Estimating groundwater use from exempt wells
Exempt wells
Data
How we estimate
Unknowns
How to improve
EXEMPT WELLS
EXEMPT WELLS

NO PERMITTING REQUIREMENTS
Texas Water Code exemptions

- Domestic and stock use
- Rig supply
- Mining
- Other exemptions described in district rules or enabling legislation
Why care?

• Exempt groundwater production typically not metered or reported, but still happening

• Districts need to know amount of available groundwater and amount used in district for permitting decisions
DATA FOR ESTIMATES
• County-Other (for domestic)
• Livestock
• Mining
• Irrigation

www.twdb.texas.gov/waterplanning/waterusesurvey/historical-pumpage.asp
TWDB water demand projections

Water Use Survey
• Population
• Livestock
• Mining
• Irrigation

www.twdb.texas.gov/waterplanning/data/projections/index.asp
TWDB Groundwater Database (GWDB)

Water Use Survey

Water demand projections
• Aquifer codes
• Water use classification
• Locations

www.twdb.texas.gov/groundwater/data/gwdbbrpt.asp
Submitted Drillers Reports (SDR) Database

Water Use Survey

Water demand projections

GWDB
• Proposed water use
• Locations
• Well depths and screened intervals
• Borehole size

www.twdb.texas.gov/groundwater/data/drillersdb.asp
District Data

- Water Use Survey
- Water demand projections
- GWDB
- SDR Database
HOW WE ESTIMATE WITH AVAILABLE DATA
Water use data from the last 5 years

Average percent use from groundwater
Water use data from the last 5 years

Average percent use from groundwater

Projections based on percent groundwater use and projected demand by type

Growth rate

Projections based on most recent 5 years of water use survey data, averaged
Water use data from the last 5 years
Average percent use from groundwater

Projections based on percent groundwater use and projected demand by type
Growth rate
Projections based on most recent 5 years of water use survey data, averaged

Average projected use from groundwater
Average projected use from groundwater
Average projected use from groundwater

Percentage of exempt wells from GWDB and SDR database by aquifer in an area
Average projected use from groundwater

Percentage of exempt wells from GWDB and SDR database by aquifer in an area

Well exemptions by district
Exempt groundwater use by aquifer
Exempt groundwater use by aquifer

District input
Exempt groundwater use by aquifer

District input

Refined exempt groundwater use by aquifer
THE GREAT UNKNOWN
• Not all pumping is reported in the TWDB Water Use Survey
• Data not always accurate
• Not all wells that exist are in the TWDB Groundwater Database

www.twdb.texas.gov/groundwater/data/gwdbbrpt.asp
• Proposed water use may not be current water use
• No aquifer picks
• Some irrigation wells may be domestic wells?

www.twdb.texas.gov/groundwater/data/drillersdb.asp
HOW TO
GET BETTER
ESTIMATES
• Combine stratigraphic interpretation from groundwater availability models and TWDB BRACS program with SDR information

• Look at borehole sizes for irrigation wells that may be domestic wells?

www.twdb.texas.gov/groundwater/data/drillersdb.asp
District collaboration

- Water Use Survey
- Water demand projections
- GWDB
- SDR Database
That’s all, folks!

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Texas Water Code exemptions

Domestic and stock use
“...drilling or operating a well used solely for domestic use or for providing water for livestock or poultry if the well is: A) located or to be located on a tract of land larger than 10 acres; and B) drilled, completed, or equipped so that it is incapable of producing more than 25,000 gallons of groundwater a day.” (TWC 36.117(b)(1))

Rig supply
“...drilling a water well used solely to supply water for a rig that is actively engaged in drilling or exploration operations for an oil or gas well permitted by the Railroad Commission of Texas provided that the person holding the permit is responsible for drilling and operating the water well and the water well is located on the same lease or field associated with the drilling rig.” (TWC 36.117(b)(2))

Mining
“...drilling a water well authorized under a permit issued by the Railroad Commission of Texas under Chapter 134, Natural Resources Code, or for production of water from any well to the extent the withdrawals are required for mining activities regardless of any subsequent use of the water.” (TWC 36.117(b)(3))

Other exemptions described in district rules or enabling legislation