

**DRAFT SUMMARY REPORT**  
**for**  
**2012 Fish Sampling in Waukegan Harbor Area of Concern**

Prepared by:

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**Purpose**

This document provides a summary of results for fish sampling activities performed in the Waukegan Harbor Area of Concern (AOC) as part of delisting efforts for the “Restriction on Fish and Wildlife Consumption” Beneficial Use Impairment (BUI). Included in this document are: background information, project objectives, description of fish consumption advisories, sampling objectives, methods, and outcomes, and tissue analysis results. Information collected during 2012 sampling season will be used to assess baseline conditions present in Waukegan Harbor. Tissue analysis data from current and future sampling activities connected with the delisting efforts will be reviewed by the Fish Contaminant Monitoring Program (FCMP). FCMP will then provide additional data interpretations and recommendations for adjusting consumption advisory levels in Waukegan Harbor.

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## Abbreviations and Acronyms

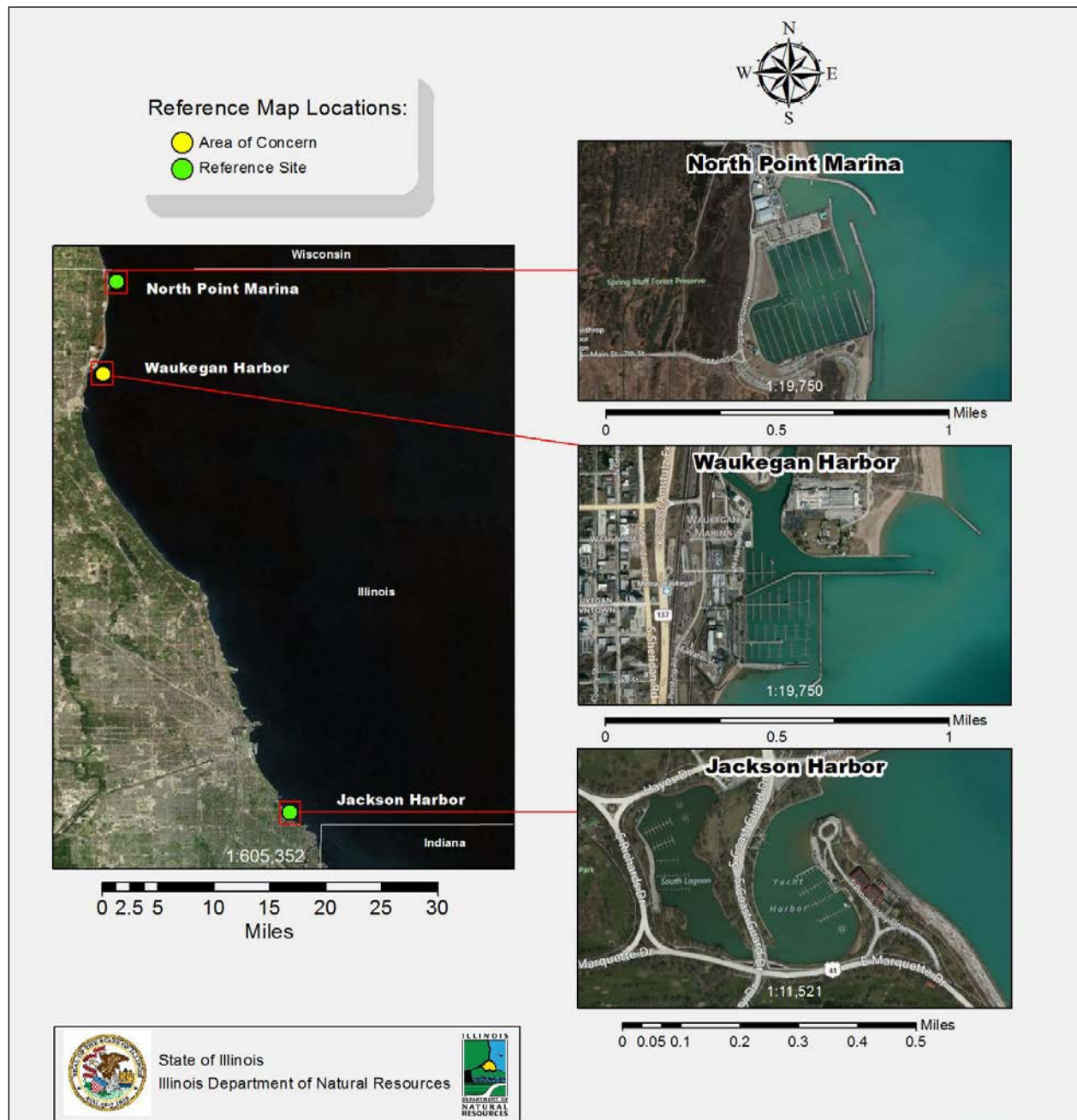
ASE	Accelerated Solvent Extraction
AOC	Area of Concern
BUI	Beneficial Use Impairment
FCMP	Fish Contaminant Monitoring Program
g	grams
IDNR	Illinois Department of Natural Resources
IDPH	Illinois Department of Public Health
IEPA	Illinois Environmental Protection Agency
kg	kilogram
µg	microgram
mg	milligram
mm	millimeters
PCB	Polychlorinated Biphenyl
QAPP	Quality Assurance Project Plan
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency

## 1. Background

The north basin of Waukegan Harbor was designated as an Area of Concern (AOC) by the International Joint Commission in 1981 due to polychlorinated biphenyl (PCB) contamination that was discharged into the harbor from nearby manufacturing facility. Previous plans have determined that removal of harbor sediments is necessary to mitigate for the beneficial use impairments listed for the harbor. Dredging of the Waukegan Harbor north basin, completed in 1993, removed approximately 95% of the PCBs believed to be in the harbor (IEPA 1999). The US Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE) have developed plans to dredge the north basin at Waukegan Harbor in 2012 and 2013 to address remaining PCB sediment contamination.

“Restriction on Fish and Wildlife Consumption” Beneficial Use Impairment (BUI) is one of the six impairments listed for Waukegan Harbor (Waukegan Citizens Advisory Group 2011). Since there is no hunting allowed in the AOC, the delisting efforts are focused on fish consumption only. Due to PCB contamination, Waukegan Harbor fish consumption advisories are in place for white sucker (*Catostomus comersonii*) and sunfish species (*Lepomis* spp.). Currently, all sizes of sunfish and white sucker in Waukegan Harbor are restricted to one meal per month (IDPH 2012). In order to remove the “Restrictions on Fish and Wildlife Consumption BUI” in Waukegan Harbor, a pre- and-post dredging approach was undertaken to evaluate changes in PCB levels in fish tissue over time. To guide sampling activities, a fish sampling plan and a quality assurance project plan (QAPP) were developed with input from USEPA, Illinois Environmental Protection Agency (IEPA), and Illinois Department of Public Health (IDPH). Pre-dredging sampling of fish was performed by Illinois Department of Natural Resources (IDNR) from May to July of 2012. Sampling was performed in Waukegan Harbor and at reference sites of North Point Marina, IL and Jackson Harbor, IL (Figure 1).

**Figure 1: Waukegan Harbor and reference sites**



## 2. Project Goal and Objective

The ultimate goal of this project is to remove the fish consumption BUI from the Waukegan Harbor AOC. As described in the guidelines laid out in “Delisting Targets for the Waukegan Harbor Area of Concern: Final Report” (Environmental Consulting & Technology, Inc. 2008) the fish consumption BUI can be considered for removal when fish consumption advisories in Waukegan Harbor are no more restrictive than lake-wide advisories (here taken to mean the Illinois waters of Lake Michigan). To evaluate

advisory levels, a pre-and-post dredging approach was undertaken. Fish contaminant levels at Waukegan Harbor and a reference site will be compared using the accepted Fish Consumption Advice Groups (Great Lakes Sport Fish Advisory Task Force, 1993) prior to dredging (2012 sampling) and in 2014 and 2016 following the dredging operation. If the PCB contaminant levels in fish at Waukegan Harbor result in the same Fish Consumption Advice Group as the rest of the lake (as exemplified by the reference site), the qualification for removal of the “Restriction on Fish and Wildlife Consumption” BUI will have been met.

The main objective of this project is to collect information on pre-and post-dredging fish tissue PCB contaminant data at the Waukegan Harbor AOC and a reference site to determine if differences exist. The objective will be met through fish sample collection, contaminant analysis, and comparison of results between samples collected in the north basin of Waukegan Harbor and a reference site.

