



# EASTMAN

## CHEMICALS – PLASTICS - FIBERS



# Who we are

**EASTMAN**

- A global specialty chemicals company headquartered in Kingsport, Tennessee
- Approximately 13,500 employees and over 44 manufacturing sites around the globe
- A company dedicated to environmental stewardship, social responsibility and economic growth  
2012 ENERGY STAR® Partner of the Year
- Combined 2011 sales revenue of approximately \$9.3 billion





**EASTMAN**

# Academy of Natural Sciences River Studies

Since 1965, the Philadelphia Academy of Natural Sciences has conducted biological surveys of the river, upstream and downstream from Eastman



# Academy of Natural Science Fish Study

“The structure of the fish assemblage at Zone 2A does not appear to be particularly vulnerable to impingement, based on habitat and size structure of fish caught. Virtually all of the species of fish caught in Zone 2A are either demersal (white sucker, redhorses, common carp, central stoneroller) or associated with cover (sunfishes, basses and Tennessee snubnose darter). Rainbow trout, a stocked species, is the only mainly open water species found in Zone 2A.”



# Third-Party Impingement Study

**EASTMAN**

- Collected impinged fish from B-269 and B-63 CWIS (approx. half of the total intake volume) over two 24 hour periods
- One minnow caught
- Impingement rate = 0.0023 fish/Mgal



# Cost Estimates

**Table 1: Comparison of EPA Model Facility Cost to Tennessee Eastman Cost Estimates**

	EPA Model Facility Cost <sup>1</sup>	Eastman replacement w/ Ristroph screens only	Eastman replacement w/ Ristroph screens + modified intakes to reduce velocity
Capital Cost <sup>2</sup>	\$4,548,611	\$20,215,432	\$55,000,000
Net O&M Costs	\$270,833	\$702,100	\$702,100
Total <sup>3</sup>	\$4,819,444	\$20,917,532	\$55,779,012

1. Based upon Exhibit 8-19 above using 500 MGD flow (347,222 gpm)
2. Capital cost represents partial solution; additional costs will apply.
3. Cost impact of extended shutdowns is not captured, due to complexities of construction requirement. Projected shutdowns for pump houses are several weeks duration.

- Costs do not include the 4 required entrainment studies, peer reviews, potential entrainment controls, permitting, operation & maintenance, facility downtime, business interruption or impingement mortality monitoring
- Engineering cost study estimate to replace Ristroph screens, reduce velocity and reduce potential entrapment is \$120M

## Meeting with EPA Office of Water November 21, 2011

- Eastman referenced in EPA's June 11, 2012 Notice (77 FR 34325)
- *"In another case, the intake is located downstream of a dam, and the fish avoid the cold water coming from the dam. Recent data show the facility impinged one fish over two 24 hour periods. Under such low impingement rate conditions, technology performance is unlikely to be meaningfully evaluated. Moreover, in EPA's view, these facilities are not likely having an adverse effect on aquatic life. It is probable that in most cases requiring additional technology would not be necessary to further minimize adverse environmental impacts."*



# Our Position

- Requirements for both impingement and entrainment control should be made on a site-specific basis, taking into account costs, benefits and best professional judgment