300**	**49400**	**52900**
Benzo(a)pyrene	**82600**	**22900**	**20400**	**73300**	**139000**	**65600**	**62500**	**54400**	**22900**
Benzo(k)fluoranthene	**33500**	**8390**	**9630**	**28000**	**51700**	**26600**	**24400**	**17200**	**6470**
Chrysene	**91300**	**48400**	**33300**	**66700**	**183000**	**100000**	**93800**	**61100**	**64700**
Dibenz[a,h]anthracene	**14800**	**5480**	**5190**	<47300	**23900**	**11600**	**12500**	<41100	**5590**
Indeno(1,2,3-c,d)pyrene	**60900**	**13500**	**14400**	**58700**	**94400**	**53100**	**41900**	**40600**	**12400**

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH = Indiana Harbor; LM = Lake Michigan; USC = United States Canal.

Table A3.8 Sediment chemistry data used to assess injury to human uses of fishery resources (IDEM 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	085-94	086-94	025-90	026-90	033-92	063-94	064-94	087-94
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	USC	USC	USC	USC	USC	WBGCR II
Sampling Year	1994	1994	1990	1990	1992	1994	1994	1994
Depth (ft)	Surface	Surface	Surface	Surface	Surface	Surface	Surface	Surface
Latitude	41.61409	41.61409	41.65525	41.65525	41.65525	41.65525	41.65525	41.6144
Longitude	-87.4614	-87.4614	-87.4592	-87.4592	-87.4592	-87.4592	-87.4592	-87.4806
Percent TOC	10.52	10.4	9.37	11.53	9.065	15.86	10.36	18.64
Percent Moisture	54.5	62.5	53	48	52.5	69.4	55.9	74.8
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benzene	NR	NR	331	217	1070	NR	NR	NR
Benz[a]anthracene	**209000**	**96200**	**171000**	**104000**	**205000**	**47300**	**78200**	**59000**
Benzo(a)pyrene	**171000**	**32700**	**104000**	**83300**	**90500**	**61800**	**59800**	**24700**
Benzo(k)fluoranthene	<171000	**58700**	<149000	<113000	**74300**	**29600**	**29900**	**34900**
Chrysene	**447000**	**38500**	**203000**	**147000**	**1550000**	**94600**	**174000**	**24100**
Dibenz[a,h]anthracene	**22800**	**21200**	<149000	<113000	**19700**	**13200**	**13500**	**11300**
Indeno(1,2,3-c,d)pyrene	**44700**	**15400**	**65100**	**45100**	**124000**	**26500**	**22200**	**14500**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<20900	<12800	<227	<167	<58600	<8240	<8750	<10600
Aroclor 1242	<20900	<12800	**145000**	**155000**	<58600	<8240	<8750	<10600
Aroclor 1248	**148000**	**97400**	<227	<167	**204000**	**45300**	**125000**	**42600**
Aroclor 1254	<20900	<12800	**36300**	**35000**	<58600	<8240	<8750	<10600
Aroclor 1260	<20900	<12800	**3180**	**2500**	<58600	<8240	<8750	<10600
Total PCBs[1]	**148000**	**97400**	**185000**	**193000**	**204000**	**45300**	**125000**	**42600**
Pesticides (µg/kg OC)								
Chlordane[1]	NR	NR	**1360**	**367**	NR	**824**	**1570**	NR

Table A3.8 Sediment chemistry data used to assess injury to human uses of fishery resources (IDEM 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	085-94	086-94	025-90	026-90	033-92	063-94	064-94	087-94
Pesticides (µg/kg OC)								
Dieldrin	<418	<257	**318**	**167**	<1170	**577**	**219**	<575
Endrin	<4180	<2560	<1700	<1250	<11700	<206	136	<2130
Heptachlor	<2090	<1280	<568	<417	<5860	**556**	**1930**	<1060
Heptachlor epoxide	<1610	<2030	<863	<634	<5860	**1650**	**3500**	<1060
Lindane	<418	<257	<171	<125	<1170	<20.8	**153**	<213
p,p'-DDD	<836	<512	**908**	**717**	<2340	**268**	**482**	**958**
p,p'-DDE	<1150	<795	<227	<167	<2340	**701**	**1360**	<958
p,p'-DDT	<836	<512	<568	<417	<2340	**289**	**306**	<426

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, WBGCR = West Branch of the Grand Calumet River; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.9 Sediment chemistry data used to assess injury to human uses of fishery resources (Burton 1994; Dorkin 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	COL1-13	COL2-37	COL2-38	COL2-39	COL2-40	COL2-41	COL2-42	COL2-46	COL2-47	MOL1-17	MOL2-48
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	0-1	0-3	3-6	6-7.2	0-3	3-6	6-7.1	0-3	0-3	0-3	0-3
Latitude	41.61866	41.61866	41.61866	41.61866	41.61866	41.61866	41.61866	41.6186	41.6188	41.6159	41.6159
Longitude	-87.4997	-87.4997	-87.4997	-87.4997	-87.4997	-87.4997	-87.4997	-87.4997	-87.4997	-87.4938	-87.4938
Percent TOC	1.3	2.2	4.8	7.4	3.4	7.3	6.9	1.4	3.8	11.72	12.5
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)											
Benzene	<5150	NR	NR	NR	NR	NR	NR	NR	NR	<1020	NR
Benz[a]anthracene	**231000**	**159000**	**375000**	**716000**	**353000**	**411000**	**464000**	<857000	**447000**	**358000**	**448000**
Benzo(a)pyrene	**254000**	<300000	**185000**	**311000**	**235000**	**192000**	**232000**	<857000	**237000**	**265000**	**192000**
Benzo(k)fluoranthene	**146000**	<300000	<219000	<446000	<241000	<219000	<319000	<857000	<276000	**58900**	<144000
Chrysene	**262000**	**259000**	**500000**	**757000**	**588000**	**603000**	**522000**	**443000**	**868000**	**734000**	**960000**
Dibenz[a,h]anthracene	<354000	<300000	<219000	<446000	<241000	<219000	<319000	<857000	<276000	<128000	<144000
Indeno(1,2,3-c,d)pyrene	**192000**	<300000	**123000**	<446000	**147000**	**91800**	<319000	<857000	<276000	**73400**	<144000

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.9 Sediment chemistry data used to assess injury to human uses of fishery resources (Burton 1994; Dorkin 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	MOL2-50	MOL2-52	MOL2-54	MOL2-56	MOL2-58	MOL2-59	MOL2-60	MOL2-61	MOL2-68	MOL2-70	ROX1-21A
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	3-6	6-9	9-12	12-13	0-3	3-6	6-9	9-11.7	0-3	0-3	0-3
Latitude	41.6159	41.6159	41.6159	41.6159	41.6159	41.6159	41.6159	41.6159	41.61595	41.616	41.6163
Longitude	-87.4938	-87.4938	-87.4938	-87.4938	-87.4938	-87.4938	-87.4938	-87.4938	-87.4938	-87.4938	-87.4903
Percent TOC	9	6.8	8	1.3	15.8	9.7	8.7	5.5	18.1	17.4	8.4
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)											
Benzene	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	679
Benz[a]anthracene	**456000**	**83800**	<65000	<154000	**627000**	**47400**	<43700	<65500	**2320000**	**1090000**	**167000**
Benzo(a)pyrene	**244000**	<76500	<65000	<154000	**266000**	**20600**	<43700	<65500	**884000**	**420000**	**143000**
Benzo(k)fluoranthene	<256000	<76500	<65000	<154000	<171000	<25800	<43700	<65500	<298000	**39700**	**21400**
Chrysene	**889000**	**137000**	<65000	<154000	**1330000**	**92800**	**28700**	<65500	**4030000**	**1320000**	**369000**
Dibenz[a,h]anthracene	<256000	<76500	<65000	<154000	<171000	<25800	<43700	<65500	144000	<16700	<131000
Indeno(1,2,3-c,d)pyrene	<256000	<76500	<65000	<154000	<171000	<25800	<43700	<65500	**144000**	**92000**	<131000

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.9 Sediment chemistry data used to assess injury to human uses of fishery resources (Burton 1994; Dorkin 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	ROX1-21B	ROX2-71	ROX2-72	ROX2-73	ROX2-74	ROX2-75	ROX2-76	ROX2-80	ROX2-81	ROX2-82	ROX2-84
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	0-3	0-3	3-6	6-7.5	0-3	3-6	6-7.7	0-3	0-3	0-3	3-6
Latitude	41.6163	41.6163	41.6163	41.6163	41.6163	41.6163	41.6163	41.61617	41.6164	41.6188	41.6188
Longitude	-87.4903	-87.4903	-87.4903	-87.4903	-87.4903	-87.4903	-87.4903	-87.4902	-87.4903	-87.4864	-87.4864
Percent TOC	6.5	19.2	15.2	9.1	13.4	14.8	10.5	4	8.5	5.8	5.1
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)											
Benzene	<2460	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Benz[a]anthracene	**385000**	**365000**	**289000**	**46200**	**261000**	**203000**	<50500	**173000**	**200000**	<32800	<58800
Benzo(a)pyrene	**200000**	**161000**	**158000**	**27500**	**179000**	**115000**	<50500	**133000**	**119000**	<32800	<58800
Benzo(k)fluoranthene	**29200**	<83300	<138000	<51600	<41000	<50000	<50500	<52500	**16500**	<32800	<58800
Chrysene	**862000**	**781000**	**553000**	**89000**	**343000**	**358000**	<50500	**400000**	**412000**	<32800	<58800
Dibenz[a,h]anthracene	29200	<83300	<138000	<51600	29900	<50000	<50500	17500	<68200	<32800	<58800
Indeno(1,2,3-c,d)pyrene	**41500**	<83300	<138000	<51600	**36600**	**26400**	<50500	**25000**	**22400**	<32800	<58800

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.9 Sediment chemistry data used to assess injury to human uses of fishery resources (Burton 1994; Dorkin 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	ROX2-86	ROX2-88	ROX2-89	ROX2-90	ROX2-94	ROX2-95	SOHL1-09	SOHL2-21	SOHL2-23	SOHL2-25	SOHL2-27
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	6-7.8	0-3	3-6	6-7.2	0-3	0-3	0-3	0-3	3-6	6-6.5	0-3
Latitude	41.6188	41.6188	41.6188	41.6188	41.6187	41.6188	41.6222	41.6222	41.6222	41.6222	41.6222
Longitude	-87.4864	-87.4864	-87.4864	-87.4864	-87.4864	-87.48642	-87.5127	-87.5127	-87.5127	-87.5127	-87.5127
Percent TOC	4.5	6.7	6.2	4.3	13.3	8.9	1.96	10.7	9.4	6.3	11.3
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)											
Benzene	NR	NR	NR	NR	NR	NR	816	NR	NR	NR	NR
Benz[a]anthracene	<68900	<46300	<53200	<55800	**143000**	<52800	**969000**	**1590000**	**883000**	**190000**	**858000**
Benzo(a)pyrene	<68900	<46300	<53200	<55800	**113000**	<52800	**1120000**	**916000**	**489000**	**96800**	**389000**
Benzo(k)fluoranthene	<68900	<46300	<53200	<55800	**241000**	<52800	**474000**	**252000**	<543000	<190000	<407000
Chrysene	<68900	<46300	<53200	<55800	**308000**	<52800	**1070000**	**1780000**	**915000**	**173000**	**850000**
Dibenz[a,h]anthracene	<68900	<46300	<53200	<55800	<241000	<52800	168000	<72000	<543000	<190000	<407000
Indeno(1,2,3-c,d)pyrene	<68900	<46300	<53200	<55800	<241000	<52800	**816000**	**402000**	<543000	<190000	<407000

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.9 Sediment chemistry data used to assess injury to human uses of fishery resources (Burton 1994; Dorkin 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	SOHL2-28	SOHL2-29	SOHL2-33	SOHL2-35	SOHL2-96	STATE1-05	STATE2-09	STATE2-13	STATE2-14	STATE2-19
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	3-6	6-7	0-3	3-6	6-7.8	0-3	3-4.3	0-3	3-5.1	0-3
Latitude	41.6222	41.6222	41.6222	41.6222	41.6222	41.62546	41.62546	41.62546	41.62546	41.6254
Longitude	-87.5127	-87.5127	-87.5127	-87.5127	-87.5127	-87.5201	-87.5201	-87.5201	-87.5201	-87.5201
Percent TOC	7.6	5.1	5.1	7.8	6.4	10.1	11.3	13.4	4.6	10.7
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benzene	NR	NR	NR	NR	NR	<1880	NR	NR	NR	NR
Benz[a]anthracene	**421000**	**72500**	**167000**	**436000**	**78100**	**931000**	**1240000**	**679000**	<222000	**738000**
Benzo(a)pyrene	<526000	<118000	**82400**	**231000**	**42200**	**574000**	**575000**	**358000**	<222000	**402000**
Benzo(k)fluoranthene	<526000	<118000	**33300**	<269000	<109000	**168000**	<938000	<724000	<222000	<570000
Chrysene	**434000**	**70600**	**196000**	**487000**	**73400**	**980000**	**1330000**	**694000**	<222000	**1310000**
Dibenz[a,h]anthracene	<526000	<118000	<114000	<269000	<109000	71300	<938000	<724000	<222000	<570000
Indeno(1,2,3-c,d)pyrene	<526000	<118000	**66700**	**141000**	<109000	**228000**	<938000	<724000	<222000	<570000

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.9 Sediment chemistry data used to assess injury to human uses of fishery resources (Burton 1994; Dorkin 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	STATE2-20	TORR1-01A	TORR2-01	TORR2-02	TORR2-03
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1993	1993	1993	1993	1993
Depth (ft)	0-3	0-3	0-3	3-6	6-7.5
Latitude	41.6255	41.64554	41.64554	41.64554	41.64554
Longitude	-87.5201	-87.558	-87.558	-87.558	-87.558
Percent TOC	9.3	11.7	11.7	11.7	1.8
Percent Moisture	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)					
Benzene	NR	427	NR	NR	NR
Benz[a]anthracene	**731000**	**316000**	**214000**	**171000**	<200000
Benzo(a)pyrene	**387000**	**239000**	**162000**	**75200**	<200000
Benzo(k)fluoranthene	**129000**	**69200**	<359000	<103000	<200000
Chrysene	**828000**	**462000**	**342000**	**308000**	<200000
Dibenz[a,h]anthracene	<581000	37600	<359000	<103000	<200000
Indeno(1,2,3-c,d)pyrene	**129000**	**128000**	<359000	<103000	<200000

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.10 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHST 93-1-1	IHST 93-1-2	IHST 93-1-3	IHST 93-1-4	IHST 93-1-5	IHST 93-2-1	IHST 93-2-2	IHST 93-2-3	IHST 93-2-4
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	USC	USC	USC	USC	USC	USC	USC	USC	USC
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	13.1-17.1	17.1-21.1	21.1-25.1	25.1-29.1	29.1-33.1	11.6-15.6	15.6-19.6	19.6-23.6	23.6-27.6
Latitude	41.64075	41.64075	41.64075	41.64075	41.64075	41.64233	41.64233	41.64233	41.64233
Longitude	-87.4711	-87.4711	-87.4711	-87.4711	-87.4711	-87.4713	-87.4713	-87.4713	-87.4713
Percent TOC	12.98	10.76	9.25	7.36	8.81	13.92	12.65	9.86	10.75
Percent Moisture	64	52	45	40	49	64	60	51	49
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**125000**	**125000**	**163000**	**186000**	**213000**	**125000**	**111000**	**117000**	**135000**
Benzo(a)pyrene	**107000**	**82700**	**110000**	**124000**	**97600**	**118000**	**86200**	**75100**	**84700**
Benzo(k)fluoranthene	**77800**	**52000**	**63800**	**76100**	**32900**	**86200**	**55300**	**49700**	**54900**
Chrysene	**151000**	**165000**	**202000**	**230000**	**398000**	**142000**	**138000**	**155000**	**165000**
Dibenz[a,h]anthracene	**13100**	**11200**	**13000**	**16300**	**20400**	**12900**	**11100**	**9130**	**10200**
Indeno(1,2,3-c,d)pyrene	**73200**	**45500**	**65900**	**72000**	**44300**	**82600**	**54500**	**40600**	**47400**
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1242	<1030	<919	<990	<1230	<1130	<941	<1020	<1030	<957
Aroclor 1248	**127000**	**375000**	**509000**	**627000**	**43800**	**110000**	**244000**	**519000**	**594000**
Aroclor 1254	<1030	<919	<990	<1230	<1130	<941	<1020	<1030	<957
Aroclor 1260	<1030	<919	<990	<1230	<1130	<941	<1020	<1030	<957
Total PCBs[1]	**127000**	**375000**	**509000**	**627000**	**43800**	**110000**	**244000**	**519000**	**594000**
Pesticides (µg/kg OC)									
Dieldrin	**131**	**191**	**177**	**166**	**66.1**	**71.3**	**179**	**230**	**136**
Endrin	<33.9	<30.4	<32.6	<40.6	<37.3	<31.0	<33.8	<34.0	<31.6
Heptachlor	<30.1	<27.0	<29.1	<36.1	<33.1	<27.6	<30.0	<30.2	<28.1

Table A3.10 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHST 93-1-1	IHST 93-1-2	IHST 93-1-3	IHST 93-1-4	IHST 93-1-5	IHST 93-2-1	IHST 93-2-2	IHST 93-2-3	IHST 93-2-4
Pesticides (µg/kg OC; cont.)									
Heptachlor epoxide	**61.9**	<27.0	<29.1	**100**	<33.1	**73**	<30.0	<30.2	<28.1
Lindane	**51.8**	<26.7	<28.8	<35.7	<32.8	<27.3	<29.7	<29.9	<27.8
p,p'-DDD	**448**	**939**	**1510**	**2060**	**343**	**322**	**610**	**1320**	**1850**
p,p'-DDE	**358**	**344**	**543**	**487**	**190**	**405**	**403**	**347**	**134**
p,p'-DDT	<31.7	<28.4	<30.7	<38.2	<35.1	<29.2	<31.7	<31.9	<29.7

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.10 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHST 93-2-5	IHST 93-3-1	IHST 93-3-2	IHST 93-3-3	IHST 93-3-4	IHST 93-4-2	IHST 93-4-3	IHST 93-4-4	IHST 93-4-5
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	USC	USC	USC	USC	USC	USC	USC	USC	USC
Sampling Year	1993	1993	1993	1993	1993	1993	1993	1993	1993
Depth (ft)	27.6-29.6	6.9-10.9	10.9-14.9	14.9-18.9	18.9-22.9	0.3-4.3	4.3-8.3	8.3-12.3	12.3-16.3
Latitude	41.64233	41.64323	41.64323	41.64323	41.64323	41.64611	41.64611	41.64611	41.64611
Longitude	-87.4713	-87.4713	-87.4713	-87.4713	-87.4713	-87.4719	-87.4719	-87.4719	-87.4719
Percent TOC	13.44	7.84	14.46	11.94	7.27	12.8	10.94	10.44	6.81
Percent Moisture	55	64	52	47	39	54	40	42	34
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**91500**	**330000**	**89200**	**157000**	**792000**	**224000**	**723000**	**1480000**	**1710000**
Benzo(a)pyrene	**45400**	**311000**	**56000**	**100000**	**316000**	**135000**	**333000**	**679000**	**687000**
Benzo(k)fluoranthene	**21600**	**235000**	**31100**	**74500**	**71500**	**73400**	**93200**	**114000**	**119000**
Chrysene	**147000**	**358000**	**120000**	**193000**	**1680000**	**361000**	**1420000**	**3100000**	**3600000**
Dibenz[a,h]anthracene	**7440**	**31900**	**6920**	**13400**	**79800**	**22700**	**24700**	**155000**	**167000**
Indeno(1,2,3-c,d)pyrene	**24600**	**221000**	**29700**	**60300**	**103000**	**71900**	**122000**	**196000**	**207000**
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1242	<798	<1730	<764	<899	<1460	<901	<797	<878	<1250
Aroclor 1248	**13500**	**262000**	**350000**	**836000**	**124000**	**332000**	**272000**	<878	<1250
Aroclor 1254	<798	<1730	<764	<899	<1460	<901	<797	<878	<1250
Aroclor 1260	<798	<1730	<764	<899	<1460	<901	<797	<878	<1250
Total PCBs[1]	**13500**	**262000**	**350000**	**836000**	**124000**	**332000**	**272000**	NR	NR
Pesticides (µg/kg OC)									
Dieldrin	**103**	**230**	**177**	**215**	**337**	**194**	**190**	<25.0	<35.7
Endrin	<26.3	<57.3	<25.2	<29.6	<48.0	<29.8	<26.3	<29.0	<41.4
Heptachlor	<23.4	<50.9	<22.4	<26.4	<42.6	<26.5	<23.4	<25.8	<36.9

Table A3.10 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1994; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHST 93-2-5	IHST 93-3-1	IHST 93-3-2	IHST 93-3-3	IHST 93-3-4	IHST 93-4-2	IHST 93-4-3	IHST 93-4-4	IHST 93-4-5
Pesticides (µg/kg OC; cont.)									
Heptachlor epoxide	<23.4	<50.9	<22.4	<26.4	**168**	<26.5	<23.4	<25.8	<36.9
Lindane	<23.2	<50.4	<22.2	<26.1	<42.2	<26.2	<23.1	<25.5	<36.4
p,p'-DDD	**204**	**726**	**866**	**2650**	**618**	**1060**	**1110**	**486**	**650**
p,p'-DDE	**378**	**660**	**243**	**305**	<42.0	**257**	**230**	<25.4	<36.3
p,p'-DDT	<24.7	<53.7	<23.7	<27.9	<45.1	<28.0	<24.7	<27.2	<38.9

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; USC = United States Canal.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.11 Sediment chemistry data used to assess injury to human uses of fishery resources (Gillespie et al. 1998; USDOI 1994; bolded values indicate an exceedance of bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	ML2	WL4	WL5
Geographic Area	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL
Sampling Year	1995	1995	1995
Depth (ft)	0.66-0.98	0.66-0.98	0.66-0.98
Latitude	41.61527	41.6133	41.61176
Longitude	-87.2731	-87.2889	-87.2931
Percent TOC	0.1	5.1	34.1
Percent Moisture	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)			
Benz[a]anthracene	<700000	<13700	**1530000**
Benzo(a)pyrene	<700000	<13700	**1300000**
Benzo(k)fluoranthene	<700000	**19600**	**604000**
Chrysene	<700000	<13700	**1330000**
Indeno(1,2,3-c,d)pyrene	<700000	<13700	**648000**

OC = organic carbon; TOC = total organic carbon; NR = not reported; GCRL = Grand Calumet River Lagoons.

Table A3.12 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1996; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	001	002	003	004	005	006
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1996	1996	1996	1996	1996	1996
Depth (ft)	0-2	0-3	0-1	2-3	0-2	0-4
Latitude	41.61588	41.61546	41.61589	41.61329	41.61358	41.61221
Longitude	-87.264	-87.2725	-87.2789	-87.2811	-87.2863	-87.2924
Percent TOC	6.65	10.4	9.11	8.87	10.8	38.1
Percent Moisture	79	80	75	77	74	87
Polycyclic Aromatic Hydrocarbons (µg/kg OC)						
Benz[a]anthracene	<14300	<9620	<8780	<9810	<7130	**13100000**
Benzo(a)pyrene	<14300	<9620	<8780	<9810	<7130	**1230000**
Benzo(k)fluoranthene	<14300	<9620	<8780	<9810	<7130	**1000000**
Chrysene	<14300	<9620	<8780	<9810	<7130	**14400000**
Dibenz[a,h]anthracene	<14300	<9620	<8780	<9810	<7130	<814000
Indeno(1,2,3-c,d)pyrene	<14300	<9620	<8780	<9810	<7130	<814000
Polychlorinated Biphenyls (µg/kg OC)						
Aroclor 1016	<1430	<962	<878	<981	<713	<394
Aroclor 1242	<1430	<962	<878	<981	<713	<394
Aroclor 1248	<1430	<962	<878	<981	<713	<394
Aroclor 1254	<1430	<962	<878	<981	<713	<394
Aroclor 1260	<1430	<962	<878	<981	<713	<394
Pesticides (µg/kg OC)						
Dieldrin	<143	<96.2	<87.8	<98.1	<71.3	<39.4
Endrin	<143	<96.2	<87.8	<98.1	<71.3	<39.4
Heptachlor	<72.2	<48.1	<43.9	<49.6	<36.1	<20.2

Table A3.12 Sediment chemistry data used to assess injury to human uses of fishery resources (USACE 1996; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	001	002	003	004	005	006
Pesticides (µg/kg OC; cont.)						
Heptachlor epoxide	<72.2	<48.1	<43.9	<49.6	<36.1	<20.2
Lindane	<72.2	<48.1	<43.9	<49.6	<36.1	<20.2
p,p'-DDD	<436	<288	<263	<293	<213	<121
p,p'-DDE	<143	<96.2	<87.8	<98.1	<71.3	<39.4
p,p'-DDT	<436	<288	<263	<293	<213	<121

OC = organic carbon; TOC = total organic carbon; GCRL = Grand Calumet River Lagoons.

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG82S01	97CG82S02	97CG82S03	97CG82D03	97CG82S04	97CG82S05	97CG82S06	97CG82D06	97CG82S07	97CG82S08
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6124	41.6131	41.613	41.613	41.613	41.6136	41.6136	41.6136	41.6136	41.6142
Longitude	-87.3821	-87.3834	-87.3825	-87.3825	-87.3816	-87.3839	-87.383	-87.383	-87.3821	-87.3834
Percent TOC	1	1	1	1	1	1	1	1	1	1
Percent Moisture	29.59	77.585	59.31	27.08	21.715	88.445	31.16	30.315	19.995	46.075
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<74000	<230000	<130000	<84000	<76000	<370000	<75000	<82000	<78000	<90000
Benzo(a)pyrene	<74000	<230000	<130000	<84000	<76000	<370000	<75000	<82000	<78000	**13000**
Chrysene	<74000	**24000**	<130000	<84000	<76000	<370000	<75000	<82000	<78000	**9600**
Dibenz[a,h]anthracene	<74000	<230000	<130000	<84000	<76000	<370000	<75000	<82000	<78000	**9400**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Aroclor 1242	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Aroclor 1248	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Aroclor 1254	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Aroclor 1260	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<500	<1300	<700	<500	<500	<2400	<400	<400	<400	<500

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG82S01	97CG82S02	97CG82S03	97CG82D03	97CG82S04	97CG82S05	97CG82S06	97CG82D06	97CG82S07	97CG82S08
Pesticides (µg/kg OC; cont.)										
Endrin	<500	<1300	<700	<500	<500	<2400	<400	<400	<400	<500
Heptachlor	<300	<600	<400	<300	<300	<1200	<200	<200	<66200	<300
Heptachlor epoxide	<300	<600	<400	<300	<300	<1200	<200	<200	<200	<300
Lindane	<300	<600	<400	<300	<300	<1200	<200	<200	<200	<300
p,p'-DDD	<500	<1300	<700	<500	<500	<2400	<400	<400	<400	<500
p,p'-DDE	<500	<1300	<700	<500	<500	<2400	<400	<400	<400	<500
p,p'-DDT	<500	<1300	<700	<500	<500	<2400	<400	<400	<400	<500

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG82S09	97CG82S10	97CG82S11	97CG82S12	97CG82S13	97CG82S14	97CG82S15	97CG82D15	97CG82S16	97CG82S17
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6142	41.6142	41.6148	41.6156	41.6156	41.6156	41.6165	41.6165	41.6165	41.6165
Longitude	-87.3825	-87.3816	-87.3839	-87.3838	-87.3826	-87.3815	-87.3838	-87.3838	-87.3826	-87.3815
Percent TOC	1	1	1	1	1	1	1	1.3	1.1	1.2
Percent Moisture	20.81	19.29	26.195	23.31	50.705	59.49	54.59	52.78	45.28	63.825
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<88000	<8000	<72000	<94000	**18000**	**28000**	**11000**	<92300	**13600**	**37500**
Benzo(a)pyrene	<88000	<88000	<72000	<94000	**21000**	**30000**	**12000**	<92300	**14500**	**40800**
Chrysene	<88000	<88000	<72000	<94000	**22000**	**36000**	**12000**	<92300	**18200**	**47500**
Dibenz[a,h]anthracene	<88000	<88000	<72000	<94000	<100000	<110000	<100000	<92300	<86400	<125000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	NR	NR	NR	NR	NR	<13000	NR	NR	NR	NR
Aroclor 1242	NR	NR	NR	NR	NR	<13000	NR	NR	NR	NR
Aroclor 1248	NR	NR	NR	NR	NR	<13000	NR	NR	NR	NR
Aroclor 1254	NR	NR	NR	NR	NR	<13000	NR	NR	NR	NR
Aroclor 1260	NR	NR	NR	NR	NR	<13000	NR	NR	NR	NR
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<400	<400	<400	<500	<500	<700	<500	<538	<455	<667

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG82S09	97CG82S10	97CG82S11	97CG82S12	97CG82S13	97CG82S14	97CG82S15	97CG82D15	97CG82S16	97CG82S17
Pesticides (µg/kg OC; cont.)										
Endrin	<400	<400	<400	<500	<500	<700	<500	<538	<455	<667
Heptachlor	<200	<200	<200	<300	<300	<400	<300	<308	<273	<333
Heptachlor epoxide	<200	<200	<200	<300	<300	<400	<300	<308	<273	<333
Lindane	<200	<200	<200	<300	<300	<400	<300	<308	<273	<333
p,p'-DDD	<400	<400	<400	<500	<500	<700	<500	<538	<455	<667
p,p'-DDE	<400	<400	<400	<500	<500	<700	<500	<538	<455	<667
p,p'-DDT	<400	<400	<400	<500	<2500	<700	<500	<538	<455	<667

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG82S18	97CG82S19	97CG82S20	97CG82S21	97CG82D21	97CG84S01	97CG84S02	97CG84S03	97CG84D03	97CG84S04
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6174	41.6174	41.6183	41.6183	41.6183	41.6078	41.6078	41.6078	41.6078	41.6081
Longitude	-87.3838	-87.3826	-87.3838	-87.3826	-87.3826	-87.3827	-87.3823	-87.3819	-87.3819	-87.3831
Percent TOC	1.2	1.5	1.7	1.2	1	1	1	1	1	1
Percent Moisture	37.41	42.915	33.185	57.81	63.99	21.5	22.615	61.915	38.48	22.08
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**542000**	**8000**	**141000**	**24200**	**27000**	<87000	<76000	**63000**	**67000**	<82000
Benzo(a)pyrene	**575000**	**9330**	**147000**	**25800**	**32000**	<87000	<76000	**100000**	**100000**	<82000
Chrysene	**575000**	**10000**	**165000**	**30000**	**37000**	<87000	<76000	**73000**	**69000**	<82000
Dibenz[a,h]anthracene	**83300**	<65300	**21800**	<100000	<120000	<87000	<76000	<130000	<90000	<82000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	NR	NR	NR	NR	NR	NR	NR	<200000	<100000	NR
Aroclor 1242	NR	NR	NR	NR	NR	NR	NR	<200000	<100000	NR
Aroclor 1248	NR	NR	NR	NR	NR	NR	NR	**2850000**	**690000**	NR
Aroclor 1254	NR	NR	NR	NR	NR	NR	NR	<13000	<10000	NR
Aroclor 1260	NR	NR	NR	NR	NR	NR	NR	<13000	<10000	NR
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	**2850000**	**690000**	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<417	<400	<235	<583	<800	<400	<500	<5000	<4000	<500

