



Public hearing on Renewal
of NPDES permit for
Bayshore Power Plant

April 22, 2010

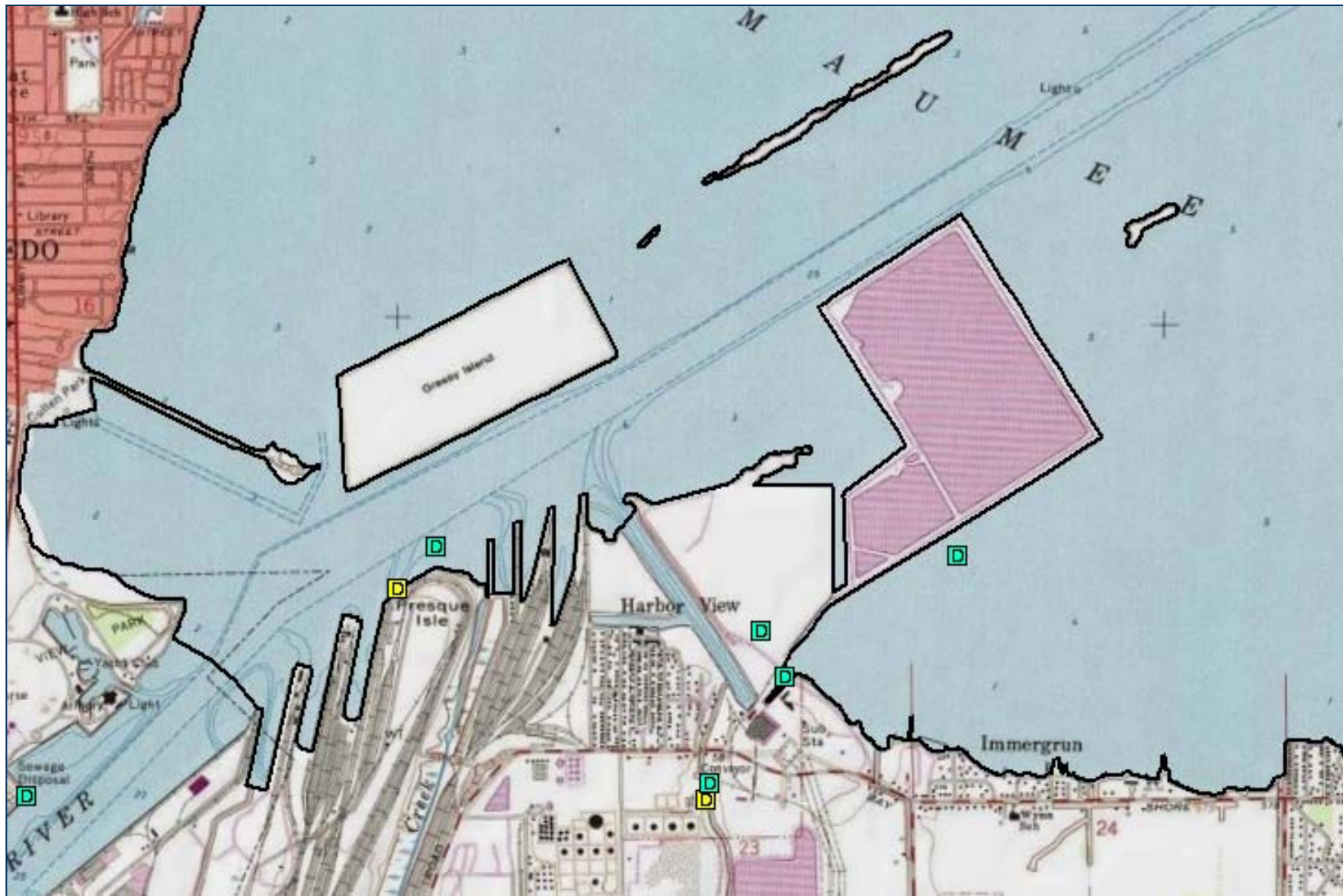
A thick, dark blue horizontal bar with rounded ends, positioned below the date text.

Wastewater Permit Process

- Ohio EPA receives application
- Ohio EPA public notices receipt of application

Wastewater Permit Process cont'd

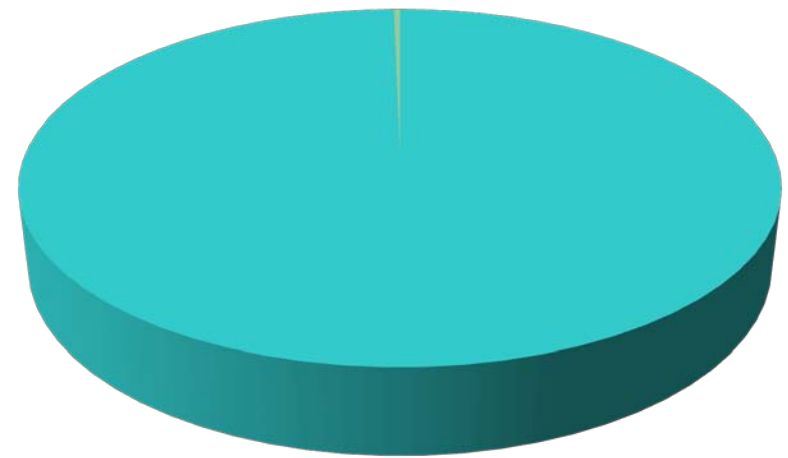
- Ohio EPA public notices draft permit or proposed denial
- Ohio EPA holds public hearing if significant interest
- Comment period ends on draft permit OR proposed denial
- Ohio EPA takes final action – issues permit or denies



