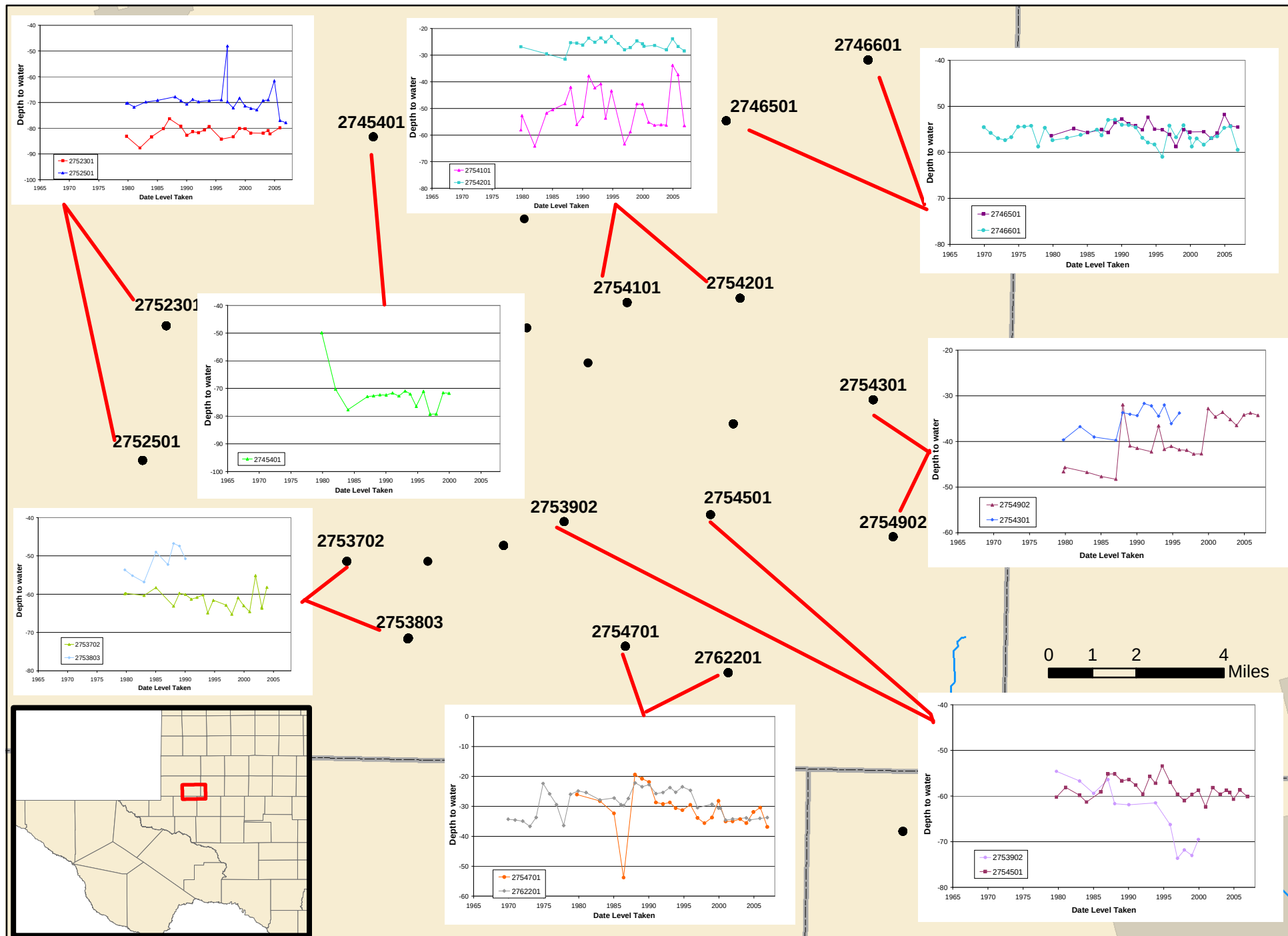


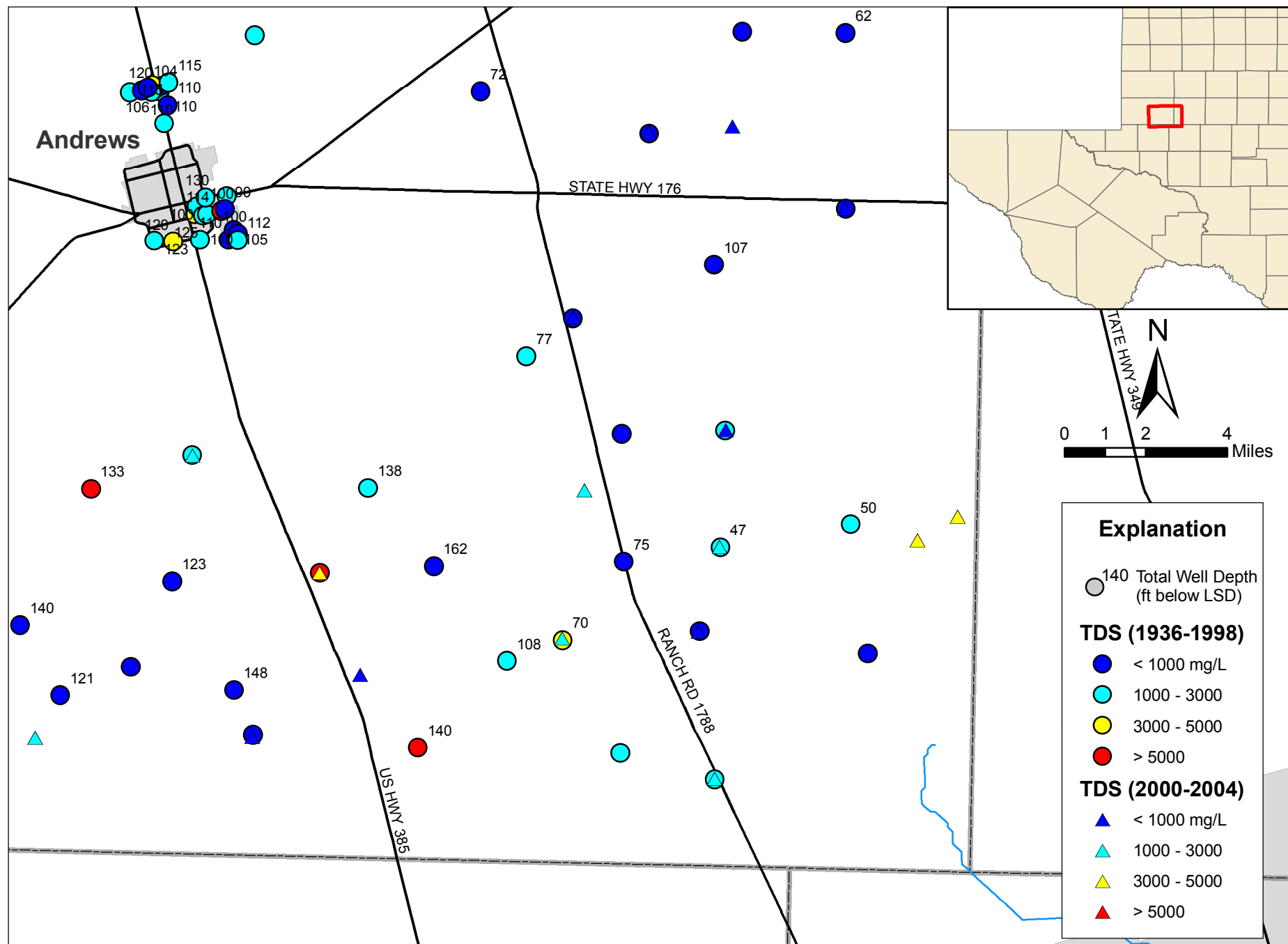


MAP SHOWING HYDROGRAPHS OF WELLS IN
SOUTHEAST ANDREWS CO. CONTAINING DATA 1970-2006

Figure 4-1

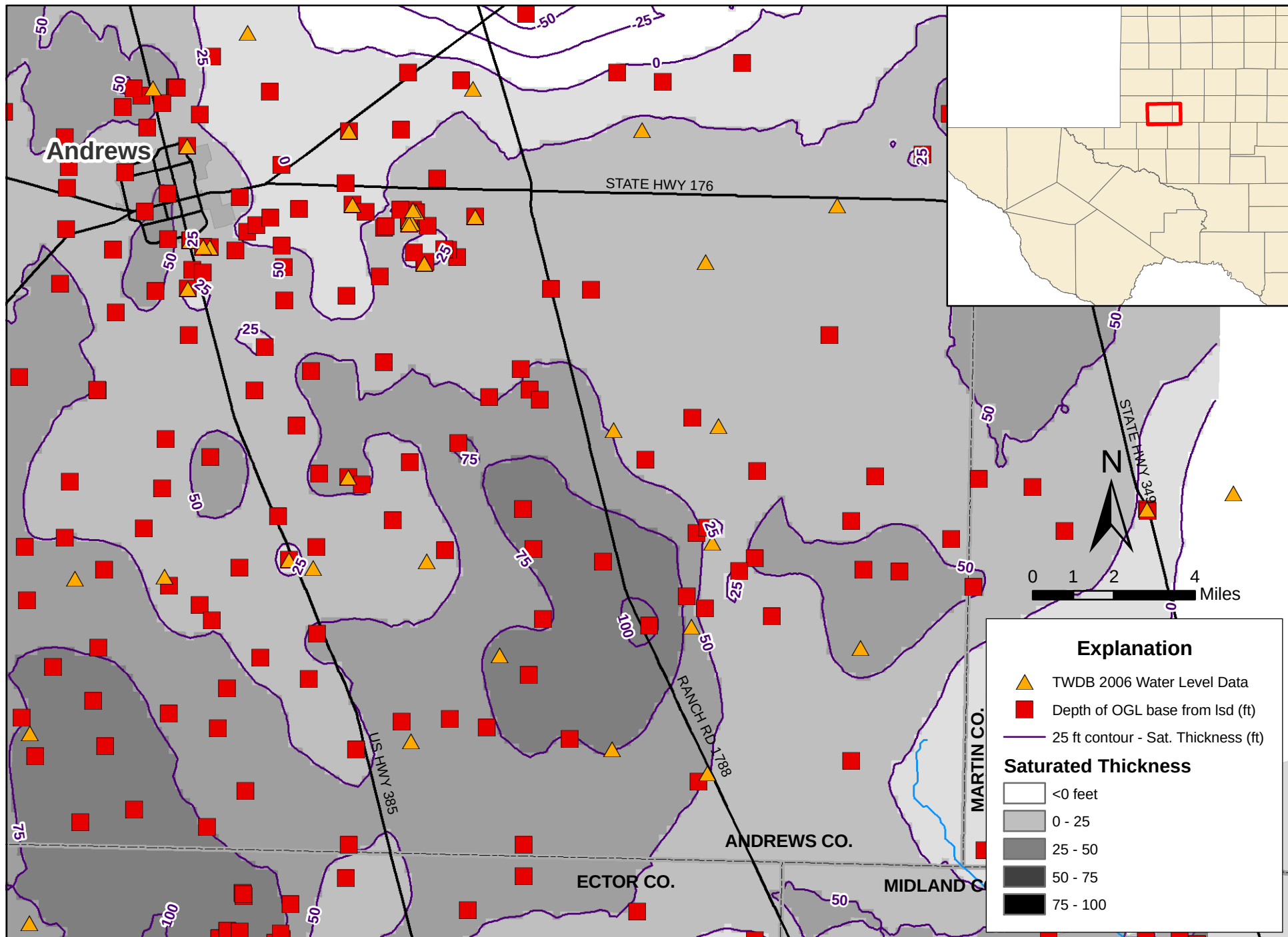






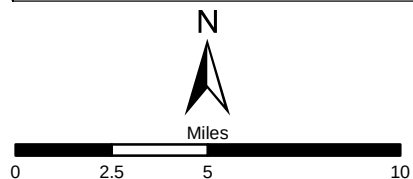
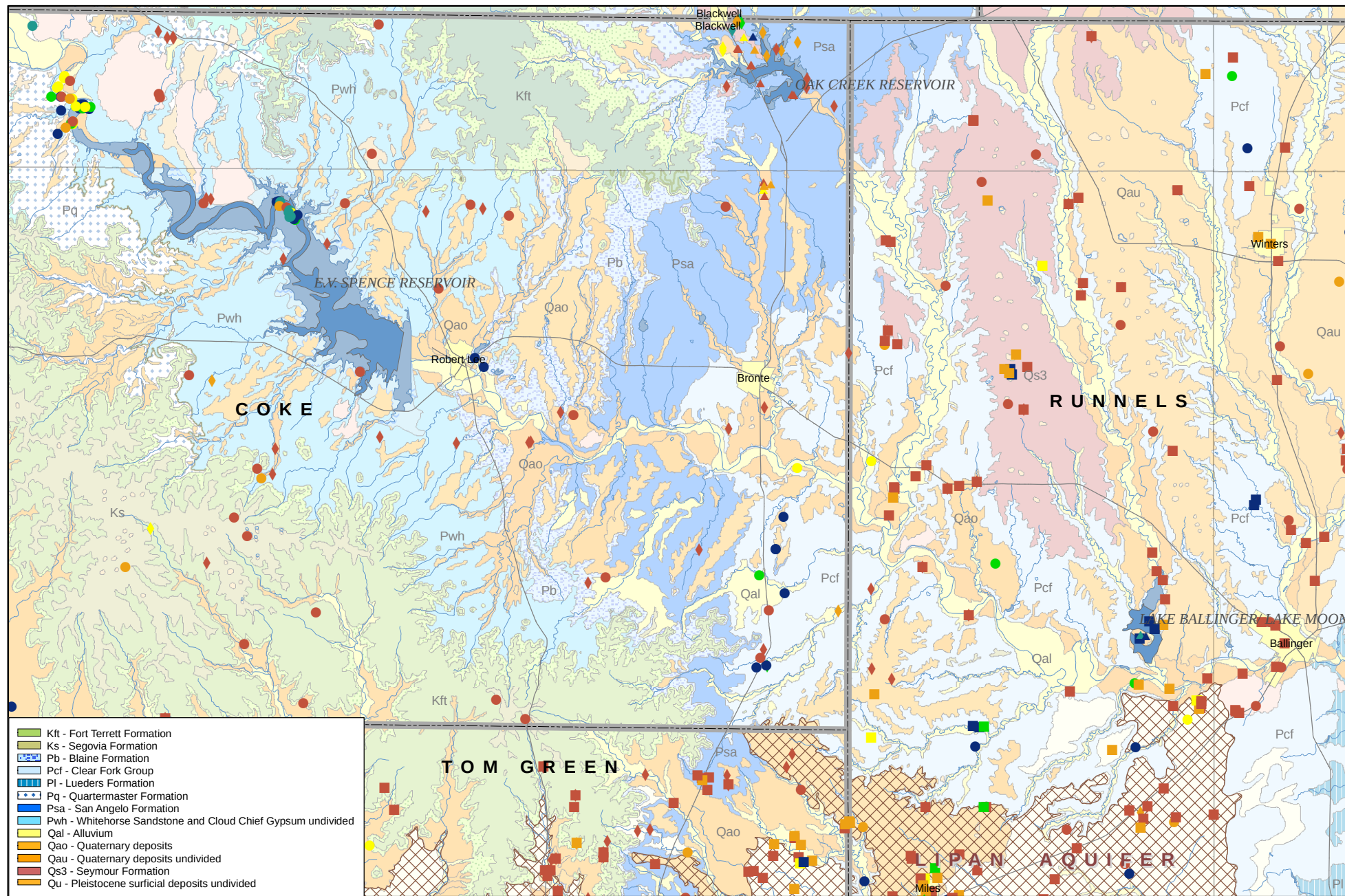
WATER QUALITY MAP SHOWING CONCENTRATION OF TOTAL DISSOLVED SOLIDS