Data gathered in 2012 will be combined with previous fish tissue contaminant data collected by IDNR and IEPA as part of regular monitoring to establish baseline conditions. Following the dredging operations, sampling will be performed in 2014 and 2016 to evaluate fish advisory levels. PCB levels in fish tissue are a lagging indicator of water and sediment contamination levels since fish are relatively long-lived and persistent biological toxins such as PCBs tend to accumulate over the lifespan of the organism. Timing of the resampling effort (post-dredging) should allow for generational turnover of the species of interest so that the fish present in the harbor will be new cohorts that were not exposed prior to dredging.

### 3. Fish Consumption Advisories

The Illinois PCB fish advisories are grouped into five categories, as shown in the Table 1 below. As mentioned previously, all sizes of sunfish and white sucker in Waukegan Harbor are restricted to one meal per month (0.23 -0.95 parts per million total PCB).

**Table 1: Consumption advice groups for Total PCB aroclors**

Consumption Advice Groups	Concentration of Total PCB aroclors (ppm) – wet weight
Unrestricted consumption	0 – 0.05
1 meal / week	0.06 – 0.22
1 meal / month	0.23 – 0.95
6 meals / year	0.96 – 1.9
Do not eat	>1.9

The posting of fish consumption advisories involves participation by three state agencies in Illinois: Illinois Department of Natural Resources (IDNR), Illinois Department of Public Health (IDPH), and Illinois Environmental Protection Agency (IEPA). Fish are sampled by the IDNR and tissue samples are processed by the IEPA. Sample results are provided to the IDPH which then develops fish consumption advisories for public distribution. A Memorandum of Agreement was established between these three state agencies in 1989 in order to coordinate the Fish Contaminant Monitoring Program (FCMP). The

FCMP convenes each year in late October in order to review and update the advisory information for Illinois sport fish.

The FCMP's first preference for making cutoff decisions for fish advisories is a length vs. concentration correlation, although most data sets are too small for such an approach. Thus, most decisions are based on: the preponderance of the results are in one consumption class (ex., 5 of 6 samples are one meal/week); a clear break-point is evident in the results (ex., all samples <18" are one meal/week and all samples >18" are one meal/month); or the average contaminant concentration falls into a consumption class (typically for data sets such as panfish with little size difference among the samples). After discussion, the members decide whether to accept the recommendation, modify it, or determine that more data are needed before a decision can be made. It is expected that FCMP will utilize the same methods for evaluation of the Waukegan AOC fish data.

#### **4. Fish Sampling**

A detailed fish sampling plan was developed as part of the planning process. This plan was used to guide sampling activities in Waukegan Harbor and reference sites.

##### ***4.1 Sampling Objectives***

Target fish species and the number of samples needed to meet project objectives were identified in the sampling plan and included:

- **Sunfish** (bluegill, pumpkinseed sunfish, green sunfish): 1-2 composites (3-5 fish each) at each site, as available
- **White sucker**: 1-2 composites (3-5 fish each) at each site, as available
- **Rock bass**: 1-2 composites (3-5 fish each) at each site, as available
- **Black bullhead**: 1-2 composites (3-5 fish each) at each site, as available
- **Largemouth bass** (small, 17-23 centimeters) : 1 composite (3-5 fish) at each site
- **Largemouth bass** (medium, 25-28 centimeters) : 1 composite (3-5 fish) at each site

Sunfish and white sucker consumption advisories are present specifically for Waukegan Harbor; therefore the collection of these two species was considered critical for delisting of the consumption advisories. Rock bass, black bullhead, and largemouth bass do not have consumption advisories but collection of these species would allow for further assessment of baseline conditions present in Waukegan Harbor fish.

##### ***4.2 Sampling Methods***

IDNR performed sampling on the following dates and in the following locations:

- May 11, 2012 – Waukegan Harbor and North Point Marina
- June 4, 2012 – North Point Marina
- June 7, 2012 – Waukegan Harbor
- June 19, 2012 – Waukegan Harbor and North Point Marina

- June 20, 2012 – Jackson Harbor
- June 22, 2012 – Waukegan Harbor
- July 2, 2012 – Waukegan Harbor
- July 24, 2012 – Waukegan Harbor

Fish were collected using a boat-mounted Smith-Root Model 5.0 GPP Pulsed-DC electrofishing unit, operated at 8 to 10 amps and 60 pulses per second. Field staff dip-netted fish affected by the electric current and placed them in 5-gallon buckets. The field staff paid particular attention to locating less-common target species, which included sunfish, black bullhead, and largemouth bass. Most fish were identified to species while still in the water, and non-target species were generally not collected. Some non-target species were dip-netted if accurate identification of the fish in the water was not possible, or to allow the non-target fish to revive from the shock. Any non-target fish were placed in a separate bucket and released at the end of sampling activities. All target fish species were placed together in 5-gallon buckets.

All portions of the harbors where the water depth was appropriate for this methodology (i.e. less than 3 meters in depth) were sampled. Areas sampled during each sampling event are shown on maps in Appendix A.

Once electrofishing has been completed, all collected fish were separated according to species. Fish were laid out on prep boards and grouped together based on initial size assessment, with rough division of fish into two composite groups based on size (for species where enough fish were collected). Fish were then measured and composites were adjusted accordingly to ensure the fish were within 75% of the same length. Total length measurement, accurate to the nearest 5 millimeters (mm), was recorded for each fish. Weight was recorded to the nearest 10 grams (g).

Sample preparation included scaling the fish and removing fillets from both sides. Composite samples of fillets from 3 to 5 fish were packaged together in aluminum foil for each species. Composite sample packets were then wrapped with masking tape, labeled, and transported to the IDNR facility in a cooler with ice. Samples were held at IDNR facility freezer until all required samples were collected. Once all composite samples have been completed, samples were transported to IEPA laboratory for analysis.

#### 4.3 Sampling Outcomes

Sampling activities resulted in collection of black bullhead, rock bass, sunfish, and white sucker at Waukegan Harbor and reference sites. There were enough fish collected to create 2 composite samples for each species. Table 2 provides details on number of fish included in each composite.

**Table 2: Number of fish included in composite samples**

Species	Waukegan Harbor		North Point Marina		Jackson Harbor	
	Number of fish in Composite 1	Number of fish in Composite 2	Number of fish in Composite 1	Number of fish in Composite 2	Number of fish in Composite 1	Number of fish in Composite 2
Black bullhead	3	3	-	-	5	4
Rock bass	5	5	5	5	-	-
Sunfish	5	5	5	5	-	-
White sucker	4	4	4	4	-	-

Largemouth bass was the only fish species that was not collected as part of the sampling efforts. There were no largemouth bass observed in Waukegan Harbor during IDNR sampling. The species was observed in North Point Marina but no fish were collected since there was no comparable sample taken at Waukegan Harbor. This data gap is not considered critical since there is no consumption advisory issued for largemouth bass. Lack of largemouth bass samples will not impact fish consumption advisory evaluation.

Largemouth bass has been previously collected and analyzed as part of regular monitoring in both Waukegan Harbor and North Point Marina. If largemouth bass were collected as part of 2012 sampling, the data would have provided additional information on general contamination trends in Waukegan Harbor. A re-evaluation of target species will be performed before 2014 sampling to determine if samples of largemouth bass should be collected during future sampling.

#### 5. Tissue Analysis Results

All fish tissues samples were submitted to IEPA laboratory in Springfield on August 20, 2012. Samples were processed and analyzed according to procedures described in IEPA Standard Operating Procedures, *Extraction Procedures for the Determination of Chlorinated Hydrocarbon and Polychlorinated Biphenyls (PCBs) in Fish Using Sonication Extraction or Accelerated Solvent Extraction (ASE)*, Reference Number ORL017-02-0900 and *Analysis Procedures for the Determination of Chlorinated Hydrocarbon Pesticides and Polychlorinated Biphenyls (PCBs) in Fish*, Reference Number ORL018-02-0900.

Results of tissue analysis performed by IEPA are presented in tables below. Table 3 provides composite sample information and results of laboratory analysis for fish collected in Waukegan Harbor while Table 4 provides the same information for reference sites (Jackson Harbor and North Point Marina). Complete lab reports are attached in Appendix B.

**Table 3: Waukegan Harbor – fish composites and tissue analysis results**

Lab Sample ID	SH21392-01	SH21393-01	SH21385-01	SH21396-01	SH21391-01	SH21390-01	SH21383-01	SH21384-01
DNR Sample ID	37427	37428	37388	37441	37426	37425	37386	37387
Location	Waukegan	Waukegan	Waukegan	Waukegan	Waukegan	Waukegan	Waukegan	Waukegan
Fish Species	Black bullhead	Black bullhead	Rock Bass	Rock Bass	Sunfish	Sunfish	White Sucker	White Sucker
Count of Individuals	3	3	5	5	5	5	4	4
Avg. Length (mm)	255	202	150	173	114	143	365	425
Avg. Weight (g)	332	180	80	130	32	66	485	713
Analyte (all units are µg/g)								
Mercury	0.075	0.035	0.055	0.10	0.045	0.023	0.025 **	0.056
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND
p,p'-DDE	0.024	0.017	0.007 *	0.007 *	0.007 *	ND	0.005 *	0.013
p,p'-DDD	0.003 *	0.004 *	ND	ND	ND	ND	ND	0.005 *
p,p'-DDT	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.003 *	ND	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlordane	ND	0.007 *	ND	0.004 *	ND	ND	ND	ND
Total PCBs	1.4	1.2	1.0	0.74	0.41	0.12	0.20	0.26
% Lipid Content	0.69	0.91	0.76	0.38	0.44	0.19	0.68	1.1

\* Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

\*\* The reported value failed to meet the established quality control criteria for either precision or accuracy possibly due to matrix effects.

