PUBLIC WATER SUPPLY ASSISTANCE PROGRAM

WATER RESOURCE MANAGEMENT

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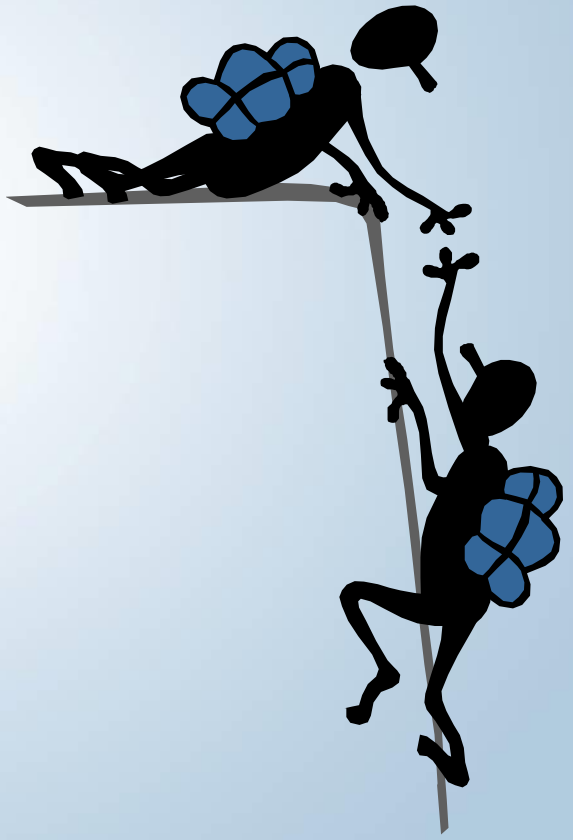
PUBLIC WATER SUPPLY ASSISTANCE PROGRAM

- Partnership with PADEP
- Outreach
- System specific assistance
- Training



PUBLIC WATER SUPPLY ASSISTANCE PROGRAM

- Planning
  - Evaluate current and future system demands
  - Develop schedule to add sources to systems
  - Plan financially to make application for pre-regulation sources

- Data collection
  - Assess hydrogeologic setting to determine potential operational testing and monitoring to support waiver requests
  - Plan several years in advance to collect adequate data
  - Evaluate data as it is collected; adjust monitoring accordingly

SUSQUEHANNA RIVER BASIN COMMISSION

STATEMENT OF MISSION

The mission of the Susquehanna River Basin Commission (SRBC), which is defined in the Compact, is to enhance public welfare through comprehensive planning, water supply allocation, and management of the water resources of the Susquehanna River Basin.

To accomplish this mission, the SRBC works to: reduce damages caused by floods; provide for the reasonable and sustained development and use of surface and groundwater for municipal, agricultural, recreational, commercial and industrial purposes; protect and restore fisheries, wetlands and aquatic habitat; protect water quality and instream uses; and ensure future availability of flows to the Chesapeake Bay.

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serve as an effective forum for resolution of water resource issues and controversies within the basin;

To be a leader in issues concerning the conservation, utilization, allocation, development, and management of water resources within the Susquehanna River Basin;

To encourage excellence in SRBC staff by affording opportunities for professional growth and development and by providing a stimulating work environment for all Commission employees; and

To provide public information and education about the water resources of the basin.

Groundwater Management Must Consider Environmental, Social, and Economic Needs

Because any use of ground water changes the subsurface and surface environment (that is, the water must come from somewhere), the public should determine the tradeoff between ground-water use and changes to the environment and set a threshold for what level of change becomes undesirable. As development of land and water resources intensifies, it is increasingly apparent that development of either ground water or surface water affects the other.