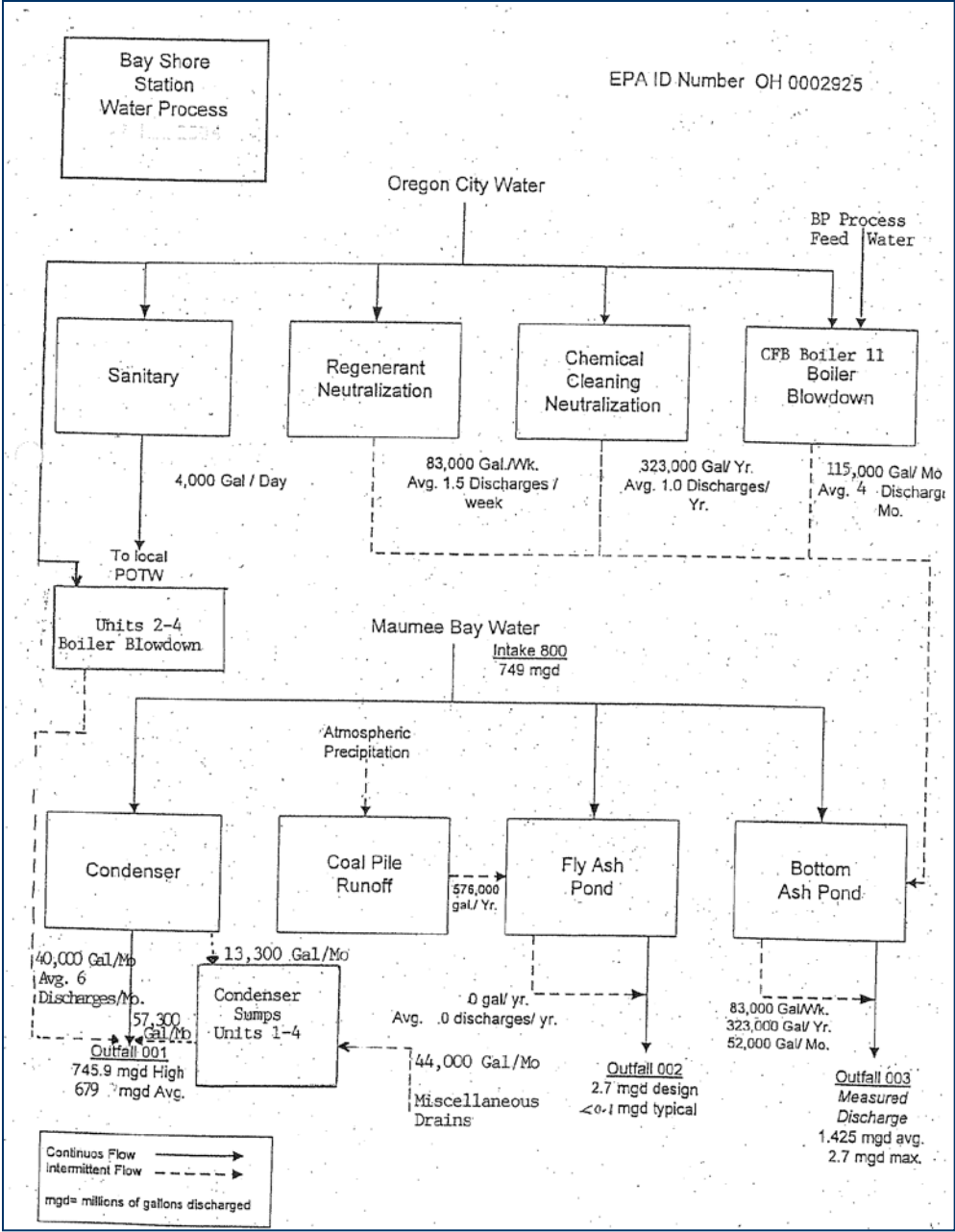


Bayshore Discharge Sources

- Cooling water
- Treated ash wastewater
- Chemical metal cleaning (infrequent – Sept. 1994)



■ Cooling Water ■ Ash Pond



Bayshore Treatment

- Outfall 001 – none
- Outfall 003
 - settling
 - neutralization

Primary Issues

- Impingement/Entrainment
- Mercury
- Thermal discharge
- Other issues

Cooling Water Intake Structure



Impingement/Entrainment

- Annual rates of:
 - impingement...46 million
 - entrainment...2.4 billion
- Reduction Options
 - Cooling towers
 - Wedgewire screens
 - Operational changes