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG82S18	97CG82S19	97CG82S20	97CG82S21	97CG82D21	97CG84S01	97CG84S02	97CG84S03	97CG84D03	97CG84S04
Pesticides (µg/kg OC; cont.)										
Endrin	<417	<400	<235	<583	<800	<400	<500	<5000	<4000	<500
Heptachlor	<250	<200	<118	<333	<400	<200	<300	<3000	<2000	<300
Heptachlor epoxide	<250	<200	<118	<333	<400	<200	<300	<3000	<2000	<300
Lindane	<250	<200	<118	<333	<400	<200	<300	<3000	<2000	<300
p,p'-DDD	<417	<400	<235	<583	<800	<400	<500	<5000	<4000	<500
p,p'-DDE	<417	<400	<235	<583	<800	<400	<500	<5000	<4000	<500
p,p'-DDT	<417	<400	<235	<583	<800	<400	<500	<5000	<4000	<500

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG84S05	97CG84S06	97CG84S07	97CG84S08	97CG84S09	97CG84D09	97CG84S10	97CG84S11	97CG84S12	97CG84S13
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6081	41.6081	41.6081	41.6084	41.6084	41.6084	41.6084	41.6084	41.6084	41.6087
Longitude	-87.3827	-87.3823	-87.3819	-87.3835	-87.3831	-87.3831	-87.3827	-87.3823	-87.3819	-87.384
Percent TOC	1	1	1	1	1	1	1.3	1	1	1
Percent Moisture	80.12	86.88	83.31	44.305	84.58	85.58	74.075	76.785	24.885	23.81
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**240000**	**230000**	**240000**	**33000**	**520000**	**160000**	**154000**	**90000**	<81000	<74000
Benzo(a)pyrene	**370000**	**330000**	**370000**	**55000**	**460000**	**240000**	**162000**	**110000**	<81000	<74000
Chrysene	**290000**	**300000**	**310000**	**37000**	**580000**	**200000**	**192000**	**120000**	<81000	<74000
Dibenz[a,h]anthracene	<550000	<720000	<550000	<80000	<650000	<350000	<277000	<180000	<81000	<74000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<30000	<40000	<40000	<10000	<40000	NR	<12300	<20000	<10000	NR
Aroclor 1242	<30000	<40000	<40000	<10000	<40000	NR	<12300	<20000	<10000	NR
Aroclor 1248	**130000**	**290000**	**230000**	**14000**	**170000**	NR	**61500**	**100000**	<10000	NR
Aroclor 1254	<30000	<40000	<40000	<10000	<40000	NR	<12300	<20000	<10000	NR
Aroclor 1260	<30000	<40000	<40000	<10000	<40000	NR	<12300	<20000	<10000	NR
Total PCBs[1]	**130000**	**290000**	**230000**	**14000**	**170000**	NR	**61500**	**100000**	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<4000	<16000	<16000	<5000	<16000	<16000	<6150	<10000	<5000	<400

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG84S05	97CG84S06	97CG84S07	97CG84S08	97CG84S09	97CG84D09	97CG84S10	97CG84S11	97CG84S12	97CG84S13
Pesticides (µg/kg OC; cont.)										
Endrin	<4000	<16000	<16000	<5000	<16000	<16000	<6150	<10000	<5000	<400
Heptachlor	<2000	<8000	<8000	<3000	<8000	<8000	<3080	<5000	<3000	<200
Heptachlor epoxide	<2000	<8000	<8000	<3000	<8000	<8000	<3080	<5000	<3000	<200
Lindane	<2000	<8000	<8000	<3000	<8000	<8000	<3080	<5000	<3000	<200
p,p'-DDD	<4000	<16000	<16000	<5000	<16000	<16000	<6150	<10000	<5000	<400
p,p'-DDE	<4000	<16000	<16000	<5000	<8000	<16000	<6150	<10000	<5000	<400
p,p'-DDT	<4000	<16000	<16000	<5000	<16000	<16000	<6150	<10000	<5000	<400

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station **Sample**	**97CG84S14**	**97CG84S15**	**97CG84S16**	**97CG84S17**	**97CG84S18**	**97CG84S19**	**98CG50S06** **South Bonji #2**	**98CG50S07** **South Bonji #5**	**98CG50S08** **North Bonji #6**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II
Sampling Year	1997	1997	1997	1997	1997	1997	1998	1998	1998
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6087	41.6087	41.6087	41.6087	41.6087	41.609	41.6131	41.6136	41.6165
Longitude	-87.3835	-87.3831	-87.3827	-87.3823	-87.3819	-87.3827	-87.3834	-87.3839	-87.3815
Percent TOC	1	1	1	1	1	1	0.04	0.86	1.34
Percent Moisture	72.2	83.12	68.705	26.695	37.89	27.115	75.2406	81.5641	52.40355
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**140000**	**240000**	**32000**	**13000**	**21000**	**14000**	<5000000	**52300**	**56000**
Benzo(a)pyrene	**190000**	**330000**	**50000**	**20000**	**29000**	**19000**	<5000000	**58100**	**44000**
Chrysene	**140000**	**250000**	**42000**	**17000**	**32000**	**22000**	<5000000	**76700**	**69400**
Dibenz[a,h]anthracene	<180000	**46000**	<160000	<86000	<93000	<75000	<5000000	<209000	<82100
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<20000	<30000	<20000	NR	NR	NR	<350000	NR	<5220
Aroclor 1242	<20000	<30000	<20000	NR	NR	NR	<350000	NR	<5220
Aroclor 1248	**130000**	**230000**	**90000**	NR	NR	NR	<350000	NR	<5220
Aroclor 1254	<20000	<30000	<20000	NR	NR	NR	<350000	NR	<5220
Aroclor 1260	<20000	<30000	<20000	NR	NR	NR	<350000	NR	<5220
Total PCBs[1]	**130000**	**230000**	**90000**	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)									
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<10000	<16000	<8000	<5000	<4000	<4000	<17500	<1160	<299

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG84S14	97CG84S15	97CG84S16	97CG84S17	97CG84S18	97CG84S19	98CG50S06 South Bonji #2	98CG50S07 South Bonji #5	98CG50S08 North Bonji #6
Pesticides (µg/kg OC; cont.)									
Endrin	<10000	<16000	<8000	<5000	<4000	<4000	<17500	<1160	<299
Heptachlor	<5000	<8000	<4000	<3000	<2000	<2000	<10000	<581	<149
Heptachlor epoxide	<5000	<8000	<4000	<3000	<2000	<2000	<10000	<581	<149
Lindane	<5000	<8000	<4000	<3000	<2000	<2000	<10000	<581	<149
p,p'-DDD	<10000	<16000	<8000	<5000	<4000	<4000	<17500	<1160	<299
p,p'-DDE	<5000	<3000	<8000	<5000	<2000	<40000	**17500**	**814**	**522**
p,p'-DDT	<10000	<16000	<8000	<5000	<4000	<4000	<17500	<1160	<299

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station / **Sample**	**98CG50S09** **North Bonji #10**	**98CG50S10** **Georgia Pacific #5**	**98CG50S11** **Georgia Pacific #7**	**98CG50S12** **Georgia Pacific #9**	**98CG50S13** **Georgia Pacific #14**	**97CG80S01**	**97CG80S02**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCRL	GCRL
Reach	EBGCR II	EBGCR II	EBGCR II	EBGCR II	EBGCR II	GCRL	GCRL
Sampling Year	1998	1998	1998	1998	1998	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6183	41.6081	41.6081	41.6084	41.6087	41.6115	41.6115
Longitude	-87.3826	-87.3827	-87.3819	-87.3831	-87.3835	-87.2947	-87.294
Percent TOC	0.68	0.76	0.9	0.87	0.94	24.2	17.3
Percent Moisture	55.80045	75.02225	83.335	83.0532	75.9243	50.195	64.695
Polycyclic Aromatic Hydrocarbons (µg/kg OC)							
Benz[a]anthracene	**75000**	**250000**	**378000**	**425000**	<223000	**45100000**	**555000**
Benzo(a)pyrene	**72100**	**316000**	**511000**	**425000**	**277000**	**16500000**	**191000**
Chrysene	**85300**	**303000**	**422000**	**218000**	<245000	**550000**	**694000**
Dibenz[a,h]anthracene	<162000	**57900**	**111000**	<644000	<447000	**1070000**	**17300**
Polychlorinated Biphenyls (µg/kg OC)							
Aroclor 1016	<14700	<19700	<22200	<23000	<21300	<2070	<867
Aroclor 1242	<14700	**526000**	<22200	<23000	<21300	<2070	<867
Aroclor 1248	<14700	<19700	**311000**	**276000**	**270000**	<2070	<867
Aroclor 1254	<14700	<19700	<22200	<23000	<21300	<2070	<867
Aroclor 1260	<14700	<19700	<22200	<23000	<21300	<2070	<867
Total PCBs[1]	NR	**526000**	**311000**	**276000**	**270000**	NR	NR
Pesticides (µg/kg OC)							
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	<921	<1110	<1150	<851	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S09 North Bonji #10	98CG50S10 Georgia Pacific #5	98CG50S11 Georgia Pacific #7	98CG50S12 Georgia Pacific #9	98CG50S13 Georgia Pacific #14	97CG80S01	97CG80S02
Pesticides (µg/kg OC; cont.)							
Endrin	NR	<921	<1110	<1150	<851	NR	NR
Heptachlor	NR	<526	<556	<575	<426	NR	NR
Heptachlor epoxide	NR	<526	<556	<575	<426	NR	NR
Lindane	NR	<526	<556	<575	<426	NR	NR
p,p'-DDD	NR	<921	<1110	<1150	<851	NR	NR
p,p'-DDE	NR	**5000**	<1110	**5060**	**3300**	NR	NR
p,p'-DDT	NR	<921	<1110	<1150	<851	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S03	97CG80S04	97CG80S05	97CG80S06	97CG80S07	97CG80D07	97CG80S08	97CG80S09	97CG80S10	97CG80S11
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6119	41.6119	41.6119	41.6123	41.6123	41.6123	41.6127	41.6127	41.6132	41.6132
Longitude	-87.2937	-87.2931	-87.2924	-87.2927	-87.2921	-87.2921	-87.2911	-87.2905	-87.2895	-87.2888
Percent TOC	2.2	2	28.9	1	2	1	4.9	2.6	1.8	1.5
Percent Moisture	86.725	83.585	31.34	80.88	81.6	77.585	70.295	84.50999	81.675	81.305
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**3500000**	**600000**	NR	**870000**	**4300000**	**10000000**	**306000**	**185000**	**72200**	**180000**
Benzo(a)pyrene	**4140000**	**600000**	NR	**900000**	**2300000**	**5700000**	**327000**	**204000**	**83300**	**193000**
Chrysene	**3640000**	**700000**	NR	**990000**	**3400000**	**8000000**	**347000**	**204000**	**117000**	**260000**
Dibenz[a,h]anthracene	**164000**	<1850000	NR	<3300000	<700000	**340000**	<204000	**33500**	<339000	**30700**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<18200	<20000	<16300	<40000	<15000	<30000	<6120	<15400	<16700	<20000
Aroclor 1242	**59100**	**20000**	<16300	<40000	<15000	<30000	<6120	**11500**	<16700	<20000
Aroclor 1248	<18200	<20000	<16300	<40000	<15000	<30000	<6120	<15400	<16700	<20000
Aroclor 1254	<18200	<20000	<16300	<40000	<15000	<30000	<6120	<15400	<16700	<20000
Aroclor 1260	**40900**	**5000**	<16300	<40000	<15000	<30000	<6120	**19200**	<16700	<20000
Total PCBs[1]	**100000**	**25000**	NR	NR	NR	NR	NR	**30800**	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S03	97CG80S04	97CG80S05	97CG80S06	97CG80S07	97CG80D07	97CG80S08	97CG80S09	97CG80S10	97CG80S11
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S12	97CG80S13	97CG80S14	97CG80S15	97CG80S16	97CG80S17	97CG80S18	97CG80S19	97CG80S20	97CG80S21
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6132	41.6132	41.6132	41.6132	41.6132	41.6132	41.6132	41.6136	41.6136	41.6136
Longitude	-87.2882	-87.2875	-87.281	-87.2803	-87.2797	-87.279	-87.2784	-87.2885	-87.2879	-87.2872
Percent TOC	1.1	1	1	1	1	1	1	1	1	2.4
Percent Moisture	87.08	88.18	88.49001	63.125	90.3	61.125	78.31	75.165	42.6	83.595
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**76400**	**400000**	**350000**	**20000**	<2300000	**26000**	**65000**	**930000**	**27000**	**300000**
Benzo(a)pyrene	**78200**	**440000**	**430000**	**20000**	<2300000	**34000**	**64000**	**1400000**	**19000**	**387000**
Chrysene	**100000**	**590000**	**460000**	**25000**	<2300000	**33000**	**79000**	**1800000**	**24000**	**358000**
Dibenz[a,h]anthracene	<318000	**84000**	**163000**	<140000	<2300000	<130000	<490000	**200000**	<110000	**58300**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<36400	<40000	<40000	<15000	<50000	<20000	<30000	<20000	<10000	<20800
Aroclor 1242	<36400	<40000	<40000	<15000	<50000	<20000	<30000	<20000	<10000	<20800
Aroclor 1248	<36400	<40000	<40000	<15000	<50000	<20000	<30000	<20000	<10000	<20800
Aroclor 1254	<36400	<40000	<40000	<15000	<50000	<20000	<30000	<20000	<10000	<20800
Aroclor 1260	<36400	<40000	<40000	<15000	<50000	<20000	<30000	<20000	<10000	<20800
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S12	97CG80S13	97CG80S14	97CG80S15	97CG80S16	97CG80S17	97CG80S18	97CG80S19	97CG80S20	97CG80S21
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S22	97CG80S23	97CG80S24	97CG80S25	97CG80D25	97CG80S26	97CG80S27	97CG80S28	97CG80S29	97CG80S30
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6136	41.6136	41.6136	41.6136	41.6136	41.6136	41.6136	41.6136	41.6136	41.6136
Longitude	-87.2865	-87.2859	-87.2852	-87.2846	-87.2846	-87.2839	-87.2833	-87.2826	-87.282	-87.2813
Percent TOC	2.1	1	1	1	1	1	1	1.6	1	1
Percent Moisture	76.58	80.075	70.73	84.11	96.86	88.67	88.415	87.99001	24.7	47.5
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**25700**	**43000**	NR	**140000**	**390000**	**480000**	**69000**	**1500000**	**27000**	<100000
Benzo(a)pyrene	**29500**	**28000**	NR	**150000**	**440000**	**670000**	**92000**	**1060000**	**35000**	<100000
Chrysene	**40000**	**63000**	NR	**190000**	**500000**	**560000**	**96000**	**1690000**	**34000**	**13000**
Dibenz[a,h]anthracene	<95200	<250000	NR	<680000	<1700000	**95000**	<350000	**331000**	<64000	<100000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<9520	<30000	<20000	<40000	<180000	<30000	<40000	<18700	<10000	<10000
Aroclor 1242	<9520	<30000	<20000	<40000	<180000	**154000**	<40000	**37500**	<10000	<10000
Aroclor 1248	<9520	<30000	<20000	<40000	<180000	<30000	<40000	<18700	<10000	<10000
Aroclor 1254	<9520	<30000	<20000	<40000	<180000	**30000**	<40000	<18700	<10000	<10000
Aroclor 1260	<9520	<30000	<20000	<40000	<180000	<30000	<40000	<18700	<10000	<10000
Total PCBs[1]	NR	NR	NR	NR	NR	**184000**	NR	**37500**	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S22	97CG80S23	97CG80S24	97CG80S25	97CG80D25	97CG80S26	97CG80S27	97CG80S28	97CG80S29	97CG80S30
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S31	97CG80S32	97CG80S33	97CG80S34	97CG80S35	97CG80S36	97CG80S37	97CG80S38	97CG80S39	97CG80S40
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6136	41.6136	41.6136	41.6136	41.614	41.614	41.614	41.614	41.614	41.614
Longitude	-87.2807	-87.2787	-87.278	-87.2774	-87.2856	-87.2849	-87.2843	-87.2836	-87.2784	-87.2777
Percent TOC	1	1	1	1	1	1	1	1	1	1
Percent Moisture	55.8	76.595	52.725	78.88	60.095	60.405	78.185	22.28	36.92	57
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**18000**	<190000	**14000**	<170000	**9500**	**16000**	<480000	**10000**	<64000	**24000**
Benzo(a)pyrene	**18000**	**27000**	**16000**	<170000	**12000**	**20000**	**52000**	**13000**	<64000	**31000**
Chrysene	**26000**	**22000**	**21000**	<170000	**13000**	**19000**	**61000**	**12000**	**7800**	**42000**
Dibenz[a,h]anthracene	<120000	<190000	<130000	<170000	<79000	<150000	<480000	<87000	<64000	<240000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<20000	NR	<20000	<10000	<16000	<25000	<10000	<10000	<10000
Aroclor 1242	<10000	<20000	NR	<20000	<10000	<16000	<25000	<10000	<10000	<10000
Aroclor 1248	<10000	<20000	NR	<20000	<10000	<16000	<25000	<10000	<10000	<10000
Aroclor 1254	<10000	<20000	NR	<20000	<10000	<16000	<25000	<10000	<10000	<10000
Aroclor 1260	<10000	<20000	NR	<20000	<10000	<16000	<25000	<10000	<10000	<10000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S31	97CG80S32	97CG80S33	97CG80S34	97CG80S35	97CG80S36	97CG80S37	97CG80S38	97CG80S39	97CG80S40
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S41	97CG80S42	97CG80S43	97CG80S44	97CG80S45	97CG80S46	97CG80S47	97CG80S48	97CG80S49	97CG80S50
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.614	41.6166	41.6166	41.617	41.617	41.6174	41.6174	41.6174	41.6174	41.6174
Longitude	-87.2771	-87.2626	-87.262	-87.2623	-87.2617	-87.262	-87.2614	-87.2609	-87.2603	-87.2597
Percent TOC	1	1	1	1	1.1	1	1.4	1.8	1.7	1
Percent Moisture	46.775	76.9	64.8	43.5	75.98	64.1	30.4	41.1	31.385	20.8
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**12000**	**63000**	<270000	<89000	**218000**	**13000**	**7140**	<61100	**11800**	**1400000**
Benzo(a)pyrene	**14000**	**72000**	<270000	<89000	**282000**	**15000**	**7860**	<61100	**12400**	**1300000**
Chrysene	**13000**	**97000**	<270000	<89000	**345000**	**18000**	**10700**	<61100	**15300**	**1500000**
Dibenz[a,h]anthracene	<85000	<490000	<270000	<89000	**41800**	<130000	<62900	<61100	<46500	**180000**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<20000	<10000	<10000	<12700	<10000	<3570	<2780	<3530	<5000
Aroclor 1242	<10000	<20000	<10000	<10000	<12700	<10000	<3570	<2780	<3530	<5000
Aroclor 1248	<10000	<20000	<10000	<10000	<12700	<10000	<3570	<2780	<3530	<5000
Aroclor 1254	<10000	<20000	<10000	<10000	<12700	<10000	<3570	<2780	<3530	<5000
Aroclor 1260	<10000	<20000	<10000	<10000	<12700	<10000	<3570	<2780	<3530	<5000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	**2400**	NR	NR	**1270**	NR	NR	**222**	NR	**5100**
Dieldrin	NR	<1000	<500	<400	<636	<200	<214	**55.6**	<118	<300

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S41	97CG80S42	97CG80S43	97CG80S44	97CG80S45	97CG80S46	97CG80S47	97CG80S48	97CG80S49	97CG80S50
Pesticides (µg/kg OC; cont.)										
Endrin	NR	<1000	<500	<400	**636**	200	<214	<167	<118	<300
Heptachlor	NR	<500	<300	<200	<273	<200	<71.4	<55.6	<58.8	<100
Heptachlor epoxide	NR	<500	<300	<200	<273	<200	<71.4	<55.6	<58.8	<100
Lindane	NR	<500	<300	<200	<273	<200	<71.4	<55.6	<58.8	<100
p,p'-DDD	NR	<1000	<500	<200	<636	<400	<214	**389**	**5470**	**167000**
p,p'-DDE	NR	**79000**	**300**	<200	**53300**	**700**	**1000**	**444**	**4060**	**127000**
p,p'-DDT	NR	**18000**	<500	<400	**13100**	**400**	<214	**4560**	**882**	<300

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S51	97CG80S52	97CG80D52	97CG80S53	97CG80S54	97CG80S55	97CG80S56	97CG80S57	97CG80S58	97CG80S59
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6145	41.6145	41.6145	41.6145	41.6145	41.6149	41.6149	41.6149	41.6149	41.6149
Longitude	-87.2758	-87.2753	-87.2753	-87.2747	-87.2741	-87.2744	-87.2738	-87.2732	-87.2726	-87.2721
Percent TOC	1	1	1	1	1	1	1	1	1	1
Percent Moisture	37.62	71.985	64.98	64.50999	25.61	41.28	72.22	80.72	43.61	43.61
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<89000	**21000**	<650000	<150000	<81000	<86000	<180000	<310000	<180000	<65000
Benzo(a)pyrene	<89000	**23000**	<650000	<150000	<81000	<86000	<180000	<310000	<180000	<65000
Chrysene	<89000	**34000**	<650000	<150000	<81000	<86000	<180000	<310000	<180000	<65000
Dibenz[a,h]anthracene	<89000	<190000	<650000	<150000	<81000	<86000	<180000	<310000	<180000	<65000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<20000	<13000	<15000	<10000	<10000	<20000	<30000	<16000	<10000
Aroclor 1242	<10000	<20000	<13000	<15000	<10000	<10000	<20000	<30000	<16000	<10000
Aroclor 1248	<10000	<20000	<13000	<15000	<10000	<10000	<20000	<30000	<16000	<10000
Aroclor 1254	<10000	<20000	<13000	<15000	<10000	<10000	<20000	<30000	<16000	<10000
Aroclor 1260	<10000	<20000	<13000	<15000	<10000	<10000	<20000	<30000	<16000	<10000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S51	97CG80S52	97CG80D52	97CG80S53	97CG80S54	97CG80S55	97CG80S56	97CG80S57	97CG80S58	97CG80S59
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S60	97CG80S61	97CG80S62	97CG80S63	97CG80S64	97CG80S65	97CG80S66	97CG80S67	97CG80S68	97CG80D68
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6149	41.6152	41.6153	41.6153	41.6153	41.6153	41.6153	41.6153	41.6153	41.6153
Longitude	-87.2715	-87.2741	-87.2735	-87.2729	-87.2723	-87.2718	-87.2712	-87.2706	-87.27	-87.27
Percent TOC	1	1	1.1	1	1	1.1	1.1	1.2	1	1
Percent Moisture	18.095	25.605	68.295	72.225	79.72	78.16	80.485	69.59	82.665	82.875
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<72000	<77000	<145000	<200000	<250000	NR	NR	<117000	**98000**	**34000**
Benzo(a)pyrene	<72000	<77000	<145000	<200000	<250000	NR	NR	<117000	**130000**	**34000**
Chrysene	<72000	<77000	<145000	<200000	<250000	NR	NR	<117000	**140000**	**44000**
Dibenz[a,h]anthracene	<72000	<77000	<145000	<200000	<250000	NR	NR	<117000	**22000**	<330000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<10000	<18200	<16000	<26000	<45500	<23600	<11700	<20000	<30000
Aroclor 1242	<10000	<10000	<18200	<16000	<26000	<45500	<23600	<11700	<20000	<30000
Aroclor 1248	<10000	<10000	<18200	<16000	<26000	<45500	<23600	<11700	<20000	<30000
Aroclor 1254	<10000	<10000	<18200	<16000	<26000	<45500	<23600	<11700	**164000**	<30000
Aroclor 1260	<10000	<10000	<18200	<16000	<26000	<45500	<23600	<11700	<20000	<30000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	**164000**	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S60	97CG80S61	97CG80S62	97CG80S63	97CG80S64	97CG80S65	97CG80S66	97CG80S67	97CG80S68	97CG80D68
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S69	97CG80S70	97CG80S71	97CG80S72	97CG80S73	97CG80S74	97CG80S75	97CG80S76	97CG80S77	97CG80S78
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6153	41.6153	41.6156	41.6156	41.6156	41.6155	41.6156	41.6156	41.6156	41.616
Longitude	-87.2694	-87.2689	-87.2732	-87.2726	-87.2721	-87.2715	-87.2709	-87.2703	-87.2697	-87.2729
Percent TOC	1	1	1	1.9	1	1.2	1.2	1	1	1
Percent Moisture	52.1	30.785	74.79	81.9	77.48	69.6	61.72	59.8	48.98	45.275
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<200000	**140000**	<230000	<311000	<240000	<150000	<117000	<140000	<99000	<190000
Benzo(a)pyrene	<200000	**160000**	<230000	<311000	<240000	<150000	<117000	**17000**	<99000	<190000
Chrysene	<200000	**210000**	<230000	<311000	<240000	<150000	<117000	**22000**	<99000	<190000
Dibenz[a,h]anthracene	<200000	**28000**	<230000	<311000	<240000	<150000	<117000	<140000	<99000	<190000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<8000	<5000	<25000	<10500	<20000	<16700	<12500	<13000	<10000	<10000
Aroclor 1242	<8000	<5000	<25000	<10500	<20000	<16700	<12500	<13000	<10000	<10000
Aroclor 1248	<8000	<5000	<25000	<10500	<20000	<16700	<12500	<13000	<10000	<10000
Aroclor 1254	<8000	<5000	<25000	<10500	<20000	<16700	<12500	<13000	<10000	<10000
Aroclor 1260	<8000	**13000**	<25000	<10500	<20000	<16700	<12500	<13000	<10000	<10000
Total PCBs[1]	NR	**13000**	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S69	97CG80S70	97CG80S71	97CG80S72	97CG80S73	97CG80S74	97CG80S75	97CG80S76	97CG80S77	97CG80S78
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S79	97CG80S80	97CG80S81	97CG80S82	97CG80S83	97CG80S84	97CG80S85	97CG80S86	97CG80S87	97CG80S88
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.616	41.616	41.616	41.6164	41.6164	41.6164	41.6164	41.6168	41.6168	41.6168
Longitude	-87.2723	-87.2718	-87.2712	-87.2738	-87.2732	-87.2726	-87.2721	-87.2741	-87.2735	-87.2729
Percent TOC	1	1	1	1	1	1	1	1	1	1
Percent Moisture	68.425	65.9	69.985	34.495	26.705	41	24.965	39	18.605	39.18
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<160000	<150000	<170000	**8900**	<70000	**310000**	NR	<93000	NR	**99000**
Benzo(a)pyrene	<160000	<150000	<170000	**12000**	<70000	**390000**	NR	<93000	NR	**120000**
Chrysene	<160000	<150000	<170000	**13000**	<70000	**470000**	NR	<93000	NR	**150000**
Dibenz[a,h]anthracene	<160000	<150000	<170000	<84000	<70000	**51000**	NR	<93000	NR	**15000**
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<20000	<16000	<20000	<10000	<10000	<10000	<10000	<10000	<6000	<10000
Aroclor 1242	<20000	<16000	<20000	<10000	<10000	<10000	<10000	<10000	<6000	<10000
Aroclor 1248	<20000	<16000	<20000	<10000	<10000	<10000	<10000	<10000	<6000	<10000
Aroclor 1254	<20000	<16000	<20000	<10000	<10000	<10000	<10000	<10000	<6000	<10000
Aroclor 1260	<20000	<16000	<20000	<10000	<10000	<10000	<10000	<10000	<6000	<10000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S79	97CG80S80	97CG80S81	97CG80S82	97CG80S83	97CG80S84	97CG80S85	97CG80S86	97CG80S87	97CG80S88
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S89	97CG80S90	97CG80S91	97CG80S92	97CG80S93	97CG80S94	97CG80S95	97CG80S96	97CG80D96	97CG80S97
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6168	41.6168	41.6152	41.6152	41.6152	41.6152	41.6155	41.6155	41.6155	41.6155
Longitude	-87.2724	-87.2718	-87.2682	-87.2677	-87.2671	-87.2665	-87.2674	-87.2668	-87.2668	-87.2662
Percent TOC	1	1	1	1	1.4	1	3.3	1	1	1
Percent Moisture	47.98	29.515	21.51	80.81	75.785	30.92	16.58	77.685	80.99001	82.08
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**7100000**	<82000	**20000**	**180000**	**50000**	<89000	**39400**	<210000	**67000**	**130000**
Benzo(a)pyrene	**6700000**	**12000**	**19000**	**210000**	**47100**	<89000	**26700**	<210000	**73000**	**150000**
Chrysene	**8100000**	**14000**	**24000**	**290000**	**63600**	<89000	**42400**	<210000	**92000**	**200000**
Dibenz[a,h]anthracene	**710000**	<82000	<89000	<620000	<171000	<89000	**3330**	<210000	<250000	<470000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<10000	NR	<30000	<21400	<10000	<1520	<20000	<25000	<30000
Aroclor 1242	<10000	<10000	NR	<30000	<21400	<10000	<1520	<20000	<25000	<30000
Aroclor 1248	<10000	<10000	NR	<30000	<21400	<10000	<1520	<20000	<25000	<30000
Aroclor 1254	<10000	<10000	NR	<30000	<21400	<10000	<1520	<20000	<25000	<30000
Aroclor 1260	<10000	<10000	NR	<30000	<21400	<10000	<1520	<20000	<25000	<30000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	**600**	**1300**	NR	NR	**90.9**	NR	NR	NR
Dieldrin	NR	NR	<400	<1500	<1070	NR	<90.9	<1000	<1300	<700