Figure 4-3



MAP SHOWING SATURATED THICKNESS ESTIMATE USING ALL BASE OF OGALLALA
AND WATER LEVEL SOURCES AVAILABLE

Figure 4-4



WELL PRODUCTION, IN GPM **COKE AND WESTERN RUNNELS COUNTIES, TEXAS**

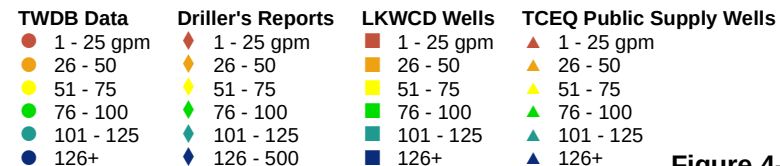
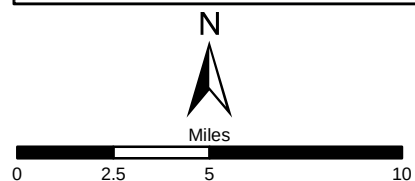
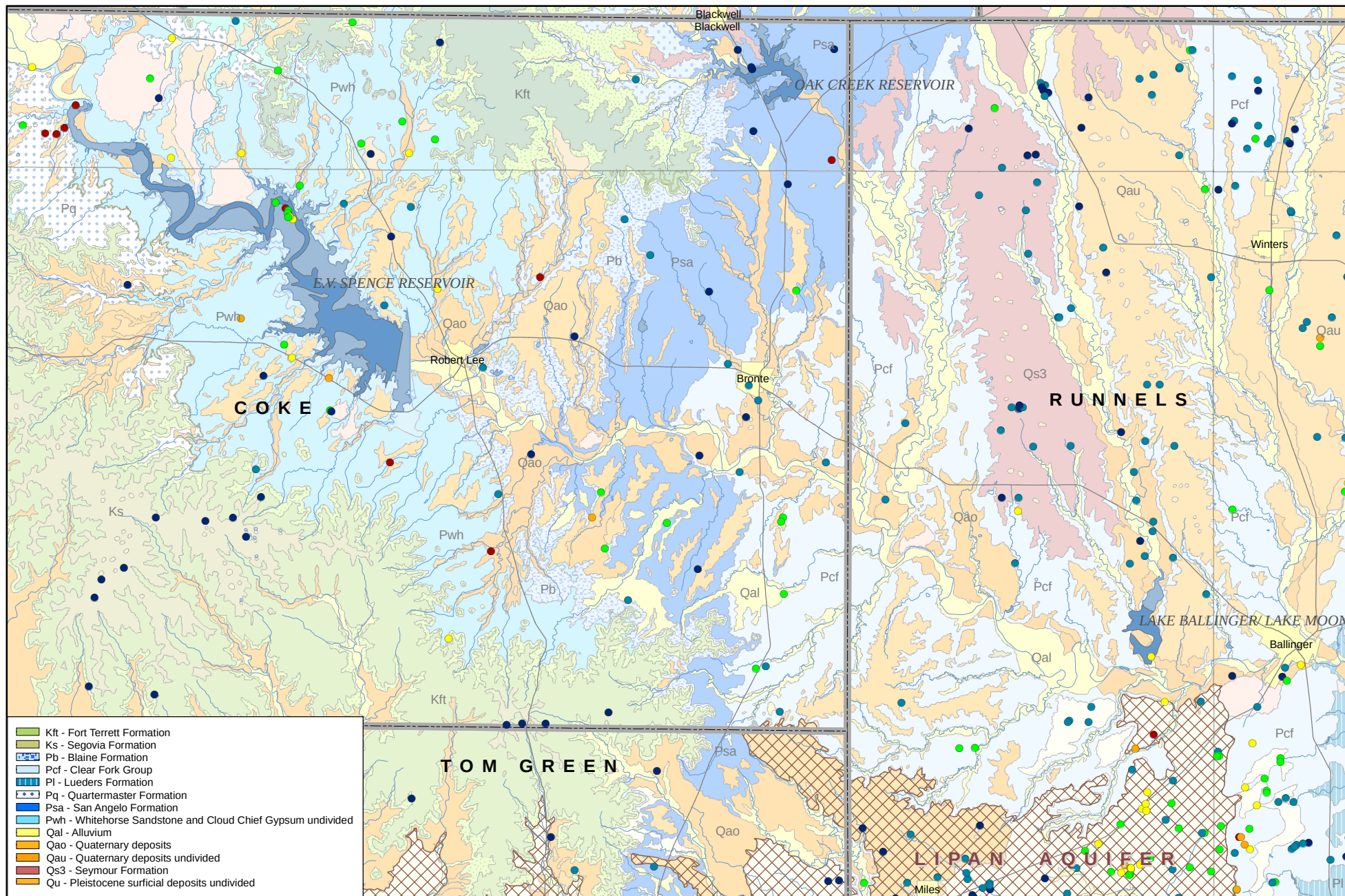


Figure 4-7



AVERAGE TOTAL DISSOLVED SOLIDS (MG/L)
COKE AND WESTERN RUNNELS COUNTIES, TEXAS

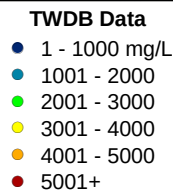
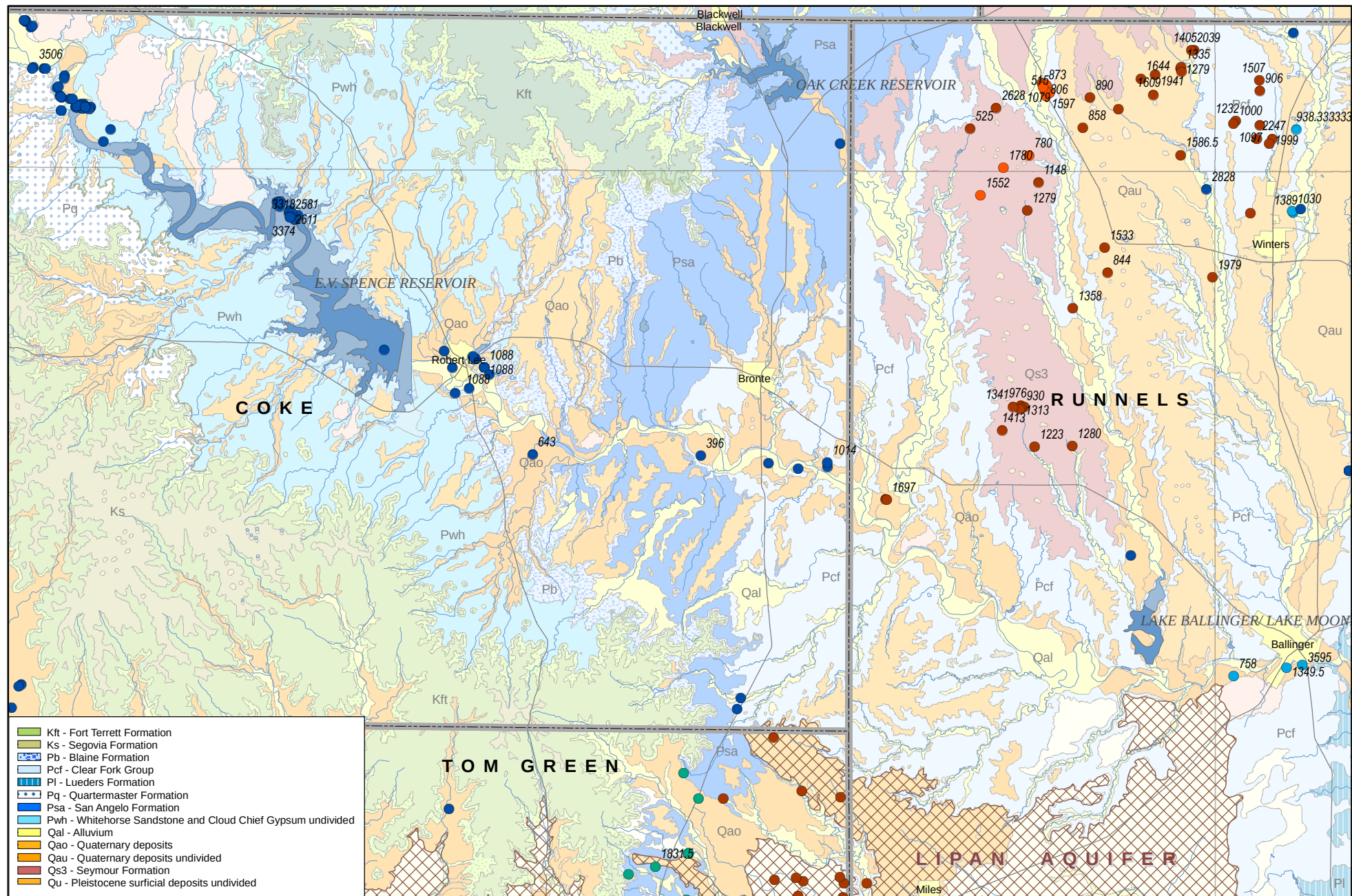


Figure 4-8

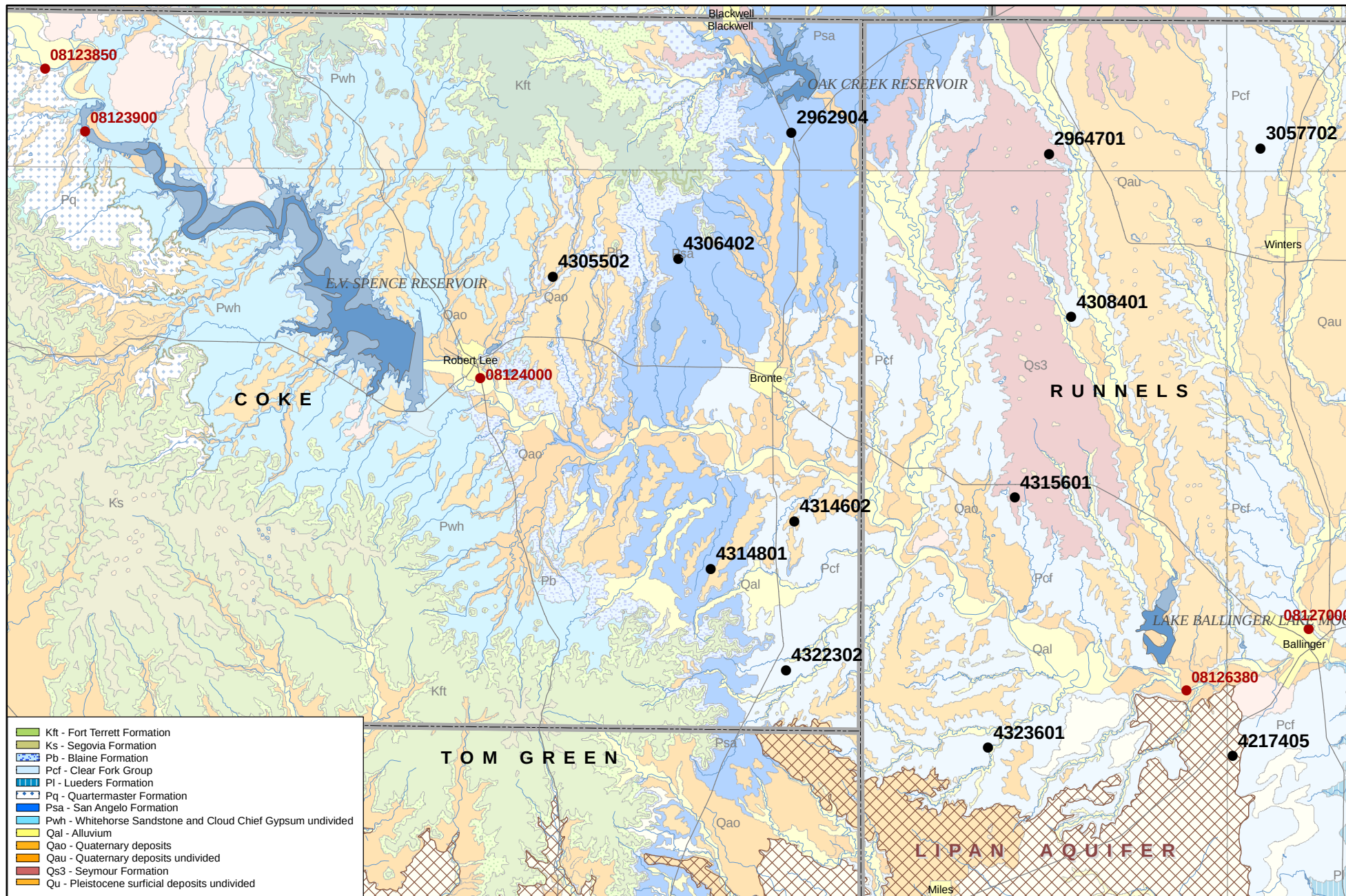


PRODUCING UNIT WITH TOTAL DISSOLVED SOLIDS (MG/L)
COKE AND WESTERN RUNNELS COUNTIES, TEXAS

Producing Unit with Average TDS (mg/L)

- Alluvium
- Alluvium
- Choza Formation
- Merkel Dolomite Member
- San Angelo Formation