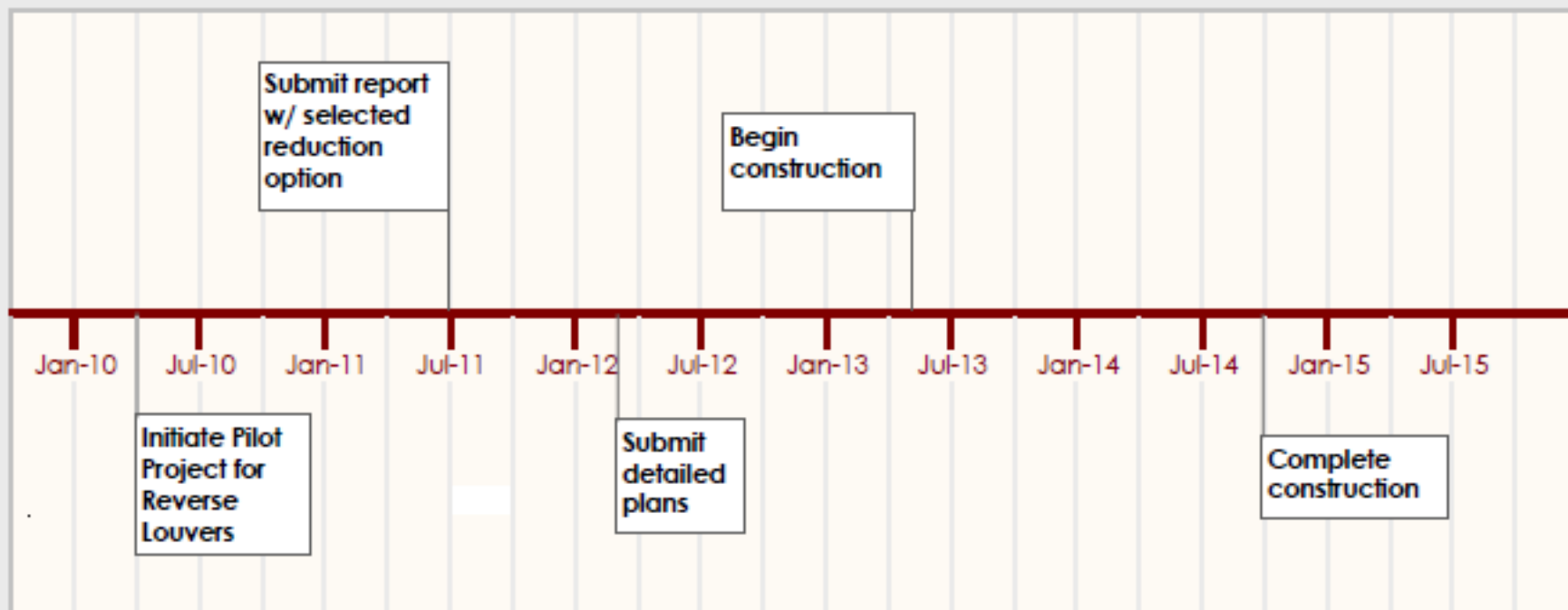
I/E Control Strategies

Control Strategy	Strategy Addresses:			Cost	Feasible?
	Impingement	Entrainment	Thermal		
Cooling towers	yes	yes	yes	\$100 million, 3 to 6.5 % increase	yes
Improved traveling screens	yes	no	no	\$13 million	yes
Wedgewire screens	yes	yes	no	\$17 million	possible
Seasonal operation	yes	yes	no	?	FirstEnergy: "no"
Combination of strategies	yes	yes	possible	?	yes

