

Delaware Estuary TMDL Coalition

*PCB Pollution Minimization Plan (PMP)
Workshop*

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Paulsboro Refining Company LLC
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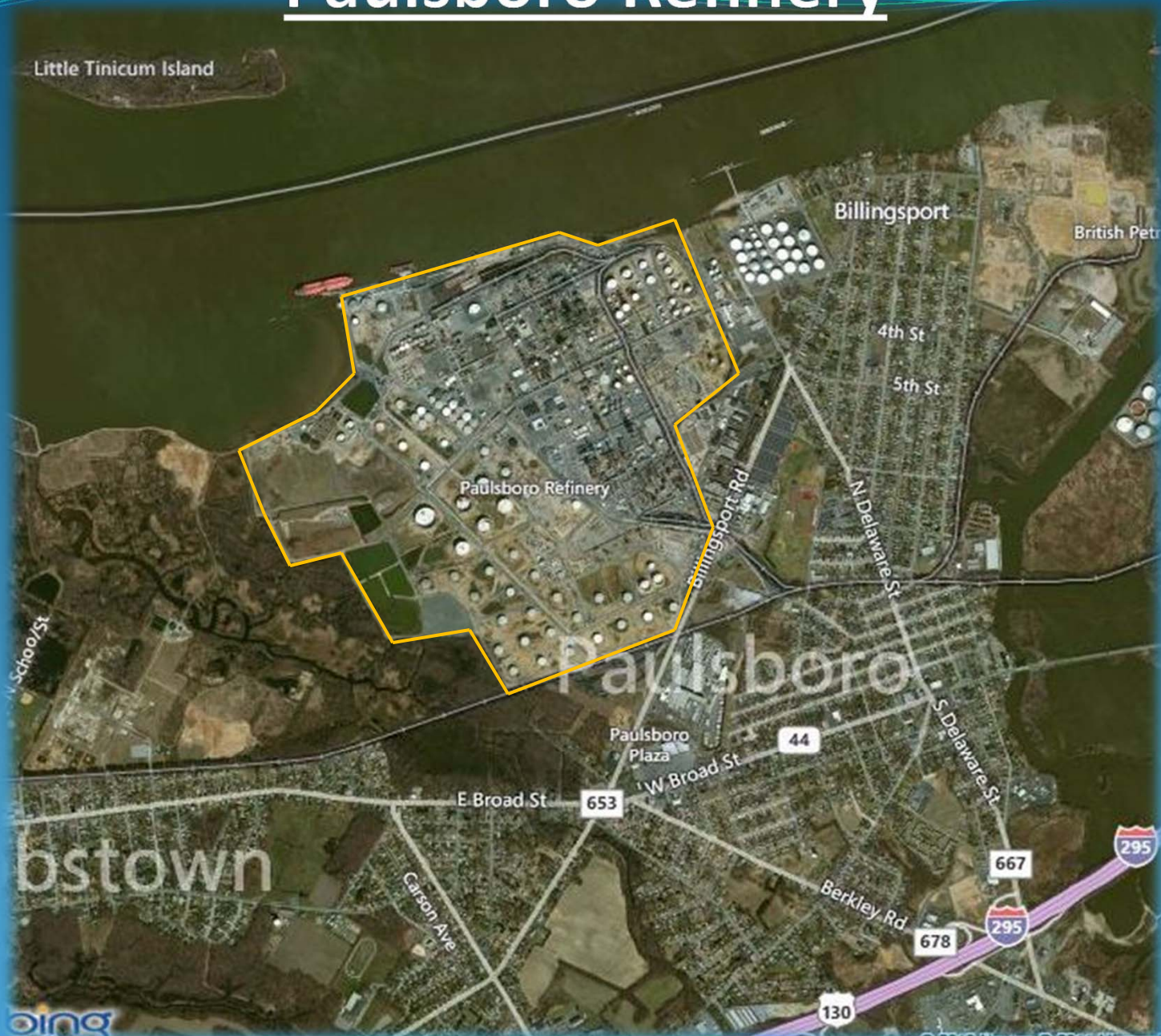
Paulsboro Refinery