Figure 4-9



Miles

0 2.5 5 10

SELECTED TWDB WELL LOCATIONS AND USGS GAGING STATIONS COKE AND WESTERN RUNNELS COUNTIES, TEXAS

- TWDB Well (Hydrograph)
- USGS Gaging Station

Figure 4-10

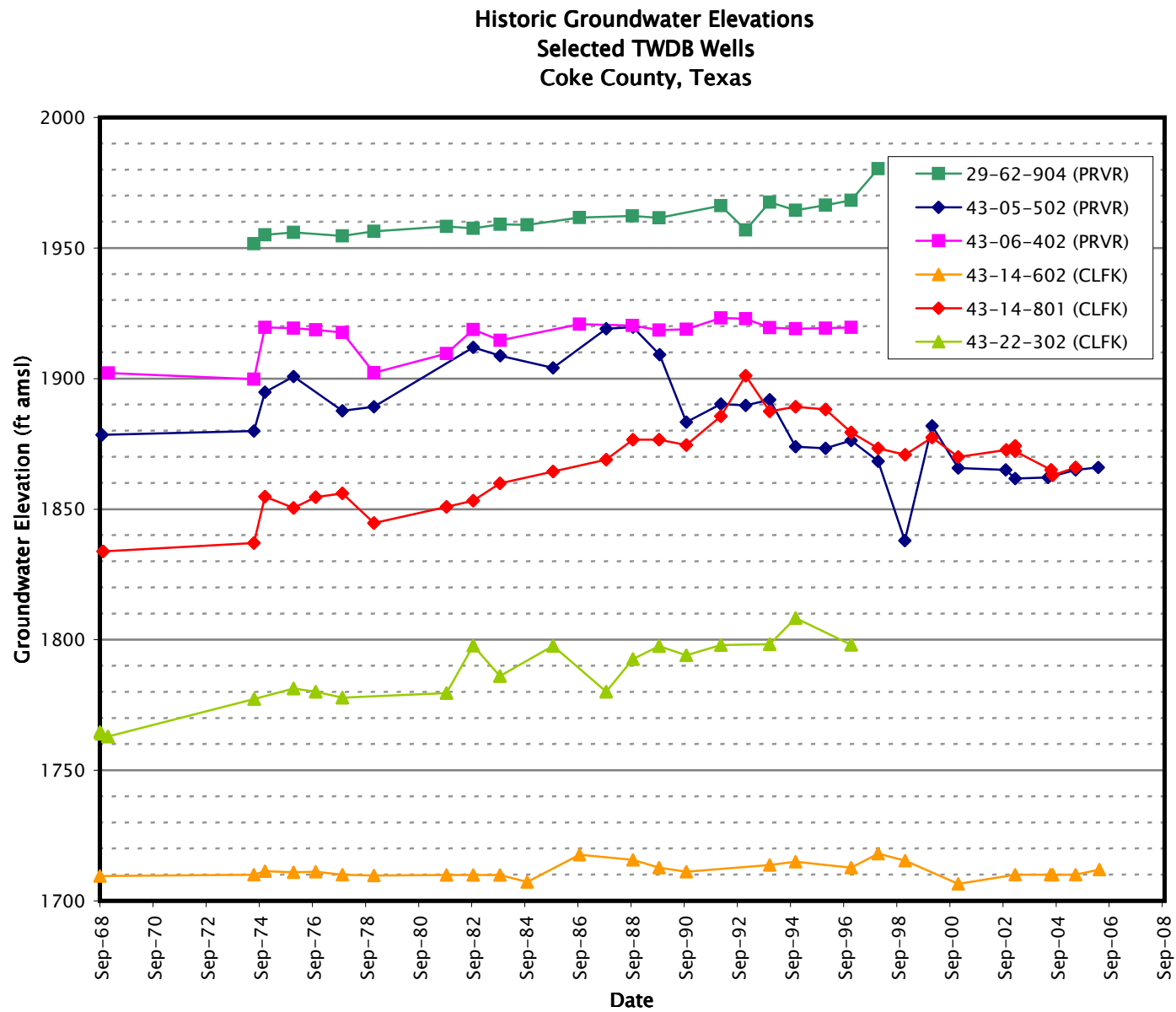


Figure 4-11

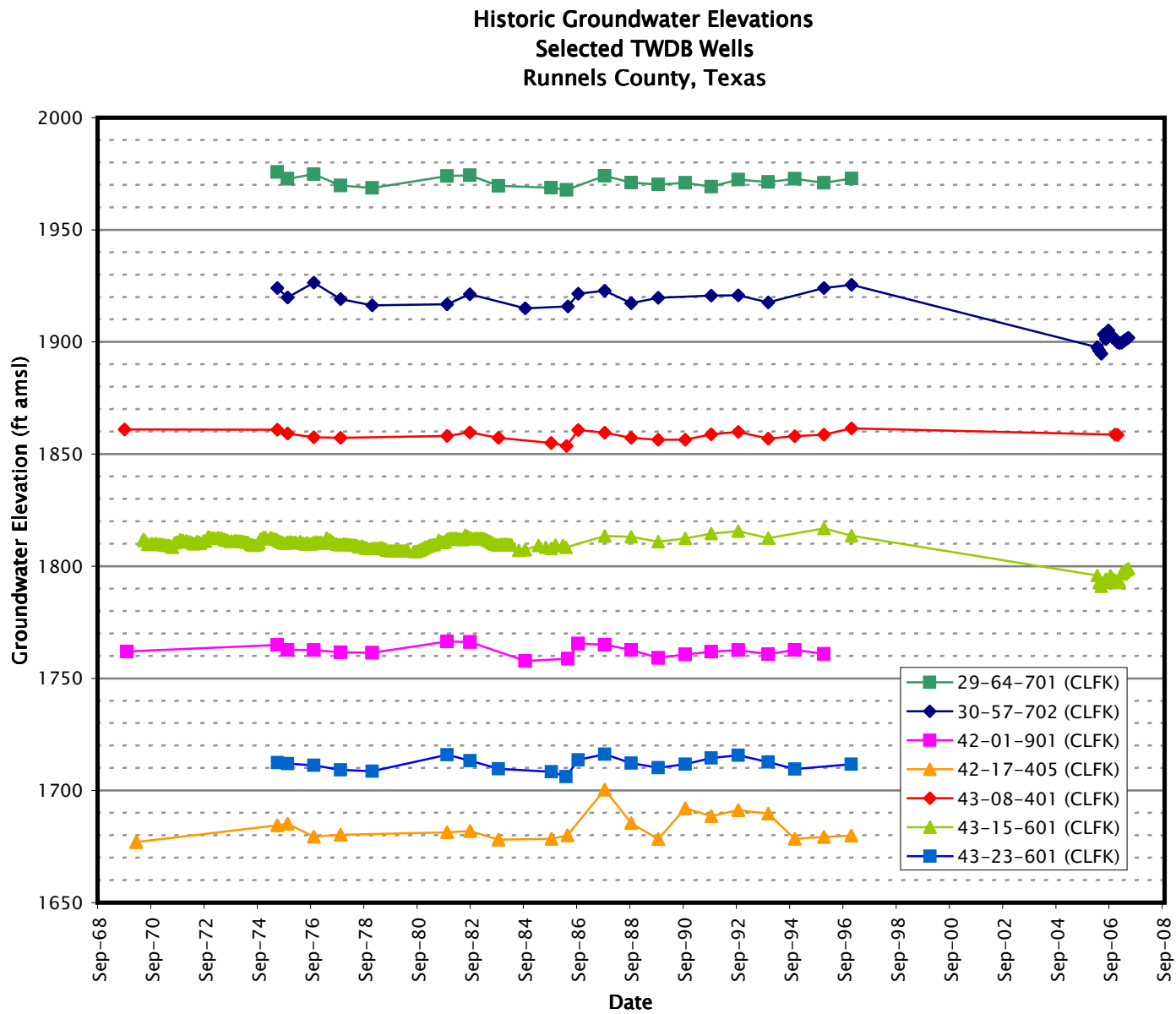


Figure 4-12

	Total TWDB Region F Wells	Wells with Production Reported	Wells with Production Reported >100 GPM	Wells with Production Reported (%)	Wells with Production Reported >100 GPM (%)
MAJOR AQUIFERS					
Pecos Valley Alluvium	2,584	544	366	21	14
Edwards–Trinity (Plateau)	11,130	2,080	623	19	6
Ogallala	1,639	110	42	7	3
Trinity	1,118	93	6	8	1
MINOR AQUIFERS					
Capitan Reef	99	21	11	21	11
Ellenburger–San Saba	206	57	8	28	4
Hickory	1,015	298	213	29	21
Rustler	104	23	10	22	10
Dockum	1,617	659	336	41	21
Lipan	486	93	62	19	13
OTHER AQUIFERS					
Alluvium					
Cambrian	3,217	334	122	10	4
Permian					

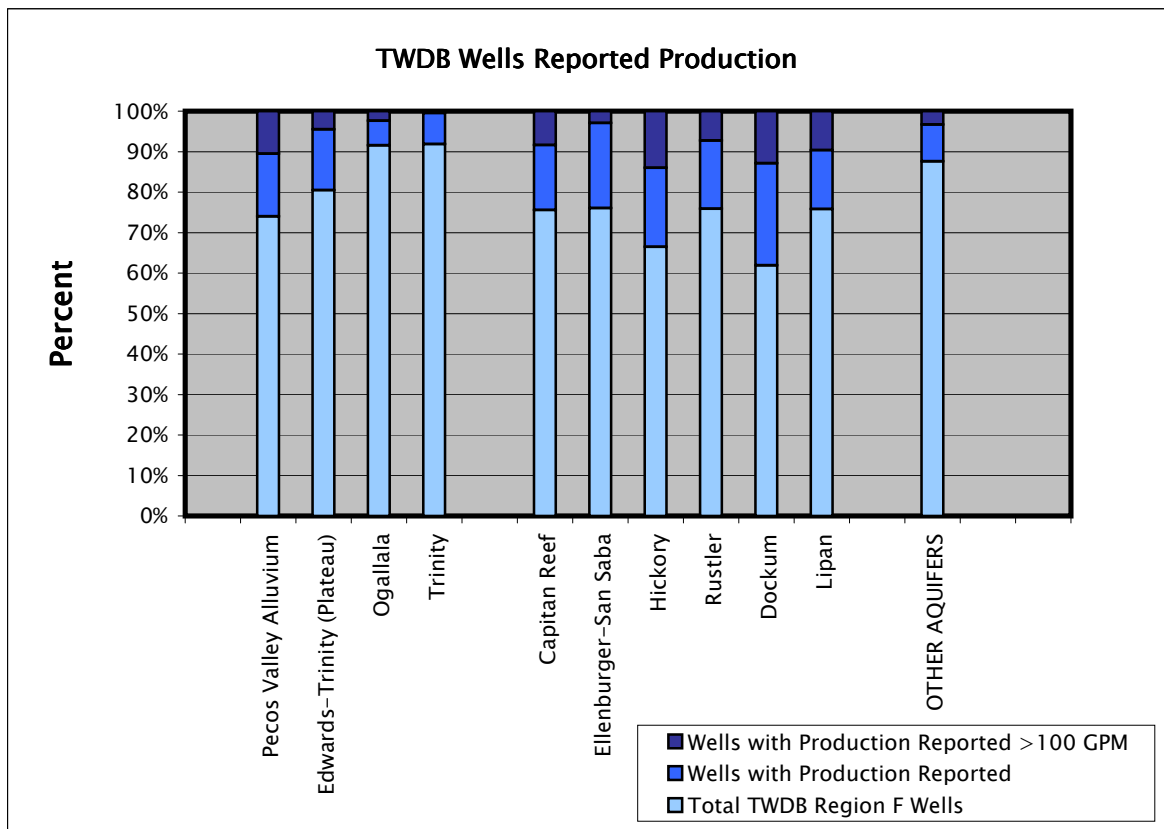
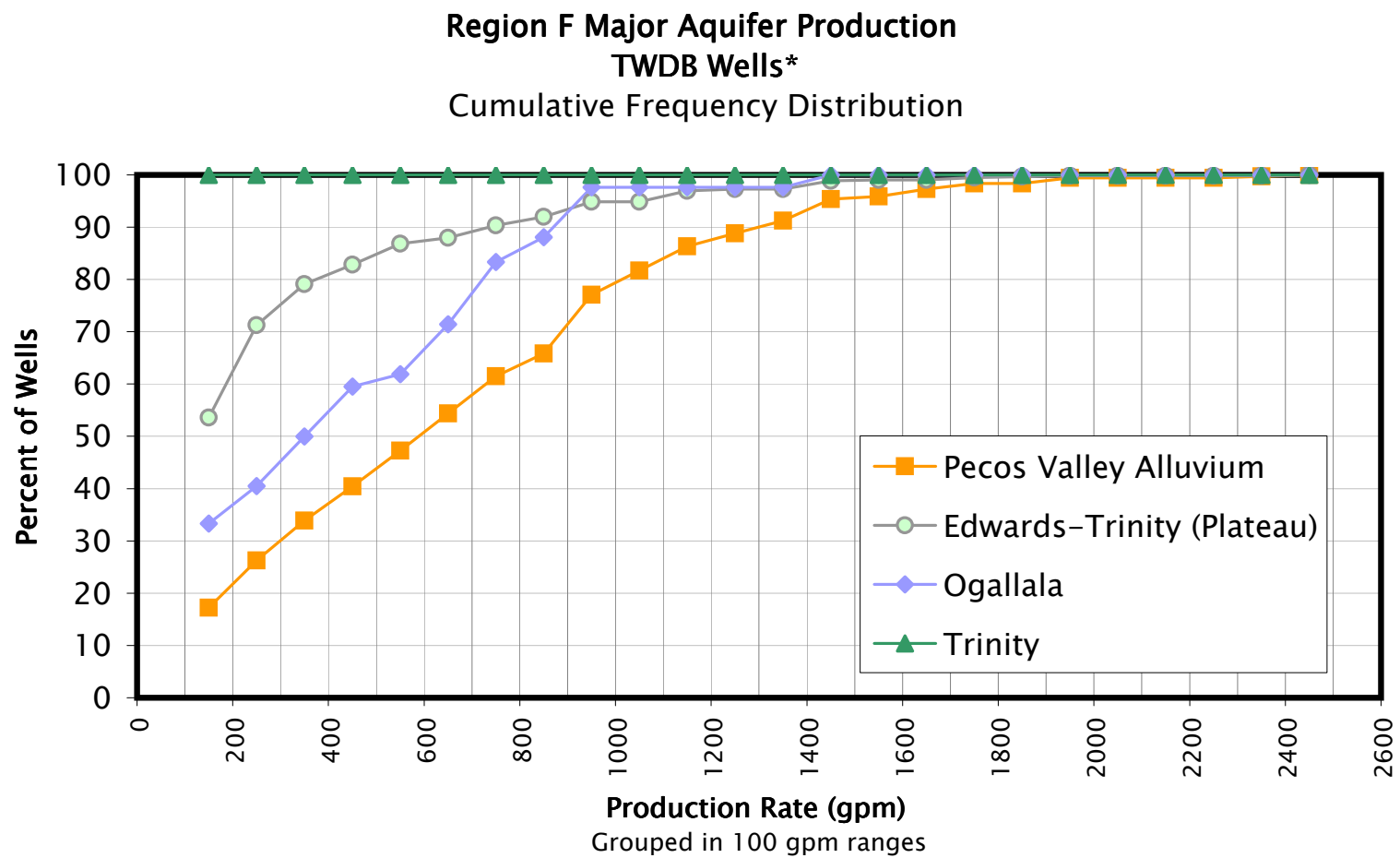
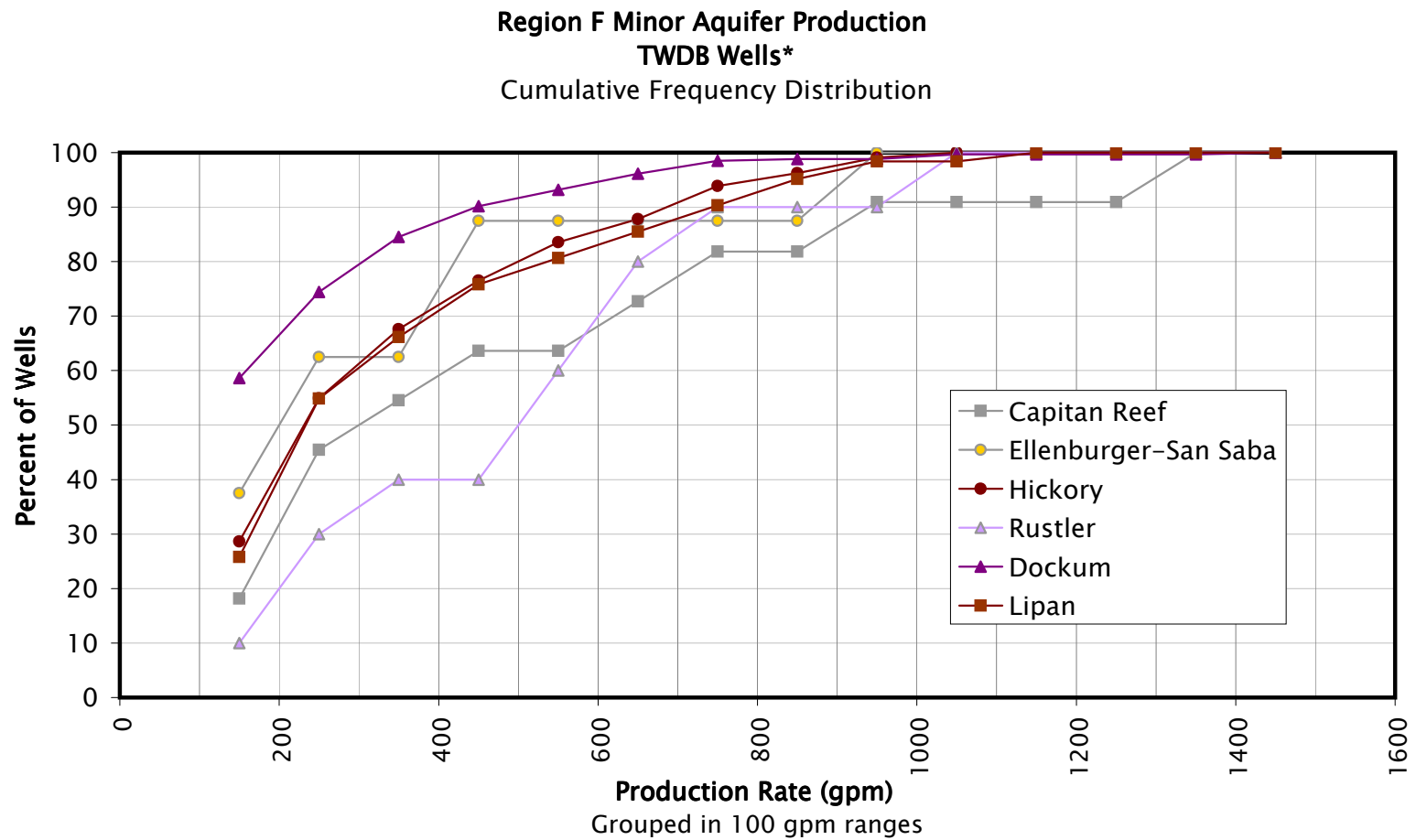