ND: Analyte NOT DETECTED at or above the reporting limit

**Table 4: Reference sites - fish composites and tissue analysis results**

Lab Sample ID	SH21394-01	SH21395-01	SH21388-01	SH21389-01	SH21397-01	SH21398-01	SH21386-01	SH21387-01
DNR Sample ID	37430	37431	37391	37392	37442	37443	37389	37390
Location	Jackson Harbor	Jackson Harbor	North Point Marina	North Point Marina	North Point Marina	North Point Marina	North Point Marina	North Point Marina
Fish Species	Black bullhead	Black bullhead	Rock Bass	Rock Bass	Sunfish	Sunfish	White Sucker	White Sucker
Count of Individuals	5	4	5	5	5	5	4	4
Avg. Length (mm)	271	243	195	170	156	169	491	431
Avg. Weight (g)	308	225	147	87	76	100	1275	875
Analyte (all units are µg/g)								
Mercury	0.022	0.015	0.045	0.041	0.014	0.027	0.069	0.061
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND
p,p'-DDE	0.032	0.028	0.005 *	0.004 *	0.004 *	0.006 *	0.010	0.023
p,p'-DDD	0.018	0.015	ND	ND	ND	ND	ND	0.004 *
p,p'-DDT	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.004 *	0.003 *	ND	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND	ND	ND	ND
Total Chlordane	0.011 *	0.012 *	ND	ND	0.002 *	ND	0.002 *	0.002 *
Total PCBs	0.32	0.21	0.031 *	0.027 *	ND	0.030 *	0.049 *	0.40
% Lipid Content	2.6	3.0	0.16	0.33	0.27	0.41	0.72	1.3

\* Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND: Analyte NOT DETECTED at or above the reporting limit

In general, fish in Waukegan Harbor show higher level of PCB contamination than fish from reference sites. There are multiple data points that indicate different contamination levels between Waukegan Harbor and reference sites. Due to a small sample size, statistical tests were not performed.

- The average PCB concentrations of all fish samples but white suckers are much higher at Waukegan Harbor than those from the reference sites. Waukegan Harbor black bullhead average of 1.3 milligram/kilogram (mg/kg)<sup>1</sup> is 5 times greater than the Jackson Harbor average of 0.26 mg/kg; the Waukegan Harbor rock bass average of 0.87 mg/kg is 30 times greater than the North Point Marina average of 0.029 mg/kg; and the Waukegan Harbor sunfish average of 0.26 mg/kg is 12 times greater than the North Point Marina average of 0.02 mg/kg (assuming the non-detect value is ½ the detection limit<sup>2</sup>). Waukegan Harbor and North Point Marina averages for white suckers are almost the same (0.23 vs. 0.22 mg/kg); it is likely that white suckers are not full-time residents in the harbors so their PCB levels would be expected to be closer than the other species.
- PCB concentrations are typically directly related to length and lipid concentrations<sup>3</sup> and need to be adjusted and interpreted accordingly. There are two comparisons (excluding white suckers for the reason discussed above) in which the Waukegan and North Point fish are similar with respect to length and lipid content, therefore allowing for direct comparison of PCB levels.
  - Waukegan Harbor 173 mm rock bass sample with 0.38% lipid (lab sample ID SH21396-01) and a North Point Marina 170 mm rock bass with 0.33% lipid (lab sample ID SH21389-01); the Waukegan sample contains 0.74 mg/kg PCBs which is 27.4 times greater than the North Point Marina sample of 0.027 mg/kg.
  - Waukegan Harbor 143 mm sunfish with 0.19% lipid (lab sample ID SH21390-01) and a North Point Marina 156 mm sunfish with 0.27% lipid (lab sample ID SH21397-01); the Waukegan sample contains 0.12 mg/kg PCBs which is 8.9 times greater than the North Point Marina sample of 0.0135 mg/kg (assuming ½ the detection limit).
- In contrast to the above, the larger Jackson Harbor black bullhead (lab sample ID SH21394-01), with a length of 271 mm and lipid content of 2.6%, is longer and fattier than the larger Waukegan bullhead (lab sample ID SH21392-01), with a length of 255 mm and a lipid content of 0.69%, which would suggest that the Jackson sample should have a larger PCB concentration. Instead, the Waukegan bullhead, at 1.4 mg/kg, has 4.4 times more PCBs than the Jackson bullhead at 0.32 mg/kg. The same is true for the comparison of the smaller black bullhead samples, where the PCB concentration in the Waukegan Harbor sample (smaller size and smaller lipid content) is 5.7 times greater than the Jackson Harbor sample.
- The raw averages of all species from Waukegan vs. the reference sites, while a crude estimate, shows that Waukegan fish at 0.67 mg/kg have 4.8 times the amount of PCBs as the reference

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<sup>1</sup> Units used in discussion are equivalent to laboratory reporting units used in table. 1 mg = 1,000 µg and 1 kg = 1,000 g. Example conversion: 1.3 µg/g \* (.001 mg/µg) \* (1000 g/kg) = 1.3 mg/kg

<sup>2</sup> For Total PCB, reporting limit = 0.10 µg/g; detection limit = 0.027 µg/g

<sup>3</sup> Larger fish, with a longer growth time, generally exhibit greater PCB concentrations.

sites at 0.14 mg/kg; if the white sucker data are excluded, the Waukegan fish at 0.81 mg/kg have 7.4 times the PCBs as the reference sites at 0.11 mg/kg.

## **6. Summary**

Fish collected during summer 2012 pre-dredging sampling activities included black bullhead, rock bass, sunfish, and white sucker. In general, all fish composites from Waukegan Harbor and from reference sites contained mercury contamination. All composite samples collected from Waukegan Harbor contained Total PCBs exceeding the laboratory's method detection limit. Samples collected from reference sites had a lower level of PCB contamination than at Waukegan Harbor.

This report provides a summary of results only; it does not interpret fish advisories for Waukegan Harbor. Data obtained from the 2012 sampling activities will be provided to IEPA, IDPH, and other agencies that may require use of this data. Comparison analysis and evaluation of fish advisories will be performed by the Fish Contaminant Monitoring Program once post-dredging sampling is complete.

## **References**

Environmental Consulting & Technology, Inc. (ECT). 2008. Delisting Targets for the Waukegan Harbor Area of Concern: Final Report. Submitted to the Illinois Environmental Protection Agency on October 30, 2008.

Great Lakes Sport Fish Advisory Task Force. 1993. Protocol for a Uniform Great Lakes Sport Fish Consumption Advisory.

Illinois Department of Public Health (IDPH). 2012. Illinois Fish Advisory. Electronic resource available at: <http://www.idph.state.il.us/envhealth/fishadvisory/index.htm>

Illinois Environmental Protection Agency (IEPA). 1999. Final Stage III Report Waukegan Harbor Remedial Action Plan. Waukegan, Illinois 1999.

Waukegan Citizens Advisory Group. 2011. Working Together; Recovery and Delisting of the Waukegan Harbor Area of Concern. Project Update #3.

