ORSANCO ODS/Emergency Response Program

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WHAT IS ORSANCO?

- Interstate Compact Water Pollution Control Agency
- Created in 1948
- Monitor and Abate Water Pollution in Compact “District”

ORGANIZATION

- COMMISSION – 27 Members
  - Standing Committees
  - Technical Committee
    - Subcommittees
- Advisory Committees
- Industry Action Committees

ORGANIZATION

- COMMISSION / Technical Committee
  - Meets 3 times per year
  - Oversees general direction of organization, administrative and technical programs
- Funding provided by States
  - USEPA 106 Funds, Grants, outside funding sources

PROGRAMS

- Water Quality Monitoring
- Water Quality Assessment
  - WQ Monitor, 305(b), TMDL, PCS
- SWP
- Public Information
- Wet weather/CSO Impacts studies
- GT. Lakes/Baltic Sea Partnership

PROGRAMS

- Monitoring
  - ODS - Spills
  - Manual Sampling
    - Metals/Nutrients
  - Recreational Season
    - Bacteria, D.O., Algae
  - Biological
    - Biocriteria, Fish Contaminants

OHIO RIVER USES

- Water Intakes
  - 33 Municipal
  - 144 Industrial
  - 41 Power Generation
    - total withdrawal -15,070MGD
  - 6 Hydropower

OHIO RIVER USES

- Potable Water Supply - 3,000,000
  - 25,000,000 in 220,000 mi^2 basin
- Commercial Navigation
  - >260,000,000 tons annually
- Discharges
  - >600 NPDES discharges
  - 1350 CSO discharges