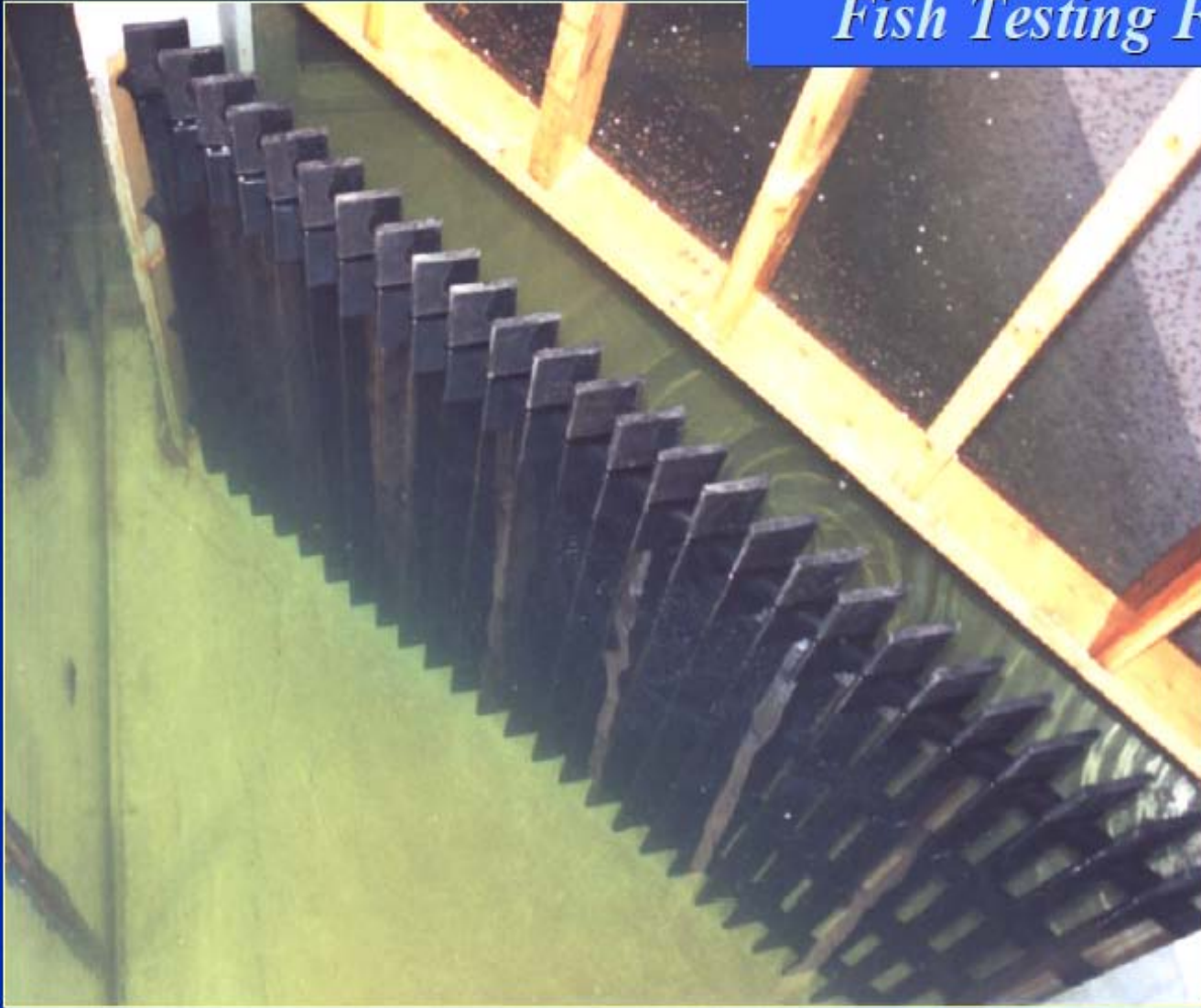
Permit Requirements for I/E Reduction

- Select alternative by July 2011 to meet:
 - 80% for impingement
 - 60% for entrainment

I/E Compliance Schedule



Fish Testing Facility



**45°
Louver**

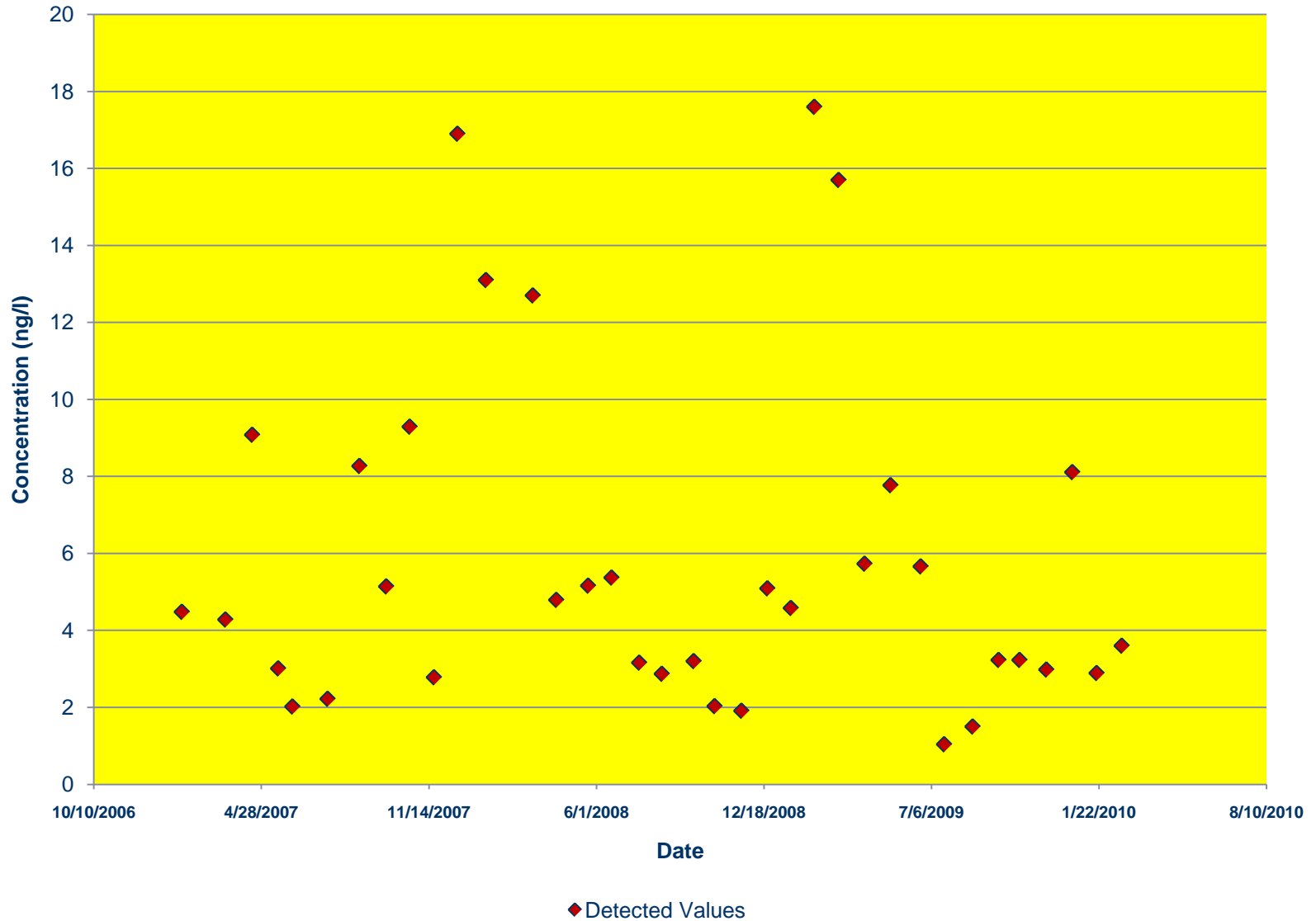
Source: "The Use of Angled Bar Racks and Louvers for Protecting Fish at Water Intakes", Amaral and Taft, and Electric Power Research Institute.