## **Appendix A**

### **Maps of Sampling Areas**



State of Illinois  
Illinois Department of Natural Resources

# North Point Marina

May 11, 2012



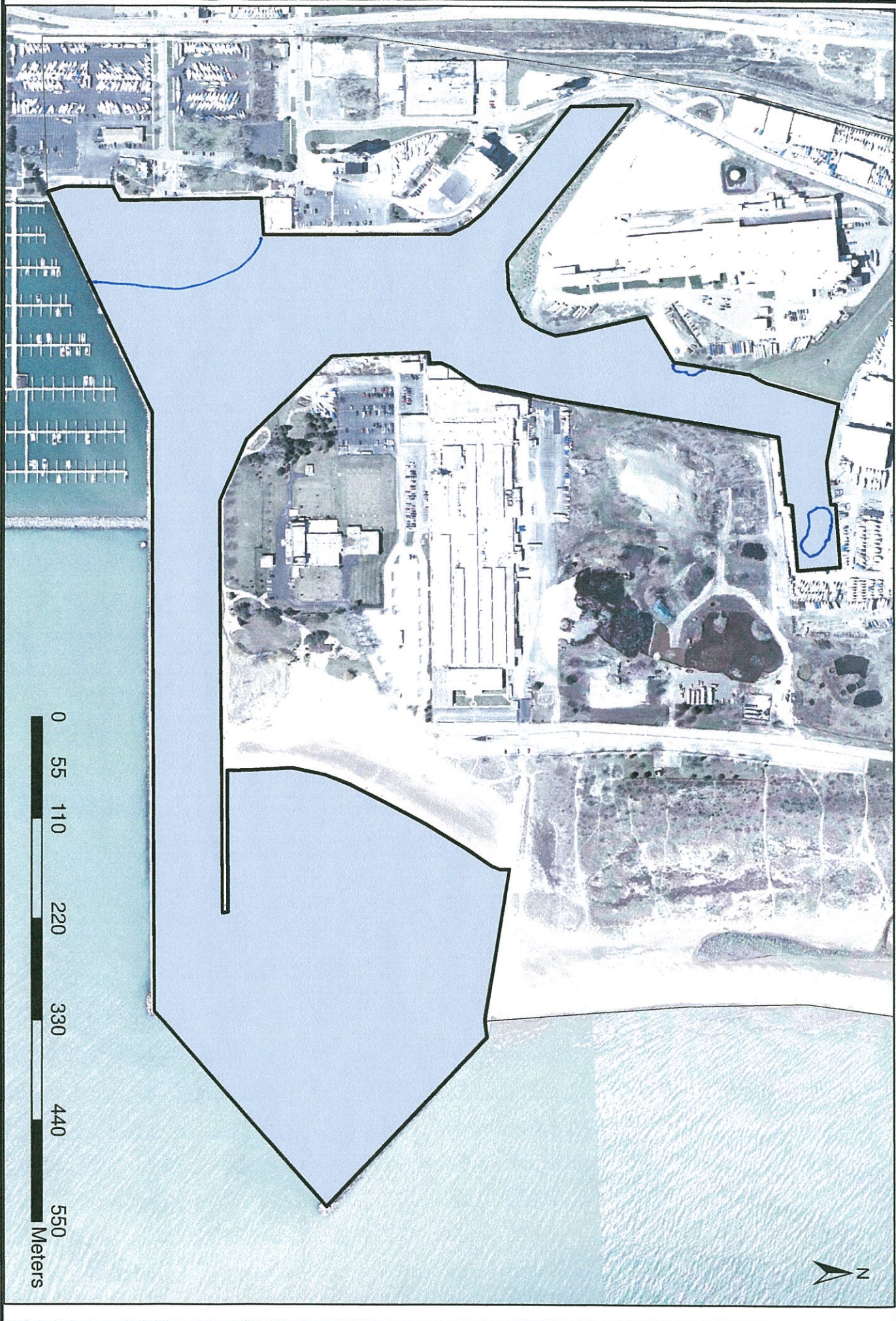


State of Illinois  
Illinois Department of Natural Resources

# Waukegan Harbor

○ Sampled sites

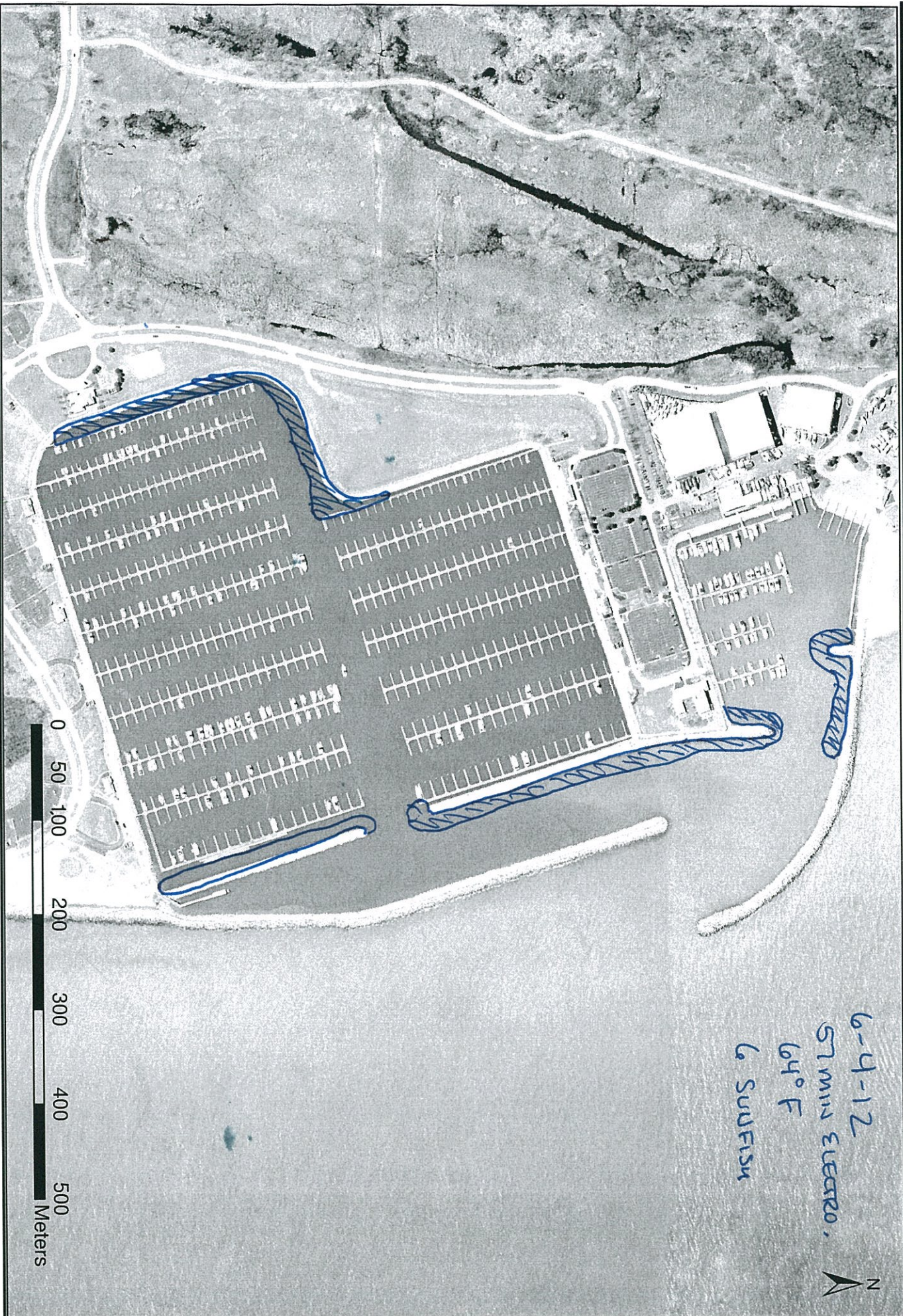
May 11, 2012