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S89	97CG80S90	97CG80S91	97CG80S92	97CG80S93	97CG80S94	97CG80S95	97CG80S96	97CG80D96	97CG80S97
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	<400	<1500	<1070	NR	<90.9	<1000	<1300	<1400
Heptachlor	NR	NR	<200	<700	<500	NR	<30.3	<500	<600	<700
Heptachlor epoxide	NR	NR	<200	<700	<500	NR	<30.3	<500	<600	<700
Lindane	NR	NR	<200	<700	<500	NR	<30.3	<500	<600	<700
p,p'-DDD	NR	NR	**2300**	**5700**	**6790**	NR	**212**	<500	**4800**	**7500**
p,p'-DDE	NR	NR	**9000**	**27700**	**21300**	NR	**1360**	**4000**	**38100**	**34600**
p,p'-DDT	NR	NR	**1100**	**2800**	**1640**	NR	**182**	<0	**2900**	**6700**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S98	97CG80S99	97CG81S01	97CG81S02	97CG81S03	97CG81S04	97CG81S05	97CG81S06	97CG81S07	97CG81S08
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6155	41.6155	41.6155	41.6155	41.6155	41.6155	41.6159	41.6159	41.6159	41.6159
Longitude	-87.2657	-87.2651	-87.2645	-87.264	-87.2634	-87.2628	-87.2654	-87.2648	-87.2643	-87.2637
Percent TOC	1	1	1	1	1	1.3	1	1	1	1
Percent Moisture	53.105	20.11	84.795	25.12	76.185	73.205	77.21	78.45	55.3	72.685
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**13000**	<89000	**60000**	<67000	**56000**	**362000**	<200000	NR	**19000**	<170000
Benzo(a)pyrene	**14000**	<89000	**69000**	<67000	**72000**	**415000**	<200000	NR	**24000**	<170000
Chrysene	**16000**	<89000	**80000**	<67000	**73000**	**492000**	<200000	NR	**28000**	**19000**
Dibenz[a,h]anthracene	<110000	<89000	<280000	<67000	<230000	**67700**	<200000	NR	<100000	<170000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	NR	<10000	<30000	<6000	<22000	<15400	NR	<25000	<12000	<20000
Aroclor 1242	NR	<10000	<30000	<6000	<22000	<15400	NR	<25000	<12000	<20000
Aroclor 1248	NR	<10000	<30000	<6000	<22000	<15400	NR	<25000	<12000	<20000
Aroclor 1254	NR	<10000	<30000	<6000	<22000	<15400	NR	<25000	<12000	<20000
Aroclor 1260	NR	<10000	<30000	<6000	<22000	<15400	NR	<25000	<12000	<20000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	**900**	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	<400	<1500	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG80S98	97CG80S99	97CG81S01	97CG81S02	97CG81S03	97CG81S04	97CG81S05	97CG81S06	97CG81S07	97CG81S08
Pesticides (µg/kg OC; cont.)										
Endrin	NR	<400	<1500	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	<200	<700	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	<200	<700	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	<200	<700	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	<400	**8500**	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	<400	**63000**	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	<400	**9400**	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG81S09	97CG81D09	97CG81S10	97CG81S11	97CG81S12	97CG81S13	97CG81S14	97CG81S15	97CG81S16	97CG81S17
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6159	41.6159	41.6159	41.6163	41.6163	41.6163	41.6163	41.6166	41.6166	41.6177
Longitude	-87.2631	-87.2631	-87.2626	-87.264	-87.2634	-87.2629	-87.2623	-87.2637	-87.2631	-87.2617
Percent TOC	1.3	1	1	1	1	1	1	1	1	1
Percent Moisture	72.1	73.9	64.9	59.9	29.8	77.375	71.705	23.605	68.38	79.895
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**53100**	**160000**	**340000**	<140000	<90000	**160000**	<180000	**23000**	<150000	<190000
Benzo(a)pyrene	**69200**	**210000**	**390000**	<140000	<90000	**220000**	<180000	**37000**	**16000**	<190000
Chrysene	**76900**	**220000**	**440000**	<140000	<90000	**240000**	<180000	**31000**	**18000**	<190000
Dibenz[a,h]anthracene	<162000	**35000**	**47000**	<140000	<90000	**34000**	<180000	<72000	<150000	<190000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<15400	<20000	<15000	<14000	<10000	<25000	<20000	<10000	<20000	<30000
Aroclor 1242	<15400	<20000	<15000	<14000	<10000	<25000	<20000	<10000	<20000	<30000
Aroclor 1248	<15400	<20000	<15000	<14000	<10000	<25000	<20000	<10000	<20000	<30000
Aroclor 1254	<15400	<20000	**45000**	<14000	<10000	<25000	<20000	<10000	<20000	<30000
Aroclor 1260	<15400	<20000	<15000	<14000	<10000	<25000	<20000	<10000	<20000	<30000
Total PCBs[1]	NR	NR	**45000**	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG81S09	97CG81D09	97CG81S10	97CG81S11	97CG81S12	97CG81S13	97CG81S14	97CG81S15	97CG81S16	97CG81S17
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG81S18	97CG81S19	97CG81S20	97CG83S01	97CG83D01	97CG83S02	97CG83S03	97CG83S04	97CG83S05	97CG83S06
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6177	41.6177	41.6177	41.6154	41.6154	41.6156	41.6156	41.6156	41.6156	41.6158
Longitude	-87.2612	-87.2606	-87.26	-87.2788	-87.2788	-87.2785	-87.2789	-87.2787	-87.2784	-87.2791
Percent TOC	1	1	1	1.1	1.1	1	1.1	1	1	1
Percent Moisture	27.38	23.295	34.47	50.07	40.01	39.305	64.21	33.01	30.79	52.015
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<75000	<76000	**12000**	**27300**	<76400	**22000**	NR	<77000	<76000	**27000**
Benzo(a)pyrene	<75000	<76000	**14000**	**45500**	<76400	**32000**	NR	**8900**	<76000	**43000**
Chrysene	<75000	<76000	**17000**	**35500**	<76400	**29000**	NR	<77000	<76000	**37000**
Dibenz[a,h]anthracene	<75000	<76000	<76000	<109000	<76400	<110000	NR	<77000	<76000	<130000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<10000	<10000	<9090	<9090	<10000	<18200	<10000	<10000	<13000
Aroclor 1242	<10000	<10000	<10000	<9090	<9090	<10000	<18200	<10000	<10000	<13000
Aroclor 1248	<10000	<10000	<10000	<9090	<9090	<10000	<18200	<10000	<10000	<13000
Aroclor 1254	<10000	<10000	<10000	<9090	<9090	<10000	<18200	<10000	<10000	<13000
Aroclor 1260	<10000	<10000	<10000	<9090	<9090	**30000**	**21800**	<10000	<10000	<13000
Total PCBs[1]	NR	NR	NR	NR	NR	**30000**	**21800**	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG81S18	97CG81S19	97CG81S20	97CG83S01	97CG83D01	97CG83S02	97CG83S03	97CG83S04	97CG83S05	97CG83S06
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG83S07	97CG83S08	97CG83S09	97CG83S10	97CG83S11	97CG83S12	97CG83S13	97CG83S14	97CG83S15	97CG83S16
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6158	41.6158	41.616	41.616	41.616	41.6161	41.6161	41.6161	41.6163	41.6163
Longitude	-87.2788	-87.2785	-87.2792	-87.2789	-87.2787	-87.2793	-87.2791	-87.2788	-87.2794	-87.2792
Percent TOC	1.5	1.4	1	1	1	1	1	1.1	1	1
Percent Moisture	53.19	53.99	31.1	42.425	28.58	32.895	39.455	27	30.62	30.095
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**19300**	**48600**	NR	**13000**	**9100**	**8500**	**20000**	<79100	**17000**	**9200**
Benzo(a)pyrene	**33300**	**70700**	NR	**22000**	**15000**	**13000**	**35000**	**8270**	**28000**	**16000**
Chrysene	**28700**	**59300**	NR	**17000**	**11000**	**12000**	**28000**	<79100	**21000**	**11000**
Dibenz[a,h]anthracene	<73300	<78600	NR	<90000	<81000	<78000	<92000	<79100	<82000	<80000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<6670	<7140	<10000	<10000	<10000	<10000	<10000	<9090	<10000	<10000
Aroclor 1242	<6670	<7140	<10000	<10000	<10000	<10000	<10000	<9090	<10000	<10000
Aroclor 1248	<6670	<7140	<10000	<10000	<10000	<10000	<10000	<9090	<10000	<10000
Aroclor 1254	<6670	<71400	<10000	<10000	<10000	<10000	<10000	<9090	<10000	<10000
Aroclor 1260	<6670	<379000	<10000	**13000**	<10000	<10000	<10000	<9090	<10000	**13000**
Total PCBs[1]	NR	NR	NR	**13000**	NR	NR	NR	NR	NR	**13000**
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG83S07	97CG83S08	97CG83S09	97CG83S10	97CG83S11	97CG83S12	97CG83S13	97CG83S14	97CG83S15	97CG83S16
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG83S17	97CG83S18	97CG83S19	97CG83D19	97CG83S20	97CG85S01	97CG85S02	97CG85S03	97CG85S04	97CG85S05
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6163	41.6163	41.6165	41.6165	41.6165	41.6155	41.6157	41.6157	41.616	41.616
Longitude	-87.2789	-87.2787	-87.2798	-87.2798	-87.2796	-87.2761	-87.2768	-87.2757	-87.2768	-87.2764
Percent TOC	1	1	1	1	1	1	1	1	1	1
Percent Moisture	34.19	27.595	56.21	48.575	24.8	44.525	31	48.695	47.005	34.08
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	**18000**	**15000**	**54000**	**39000**	<86000	**12000**	**8800**	<120000	<100000	**15000**
Benzo(a)pyrene	**31000**	**21000**	**83000**	**58000**	<86000	**17000**	**13000**	<120000	<100000	**23000**
Chrysene	**22000**	**19000**	**75000**	**53000**	<86000	**14000**	**12000**	**14000**	<100000	**35000**
Dibenz[a,h]anthracene	<77000	<71000	**13000**	<100000	<86000	<110000	<86000	<120000	<100000	<86000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<10000	<10000	<10000	<10000	<13000	<10000	<13000	<10000	<10000
Aroclor 1242	<10000	<10000	<10000	<10000	<10000	<13000	<10000	<13000	<10000	<10000
Aroclor 1248	<10000	<10000	<10000	<10000	<10000	<13000	<10000	<13000	<10000	<10000
Aroclor 1254	<10000	<10000	<10000	<10000	<10000	<13000	<10000	<13000	<10000	<10000
Aroclor 1260	<10000	**30000**	**10000**	**10000**	<10000	<13000	<10000	<13000	<10000	<10000
Total PCBs[1]	NR	**30000**	**10000**	**10000**	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG83S17	97CG83S18	97CG83S19	97CG83D19	97CG83S20	97CG85S01	97CG85S02	97CG85S03	97CG85S04	97CG85S05
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG85S06	97CG85D06	97CG85S07	97CG85S08	97CG85S09	97CG85S10	97CG85D10	97CG85S11	97CG85S12	97CG85S13
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.616	41.616	41.616	41.6163	41.6163	41.6163	41.6163	41.6163	41.6163	41.6165
Longitude	-87.2761	-87.2761	-87.2757	-87.2771	-87.2768	-87.2764	-87.2764	-87.2761	-87.2757	-87.2764
Percent TOC	1	1	1	1	1	1	1	1	1	1
Percent Moisture	43.205	34.315	37.705	40.19	42.65	29.31	31.715	25.08	28.905	24.39
Polycyclic Aromatic Hydrocarbons (µg/kg OC)										
Benz[a]anthracene	<100000	<85000	<93000	<100000	NR	**11000**	**13000**	<74000	<95000	<85000
Benzo(a)pyrene	**14000**	<85000	<93000	<100000	NR	**17000**	**19000**	<74000	<95000	<85000
Chrysene	**13000**	<85000	<93000	<100000	NR	**24000**	**21000**	**7500**	<95000	<85000
Dibenz[a,h]anthracene	<100000	<85000	<93000	<100000	NR	<85000	<77000	<74000	<95000	<85000
Polychlorinated Biphenyls (µg/kg OC)										
Aroclor 1016	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000
Aroclor 1242	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000
Aroclor 1248	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000
Aroclor 1254	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000
Aroclor 1260	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)										
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG85S06	97CG85D06	97CG85S07	97CG85S08	97CG85S09	97CG85S10	97CG85D10	97CG85S11	97CG85S12	97CG85S13
Pesticides (µg/kg OC; cont.)										
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG85S14	97CG85S15	97CG85S16	97CG85S17	97CG85S18	97CG85S19	98CG50S01 East Pond #5	98CG50S02 East Pond #19	98CG50S03 West Pond #7
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1997	1997	1997	1997	1997	1997	1998	1998	1998
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6165	41.6165	41.6168	41.6168	41.6168	41.6171	41.616	41.6171	41.6158
Longitude	-87.2761	-87.2757	-87.2761	-87.2757	-87.2754	-87.2754	-87.2764	-87.2754	-87.2788
Percent TOC	1	1	1	1	1	1	0.51	0.14	0.69
Percent Moisture	24.28	32.72	29.305	24.48	43.385	86.995	62.825	23.91395	36.29805
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	<98000	**12000**	<90000	<82000	<230000	**71000**	<176000	<929000	**159000**
Benzo(a)pyrene	<98000	**16000**	<90000	**11000**	**24000**	**110000**	<176000	<929000	**203000**
Chrysene	<98000	**18000**	<90000	**8700**	<230000	**89000**	<176000	<929000	**188000**
Dibenz[a,h]anthracene	<98000	<100000	<90000	<82000	<230000	<510000	<176000	<929000	<493000
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<10000	<10000	<10000	<10000	<10000	<50000	<19600	<35700	<14500
Aroclor 1242	<10000	<10000	<10000	<10000	<10000	<50000	<19600	<35700	<14500
Aroclor 1248	<10000	<10000	<10000	<10000	<10000	<50000	<19600	<35700	<14500
Aroclor 1254	<10000	<10000	<10000	<10000	<10000	<50000	<19600	<35700	<14500
Aroclor 1260	<10000	<10000	<10000	<10000	<10000	<50000	<19600	<35700	**49300**
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	**49300**
Pesticides (µg/kg OC)									
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	97CG85S14	97CG85S15	97CG85S16	97CG85S17	97CG85S18	97CG85S19	98CG50S01 East Pond #5	98CG50S02 East Pond #19	98CG50S03 West Pond #7
Pesticides (µg/kg OC; cont.)									
Endrin	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S04 West Pond #18	98CG50S14 West Lake #1	98CG50S15 West Lake #16	98CG50S16 West Lake #18	98CG50S17 West Lake #21	98CG50S18 West Lake #28	98CG50D18 West Lake #28	98CG50S19 West Lake #32
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6163	41.6115	41.6132	41.6132	41.6136	41.6136	41.6136	41.6136
Longitude	-87.2787	-87.2947	-87.2797	-87.2784	-87.2872	-87.2826	-87.2826	-87.2787
Percent TOC	0.02	15.8	1	0.42	1.12	0.67	0.62	0.54
Percent Moisture	36.9915	53.5119	83.8709	15.8068	42.48405	83.4444	43.0279	78.0715
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**2350000**	**354000**	**380000**	**78600**	**893000**	**806000**	**1080000**	**500000**
Benzo(a)pyrene	**3100000**	**392000**	**510000**	**107000**	**1250000**	**925000**	**1450000**	**519000**
Chrysene	**2550000**	**278000**	**430000**	**92900**	**982000**	**627000**	**823000**	**407000**
Dibenz[a,h]anthracene	<8000000	**30400**	<610000	<117000	**277000**	<1790000	<2260000	**88900**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<350000	<633	<25000	<14300	<22300	<29900	<41900	<27800
Aroclor 1242	<350000	<633	<25000	<14300	<22300	<29900	<41900	<27800
Aroclor 1248	<350000	<633	**25000**	<14300	**50000**	**53700**	**72600**	**35200**
Aroclor 1254	<350000	<633	<25000	<14300	<22300	<29900	<41900	<27800
Aroclor 1260	<350000	**2340**	<25000	<14300	<22300	<29900	<41900	<27800
Total PCBs[1]	NR	**2340**	**25000**	NR	**50000**	**53700**	**72600**	**35200**
Pesticides (µg/kg OC)								
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S04 West Pond #18	98CG50S14 West Lake #1	98CG50S15 West Lake #16	98CG50S16 West Lake #18	98CG50S17 West Lake #21	98CG50S18 West Lake #28	98CG50D18 West Lake #28	98CG50S19 West Lake #32
Pesticides (µg/kg OC; cont.)								
Endrin	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	NR
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S20 West Lake #33	98CG50S21 West Lake #40	98CG50S22 Middle Lake #2	98CG50S23 Middle Lake #6	98CG50S24 Middle Lake #16	98CG50S25 Middle Lake #18	98CG50S26 Middle Lake #22	98CG50S27 East Lake #7
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	surface	surface	surface	surface	surface	surface	surface	surface
Latitude	41.6136	41.614	41.6145	41.6149	41.6153	41.6153	41.6156	41.6155
Longitude	-87.278	-87.2777	-87.2753	-87.2738	-87.2712	-87.27	-87.2726	-87.2662
Percent TOC	0.55	0.84	0.51	0.32	0.49	0.57	0.45	0.38
Percent Moisture	81.01575	37.9047	72.62075	63.9134	79.88155	83.24319	74.02264	76.15445
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**291000**	**214000**	**133000**	**116000**	**286000**	**789000**	**162000**	**605000**
Benzo(a)pyrene	**345000**	**250000**	**143000**	**131000**	**306000**	**947000**	**204000**	**737000**
Chrysene	**273000**	**202000**	**118000**	**109000**	**265000**	**789000**	**178000**	**553000**
Dibenz[a,h]anthracene	<473000	<250000	<353000	<275000	<490000	<526000	<400000	<526000
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<36400	<23800	<25500	<31300	NR	<35100	<31100	<39500
Aroclor 1242	<36400	<23800	<25500	<31300	NR	<35100	<31100	<39500
Aroclor 1248	<36400	**16700**	<25500	<31300	NR	<35100	<31100	<39500
Aroclor 1254	<36400	<23800	<25500	<31300	NR	**221000**	<31100	<39500
Aroclor 1260	<36400	<23800	<25500	<31300	NR	<35100	<31100	<39500
Total PCBs[1]	NR	**16700**	NR	NR	NR	**221000**	NR	NR
Pesticides (µg/kg OC)								
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	**2890**
Dieldrin	NR	NR	NR	NR	NR	NR	NR	<1840

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S20 West Lake #33	98CG50S21 West Lake #40	98CG50S22 Middle Lake #2	98CG50S23 Middle Lake #6	98CG50S24 Middle Lake #16	98CG50S25 Middle Lake #18	98CG50S26 Middle Lake #22	98CG50S27 East Lake #7
Pesticides (µg/kg OC; cont.)								
Endrin	NR	NR	NR	NR	NR	NR	NR	<1840
Heptachlor	NR	NR	NR	NR	NR	NR	NR	<1050
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	<1050
Lindane	NR	NR	NR	NR	NR	NR	NR	<1050
p,p'-DDD	NR	NR	NR	NR	NR	NR	NR	**21300**
p,p'-DDE	NR	NR	NR	NR	NR	NR	NR	**65800**
p,p'-DDT	NR	NR	NR	NR	NR	NR	NR	**21100**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S28 East Lake #10	98CG50S29 East Lake #13	98CG50S30 East Lake #29	98CG50S31 East Lake #34
Geographic Area	GCRL	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL	GCRL
Sampling Year	1998	1998	1998	1998
Depth (ft)	surface	surface	surface	surface
Latitude	41.6155	41.6155	41.617	41.6174
Longitude	-87.2645	-87.2628	-87.2617	-87.2597
Percent TOC	0.6	0.8	0.87	0.52
Percent Moisture	79.21405	77.66135	77.3433	82.9404
Polycyclic Aromatic Hydrocarbons (µg/kg OC)				
Benz[a]anthracene	**717000**	**825000**	**552000**	**2500000**
Benzo(a)pyrene	**967000**	**812000**	**586000**	**2500000**
Chrysene	**833000**	**937000**	**621000**	**2310000**
Dibenz[a,h]anthracene	<400000	<262000	<241000	<1130000
Polychlorinated Biphenyls (µg/kg OC)				
Aroclor 1016	<33300	<25000	<23000	<38500
Aroclor 1242	<33300	<25000	<23000	<38500
Aroclor 1248	<33300	<25000	<23000	<38500
Aroclor 1254	<33300	<25000	<23000	<38500
Aroclor 1260	<33300	<25000	<23000	<38500
Total PCBs[1]	NR	NR	NR	NR
Pesticides (µg/kg OC)				
Chlordane[1]	**7500**	**9500**	**3560**	**37700**
Dieldrin	**4330**	<1250	<920	<1540

Table A3.13 Sediment chemistry data used to assess injury to human uses of fishery resources (Simon 2000; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	98CG50S28 East Lake #10	98CG50S29 East Lake #13	98CG50S30 East Lake #29	98CG50S31 East Lake #34
Pesticides (µg/kg OC; cont.)				
Endrin	**2330**	<1250	<920	<1540
Heptachlor	<833	<625	<460	<769
Heptachlor epoxide	<833	<625	<460	<769
Lindane	<833	<625	<460	<769
p,p'-DDD	**13000**	**18900**	**8740**	**1010000**
p,p'-DDE	**65700**	**67500**	**48600**	**1030000**
p,p'-DDT	**14700**	**14100**	**10100**	**758000**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	**A-M**	**A-M**	**A-M**	**A-N**	**A-N**	**A-S**	**B-M**	**B-M**
Sample	**ECH-E-AM01**	**ECH-E-AM02**	**ECH-E-AM03**	**ECH-E-AN01_1**	**ECH-E-AN01_2**	**ECH-E-AS01**	**BCORE01SD**	**BCORE02SD_1**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	0-0.33	0.33 - 0.66	0.66 - 0.98	0-0.33	0-0.33	0-0.33	0-1.80	1.80 - 3.94
Latitude	41.6133	41.6133	41.6133	41.6134	41.6134	41.6132	41.6132	41.6132
Longitude	-87.4341	-87.4341	-87.4341	-87.4341	-87.4341	-87.4341	-87.4381	-87.4381
Percent TOC	1.03	1.22	3.2	2.24	2.03	2.12	3	4.2
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benzene	<194	**27900**	**17800**	<89.3	<98.5	<189	NR	NR
Carbazole	**62100**	**1230000**	**4370000**	**49100**	**54200**	<21200	<15300	<3810
Benz[a]anthracene	**2330000**	**28700000**	**43700000**	**1030000**	**1130000**	**387000**	**833000**	**5710**
Benzo(a)pyrene	**2330000**	**19700000**	**29100000**	**982000**	**1080000**	**226000**	**600000**	<3810
Benzo(b)fluoranthene	**2330000**	**20500000**	**29700000**	**1030000**	**1080000**	**264000**	**867000**	<3810
Benzo(k)fluoranthene	**922000**	**5490000**	**8440000**	**348000**	**429000**	**56600**	**310000**	<3810
Chrysene	**2430000**	**32800000**	**43700000**	**1340000**	**1530000**	**849000**	**1070000**	**5480**
Dibenz[a,h]anthracene	**359000**	**2050000**	**3440000**	**179000**	**177000**	**61300**	<15300	<3810
Indeno(1,2,3-c,d)pyrene	**1460000**	**10700000**	**11200000**	**670000**	**690000**	**142000**	**250000**	<3810
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<44700	<36900	<14700	<25000	<26100	<42000	<3000	<3570
Aroclor 1242	<44700	<36900	<14700	<25000	<26100	<42000	<3000	<3570
Aroclor 1248	**252000**	<36900	<14700	**205000**	**192000**	<42000	<3000	<3570
Aroclor 1254	<44700	<36900	<14700	<25000	<26100	<42000	<3000	<3570
Aroclor 1260	<44700	<36900	<14700	<25000	<26100	<42000	<3000	<3570
Total PCBs[1]	**252000**	NR	NR	**205000**	**192000**	NR	NR	NR

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	A-M ECH-E-AM01	A-M ECH-E-AM02	A-M ECH-E-AM03	A-N ECH-E-AN01_1	A-N ECH-E-AN01_2	A-S ECH-E-AS01	B-M BCORE01SD	B-M BCORE02SD_1
Chlorophenols (µg/kg OC)								
2,4,6-Trichlorophenol	<45600	<73800	<150000	<25000	<26100	<42500	<30300	<7380
2,4-Dichlorophenol	<45600	<73800	<150000	<25000	<26100	<42500	<30300	<7380
Pentachlorophenol	<117000	<189000	<375000	<62500	<64000	<108000	<76700	<18600
Pesticides (µg/kg OC)								
Aldrin	<913	<746	<300	<491	<542	<849	<60.0	<73.8
Chlordane[1]	NR	**1980**	**1020**	**893**	**542**	NR	NR	**145**
Dieldrin	<1750	<1480	**625**	<982	<1030	<1650	**213**	<145
Endosulfan, total	5600	14500	11700	2770	2460	<4100	820	<364
Endrin	<1750	<1480	<594	**1470**	<1030	<1650	<120	<145
Heptachlor	<913	<746	<300	<491	<542	<849	<60.0	**73.8**
Heptachlor epoxide	**3960**	<746	<300	<491	**1920**	<849	<60.0	<73.8
Hexachlorocyclohexane-alpha	<913	<746	<300	<491	<542	<849	<60.0	<73.8
Hexachlorocyclohexane-beta	**1580**	**13300**	<300	<491	**1870**	<849	<60.0	<73.8
Lindane	<913	<746	<300	<491	**591**	<849	<60.0	<73.8
p,p'-DDD	<1750	<1480	<594	<982	<1480	<1600	<1200	<145
p,p'-DDE	<1750	<1480	<594	<982	**15800**	<1600	<1200	<145
p,p'-DDT	<1750	<1480	**1470**	<982	<1030	<1650	<1200	<145

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station **Sample**	**B-M** **BCORE03SD**	**B-N** **ECH-E-BN01**	**B-S** **ECH-E-BS01**	**C-N** **ECH-E-CN03_1**	**D-N** **ECH-E-DN01**	**D-S** **ECH-E-DS01**	**G-M** **GCORE01SD**	**G-M** **GCORE02SD**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	3.94 - 5.68	0-0.33	0-0.33	0.66 - 0.98	0-0.33	0-0.33	0-2.10	3.08 - 6.82
Latitude	41.6132	41.6134	41.6130	41.6119	41.6128	41.6126	41.6172	41.6172
Longitude	-87.4381	-87.4381	-87.4380	-87.4494	-87.4511	-87.4514	-87.4582	-87.4582
Percent TOC	0.253	1.17	3	3	2.16	3.34	1.19	3.1
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benzene	NR	<171	300	NR	4490	<150	NR	NR
Carbazole	<16200	<23900	<63300	NR	<20400	<16800	**118000**	<3870
Benz[a]anthracene	<16200	**821000**	**1230000**	NR	**880000**	**2690000**	**1090000**	<3870
Benzo(a)pyrene	<16200	**795000**	**1000000**	NR	**1060000**	**1290000**	**840000**	<3870
Benzo(b)fluoranthene	<16200	**855000**	**367000**	NR	**1200000**	**1470000**	**1010000**	<3870
Benzo(k)fluoranthene	<16200	**333000**	<63300	NR	**407000**	<16800	<30300	<3870
Chrysene	<16200	**1030000**	**1800000**	NR	**1160000**	**6290000**	**2440000**	<3870
Dibenz[a,h]anthracene	<16200	**137000**	**180000**	NR	**218000**	**389000**	**193000**	<3870
Indeno(1,2,3-c,d)pyrene	<16200	**573000**	**633000**	NR	**880000**	**689000**	**454000**	<3870
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<15800	<47000	<25000	NR	<39800	<32900	<5970	<3550
Aroclor 1242	<15800	<47000	<25000	NR	<39800	<32900	<36100	<3550
Aroclor 1248	<15800	**538000**	**2280000**	NR	**495000**	<32900	<92400	<3550
Aroclor 1254	<15800	<47000	<25000	NR	<39800	<32900	<72300	<3550
Aroclor 1260	<15800	<47000	<25000	NR	<39800	<32900	<31100	<3550
Total PCBs[1]	NR	**538000**	**2280000**	NR	**495000**	NR	NR	NR

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	B-M BCORE03SD	B-N ECH-E-BN01	B-S ECH-E-BS01	C-N ECH-E-CN03_1	D-N ECH-E-DN01	D-S ECH-E-DS01	G-M GCORE01SD	G-M GCORE02SD
Chlorophenols (µg/kg OC)								
2,4,6-Trichlorophenol	<32000	<47900	<127000	NR	<40300	<32900	<60500	<7420
2,4-Dichlorophenol	<32000	<47900	<127000	NR	<40300	<32900	<60500	<7420
Pentachlorophenol	<79100	<120000000	<317000	48	<102000	<83800	<151000	<18700
Pesticides (µg/kg OC)								
Aldrin	<324	<940	<500	NR	<833	<689	<118	<74.2
Chlordane[1]	NR	NR	**667**	NR	**1300**	**3230**	**2000**	NR
Dieldrin	<632	<1880	**1700**	NR	<1570	<1320	<235	<145
Endosulfan, total	<1590	<4700	<2500	NR	<3980	<3320	<588	<365
Endrin	<632	<1880	<1000	NR	<1570	<1320	**1600**	<145
Heptachlor	<324	<940	<500	NR	<833	<689	**336**	<74.2
Heptachlor epoxide	<324	<940	**25700**	NR	<833	<689	**353**	<74.2
Hexachlorocyclohexane-alpha	<324	<940	<500	NR	<833	<689	<118	<74.2
Hexachlorocyclohexane-beta	<324	**1370**	**5830**	NR	<833	<689	**454**	<74.2
Lindane	<324	<940	**1170**	NR	<833	<689	<118	<74.2
p,p'-DDD	<632	<1880	<1000	NR	<1570	<1320	<235	<145
p,p'-DDE	<632	<1880	**10700**	NR	<1570	<1320	<235	<145
p,p'-DDT	<632	**3160**	<1000	NR	**3100**	<1320	<235	<145

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	G-M GCORE03SD_1	G-M GCORE03SD_2	I-M ECH-E-IM01	I-M ECH-E-IM02_1	I-M ECH-E-IM02_2	I-M ECH-E-IM03	I-M ICORE01SD	I-M ICORE02SD
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	6.82 - 8.50	6.82 - 8.50	0-0.33	0.33 - 0.66	0.33 - 0.66	0.66 - 0.98	0-2.43	2.43 - 5.09
Latitude	41.6172	41.6172	41.6148	41.6148	41.6148	41.6148	41.6148	41.6148
Longitude	-87.4582	-87.4582	-87.4610	-87.4610	-87.4610	-87.4610	-87.4610	-87.4610
Percent TOC	2.5	3.4	1.31	1.94	1.13	2.04	2.5	1.8
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benzene	NR	NR	382	361	531	294	NR	NR
Carbazole	<3920	<2940	<22100	**134000**	**248000**	<26500	**96000**	<6110
Benz[a]anthracene	<3920	<2940	**763000**	**5000000**	**7960000**	**1720000**	**5600000**	**11700**
Benzo(a)pyrene	<3920	<2940	**840000**	**3090000**	**4070000**	**1030000**	**2920000**	**10600**
Benzo(b)fluoranthene	<3920	<2940	**1150000**	**3560000**	**4420000**	**1470000**	**3320000**	<6110
Benzo(k)fluoranthene	<3920	<2940	**397000**	**1240000**	**1060000**	**358000**	**680000**	<6110
Chrysene	<3920	<2940	**1370000**	**9790000**	**19500000**	**3190000**	**15200000**	**14400**
Dibenz[a,h]anthracene	<3920	<2940	**107000**	**454000**	**611000**	**137000**	**400000**	<6110
Indeno(1,2,3-c,d)pyrene	<3920	<2940	**359000**	**1030000**	**1060000**	**324000**	**560000**	<6110
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<3880	<2940	<43500	<39200	<6550	<5390	<92000	<6110
Aroclor 1242	<3880	<2940	<43500	<39200	<6550	<5390	<92000	<6110
Aroclor 1248	<3880	<2940	**435000**	**304000**	**419000**	<5390	<92000	<6110
Aroclor 1254	<3880	<2940	<43500	<39200	<6550	<5390	<40000	<6110
Aroclor 1260	<3880	<2940	<43500	<39200	<6550	<5390	<18000	<6110
Total PCBs[1]	NR	NR	**435000**	**304000**	**419000**	NR	NR	NR

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	G-M GCORE03SD_1	G-M GCORE03SD_2	I-M ECH-E-IM01	I-M ECH-E-IM02_1	I-M ECH-E-IM02_2	I-M ECH-E-IM03	I-M ICORE01SD	I-M ICORE02SD
Chlorophenols (µg/kg OC)								
2,4,6-Trichlorophenol	<8000	<6180	<44300	<39700	<66400	<53900	<30400	<12800
2,4-Dichlorophenol	<8000	<6180	<44300	<39700	<66400	<53900	<30400	<12800
Pentachlorophenol	<19600	<15300	<107000	<97900	<168000	<132000	<76000	<31100
Pesticides (µg/kg OC)								
Aldrin	<80.0	<61.8	<916	<773	<1330	<1080	<60.0	<128
Chlordane[1]	NR	NR	NR	**6080**	**24100**	**3280**	**6600**	NR
Dieldrin	<152	<118	<1760	<1550	<2570	<2060	**720**	<244
Endosulfan, total	<384	<297	<4430	<3870	<6460	<5200	1940	<617
Endrin	<152	<118	<1760	<1550	**4340**	<2060	<116	<244
Heptachlor	<80.0	<61.8	<916	<773	<1330	<1080	<60.0	<128
Heptachlor epoxide	<80.0	<61.8	<916	<773	<1330	<1080	**604**	<128
Hexachlorocyclohexane-alpha	<80.0	<61.8	<916	<773	<1330	<1080	<60.0	<128
Hexachlorocyclohexane-beta	<80.0	<61.8	<916	**1290**	<1330	<1080	**600**	<128
Lindane	<80.0	<61.8	<916	<773	**1500**	<1080	**312**	<128
p,p'-DDD	<152	<118	<1760	<1550	<2570	<2060	<116	<244
p,p'-DDE	<152	<118	<1760	<1550	**8140**	<2060	**1160**	<244
p,p'-DDT	<152	<118	<1760	<1550	<2570	<2060	**216**	<244

