

# A Susquehanna River Basin Commission Presentation

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## An Overview of the Project Review Process and Docket Content

# What Does SRBC Regulate?

- **Surface Water Withdrawals** ( $\geq 100,000$  gpd)
- **Groundwater Withdrawals** ( $\geq 100,000$  gpd)
- **Consumptive Use** ( $\geq 20,000$  gpd)\*
- **Diversions** (Out of Basin  $\geq 20,000$  gpd; Into Basin at gal. 1)

\* For Natural Gas Industry, Withdrawals or Consumptive Use; (regulated from gal. 1)

# General Content of Dockets

- **Approval**
- **Project Information** (e.g., Approval Type, Water Use, Municipality, County, State),
- **Source Information** (Sub-basin, Watershed Boundary, Water Use Designation, Flow Statistics, etc.),
- **Approved Withdrawal Conditions** (Peak Withdrawal Amounts, Flow Protection, Method of Monitoring, Trigger Flows, etc.),
- **Standard Conditions** (Metering Plan, Record Keeping, Reopeners,
- **Special Conditions** (Expiration Date, Passby Conditions, Signage, Aquatic Nuisance Species, etc.),

# Consumptive Use

“Simplified” Definition:

Water that is used but not  
returned to the basin  
undiminished in quantity

# Withdrawals

(Groundwater or Surface Water)

## Definition:

A taking or removal of water from any source within the basin for use within the basin.

# Diversions

## Definition:

The transfer of water into or out of the basin.

# Consumptive Use (General)

- Application Data Requirements & Forms
- Notification Requirements (Agency, County Gov., Local Gov. and Legal Newspaper)
- Water Requirements
- Water Source(s)
- Metering Plan
- Consumptive Use Compensation Method

# Consumptive Use (Gas-Related)

## Approval-by-Rule (ABR)

- Application Data Requirements (On-Line Application)
- Requested Max. Daily Consumptive Use Amount
- Metering Plan
- Site Location Map
- Method of Consumptive Use Mitigation
- Notification Requirements (Agency, County Gov., Local Gov. and Legal Newspaper)
- Proof of PADEP Drilling Permit

# Groundwater Withdrawals

# Groundwater Withdrawals

- Application Data Requirements & Forms
- Notification Requirements (Agency, County Gov., Local Gov. and Legal Newspaper, Landowners within ½ Mile Radius of Project)
- Aquifer Test Plan (Pre-Approved by Staff)
- Aquifer Test Results (in Support of Application)
- Aquifer Test Waiver Request (with Supporting Data)
- Basin Analysis and Hydrogeologic Setting
- Impact Analyses - Existing Users & Surface Waters
- Passby Flow Determination (Where Appropriate)

# Surface Water Withdrawals

# Surface Water Withdrawals

- Application Data Requirements & Forms
- Notification Requirements (Agency, County Gov., Local Gov. and Legal Newspaper, and Riparian Landowners located ½ Mile Up/Downstream)
- Environmental Reviews, Aquatic Resource Surveys
- Safe Yield Calculation
- Cumulative Impact Analysis - Upstream Uses
- Cumulative Impact Analysis - Downstream Uses
- Passby Flow Determination ("Interruptible" Source)

# Commonly Used Engineering Terms Associated with Withdrawals:

$Q_{7-10}$

ADF

Passby Flow

# What is $Q_{7-10}$ ?

It's a "Drought flow"  
Condition

Lowest average flow  
experienced during a  
consecutive 7-day period that  
is estimated to recur on average  
only once every 10 years

# “Facts About Droughts”

- Droughts are naturally occurring events,
- SRBC cannot “prevent” droughts from occurring,
- We can minimize impacts of withdrawals during droughts.

10% of  $Q_{7-10}$

Is used as “threshold”  
to determine if passby  
is required for any  
given withdrawal.

# What is ADF?

“Average Daily Flow”

An average of all the individual daily flow rates for the entire period of record for any given streamflow gage.