Figure 4–13



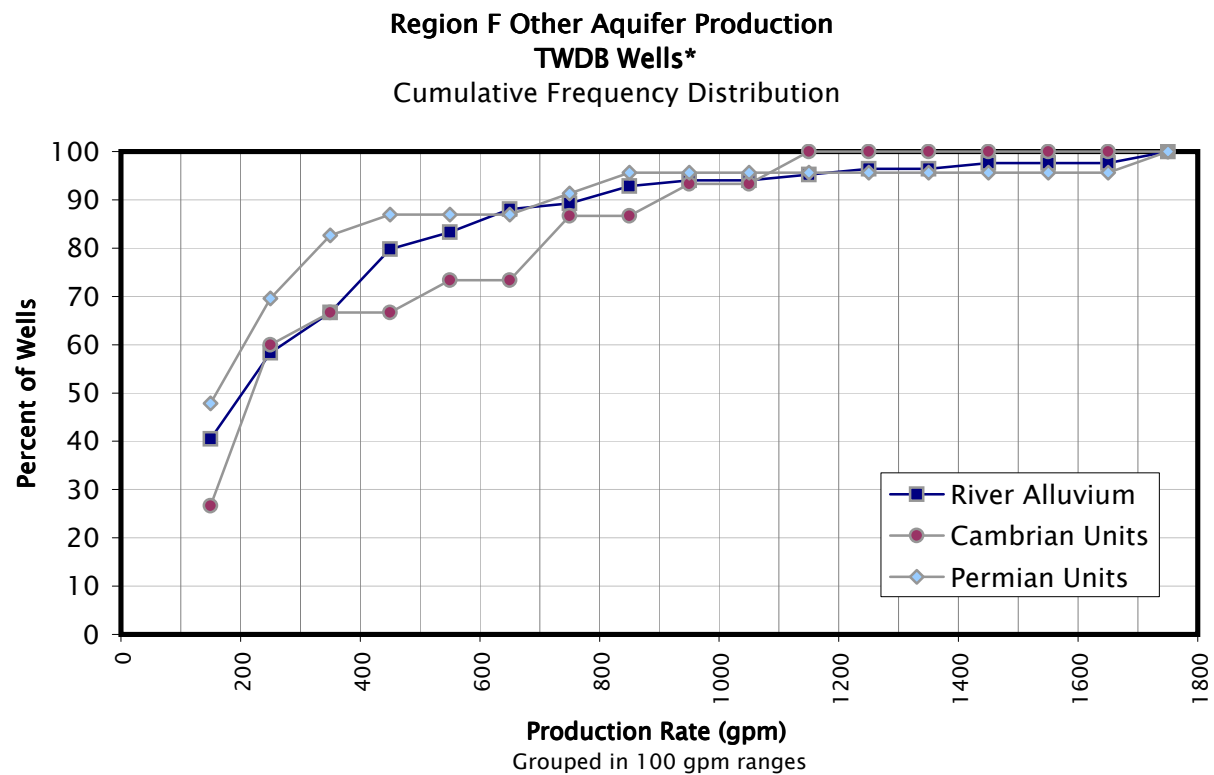
* Only TWDB wells reporting greater than 100 gpm production included in graph.

Figure 4-14



* Only TWDB wells reporting greater than 100 gpm production included in graph.

Figure 4-15



* Only TWDB wells reporting greater than 100 gpm production included in graph.

Figure 4-16

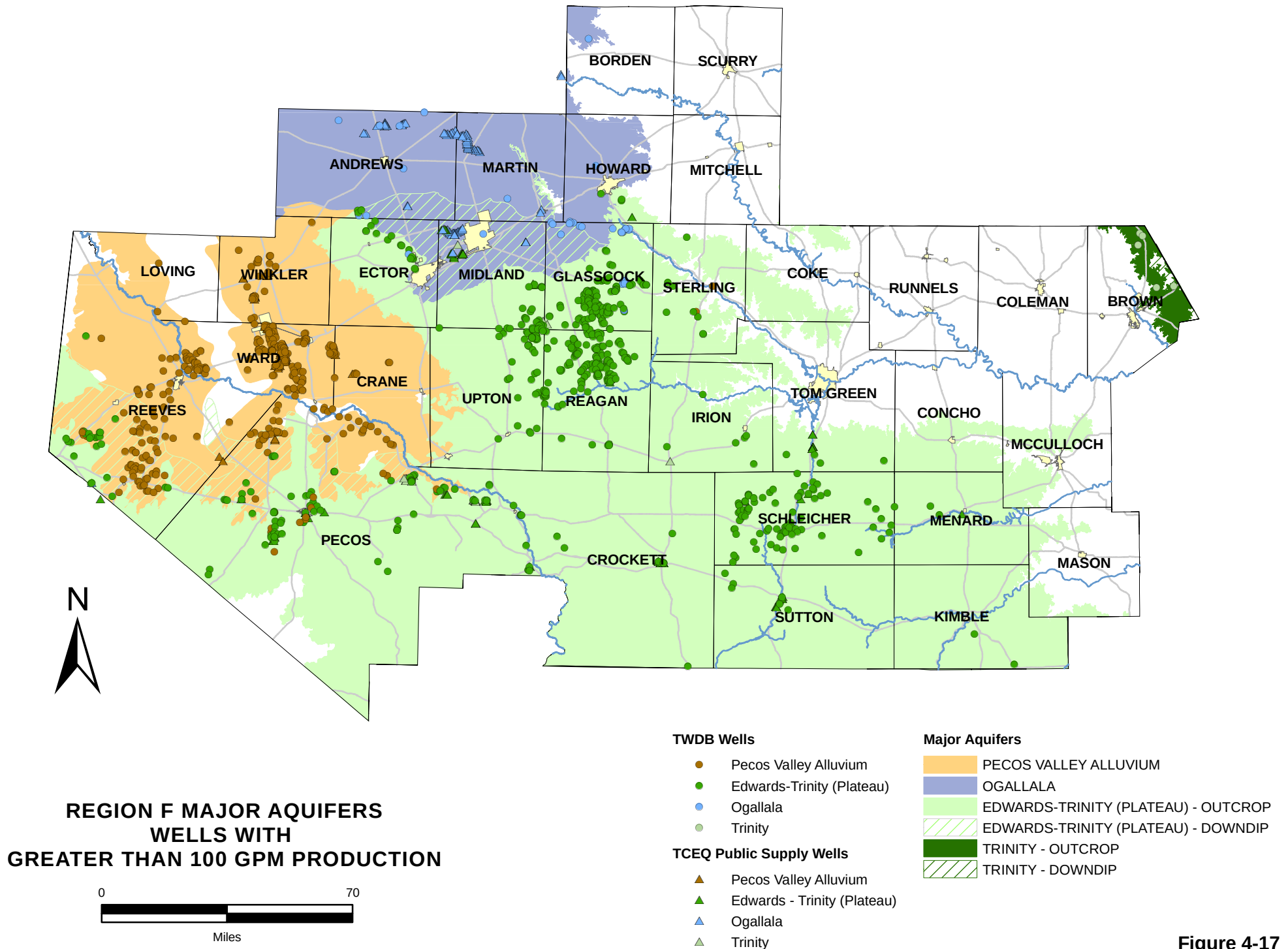
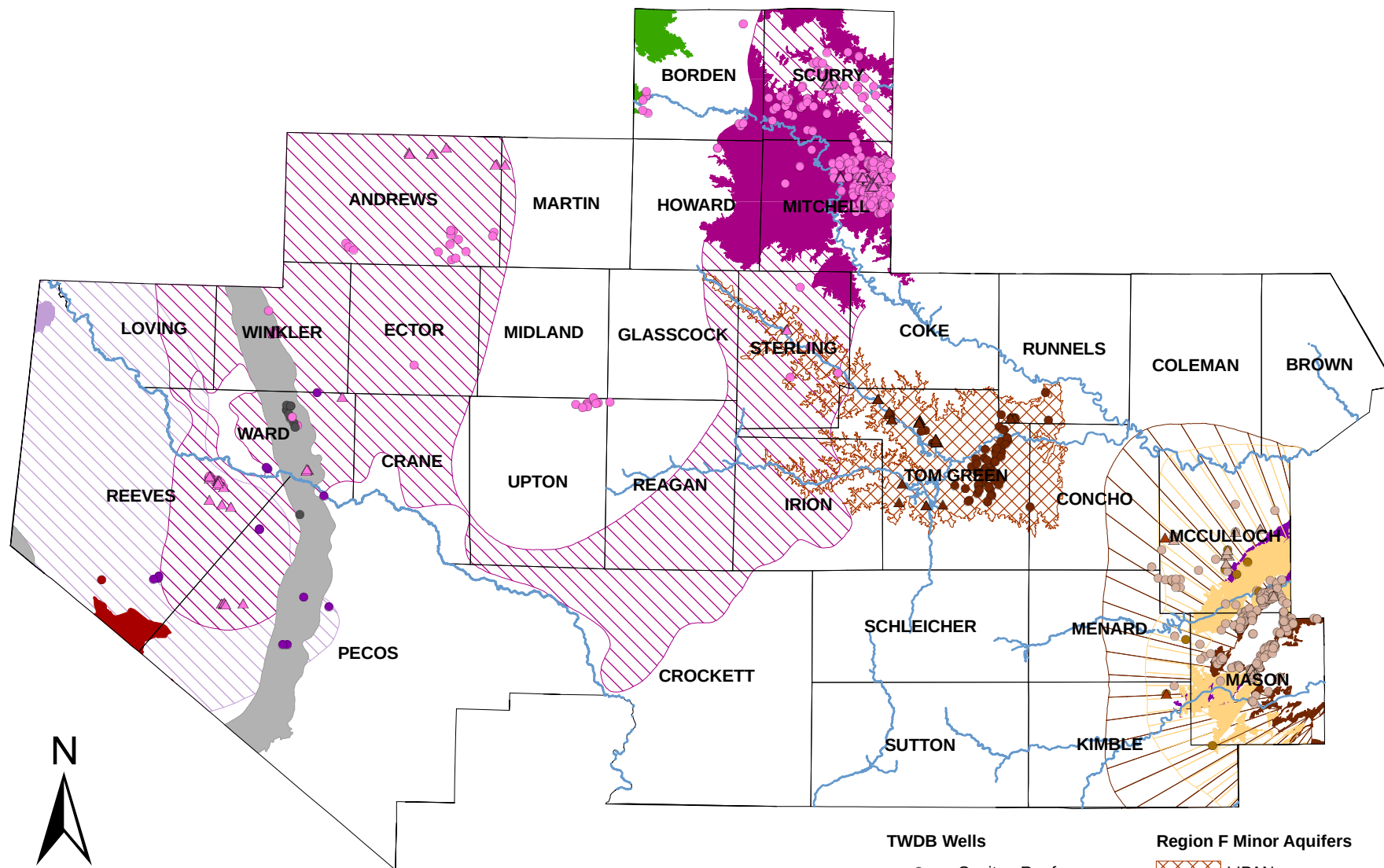


Figure 4-17



REGION F MINOR AQUIFERS WELLS WITH GREATER THAN 100 GPM PRODUCTION



TWDB Wells

- Capitan Reef
- Ellenburger-San Saba
- Hickory
- Igneous
- Rustler
- Dockum
- Lipan

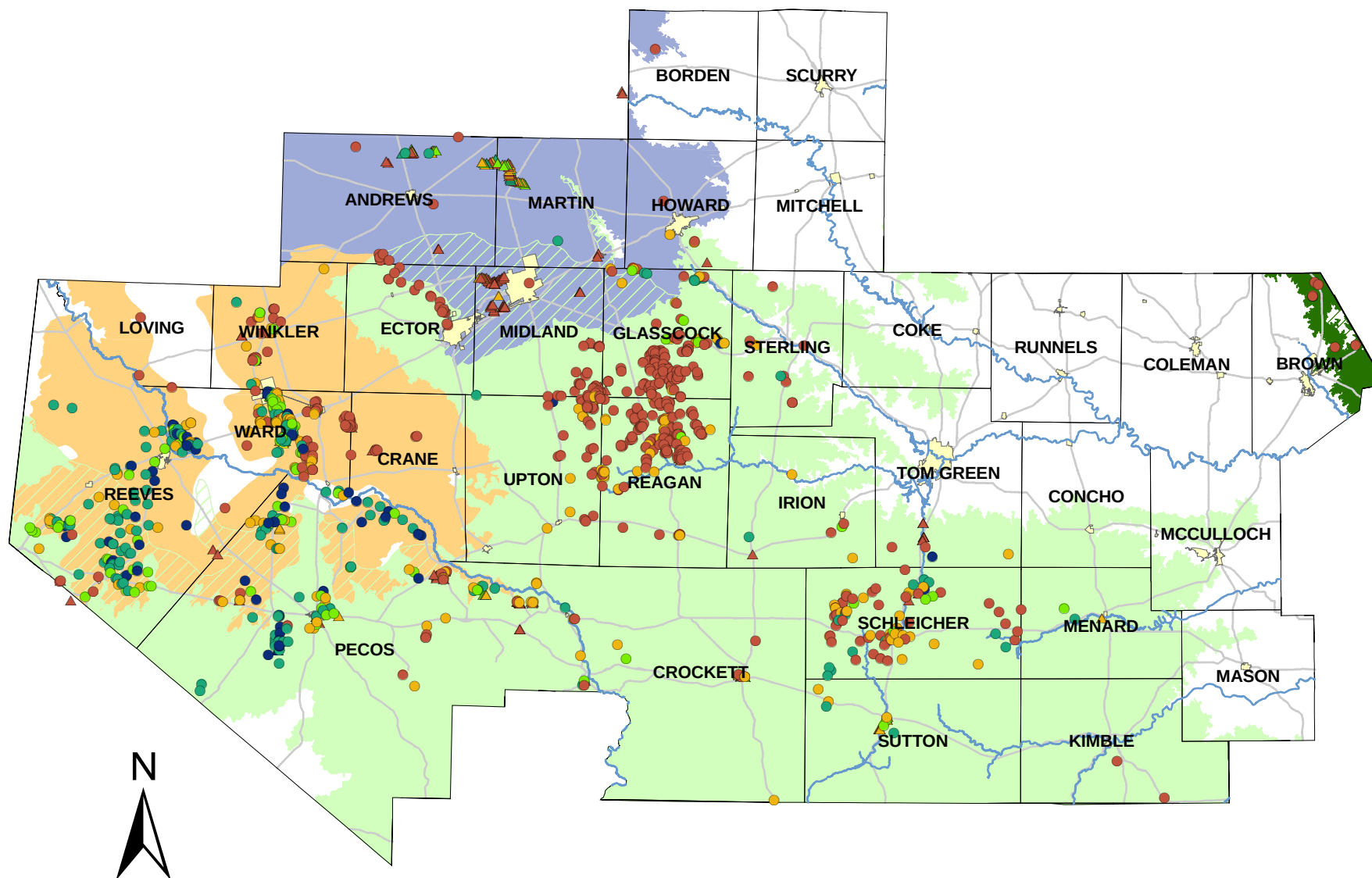
TCEQ Public Supply Wells

- Ellenburger-San Saba
- Hickory
- Dockum
- Lipan

Region F Minor Aquifers

- LIPAN
- IGNEOUS
- EDWARDS-TRINITY (HIGH PLAINS)
- DOCKUM - OUTCROP
- DOCKUM - DOWNDIP
- RUSTLER - OUTCROP
- RUSTLER - DOWNDIP
- CAPITAN REEF COMPLEX
- MARBLE FALLS
- ELLENBURGER-SAN SABA - OUTCROP
- ELLENBURGER-SAN SABA - DOWNDIP
- HICKORY - OUTCROP
- HICKORY - DOWNDIP