Mercury

- Variance from mercury limit of 1.3 ng/l
- Variance-based limit of 11 ng/l
- Conditions of the variance:
 - optimize operation of ash pond
 - analyze dissolved vs. total mercury
 - evaluate filtration system

Mercury, Total (Low Level) (Outfall 003)



Thermal Discharge

- Benthic survey results
- Impacts to Maumee Bay:
 - temperature increase
 - recreation
 - nuisance conditions (e.g., algal blooms)
- Restrict size of mixing zone

Where from here?

- Ohio EPA considers all comments received in writing or at hearing
- Comments accepted until **May 29th**
- Ohio EPA staff consider comments, make revisions to the permit, recommendation to the Director

Where from here? Cont'd

- Ohio EPA director takes action to issue a final permit *or* deny draft permit
- Ohio EPA mails responsiveness summary and announces final decision
- Final decisions are appealable to Environmental Review Appeals Commission

Send comments to:

- **Ohio EPA**
Division of Surface Water
Permits Processing Unit
P.O. Box 1049
Columbus, OH 43216-1049

through close of business May 29th

Discharge Permit Contacts

- Mike McCullough
Division of Surface Water
(614) 644-4824
mike.mccullough@epa.state.oh.us

or

Discharge Permit Contacts

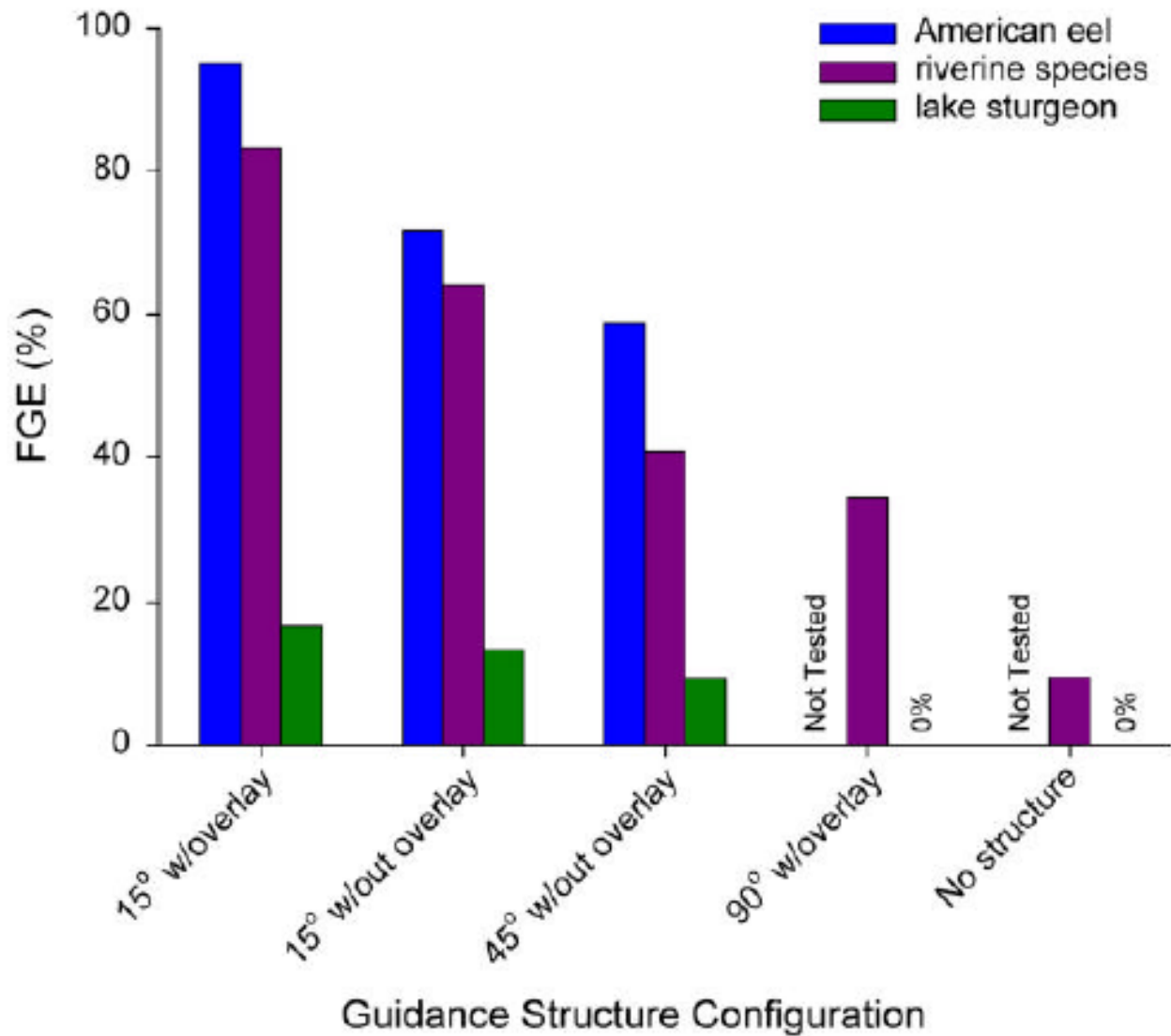
- Naajy Abdullah
Division of Surface Water, NWDO
(419) 373-3017
naajy.abdullah@epa.state.oh.us