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	**I-M**	**I-N (S)**	**I-N**	**I-N**	**I-S**	**I-S**	**I-S**	**WETLAND1**	**WETLAND2**
Sample	**ICORE03SD**	**ECH-E-IN02**	**ECH-E-IN01**	**ECH-E-IN03**	**ECH-E-IS01**	**ECH-E-IS02**	**ECH-E-IS03**	**ECH-E-W101**	**ECH-E-W102_1**
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	5.09 - 6.00	0.33 - 0.66	0-0.33	0.66 - 0.98	0-0.33	0.33 - 0.66	0.66 - 0.98	0-0.33	0-0.33
Latitude	41.6148	41.6148	41.6148	41.6148	41.6147	41.6147	41.6147	41.6130	41.6126
Longitude	-87.4610	-87.4611	-87.4611	-87.4611	-87.4609	-87.4609	-87.4609	-87.4415	-87.4502
Percent TOC	0.63	2.5	3.49	2.2	1.25	1.5	0.21	7.1	8.2
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benzene	NR	280	430	955	560	<400	<476	<84.5	<110
Carbazole	<6670	<18000	<13800	<43600	<34400	<40000	<114000	NR	NR
Benz[a]anthracene	**15900**	**1440000**	**487000**	**955000**	**664000**	**273000**	<114000	NR	NR
Benzo(a)pyrene	**7940**	**760000**	**516000**	**591000**	**440000**	**220000**	<114000	NR	NR
Benzo(b)fluoranthene	<6670	**1000000**	**688000**	**909000**	**720000**	**373000**	<114000	NR	NR
Benzo(k)fluoranthene	<6670	**204000**	**244000**	**332000**	**264000**	**133000**	<114000	NR	NR
Chrysene	**42900**	**3160000**	**745000**	**1090000**	**960000**	**207000**	<114000	NR	NR
Dibenz[a,h]anthracene	<6670	**152000**	**77400**	**72700**	**34400**	<40000	<114000	NR	NR
Indeno(1,2,3-c,d)pyrene	<6670	**268000**	**249000**	**305000**	**152000**	**93300**	<114000	NR	NR
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<6510	<35600	<26900	<43200	<68000	<80000	<224000	NR	NR
Aroclor 1242	<6510	<35600	<26900	<43200	<68000	<80000	<224000	NR	NR
Aroclor 1248	<6510	<35600	<26900	<43200	<68000	<80000	<224000	NR	NR
Aroclor 1254	<6510	<35600	<26900	<43200	<68000	<80000	<224000	NR	NR
Aroclor 1260	<6510	<35600	<26900	<43200	<68000	<80000	<224000	NR	NR
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.14 Sediment chemistry data used to assess injury to human uses of fishery resources (Exponent 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station Sample	I-M ICORE03SD	I-N (S) ECH-E-IN02	I-N ECH-E-IN01	I-N ECH-E-IN03	I-S ECH-E-IS01	I-S ECH-E-IS02	I-S ECH-E-IS03	WETLAND1 ECH-E-W101	WETLAND2 ECH-E-W102_1
Chlorophenols (µg/kg OC)									
2,4,6-Trichlorophenol	<13200	<36000	<27200	<86400	<68800	<80000	<229000	NR	NR
2,4-Dichlorophenol	<13200	<36000	<27200	<86400	<68800	<80000	<229000	NR	NR
Pentachlorophenol	<33300	<88000	<68800	<218000	<176000	<200000	<571000	NR	NR
Pesticides (µg/kg OC)									
Aldrin	<133	<720	<544	<864	<1360	<1600	<4570	NR	NR
Chlordane[1]	**159**	**2240**	**1060**	**2180**	NR	NR	NR	NR	NR
Dieldrin	<254	<1400	<1060	<1730	<2720	<3130	<9050	NR	NR
Endosulfan, total	<641	<3520	<2660	<4320	<6800	<7870	<22700	NR	NR
Endrin	<254	<1400	<1060	<1730	<2720	<3130	<9050	NR	NR
Heptachlor	<133	<720	<544	<864	<1360	<1600	<4570	NR	NR
Heptachlor epoxide	<133	<720	<544	<864	<1360	<1600	<4570	NR	NR
Hexachlorocyclohexane-alpha	<133	<720	<544	<864	<1360	<1600	<4570	NR	NR
Hexachlorocyclohexane-beta	<133	<720	<544	1640	<1360	<1600	<4570	NR	NR
Lindane	<133	<720	<544	<864	<1360	<1600	<4570	NR	NR
p,p'-DDD	<254	<1400	<1060	<1730	<2720	<3130	<9050	NR	NR
p,p'-DDE	<254	<1400	<1060	<1730	<2720	<3130	<9050	NR	NR
p,p'-DDT	<254	<1400	<1060	<1730	<2720	<3130	<9050	NR	NR

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.15 Sediment chemistry data used to assess injury to human uses of fishery resources (Thermoretec 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	SD-98-16/0-2'	SD-98-16/2-4.5'	SD-98-17/2-5'	SD-98-17S/0-2'	SD-98-18/0-2'	SD-98-18/2-4'	SD-98-20/0-2'
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	0-2	2-4.5	2-5	0-2	0-2	2-4	0-2
Latitude	41.6258	41.6258	41.6257	41.6257	41.6255	41.6255	41.6253
Longitude	-87.5215	-87.5215	-87.5208	-87.5208	-87.5199	-87.5199	-87.5193
Percent TOC	12.9	8.71	10.5	4.44	8.34	7.43	14.4
Percent Moisture	63	59.8	57.4	60.4	58.7	61.3	48.7
Polycyclic Aromatic Hydrocarbons (µg/kg OC)							
Benzene	7750	**31000**	**86700**	**563000**	6830	**89500**	**306000**
Benz[a]anthracene	**41900**	<7580	**143000**	**1490000**	**116000**	**190000**	**458000**
Benzo(a)pyrene	**27900**	<7580	<314000	**1170000**	**74300**	**149000**	<903000
Benzo(k)fluoranthene	**10900**	<7580	<314000	**315000**	**22800**	**122000**	<903000
Chrysene	**51900**	<7580	**133000**	**1530000**	**132000**	**180000**	**458000**
Dibenz[a,h]anthracene	<25600	<7580	<314000	<1490000	<39600	<444000	<903000
Indeno(1,2,3-c,d)pyrene	<25600	<7580	<314000	<1490000	<39600	<444000	<903000

OC = organic carbon; TOC = total organic carbon; GCR/IHC = Grand Calumet River and Indiana Harbor Canal;
WBGCR = West Branch of the Grand Calumet River.

Table A3.15 Sediment chemistry data used to assess injury to human uses of fishery resources (Thermoretec 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	SD-98-20/2-4'	SD-98-20S/0-0.83	SD-98-22/0-2'	SD-98-22/2-4'	SD-98-24/0-2'	SD-98-24/2-5'	SD-98-24S/0-0.83
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	2-4	0-0.83	0-2	2-4	0-2	2-5	0-0.83
Latitude	41.6253	41.6253	41.6249	41.6249	41.6245	41.6245	41.6245
Longitude	-87.5193	-87.5193	-87.5186	-87.5186	-87.51785	-87.51785	-87.5179
Percent TOC	12.1	10.4	13.7	10.1	10	6.83	15
Percent Moisture	46.6	59.9	59.6	57	50	59.3	58.9
Polycyclic Aromatic Hydrocarbons (µg/kg OC)							
Benzene	<413000	**135000**	**59900**	**257000**	<500000	4830	1800
Benz[a]anthracene	**992000**	**115000**	**131000**	**465000**	**450000**	<966000	**10700**
Benzo(a)pyrene	<2730000	**88500**	**109000**	**406000**	**350000**	<966000	**9330**
Benzo(k)fluoranthene	<2730000	<250000	<241000	**119000**	<660000	<966000	**3870**
Chrysene	**826000**	**240000**	**226000**	**515000**	**440000**	<966000	**16000**
Dibenz[a,h]anthracene	<2730000	<250000	<241000	<653000	<660000	<966000	<4400
Indeno(1,2,3-c,d)pyrene	<2730000	<250000	<241000	<653000	<660000	<966000	<4400

OC = organic carbon; TOC = total organic carbon; GCR/IHC = Grand Calumet River and Indiana Harbor Canal;
WBGCR = West Branch of the Grand Calumet River.

Table A3.15 Sediment chemistry data used to assess injury to human uses of fishery resources (Thermoretec 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	SD-98-26/0-2'	SD-98-26/2-5'
Geographic Area	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II
Sampling Year	1998	1998
Depth (ft)	0-2	2-5
Latitude	41.6239	41.6239
Longitude	-87.5168	-87.5168
Percent TOC	7.96	6.22
Percent Moisture	55.8	51.1
Polycyclic Aromatic Hydrocarbons (µg/kg OC)		
Benzene	<77900	<9970
Benz[a]anthracene	**176000**	**22500**
Benzo(a)pyrene	<415000	**18500**
Benzo(k)fluoranthene	<415000	**7880**
Chrysene	**176000**	**26500**
Dibenz[a,h]anthracene	<415000	<10600
Indeno(1,2,3-c,d)pyrene	<415000	<10600

OC = organic carbon; TOC = total organic carbon; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

Table A3.16 Sediment chemistry data used to assess injury to human uses of fishery resources (URS Greiner Woodward Clyde 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	01RA01SE00	01RA01SE07	01RA02SE00	01RA02SE07	01RA03SD10	01RA03SE00	01RA03SE10	01RB01SE00
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	0-0.16	2-3.7	0-0.16	2-5.5	5-8	0-0.16	5-8	0-0.16
Latitude	41.6169	41.6169	41.6182	41.6182	41.6188	41.6188	41.6188	41.6179
Longitude	-87.4867	-87.4867	-87.4877	-87.4877	-87.4881	-87.4881	-87.4881	-87.4859
Percent TOC	16.9	5.33	27.4	2.39	6.33	12	5.95	16.3
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benzene	<65.1	<131	<35.0	<230	NR	NR	NR	NR
Benz[a]anthracene	<3910	<6190	<2410	<13800	<5210	<68300	<5550	<4050
Benzo(a)pyrene	<3910	<6190	<2410	<13800	<5210	<68300	<5550	<4050
Benzo(k)fluoranthene	<3910	<6190	<2410	<13800	<5210	<68300	<5550	<4050
Chrysene	<3910	<6190	<2410	<13800	<5210	<68300	<5550	<4050
Dibenz[a,h]anthracene	<3910	<6190	<2410	<13800	<5210	<68300	<5550	<4050
Indeno(1,2,3-c,d)pyrene	<3910	<6190	<2410	<13800	<5210	<68300	<5550	<4050
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<19500	<3000	<120	<1380	<521	<27500	<555	<20200
Aroclor 1242	<19500	<3000	<120	<1380	<521	<27500	<555	<20200
Aroclor 1248	<19500	<3000	<120	<1380	<521	<27500	<555	<20200
Aroclor 1254	<19500	<3000	**117**	<1380	<521	<27500	<555	<20200
Aroclor 1260	<19500	<3000	<120	<1380	<521	<27500	<555	<20200
Total PCBs[1]	NR	NR	**117**	NR	NR	NR	NR	NR

Table A3.16 Sediment chemistry data used to assess injury to human uses of fishery resources (URS Greiner Woodward Clyde 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	01RA01SE00	01RA01SE07	01RA02SE00	01RA02SE07	01RA03SD10	01RA03SE00	01RA03SE10	01RB01SE00
Pesticides (µg/kg OC)								
Dieldrin	<2010	<1280	<124	<1420	<269	<5670	<286	<2090
Endrin	<2010	<1280	<124	<1420	<269	<5670	<286	<2090
Heptachlor	<1010	<638	<62.0	<711	<134	<2830	<143	<1040
Heptachlor epoxide	<1010	<638	<62.0	<711	<134	<2830	<143	<1040
Lindane	<1010	<638	<62.0	<711	<134	<2830	<143	<1040
p,p'-DDD	<2010	<1280	<124	<1420	<269	<5670	<286	<2090
p,p'-DDE	<2010	<1280	<124	<1420	<269	<5670	<286	<2090
p,p'-DDT	<2010	<1280	<124	<1420	<269	<5670	<286	<2090

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.16 Sediment chemistry data used to assess injury to human uses of fishery resources (URS Greiner Woodward Clyde 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	01RB01SE07	01RB03SD10	01RB03SE05	01RB03SE10	01RB03SE15	01RC01SE00	01RC01SE07	01RC02SE00
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1998	1998	1998	1998	1998	1998	1998	1998
Depth (ft)	2-7	5-10	0-5	5-10	10-13	0-2	2-6.5	0-5
Latitude	41.6179	41.6188	41.6188	41.6188	41.6188	41.6168	41.6168	41.6175
Longitude	-87.4859	-87.4859	-87.4859	-87.4859	-87.4859	-87.4853	-87.4853	-87.4843
Percent TOC	3.76	9.96	10.2	11.1	4.14	12.4	5.02	23.1
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benzene	NR	NR	NR	NR	<174	<58.9	<112	<36.4
Benz[a]anthracene	<8780	<3310	**83300**	<2970	<7970	<2660	<6570	<1430
Benzo(a)pyrene	<8780	<3310	<32400	<2970	<7970	<2660	<6570	<1430
Benzo(k)fluoranthene	<8780	<3310	<32400	<2970	<7970	<2660	<6570	<1430
Chrysene	<8780	<3310	**157000**	**3150**	<7970	**3230**	<6570	<1430
Dibenz[a,h]anthracene	<8780	<3310	<32400	<2970	<7970	<2660	<6570	<1430
Indeno(1,2,3-c,d)pyrene	<8780	<3310	<32400	<2970	<7970	<2660	<6570	<1430
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<878	<3310	<32400	<2970	<797	<5320	<657	<143
Aroclor 1242	<878	<3310	<32400	<2970	<797	<5320	<657	<143
Aroclor 1248	<878	<3310	<32400	<2970	<797	<5320	<657	<143
Aroclor 1254	<878	<3310	<32400	<2970	<797	<5320	<657	**563**
Aroclor 1260	<878	<3310	<32400	<2970	<797	<5320	<657	<143
Total PCBs[1]	NR	NR	NR	NR	NR	NR	NR	**563**

Table A3.16 Sediment chemistry data used to assess injury to human uses of fishery resources (URS Greiner Woodward Clyde 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	01RB01SE07	01RB03SD10	01RB03SE05	01RB03SE10	01RB03SE15	01RC01SE00	01RC01SE07	01RC02SE00
Pesticides (µg/kg OC)								
Dieldrin	<90.4	<3410	<16700	<3060	<411	<2740	<67.7	<736
Endrin	<90.4	<3410	<16700	<3060	<411	<2740	<67.7	<736
Heptachlor	<45.2	<1710	<8330	<1530	<205	<1370	<33.9	<368
Heptachlor epoxide	<45.2	<1710	<8330	<1530	<205	<1370	<33.9	<368
Lindane	<45.2	<1710	<8330	<1530	<205	<1370	<33.9	<368
p,p'-DDD	<90.4	<3410	<16700	<3060	<411	<2740	<67.7	<736
p,p'-DDE	<90.4	<3410	<16700	<3060	<411	<2740	<67.7	<736
p,p'-DDT	<90.4	<3410	<16700	<3060	<411	<2740	<67.7	<736

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.16 Sediment chemistry data used to assess injury to human uses of fishery resources (URS Greiner Woodward Clyde 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	01RC02SE07	01RC03SE00	01RC03SE10
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC
Reach	WBGCR II	WBGCR II	WBGCR II
Sampling Year	1998	1998	1998
Depth (ft)	2-3.5	0-0.16	5-9.5
Latitude	41.6175	41.6179	41.6179
Longitude	-87.4843	-87.4838	-87.4838
Percent TOC	4.2	17.5	2.92
Percent Moisture	NR	NR	NR
Polycyclic Aromatic Hydrocarbons (µg/kg OC)			
Benzene	<200	<274000	<260
Benz[a]anthracene	<7860	<286000	<11300
Benzo(a)pyrene	<7860	<286000	<11300
Benzo(k)fluoranthene	<7860	<286000	<11300
Chrysene	<7860	<286000	<11300
Dibenz[a,h]anthracene	<7860	<286000	<11300
Indeno(1,2,3-c,d)pyrene	<7860	<286000	<11300
Polychlorinated Biphenyls (µg/kg OC)			
Aroclor 1016	<3810	<18900	<1130
Aroclor 1242	<3810	<18900	<1130
Aroclor 1248	<3810	<18900	<1130
Aroclor 1254	<3810	<18900	<1130
Aroclor 1260	<3810	<18900	<1130
Total PCBs[1]	NR	NR	NR

Table A3.16 Sediment chemistry data used to assess injury to human uses of fishery resources (URS Greiner Woodward Clyde 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	01RC02SE07	01RC03SE00	01RC03SE10
Pesticides (µg/kg OC)			
Dieldrin	<810	<19400	<1160
Endrin	<810	<19400	<1160
Heptachlor	<405	<9710	<582
Heptachlor epoxide	<405	<9710	<582
Lindane	<405	<9710	<582
p,p'-DDD	<810	<19400	<1160
p,p'-DDE	<810	<19400	<1160
p,p'-DDT	<810	<19400	<1160

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; WBGCR = West Branch of the Grand Calumet River.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99E1	GC99E2	GC99E3	GC99S01	GC99S015	GC99S02	GC99S03	GC99S04	GC99S05
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-5	5-6.29	6.29-10	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33	0-0.33
Latitude	41.6154	41.6154	41.6154	41.60945	41.61075	41.61195	41.619366667	41.62315	41.61545
Longitude	-87.467233333	-87.467233333	-87.467233333	-87.388083333	-87.42075	-87.420066667	-87.4195	-87.424	-87.466666667
Percent TOC	12	8.1	0.55	14	14	0.17	4.8	7.2	14
Percent Moisture	56.5	46	21	83	68	23	63	65	58
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**102000**	NR	**34500**	<6930	**43600**	<124000	<18500	<13100	**57900**
Benzo(a)pyrene	**55800**	**70400**	**30900**	**2140**	**60000**	<124000	<18500	<13100	**62900**
Benzo(b)fluoranthene	**86700**	**122000**	**38200**	**3070**	**65000**	<124000	<18500	<13100	**85700**
Benzo(k)fluoranthene	**32900**	**38300**	**11800**	**2140**	**54300**	<124000	<18500	<13100	**31400**
Chrysene	**103000**	**222000**	**52700**	**2500**	**53600**	<124000	<18500	<13100	**63600**
Dibenz[a,h]anthracene	**8580**	**9140**	**3820**	<6930	**12100**	<124000	<18500	<13100	**8570**
Indeno(1,2,3-c,d)pyrene	**23800**	**27200**	**10200**	<6930	**32900**	<124000	<18500	<13100	**27900**
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<1580	<1850	<3820	<693	<371	<12400	<937	<653	<1430
Aroclor 1242	<1580	<1850	<3820	<693	<371	<12400	<937	<653	<1430
Aroclor 1248	**371000**	**173000**	**30900**	<693	**17900**	<12400	<937	<653	**54300**
Aroclor 1254	<1580	<1850	<3820	<693	<371	<12400	<937	**1150**	<1430
Aroclor 1260	<1580	<1850	<3820	<693	<371	<12400	<937	<653	<1430
Total PCBs[1]	**371000**	**173000**	**30900**	NR	**17900**	NR	NR	**1150**	**54300**
Phthalates (µg/kg OC)									
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99E1	GC99E2	GC99E3	GC99S01	GC99S015	GC99S02	GC99S03	GC99S04	GC99S05
Chlorophenols (µg/kg OC)									
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)									
Aldrin	<642	<383	<382	<69.3	<186	<1240	<937	<333	<143
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<1250	<753	<764	<136	<371	<2530	<185	<653	<279
Endosulfan, total	<3140	<1890	<1910	<341	<929	<6290	<1310	<1640	<700
Endrin	<1250	<753	<764	<136	<371	<2530	<185	<653	<279
Heptachlor	<642	<383	<382	<69.3	<186	<1240	<937	<333	<143
Heptachlor epoxide	<642	<383	<382	<69.3	<186	<1240	<937	<333	<143
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<642	<383	<382	<69.3	<186	<1240	<937	<333	<143
p,p'-DDD	<1250	<753	<764	<136	<371	<2530	<185	<653	<279
p,p'-DDE	<1250	<753	<764	<136	<371	<2530	<185	<653	<279
p,p'-DDT	<1250	<753	<764	<136	<371	<2530	<185	<653	<279

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99S05A	GC99S06	GC99T01C1	GC99T01C2	GC99T01C3	GC99T01CS	GC99T01L1	GC99T01LS
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-0.33	0-0.33	0-5	5-9	9-10	0-0.33	0-3	0-0.33
Latitude	41.6155	41.61575	41.608	41.608	41.608	41.608	41.608	41.608
Longitude	-87.466666667	-87.468683333	-87.393316667	-87.393316667	-87.393316667	-87.393316667	-87.3931	-87.3931
Percent TOC	11	9.9	7.2	10	13	9	0.34	1.1
Percent Moisture	55	70	44	67	73	23	24	30
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**16400**	**34300**	**472000**	**2500000**	**6080**	**11000000**	**11500000**	**14500000**
Benzo(a)pyrene	**19100**	**40400**	**264000**	**1200000**	<23800	**10100000**	**10900000**	**16400000**
Benzo(b)fluoranthene	**23600**	**48500**	**431000**	**2100000**	<23800	**7780000**	**9410000**	**15500000**
Benzo(k)fluoranthene	**9000**	**27300**	**306000**	**1200000**	<23800	**6330000**	**6760000**	**10000000**
Chrysene	**18200**	**73700**	**486000**	**2500000**	**7230**	**10600000**	**11200000**	**12700000**
Dibenz[a,h]anthracene	**2360**	<28300	NR	NR	<23800	**956000**	**735000**	NR
Indeno(1,2,3-c,d)pyrene	**8550**	**15200**	**153000**	**720000**	<23800	**2780000**	**3240000**	**4820000**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<3360	<556	<2080	<2500	<923	<1220	<32400	<10900
Aroclor 1242	<3360	<556	<2080	<2500	<923	<1220	<32400	<10900
Aroclor 1248	**63600**	**2120**	**18100**	**36000**	**408**	**267000**	**471000**	**409000**
Aroclor 1254	<3360	<556	<2080	<2500	<923	<1220	<32400	<10900
Aroclor 1260	<3360	<556	<2080	<2500	<923	<1220	<32400	<10900
Total PCBs[1]	**63600**	**2120**	**18100**	**36000**	**408**	**267000**	**471000**	**409000**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99S05A	GC99S06	GC99T01C1	GC99T01C2	GC99T01C3	GC99T01CS	GC99T01L1	GC99T01LS
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<664	<55.6	<819	<1000	<46.9	<4780	<12600	<4270
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<1360	<111	<1670	<2000	<92.3	<9560	<25600	<8550
Endosulfan, total	<3390	<278	<4150	<5000	<232	<23900	<63800	<21400
Endrin	<1360	<111	<1670	<2000	<92.3	<9560	<25600	<8550
Heptachlor	<664	<55.6	<819	<1000	<46.9	<4780	<12600	<4270
Heptachlor epoxide	<664	<55.6	<819	<1000	<46.9	<4780	<12600	<4270
Hexachlorocyclohexane-alpha	<664	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	<664	NR	NR	NR	NR	NR	NR	NR
Lindane	<664	<55.6	<819	<1000	<46.9	<4780	<12600	<4270
p,p'-DDD	<1360	<111	<1670	<2000	<92.3	<9560	<25600	<8550
p,p'-DDE	<1360	<111	<1670	<2000	<92.3	<9560	<25600	<8550
p,p'-DDT	<1360	<111	<1670	<2000	<92.3	<9560	<25600	<8550

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T01R1	GC99T01R2	GC99T01R3	GC99T02C1	GC99T02CS	GC99T02L1	GC99T02L2	GC99T02R1
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-5	5-7.92	7.92-10	0-5	0-0.33	0-3	3-5	0-5
Latitude	41.608166667	41.608166667	41.608166667	41.609083333	41.609083333	41.609	41.609	41.6092
Longitude	-87.393116667	-87.393116667	-87.393116667	-87.410716667	-87.410716667	-87.4114	-87.4114	-87.411216667
Percent TOC	8.5	7.6	13	9.6	11	7.5	0.8	10
Percent Moisture	49	54	74	53	34	60	24	55
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**98200**	**88200**	<24600	**156000**	**209000**	**40000**	**32500**	**46000**
Benzo(a)pyrene	**68800**	**63200**	<24600	**146000**	**336000**	**34700**	**42500**	**37000**
Benzo(b)fluoranthene	**94100**	**59200**	<24600	**135000**	**327000**	**38700**	**41200**	**37000**
Benzo(k)fluoranthene	**65900**	**67100**	<24600	**115000**	**264000**	**28000**	**36200**	**31000**
Chrysene	**124000**	**111000**	<24600	**167000**	**218000**	**46700**	**38700**	**51000**
Dibenz[a,h]anthracene	NR	NR	<24600	<7290	**48200**	<5470	<27500	<3700
Indeno(1,2,3-c,d)pyrene	**25900**	**17100**	<24600	**68700**	**155000**	**17300**	<27500	**19000**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<1880	<2370	<1000	<1870	<1180	<547	<2750	<1800
Aroclor 1242	<1880	<2370	<1000	<1870	<1180	<547	<2750	<1800
Aroclor 1248	**2470**	<2370	<1000	**5310**	**12700**	**733**	<2750	**13000**
Aroclor 1254	<1880	<2370	<1000	<1870	<1180	<547	<2750	<1800
Aroclor 1260	<1880	<2370	<1000	<1870	<1180	<547	<2750	<1800
Total PCBs[1]	**2470**	NR	NR	**5310**	**12700**	**733**	NR	**13000**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	<27500	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	<27500	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T01R1	GC99T01R2	GC99T01R3	GC99T02C1	GC99T02CS	GC99T02L1	GC99T02L2	GC99T02R1
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	<27500	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	<137000	NR
Pesticides (µg/kg OC)								
Aldrin	<765	<947	<48.5	<187	<118	<54.7	<275	<180
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<1530	<1840	<100	<365	<227	<111	<538	<370
Endosulfan, total	<3820	<4630	<248	<917	<573	<276	<1350	<920
Endrin	<1530	<1840	<100	<365	<227	<111	<538	<370
Heptachlor	<765	<947	<48.5	<187	<118	<54.7	<275	<180
Heptachlor epoxide	<765	<947	<48.5	<187	<118	<54.7	<275	<180
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<765	<947	<48.5	<187	<118	<54.7	<275	<180
p,p'-DDD	<1530	<1840	<100	<365	<227	<111	<538	<370
p,p'-DDE	<1530	<1840	<100	<365	<227	<111	<538	<370
p,p'-DDT	<1530	<1840	<100	<365	<227	<111	<538	<370

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T02R2	GC99T02R3	GC99T02RS	GC99T03C1	GC99T03C2	GC99T03CS	GC99T03L1	GC99T03L2
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	5-7.25	7.25-10	0-0.33	0-5	5-10	0-0.33	0-5	5-10
Latitude	41.6092	41.6092	41.6092	41.6101	41.6101	41.6101	41.609866667	41.609866667
Longitude	-87.411216667	-87.411216667	-87.411216667	-87.420416667	-87.420416667	-87.420416667	-87.420566667	-87.420566667
Percent TOC	9.1	10	10	11.15	2.3	9.6	10	8.1
Percent Moisture	55	67	51	46	35	39	59	51
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**67000**	**2300**	**150000**	**341000**	**196000**	**115000**	**570000**	**39500**
Benzo(a)pyrene	**56000**	<5000	**120000**	**233000**	**161000**	**115000**	**340000**	**21000**
Benzo(b)fluoranthene	**57100**	<5000	**120000**	**269000**	**178000**	**135000**	**430000**	**30900**
Benzo(k)fluoranthene	**44000**	<5000	**97000**	**130000**	**95700**	**63500**	**210000**	**13600**
Chrysene	**76900**	**2900**	**150000**	**269000**	**143000**	**81200**	**440000**	**29600**
Dibenz[a,h]anthracene	<3700	<5000	**3200**	**29600**	**19600**	**15600**	**51000**	**3090**
Indeno(1,2,3-c,d)pyrene	**30800**	<5000	**64000**	**97300**	**73900**	**56200**	**170000**	**9750**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<1980	<500	<1700	<5560	<5650	<1460	<2000	<2100
Aroclor 1242	<1980	<500	<1700	<5560	<5650	<1460	<2000	<2100
Aroclor 1248	<1980	<500	**150000**	**117000**	**20900**	**25000**	**120000**	<2100
Aroclor 1254	<1980	<500	<1700	<5560	<5650	<1460	<2000	<2100
Aroclor 1260	<1980	<500	**23000**	<5560	<5650	<1460	<2000	<2100
Total PCBs[1]	NR	NR	**173000**	**117000**	**20900**	**25000**	**120000**	NR
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T02R2	GC99T02R3	GC99T02RS	GC99T03C1	GC99T03C2	GC99T03CS	GC99T03L1	GC99T03L2
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<198	<50.0	<170	<556	<2220	<562	<800	<827
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<407	<100	<340	<1080	<4350	<1150	<1600	<1600
Endosulfan, total	<1010	<250	<850	<2710	<10900	<2850	<4000	<4040
Endrin	<407	<100	<340	<1080	<4350	<1150	<1600	<1600
Heptachlor	<198	<50.0	<170	<556	<2220	<562	<800	<827
Heptachlor epoxide	<198	<50.0	<170	<556	<2220	<562	<800	<827
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<198	<50.0	<170	<556	<2220	<562	<800	<827
p,p'-DDD	<407	<100	<340	<1080	<4350	<1150	<1600	<1600
p,p'-DDE	<407	<100	<340	<1080	<4350	<1150	<1600	<1600
p,p'-DDT	<407	<100	<340	<1080	<4350	<1150	<1600	<1600