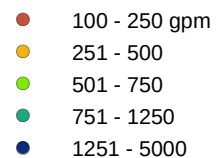
Figure 4-18



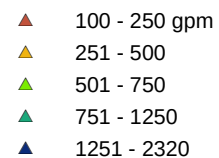
REGION F WELL PRODUCTION (greater than 100 gpm) MAJOR AQUIFERS



TWDB Wells



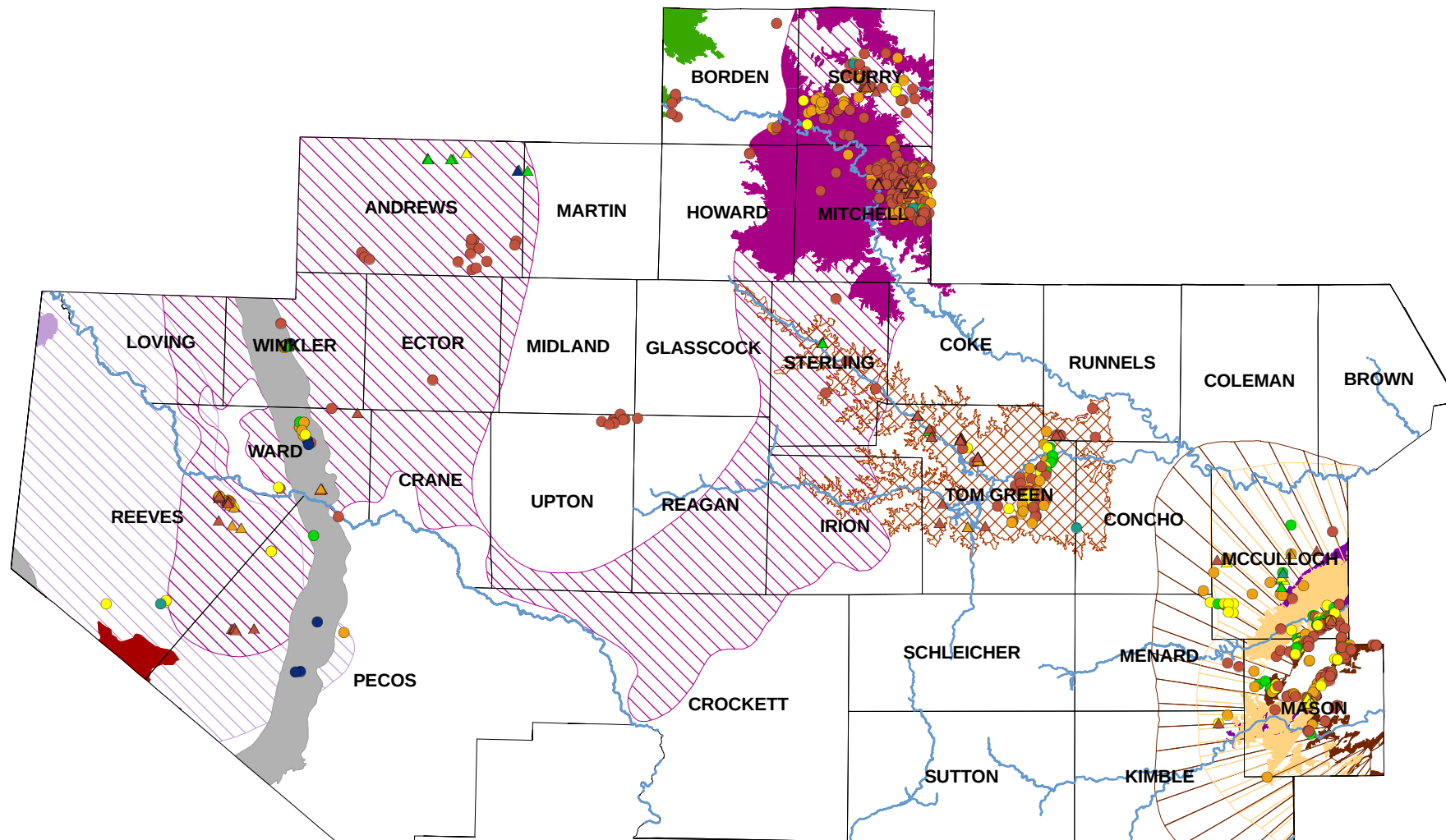
TCEQ Public Supply Wells



Major Aquifers



Figure 4-19



REGION F WELL PRODUCTION (greater than 100 gpm) MINOR AQUIFERS

TWDB Wells

- 100 - 250 gpm
- 251 - 480
- 481 - 750
- 751 - 1000
- 1001 - 1250
- 1251+

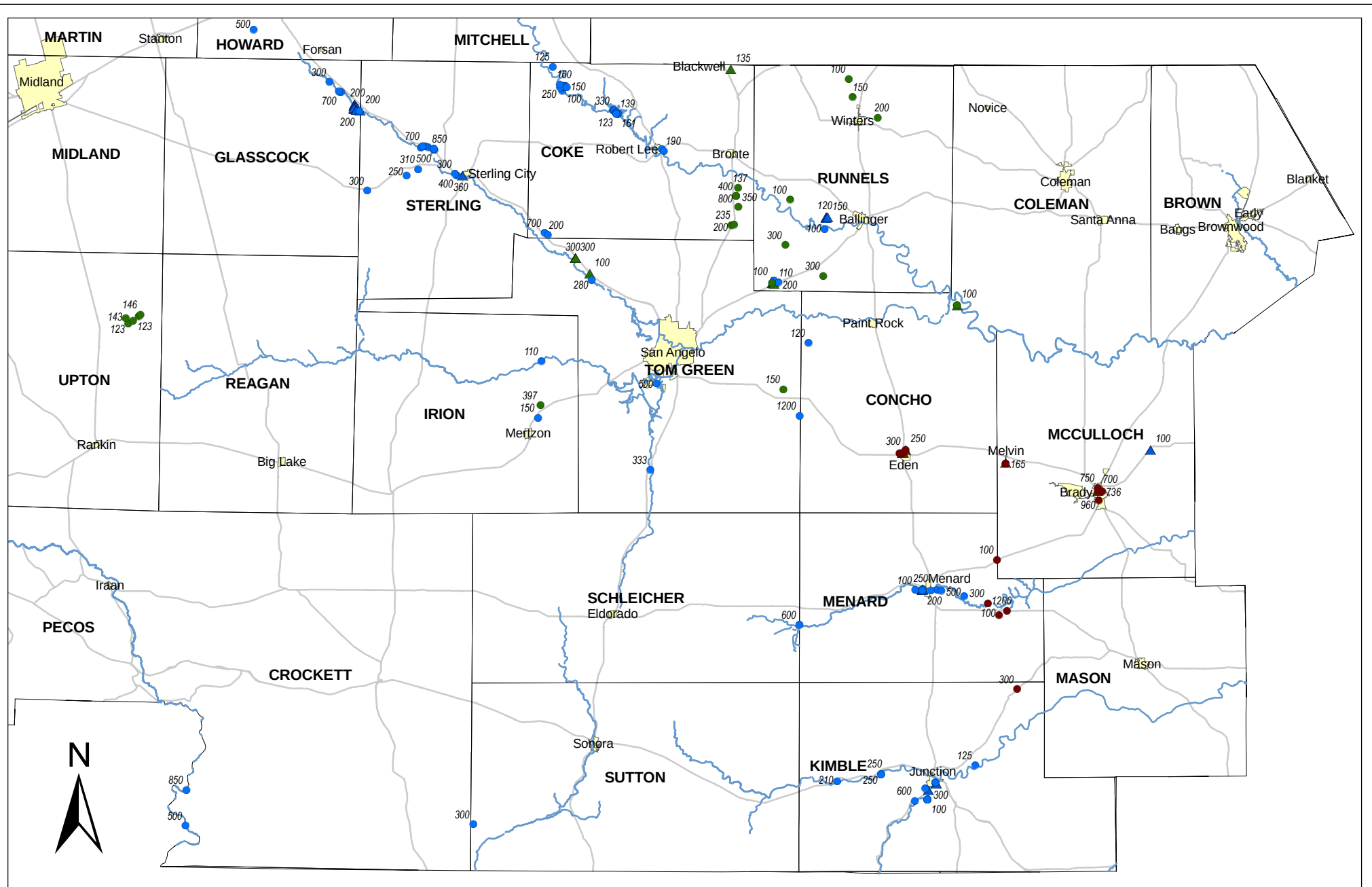
TCEQ Public Supply Wells

- ▲ 100 - 250 gpm
- ▲ 251 - 400
- ▲ 401 - 650
- ▲ 651 - 1000
- ▲ 1001 - 1250
- ▲ 1251+

Region F Minor Aquifers

- ▨ LIPAN
- IGNEOUS
- EDWARDS-TRINITY (HIGH PLAINS)
- DOCKUM - OUTCROP
- ▨ DOCKUM - DOWNDIP
- RUSTLER - OUTCROP
- ▨ RUSTLER - DOWNDIP
- CAPITAN REEF COMPLEX
- MARBLE FALLS
- ELLENBURGER-SAN SABA - OUTCROP
- ▨ ELLENBURGER-SAN SABA - DOWNDIP
- HICKORY - OUTCROP
- ▨ HICKORY - DOWNDIP

Figure 4-20



**REGION F WELL PRODUCTION
(greater than 100 gpm)
OTHER AQUIFERS**

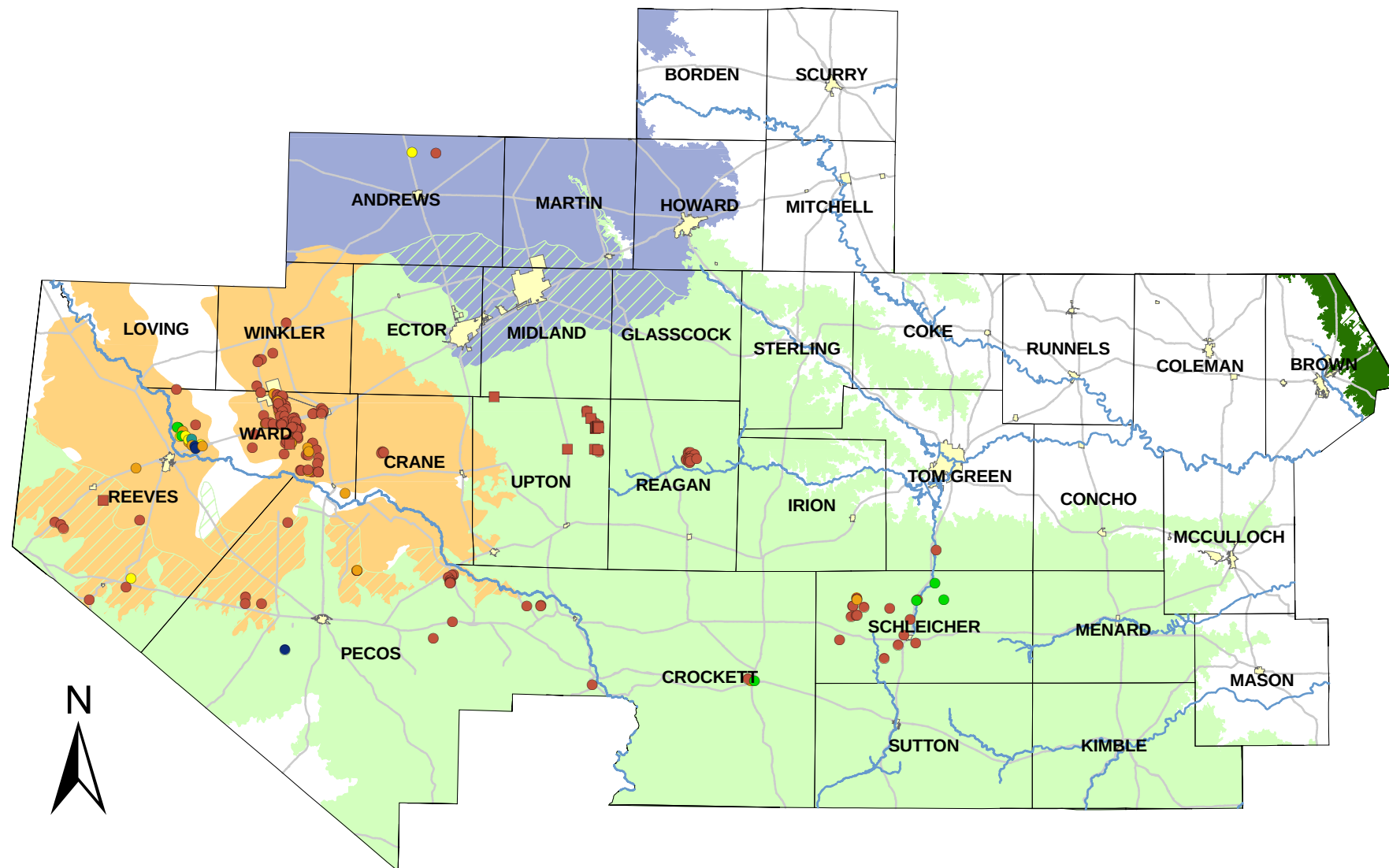
TWDB "Other" Aquifer Wells

- Alluvium
- Cambrian
- Permian

TCEQ PWS "Other" Aquifer Wells

- ▲ Alluvium
- ▲ Cambrian
- ▲ Permian

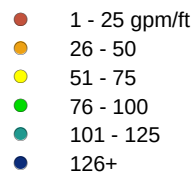
Figure 4-21



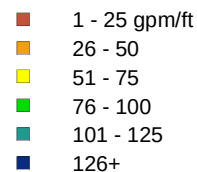
REGION F
SPECIFIC CAPACITY (GPM/FT)
MAJOR AQUIFERS