<http://epa.ohio.gov/dsw/permits/bayshore.aspx>

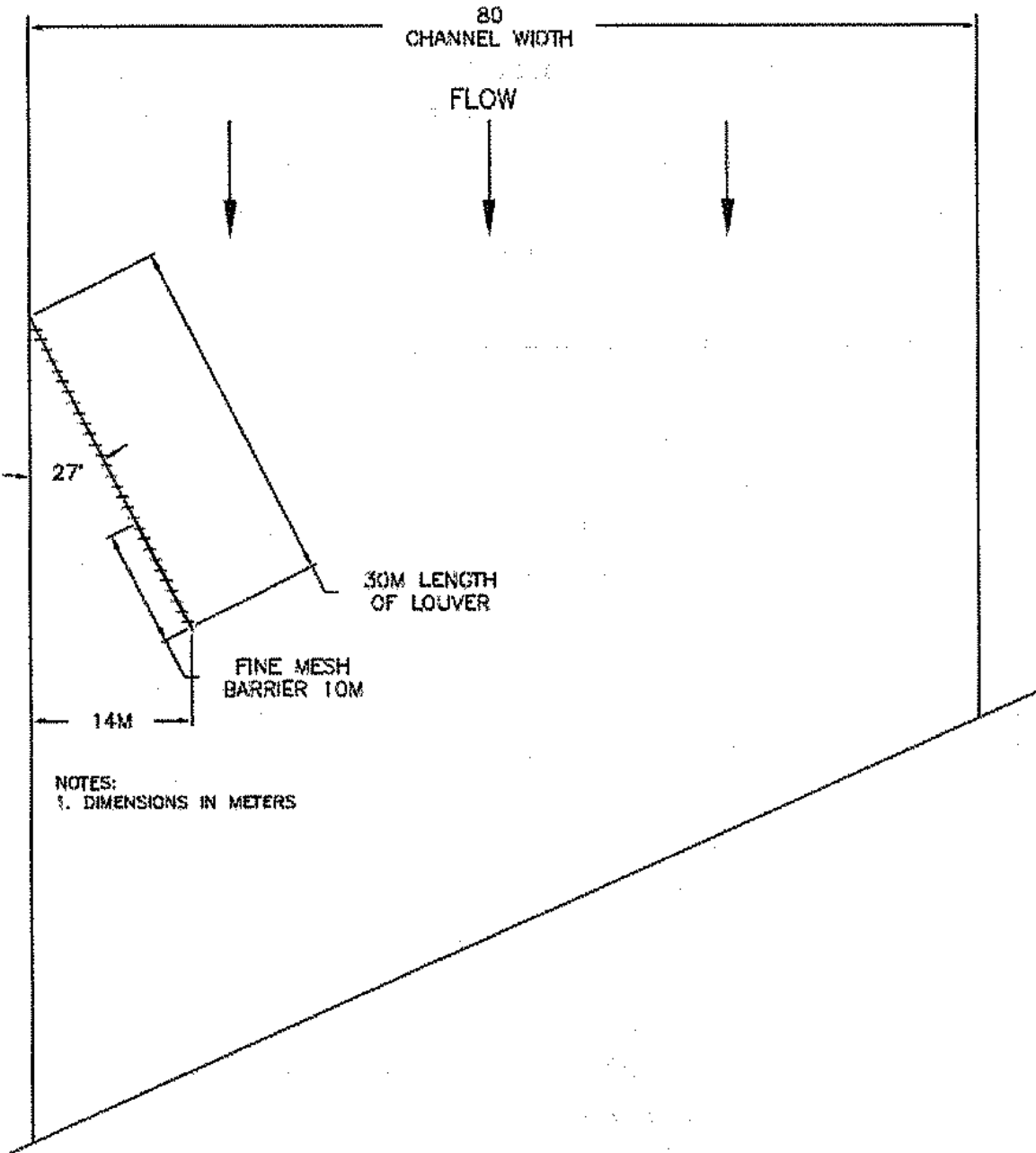
The screenshot shows a Microsoft Internet Explorer browser window with the following details:

- Title Bar:** Wastewater NPDES - Bay Shore Power Plant - Microsoft Internet Explorer
- Address Bar:** http://epa.ohio.gov/dsw/permits/bayshore.aspx
- Page Header:** Ohio.gov | Environmental Protection Agency
- Navigation Links:** Air | Land | Water | News | Answer Place | eBusiness Center | Permit & Compliance Assistance | Home
- Main Content:**
 - Division of Surface Water Wastewater NPDES - Bay Shore Power Plant**
 - Program Links:** Individual NPDES Permits, General NPDES Permits, Technical Assistance, Implementation of 316(b) Rules, Permits Home
 - Division Links:** Division Forms and Publications, Division Rules and Laws, Policies and Guidance, Surface Water Programs, Related Sites, Interactive Maps, Do Business Online, What's New (April 15, 2010), DSW Intranet (OEPA staff only), About Us, Division Contacts
 - Wastewater NPDES Permits Bay Shore Power Plant**
 - NPDES Permit renewal Documents (2010)**
 - Public Notice for Draft Comment Period & Hearing [PDF 10K]
 - Bayshore Power Plant NPDES Draft Permit, March 15, 2010 [PDF 180K]
 - Fact Sheet for Bayshore Power Plant Draft Permit, March 15, 2010 [PDF 16MB]
 - Other Supporting Documents (2010)**
 - Thermal Mixing Zone Benthic Study: 2008 - 2009, December 2009 [PDF 1.13 MB]
 - Modeling of Options to Address Entrainment & Impingement Reductions at Bayshore, January 2010 [PDF 4.63MB]
 - Responsiveness Summary for December 2008 Mercury Variance Hearing [PDF 88K]
 - Public Meeting Materials - March 3, 2009

The taskbar at the bottom shows the Start button and several open applications: Novell GroupWi..., Microsoft Powe..., fish louvers - G..., Wastewater NP..., Document1 - Mi..., Microsoft Excel ... The system clock shows 8:45 AM.