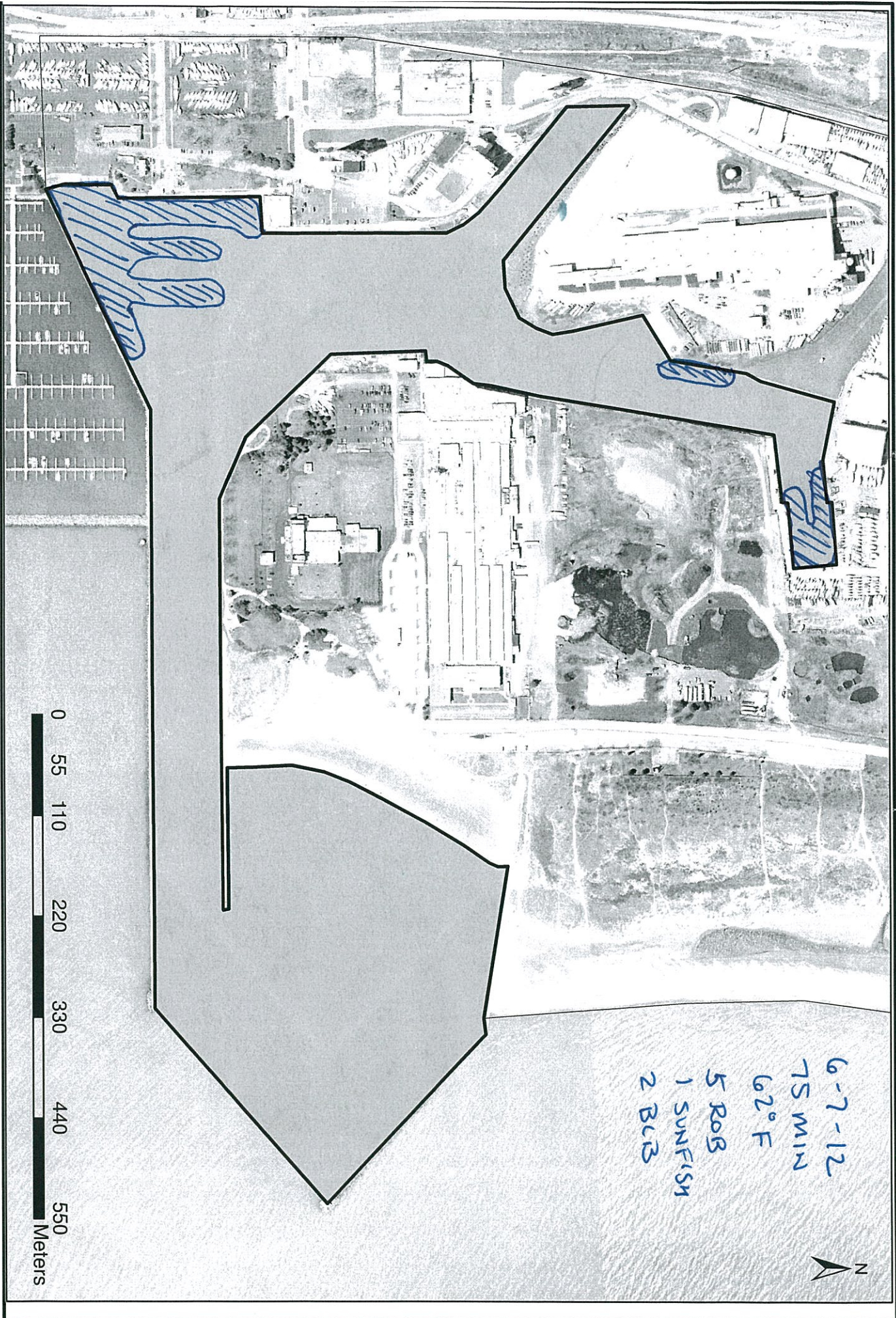
State of Illinois  
Illinois Department of Natural Resources

# North Point Marina





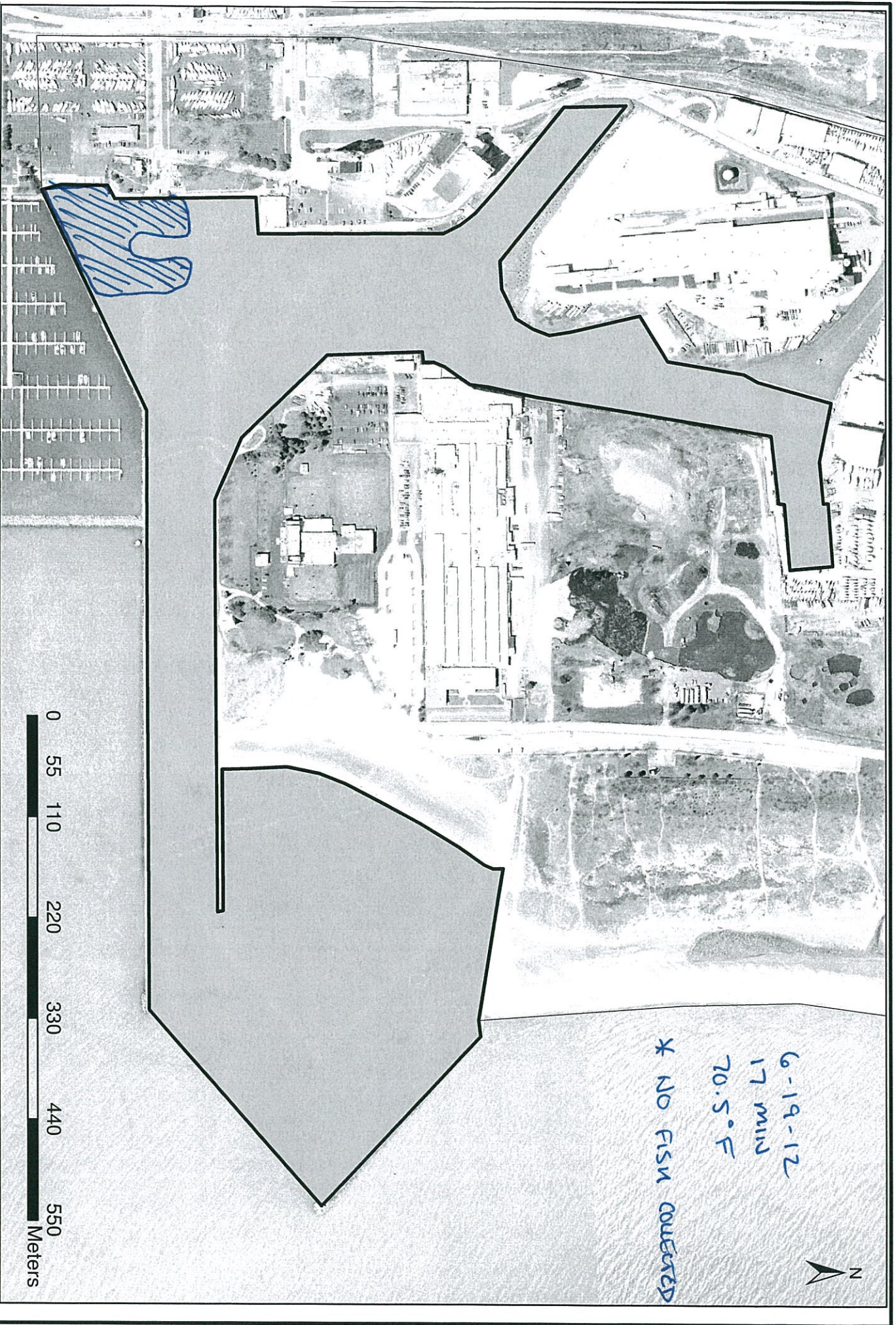
# Waukegan Harbor





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# Waukegan Harbor





# North Point Marina

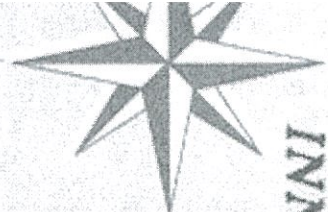
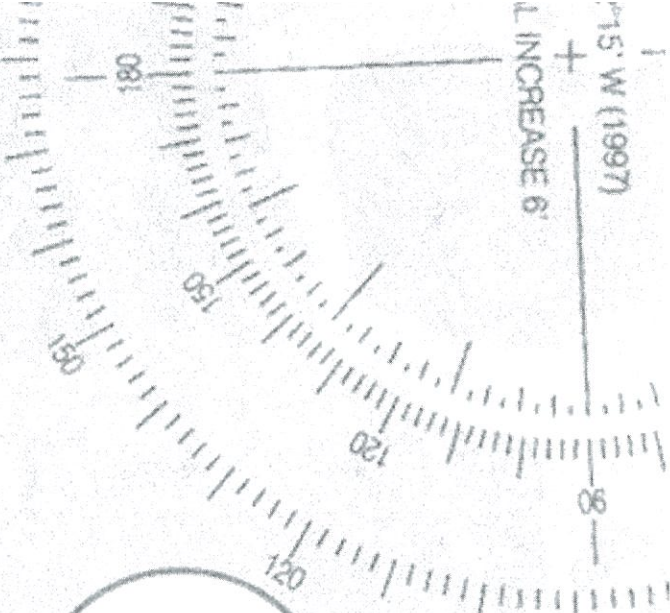