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T03L3	GC99T03R1	GC99T03R2	GC99T03RS	GC99T04C1	GC99T04C2	GC99T04C3	GC99T04CS
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	10-15	0-5	5-10	0-0.33	0-5	5-6.5	6.5-9.29	0-0.33
Latitude	41.609866667	41.610166667	41.610166667	41.610166667	41.612833333	41.612833333	41.612833333	41.612833333
Longitude	-87.420566667	-87.420616667	-87.420616667	-87.420616667	-87.431316667	-87.431316667	-87.431316667	-87.431316667
Percent TOC	0.32	12	0.45	13	7.7	2.6	0.23	6.1
Percent Moisture	26	55	22	62	62	43	20	29
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**10300**	**258000**	**8670**	**146000**	**83100**	**10400**	**3390**	**136000**
Benzo(a)pyrene	**8440**	**167000**	**8000**	**115000**	**55800**	**23800**	**3610**	**134000**
Benzo(b)fluoranthene	**10000**	**217000**	**8670**	**138000**	**74000**	**23500**	**3780**	**164000**
Benzo(k)fluoranthene	**4380**	**100000**	**3780**	**63100**	**33800**	**10000**	**1650**	**75400**
Chrysene	**8440**	**200000**	**7330**	**115000**	**63600**	**7310**	**2960**	**102000**
Dibenz[a,h]anthracene	<6880	**23300**	<4670	**14600**	**7270**	**2770**	<9130	**19700**
Indeno(1,2,3-c,d)pyrene	<6880	**76700**	<4670	**41500**	**27300**	**13100**	<9130	**72100**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<6880	<1500	<4670	<1690	<1130	<1120	<9130	<1970
Aroclor 1242	<6880	<1500	<4670	<1690	<1130	<1120	<9130	<1970
Aroclor 1248	<6880	**225000**	**37800**	**423000**	<1130	**4230**	<9130	**2300**
Aroclor 1254	<6880	<1500	<4670	<1690	<1130	<1120	<9130	<1970
Aroclor 1260	<6880	<1500	<4670	<1690	<1130	<1120	<9130	<1970
Total PCBs[1]	NR	**225000**	**37800**	**423000**	NR	**4230**	NR	**2300**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T03L3	GC99T03R1	GC99T03R2	GC99T03RS	GC99T04C1	GC99T04C2	GC99T04C3	GC99T04CS
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<688	<608	<467	<669	<558	<112	<913	<377
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<1410	<1250	<933	<1310	<1130	<223	<1780	<754
Endosulfan, total	<3500	<3110	<2330	<3280	<2820	<558	<4480	<1890
Endrin	<1410	<1250	<933	<1310	<1130	<223	<1780	<754
Heptachlor	<688	<608	<467	<669	<558	<112	<913	<377
Heptachlor epoxide	<688	<608	<467	<669	<558	<112	<913	<377
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<688	<608	<467	<669	<558	<112	<913	<377
p,p'-DDD	<1410	<1250	<933	<1310	<1130	<223	<1780	<754
p,p'-DDE	<1410	<1250	<933	<1310	<1130	<223	<1780	<754
p,p'-DDT	<1410	<1250	<933	<1310	<1130	<223	<1780	<754

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T04L1	GC99T04L2	GC99T04R1	GC99T04RS	GC99T05C1	GC99T05C2	GC99T05C3	GC99T05CS
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-5	5-10	0-5	0-0.33	0-5	5-6.63	6.63-10.72	0-0.33
Latitude	41.6126	41.6126	41.6131	41.6131	41.6121	41.6121	41.6121	41.6121
Longitude	-87.4314	-87.4314	-87.43125	-87.43125	-87.442916667	-87.442916667	-87.442916667	-87.442916667
Percent TOC	4.5	3.4	1.8	8.8	3.7	4.8	14	6.3
Percent Moisture	51	41	49	54	24	49	71	39
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**109000**	**241**	**6110**	**85200**	**227000**	**58300**	**1210**	**114000**
Benzo(a)pyrene	**91100**	**224**	**2940**	**79500**	**151000**	**54200**	**1000**	**111000**
Benzo(b)fluoranthene	**111000**	**382**	**7780**	**92000**	**238000**	**60400**	**1360**	**157000**
Benzo(k)fluoranthene	**48900**	**121**	**3440**	**40900**	**78400**	**25000**	**650**	**63500**
Chrysene	**95600**	**206**	**4560**	**63600**	NR	**62500**	**1360**	**125000**
Dibenz[a,h]anthracene	**11300**	<824	<3610	**10100**	**26800**	**6460**	<786	**22200**
Indeno(1,2,3-c,d)pyrene	**42200**	<824	**2940**	**30700**	**75700**	**25000**	**600**	**63500**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<756	<824	<8890	<2050	<2970	<3330	<407	<2220
Aroclor 1242	<756	<824	<8890	<2050	<2970	<3330	<407	<2220
Aroclor 1248	<756	<824	<8890	**58000**	**27000**	**8750**	<407	**27000**
Aroclor 1254	<756	<824	<8890	<2050	<2970	<3330	<407	<2220
Aroclor 1260	<756	<824	<8890	<2050	<2970	<3330	<407	<2220
Total PCBs[1]	NR	NR	NR	**58000**	**27000**	**8750**	NR	**27000**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T04L1	GC99T04L2	GC99T04R1	GC99T04RS	GC99T05C1	GC99T05C2	GC99T05C3	GC99T05CS
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<378	<82.4	<1780	<818	<297	<333	<40.7	<222
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<756	<165	<3610	<1590	<595	<667	<78.6	<429
Endosulfan, total	<1890	<412	<9000	<4000	<1490	<1670	<198	<1080
Endrin	<756	<165	<3610	<1590	<595	<667	<78.6	<429
Heptachlor	<378	<82.4	<1780	<818	<297	<333	<40.7	<222
Heptachlor epoxide	<378	<82.4	<1780	<818	<297	<333	<40.7	<222
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<378	<82.4	<1780	<818	<297	<333	<40.7	<222
p,p'-DDD	<756	<165	<3610	<1590	<595	<667	<78.6	<429
p,p'-DDE	<756	<165	<3610	<1590	<595	<667	<78.6	<429
p,p'-DDT	<756	<165	<3610	<1590	<595	<667	<78.6	<429

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T05L1	GC99T05L2	GC99T05R1	GC99T05R2	GC99T05R3	GC99T05RS	GC99T06C1	GC99T06CS
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-5	5-8	0-5	5-7.75	7.75-10	0-0.33	0-5	0-0.33
Latitude	41.612083333	41.612083333	41.612433333	41.612433333	41.612433333	41.612433333	41.614	41.614
Longitude	-87.442666667	-87.442666667	-87.442766667	-87.442766667	-87.442766667	-87.442766667	-87.4622	-87.4622
Percent TOC	6.5	0.14	10	9.3	0.41	10	0.53	0.59
Percent Moisture	64	21	74	69	22	49	26	28
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**43100**	<15000	**24000**	**1830**	**1560**	**47000**	**43400**	**271000**
Benzo(a)pyrene	**33800**	**4000**	**23000**	**1610**	<5120	**50000**	**52800**	**305000**
Benzo(b)fluoranthene	**49200**	**7860**	**31000**	**2900**	**1540**	**70000**	**60400**	**407000**
Benzo(k)fluoranthene	**16900**	**2210**	**11000**	**892**	<5120	**27000**	**26400**	**153000**
Chrysene	**66200**	**9290**	**32000**	**3440**	**3900**	**66000**	**47200**	**390000**
Dibenz[a,h]anthracene	**4770**	<15000	**3100**	<1180	<5120	**8500**	**6420**	**40700**
Indeno(1,2,3-c,d)pyrene	**15400**	<15000	**9900**	**914**	<5120	**29000**	**28300**	**144000**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<708	<15000	<630	<570	<5120	<1600	<4150	<18600
Aroclor 1242	<708	<15000	<630	<570	<5120	<1600	<4150	<18600
Aroclor 1248	<708	<15000	<630	**3330**	**12700000**	**12000**	**9060**	**147000**
Aroclor 1254	<708	<15000	<630	<570	<5120	<1600	<4150	<18600
Aroclor 1260	<708	<15000	<630	<570	<5120	<1600	<4150	<18600
Total PCBs[1]	NR	NR	NR	**3330**	**12700000**	**12000**	**9060**	**147000**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T05L1	GC99T05L2	GC99T05R1	GC99T05R2	GC99T05R3	GC99T05RS	GC99T06C1	GC99T06CS
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<354	<1500	<63.0	<57.0	<512	<160	<415	<7800
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<708	<3000	<130	<118	<1020	<320	<849	<15600
Endosulfan, total	<1770	<7500	<323	<294	<2560	<800	<2110	<39000
Endrin	<708	<3000	<130	<118	<1020	<320	<849	<15600
Heptachlor	<354	<1500	<63.0	<57.0	<512	<160	<415	<7800
Heptachlor epoxide	<354	<1500	<63.0	<57.0	<512	<160	<415	<7800
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<354	<1500	<63.0	<57.0	<512	<160	<415	<7800
p,p'-DDD	<708	<3000	<130	<118	<1020	<320	<849	<15600
p,p'-DDE	<708	<3000	<130	<118	<1020	<320	<849	**1860**
p,p'-DDT	<708	<3000	<130	<118	<1020	<320	<849	<15600

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T06L1	GC99T06L2	GC99T06L3	GC99T06L4	GC99T06LS	GC99T06R1	GC99T06R2	GC99T07C1	GC99T07CS
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I	EBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-5	5-10	10-11	11-13.16	0-0.33	0-5	5.25-9.5	0-5	0-0.33
Latitude	41.615	41.615	41.615	41.615	41.615	41.6139	41.6139	41.617216667	41.617216667
Longitude	-87.4622	-87.4622	-87.4622	-87.4622	-87.4622	-87.4622	-87.4622	-87.46875	-87.46875
Percent TOC	7.1	8.5	4.7	5.5	10	3.7	0.96	2.8	6.1
Percent Moisture	34	39	31	62	53	46	29	36	60
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**169000**	**247000**	**87200**	**436**	**69000**	<838	<2400	**6790**	**59000**
Benzo(a)pyrene	**183000**	**75300**	**76600**	<782	**84000**	<838	<2400	**5710**	NR
Benzo(b)fluoranthene	**211000**	**153000**	**100000**	**582**	**110000**	<838	<2400	**10700**	NR
Benzo(k)fluoranthene	**88700**	**37600**	NR	**142**	**45000**	<838	<2400	**3360**	NR
Chrysene	**169000**	NR	**126000**	**873**	**77000**	<838	<2400	**15400**	NR
Dibenz[a,h]anthracene	**18300**	**6240**	**10200**	<782	**4200**	<838	<2400	**1290**	**12600**
Indeno(1,2,3-c,d)pyrene	**85900**	**31800**	**34000**	<782	**43000**	<838	<2400	**3930**	**44300**
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<1830	<1650	<2550	<782	<1800	<838	<2400	<929	<672
Aroclor 1242	<1830	<1650	<2550	<782	<1800	<838	<2400	<929	<672
Aroclor 1248	**28200**	**30600**	**100000**	<782	**23000**	<838	<2400	**8570**	**41000**
Aroclor 1254	<1830	<1650	<2550	<782	<1800	<838	<2400	<929	<672
Aroclor 1260	**2110**	**2000**	<2550	<782	**3100**	<838	<2400	<929	<672
Total PCBs[1]	**30300**	**32600**	**100000**	NR	**26100**	NR	NR	**8570**	**41000**
Phthalates (µg/kg OC)									
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T06L1	GC99T06L2	GC99T06L3	GC99T06L4	GC99T06LS	GC99T06R1	GC99T06R2	GC99T07C1	GC99T07CS
Chlorophenols (µg/kg OC)									
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)									
Aldrin	<183	<165	<511	<78.2	<180	<83.8	<240	<929	<1360
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<352	<318	<1020	<158	<350	<165	<479	<1860	<2790
Endosulfan, total	<887	<800	<2550	<395	<880	<414	<1200	<4640	<6930
Endrin	<352	<318	<1020	<158	<350	<165	<479	<1860	<2790
Heptachlor	<183	<165	<511	<78.2	<180	<83.8	<240	<929	<1360
Heptachlor epoxide	<183	<165	<511	<78.2	<180	<83.8	<240	<929	<1360
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<183	<165	<511	<78.2	<180	<83.8	<240	<929	<1360
p,p'-DDD	<352	<318	<1020	<158	<350	<165	**50**	<1860	<2790
p,p'-DDE	<352	<318	<1020	<158	<350	<165	<479	<1860	<2790
p,p'-DDT	<352	<318	<1020	<158	<350	<165	**56.3**	<1860	<2790

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T07L1	GC99T07L2	GC99T07R1	GC99T07RS	IHC99S07	IHC99T09C1	IHC99T09CS	IHC99T09L1
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	EBGCR I	EBGCR I	EBGCR I	EBGCR I	IHC	IHC	IHC	IHC
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-5	5-10	0-3	0-0.33	0-0.33	0-0.33	0-0.33	0-4
Latitude	41.609	41.609	41.6173	41.6173	41.633533333	41.622416667	41.622416667	41.622566667
Longitude	-87.4115	-87.4115	-87.4687	-87.4687	-87.467983333	-87.471116667	-87.471116667	-87.471216667
Percent TOC	6.6	5.1	0.32	7.3	13	2.3	3.1	0.6
Percent Moisture	58	54.5	20	31	71	27	35	21
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**87900**	**8430**	**306000**	**260000**	<4380	**152000**	**326000**	**53300**
Benzo(a)pyrene	**78800**	**11200**	**438000**	**132000**	**1150**	**187000**	**322000**	**48300**
Benzo(b)fluoranthene	**112000**	**16300**	**938000**	**370000**	<4380	**204000**	**355000**	**51700**
Benzo(k)fluoranthene	**42400**	**6080**	**244000**	NR	<4380	**104000**	**165000**	**23300**
Chrysene	**152000**	**16000**	**1810000**	NR	**1150**	**326000**	**597000**	**86700**
Dibenz[a,h]anthracene	**11200**	**1250**	**37500**	**10300**	<4380	**29100**	**50000**	**15200**
Indeno(1,2,3-c,d)pyrene	**30300**	**6570**	**253000**	**82200**	<4380	**60900**	**109000**	**25000**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<3030	<765	<31300	<1640	<438	<4780	<4190	<7000
Aroclor 1242	<3030	<765	<31300	<1640	<438	<4780	<4190	<7000
Aroclor 1248	**11800**	**12500**	**109000**	**23300**	<438	**69600**	**41900**	**23300**
Aroclor 1254	<3030	<765	<31300	<1640	<438	<4780	<4190	<7000
Aroclor 1260	<3030	<765	<31300	<1640	<438	<4780	<4190	<7000
Total PCBs[1]	**11800**	**12500**	**109000**	**23300**	NR	**69600**	**41900**	**23300**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T07L1	GC99T07L2	GC99T07R1	GC99T07RS	IHC99S07	IHC99T09C1	IHC99T09CS	IHC99T09L1
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<303	<76.5	<6560	<658	<43.8	<1000	<806	<350
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<591	<155	<12800	<1320	<84.6	<1960	<1650	<700
Endosulfan, total	<1480	<363	<32200	<3290	<213	<4910	<4100	<1750
Endrin	<591	<155	<12800	<1320	<84.6	<1960	<1650	<700
Heptachlor	<303	<76.5	<6560	<658	<43.8	<1000	<806	<350
Heptachlor epoxide	<303	<76.5	<6560	<658	<43.8	<1000	<806	<350
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<303	<76.5	<6560	<658	<43.8	<1000	<806	<350
p,p'-DDD	<591	<155	<12800	<1320	<84.6	<1960	<1650	<700
p,p'-DDE	<591	<155	<12800	<1320	<84.6	<1960	<1650	<700
p,p'-DDT	<591	<155	<12800	<1320	**11.5**	<1960	<1650	<700

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T09LS	IHC99T09R1	IHC99T10C1	IHC99T10CS	IHC99T10L1	IHC99T10R1	IHC99T10RS	IHC99T11C1
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	IHC	IHC	IHC	IHC	IHC	IHC	IHC	LGB
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-0.33	0-5	0-5	0-0.33	0-5	0-3	0-0.33	0-5
Latitude	41.622566667	41.6217	41.6366	41.6366	41.636366667	41.6368	41.6368	41.6468
Longitude	-87.471216667	-87.470883333	-87.471216667	-87.471216667	-87.471266667	-87.4709	-87.4709	-87.486066667
Percent TOC	1.1	0.51	8.2	2.2	2	1.4	4.9	6.65
Percent Moisture	23	21	47	31	42	22	26	31
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**109000**	**54900**	**110000**	**327000**	**145000**	**250000**	**306000**	**123000**
Benzo(a)pyrene	**109000**	**51000**	**75600**	**423000**	**85000**	**136000**	**180000**	**94700**
Benzo(b)fluoranthene	**118000**	**54900**	**84100**	**382000**	**100000**	**200000**	**265000**	**78900**
Benzo(k)fluoranthene	**59100**	**23500**	**62200**	**255000**	**90000**	**78600**	**116000**	**22600**
Chrysene	**218000**	**102000**	**171000**	**455000**	**150000**	**593000**	**776000**	**196000**
Dibenz[a,h]anthracene	**6270**	**15100**	**8050**	NR	NR	NR	**26500**	**40600**
Indeno(1,2,3-c,d)pyrene	**39100**	**27500**	**18300**	**150000**	**27500**	**37100**	**42900**	**40600**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<3910	<8240	<3780	<5450	<7000	<7860	<4490	<7220
Aroclor 1242	<3910	<8240	<3780	<5450	<7000	<7860	<4490	<7220
Aroclor 1248	**31800**	**19600**	**31700**	**45500**	**13000**	**66400**	**100000**	**82000**
Aroclor 1254	<3910	<8240	<3780	<5450	<7000	<7860	<4490	<7220
Aroclor 1260	<3910	<8240	<3780	<5450	<7000	<7860	<4490	2780
Total PCBs[1]	**31800**	**19600**	**31700**	**45500**	**13000**	**66400**	**100000**	**84700**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T09LS	IHC99T09R1	IHC99T10C1	IHC99T10CS	IHC99T10L1	IHC99T10R1	IHC99T10RS	IHC99T11C1
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<1000	<412	<378	<545	<700	<786	<918	<3610
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<1000	<824	<756	<1090	<1400	<1500	<1820	<7220
Endosulfan, total	<4820	<2060	<1890	<2730	<3500	<3790	<4550	<18000
Endrin	<1910	<824	<756	<1090	<1400	<1500	<1820	<7220
Heptachlor	<1000	<412	<378	<545	<700	<786	<918	<3610
Heptachlor epoxide	<1000	<412	<378	<545	<700	<786	<918	<3610
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<1000	<412	<378	<545	<700	<786	<918	<3610
p,p'-DDD	<1910	<824	<756	<1090	<1400	<1500	<1820	<7220
p,p'-DDE	<1910	<824	<756	<1090	<1400	<1500	<1820	<7220
p,p'-DDT	**282**	**90.2**	<756	<1090	<1400	**393**	<1820	<7220

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T11C2	IHC99T11C3	IHC99T11CS	IHC99T11L1	IHC99T11R1	IHC99T11R2	IHC99T11RS	IHC99T12C1
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	LGB	LGB	LGB	LGB	LGB	LGB	LGB	LGB
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	5-10	10-14.5	0-0.33	0-2	0-5	5-9.67	0-0.33	0-5
Latitude	41.6468	41.6468	41.6468	41.646983333	41.646616667	41.646616667	41.646616667	41.646716667
Longitude	-87.486066667	-87.486066667	-87.486066667	-87.486383333	-87.48645	-87.48645	-87.48645	-87.493466667
Percent TOC	12	4.9	3.6	5	2.1	3.5	1.8	21
Percent Moisture	42	27	28	24	20	21	19	83
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**375000**	**198000**	**97200**	**60000**	**181000**	**457000**	**261000**	**31900**
Benzo(a)pyrene	**367000**	**245000**	**114000**	<22000	<47600	<28600	**306000**	**25200**
Benzo(b)fluoranthene	**200000**	**106000**	**91700**	**70000**	**176000**	**234000**	**167000**	**19000**
Benzo(k)fluoranthene	**69200**	**55100**	**33300**	<22000	<47600	**129000**	**66700**	<46200
Chrysene	**650000**	**245000**	**169000**	**90000**	**281000**	**543000**	**378000**	**61900**
Dibenz[a,h]anthracene	**83300**	**77600**	**27800**	<22000	<47600	<28600	**88900**	<46200
Indeno(1,2,3-c,d)pyrene	**78300**	**59200**	**36100**	**22000**	**52400**	**68600**	**77800**	<46200
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<2330	<9180	<12800	<2200	<4760	<2860	<11100	<23300
Aroclor 1242	<2330	<9180	<12800	<2200	<4760	<2860	<11100	<23300
Aroclor 1248	**5500**	**3060**	**77800**	**36000**	**47600**	**6290**	**39400**	**176000**
Aroclor 1254	<2330	<9180	<12800	<2200	<4760	<2860	<11100	<23300
Aroclor 1260	<2330	<9180	**6670**	<2200	<4760	<2860	<11100	<23300
Total PCBs[1]	**5500**	**3060**	**84400**	**36000**	**47600**	**6290**	**39400**	**176000**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T11C2	IHC99T11C3	IHC99T11CS	IHC99T11L1	IHC99T11R1	IHC99T11R2	IHC99T11RS	IHC99T12C1
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<475	<918	<3060	<4400	<1950	<6000	<2280	<4620
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<917	<1840	<6390	<8600	<3950	<12000	<4500	<9050
Endosulfan, total	<2310	<4590	<15800	<21600	<9860	<24000	<11300	<22700
Endrin	<917	<1840	<6390	<8600	<3950	<12000	<4500	<9050
Heptachlor	<475	<918	<3060	<4400	<1950	<6000	<2280	<4620
Heptachlor epoxide	<475	<918	<3060	<4400	<1950	<6000	<2280	<4620
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<475	<918	<3060	<4400	<1950	<6000	<2280	<4620
p,p'-DDD	<917	<1840	<6390	<8600	<3950	<12000	<4500	<9050
p,p'-DDE	<917	<1840	<6390	<8600	<3950	<12000	<4500	<9050
p,p'-DDT	<917	<1840	<6390	<8600	<3950	<12000	<4500	<9050

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T12C2	IHC99T12C3	IHC99T12CS	IHC99T12L1	IHC99T12L2	IHC99T12L3	IHC99T12LS	IHC99T12R1
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	LGB	LGB	LGB	LGB	LGB	LGB	LGB	LGB
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	5-10	10-14	0-0.33	0-5	5-10	10-13.41	10-13.41	0-5
Latitude	41.646716667	41.646716667	41.646716667	41.646983333	41.646983333	41.646983333	41.646983333	41.646416667
Longitude	-87.493466667	-87.493466667	-87.493466667	-87.4935	-87.4935	-87.4935	-87.4935	-87.493
Percent TOC	15	1.7	14	22	14	7	16	16
Percent Moisture	64	27.8	82	76	57	26	80	53
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**260000**	**18200**	<65700	**132000**	**236000**	**67100**	<51900	**18800**
Benzo(a)pyrene	**273000**	**23500**	**26400**	**132000**	**264000**	**74300**	**16900**	<11300
Benzo(b)fluoranthene	**147000**	**13500**	**32900**	**77300**	**143000**	**38600**	**20000**	**13800**
Benzo(k)fluoranthene	**48000**	**8240**	<65700	**30500**	**50000**	**17100**	<51900	<11300
Chrysene	**413000**	**26500**	**31400**	**227000**	**343000**	**117000**	**26300**	**29400**
Dibenz[a,h]anthracene	**73300**	<13500	<65700	**39100**	**64300**	<31400	<51900	<11300
Indeno(1,2,3-c,d)pyrene	**62700**	<13500	**14300**	**39100**	**55000**	**22900**	<51900	<11300
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<6130	<6470	<6570	<6360	<5500	<3140	<10600	<1130
Aroclor 1242	<6130	<6470	<6570	<6360	<5500	<3140	<10600	<1130
Aroclor 1248	<6130	**2240**	**27900**	**50000**	<5500	**5860**	**48800**	**18100**
Aroclor 1254	<6130	<6470	<6570	<6360	<5500	<3140	<10600	<1130
Aroclor 1260	<6130	<6470	<6570	<6360	<5500	<3140	**6880**	<1130
Total PCBs[1]	NR	**2240**	**27900**	**50000**	NR	**5860**	**55600**	**18100**
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T12C2	IHC99T12C3	IHC99T12CS	IHC99T12L1	IHC99T12L2	IHC99T12L3	IHC99T12LS	IHC99T12R1
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<3070	<135	<1290	<3140	<1360	<643	<2560	<438
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<6130	<271	<2640	<6360	<2710	<1270	<5190	<875
Endosulfan, total	<15300	<676	<6570	<15900	<6790	<3190	<12900	<2190
Endrin	<6130	<271	<2640	<6360	<2710	<1270	<5190	<875
Heptachlor	<3070	<135	<1290	<3140	<1360	<643	<2560	<438
Heptachlor epoxide	<3070	<135	<1290	<3140	<1360	<643	<2560	<438
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<3070	<135	<1290	<3140	<1360	<643	<2560	<438
p,p'-DDD	<6130	<271	<2640	<6360	<2710	**357**	<5190	<875
p,p'-DDE	<6130	<271	<2640	<6360	<2710	<1270	**750**	<875
p,p'-DDT	<6130	<271	<2640	<6360	<2710	<1270	<5190	<875

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T12R2	LG99S08	LG99S09	LG99T13C1	LG99T13CS	LG99T13L1	LG99T13R1	LG99T13R2
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	LGB	LGB	LGB	LGB	LGB	LGB	LGB	LGB
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	5-7.17	0-0.33	0-0.33	0-4.75	0-0.33	0-4.75	0-5	5-8.33
Latitude	41.646416667	41.644966667	41.645016667	41.646616667	41.646616667	41.646833333	41.646583333	41.646583333
Longitude	-87.493	-87.493316667	-87.501816667	-87.500833333	-87.500833333	-87.500316667	-87.501116667	-87.501116667
Percent TOC	3.935	3.6	2	4	9.75	1.1	4.3	0.75
Percent Moisture	36	25	50	56	85.5	20	58	19
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**85100**	<12200	**25000**	<47500	**11300**	<90900	**39500**	<26700
Benzo(a)pyrene	**41300**	<12200	<33000	**140000**	<60500	<90900	<46500	<26700
Benzo(b)fluoranthene	**31100**	<12200	<33000	**110000**	<60500	<90900	**39500**	<26700
Benzo(k)fluoranthene	**56700**	<12200	<33000	<47500	<60500	<90900	<46500	<26700
Chrysene	**71200**	<12200	**55000**	**115000**	**19000**	<90900	**65100**	**10100**
Dibenz[a,h]anthracene	**18400**	<12200	<33000	<47500	<60500	<90900	<46500	<26700
Indeno(1,2,3-c,d)pyrene	**16500**	<12200	<33000	<47500	<60500	<90900	<46500	<26700
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<18600	<3060	<8500	<4750	<6050	<9090	<4650	<13300
Aroclor 1242	<18600	<3060	<8500	<4750	<6050	<9090	<4650	<13300
Aroclor 1248	**46300**	<3060	**2750**	<4750	**2490**	<9090	<4650	<13300
Aroclor 1254	<18600	<3060	<8500	<4750	**3410**	<9090	<4650	<13300
Aroclor 1260	<18600	<3060	<8500	<4750	<6050	<9090	<4650	<13300
Total PCBs[1]	**46300**	NR	**2750**	NR	**5900**	NR	NR	NR
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	IHC99T12R2	LG99S08	LG99S09	LG99T13C1	LG99T13CS	LG99T13L1	LG99T13R1	LG99T13R2
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<4570	<61.1	<165	<1880	<2460	<191	<1840	<267
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<9400	<122	<330	<3750	<4820	<373	<3720	<547
Endosulfan, total	<23400	<306	<825	<9380	<12100	<936	<9280	<1360
Endrin	<9400	<122	<330	<3750	<4820	<373	<3720	<547
Heptachlor	<4570	<61.1	<165	<1880	<2460	<191	<1840	<267
Heptachlor epoxide	<4570	<61.1	<165	<1880	<2460	<191	<1840	<267
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<4570	<61.1	<165	<1880	<2460	<191	<1840	<267
p,p'-DDD	<9400	<122	<330	<3750	<4820	<373	<3720	<547
p,p'-DDE	<9400	<122	**95**	<3750	<4820	<373	**3260**	**3600**
p,p'-DDT	<9400	<122	**100**	<3750	<4820	<373	<3720	<547

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	LG99T13RS	LG99T14C1	LG99T14CS	LG99T14L1	LG99T14LS	LG99T14R1	GC99T08C1	GC99T08C2
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Reach	LGB	LGB	LGB	LGB	LGB	LGB	WBGCR I	WBGCR I
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-0.33	0-3.42	0-0.33	0-0.33	0-0.33	0-3.67	0-5	5-10
Latitude	41.646583333	41.6465	41.6465	41.64665	41.64665	41.646567	41.615483333	41.615483333
Longitude	-87.501116667	-87.506333333	-87.506333333	-87.506633333	-87.506633333	-87.5065	-87.474566667	-87.474566667
Percent TOC	6.7	3	7.6	1.5	17	3.1	6.3	2.4
Percent Moisture	79	51	89	33	89	47	55	40
Polycyclic Aromatic Hydrocarbons (µg/kg OC)								
Benz[a]anthracene	**10700**	**63300**	<98700	**100000**	<44100	**54800**	**302000**	**187000**
Benzo(a)pyrene	<58200	**93300**	<98700	**140000**	<44100	**80600**	**54000**	**22100**
Benzo(b)fluoranthene	<58200	<56700	<98700	<80000	<44100	**51600**	**159000**	**91700**
Benzo(k)fluoranthene	<58200	<56700	<98700	<80000	<44100	**25200**	**30200**	**16200**
Chrysene	**19400**	**80000**	<98700	**127000**	<44100	**80600**	**667000**	**417000**
Dibenz[a,h]anthracene	<58200	<56700	<98700	<80000	<44100	<51600	**17500**	**11200**
Indeno(1,2,3-c,d)pyrene	<58200	<56700	<98700	<80000	<44100	<51600	**31700**	**24600**
Polychlorinated Biphenyls (µg/kg OC)								
Aroclor 1016	<5820	<5670	<9870	<8000	<4410	<5160	<5870	<11700
Aroclor 1242	<5820	<5670	<9870	<8000	<4410	<5160	<5870	<11700
Aroclor 1248	<5820	<5670	**3290**	<8000	**1470**	**1680**	<5870	<11700
Aroclor 1254	<5820	<5670	<9870	<8000	<4410	<5160	<5870	<11700
Aroclor 1260	<5820	<5670	<9870	<8000	<4410	<5160	<5870	<11700
Total PCBs[1]	NR	NR	**3290**	NR	**1470**	**1680**	NR	NR
Phthalates (µg/kg OC)								
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	LG99T13RS	LG99T14C1	LG99T14CS	LG99T14L1	LG99T14LS	LG99T14R1	GC99T08C1	GC99T08C2
Chlorophenols (µg/kg OC)								
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)								
Aldrin	<2390	<2230	<3950	<3270	<441	<2000	<1160	<1170
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	<4630	<4330	<7890	<6600	<882	<3870	<2380	<2290
Endosulfan, total	<11600	<10900	<19700	<16500	<2210	<9740	<5920	<5750
Endrin	<4630	<4330	<7890	<6600	<882	<3870	<2380	<2290
Heptachlor	<2390	<2230	<3950	<3270	<441	<2000	<1160	<1170
Heptachlor epoxide	<2390	<2230	<3950	<3270	<441	<2000	<1160	<1170
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	NR	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	NR	NR	NR	NR
Lindane	<2390	<2230	<3950	<3270	<441	<2000	<1160	<1170
p,p'-DDD	<4630	<4330	<7890	<6600	<882	<3870	<2380	<2290
p,p'-DDE	**403**	<4330	<7890	<6600	**241**	**742**	<2380	<2290
p,p'-DDT	<4630	<4330	<7890	<6600	<882	<3870	<2380	<2290