TWDB Wells



Myers (1969) Pump Test Data



Major Aquifers



Figure 4-22

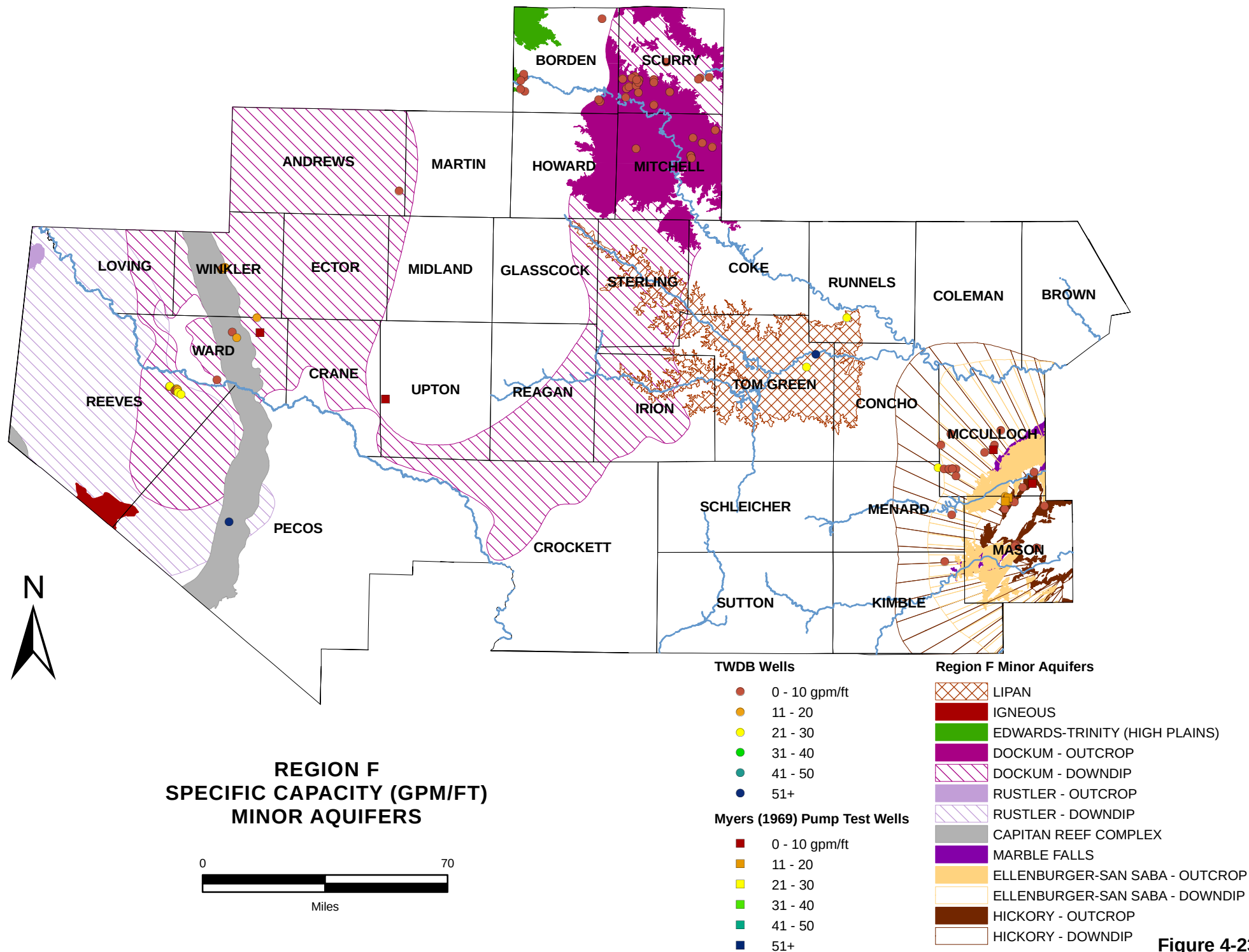
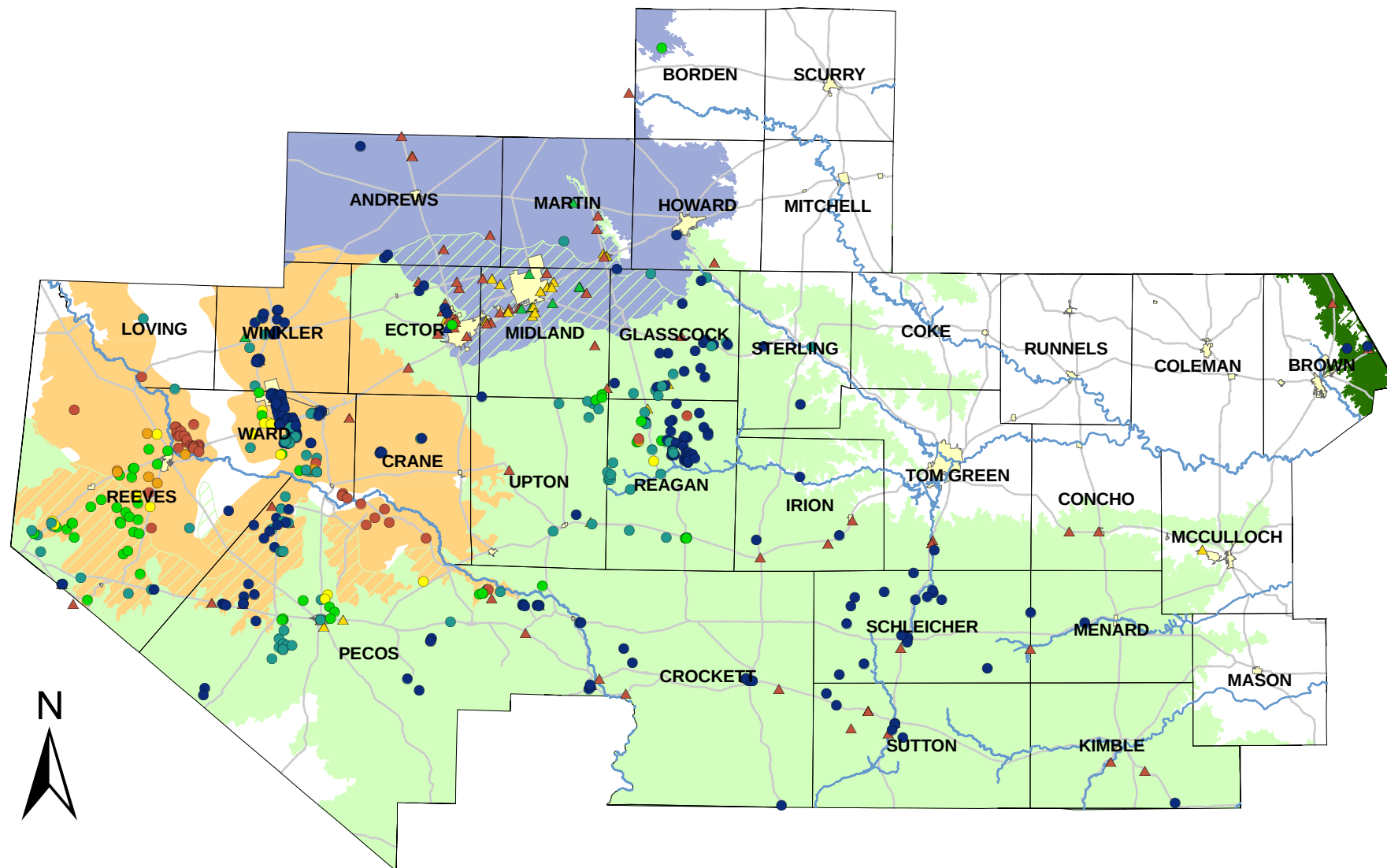


Figure 4-23



REGION F AVERAGE TDS MAJOR AQUIFERS



TWDB Wells >100 GPM

- 1 - 1000 mg/L
- 1001 - 2000
- 2001 - 3000
- 3001 - 4000
- 4001 - 5000
- 5001+

TCEQ Public Supply Wells

- ▲ 1 - 1000 mg/L
- ▲ 1001 - 2000
- ▲ 2001 - 3000
- ▲ 3001+

Major Aquifers

- PECOS VALLEY ALLUVIUM
- OGALLALA
- EDWARDS-TRINITY (PLATEAU) OUTCROP
- EDWARDS-TRINITY (PLATEAU) DOWNDIP
- TRINITY OUTCROP
- TRINITY DOWNDIP

Figure 4-24

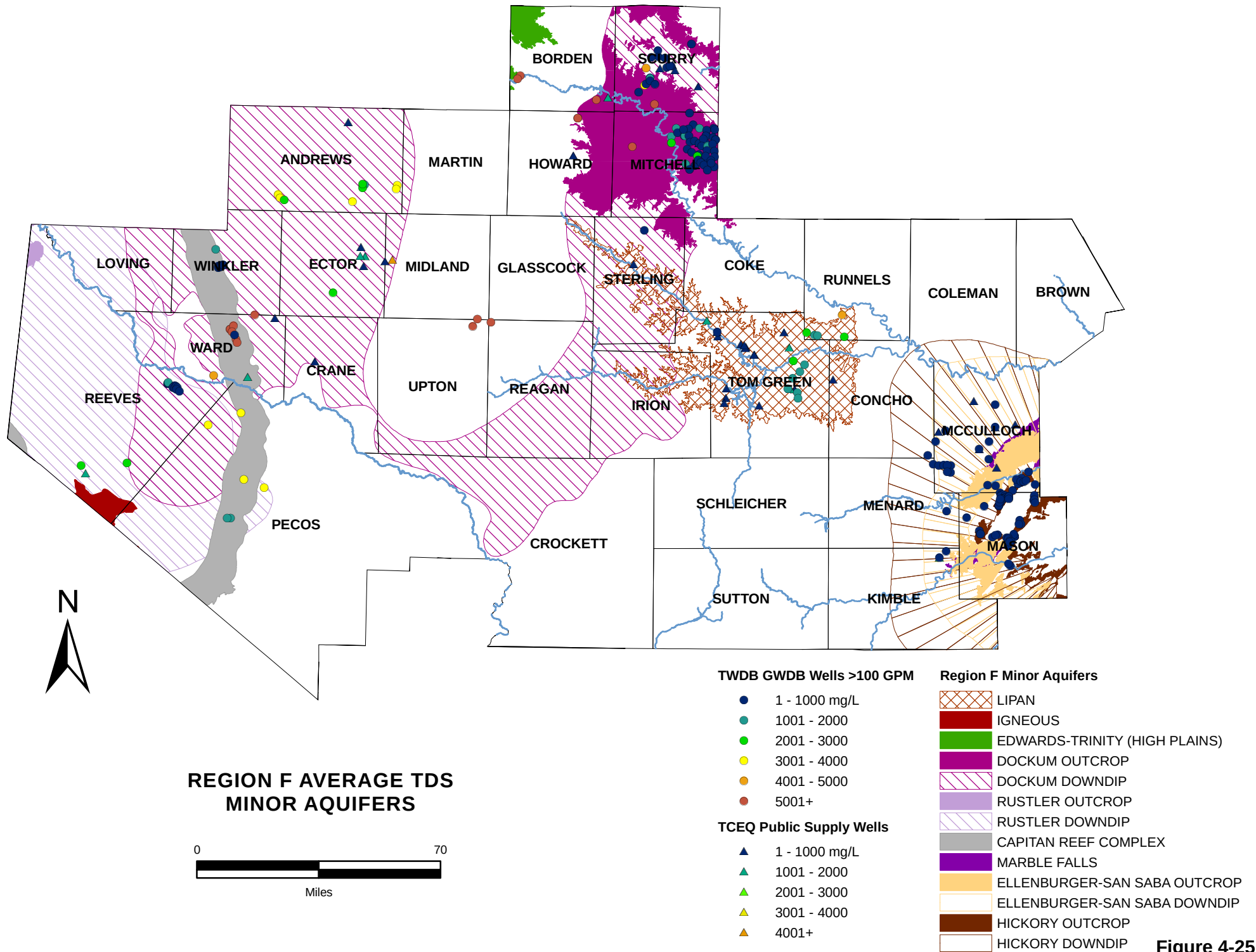
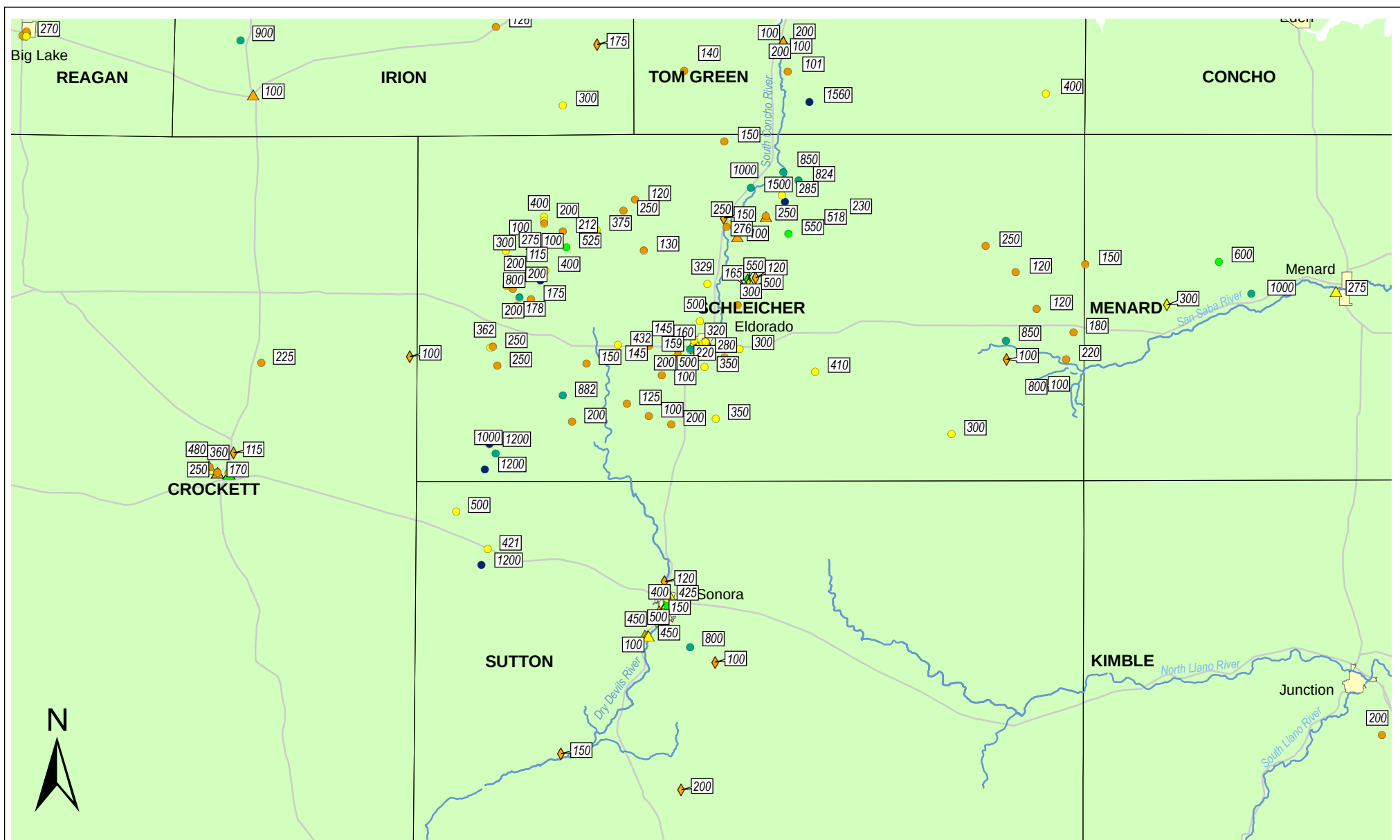