6-19-12  
65 min  
69°F

1 BLB collected  
170 mm 70g  
\* DISCARDED AFTER  
COMPOSITES COLLECTED  
@ JACKSON ON 6/20



15' W (1997)  
L INCREASE 6



N  
**JACKSON PARK**  
**INNER HARBOR**

Southern Shore  
Yacht Club

Dam



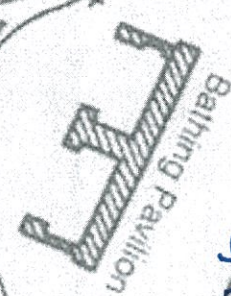
Hayes

Drive

Ramps



FOOTBRIDGE



Bathing Pavilion

6-20-122  
45 mi  
81°F  
9 BCB

N SIDE LT  
FR 35ft  
Piv

S SIDE LT  
FG 32ft  
Piv

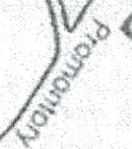
Jackson Park  
Yacht Club

Holists

**JACKSON**  
**OUTER**

Subm  
d piles

2 JACKSON PARK  
MIDDLE  
FI R 3s 40ft



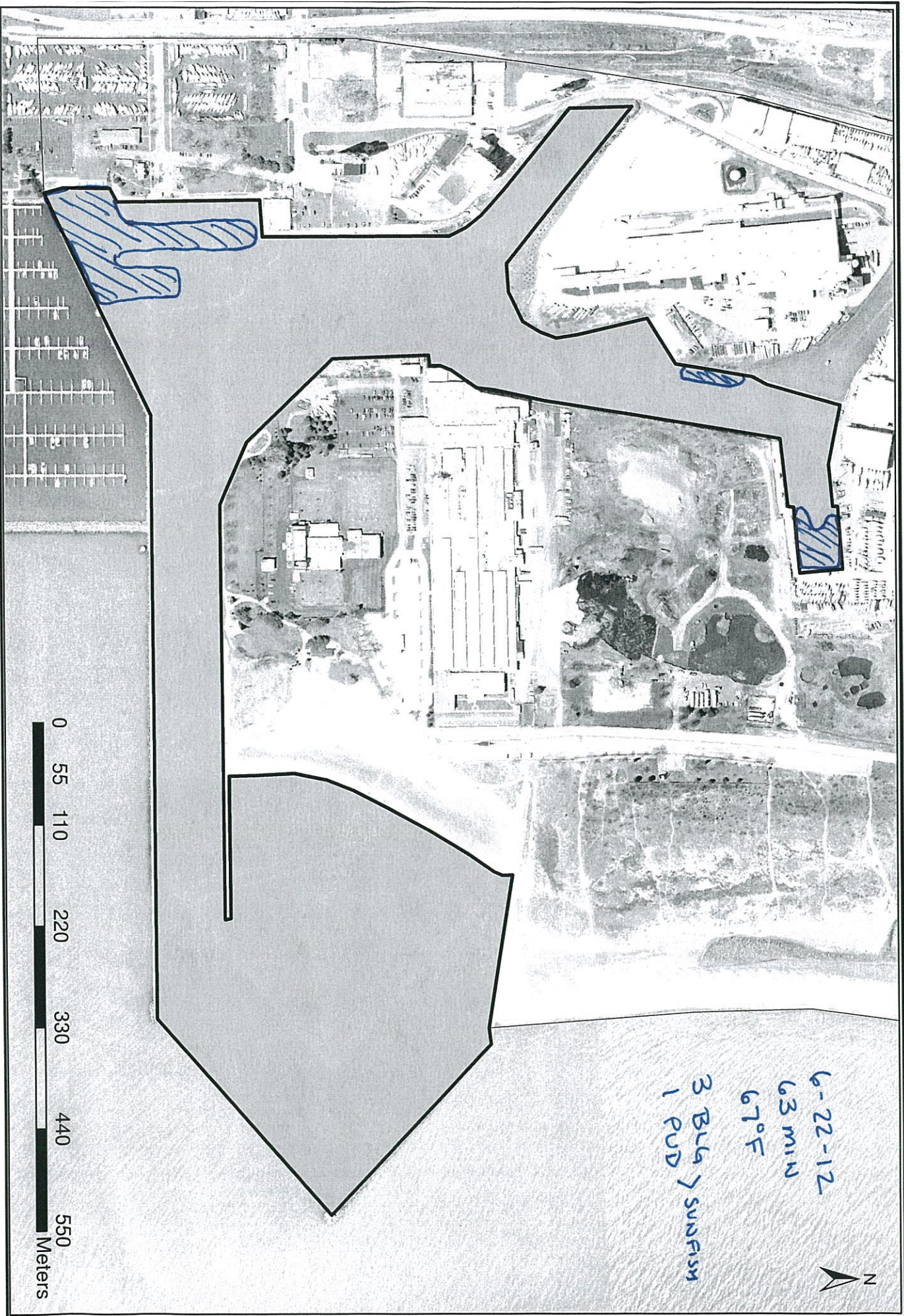
Promontory

Drive



State of Illinois  
Illinois Department of Natural Resources

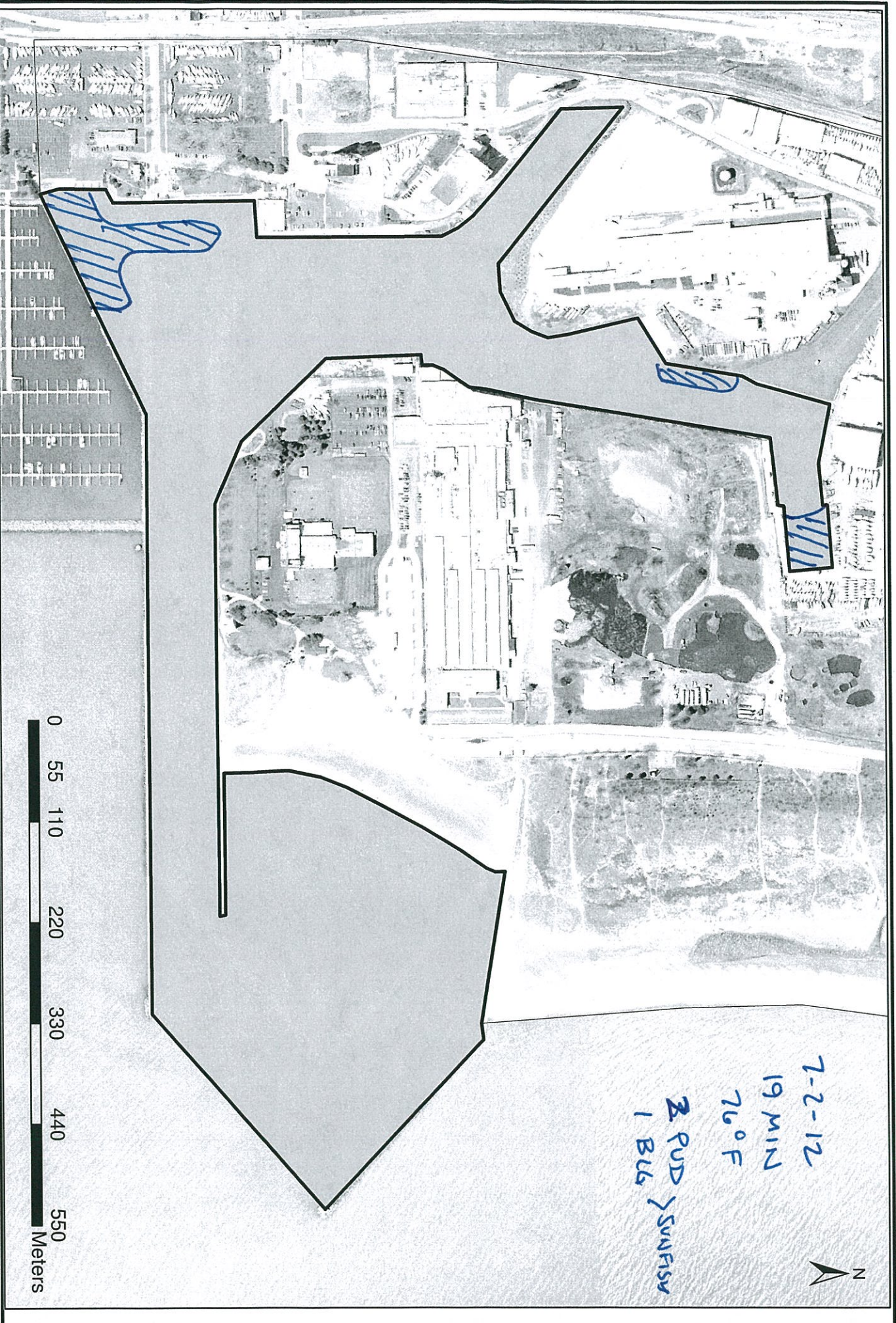
# Waukegan Harbor





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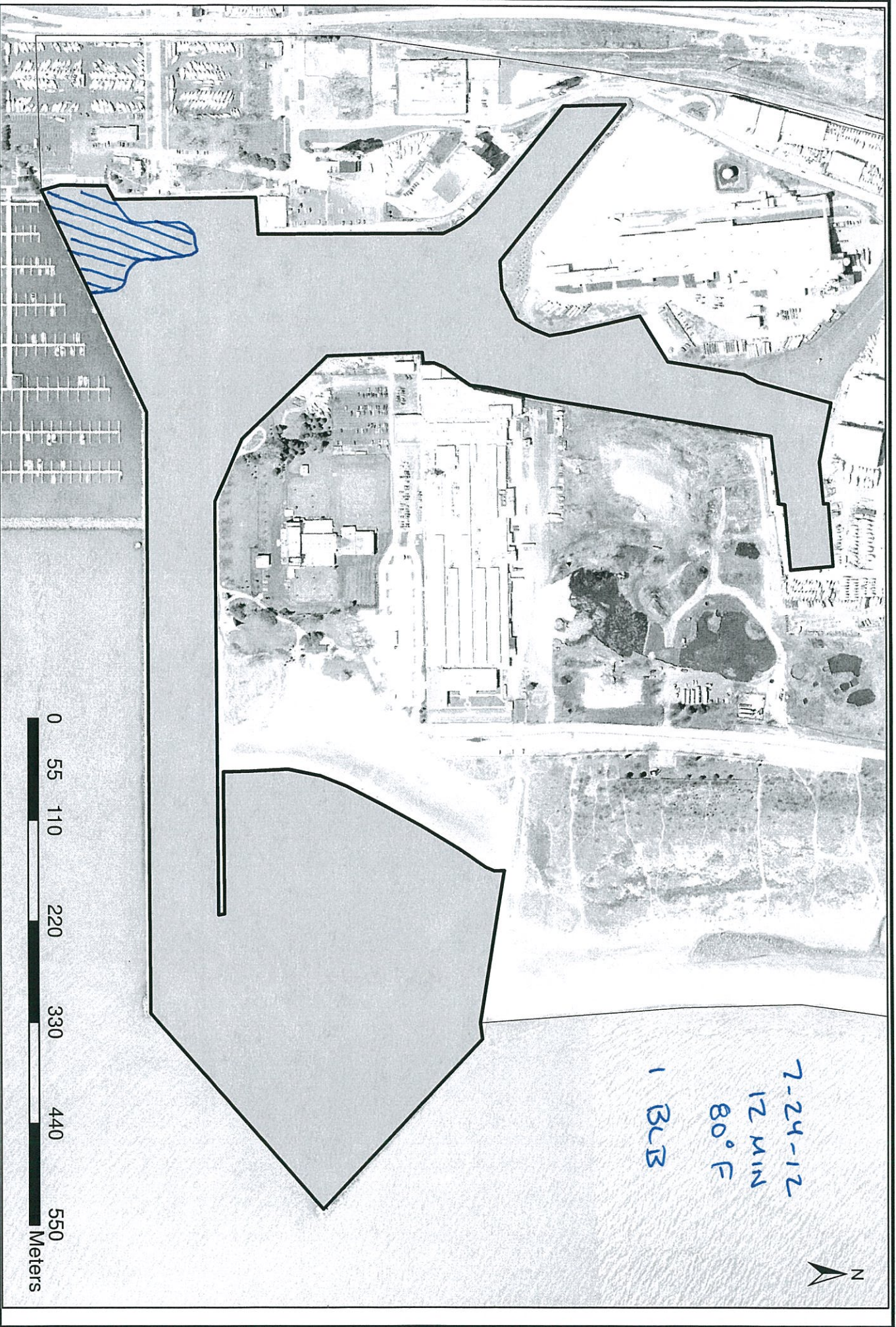
# Waukegan Harbor





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# Waukegan Harbor



**Appendix B**

**Laboratory Results**



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37386

Sample Depth: 1 Feet

Lab Sample ID: **SH21383-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 365 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 485 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 13:50

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
<b>Mercury</b>	<b>0.025</b>	J3	0.006	0.002

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/24/12 16:39

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
<b>p,p'-DDE</b>	<b>0.005</b>	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:42

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37386

Sample Depth: 1 Feet

Lab Sample ID: **SH21383-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 365 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 485 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/24/12 16:39

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.20</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.68</b>			

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**Reported:**

12/12/12 10:42

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

- J3 The reported value failed to meet the established quality control criteria for either precision or accuracy possibly due to matrix effects.
- J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.
- ND Analyte NOT DETECTED at or above the reporting limit
- \* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink that reads "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:42

Page 3 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37387

Sample Depth: 1 Feet

Lab Sample ID: **SH21384-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 425 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 713 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 13:51

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.056		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/24/12 22:07

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.013		0.010	0.003
p,p'-DDD	0.005	J	0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:42

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37387

Sample Depth: 1 Feet

Lab Sample ID: **SH21384-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 425 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 713 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/24/12 22:07

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.26</b>		0.10	0.027
<b>% Lipid Content</b>	<b>1.1</b>			

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**Reported:**

12/12/12 10:42

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:42

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37388

Sample Depth: 1 Feet

Lab Sample ID: **SH21385-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 150 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 80 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: ROB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 13:53

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.055		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/24/12 23:56

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.007	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:42

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37388

Sample Depth: 1 Feet

Lab Sample ID: **SH21385-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 150 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 80 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: ROB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/24/12 23:56

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>1.0</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.76</b>			

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**Reported:**

12/12/12 10:42

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink that reads "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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12/12/12 10:42

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37389

Sample Depth: 1 Feet

Lab Sample ID: **SH21386-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 491 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 1275 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 13:54

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.069		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 01:45

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.010		0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:41

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37389

Sample Depth: 1 Feet

Lab Sample ID: **SH21386-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 491 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 1275 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 01:45

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.002</b>	J	0.020	0.002
<b>Total PCBs</b>	<b>0.049</b>	J	0.10	0.027
<b>% Lipid Content</b>	<b>0.72</b>			

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**Reported:**

12/12/12 10:41

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QH-09

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink that reads "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:41

Page 3 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37390

Sample Depth: 1 Feet

Lab Sample ID: **SH21387-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 431 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 875 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 13:55

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.061		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 03:35

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.023		0.010	0.003
p,p'-DDD	0.004	J	0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:41

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37390

Sample Depth: 1 Feet