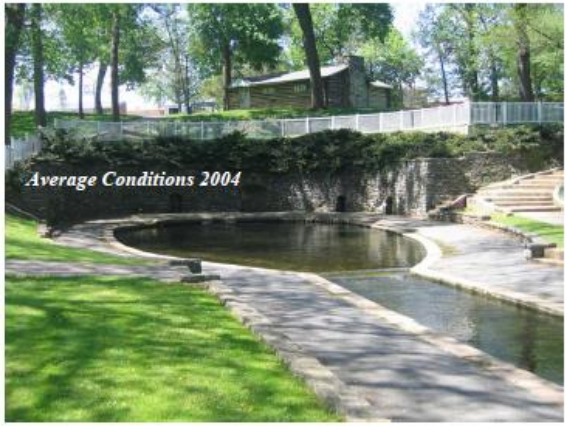
U.S. Geological Survey Circular 1186

GROUNDWATER MANAGEMENT PLAN

- Commission Publication 236 – on our website
- Sustainable yields
- Groundwater availability
- Geologic or other limitations

GROUNDWATER MANAGEMENT PLAN
FOR THE SUSQUEHANNA RIVER BASIN

June 2005
Publication No. 236



POTENTIALLY STRESSED AREAS

- PSA – Two or more of the following:
  - Diminishing groundwater yields
  - Diminishing stream or spring flows.
  - Expanded dry stream reaches.
  - Withdrawals within a groundwater basin exceed the recharge during a 1-in-10-year average annual drought based on a water budget analysis.
  - Known withdrawals in rapidly developing areas that exceed 50 percent of the recharge during a 1-in-10-year average annual drought.
  - Area where increased withdrawals from a poor or low-yielding (low permeability) bedrock unit cause conflicts among users.

- Eight areas defined in the Basin

WATER CHALLENGED AREAS

- WCA – Low yielding aquifers in developing areas.
  - Diabase
  - Bonneauville Shale
- Two areas identified