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T08CS	GC99T08L1	GC99T08L2	GC99T08L3	GC99T08R1	GC99T08R2	GC99T08RS	ML99S10	ML99S11
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCRL	GCRL
Reach	WBGCR I	WBGCR I	WBGCR I	WBGCR I	WBGCR I	WBGCR I	WBGCR I	GCRL	GCRL
Sampling Year	1999	1999	1999	1999	1999	1999	1999	1999	1999
Depth (ft)	0-0.33	0-5	5-9.5	9.5-10	0-5	5-10	0-0.33	0-0.33	0-0.33
Latitude	41.615483333	41.615616667	41.615616667	41.615616667	41.6153	41.6153	41.6153	41.616216667	41.615883333
Longitude	-87.474566667	-87.47465	-87.47465	-87.47465	-87.4747	-87.4747	-87.4747	-87.262766667	-87.27055
Percent TOC	40	6.1	8.6	6.6	1.7	0.13	12	13	9.9
Percent Moisture	37	51	57	66	29	21	43	72	81.5
Polycyclic Aromatic Hydrocarbons (µg/kg OC)									
Benz[a]anthracene	**350000**	**262000**	**140000**	**11200**	**1060000**	**846000**	**1670000**	**33800**	**6670**
Benzo(a)pyrene	**27500**	**50800**	**77900**	**3940**	**276000**	**285000**	**442000**	**48500**	**9040**
Benzo(b)fluoranthene	**168000**	**139000**	**128000**	**11400**	**365000**	**369000**	**617000**	**50800**	**8280**
Benzo(k)fluoranthene	**27500**	NR	NR	**2730**	**33500**	<162000	**45000**	**43100**	**6670**
Chrysene	**825000**	NR	**198000**	**19700**	**1530000**	**1380000**	**2670000**	**44600**	**6670**
Dibenz[a,h]anthracene	**19500**	**7050**	**5230**	**652**	<27100	<162000	<24200	<22300	<18200
Indeno(1,2,3-c,d)pyrene	**35000**	**32800**	**33700**	**2580**	**153000**	**215000**	<24200	**35400**	**6570**
Polychlorinated Biphenyls (µg/kg OC)									
Aroclor 1016	<1300	<2790	<2210	<3640	<27100	<323000	<4830	<454	<929
Aroclor 1242	<1300	<2790	<2210	<3640	<27100	<323000	<4830	<454	<929
Aroclor 1248	**1330**	<2790	<2210	<3640	<27100	<323000	<4830	**538**	**1820**
Aroclor 1254	<1300	<2790	<2210	<3640	<27100	<323000	<4830	<454	<929
Aroclor 1260	<1300	<2790	<2210	<3640	<27100	<323000	<4830	<454	<929
Total PCBs[1]	**1330**	NR	NR	NR	NR	NR	NR	**538**	**1820**
Phthalates (µg/kg OC)									
Bis(2-ethylhexyl)phthalate	NR	NR	NR	NR	NR	NR	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	GC99T08CS	GC99T08L1	GC99T08L2	GC99T08L3	GC99T08R1	GC99T08R2	GC99T08RS	ML99S10	ML99S11
Chlorophenols (µg/kg OC)									
2,4-Dichlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pentachlorophenol	NR	NR	NR	NR	NR	NR	NR	NR	NR
Pesticides (µg/kg OC)									
Aldrin	<650	<1100	<895	<74.2	<2710	<1620	<4830	<223	<92.9
Chlordane[1]	NR	NR	NR	NR	NR	NR	NR	**423**	NR
Dieldrin	<1300	<2130	<1740	<147	<5470	<3230	<10000	<454	<182
Endosulfan, total	<3250	<5360	<4380	<368	<13600	<8080	<24800	<1130	<457
Endrin	<1300	<2130	<1740	<147	<5470	<3230	<10000	<454	<182
Heptachlor	<650	<1100	<895	<74.2	<2710	<1620	<4830	<223	<92.9
Heptachlor epoxide	<650	<1100	<895	<74.2	<2710	<1620	<4830	<223	<92.9
Hexachlorocyclohexane-alpha	NR	NR	NR	NR	<2710	<1620	<4830	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR	NR	<2710	<1620	<4830	NR	NR
Lindane	<650	<1100	<895	<74.2	<2710	<1620	<4830	<223	<92.9
p,p'-DDD	<1300	<2130	<1740	<147	<5470	<3230	<10000	**177**	<182
p,p'-DDE	<1300	<2130	<1740	<147	<5470	<3230	<10000	**623**	<182
p,p'-DDT	<1300	<2130	<1740	<147	<5470	<3230	<10000	**177**	**85.4**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	ML99S12	ML99S13	ML99S14
Geographic Area	GCRL	GCRL	GCRL
Reach	GCRL	GCRL	GCRL
Sampling Year	1999	1999	1999
Depth (ft)	0-0.33	0-0.33	0-0.33
Latitude	41.613916667	41.613366667	41.613883333
Longitude	-87.27775	-87.281216667	-87.28405
Percent TOC	13	11	13
Percent Moisture	83	80	81
Polycyclic Aromatic Hydrocarbons (µg/kg OC)			
Benz[a]anthracene	<37700	**12700**	**11500**
Benzo(a)pyrene	**12300**	**22700**	**20800**
Benzo(b)fluoranthene	**11500**	**19100**	**20000**
Benzo(k)fluoranthene	**7690**	**17300**	**14600**
Chrysene	**10000**	**14500**	**13800**
Dibenz[a,h]anthracene	<37700	<15500	<13100
Indeno(1,2,3-c,d)pyrene	<37700	**17300**	**14600**
Polychlorinated Biphenyls (µg/kg OC)			
Aroclor 1016	<746	<755	<669
Aroclor 1242	<746	<755	<669
Aroclor 1248	**500**	**573**	**1380**
Aroclor 1254	<746	<755	<669
Aroclor 1260	<746	<755	<669
Total PCBs[1]	**500**	**573**	**1380**
Phthalates (µg/kg OC)			
Bis(2-ethylhexyl)phthalate	NR	NR	NR
2,4,6-Trichlorophenol	NR	NR	NR

Table A3.17 Sediment chemistry data used to assess injury to human uses of fishery resources (Maxim Technologies 1999; bolded values indicate an exceedance of the bioaccumulation-based benchmarks for sediment chemistry; Table 2).

Station	ML99S12	ML99S13	ML99S14
Chlorophenols (µg/kg OC)			
2,4-Dichlorophenol	NR	NR	NR
Pentachlorophenol	NR	NR	NR
Pesticides (µg/kg OC)			
Aldrin	<74.6	<75.5	<66.9
Chlordane[1]	NR	NR	NR
Dieldrin	<146	<155	<131
Endosulfan, total	<367	<385	<328
Endrin	<146	<155	<131
Heptachlor	<74.6	<75.5	<66.9
Heptachlor epoxide	<74.6	<75.5	<66.9
Hexachlorocyclohexane-alpha	NR	NR	NR
Hexachlorocyclohexane-beta	NR	NR	NR
Lindane	<74.6	<75.5	<66.9
p,p'-DDD	<146	<155	<131
p,p'-DDE	<146	<155	<131
p,p'-DDT	**28.5**	**30.9**	**76.9**

OC = organic carbon; TOC = total organic carbon; PCBs = polychlorinated biphenyls; NR = not reported; GCR/IHC = Grand Calumet River and Indiana Harbor Canal; EBGCR = East Branch of the Grand Calumet River, IHC = Indiana Harbor Canal; LGB = Lake George Branch; WBGCR = West Branch of the Grand Calumet River GCRL = Grand Calumet River Lagoons.

[1]Calculated or reported total (see Section 3.2 for a description of data treatment).

Appendix 4

Summary for the Whole-Sediment Chemistry Data Tables

Table A4.1 Summary of the whole-sediment chemistry data for surficial sediments in the Grand Calumet River/Indiana Harbor Canal.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	79	70.35	326.69	1070.05	19621.63	345289.67	2834.59	320186.52	2847.08	17.52	7586956.68
Carbazole	5	51079.36	54187.19	62135.92	96000.00	108456.89	71490.33	23321.14	71490.38	49107.14	117647.05
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	240	22593.43	63249.84	190237.95	596706.74	1711383.57	201631.59	815159.99	201635.49	1044.03	25782609.23
Benzo(a)pyrene	226	27702.74	72622.60	166410.06	424645.88	1159335.33	184421.84	639113.81	184424.58	1153.85	16695652.52
Benzo(b)fluoranthene	80	36563.23	72998.28	147976.20	387911.15	1089722.66	178271.42	573383.34	178273.36	3071.43	15454545.12
Benzo(k)fluoranthene	160	19429.29	32538.16	79364.36	311320.37	1486801.33	115055.63	631830.44	115058.05	2142.86	12260869.82
Chrysene	244	24042.40	73552.34	224762.40	791414.67	2360682.61	236769.54	852318.32	236773.34	1153.85	25478261.40
Dibenz[a,h]anthracene	104	8053.50	12954.79	28446.07	89165.38	295778.33	36558.68	94180.05	36559.99	1285.71	2147058.76
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	149	21364.31	36567.17	82926.83	314210.53	1364273.23	118772.05	514136.42	118773.80	2944.44	14695652.48
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.1 Summary of the whole-sediment chemistry data for surficial sediments in the Grand Calumet River/Indiana Harbor Canal.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	8	82932.54	131253.03	163770.57	257036.22	500843.57	181319.98	109405.19	181320.24	57959.18	526315.78
Aroclor 1248	136	8777.62	24023.03	77918.30	226239.72	756967.66	70973.13	201751.07	70976.80	733.33	4170731.80
Aroclor 1254	16	805.51	6574.15	29287.90	68261.01	230089.50	17726.42	82960.21	17738.62	116.79	539823.01
Aroclor 1260	7	2338.43	2638.36	3100.00	4603.91	10940.66	4178.07	3438.82	4178.30	2112.68	23000.00
Total PCBs	154	3798.23	23561.00	84590.52	206778.06	614307.42	61392.44	196327.98	61410.51	44.17	4170731.80
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	14	13218.60	15174.99	20675.50	23647.59	33099.21	20817.73	5090.01	20817.81	12500.00	63333.33
2,4,6-Trichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pentachlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	27	578.39	741.21	1362.86	8124.06	12084.73	2099.45	3835.94	2100.23	366.87	17083.33
Dieldrin	40	209.67	320.00	921.07	4576.97	10549.58	1333.37	3161.98	1334.71	166.52	17272.73

Table A4.1 Summary of the whole-sediment chemistry data for surficial sediments in the Grand Calumet River/Indiana Harbor Canal.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	13	78.89	267.97	798.18	1031.39	1635.03	534.12	359.92	535.32	53.19	4335.66
p,p'-DDE	32	537.95	777.21	3276.78	11903.12	24241.09	3159.93	6895.96	3162.15	95.00	55909.09
p,p'-DDT	23	116.69	297.26	863.56	4072.62	8623.62	994.75	2647.12	999.46	11.54	20000.00
Endosulfan, total	93	359.47	819.44	1695.45	3400.00	7928.79	1598.41	1803.72	1599.43	106.54	16093.75
Endrin	54	61.39	122.01	193.06	233.30	250.00	168.79	62.67	169.02	42.31	1596.64
Heptachlor	17	524.53	863.56	2880.00	8671.33	9409.37	2569.59	4155.00	2570.53	336.13	36944.45
Heptachlor epoxide	12	607.97	834.89	2190.52	3179.44	3912.65	1949.00	1781.18	1949.62	352.94	25733.33
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	6	521.80	737.28	1471.10	1794.96	3304.64	1363.79	802.91	1364.14	453.78	5833.33
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	14	377.97	1177.34	2201.53	4664.35	14976.10	2325.39	4018.66	2326.95	153.47	25416.67
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	15	0.00002	0.00002	0.00004	0.72	2.87	0.001	1.704	0.47	0.000003	6.20

OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Table A4.2 Summary of the whole-sediment chemistry data for surficial sediments in the Grand Calumet River Lagoons.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Carbazole	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	114	11834.81	19082.79	67992.65	353317.54	918697.78	94704.57	822565.46	94706.61	6666.67	45080439.62
Benzo(a)pyrene	125	13391.13	20000.00	69230.77	387500.00	1023076.35	92547.23	444811.97	92548.90	7857.14	16528924.69
Benzo(b)fluoranthene	5	9457.30	11538.46	19090.91	20000.00	34976.29	17929.03	7855.51	17929.21	8282.83	50769.23
Benzo(k)fluoranthene	6	7161.15	9031.23	15888.60	34278.74	207278.76	28677.41	216060.84	28678.47	6666.67	997375.33
Chrysene	127	13000.00	21000.00	73000.00	352590.02	873533.88	92335.04	419257.83	92336.78	6666.67	14435695.54
Dibenz[a,h]anthracene	28	16602.75	30594.68	54543.56	167582.24	333851.08	67485.08	104324.05	67486.25	3333.33	1074380.10
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	4	8347.20	11965.47	15888.60	20664.51	28535.10	15562.02	5861.49	15562.21	6565.66	35384.62
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.2 Summary of the whole-sediment chemistry data for surficial sediments in the Grand Calumet River Lagoons.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	5	14378.11	20000.00	37500.00	59090.91	104983.54	37953.35	25879.41	37953.77	11538.46	154000.00
Aroclor 1248	11	538.46	890.61	16666.67	41943.54	53731.34	6641.89	17385.02	6645.15	500.00	72580.64
Aroclor 1254	4	33880.43	40662.11	85907.14	176708.25	202115.75	83640.83	74835.80	83641.21	30000.00	221052.63
Aroclor 1260	13	5743.53	10000.00	13000.00	30000.00	38448.57	15007.08	8494.95	15007.55	2341.77	49275.36
Total PCBs	29	1160.60	10000.00	25000.00	49275.36	110399.94	16995.56	25324.26	16999.36	500.00	221052.63
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2,4,6-Trichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pentachlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	14	269.61	664.02	1766.40	4662.72	8849.63	1753.06	3577.08	1755.02	90.91	37692.31
Dieldrin	4	55.56	55.56	494.11	4333.33	4333.33	490.65	2138.89	494.11	55.56	4333.33

Table A4.2 Summary of the whole-sediment chemistry data for surficial sediments in the Grand Calumet River Lagoons.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	16	287.26	3993.64	7133.92	14270.19	59664.11	6705.62	87167.25	6710.74	176.92	1007692.30
p,p'-DDE	22	630.37	1784.68	30958.37	64989.60	77766.90	13189.45	42712.66	13195.17	300.00	1026923.07
p,p'-DDT	23	37.15	179.35	2800.00	11507.13	17277.64	NC	37340.28	1402.32	0.00	757692.31
Endosulfan, total	5	171.67	183.46	192.27	228.28	393.47	237.00	98.55	237.08	164.23	565.38
Endrin	22	44.06	60.40	87.04	200.00	247.59	113.79	131.40	114.26	19.69	2333.33
Heptachlor	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Heptachlor epoxide	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

NC = Not calculated (i.e., a Geomean can not be calculated if one or more of the values equal zero); OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Table A4.3 Summary of the whole-sediment chemistry data for surficial sediments in the Indiana Harbor and nearshore areas of Lake Michigan.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Carbazole	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	10	39222.04	50296.36	69221.87	79498.71	100897.45	63626.02	13538.89	63626.17	21481.48	166666.67
Benzo(a)pyrene	10	22636.38	28474.17	64043.44	108815.23	131513.84	57498.18	24626.02	57498.45	20370.37	138888.89
Benzo(b)fluoranthene	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Benzo(k)fluoranthene	10	8172.31	11136.04	25445.25	44330.00	78778.39	24627.17	23203.66	24627.62	6470.59	130718.95
Chrysene	10	46617.02	61990.63	78400.09	98399.48	118053.13	77256.58	23503.63	77256.69	33333.33	183333.33
Dibenz[a,h]anthracene	6	5332.44	5509.78	8038.35	12258.73	17280.42	9047.89	3980.76	9048.04	5185.19	23888.89
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	10	13423.81	18697.79	47165.77	83530.59	94542.03	40131.82	19561.00	40132.19	12352.94	95424.84
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.3 Summary of the whole-sediment chemistry data for surficial sediments in the Indiana Harbor and nearshore areas of Lake Michigan.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	2	58195.85	66598.84	83385.57	104403.45	119478.32	83385.47	38763.73	83385.57	53191.49	130718.95
Aroclor 1248	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1254	1	17730.50	17730.50	17730.50	17730.50	17730.50	17730.50	NA	17730.50	17730.50	17730.50
Aroclor 1260	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Total PCBs	30	10894.66	23664.95	72852.86	123338.89	267757.48	52389.30	56649.89	52392.55	693.80	500000.00
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2,4,6-Trichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pentachlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	1	862.75	862.75	862.75	862.75	862.75	862.75	NA	862.75	862.75	862.75
Dieldrin	2	3660.13	3660.13	3660.13	3660.13	3660.13	3660.13	NA	3660.13	3660.13	3660.13

Table A4.3 Summary of the whole-sediment chemistry data for surficial sediments in the Indiana Harbor and nearshore areas of Lake Michigan.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
p,p'-DDE	1	640.52	640.52	640.52	640.52	640.52	640.52	NA	640.52	640.52	640.52
p,p'-DDT	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Endosulfan, total	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Endrin	1	235.29	235.29	235.29	235.29	235.29	235.29	NA	235.29	235.29	235.29
Heptachlor	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Heptachlor epoxide	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	2	0.68	0.97	1.56	2.33	2.90	1.30	1.41	1.56	0.51	3.34

OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Table A4.4 Summary of the whole-sediment chemistry data for surficial sediments in the Assessment Area.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	79	70.35	326.69	1070.05	19621.63	345289.67	2834.59	320186.52	2847.08	17.52	7586956.68
Carbazole	5	51079.36	54187.19	62135.92	96000.00	108456.89	71490.33	23321.14	71490.38	49107.14	117647.05
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	364	13000.00	43316.18	148064.44	461766.78	1405380.23	154174.62	807734.45	154177.72	1044.03	45080439.62
Benzo(a)pyrene	361	17000.00	41935.48	130718.95	390000.01	1122448.96	140638.44	560938.86	140640.72	1153.85	16695652.52
Benzo(b)fluoranthene	85	21382.10	60377.36	135416.66	369863.00	1060590.95	155741.29	545744.39	155743.32	3071.43	15454545.12
Benzo(k)fluoranthene	176	12513.74	28964.93	73316.26	301379.35	1291069.40	100530.80	576286.87	100533.09	2142.86	12260869.82
Chrysene	381	17000.00	42000.00	166666.66	588376.64	1775700.97	167973.17	706200.34	167976.08	1153.85	25478261.40
Dibenz[a,h]anthracene	138	7807.65	13308.50	30114.08	93724.54	333073.77	38961.75	96043.84	38963.08	1285.71	2147058.76
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	163	17271.47	33911.65	76666.67	254337.37	1214904.04	105716.95	475983.54	105718.61	2944.44	14695652.48
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.4 Summary of the whole-sediment chemistry data for surficial sediments in the Assessment Area.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	15	25717.65	55524.19	130718.95	163770.57	347442.14	97065.85	47397.76	97066.58	11538.46	526315.78
Aroclor 1248	147	4385.64	21236.30	63636.36	197855.96	665713.94	59444.10	193203.62	59449.57	500.00	4170731.80
Aroclor 1254	21	1152.78	8426.97	35026.02	159615.39	221052.63	23821.44	81326.97	23834.10	116.79	539823.01
Aroclor 1260	20	2485.65	3159.28	11401.76	22107.82	30945.05	9592.55	8662.24	9593.15	2112.68	49275.36
Total PCBs	213	2850.31	18055.56	63636.36	176190.48	463269.35	50404.90	154270.48	50417.73	44.17	4170731.80
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	14	13218.60	15174.99	20675.50	23647.59	33099.21	20817.73	5090.01	20817.81	12500.00	63333.33
2,4,6-Trichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pentachlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	42	433.68	702.95	1331.06	6188.01	11514.37	1935.56	3761.73	1936.76	90.91	37692.31
Dieldrin	46	179.37	320.00	1135.14	4304.13	10000.00	1277.21	2538.65	1279.18	55.56	17272.73

Table A4.4 Summary of the whole-sediment chemistry data for surficial sediments in the Assessment Area.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	29	169.40	481.66	1818.18	7500.00	19339.71	2157.11	46963.21	2161.18	53.19	1007692.30
p,p'-DDE	55	560.55	795.66	5057.47	27146.35	64586.72	5436.19	27361.58	5439.67	95.00	1026923.07
p,p'-DDT	47	53.52	246.73	1100.00	6523.78	14888.39	NC	15362.20	1067.93	0.00	757692.31
Endosulfan, total	100	205.26	558.85	1643.07	3181.16	7918.18	1426.24	1671.65	1427.34	106.54	16093.75
Endrin	78	57.26	78.53	183.64	224.11	250.00	149.64	76.66	149.98	19.69	2333.33
Heptachlor	17	524.53	863.56	2880.00	8671.33	9409.37	2569.59	4155.00	2570.53	336.13	36944.45
Heptachlor epoxide	12	607.97	834.89	2190.52	3179.44	3912.65	1949.00	1781.18	1949.62	352.94	25733.33
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	6	521.80	737.28	1471.10	1794.96	3304.64	1363.79	802.91	1364.14	453.78	5833.33
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	14	377.97	1177.34	2201.53	4664.35	14976.10	2325.39	4018.66	2326.95	153.47	25416.67
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	17	0.00002	0.00002	0.00005	1.45	3.23	0.002	1.75	0.56	0.000003	6.20

NC = Not calculated (i.e., a Geomean can not be calculated if one or more of the values equal zero); OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Table A4.5 Summary of the whole-sediment chemistry data for sub-surface sediments in the Grand Calumet River/Indiana Harbor Canal.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	64	104.30	272.18	837.58	22923.41	610215.12	3041.01	785333.03	3049.19	55.78	11583332.87
Carbazole	10	1856.12	1941.58	3191.42	212496.94	1395905.76	21312.32	677422.42	21317.44	1470.59	4374999.93
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	120	10377.38	86704.08	218739.35	697510.22	3253622.37	212806.78	2038019.99	212824.96	241.18	50833331.31
Benzo(a)pyrene	111	16875.00	66666.67	157894.74	376939.43	3092783.41	161509.20	1708472.01	161520.45	223.53	52499997.91
Benzo(b)fluoranthene	43	3061.00	14838.62	60416.66	216465.11	1955571.31	71999.17	1521515.30	72010.34	382.35	29687499.56
Benzo(k)fluoranthene	92	6238.11	38114.50	93284.57	238257.26	2858484.17	97878.25	1316718.05	97900.05	120.59	44166664.91
Chrysene	127	8936.65	82746.60	244897.95	629757.25	3170483.73	230566.92	1859328.03	230584.10	205.88	43749999.35
Dibenz[a,h]anthracene	52	5325.11	10227.61	23646.52	140801.35	608343.25	38932.83	244259.13	38936.00	651.52	3437499.95
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	83	18126.27	42377.55	93750.00	275412.64	1671979.21	127570.91	1197525.67	127576.96	600.00	29166665.51
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.5 Summary of the whole-sediment chemistry data for sub-surface sediments in the Grand Calumet River/Indiana Harbor Canal.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1248	52	5526.73	27799.97	123027.41	432657.16	829828.04	97344.00	577495.29	97352.55	407.69	12682926.94
Aroclor 1254	3	32830.13	71126.36	258000.00	412128.72	545859.25	149336.21	181360.17	149338.02	19607.84	658333.31
Aroclor 1260	2	2262.89	2723.39	3708.30	5049.26	6076.53	3708.10	2437.50	3708.30	2000.00	6875.00
Total PCBs	52	5526.73	28018.40	123027.41	432657.16	829828.04	98707.44	596099.22	98716.11	407.69	12682926.94
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	1	13750.00	13750.00	13750.00	13750.00	13750.00	13750.00	NA	13750.00	13750.00	13750.00
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	17	3701.99	6388.89	18000.00	36885.25	53852.43	15928.22	14767.94	15928.93	3088.24	114285.72
2,4,6-Trichlorophenol	4	3257.79	3529.72	3700.06	3780.22	3910.60	3606.18	201.07	3606.18	3088.24	4000.00
Pentachlorophenol	1	48.00	48.00	48.00	48.00	48.00	48.00	NA	48.00	48.00	48.00
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	9	155.94	1018.75	2181.82	3284.31	8008.83	1684.98	3343.87	1686.98	145.24	24070.80
Dieldrin	34	79.56	136.00	179.05	215.24	300.21	174.95	46.87	175.09	66.06	625.00

Table A4.5 Summary of the whole-sediment chemistry data for sub-surface sediments in the Grand Calumet River/Indiana Harbor Canal.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	20	307.30	423.65	686.65	1163.49	1868.30	666.75	395.02	667.45	50.00	2650.08
p,p'-DDE	18	216.73	267.94	367.56	528.20	1200.92	467.01	757.67	467.35	134.23	8141.59
p,p'-DDT	2	78.20	127.87	289.07	651.94	1061.42	287.43	706.25	289.07	56.25	1468.75
Endosulfan, total	56	164.14	300.68	1220.40	2664.67	7042.29	1056.67	1598.53	1058.00	98.93	14471.31
Endrin	46	14.85	16.96	50.00	119.46	204.30	52.06	110.11	52.67	12.62	4336.28
Heptachlor	1	73.81	73.81	73.81	73.81	73.81	73.81	NA	73.81	73.81	73.81
Heptachlor epoxide	4	65.07	70.06	85.27	113.47	143.45	93.21	25.59	93.28	61.94	167.68
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	3	1351.72	1452.15	1636.36	4662.01	8736.34	3036.62	4990.93	3037.10	1288.66	13278.69
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	2	72.78	120.96	280.86	650.40	1075.80	279.08	726.33	280.86	51.77	1504.42
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Table A4.6 Summary of the whole-sediment chemistry data for sub-surface sediments in the Grand Calumet River Lagoons.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Carbazole	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	1	1533724.41	1533724.41	1533724.41	1533724.41	1533724.41	1533724.41	NA	1533724.41	1533724.41	1533724.41
Benzo(a)pyrene	1	1302052.84	1302052.84	1302052.84	1302052.84	1302052.84	1302052.84	NA	1302052.84	1302052.84	1302052.84
Benzo(b)fluoranthene	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Benzo(k)fluoranthene	2	27625.01	46196.38	108837.56	256416.81	428791.74	108835.69	292248.88	108837.56	19607.84	604105.60
Chrysene	1	1328445.81	1328445.81	1328445.81	1328445.81	1328445.81	1328445.81	NA	1328445.81	1328445.81	1328445.81
Dibenz[a,h]anthracene	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	1	648093.87	648093.87	648093.87	648093.87	648093.87	648093.87	NA	648093.87	648093.87	648093.87
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.6 Summary of the whole-sediment chemistry data for sub-surface sediments in the Grand Calumet River Lagoons.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1248	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1254	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1260	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Total PCBs	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
2,4,6-Trichlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pentachlorophenol	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Dieldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Table A4.6 Summary of the whole-sediment chemistry data for sub-surface sediments in the Grand Calumet River Lagoons.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
p,p'-DDE	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
p,p'-DDT	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Endosulfan, total	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Endrin	1	49.04	49.04	49.04	49.04	49.04	49.04	NA	49.04	49.04	49.04
Heptachlor	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Heptachlor epoxide	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Table A4.7 Summary of the whole-sediment chemistry data for sub-surface sediments in the Assessment Area.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Metals (mg/kg OC)											
Mercury	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Polycyclic Aromatic Hydrocarbons (PAHs; µg/kg OC)											
Acenapthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Acenaphthylene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Anthracene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benzene	64	104.30	272.18	837.58	22923.41	610215.12	3041.01	785333.03	3049.19	55.78	11583332.87
Carbazole	10	1856.12	1941.58	3191.42	212496.94	1395905.76	21312.32	677422.42	21317.44	1470.59	4374999.93
Fluorene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
2-Methylnaphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Naphthalene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Phenanthrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Benz[a]anthracene	121	10384.62	87234.05	224218.75	708333.31	3142857.20	216308.91	2013119.35	216327.24	241.18	50833331.31
Benzo(a)pyrene	112	17029.82	68493.49	159375.21	390078.31	2865030.60	164547.17	1683796.98	164558.54	223.53	52499997.91
Benzo(b)fluoranthene	43	3061.00	14838.62	60416.66	216465.11	1955571.31	71999.17	1521515.30	72010.34	382.35	29687499.56
Benzo(k)fluoranthene	94	6570.16	37802.23	93284.57	245547.18	2373054.65	98099.49	1279452.82	98120.90	120.59	44166664.91
Chrysene	128	9022.67	85821.65	251272.27	675187.03	3167859.54	233743.09	1840309.39	233760.38	205.88	43749999.35
Dibenz[a,h]anthracene	52	5325.11	10227.61	23646.52	140801.35	608343.25	38932.83	244259.13	38936.00	651.52	3437499.95
Fluoranthene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Indeno(1,2,3-cd)pyrene	84	18659.40	43312.40	94964.96	288262.23	1647722.74	130063.39	1180012.40	130069.49	600.00	29166665.51
Pyrene	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Total PAHs	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG

Table A4.7 Summary of the whole-sediment chemistry data for sub-surface sediments in the Assessment Area.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Polychlorinated Biphenyls (PCBs; µg/kg OC)											
Aroclor 1016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1242	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Aroclor 1248	52	5526.73	27799.97	123027.41	432657.16	829828.04	97344.00	577495.29	97352.55	407.69	12682926.94
Aroclor 1254	3	32830.13	71126.36	258000.00	412128.72	545859.25	149336.21	181360.17	149338.02	19607.84	658333.31
Aroclor 1260	2	2262.89	2723.39	3708.30	5049.26	6076.53	3708.10	2437.50	3708.30	2000.00	6875.00
Total PCBs	52	5526.73	28018.40	123027.41	432657.16	829828.04	98707.44	596099.22	98716.11	407.69	12682926.94
Chlorinated Benzenes (µg/kg OC)											
Hexachlorobenzene (HCB)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Hexachlorobutadiene (HCBD)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Phthalates (µg/kg OC)											
Bis(2-ethylhexyl)phthalate	1	13750.00	13750.00	13750.00	13750.00	13750.00	13750.00	NA	13750.00	13750.00	13750.00
Chlorophenols (µg/kg OC)											
2,4-Dichlorophenol	17	3701.99	6388.89	18000.00	36885.25	53852.43	15928.22	14767.94	15928.93	3088.24	114285.72
2,4,6-Trichlorophenol	4	3257.79	3529.72	3700.06	3780.22	3910.60	3606.18	201.07	3606.18	3088.24	4000.00
Pentachlorophenol	1	48.00	48.00	48.00	48.00	48.00	48.00	NA	48.00	48.00	48.00
Pesticides (µg/kg OC)											
Aldrin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Chlordane	9	155.94	1018.75	2181.82	3284.31	8008.83	1684.98	3343.87	1686.98	145.24	24070.80
Dieldrin	34	79.56	136.00	179.05	215.24	300.21	174.95	46.87	175.09	66.06	625.00

Table A4.7 Summary of the whole-sediment chemistry data for sub-surface sediments in the Assessment Area.