Lab Sample ID: **SH21387-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 431 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 875 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 03:35

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.002</b>	J	0.020	0.002
<b>Total PCBs</b>	<b>0.40</b>		0.10	0.027
<b>% Lipid Content</b>	<b>1.3</b>			

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**Reported:**

12/12/12 10:41

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QH-09

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:41

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37391

Sample Depth: 1 Feet

Lab Sample ID: **SH21388-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 195 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 147 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: ROB

### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:32

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.045		0.006	0.002

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 05:24

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.005	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:41

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37391

Sample Depth: 1 Feet

Lab Sample ID: **SH21388-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 195 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 147 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: ROB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 05:24

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.031</b>	J	0.10	0.027
<b>% Lipid Content</b>	<b>0.16</b>			

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**Reported:**

12/12/12 10:41

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QH-09

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink that reads "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:41

Page 3 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37392

Sample Depth: 1 Feet

Lab Sample ID: **SH21389-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 170 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 87 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: ROB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:00

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.041		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 10:52

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.004	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:40

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37392

Sample Depth: 1 Feet

Lab Sample ID: **SH21389-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 170 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 87 g

Date/Time Collected: 05/11/12 12:00

Replicate Number:

Fish Code: ROB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 10:52

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.027</b>	J	0.10	0.027
<b>% Lipid Content</b>	<b>0.33</b>			

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**Reported:**

12/12/12 10:40

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QH-09

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:40

Page 3 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37425

Sample Depth: 1 Feet

Lab Sample ID: **SH21390-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 143 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 66 g

Date/Time Collected: 07/02/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:01

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.023		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 12:41

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	ND		0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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12/12/12 10:40

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37425

Sample Depth: 1 Feet

Lab Sample ID: **SH21390-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 143 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 66 g

Date/Time Collected: 07/02/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 12:41

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.12</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.19</b>			

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Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37426

Sample Depth: 1 Feet

Lab Sample ID: **SH21391-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 114 mm

Collected By: IL DNR

Count of Individual:

Avg. Weight: 32 g

Date/Time Collected: 07/02/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:03

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.045		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 14:30

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.007	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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12/12/12 10:40

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37426

Sample Depth: 1 Feet

Lab Sample ID: **SH21391-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 114 mm

Collected By: IL DNR

Count of Individual:

Avg. Weight: 32 g

Date/Time Collected: 07/02/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 14:30

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.41</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.44</b>			

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**Reported:**

12/12/12 10:40

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:40

Page 3 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37427

Sample Depth: 1 Feet

Lab Sample ID: **SH21392-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 255 mm

Collected By: IL DNR

Count of Individual: 3

Avg. Weight: 332 g

Date/Time Collected: 06/07/12 12:00

Replicate Number:

Fish Code: BLB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:04

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
<b>Mercury</b>	<b>0.075</b>		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 16:20

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	<b>0.024</b>		0.010	0.003
p,p'-DDD	<b>0.003</b>	J	0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	<b>0.003</b>	J	0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:39

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37427

Sample Depth: 1 Feet

Lab Sample ID: **SH21392-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 255 mm

Collected By: IL DNR

Count of Individual: 3

Avg. Weight: 332 g

Date/Time Collected: 06/07/12 12:00

Replicate Number:

Fish Code: BLB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 16:20

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>1.4</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.69</b>			

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**Reported:**

12/12/12 10:39

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

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ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:39