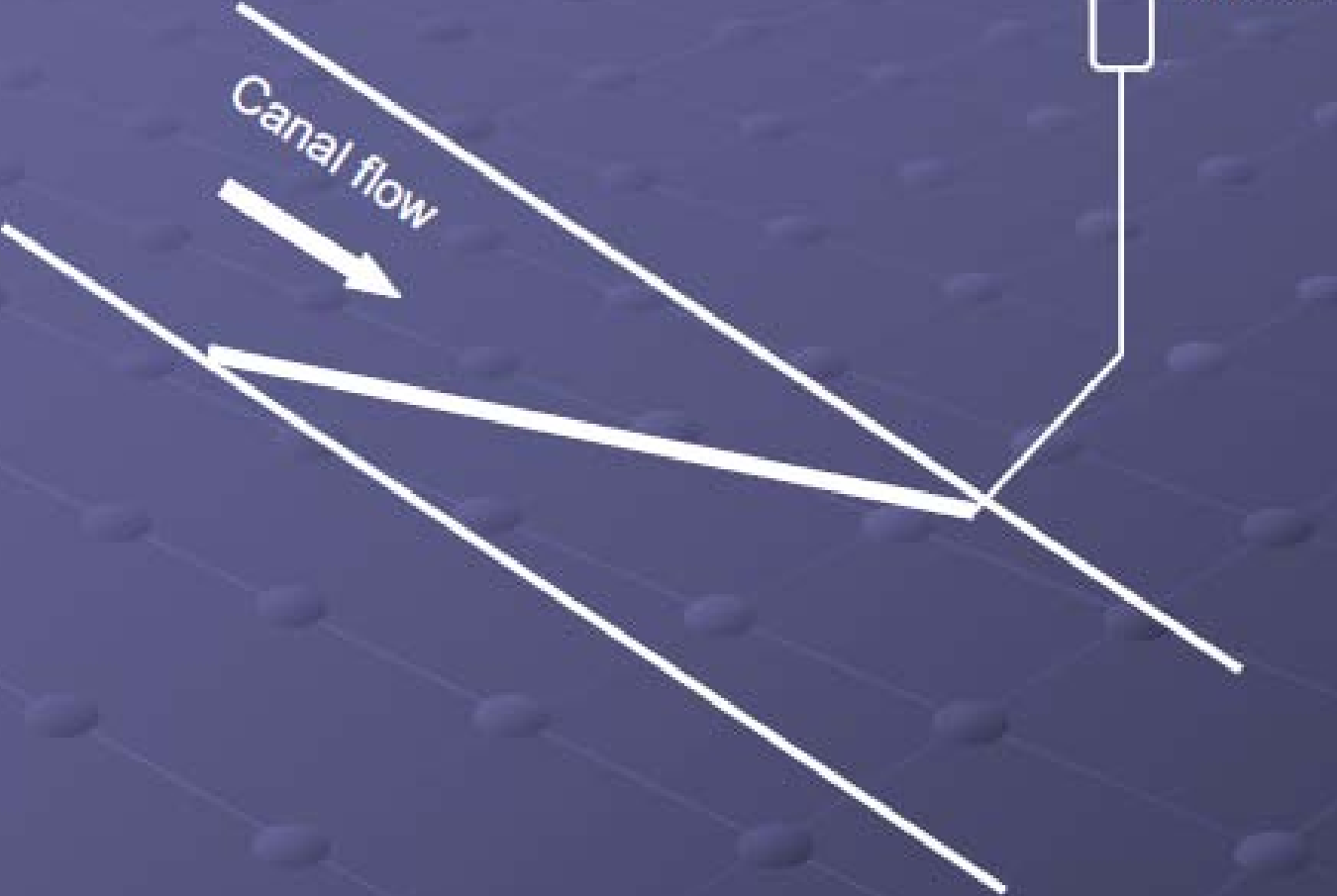


Source: “The Use of Angled Bar Racks and Louvers for Protecting Fish at Water Intakes”, Amaral and Taft, and Electric Power Research Institute.

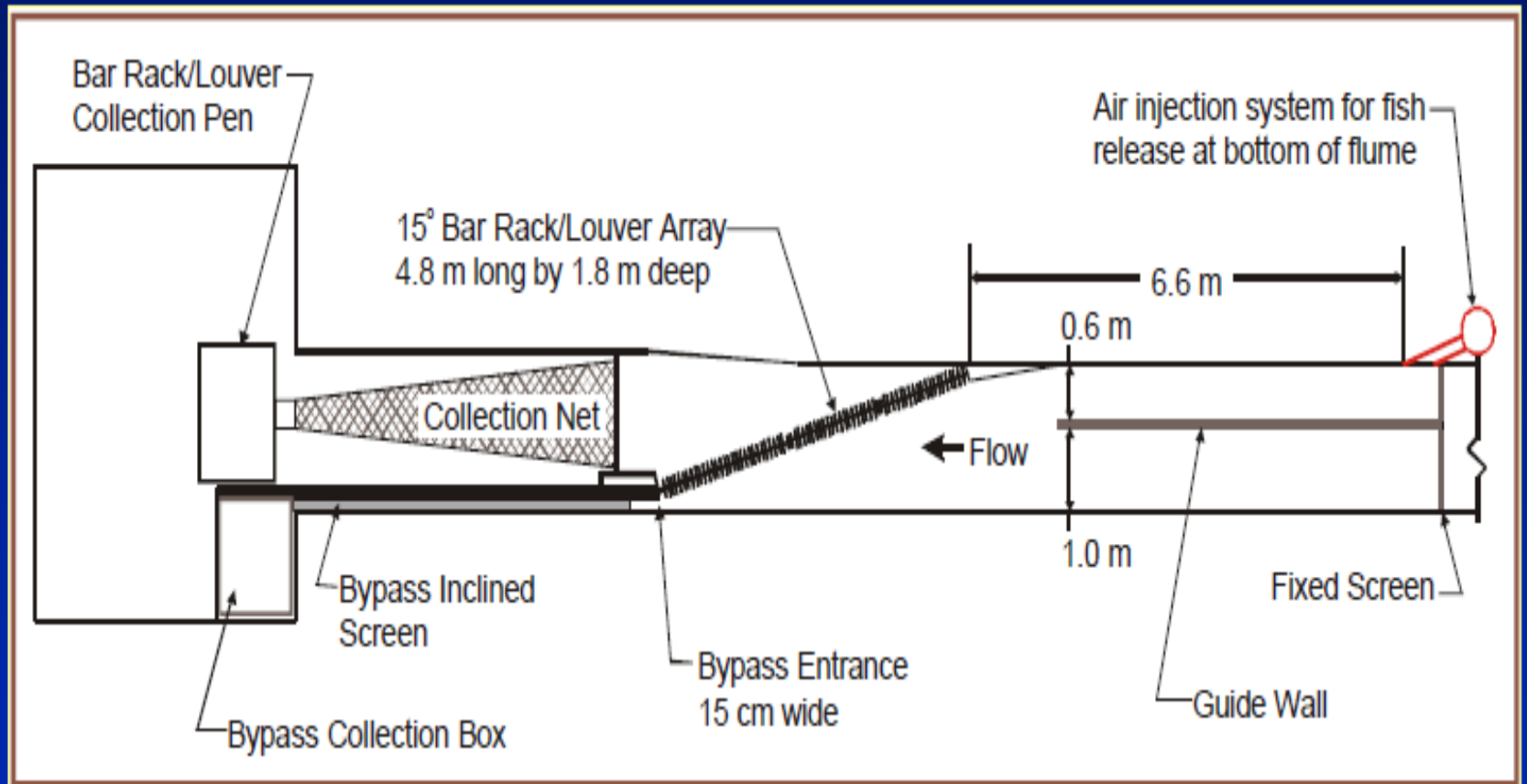




Louver Array



15° Test Facility



Source: "The Use of Angled Bar Racks and Louvers for Protecting Fish at Water Intakes", Amaral and Taft, and Electric Power Research Institute.