# When is a “Passby” Required?

**Cumulative Water Demand** =  
Proposed Withdrawal + Existing Upstream Users

If **Cumulative Water Demand** is:

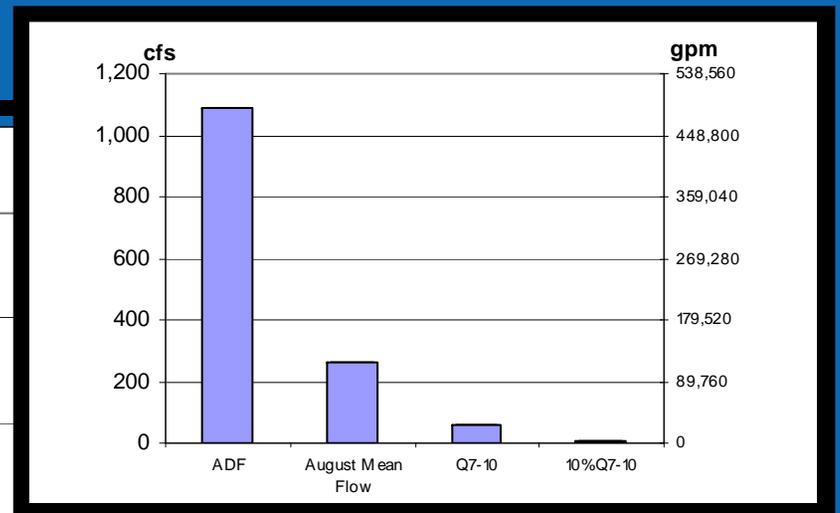
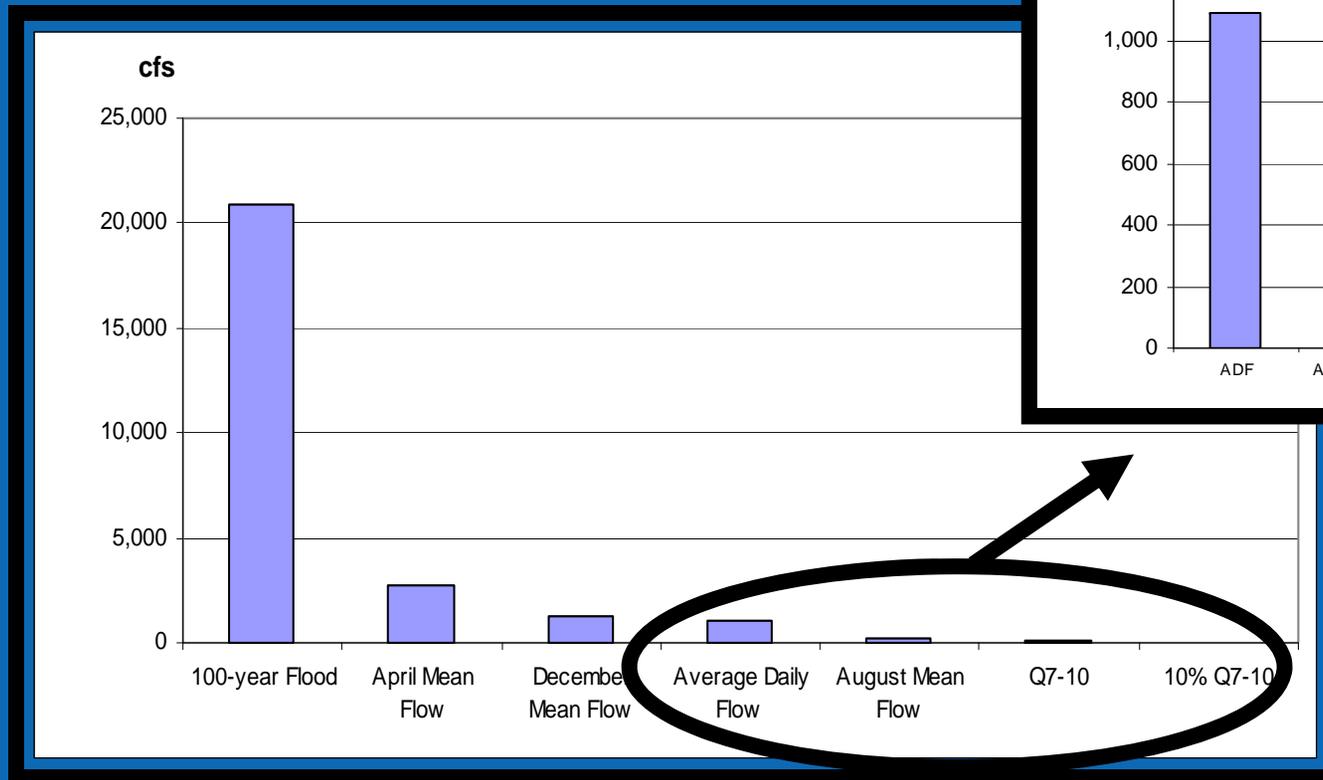
- $\leq 10\% Q_{7-10}$  (de minimis Standard), Passby Flow Not Required
- $> 10\%$  of  $Q_{7-10}$ , Passby Flow Required
  - Determine Passby Flow Condition (SRBC Policy No. 2003-01)
  - **Or**, Reduce Proposed Withdrawal Rate to  $\leq 10\%$  of  $Q_{7-10}$

