

Kennett Township

Groundwater Resources – Assessment
Based on Current Data

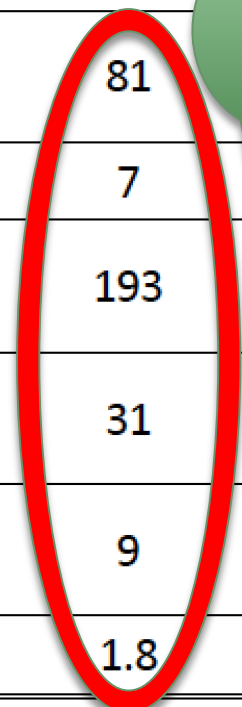
What we know today about groundwater resources in Kennett Township

Most recent data posted in chapter 4 of
the 2015 comprehensive plan

Table 4-2: Estimated Groundwater Balances in Kennett Township Sub-Basins

SUB-BASIN	ANNUAL BASEFLOW* (MILLION GAL/YEAR)	1998 GROUNDWATER WITHDRAWALS (MILION GAL/YEAR)			NET WITHDRAWAL AS % OF BASEFLOW*
		VOLUME WITHDRAWN	VOLUME RECHARGED	NET VOLUME WITHDRAWN	
BRANDYWINE CREEK ABOVE CHADDS FORD	1,098	65	133	-68	-6%
BRANDYWINE CREEK BELOW CHADDS FORD	3,313	112	31	81	2%
BURROWS RUN	799	38	31	7	1%
EAST BRANCH RED CLAY CREEK	1,096	257	63	193	18%
UPPER RED CLAY CREEK	1,360	40	9	31	2%
WEST BRANCH RED CLAY CREEK	1,917	293	284	9	<1%
MILL CREEK	1,409	14	12	1.8	<1%

What we are losing every year



Source: Watersheds, CCWRA, 2002. Note: *1 in 25 year annual baseflow is the amount of water needed to keep streams flowing in a 25 year low baseflow. These baseflows are used by DRBC for establishing withdrawal limits.

What do we know about these data?

- ◆ Volumes withdrawn are public withdrawals only
- ◆ Volumes recharged are from spray fields, other identified surface water applications (e.g. stormwater systems with infiltration)
- ◆ Assume that homes on groundwater wells and septic systems have zero net withdrawal
- ◆ Net withdrawal of 25% triggers concern

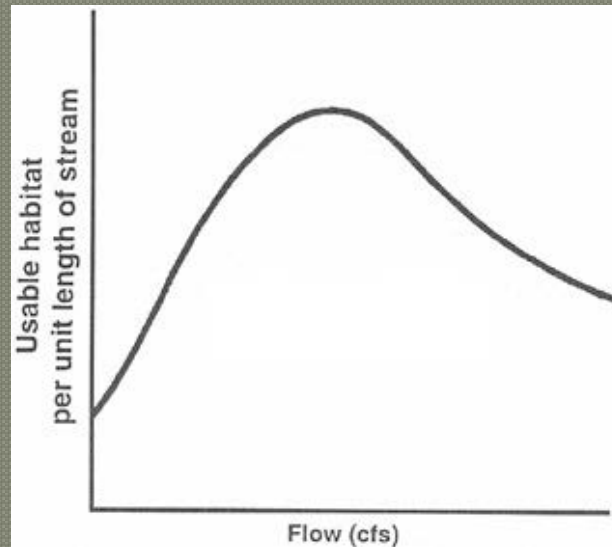
- ◆ Data are 20 years old
- ◆ When this assessment was made, it was projected that in 20 years (i.e., now) the East Red Clay net withdrawal as a percentage of baseflow would be 22%

What has changed in 20 years?

- ◆ Yeatman tract well has been approved – not pumping yet but when it does withdrawal will increase
- ◆ No new spray fields to increase recharge
- ◆ Kennett Township has approved a significant amount of high density residential development hooked to Kennett public sewage system – high amount of usage from groundwater withdrawals without recharge from surface discharge

What is the environmental impact?

- ◆ Habitat for aquatic fauna in streams is defined by stream discharge (flow)



- ◆ More wells will fail, there will be more need for pump tests before new wells can be drilled

What could be done to reduce deficit (if we decide it is a problem)?

- ◆ Invest in property and infrastructure for more sprayfield sewage effluent application
- ◆ Change ordinances to promote storm water infiltration
- ◆ Control public water usage

How should we decide if it is a problem?

- ◆ Update the data
- ◆ If the county took it on, it would take several days of effort, would use publicly available data, cost is one consideration, availability is another
- ◆ John Gaat did original analysis, could contract him to update data
- ◆ Could limit the effort to Red Clay Watersheds only– majority of the Township surface area