Page 3 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37428

Sample Depth: 1 Feet

Lab Sample ID: **SH21393-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 202 mm

Collected By: IL DNR

Count of Individual: 3

Avg. Weight: 180 g

Date/Time Collected: 07/24/12 12:00

Replicate Number:

Fish Code: BLB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:06

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
<b>Mercury</b>	<b>0.035</b>		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 18:09

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	<b>0.017</b>		0.010	0.003
p,p'-DDD	<b>0.004</b>	J	0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:39

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37428

Sample Depth: 1 Feet

Lab Sample ID: **SH21393-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 202 mm

Collected By: IL DNR

Count of Individual: 3

Avg. Weight: 180 g

Date/Time Collected: 07/24/12 12:00

Replicate Number:

Fish Code: BLB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 18:09

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.007</b>	J	0.020	0.002
<b>Total PCBs</b>	<b>1.2</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.91</b>			

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**Reported:**

12/12/12 10:39

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink, reading "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:39

Page 3 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZB-10

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37430

Sample Depth: 1 Feet

Lab Sample ID: **SH21394-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 271 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 308 g

Date/Time Collected: 06/20/12 12:00

Replicate Number:

Fish Code: BLB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:07

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
<b>Mercury</b>	<b>0.022</b>		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 23:37

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	<b>0.032</b>		0.010	0.003
p,p'-DDD	<b>0.018</b>		0.010	0.003
p,p'-DDT	ND		0.010	0.003
<b>Dieldrin</b>	<b>0.004</b>	J	0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:39

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZB-10

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37430

Sample Depth: 1 Feet

Lab Sample ID: **SH21394-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 271 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 308 g

Date/Time Collected: 06/20/12 12:00

Replicate Number:

Fish Code: BLB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/25/12 23:37

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.011</b>	J	0.020	0.002
<b>Total PCBs</b>	<b>0.32</b>		0.10	0.027
<b>% Lipid Content</b>	<b>2.6</b>			

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12/12/12 10:39

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZB-10

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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12/12/12 10:39

Page 3 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZB-10

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37431

Sample Depth: 1 Feet

Lab Sample ID: **SH21395-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 243 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 225 g

Date/Time Collected: 06/20/12 12:00

Replicate Number:

Fish Code: BLB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:08

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
<b>Mercury</b>	<b>0.015</b>		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 01:26

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	<b>0.028</b>		0.010	0.003
p,p'-DDD	<b>0.015</b>		0.010	0.003
p,p'-DDT	ND		0.010	0.003
<b>Dieldrin</b>	<b>0.003</b>	J	0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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12/12/12 10:38

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZB-10

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37431

Sample Depth: 1 Feet

Lab Sample ID: **SH21395-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 243 mm

Collected By: IL DNR

Count of Individual: 4

Avg. Weight: 225 g

Date/Time Collected: 06/20/12 12:00

Replicate Number:

Fish Code: BLB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 01:26

<b><u>Analyte</u></b>	<b><u>Result</u></b>	<b><u>Qualifier</u></b>	<b><u>Reporting Limit</u></b>	<b><u>MDL</u></b>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.012</b>	J	0.020	0.002
<b>Total PCBs</b>	<b>0.21</b>		0.10	0.027
<b>% Lipid Content</b>	<b>3.0</b>			

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**Reported:**

12/12/12 10:38

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZB-10

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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12/12/12 10:38

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37441

Sample Depth: 1 Feet

Lab Sample ID: **SH21396-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 173 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 130 g

Date/Time Collected: 06/07/12 12:00

Replicate Number:

Fish Code: ROB

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:10

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
<b>Mercury</b>	<b>0.10</b>		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 03:15

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
<b>p,p'-DDE</b>	<b>0.007</b>	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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12/12/12 10:38

Page 1 of 3



## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QZO-01

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37441

Sample Depth: 1 Feet

Lab Sample ID: **SH21396-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 173 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 130 g

Date/Time Collected: 06/07/12 12:00

Replicate Number:

Fish Code: ROB

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 03:15

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.004</b>	J	0.020	0.002
<b>Total PCBs</b>	<b>0.74</b>		0.10	0.027
<b>% Lipid Content</b>	<b>0.38</b>			

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**Reported:**

12/12/12 10:38

Page 2 of 3



## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QZO-01

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink, reading "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:38

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37442

Sample Depth: 1 Feet

Lab Sample ID: **SH21397-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 156 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 76 g

Date/Time Collected: 06/04/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:11

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Mercury	0.014		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 05:05

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Aldrin	ND		0.010	0.001
p,p'-DDE	0.004	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

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**Reported:**

12/12/12 10:37

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37442

Sample Depth: 1 Feet

Lab Sample ID: **SH21397-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 156 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 76 g

Date/Time Collected: 06/04/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 05:05

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
<b>Total Chlordane</b>	<b>0.002</b>	J	0.020	0.002
Total PCBs	ND		0.10	0.027
<b>% Lipid Content</b>	<b>0.27</b>			

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QH-09

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

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Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:37

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37443

Sample Depth: 1 Feet

Lab Sample ID: **SH21398-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 169 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 100 g

Date/Time Collected: 06/04/12 12:00

Replicate Number:

Fish Code: OTHER

#### **Mercury in Fish \***

Method: INL029

Prepared: 11/19/12 14:31

Units: ug/g

Analyzed: 12/06/12 14:13

<b><u>Analyte</u></b>	<b><u>Result</u></b>	<b><u>Qualifier</u></b>	<b><u>Reporting Limit</u></b>	<b><u>MDL</u></b>
<b>Mercury</b>	<b>0.027</b>		0.006	0.002

#### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 06:54

<b><u>Analyte</u></b>	<b><u>Result</u></b>	<b><u>Qualifier</u></b>	<b><u>Reporting Limit</u></b>	<b><u>MDL</u></b>
Aldrin	ND		0.010	0.001
<b>p,p'-DDE</b>	<b>0.006</b>	J	0.010	0.003
p,p'-DDD	ND		0.010	0.003
p,p'-DDT	ND		0.010	0.003
Dieldrin	ND		0.010	0.003
Heptachlor	ND		0.010	0.001
Heptachlor epoxide	ND		0.010	0.002
Toxaphene	ND		1.0	0.093
Methoxychlor	ND		0.050	0.018
Hexachlorobenzene	ND		0.010	0.005
gamma-BHC (Lindane)	ND		0.010	0.001
alpha-BHC	ND		0.010	0.002
Mirex	ND		0.010	0.003

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Test results meet all requirements of NELAC (accredited by Florida DOH #E37645). If you have any questions about this report, please contact Celeste Crowley, Acting Laboratory Manager, at 217.782.9780.*

**Reported:**

12/12/12 10:37

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## Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### LABORATORY RESULTS

Name: LAKE MICHIGAN

Received : 08/20/12 14:42 by Eric Bunch

Station Code: QH-09

Temperature C: 0.00

Funding Code: WP06

Monitoring Program: Fish Contaminant

Trip ID: FT

Visit Number: 1

Client Sample ID: 37443

Sample Depth: 1 Feet

Lab Sample ID: **SH21398-01**

Sample Matrix: Biological

Tissue Type: FILLET

Avg. Length: 169 mm

Collected By: IL DNR

Count of Individual: 5

Avg. Weight: 100 g

Date/Time Collected: 06/04/12 12:00

Replicate Number:

Fish Code: OTHER

### **Pesticides/PCBs in Fish \***

Method: ORL018

Prepared: 10/15/12 09:33

Units: ug/g

Analyzed: 10/26/12 06:54

<u>Analyte</u>	<u>Result</u>	<u>Qualifier</u>	<u>Reporting Limit</u>	<u>MDL</u>
Endrin	ND		0.010	0.004
Total Chlordane	ND		0.020	0.002
<b>Total PCBs</b>	<b>0.030</b>	J	0.10	0.027
<b>% Lipid Content</b>	<b>0.41</b>			

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**Reported:**

12/12/12 10:37

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## **Illinois Environmental Protection Agency Laboratory**

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

### **LABORATORY RESULTS**

Name: LAKE MICHIGAN

Station Code: QH-09

Funding Code: WP06

Trip ID: FT

Received : 08/20/12 14:42 by Eric Bunch

Temperature C: 0.00

Monitoring Program: Fish Contaminant

Visit Number: 1

### **Notes and Definitions**

J Estimated value. The laboratory cannot support the validity of this number. The result is between the method detection limit and the reporting limit.

ND Analyte NOT DETECTED at or above the reporting limit

\* Non-NELAP accredited

Report Authorized by:

A handwritten signature in black ink that reads "Celeste M. Crowley".

Celeste M. Crowley  
Acting Laboratory Manager

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**Reported:**

12/12/12 10:37

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