- **≈ 180,000 BPD crude oil petroleum refinery**
 - Products: Transportation fuels, heating oils, and lubricant base oils.
- **Located in Greenwich Township, Gloucester County, New Jersey**
 - Adjacent to Delaware River on 750 acres at RM 87.7.
- **Vacuum Oil Company began refining operations 1917**
 - Mobil and Valero were also previous owners.
- **PBF Holding Company LLC acquired refinery on December 17, 2010**

Paulsboro Refinery

- **WWTP design flow rate 15.8 MGD**
 - Tertiary treatment system.
- **WWTP typical flow rate \approx 8 MGD**
- **Two NJPDES permitted outfalls**
 - DSN-001A: Treated WWTP effluent and typical stormwater flow.
 - DSN-002A: Emergency discharge for extreme precipitation events (< 1x/yr).
- **Stormwater retention ponds - 37MG**
- **River water for cooling towers/boilers/fire protection - \approx 7MGD**

Paulsboro Refinery



Pollution Minimization Plan Highlights

- **October 4, 2005: Submitted PMP Plan**
- **January 17, 2006: PMP Completeness Determination**
 - Focus: Historical soils/sediment PCB contamination.
- **2005 - 2012: > 95% reduction of PCB mass loading to Delaware River**
 - Facility removed or environmentally isolated > 1,400 pounds of PCBs.
 - Sediment reduction to WWTP reduces total PCB to river.

PMP Measures

J-Pond Stormwater Retention Area

- Closure included in-situ stabilizing /solidifying sediment to eliminate PCB migration and exposure.
- Closure approved by NJDEP Site Remediation Program.

Process Sewers

- Sewer segments cleaned to remove sediment as necessary.
- Sediment shipped off-site for disposal.

Landfill

- Installed 40-mil, low-density polyethylene (LDPE) geo-synthetic liner cap.
- Used soil to establish grade for landfill cover and provide barrier between landfill material and geo-synthetic liner.
- Six-inches seeded clean fill placed on top of liner to prevent erosion.
- NJDEP-approved Work Plan.

PMP Measures

Soil Reuse

- Soil from construction or maintenance projects analyzed for PCB content.
- Soil w/PCB content > 1 mg/kg shipped off-site.

East/West Stormwater Ditch

- 4,450 yds³ of sediment stabilized in place with Portland cement.
- 3,500 yds³ of sediment sent off-site for disposal.

Unused Oil/Water Separator

- Clean fill/gravel cover placed over area to restrict direct contact with PCB soil and to control surface water runoff – NJDEP-approved Work Plan.
- Area restricted from future disturbance.

PMP Measures

Recycling Treated WWTP Effluent

- Treated WWTP effluent recycled into refinery fire protection system.
- Used as service water for cleaning and miscellaneous cooling.
- Less river water use means less PCB withdrawn from river into facility.