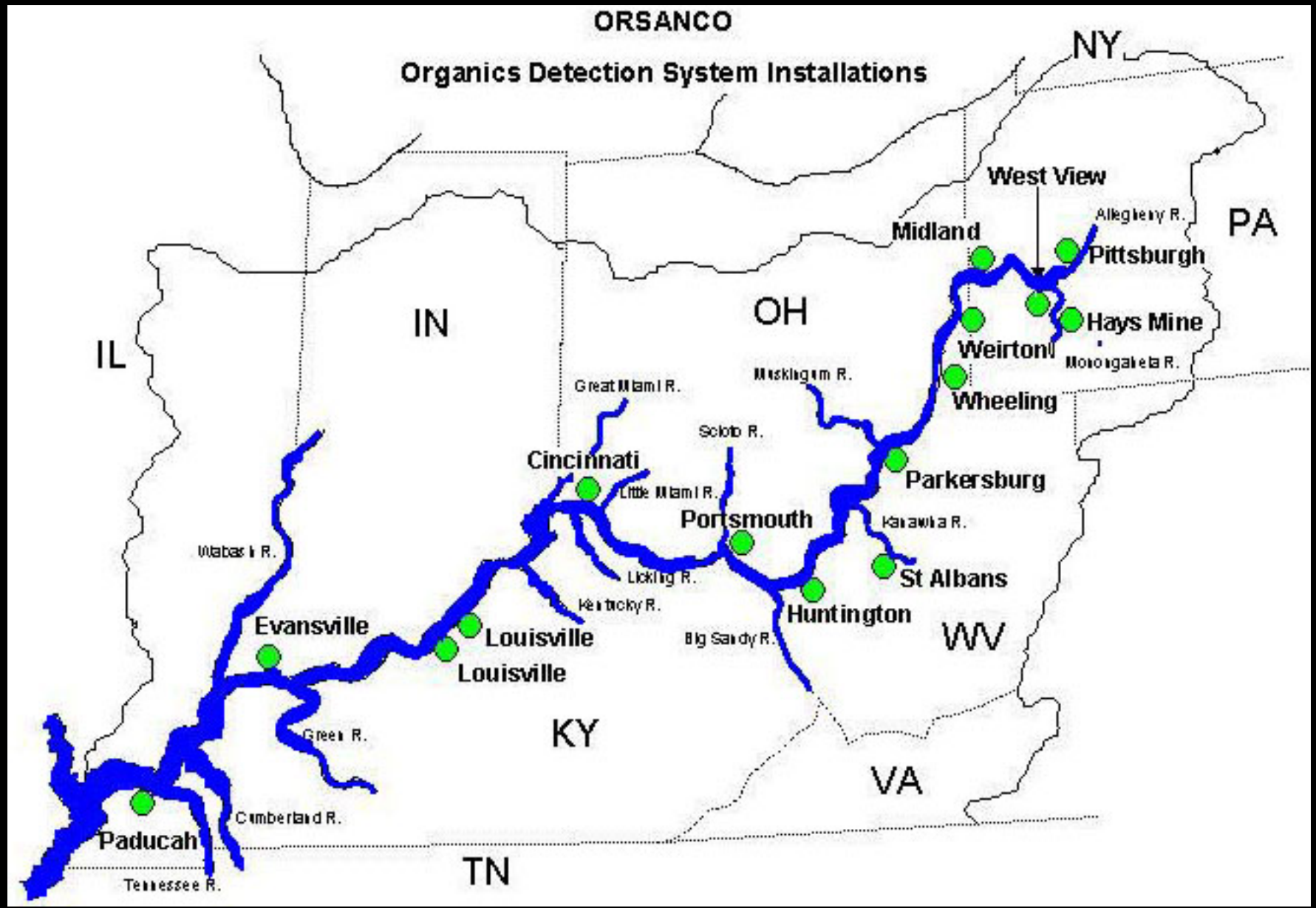
ODS BACKGROUND

- Established 1978 after carbon tetrachloride released into the Kanawha River contaminated water supply systems in Huntington, Portsmouth, Cincinnati, and Louisville.
- Initial assistance from U.S.EPA and water utilities established seven stations.
- By 1985 13 ODS stations were operational
- Presently 15 active operational stations spanning over 1000 miles of navigable waters from Pittsburgh to Paducah.

COMPOUNDS DETECTED BY THE ORGANICS DETECTION SYSTEM

Styrene
Bromoform
Chloroform
1,1 Dichloroethane
1,1 Dichloroethylene
Methylene Chloride
1,1,1 Trichloroethane
Trichlorofluoromethane
Chlorobenzene
1,2 Dichlorobenzene
1,4 Dichlorobenzene

Bromodichloromethane
Carbon Tetrachloride
Dibromochloromethane
1,2 Dichloroethane
1,2 Dichloropropane
Tetrachloroethylene
Trichloroethylene
Benzene
Ethylbenzene
1,3 Dichlorobenzene
Toluene


ORSANCO
Organics Detection System Installations
NY
PA
IN
OH
IL
KY
WV
VA
TN
West View
Midland
Pittsburgh
Allegheny R.
Hays Mine
Monongahela R.
Weirton
Wheeling
Muskingum R.
Great Miami R.
Scioto R.
Cincinnati
Little Miami R.
Parkersburg
Portsmouth
Kanawha R.
St Albans
Licking R.
Kentucky R.
Huntington
Big Sandy R.
Wabash R.
Evansville
Louisville
Louisville
Green R.
Cumberland R.
Paducah
Tennessee R.

ANALYTICAL EQUIPMENT

- Gas Chromatograph
- Purge and Trap Concentrator
- Flame Ionization Detector
- Telephone, computer, software

- Automated Multipoint Sampler
- Standards Addition Module


4506 AMPS
AUTOMATED MULTI-POINT SAMPLER
O-I-Analytical
1 2 3 4 5 6
RINSE
PURGE
SAMPLE
ALARM
POWER
SAM
STANDARDS ADDITION MODULE
PRIME
A
B
CAUTION !!!
HOT SURFACE INSIDE
VENT
4560
HEWLETT PACKARD
GC System

NEW TECHNOLOGY

- Argon Ionization Detector
  - Analysis time 5 minute

ORSANCO ODS

- ORSANCO owns and maintains equipment
  - Purchase of equipment underwritten by Commission
  - Operational lifetime, 10 years
- Stations provide daily analytical support
  - Personnel, support supplies (gasses)

OPERATING REQUIREMENTS

- 7-day/week operation (preferred)
- Process 3 samples daily
  - Blank
  - Standard
  - Raw
- Evaluate chromatograms
- Report unusual events

HOW'S IT WORK?

- Daily review of data by site, weekly by ORSANCO
- >2ppb, ORSANCO notified by site
  - Validate observation, GCMS if necessary
- Notifications
  - Downstream water utilities, NRC, States
- Quantifiable detections < 2%

ORSANCO's ROLE IN EMERGENCY RESPONSE

- Receive NRC reports 24/7
- Assure interstate notification
- Notify ODS sites
- Notify water utilities
- On-river reconnaissance
  - What, where, when, how long

ORSANCO's ROLE IN EMERGENCY RESPONSE

- Assist in coordination of sampling, analysis and information dissemination
- Identify location, leading/trailing edges
- Provide estimates of time of travel
  - Water utilities
- Provide estimates of in-stream concentration

ORSANCO's ROLE IN EMERGENCY RESPONSE

- Do not provide recommendations for treatment
  - Facilitate exchange of information between States/utilities
    - Coal slurry spill
  - Provide samples of spilled material for "jar" tests

EMERGENCY RESPONSE DIRECTORY

December
2001

ORSANCO

A M I

Advanced

Measurement

Initiative


AMI
ORSANCO

A M I

- Eight feet wide
- Twelve feet long
- Thirty inches deep
- 3/16” steel
- 3,800 lbs

A M I

- Batteries
- Solar Panels
- Radio Transmitter / antenna
- Private Aide to Navigation
- Painted yellow

A M I

- YSI
  - Temp, Cond, DO, pH, Turb, Chlorophyll
- SonTek
  - flow meter
- Turner Flourometer
  - Isco sampler pump head
- Room for four more probes
- Biologicals to be added next year

AMI's ROLE

- Mobile Water Quality Monitoring Platform
- Provide real-time information on water quality conditions
  - Ambient, site specific
- AMI-2
  - Spill monitoring downstream of spill sites