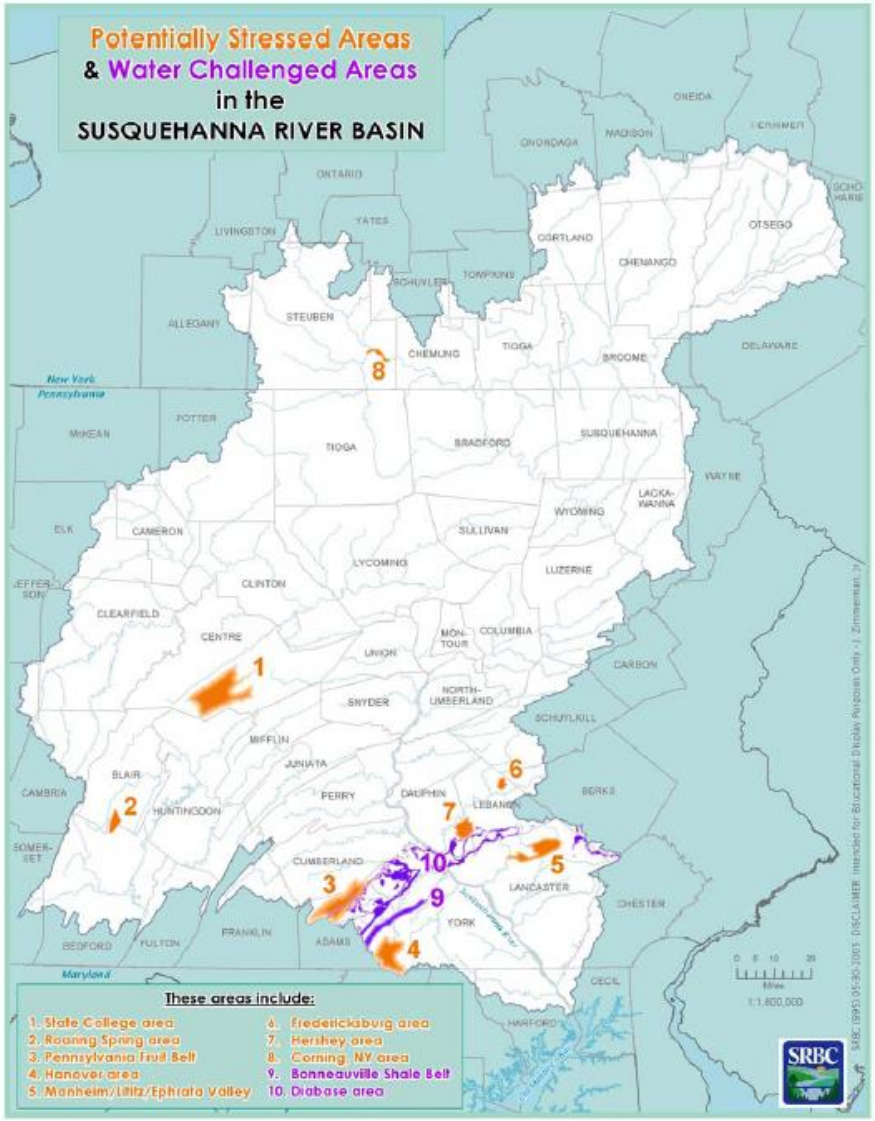


Figure 2.1. Potentially Stressed Areas and Water Challenged Areas in the Susquehanna River Basin

Sustainable: of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged
(Merriam-Webster)

SAFE YIELD

The ***safe yield*** is generally considered to be less than or equal to the average annual recharge for a groundwater basin. Such a withdrawal maintains a long-term balance between the amount of water received and the amount of water withdrawn. ***Safe yield*** ignores the natural (pre-development) balance between recharge to and discharge from a groundwater basin.

SUSTAINABLE YIELD

The ***sustainable yield*** is equal to the ***safe yield*** minus the amount of water needed to maintain groundwater dependent ecosystems. The amount of flow required to meet ecosystem's needs is dependent on the nature, sensitivity, and quality of the habitat.

- All groundwater withdrawals will have an impact
- Society must determine what impacts are acceptable

Dock on Crooked Lake in central Florida in the 1970's.

The same dock in 1990.

Photo: USGS Circular 1186

SURFICIAL IMPACTS OF OVER-PUMPING

View of the Ipswich River near South Middleton, Massachusetts (USGS)

Little Plover River, Portage County, WI

CLOSER TO HOME

SUBSIDENCE

Approximate location of maximum subsidence in United States identified by research efforts of Joseph Poland (pictured). Signs on pole show approximate altitude of land surface in 1925, 1955, and 1977.

USGS circular 1323

WHY IS SUSTAINABILITY IMPORTANT?

- Need to deliver product (water) with no interruptions
- Protects all users
- Preserve resources for future generations

- The aquifer is the only part of a system that cannot be replaced!