Chemicals of Potential Concern (COPCs)	Number of samples (n)[1]	10th Percentile[2,3]	25th Percentile[2,3]	50th Percentile[2,3]	75th Percentile[2,3]	90th Percentile[2,3]	Geomean Mean[2,4]	Geometric Standard Deviation[2,5]	Arithmetic Mean[2,3]	Minimum[2]	Maximum[2]
Pesticides (µg/kg OC; cont.)											
p,p'-DDD	20	307.30	423.65	686.65	1163.49	1868.30	666.75	395.02	667.45	50.00	2650.08
p,p'-DDE	18	216.73	267.94	367.56	528.20	1200.92	467.01	757.67	467.35	134.23	8141.59
p,p'-DDT	2	78.20	127.87	289.07	651.94	1061.42	287.43	706.25	289.07	56.25	1468.75
Endosulfan, total	56	164.14	300.68	1220.40	2664.67	7042.29	1056.67	1598.53	1058.00	98.93	14471.31
Endrin	47	14.86	16.97	50.00	116.76	204.10	52.00	107.94	52.59	12.62	4336.28
Heptachlor	1	73.81	73.81	73.81	73.81	73.81	73.81	NA	73.81	73.81	73.81
Heptachlor epoxide	4	65.07	70.06	85.27	113.47	143.45	93.21	25.59	93.28	61.94	167.68
Alpha-hexachlorocyclohexane (HCH)	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Beta-HCH	3	1351.72	1452.15	1636.36	4662.01	8736.34	3036.62	4990.93	3037.10	1288.66	13278.69
Technical-HCH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Lindane (gamma-HCH)	2	72.78	120.96	280.86	650.40	1075.80	279.08	726.33	280.86	51.77	1504.42
PCDDs and PCDFs (µg/kg OC)											
TCDD-TEQ	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

OC = organic carbon; TCDD-TEQ = tetrachlorodibenzo-*p*-dioxin - toxic equivalents; PCDDs = polychlorinated dibenzo-*p*-dioxins; PCDFs = polychlorinated dibenzofurans; NM = not measured; NG = no guideline.

[1]Excluding results for which the detection limit was greater than the selected chemical benchmark (see Section 3.2 for details).

[2]If the result is less than the detection limit, the value of 1/2 the detection limit was assigned.

[3]The percentiles and arithmetic mean were calculated using $\log_e$ transformed data.

[4]The geometric mean was not calculated using the $\log_e$ transformed data.

[5]The geometric standard deviation was calculated using the methods outlined in Gilbert (1987).

Note: Substances not listed in this table were not used in the analysis or not measured in this geographic area.

Appendix 5

Tissue Residue Data Tables

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**Q-CARP-1**	**Q-CARP-2**	**Q-CARP-3**	**Q-CARP-4**	**Q-CARP-5**	**Q-CARP-6**	**R-CARP-1**	**R-CARP-2**	**R-CARP-3**	**A**	**B**
Sample										**RO3499**	**RO3502**
Reference	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	IDEM 2000b	IDEM 2000b
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	IH/LM	IH/LM	IH/LM	GCRL	GCRL
Year	1988	1988	1988	1988	1988	1988	1988	1988	1988	1997	1997
Lab Tissue Type[1]	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	SK-OFF	SK-OFF
Number Fish/Sample	1	1	1	1	1	1	1	1	1	5	5
Length (cm)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Weight (gm)	NR	NR	NR	NR	NR	NR	NR	NR	NR	1390	2072
Latitude	41.645679	41.645679	41.645679	41.645679	41.645679	41.645679	41.667786	41.667786	41.667786	NR	NR
Longitude	-87.472031	-87.472031	-87.472031	-87.472031	-87.472031	-87.472031	-87.439423	-87.439423	-87.439423	NR	NR
Conventionals (%)											
Percent Lipid	8.13	31.57	0.71	16.16	1.68	32.14	11.32	11.35	9.34	2.92	2.96
Percent Moisture	72.57	64.84	70.11	73.45	81.71	83.64	67.76	69.28	67.71	NR	NR
Metals (mg/kg)											
Mercury	0.0584	0.0487	0.0573	0.0634	<0.00714	0.0160	0.0864	0.112	*0.193*	0.105	0.075
Pesticides (µg/kg)											
Aldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Aldrin + Dieldrin[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2,4'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4,4'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	79	68
Sum DDD[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC	NC
2,4'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4,4'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	Q-CARP-1	Q-CARP-2	Q-CARP-3	Q-CARP-4	Q-CARP-5	Q-CARP-6	R-CARP-1	R-CARP-2	R-CARP-3	A RO3499	B RO3502
Pesticides (µg/kg; cont.)											
2,4'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4,4'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDT[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC	NC
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor + Heptachlor epoxide[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Alpha (Cis) Chlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	24	25
Cis-Nonachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	11	NR
Gamma (Trans) Chlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	8.3	8.7
Oxychlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trans-Nonachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total Chlordane (all isomers)[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	24	25
Polychlorinated Biphenyls (µg/kg)											
Total PCBs (reported)	*1350*	***5830***	*336*	*1200*	*875*	*148*	***3210***	*469*	*727*	*410*	*340*

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station / **Sample**	**C** **RO3505**	**D** **RO3508**	**E** **RO3511**	**F** **RO3514**	**G** **RO3517**	**H** **RO3520**	**I** **RO3523**	**J** **RO3526**	**K** **RO3529**	**L** **RO3532**
Reference	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL
Year	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997
Lab Tissue Type[1]	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF
Number Fish/Sample	5	5	5	5	5	5	5	5	5	5
Length (cm)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Weight (gm)	2097	2089	1192	1390	738	1135	624	880	1419	679
Latitude	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Longitude	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Conventionals (%)										
Percent Lipid	2.74	2.45	1.34	1.22	1.38	1.46	1.39	0.71	0.9	1.14
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Metals (mg/kg)										
Mercury	NR	0.115	NR	0.075	0.075	NR	NR	0.11	*0.245*	0.085
Pesticides (µg/kg)										
Aldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Aldrin + Dieldrin[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
2,4'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4,4'-DDD	51	48	NR	11	36	32	NR	NR	NR	NR
Sum DDD[2]	NC	NC	NR	NC	NC	NC	NR	NR	NR	NR
2,4'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4,4'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDE[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	C RO3505	D RO3508	E RO3511	F RO3514	G RO3517	H RO3520	I RO3523	J RO3526	K RO3529	L RO3532
Pesticides (µg/kg; cont.)										
2,4'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
4,4'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Sum DDT[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total DDT[2]	NC	NC	NR	NC	NC	NC	NR	NR	NR	NR
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Heptachlor + Heptachlor epoxide[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Alpha (Cis) Chlordane	23	18	NR	NR	13	11	NR	NR	NR	NR
Cis-Nonachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Gamma (Trans) Chlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Oxychlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Trans-Nonachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Total Chlordane (all isomers)[2]	23	NC	NR	NR	NC	NC	NR	NR	NR	NR
Polychlorinated Biphenyls (µg/kg)										
Total PCBs (reported)	*280*	*290*	*270*	*160*	*300*	*210*	*70*	*320*	*240*	*240*

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversic factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station / **Sample**	**M** **RO3535**	**N** **RO3538**	**O** **RO3541**	**P** **RO3544**	**Q** **RO3547**	**R** **RO3610**	**00658**	**00478**	**00477**	**00199**
Reference	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000b	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCRL	GCRL	GCRL	GCRL	GCRL	GCRL	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1997	1997	1997	1997	1997	1997	1980	1982	1982	1984
Lab Tissue Type[1]	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	SK-OFF	WHOLE	WHOLE	WHOLE	WHOLE
Number Fish/Sample	5	5	5	5	5	5	5	3	3	5
Length (cm)	NR	NR	NR	NR	NR	NR	11.6 - 26.8	35 - 55.5	48.5 - 63	48.7 - 53.5
Weight (gm)	653	822	993	968	1646	1277	22 - 280	624 - 1276	1588 - 2863	1844 - 2298
Latitude	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Longitude	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Conventionals (%)										
Percent Lipid	1.07	2.05	0.76	0.78	1.13	0.74	1.74	8.82	8.03	7.35
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Metals (mg/kg)										
Mercury	0.08	0.06	0.145	0.11	*0.17*	*0.2*	<0.0357	NR	NR	<0.0200
Pesticides (µg/kg)										
Aldrin	NR	NR	NR	NR	NR	NR	<23.7	<23.7	<23.7	<23.7
Dieldrin	NR	NR	NR	NR	NR	NR	0.741	<7.41	<7.41	7.41
Aldrin + Dieldrin[2]	NR	NR	NR	NR	NR	NR	NC	NC	NC	NC
2,4'-DDD	NR	NR	NR	NR	NR	NR	<7.41	<7.41	<7.41	<7.41
4,4'-DDD	NR	NR	NR	NR	NR	NR	6.67	127	140	48.9
Sum DDD[2]	NR	NR	NR	NR	NR	NR	NC	NC	NC	NC
2,4'-DDE	NR	NR	NR	NR	NR	NR	<7.41	<7.41	<7.41	<7.41
4,4'-DDE	NR	NR	NR	NR	NR	NR	8.15	239	960	112
Sum DDE[2]	NR	NR	NR	NR	NR	NR	NC	239	960	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	M RO3535	N RO3538	O RO3541	P RO3544	Q RO3547	R RO3610	00658	00478	00477	00199
Pesticides (µg/kg; cont.)										
2,4'-DDT	NR	NR	NR	NR	NR	NR	<7.41	<7.41	<7.41	<7.41
4,4'-DDT	NR	NR	NR	NR	NR	NR	<7.41	<7.41	<7.41	<7.41
Sum DDT[2]	NR	NR	NR	NR	NR	NR	NC	NC	NC	NC
Total DDT[2]	NR	NR	NR	NR	NR	NR	NC	239	960	NC
Heptachlor	NR	NR	NR	NR	NR	NR	<23.7	<23.7	<23.7	<23.7
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	<5.93	<5.93	<5.93	7.41
Heptachlor + Heptachlor epoxide[2]	NR	NR	NR	NR	NR	NR	NC	NC	NC	NC
Alpha (Cis) Chlordane	NR	NR	NR	NR	NR	NR	4.44	54.8	48.1	<5.93
Cis-Nonachlor	NR	NR	NR	NR	NR	NR	0.741	<5.93	23.0	10.4
Gamma (Trans) Chlordane	NR	NR	NR	NR	NR	NR	5.93	147	279	6.67
Oxychlordane	NR	NR	NR	NR	NR	NR	0.741	<5.93	0.741	1.48
Trans-Nonachlor	NR	NR	NR	NR	NR	NR	<5.93	19.3	48.1	14.8
Total Chlordane (all isomers)[2]	NR	NR	NR	NR	NR	NR	NC	221	**399**	14.8
Polychlorinated Biphenyls (µg/kg)										
Total PCBs (reported)	*240*	*420*	*370*	*320*	*930*	*660*	*1050*	*3430*	***9260***	***4350***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversio factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station / **Sample**	**00881**	**00882**	**80502396**	**80502398**	**80502399**	**80502403**	**80502404**	**80502405**	**80502406**	**80502409**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1986	1986	1986	1986	1986	1986	1986	1987	1987	1987
Lab Tissue Type[1]	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE
Number Fish/Sample	5	5	3	4	4	5	3	4	2	4
Length (cm)	33 - 40	36 - 43	53 - 70	66 - 73.5	36.1 - 67	62 - 68.5	62.4 - 75.6	52 - 65.1	22 - 36.5	28.4 - 37.5
Weight (gm)	610 - 850	790 - 1238	2071 - 4654	3859 - 4937	738 - 4058	2866 - 4370	3093 - 6299	1873 - 4086	190 - 790	380 - 851
Latitude	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Longitude	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Conventionals (%)										
Percent Lipid	5.8	5.48	13.3	14.5	9.3	16.6	13.5	14	5.8	8.3
Percent Moisture	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Metals (mg/kg)										
Mercury	0.0471	0.0471	*0.203*	*0.243*	*0.271*	*0.214*	*0.320*	0.146	0.0743	0.0714
Pesticides (µg/kg)										
Aldrin	NR	NR	<184	19.3	<184	<302	16.3	8.15	11.9	24.4
Dieldrin	5.93	5.93	31.9	93.3	48.1	109	137	52.6	<7.41	17.8
Aldrin + Dieldrin[2]	NC	NC	NC	93.3	NC	109	137	NC	NC	NC
2,4'-DDD	NR	NR	8.15	<7.41	<7.41	<7.41	<7.41	<7.41	<7.41	<7.41
4,4'-DDD	17.8	16.3	78.5	256	110	250	341	158	26.7	22.2
Sum DDD[2]	NC	NC	NC	256	NC	250	341	158	NC	NC
2,4'-DDE	NR	NR	27.4	66.7	28.1	37.8	45.2	18.5	12.6	17.0
4,4'-DDE	<7.41	<0.741	633	889	622	1330	1930	1700	<156	14.1
Sum DDE[2]	NC	NC	633	889	622	1330	1930	1700	NC	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	00881	00882	80502396	80502398	80502399	80502403	80502404	80502405	80502406	80502409
Pesticides (µg/kg; cont.)										
2,4'-DDT	NR	NR	<7.41	<7.41	<7.41	<7.41	<7.41	<7.41	<7.41	<7.41
4,4'-DDT	1.48	0.741	11.1	<7.41	<7.41	<7.41	164	<7.41	<7.41	<7.41
Sum DDT[2]	NC	NC	NC	NC	NC	NC	164	NC	NC	NC
Total DDT[2]	NC	NC	633	1140	622	1580	2430	1860	NC	NC
Heptachlor	NR	NR	<184	<184	<184	<302	<599	<302	<124	<184
Heptachlor epoxide	1.48	1.48	<5.93	11.9	<5.93	12.6	17.8	<5.93	<5.93	10.4
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	6.67	7.41	14.1	89.6	40.0	60.7	72.6	31.9	8.15	10.4
Cis-Nonachlor	2.22	2.22	8.15	42.2	14.1	21.5	29.6	23.0	<5.93	<5.93
Gamma (Trans) Chlordane	4.44	5.19	6.59	57.0	28.1	37.8	39.3	16.3	8.15	11.1
Oxychlordane	8.89	9.63	<5.93	14.8	8.89	13.3	20.0	10.4	<5.93	<5.93
Trans-Nonachlor	<0.741	<0.741	10.4	63.7	25.2	32.6	43.7	22.2	<5.93	<5.93
Total Chlordane (all isomers)[2]	NC	NC	NC	267	93.3	153	205	93.3	NC	NC
Polychlorinated Biphenyls (µg/kg)										
Total PCBs (reported)	***2780***	***2320***	***3780***	***4070***	***3780***	***5260***	***7190***	***5930***	***3190***	***3480***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversior factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**80502410**	**90602983** **292-88**	**90602985** **293-88**	**11202139** **093-90**	**11202141** **094-90**	**30301041** **192-92**	**30301043** **193-92**	**30301044** **194-92**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1987	1988	1988	1990	1990	1992	1992	1992
Lab Tissue Type[1]	WHOLE	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	1	3	1	3	2	1	5	4
Length (cm)	38.5	60.5 - 63	74	55.2 - 61.2	40 - 47.5	80	35 - 39.1	52.2 - 55.5
Weight (gm)	888	3119 - 3686	6691	2412 - 3377	965 - 1674	8427	823 - 965	1958 - 2554
Latitude	NR	NR	NR	41.655	41.655	41.6525	41.6525	41.6525
Longitude	NR	NR	NR	-87.45916667	-87.45916667	-87.46333333	-87.46333333	-87.46333333
Conventionals (%)								
Percent Lipid	4.7	6.2	21.68	6.34	3.42	12.1	6.23	8.34
Percent Moisture	NR	NR	NR	74.2	76.5	55.91	73.37	72.4
Metals (mg/kg)								
Mercury	0.0643	0.084	0.124	0.13	0.014	0.09	0.01	0.03
Pesticides (µg/kg)								
Aldrin	<124	<16	<40	205	150	<8	<8	<40
Dieldrin	<7.41	21	210	23	<10	99	<10	<10
Aldrin + Dieldrin[2]	NC	NC	210	205	150	NC	NC	NC
2,4'-DDD	<7.41	<10	<50	26	15	26	<10	10
4,4'-DDD	<7.41	40	61	140	45	78	45	160
Sum DDD[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDE	<7.41	<10	<50	16	<20	<20	<20	<60
4,4'-DDE	<156	145	280	320	64	315	<10	59
Sum DDE[2]	NC	NC	280	320	NC	315	NC	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	80502410	90602983 292-88	90602985 293-88	11202139 093-90	11202141 094-90	30301041 192-92	30301043 193-92	30301044 194-92
Pesticides (µg/kg; cont.)								
2,4'-DDT	<7.41	<10	<50	<20	<20	<20	<20	<60
4,4'-DDT	<7.41	<10	<50	<20	<20	<20	<20	<60
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	NC	280	320	NC	315	NC	NC
Heptachlor	<124	<16	<40	6.1	8.3	14	9.7	<40
Heptachlor epoxide	<5.93	<8	101	<8	<8	32	<8	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC	101	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	<5.93	<8	80	34	10	27	<16	13
Cis-Nonachlor	<5.93	13	<40	16	<8	11	<8	<8
Gamma (Trans) Chlordane	<5.93	<8	<40	23	<8	13	<8	12
Oxychlordane	<5.93	<8	<40	<8	<8	<8	<8	<8
Trans-Nonachlor	<5.93	<8	<40	18	<16	<16	<16	<48
Total Chlordane (all isomers)[2]	NC	NC	80	57	NC	27	NC	NC
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***2440***	*1600*	***2200***	***5000***	***2500***	***8900***	***4500***	***4600***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**30301045**	**40900692**	**40900693**	**40900694**	**41201188**	**41201189**	**41201191**	**41201192**
Sample	**195-92**	**065-94**	**066-94**	**067-94**	**070-94**	**071-94**	**073-94**	**074-94**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1992	1994	1994	1994	1994	1994	1994	1994
Lab Tissue Type[1]	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	5	1	1	1	2	1	2	2
Length (cm)	22.9 - 28.8	32.8	53.7	49.5	50.6 - 50.7	35.1	35.4 - 39	46 - 46.1
Weight (gm)	216 - 336	624	2100	2724	1844 - 1930	993	530 - 993	1703 - 1703
Latitude	41.6525	41.652222222	41.652222222	41.652222222	41.609027778	41.609027778	41.6125	41.6125
Longitude	-87.46333333	-87.46305556	-87.46305556	-87.46305556	-87.37111111	-87.37111111	-87.43013889	-87.43013889
Conventionals (%)								
Percent Lipid	4.52	2.7	3.46	20.86	5.37	5.99	1.64	5.14
Percent Moisture	72.6	78.2	77.9	62.4	76.5	76.9	80.2	76.3
Metals (mg/kg)								
Mercury	0.01	<0.04	0.05	0.06	<0.02	0.05	0.03	0.02
Pesticides (µg/kg)								
Aldrin	<40	<8	28	8.6	<8	<8	<8	<8
Dieldrin	<10	<10	23	26	<10	<10	<10	<10
Aldrin + Dieldrin[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	<10	<10	19	40	<10	<10	23	16
4,4'-DDD	23	<10	78	290	30	19	120	77
Sum DDD[2]	NC	NC	NC	290	NC	NC	NC	NC
2,4'-DDE	<60	15	20	62	<84	<20	<38	<120
4,4'-DDE	<50	37	53	330	<40	69	23	39
Sum DDE[2]	NC	NC	NC	330	NC	NC	NC	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**30301045** **195-92**	**40900692** **065-94**	**40900693** **066-94**	**40900694** **067-94**	**41201188** **070-94**	**41201189** **071-94**	**41201191** **073-94**	**41201192** **074-94**
Pesticides (µg/kg; cont.)								
2,4'-DDT	<60	<20	<20	13	<20	<20	<20	<20
4,4'-DDT	<60	<20	<20	<20	<10	<20	<10	<10
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	NC	NC	620	NC	NC	NC	NC
Heptachlor	<40	<8	<8	<8	<8	<8	<8	<8
Heptachlor epoxide	<8	<8	<8	11	<8	<8	<8	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	<48	<16	14	55	<8	<8	<8	16
Cis-Nonachlor	<8	<8	<70	<260	<8	<8	<8	<8
Gamma (Trans) Chlordane	<48	<16	<16	41	<8	<8	<8	17
Oxychlordane	<8	<8	<8	<8	<8	<8	<8	<8
Trans-Nonachlor	<48	<16	<16	37	<38	<48	<22	<51
Total Chlordane (all isomers)[2]	NC	NC	NC	133	NC	NC	NC	NC
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***2600***	***3000***	***4900***	***23000***	***6800***	***6600***	*800*	***7950***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**41201194** **075-94**	**41201196** **077-94**	**41201197** **078-94**	**41201198** **079-94**	**41201200** **081-94**	**41201201** **082-94**	**41201202** **083-94**	**61200735** **131-96**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1994	1994	1994	1994	1994	1994	1994	1996
Lab Tissue Type[1]	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	1	3	3	1	3	4	2	1
Length (cm)	78.5	46 - 50.7	41 - 41.8	55.1	40.2 - 42.4	28 - 31.2	60 - 65.4	49.4
Weight (gm)	7037	1816 - 2384	972 - 1163	2696	1050 - 1135	392 - 608	3093 - 4171	1731
Latitude	41.6125	41.614861111	41.614861111	41.614861111	41.615	41.615	41.615	41.609027778
Longitude	-87.43013889	-87.48180556	-87.48180556	-87.48180556	-87.46069444	-87.46069444	-87.46069444	-87.37111111
Conventionals (%)								
Percent Lipid	11.98	8.22	5.03	16.51	4.75	6.64	8.81	9.77
Percent Moisture	69.3	73.8	76.4	66.9	77	77	73.8	71.98
Metals (mg/kg)								
Mercury	0.13	0.02	0.02	0.04	0.03	0.02	0.13	0.0563
Pesticides (µg/kg)								
Aldrin	<8	<8	<8	<8	<8	<8	<8	<8
Dieldrin	21	<10	<10	16	<10	<10	15	26
Aldrin + Dieldrin[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	26	10	<10	20	<10	<10	12	24
4,4'-DDD	200	75	45	160	37	52	97	66
Sum DDD[2]	200	NC	NC	NC	NC	NC	NC	NC
2,4'-DDE	<20	<20	<20	<20	<110	<108	<200	479
4,4'-DDE	1300	34	27	78	29	19	600	300
Sum DDE[2]	1300	NC	NC	NC	NC	NC	600	779

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**41201194** **075-94**	**41201196** **077-94**	**41201197** **078-94**	**41201198** **079-94**	**41201200** **081-94**	**41201201** **082-94**	**41201202** **083-94**	**61200735** **131-96**
Pesticides (µg/kg; cont.)								
2,4'-DDT	<20	<20	<20	<20	<20	<20	<20	<20
4,4'-DDT	<10	<10	<10	<10	<10	<10	<10	15
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	1500	NC	NC	NC	NC	NC	600	779
Heptachlor	<8	<8	<8	<8	<8	<8	<8	110
Heptachlor epoxide	<8	<8	<8	<8	<8	<8	<8	12
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	110
Alpha (Cis) Chlordane	24	18	11	30	<8	<8	27	20
Cis-Nonachlor	25	<8	<8	9	<8	<8	26	<8
Gamma (Trans) Chlordane	<8	18	12	29	<8	11	<8	14
Oxychlordane	<8	<8	<8	<8	<8	<8	<8	<8
Trans-Nonachlor	36	<57	<38	<92	<46	<44	31	15
Total Chlordane (all isomers)[2]	85	NC	NC	59	NC	NC	84	20
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***27000***	***11000***	***5700***	***19000***	***7900***	***6500***	***16000***	***20000***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**61200736**	**61200742**	**61200743**	**61200744**	**61200758**	**61200759**	**61200761**	**61200763**
Sample	**133-96**	**138-96**	**139-96**	**140-96**	**149-96**	**150-96**	**152-96**	**155-96**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1996	1996	1996	1996	1996	1996	1996	1996
Lab Tissue Type[1]	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	2	1	2	1	1	2	1	3
Length (cm)	35 - 37.7	62.2	42.2 - 42.6	29.9	39.8	28.2 - 28.6	36.4	27.2 - 28.9
Weight (gm)	689 - 789	3093	1305 - 1334	408	993	364 - 392	648	336 - 361
Latitude	41.609027778	41.6125	41.6125	41.6125	41.652222222	41.652222222	41.652222222	41.614861111
Longitude	-87.37111111	-87.43013889	-87.43013889	-87.43013889	-87.46305556	-87.46305556	-87.46305556	-87.48180556
Conventionals (%)								
Percent Lipid	6.06	5.7	7.79	4.7	6.89	4.20	4.04	2.98
Percent Moisture	74.99	74.32	73.53	75.44	74.29	77.16	76.28	77.41
Metals (mg/kg)								
Mercury	0.0256	*0.267*	0.037	0.024	0.0056	<0.006	<0.0058	<0.0055
Pesticides (µg/kg)								
Aldrin	<8	<8	<8	<8	<80	<40	<40	<40
Dieldrin	<10	17	<10	<10	<10	<10	<10	<10
Aldrin + Dieldrin[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	<10	<10	<10	<10	<10	15	<10	<10
4,4'-DDD	33	66	48	20	33	135	24	66
Sum DDD[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDE	198	93	190	110	<170	<91	<130	<90
4,4'-DDE	140	420	170	55	<110	<72	<60	<60
Sum DDE[2]	NC	420	NC	NC	NC	NC	NC	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**61200736** **133-96**	**61200742** **138-96**	**61200743** **139-96**	**61200744** **140-96**	**61200758** **149-96**	**61200759** **150-96**	**61200761** **152-96**	**61200763** **155-96**
Pesticides (µg/kg; cont.)								
2,4'-DDT	23	<20	<20	<20	<110	<60	<60	<60
4,4'-DDT	<20	<20	<20	<20	<110	<60	<60	<60
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	420	NC	NC	NC	NC	NC	NC
Heptachlor	39	22	37	26	<80	<40	<40	<40
Heptachlor epoxide	<8	<8	<8	<8	<8	<8	<8	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	10	14	9.4	<8	<8	10	<8	11
Cis-Nonachlor	<18	<8	<8	<8	<8	<8	<8	<8
Gamma (Trans) Chlordane	11	<8	10	<8	<8	6.9	<8	8.8
Oxychlordane	<8	<8	<8	<8	<8	<8	<8	<8
Trans-Nonachlor	8.5	14	8.5	<16	<88	<48	<48	<48
Total Chlordane (all isomers)[2]	NC	NC	NC	NC	NC	NC	NC	NC
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***12500***	***7200***	***13000***	***6700***	***7100***	***2650***	***3500***	***2700***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**61200764** **156-96**	**61200765** **157-96**	**61200749** **162-96**	**61200750** **163-96**	**61200754** **164-96**	**910262001**	**910262003**	**910262007**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1996	1996	1996	1996	1996	2000	2000	2000
Lab Tissue Type[1]	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	1	1	2	3	2	3	3	3
Length (cm)	36	19.6	24.3 - 25	36.7 - 40.5	42.7 - 46.3	40.5 - 47.5	48.5 - 54.3	40.5 - 41
Weight (gm)	748	150	228 - 272	718 - 985	1305 - 1362	1077 - 1531	1814 - 2381	1106 - 1191
Latitude	41.614861111	41.614861111	41.615	41.615	41.615	41.609166667	41.609166667	41.614444444
Longitude	-87.48180556	-87.48180556	-87.46069444	-87.46069444	-87.46069444	-87.37222222	-87.37222222	-87.46111111
Conventionals (%)								
Percent Lipid	6.89	4.98	2.62	5.36	4.26	4.03	10.8	9.32
Percent Moisture	74.94	74.21	77.78	75.28	75.52	77.05	69.7	72.1
Metals (mg/kg)								
Mercury	0.007	0.0075	0.0345	0.0281	0.0435	<0.05	<0.05	<0.05
Pesticides (µg/kg)								
Aldrin	<40	<100	<8	<8	<8	<2.5	<2.5	<2.5
Dieldrin	<10	<13	<10	<10	<10	<5	8.3	6.5
Aldrin + Dieldrin[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	16	<13	12	<10	21	6.8	24	12
4,4'-DDD	150	38	37	41	110	38	150	58
Sum DDD[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDE	<60	150	52	171	160	<5	<5	<5
4,4'-DDE	<60	<143	30	85	120	43.5	320	<5
Sum DDE[2]	NC	NC	NC	NC	NC	NC	320	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**61200764** **156-96**	**61200765** **157-96**	**61200749** **162-96**	**61200750** **163-96**	**61200754** **164-96**	**910262001**	**910262003**	**910262007**
Pesticides (µg/kg; cont.)								
2,4'-DDT	<60	<143	<20	<20	<20	<5	<5	<5
4,4'-DDT	<60	<143	<20	<20	<20	<5	<5	<5
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	NC	NC	NC	NC	NC	320	NC
Heptachlor	<40	<100	<8	29	19	<2.5	<2.5	<2.5
Heptachlor epoxide	<8	<10	<8	<8	<8	<2.5	<2.5	<2.5
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	28	<10	<8	9	13	4.25	31	9.2
Cis-Nonachlor	<8	<10	<8	<8	<8	<5	<5	<5
Gamma (Trans) Chlordane	19	<10	<8	9.6	10	3.35	23	9.4
Oxychlordane	<8	<10	<8	<8	<8	<5	<5	<5
Trans-Nonachlor	<48	<110	<16	<16	16	<5	33	5.6
Total Chlordane (all isomers)[2]	28	NC	NC	NC	NC	NC	87	NC
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***3300***	***4100***	***2400***	***9200***	***8800***	***4700***	***9000***	***7400***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**910262012**	**910262013**	**910262019**	**910398006**	**80502397**	**80502401**	**80502402**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCRL	GCRL	GCRL
Year	2000	2000	2000	2000	1986	1986	1986
Lab Tissue Type[1]	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	SK-ON, SC-OFF	WHOLE	WHOLE	WHOLE
Number Fish/Sample	3	3	3	3	5	3	4
Length (cm)	40.1 - 40.5	58.5 - 63.8	45.8 - 52.1	43.6 - 47.5	43.4 - 57	39.9 - 45.5	33 - 45
Weight (gm)	992 - 1134	2863 - 3856	1928 - 1984	1077 - 1729	1078 - 2298	766 - 1277	482 - 1277
Latitude	41.613055556	41.613055556	41.613888889	41.652222222	NR	NR	NR
Longitude	-87.4325	-87.4325	-87.47805556	-87.46305556	NR	NR	NR
Conventionals (%)							
Percent Lipid	9.64	11.7	2.21	6.01	7.6	2.8	4.5
Percent Moisture	73.3	68.8	80.1	75.1	NR	NR	NR
Metals (mg/kg)							
Mercury	<0.05	0.12	<0.05	<0.05	0.0671	0.0500	0.0514
Pesticides (µg/kg)							
Aldrin	<2.5	<2.5	<2.5	<2.5	<11.9	<11.9	<65.2
Dieldrin	8.2	18	<5	<5	<7.41	<7.41	12.6
Aldrin + Dieldrin[2]	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	13	25	5.1	8.2	25.2	<7.41	<7.41
4,4'-DDD	79	140	30	43	336	22.2	15.6
Sum DDD[2]	NC	NC	NC	NC	336	NC	NC
2,4'-DDE	<5	<5	<5	<5	38.5	<7.41	<7.41
4,4'-DDE	160	590	34	73	963	274	133
Sum DDE[2]	NC	590	NC	NC	963	274	NC