Figure 4-25



**WELL LOCATIONS WITH
GREATER THAN 100 GPM PRODUCTION
SCHLEICHER AND SURROUNDING COUNTIES**



TWDB Wells

- 100 - 250 gpm
- 251 - 500
- 501 - 750
- 751 - 1000
- 1001 - 5000

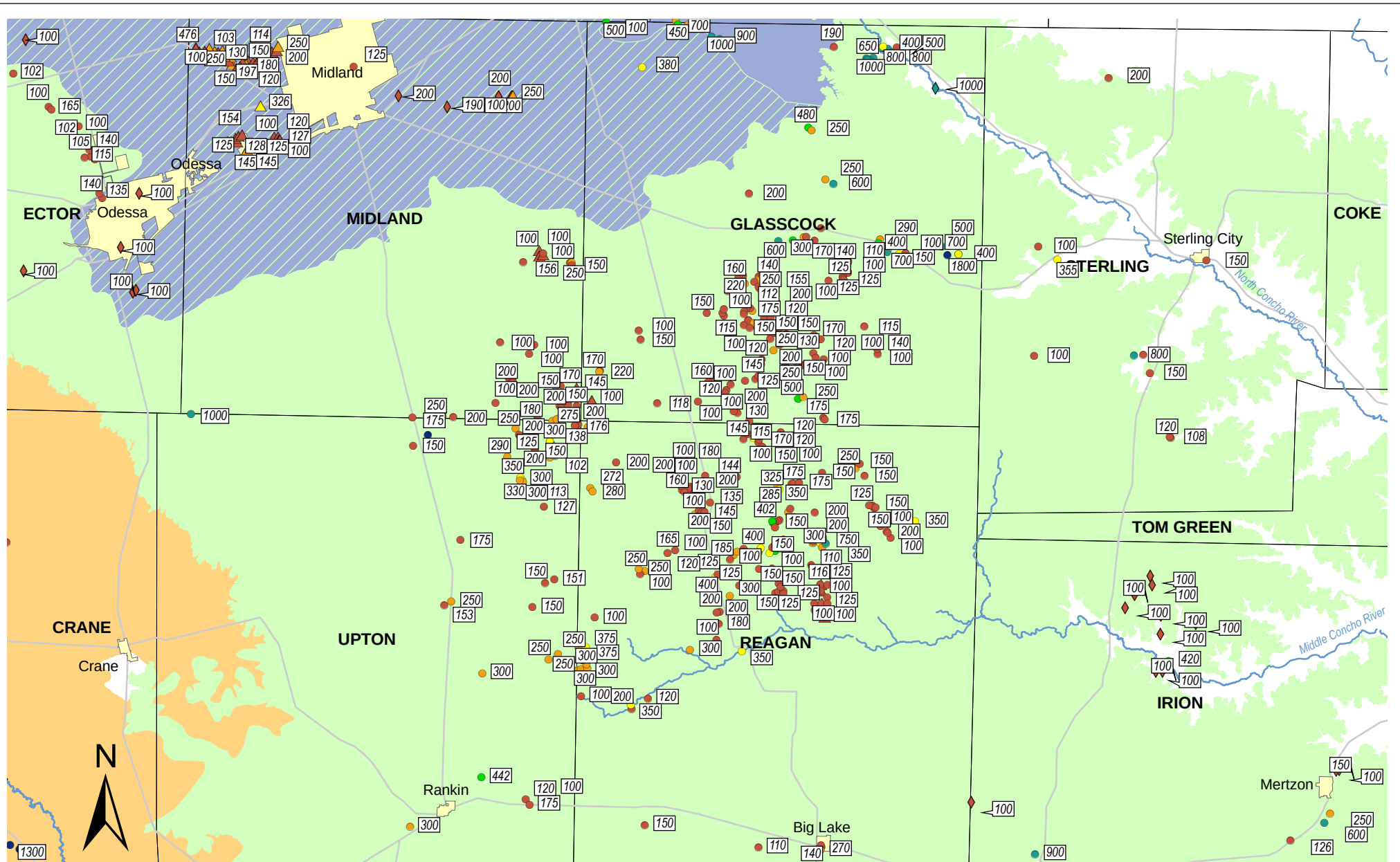
TCEQ Public Supply Wells

- ▲ 100 - 250 gpm
- ▲ 251 - 500
- ▲ 501 - 750
- ▲ 751 - 1000
- ▲ 1001 - 2320

WIID Driller's Logs

- ◆ 100 - 250 gpm
- ◆ 251 - 500
- ◆ 501 - 750

Figure 4-26



WELL LOCATIONS WITH GREATER THAN 100 GPM PRODUCTION GLASSCOCK AND SURROUNDING COUNTIES



TWDB Wells

- 100 - 200 gpm
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 1000
- 1001+

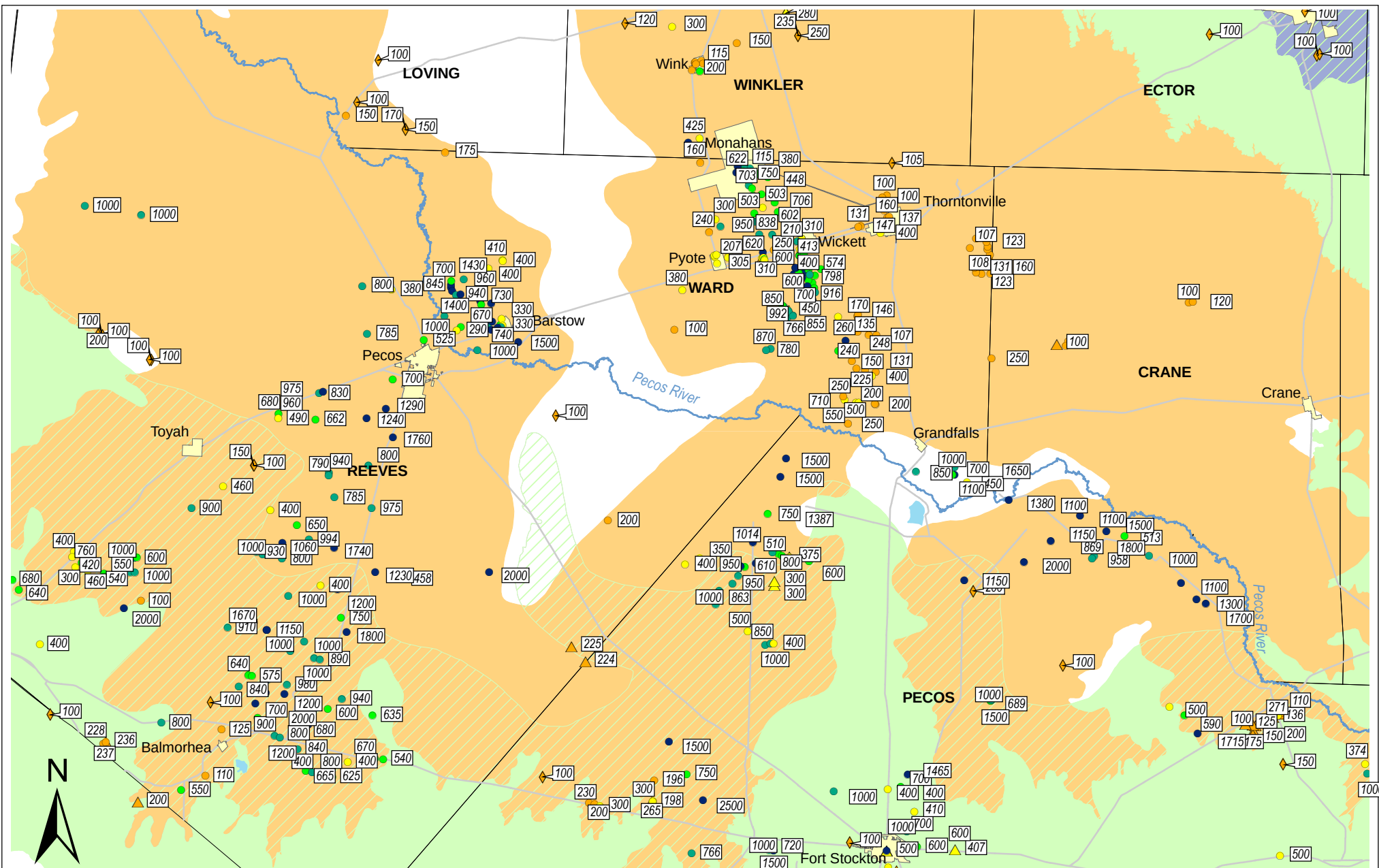
TCEQ Public Supply Wells

- ▲ 100 - 200 gpm
- ▲ 201 - 300
- ▲ 301 - 400
- ▲ 401 - 500
- ▲ 501 - 1000
- ▲ 1001+

WIID Driller's Logs

- ◆ 100 - 200 gpm
- ◆ 201 - 300
- ◆ 301 - 400
- ◆ 401 - 500
- ◆ 501 - 1000

Figure 4-27



WELL LOCATIONS WITH GREATER THAN 100 GPM PRODUCTION WARD AND SURROUNDING COUNTIES



TWDB Wells

- 100 - 250 gpm
- 251 - 500
- 501 - 750
- 751 - 1000
- 1001+

TCEQ Public Supply Wells

- ▲ 100 - 250 gpm
- ▲ 251 - 500
- ▲ 501 - 750
- ▲ 751 - 1000
- ▲ 1001+

WIID Driller's Logs

- ◆ 100 - 250 gpm
- ◆ 251 - 500
- ◆ 501 - 750
- ◆ 751 - 1000

Figure 4-28

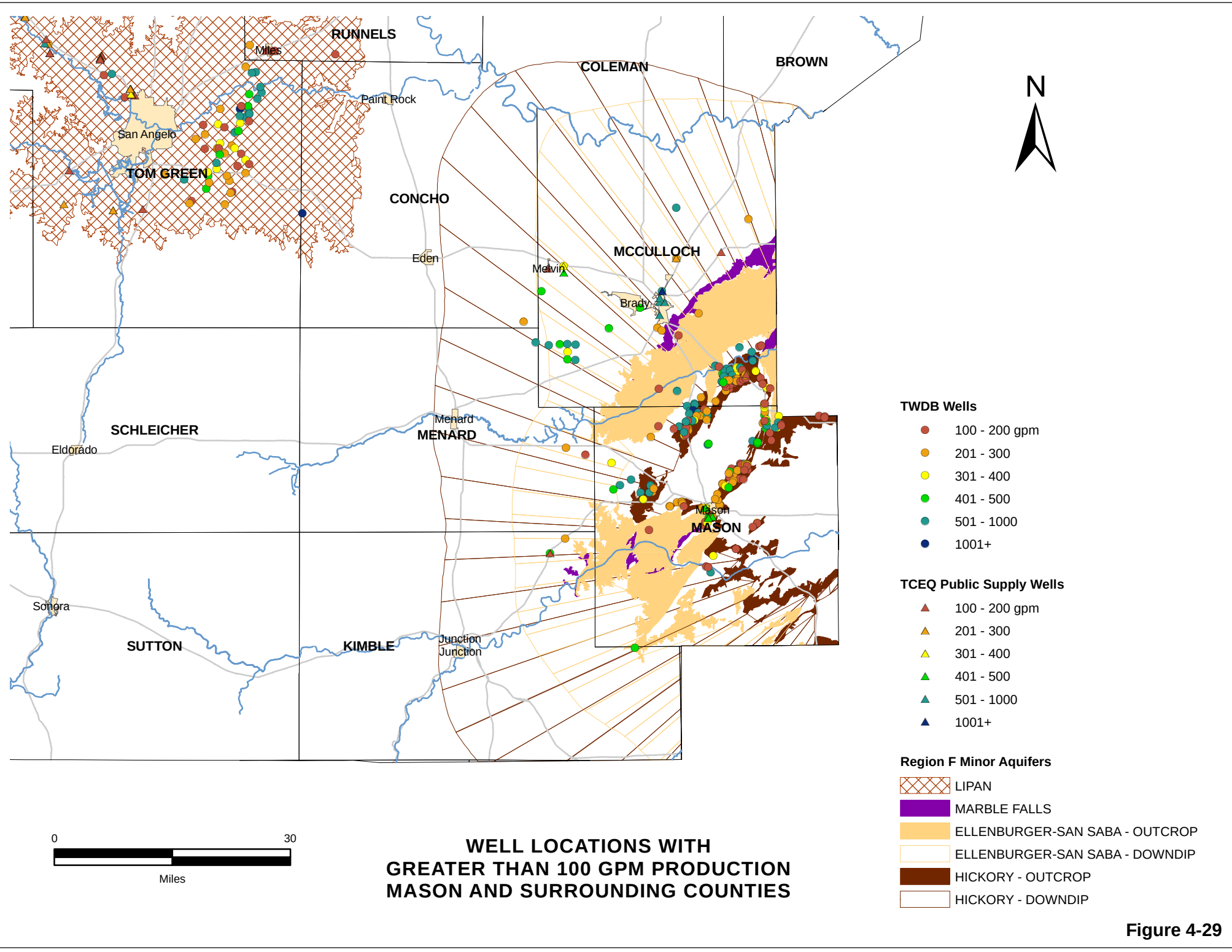
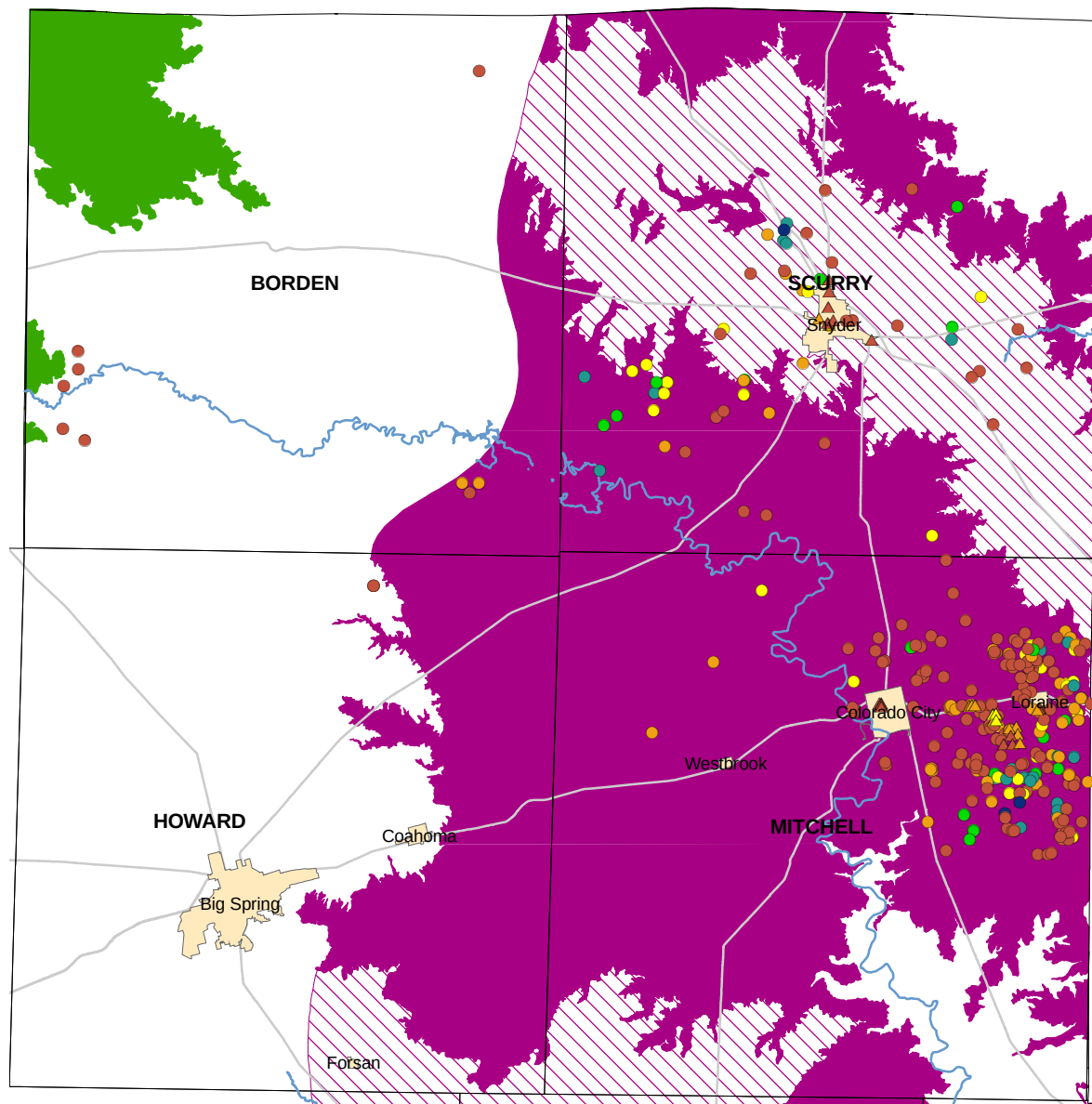