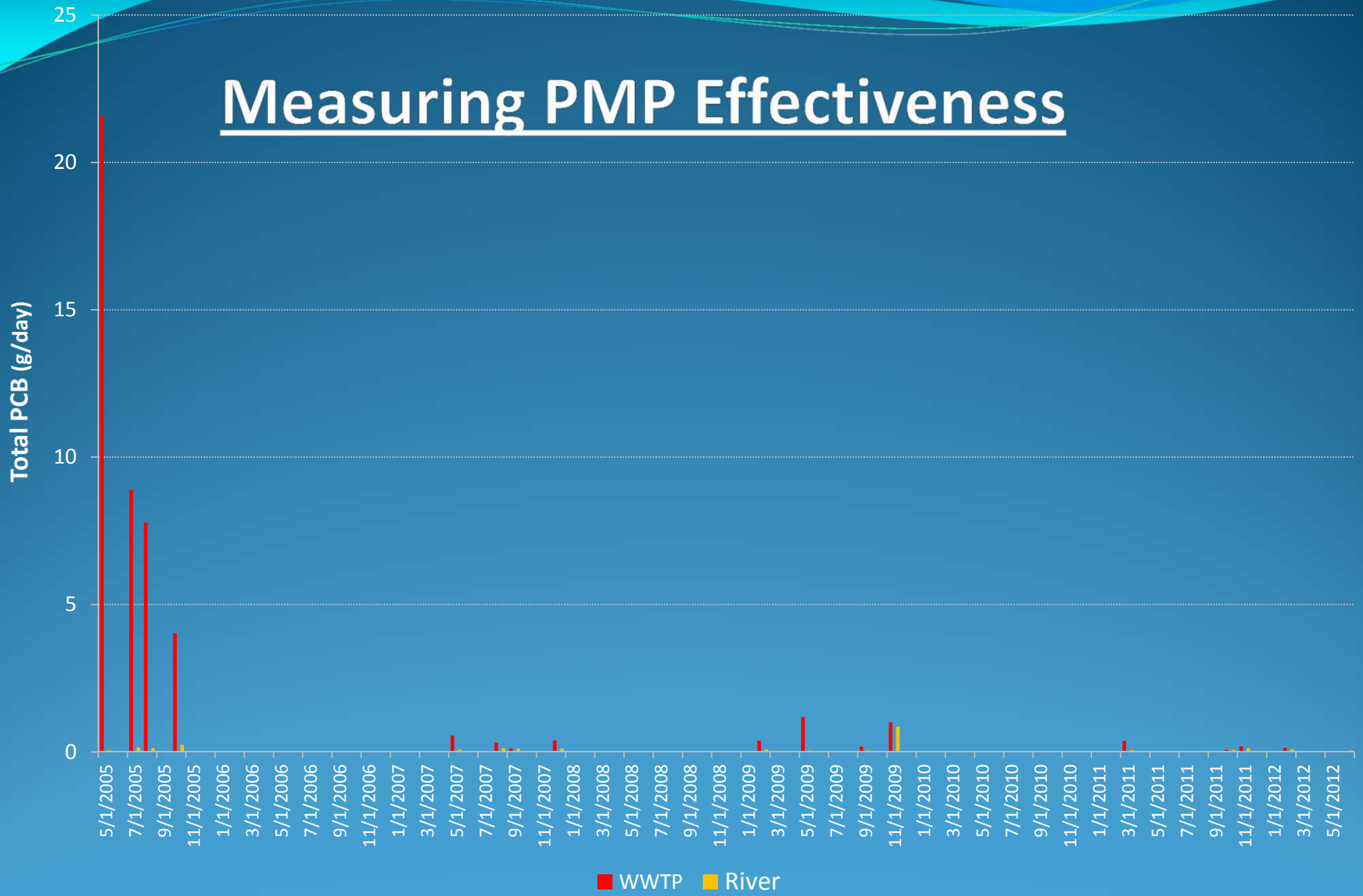
West Stormwater Retention Pond-A

- Suspended solids in refinery stormwater run-off settle out / accumulate in Pond-A.
- Sediment removed from portion of Pond-A transferred to North Stormwater Retention Pond for subsequent stabilization/solidification.

North Stormwater Retention Pond

- Sediment from West Retention Pond-A used as supplemental fill material in stabilization/solidification closure of the North Retention Pond
- Replacement stormwater collection system for North Pond included a 212-thousand gallon sump and 5-million gallon aboveground storage tank
- NJDEP-approved Closure Plan.

Measuring PMP Effectiveness



Summary

- Paulsboro Refinery remains committed to reducing discharges of PCB to the Delaware River Estuary through the PMP process.
- Sampling data demonstrate that the PMP approach as implemented at the Paulsboro Refinery is effective and is measurably reducing PCB discharges to the Delaware Estuary.
- PMP progress is not finished - it is a continuing process
- Our efforts will continue.

Thank You – Any Questions?

John Deemer, Environmental Manager

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