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	910262012	910262013	910262019	910398006	80502397	80502401	80502402
Pesticides (µg/kg; cont.)							
2,4'-DDT	<5	<5	<5	<5	<7.41	<7.41	<7.41
4,4'-DDT	<5	<5	<5	<5	8.89	<7.41	<7.41
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	590	NC	NC	1300	274	NC
Heptachlor	<2.5	<2.5	<2.5	<2.5	<11.9	<11.9	<65.2
Heptachlor epoxide	<2.5	<2.5	<2.5	<2.5	<5.93	<5.93	<5.93
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	16	18	7	7	79.3	8.89	<5.93
Cis-Nonachlor	6.1	13	<5	<5	16.3	<5.93	<5.93
Gamma (Trans) Chlordane	11	11	6.5	4.9	38.5	<5.93	<5.93
Oxychlordane	<5	<5	<5	<5	<5.93	<5.93	<5.93
Trans-Nonachlor	<5	<5	<5	8.6	14.8	<5.93	<5.93
Total Chlordane (all isomers)[2]	NC	NC	NC	NC	149	NC	NC
Polychlorinated Biphenyls (µg/kg)							
Total PCBs (reported)	***10000***	***11000***	***2200***	***4100***	*237*	*215*	*815*

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**90603017** **306-88**	**90603019** **308-88**	**980431004** **212-96**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	IH/LM	IH/LM	IH/LM
Year	1988	1988	1996
Lab Tissue Type[1]	SK-ON, SC-ON	SK-ON, SC-ON, LS	SK-ON, SC-OFF
Number Fish/Sample	2	5	2
Length (cm)	NR	NR	60 - 63.1
Weight (gm)	NR	NR	3360 - 3810
Latitude	NR	NR	41.670277778
Longitude	NR	NR	-87.43666667
Conventionals (%)			
Percent Lipid	20.91	19.95	14.21
Percent Moisture	NR	NR	69.6
Metals (mg/kg)			
Mercury	*0.165*	*0.165*	<0.04
Pesticides (µg/kg)			
Aldrin	<16	<8	<8
Dieldrin	85	102	21
Aldrin + Dieldrin[2]	NC	102	NC
2,4'-DDD	<10	<10	<10
4,4'-DDD	110	210	45
Sum DDD[2]	NC	210	NC
2,4'-DDE	<10	<10	<20
4,4'-DDE	1200	<10	230
Sum DDE[2]	1200	NC	230

Table A5.1 Tissue chemistry data used to assess injury to human uses of fishery resources (carp; *Cyprinus carpio*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	90603017 306-88	90603019 308-88	980431004 212-96
Pesticides (µg/kg; cont.)			
2,4'-DDT	14	<10	<20
4,4'-DDT	<10	<10	24
Sum DDT[2]	NC	NC	NC
Total DDT[2]	1200	210	230
Heptachlor	<16	<8	<31
Heptachlor epoxide	19	27	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC
Alpha (Cis) Chlordane	57	85	14
Cis-Nonachlor	25	41	11
Gamma (Trans) Chlordane	34	57	8.3
Oxychlordane	11	<8	<8
Trans-Nonachlor	41	30	<16
Total Chlordane (all isomers)[2]	157	213	NC
Polychlorinated Biphenyls (µg/kg)			
Total PCBs (reported)	*1500*	***3300***	***4200***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; GCRL = Grand Calumet River Lagoons; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-OFF = Skin-off Fillets; SK-ON, SC-OFF = Skin-on fillets, scaleless; SK-ON, SC-ON = Skin-on fillets, scales on; SK-ON, SC-ON, LS = Skin-on fillets, scales on, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.2 Tissue chemistry data used to assess injury to human uses of fishery resources (goldfish; *Carassius auratus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**11202142** **095-90**	**41201190** **072-94**	**41201195** **076-94**	**41201199** **080-94**	**41201203** **084-94**	**61200738** **134-96**	**61200745** **141-96**	**61200755** **146-96**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1990	1994	1994	1994	1994	1996	1996	1996
Lab Tissue Type[1]	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE
Number Fish/Sample	6	8	8	9	10	5	1	5
Length (cm)	15.1 - 23.5	14.7 - 17.5	13.9 - 17.2	18.5 - 19.5	12.5 - 14.8	13.3 - 15.1	12.5	15.5 - 16.2
Weight (gm)	70 - 263	55 - 100	53 - 90	113 - 162	20 - 60	42 - 64	44	76 - 100
Latitude	41.655	41.609027778	41.6125	41.614861111	41.615	41.609027778	41.6125	41.652222222
Longitude	-87.45916667	-87.37111111	-87.43013889	-87.48180556	-87.46069444	-87.37111111	-87.43013889	-87.46305556
Conventionals (%)								
Percent Lipid	4.85	3.92	3.19	4.55	3.44	4.59	4.75	8.86
Percent Moisture	73.6	76.3	76.9	75.3	76.3	72.65	72.31	70.35
Metals (mg/kg)								
Mercury	<0.0143	0.0429	0.0429	0.0429	0.0429	0.0224	0.0419	<0.00786
Pesticides (µg/kg)								
Aldrin	163	<5.93	<5.93	<5.93	<5.93	<5.93	<8.89	<59.3
Dieldrin	<7.41	<7.41	<7.41	<7.41	<7.41	<7.41	<11.1	9.63
Aldrin + Dieldrin[2]	163	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	8.89	<7.41	<7.41	<7.41	<7.41	<7.41	<11.1	8.15
4,4'-DDD	33.3	<7.41	<7.41	88.9	40.0	24.4	<11.1	61.5
Sum DDD[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDE	<14.8	<52.6	<62.2	<43.7	<61.5	126	119	<185
4,4'-DDE	<7.41	<7.41	<57.0	18.5	14.1	81.5	72.6	<81.5
Sum DDE[2]	NC	NC	NC	NC	NC	NC	NC	NC

Table A5.2 Tissue chemistry data used to assess injury to human uses of fishery resources (goldfish; *Carassius auratus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**11202142** **095-90**	**41201190** **072-94**	**41201195** **076-94**	**41201199** **080-94**	**41201203** **084-94**	**61200738** **134-96**	**61200745** **141-96**	**61200755** **146-96**
Pesticides (µg/kg; cont.)								
2,4'-DDT	35.6	<14.8	<14.8	<14.8	<14.8	17.8	<22.2	<81.5
4,4'-DDT	<14.8	<7.41	<7.41	<7.41	<7.41	<14.8	<22.2	<81.5
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Heptachlor	<5.93	<5.93	<5.93	<5.93	<5.93	<5.93	<8.89	<59.3
Heptachlor epoxide	<5.93	<5.93	<5.93	<5.93	<5.93	<5.93	<8.89	<5.93
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	8.89	<5.93	<5.93	11.9	<5.93	8.15	11.9	14.8
Cis-Nonachlor	<5.93	<5.93	<5.93	<5.93	<5.93	<12.6	<8.89	<5.93
Gamma (Trans) Chlordane	<5.93	<5.93	<5.93	10.4	<5.93	5.93	<8.89	10.4
Oxychlordane	<5.93	<5.93	<5.93	<5.93	<5.93	<5.93	<8.89	<5.93
Trans-Nonachlor	<11.9	<28.1	<28.9	<25.2	<31.1	<11.9	<17.8	<65.2
Total Chlordane (all isomers)[2]	NC	NC	NC	NC	NC	NC	NC	14.8
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***4220***	***3040***	***3930***	***2670***	***3850***	***8150***	***6300***	***4960***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000)

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.2 Tissue chemistry data used to assess injury to human uses of fishery resources (goldfish; *Carassius auratus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**61200762**	**61200748**	**910262004**	**910262014**	**910262016**	**910262018**	**910262008**	**910398005**
Sample	**153-96**	**161-96**						
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC	GCR/IHC
Year	1996	1996	2000	2000	2000	2000	2000	2000
Lab Tissue Type[1]	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE
Number Fish/Sample	5	5	12	2	13	41	9	5
Length (cm)	14.2 - 15.5	13 - 13.8	10.9 - 13.7	15 - 20.5	9.1 - 15.9	4.2 - 8.4	10 - 16	7.1 - 20.7
Weight (gm)	60 - 78	40 - 48	24 - 60	64 - 150	14 - 82	1 - 10	18 - 84	4 - 178
Latitude	41.614861111	41.615	41.609166667	41.613055556	41.613888889	41.613888889	41.614444444	41.652222222
Longitude	-87.48180556	-87.46069444	-87.37222222	-87.4325	-87.47805556	-87.47805556	-87.46111111	-87.46305556
Conventionals (%)								
Percent Lipid	4.07	6.61	3.44	3.04	2.67	2.9	4.81	16.6
Percent Moisture	74.35	71.13	74.2	74.4	76.5	79	74.2	64.2
Metals (mg/kg)								
Mercury	<0.00743	0.0487	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714	<0.0714
Pesticides (µg/kg)								
Aldrin	<29.6	<5.93	<1.85	<1.85	<1.85	<1.85	<1.85	<1.85
Dieldrin	<7.41	<7.41	<3.70	<3.70	<3.70	<3.70	<3.70	10.4
Aldrin + Dieldrin[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDD	14.1	<7.41	<3.70	<3.70	<3.70	<3.70	<3.70	10.4
4,4'-DDD	141	25.2	6.67	<3.70	23.0	22.2	11.1	46.7
Sum DDD[2]	NC	NC	NC	NC	NC	NC	NC	NC
2,4'-DDE	<54.1	141	<3.70	<3.70	<3.70	<3.70	<3.70	<3.70
4,4'-DDE	<63.7	81.5	<3.70	31.1	27.4	23.0	<3.70	222
Sum DDE[2]	NC	NC	NC	NC	NC	NC	NC	222

Table A5.2 Tissue chemistry data used to assess injury to human uses of fishery resources (goldfish; *Carassius auratus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station Sample	61200762 153-96	61200748 161-96	910262004	910262014	910262016	910262018	910262008	910398005
Pesticides (µg/kg; cont.)								
2,4'-DDT	<44.4	<14.8	<3.70	<3.70	<3.70	<3.70	<3.70	<3.70
4,4'-DDT	<44.4	<14.8	<3.70	<3.70	<3.70	<3.70	<3.70	<3.70
Sum DDT[2]	NC	NC	NC	NC	NC	NC	NC	NC
Total DDT[2]	NC	NC	NC	NC	NC	NC	NC	222
Heptachlor	<29.6	<5.93	<1.85	<1.85	<1.85	<1.85	<1.85	<1.85
Heptachlor epoxide	<5.93	<5.93	<1.85	<1.85	<1.85	<1.85	<1.85	<1.85
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC	NC	NC	NC	NC	NC
Alpha (Cis) Chlordane	20.0	8.89	<1.85	<1.85	4.81	4.22	3.41	17.0
Cis-Nonachlor	6.67	<5.93	<3.70	<3.70	<3.70	<3.70	<3.70	6.81
Gamma (Trans) Chlordane	14.8	7.41	<1.85	<1.85	4.81	4.52	2.30	14.1
Oxychlordane	<5.93	<5.93	<3.70	<3.70	<3.70	<3.70	<3.70	<3.70
Trans-Nonachlor	<35.6	6.22	<3.70	<3.70	<3.70	<3.70	<3.70	32.6
Total Chlordane (all isomers)[2]	34.8	NC	NC	NC	NC	NC	NC	49.6
Polychlorinated Biphenyls (µg/kg)								
Total PCBs (reported)	***2070***	***8150***	***3480***	*2000*	*1110*	*889*	***3930***	***12600***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000)

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.3 Tissue chemistry data used to assess injury to human uses of fishery resources (bluegill; *Lepomis macrochirus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**974252003**
Sample	**049-97**
Reference	IDEM 2000a
Geographic Area	GCRL
Year	1997
Lab Tissue Type[1]	WHOLE
Number Fish/Sample	15
Length (cm)	10.4 - 17.2
Weight (gm)	550
Latitude	41.615833333
Longitude	-87.26444444
Conventionals (%)	
Percent Lipid	3.26
Percent Moisture	75.5
Metals (mg/kg)	
Mercury	<0.0571
Pesticides (µg/kg)	
Aldrin	<5.93
Dieldrin	<7.41
Aldrin + Dieldrin[2]	NC
2,4'-DDD	<7.41
4,4'-DDD	14.8
Sum DDD[2]	NC
2,4'-DDE	<14.8
4,4'-DDE	44.4
Sum DDE[2]	NC

Table A5.3 Tissue chemistry data used to assess injury to human uses of fishery resources (bluegill; *Lepomis macrochirus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**974252003**
Sample	**049-97**
Pesticides (µg/kg; cont.)	
2,4'-DDT	<14.8
4,4'-DDT	<14.8
Sum DDT[2]	NC
Total DDT[2]	NC
Heptachlor	<5.93
Heptachlor epoxide	<5.93
Heptachlor + Heptachlor epoxide[2]	NC
Alpha (Cis) Chlordane	<5.93
Cis-Nonachlor	<5.93
Gamma (Trans) Chlordane	<5.93
Oxychlordane	<5.93
Trans-Nonachlor	<11.9
Total Chlordane (all isomers)[2]	NC
Polychlorinated Biphenyls (µg/kg)	
Total PCBs (reported)	*252*

GCRL = Grand Calumet River Lagoons; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000)

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.4 Tissue chemistry data used to assess injury to human uses of fishery resources (pumpkinseed; *Lepomis gibbosus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**80502408**
Reference	IDEM 2000a
Geographic Area	GCR/IHC
Year	1987
Lab Tissue Type[1]	WHOLE
Number Fish/Sample	10
Length (cm)	7.5 - 10.3
Weight (gm)	10 - 28
Latitude	NR
Longitude	NR
Conventionals (%)	
Percent Lipid	1.5
Metals (mg/kg)	
Mercury	<0.0357

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000)

Table A5.5 Tissue chemistry data used to assess injury to human uses of fishery resources (sunfish; *Lepomis* Hybrid); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	Q-SUN-1,2,3	R-SUN-1,2,3
Reference	Risatti and Ross 1989	Risatti and Ross 1989
Geographic Area	GCR/IHC	IH/LM
Year	1988	1988
Lab Tissue Type[1]	WHOLE	WHOLE
Number Fish/Sample	3	3
Length (cm)	NR	NR
Weight (gm)	NR	NR
Latitude	41.645679	41.667786
Longitude	-87.472031	-87.439423
Conventionals (%)		
Percent Lipid	NR	5.1767
Percent Moisture	82.63	78.35
Metals (mg/kg)		
Mercury	0.0443	<0.00714
Polychlorinated Biphenyls (µg/kg)		
Total PCBs (reported)	*380*	*575*

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000).

Table A5.6 Tissue chemistry data used to assess injury to human uses of fishery resources (largemouth bass; *Micropterus salmoides*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**80502400**	**974252001** **047-97**	**974252002** **048-97**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCRL	GCRL	GCRL
Year	1986	1997	1997
Lab Tissue Type[1]	WHOLE	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	1	3	3
Length (cm)	32	39.2 - 43.7	37.1 - 40.3
Weight (gm)	454	809 - 919	582 - 829
Latitude	NR	41.615833333	41.615833333
Longitude	NR	-87.26444444	-87.26444444
Conventionals (%)			
Percent Lipid	4.4	0.62	0.48
Percent Moisture	NR	81	80.8
Metals (mg/kg)			
Mercury	0.0900	<0.04	<0.04
Pesticides (µg/kg)			
Aldrin	<23.7	<8	<8
Dieldrin	<7.41	<10	<10
Aldrin + Dieldrin[2]	NC	NC	NC
2,4'-DDD	<7.41	<10	<10
4,4'-DDD	209	<10	<10
Sum DDD[2]	209	NC	NC
2,4'-DDE	17.0	<10	<20
4,4'-DDE	1040	44	51
Sum DDE[2]	1040	NC	NC

Table A5.6 Tissue chemistry data used to assess injury to human uses of fishery resources (largemouth bass; *Micropterus salmoides*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**80502400**	**974252001** **047-97**	**974252002** **048-97**
Pesticides (µg/kg; cont.)			
2,4'-DDT	<7.41	<20	<20
4,4'-DDT	<7.41	<20	<20
Sum DDT[2]	NC	NC	NC
Total DDT[2]	1250	NC	NC
Heptachlor	<23.7	<8	<8
Heptachlor epoxide	<5.93	<8	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC
Alpha (Cis) Chlordane	25.9	<8	<8
Cis-Nonachlor	19.3	<8	<8
Gamma (Trans) Chlordane	11.1	<8	<8
Oxychlordane	15.6	<8	<8
Trans-Nonachlor	22.2	<16	<16
Total Chlordane (all isomers)[2]	83.0	NC	NC
Polychlorinated Biphenyls (µg/kg)			
Total PCBs (reported)	*459*	*170*	*250*

GCRL = Grand Calumet River Lagoons; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; NR = not reported; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-ON, SC-OFF = Skin-on fillets, scaleless.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.7 Tissue chemistry data used to assess injury to human uses of fishery resources (longnose sucker; *Catostomus catostomus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**90603018** **307-88**	**90603020** **309-88**
Reference	IDEM 2000a	IDEM 2000a
Geographic Area	IH/LM	IH/LM
Year	1988	1988
Lab Tissue Type[1]	SK-ON, SC-ON	SK-ON, LS
Number Fish/Sample	5	5
Length (cm)	NR	NR
Weight (gm)	NR	NR
Latitude	NR	NR
Longitude	NR	NR
Conventionals (%)		
Percent Lipid	4.78	4
Metals (mg/kg)		
Mercury	0.098	*0.191*
Pesticides (µg/kg)		
Aldrin	<8	<16
Dieldrin	45	49
Aldrin + Dieldrin[2]	NC	NC
2,4'-DDD	<10	<10
4,4'-DDD	34	27
Sum DDD[2]	NC	NC
2,4'-DDE	<10	<10
4,4'-DDE	<10	131
Sum DDE[2]	NC	NC

Table A5.7 Tissue chemistry data used to assess injury to human uses of fishery resources (longnose sucker; *Catostomus catostomus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**90603018** **307-88**	**90603020** **309-88**
Pesticides (µg/kg; cont.)		
2,4'-DDT	<10	<10
4,4'-DDT	<10	24
Sum DDT[2]	NC	NC
Total DDT[2]	NC	NC
Heptachlor	<8	<16
Heptachlor epoxide	17	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC
Alpha (Cis) Chlordane	26	23
Cis-Nonachlor	27	14
Gamma (Trans) Chlordane	14	17
Oxychlordane	<8	17
Trans-Nonachlor	<8	33
Total Chlordane (all isomers)[2]	53	56
Polychlorinated Biphenyls (µg/kg)		
Total PCBs (reported)	*600*	<50

IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; NR = not reported; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels.

[1]Lab Tissue Type: SK-ON, SC-ON = Skin on fillets, scales on; SK-ON, LS = Skin-on fillets, left side.
[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.8 Tissue chemistry data used to assess injury to human uses of fishery resources (white sucker; *Catostomus commersoni*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**61200766** **158-96**	**910262015**	**910262017**
Reference	IDEM 2000a	IDEM 2000a	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	GCR/IHC
Year	1996	2000	2000
Lab Tissue Type[1]	SK-ON, SC-OFF	WHOLE	WHOLE
Number Fish/Sample	1	1	5
Length (cm)	28.2	22.6	8.6 - 12.5
Weight (gm)	258	100	6 - 20
Latitude	41.614861111	41.613055556	41.613888889
Longitude	-87.48180556	-87.4325	-87.47805556
Conventionals (%)			
Percent Lipid	0.86	1.22	1.57
Percent Moisture	79.75	75.6	78.1
Metals (mg/kg)			
Mercury	0.0123	<0.0714	<0.0714
Pesticides (µg/kg)			
Aldrin	<8	<1.85	<1.85
Dieldrin	<10	<3.70	<3.70
Aldrin + Dieldrin[2]	NC	NC	NC
2,4'-DDD	<10	<3.70	<3.70
4,4'-DDD	18	<3.70	8.15
Sum DDD[2]	NC	NC	NC
2,4'-DDE	<24	<3.70	<3.70
4,4'-DDE	<30	31.9	14.8
Sum DDE[2]	NC	NC	NC

Table A5.8 Tissue chemistry data used to assess injury to human uses of fishery resources (white sucker; *Catostomus commersoni*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**61200766**	**910262015**	**910262017**
Sample	**158-96**		
Pesticides (µg/kg; cont.)			
2,4'-DDT	<20	<3.70	<3.70
4,4'-DDT	<20	<3.70	<3.70
Sum DDT[2]	NC	NC	NC
Total DDT[2]	NC	NC	NC
Heptachlor	<8	<1.85	<1.85
Heptachlor epoxide	<8	<1.85	<1.85
Heptachlor + Heptachlor epoxide[2]	NC	NC	NC
Alpha (Cis) Chlordane	<8	<1.85	2.96
Cis-Nonachlor	<8	<3.70	<3.70
Gamma (Trans) Chlordane	<8	<1.85	3.04
Oxychlordane	<8	<3.70	<3.70
Trans-Nonachlor	<16	<3.70	<3.70
Total Chlordane (all isomers)[2]	NC	NC	NC
Polychlorinated Biphenyls (µg/kg)			
Total PCBs (reported)	*770*	***2150***	*593*

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; COPC = chemical of potential concern; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-ON, SC-OFF = Skin-on fillets, scaleless.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.9 Tissue chemistry data used to assess injury to human uses of fishery resources (yellow perch; *Perca flavescens*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group1 threshold.

Station **Sample**	**S-PER-1-10**	**90603021** **315-88**	**90603022** **316-88**
Reference	Risatti and Ross 1989	IDEM 2000a	IDEM 2000a
Geographic Area	IH/LM	IH/LM	IH/LM
Year	1988	1988	1988
Lab Tissue Type[1]	WHOLE	SK-ON, LS	SK-ON, LS
Number Fish/Sample	10	5	5
Length (cm)	NR	20.3 - 22.6	22.4 - 23.9
Weight (gm)	NR	NR	NR
Latitude	41.678841	NR	NR
Longitude	-87.401932	NR	NR
Conventionals (%)			
Percent Lipid	2.87	0.87	0.87
Percent Moisture	74.92	NR	NR
Metals (mg/kg)			
Mercury	0.0326	0.09	0.081
Pesticides (µg/kg)			
Aldrin	NR	<16	<16
Dieldrin	NR	<10	<10
Aldrin + Dieldrin[2]	NR	NC	NC
2,4'-DDD	NR	<10	<10
4,4'-DDD	NR	<10	<10
Sum DDD[2]	NR	NC	NC
2,4'-DDE	NR	<10	<10
4,4'-DDE	NR	<10	<10
Sum DDE[2]	NR	NC	NC

Table A5.9 Tissue chemistry data used to assess injury to human uses of fishery resources (yellow perch; *Perca flavescens*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group1 threshold.

Station Sample	S-PER-1-10	90603021 315-88	90603022 316-88
Pesticides (µg/kg; cont.)			
2,4'-DDT	NR	<10	<10
4,4'-DDT	NR	<10	<10
Sum DDT[2]	NR	NC	NC
Total DDT[2]	NR	NC	NC
Heptachlor	NR	<16	<16
Heptachlor epoxide	NR	<8	<8
Heptachlor + Heptachlor epoxide[2]	NR	NC	NC
Alpha (Cis) Chlordane	NR	<8	<8
Cis-Nonachlor	NR	<8	<8
Gamma (Trans) Chlordane	NR	<8	<8
Oxychlordane	NR	<8	<8
Trans-Nonachlor	NR	<8	<8
Total Chlordane (all isomers)[2]	NR	NC	NC
Polychlorinated Biphenyls (µg/kg)			
Total PCBs (reported)	*280*	<50	<50

IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; NR = not reported; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; COPC = chemical of potential concern; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-ON, LS = Skin-on fillets, left side.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.10 Tissue chemistry data used to assess injury to human uses of fishery resources (channel catfish; *Ictalurus punctatus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	**910262011**
Reference	IDEM 2000a
Geographic Area	GCR/IHC
Year	2000
Lab Tissue Type[1]	SK-OFF
Number Fish/Sample	1
Length (cm)	56
Weight (gm)	1673
Latitude	41.613055556
Longitude	-87.4325
Conventionals (%)	
Percent Lipid	19.5
Percent Moisture	60.6
Metals (mg/kg)	
Mercury	0.095
Pesticides (µg/kg)	
Aldrin	<2.5
Dieldrin	21
Aldrin + Dieldrin[2]	NC
2,4'-DDD	<5
4,4'-DDD	55
Sum DDD[2]	NC
2,4'-DDE	<5
4,4'-DDE	520
Sum DDE[2]	520

Table A5.10 Tissue chemistry data used to assess injury to human uses of fishery resources (channel catfish; *Ictalurus punctatus*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	910262011
Pesticides (µg/kg; cont.)	
2,4'-DDT	<5
4,4'-DDT	15
Sum DDT[2]	NC
Total DDT[2]	520
Heptachlor	<2.5
Heptachlor epoxide	<2.5
Heptachlor + Heptachlor epoxide[2]	NC
Alpha (Cis) Chlordane	<2.5
Cis-Nonachlor	28
Gamma (Trans) Chlordane	12
Oxychlordane	9.4
Trans-Nonachlor	68
Total Chlordane (all isomers)[2]	96
Polychlorinated Biphenyls (µg/kg)	
Total PCBs (reported)	***4600***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; PCBs = polychlorinated biphenyls; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: SK-OFF = Skin off fillets.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.11 Tissue chemistry data used to assess injury to human uses of fishery resources (brown trout; *Salmo trutta*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**980431002** **210-96**	**980431003** **211-96**
Reference	IDEM 2000a	IDEM 2000a
Geographic Area	IH/LM	IH/LM
Year	1996	1996
Lab Tissue Type[1]	SK-ON, SC-OFF	SK-ON, SC-OFF
Number Fish/Sample	1	3
Length (cm)	37.2	43.5 - 47
Weight (gm)	710	950 - 1490
Latitude	41.670277778	41.670277778
Longitude	-87.43666667	-87.43666667
Conventionals (%)		
Percent Lipid	9.09	11.31
Percent Moisture	70	68
Metals (mg/kg)		
Mercury	<0.04	<0.04
Pesticides (µg/kg)		
Aldrin	<8	<8
Dieldrin	22	32
Aldrin + Dieldrin[2]	NC	NC
2,4'-DDD	<10	<10
4,4'-DDD	24	26
Sum DDD[2]	NC	NC
2,4'-DDE	<20	<20
4,4'-DDE	87	100
Sum DDE[2]	NC	NC

Table A5.11 Tissue chemistry data used to assess injury to human uses of fishery resources (brown trout; *Salmo trutta*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station **Sample**	**980431002** **210-96**	**980431003** **211-96**
Pesticides (µg/kg; cont.)		
2,4'-DDT	<20	<20
4,4'-DDT	16	23
Sum DDT[2]	NC	NC
Total DDT[2]	NC	NC
Heptachlor	<16	<10
Heptachlor epoxide	<8	<8
Heptachlor + Heptachlor epoxide[2]	NC	NC
Alpha (Cis) Chlordane	8.7	<8
Cis-Nonachlor	10	19
Gamma (Trans) Chlordane	<8	<8
Oxychlordane	<8	<8
Trans-Nonachlor	<16	<16
Total Chlordane (all isomers)[2]	NC	NC
Polychlorinated Biphenyls (µg/kg)		
Total PCBs (reported)	*1200*	*910*

IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels.
USFDA = United States Food and Drug Administration; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: SK-ON, SC-OFF = Skin on fillets, scaleless.

[2]Calculated total (see Section 3.2 for a description of data treatment).

Table A5.12 Tissue chemistry data used to assess injury to human uses of fishery resources (gizzard shad; *Dorosoma cepedianum*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station / **Sample**	**Q-SHAD-1**	**Q-SHAD-7**	**R-SHAD-1**	**R-SHAD-2**	**R-SHAD-3**	**R-SHAD-4,5**	**R-SHAD-6,11**	**R-SHAD-12**	**R-SHAD-13,14**	**980431001 209-96**
Reference	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	Risatti and Ross 1989	IDEM 2000a
Geographic Area	GCR/IHC	GCR/IHC	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM	IH/LM
Year	1988	1988	1988	1988	1988	1988	1988	1988	1988	1996
Lab Tissue Type[1]	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	WHOLE	SK-ON, SC-OFF
Number Fish/Sample	1	1	1	1	1	2	2	1	2	5
Length (cm)	NR	NR	NR	NR	NR	NR	NR	NR	NR	41.6 - 44.6
Weight (gm)	NR	NR	NR	NR	NR	NR	NR	NR	NR	910 - 1150
Latitude	41.645679	41.645679	41.667786	41.667786	41.667786	41.667786	41.667786	41.667786	41.667786	41.670277778
Longitude	-87.472031	-87.472031	-87.439423	-87.439423	-87.439423	-87.439423	-87.439423	-87.439423	-87.439423	-87.43666667
Conventionals (%)										
Percent Lipid	19.54	5.15	23.12	4.21	12.63	6.16	4.655	15.66	20.09	20.14
Percent Moisture	67.07	78.38	66.20	78.29	63.25	75.73	84.205	76.82	80.91	64.2
Metals (mg/kg)										
Mercury	0.0757	0.0414	0.0781	0.0346	0.0224	0.0311	<0.00714	NR	0.0380	<0.04
Pesticides (µg/kg)										
Aldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	<8
Dieldrin	NR	NR	NR	NR	NR	NR	NR	NR	NR	22
Aldrin + Dieldrin[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
2,4'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	<10
4,4'-DDD	NR	NR	NR	NR	NR	NR	NR	NR	NR	22
Sum DDD[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
2,4'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	<20
4,4'-DDE	NR	NR	NR	NR	NR	NR	NR	NR	NR	130

Table A5.12 Tissue chemistry data used to assess injury to human uses of fishery resources (gizzard shad; *Dorosoma cepedianum*); bolded values indicate an exceedance of the USFDA tolerance level or action level; italicized and underlined values indicate an exceedance of the ISDH Group 1 threshold.

Station	Q-SHAD-1	Q-SHAD-7	R-SHAD-1	R-SHAD-2	R-SHAD-3	R-SHAD-4,5	R-SHAD-6,11	R-SHAD-12	R-SHAD-13,14	980431001
Sample										209-96
Pesticides (µg/kg; cont.)										
Sum DDE[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
2,4'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	<20
4,4'-DDT	NR	NR	NR	NR	NR	NR	NR	NR	NR	16
Sum DDT[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
Total DDT[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
Heptachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	<8
Heptachlor epoxide	NR	NR	NR	NR	NR	NR	NR	NR	NR	<8
Heptachlor + Heptachlor epoxide[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
Alpha (Cis) Chlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	9.7
Cis-Nonachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	8.8
Gamma (Trans) Chlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	<8
Oxychlordane	NR	NR	NR	NR	NR	NR	NR	NR	NR	<8
Trans-Nonachlor	NR	NR	NR	NR	NR	NR	NR	NR	NR	<16
Total Chlordane (all isomers)[2]	NR	NR	NR	NR	NR	NR	NR	NR	NR	NC
Polychlorinated Biphenyls (µg/kg)										
Total PCBs (reported)	*310*	*155*	*731*	*197*	*105*	*1200*	*669*	*86.7*	*88.7*	***2400***

GCR/IHC = Grand Calumet River and Indiana Harbor Canal; IH/LM = Indiana Harbor and nearshore areas of Lake Michigan; PCBs = polychlorinated biphenyls; USEPA = United States Environmental Protection Agency; COPC = chemical of potential concern; NR = not reported; USFDA = United States Food and Drug Administration; NC = not calculated; all values contributing to the total were less than detection limit data and low level detects, which were treated as zero in accordance with the guidance provided by USFDA (2001), to facilitate comparison with the action levels; ISDH = Indiana State Department of Health.

[1]Lab Tissue Type: WHOLE = Whole body (Note that the data reported in this appendix are calculated COPC concentrations in skin-on fillets using the USEPA-recommended conversion factors from the whole body data; USEPA 2000); SK-ON, SC-OFF = Skin-on fillets, scaleless.

[2]Calculated total (see Section 3.2 for a description of data treatment).