Figure 4-29



TWDB Wells

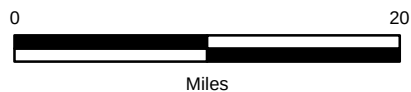
- 100 - 200 gpm
- 201 - 300
- 301 - 400
- 401 - 500
- 501 - 1000
- 1001+

TCEQ Public Supply Wells

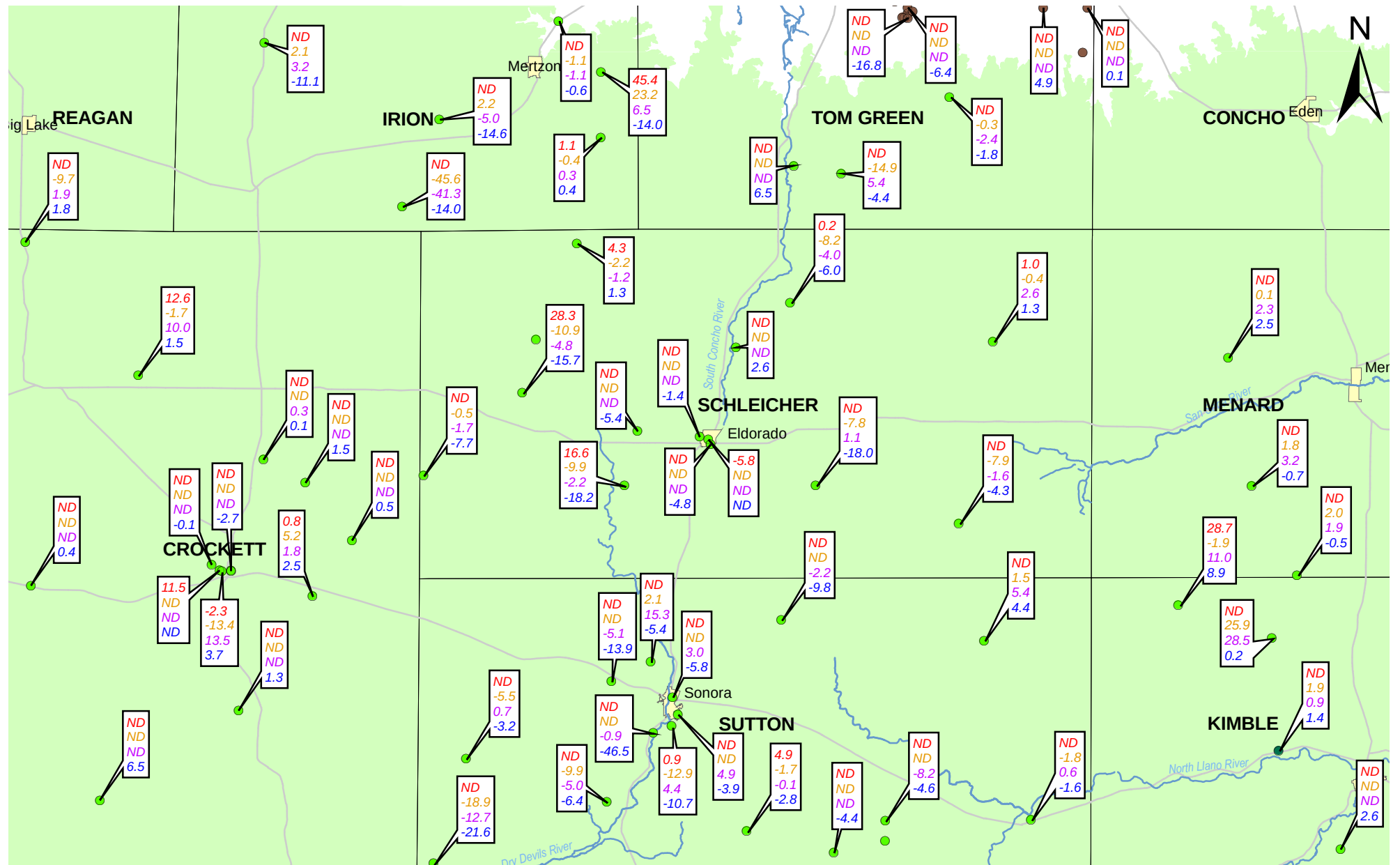
- ▲ 100 - 200 gpm
- ▲ 201 - 300
- ▲ 301 - 400
- ▲ 401 - 500
- ▲ 501 - 1000
- ▲ 1001+

Region F Minor Aquifers

- EDWARDS-TRINITY (HIGH PLAINS)
- DOCKUM - OUTCROP
- DOCKUM - DOWNDIP

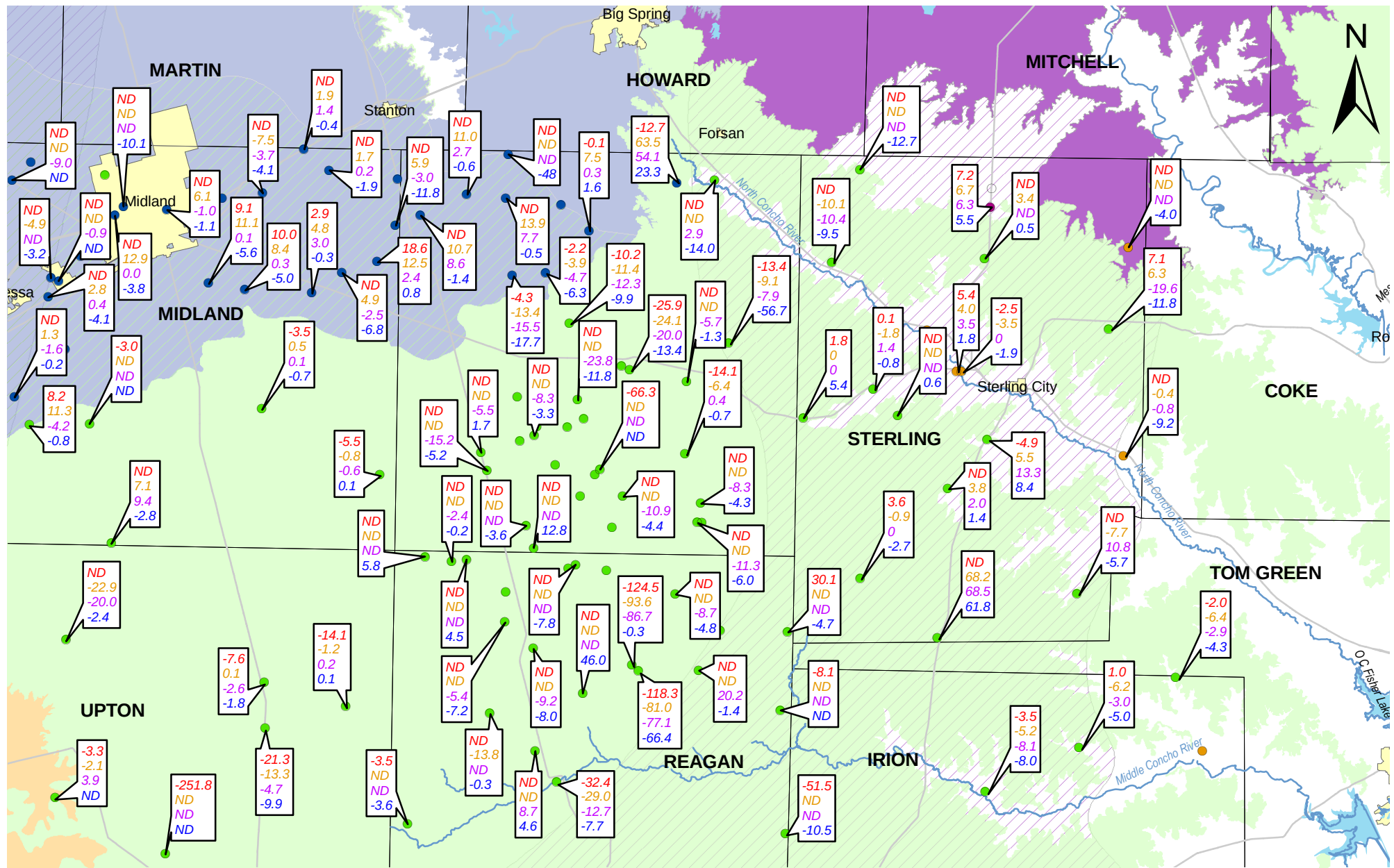


**WELL LOCATIONS WITH
GREATER THAN 100 GPM PRODUCTION
MITCHELL AND SURROUNDING COUNTIES**

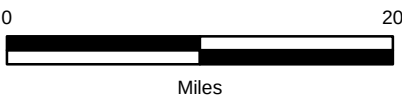


* Calculated by averaging the water level per decade per well, and taking the change in average water level per decade. This is intended to give a general sense of where an aquifer is experiencing long-term drawdown or recovery. Values shown only for wells with at least three water levels measured both in the 2000s and in any other decade.

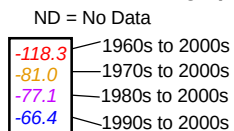
Figure 4-31



WATER LEVEL CHANGES 1960s - 2000s



Average Water Level Change (feet)*

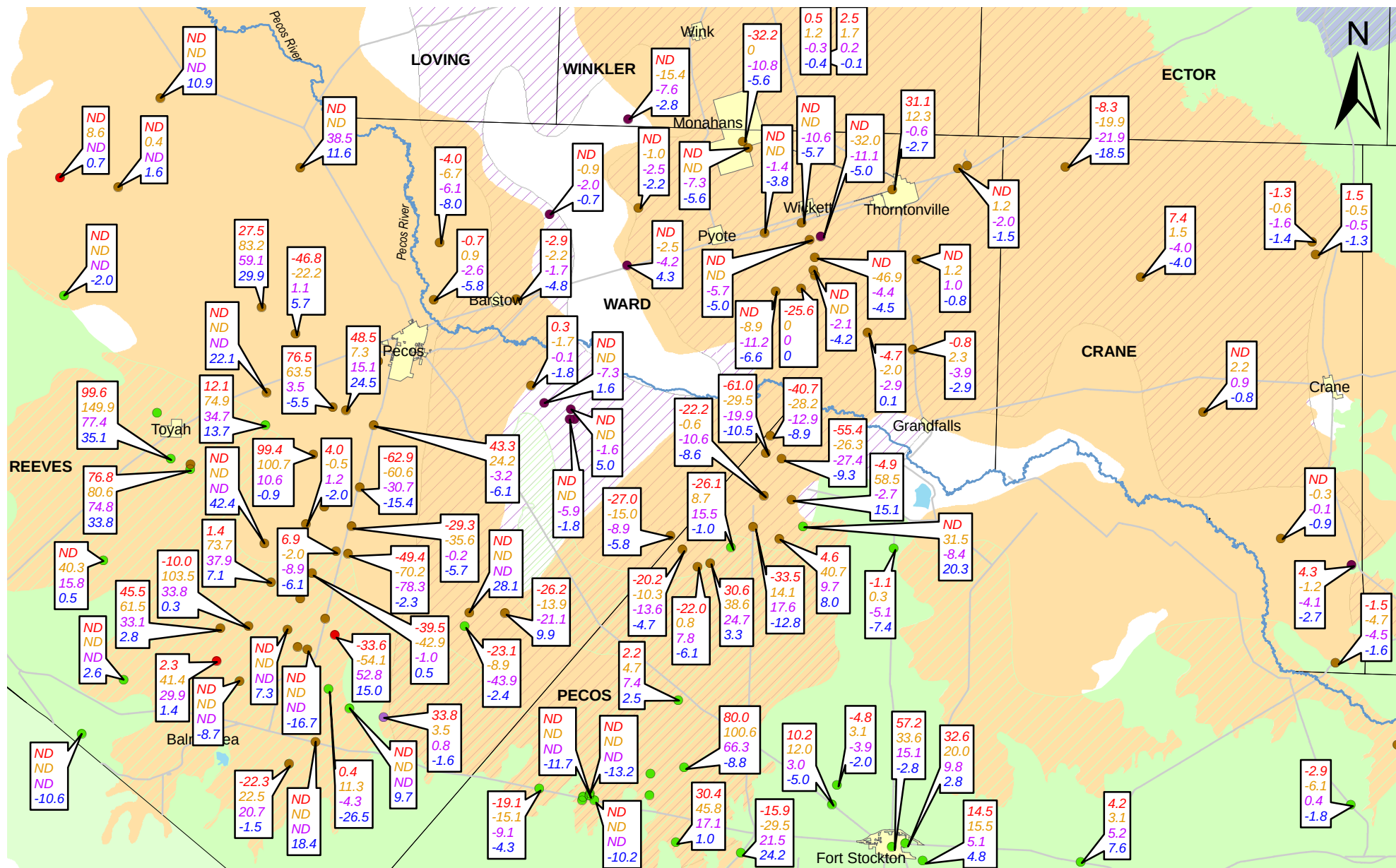


Aquifers

- OGALLALA
- EDWARDS-TRINITY (PLATEAU)
- DOCKUM
- OTHER

* Calculated by averaging the water level per decade per well, and taking the change in average water level per decade. This is intended to give a general sense of where an aquifer is experiencing long-term drawdown or recovery. Values shown only for wells with at least three water levels measured both in the 2000s and in any other decade.

Figure 4-32



* Calculated by averaging the water level per decade per well, and taking the change in average water level per decade. This is intended to give a general sense of where an aquifer is experiencing long-term drawdown or recovery. Values shown only for wells with at least three water levels measured both in the 2000s and in any other decade.

Figure 4-33