COMMON ISSUES FOR EXISTING PROJECTS

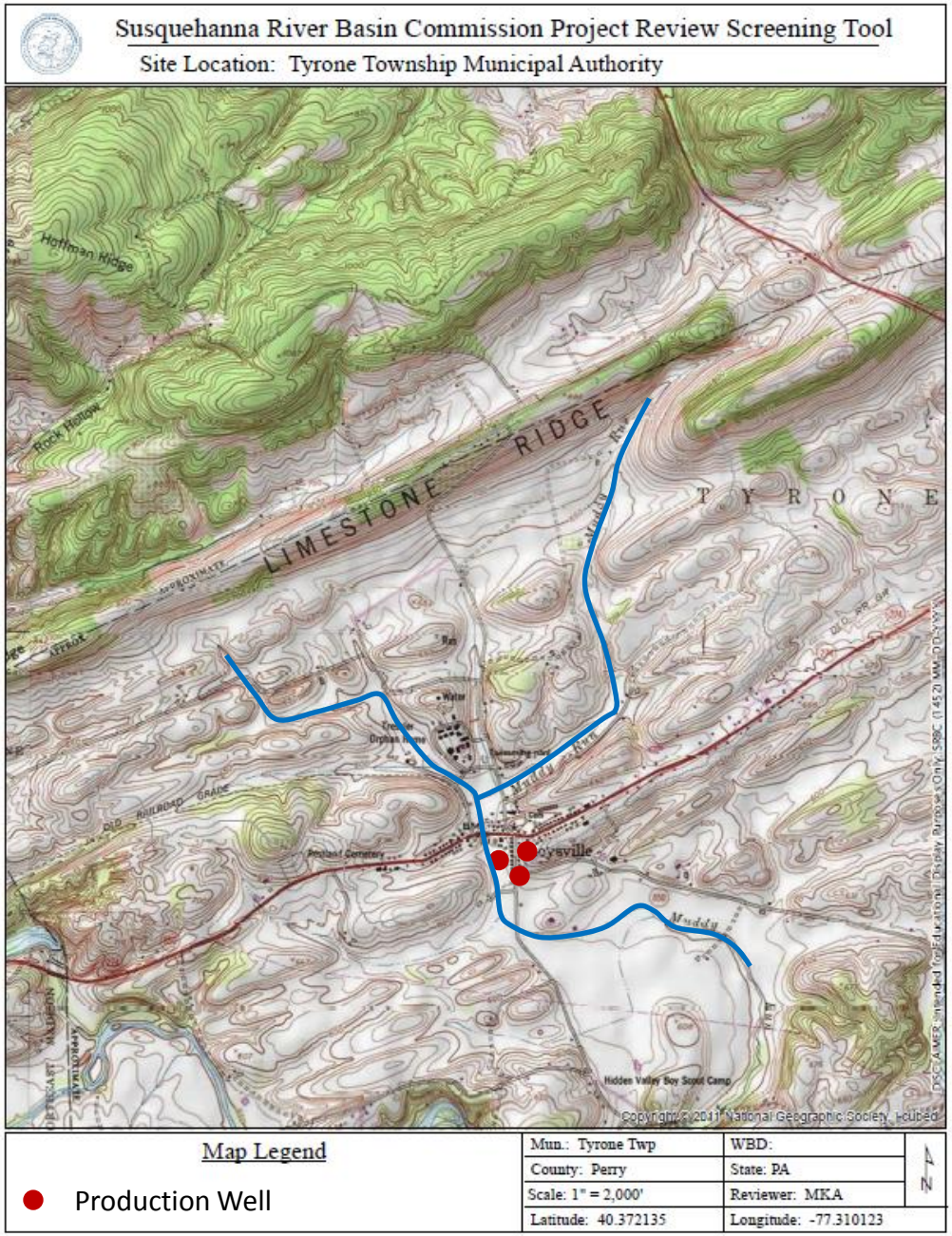
- Old approvals for old sources (Original permits may pre-date SRBC or DEP)
- Lack data to support the historic approval
- Standard for a renewal is the same as for a new source
- “Paper” water