# Passby Flow?

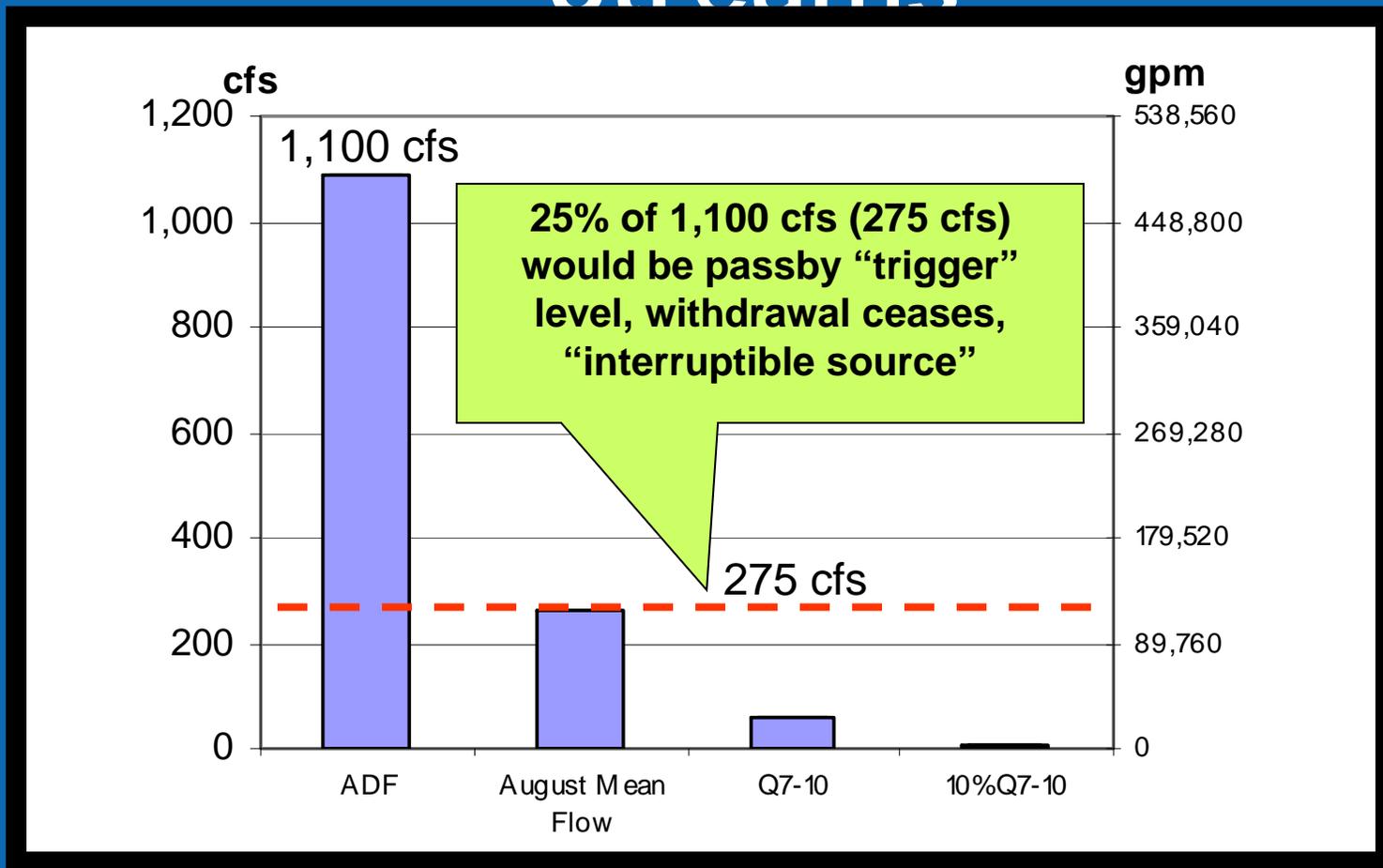
The amount of water that has to “pass by” the point of withdrawal.

Think “Interruptible”  
Withdrawal

# Hypothetical Example: Trout Stream, Passby Equals 25% of ADF



# Example of Low Flow Statistics for Rivers and Streams



# Summary of SRBC “Reviews”

- Science-based decision making,
- Cumulative impacts are critical,
- Timing and location of withdrawals very important,
- Use “interruptible sources” to minimize impacts on aquatic ecosystems during low flow periods.