PAPER WATER

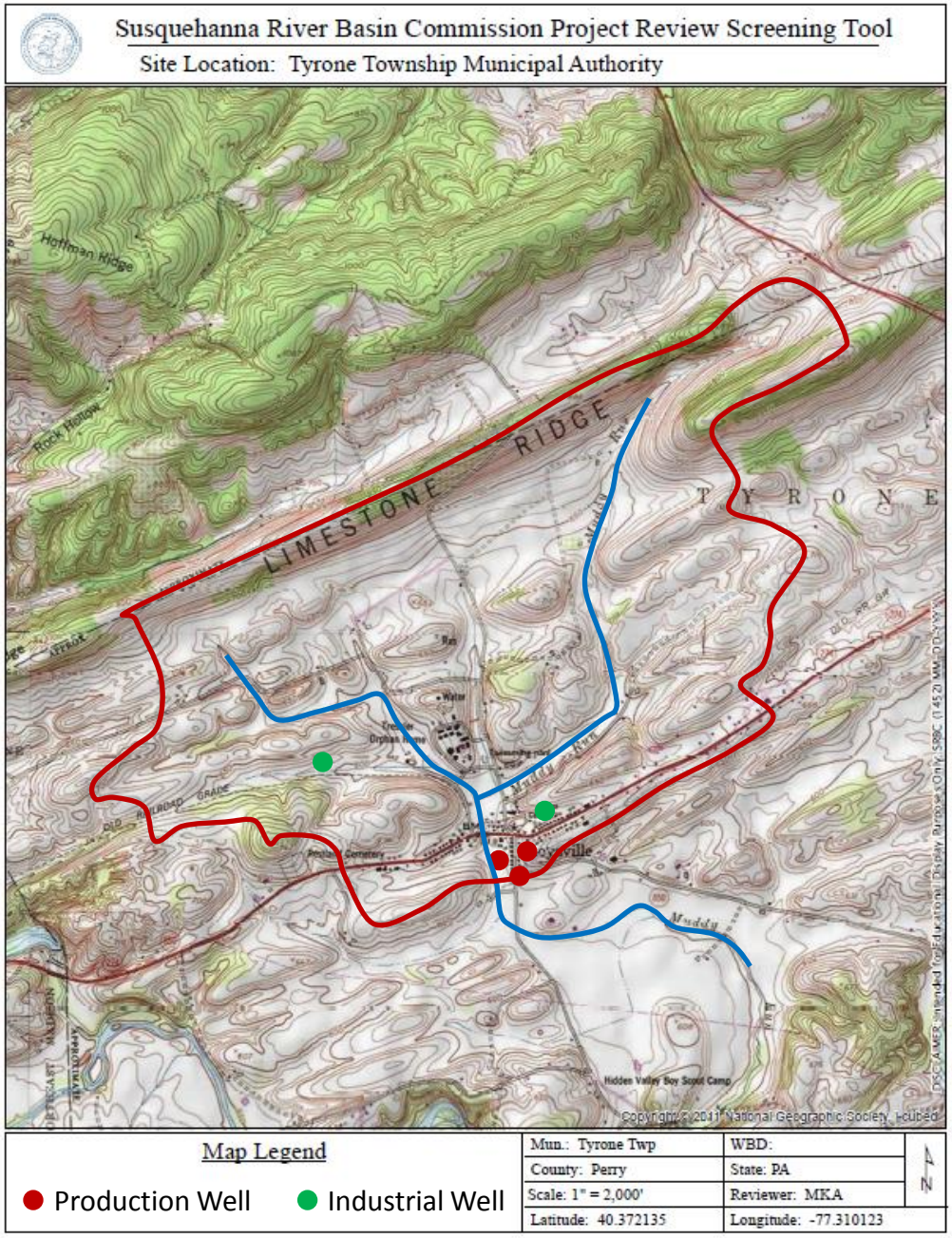
- Not demonstrated
- Complete aquifer testing
- Review historic withdrawal data

PAPER WATER EXAMPLE

- Multiple Wells
  - 1.0 mgd per well historic rate
  - Combined 3.0 mgd
- Never used or proven
  - Based on treatment, blown yield, or other estimate
  - Old approvals



- Multiple Wells
  - Requesting 1.0 mgd from each
- Near stream
- Small basin
  - ~ 2 square miles
  - 1-in-2 year recharge rate of 0.500 mgd/ mi^2
  - 1-in-10 year= 60% or 0.3 mgd
  - Basin drought recharge of 0.6 mgd
- Other Withdrawals
  - 0.10 mgd total



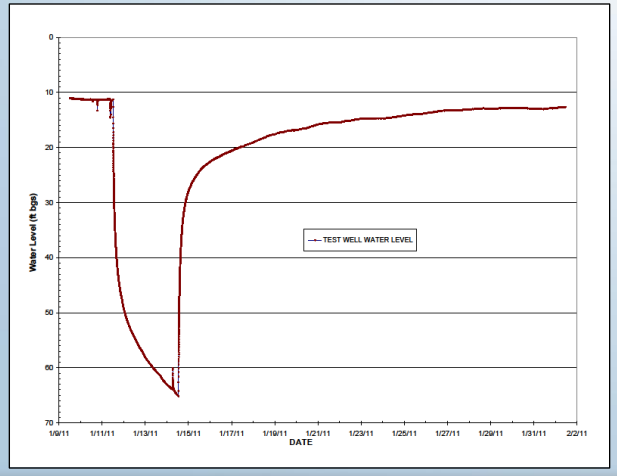
SRBC GROUNDWATER APPLICATION PROCESS

Pre-Drill Well Site Review (not required)

Well Drilling

Submit Aquifer Testing Plan

Conduct Aquifer Test



Pre-Application Meeting

Submit Application

SRBC Review

GOALS OF REGULATORY PROGRAM

1. Sustainable withdrawals

2. Impacts to competing groundwater or surface water users

3. Impacts to the environment

QUESTIONS?

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