60
TANK TRUCK
ALEDO, TEXAS
WHP 346

MACK

1327091
Key
WHP 575

KENWORTH

PHILLIPS
WHP 2399

28
TANK TRUCKS
BRIDGEPORT • JACKSBORO

PHILLIPS
WHP 2399
TX DOT CERT. #005264303C
(817) 599-8600 (940) 769-3100
WEATHERFORD, TX / SANTO, TX
957-09Z
NAPA

641

Citizen Concerns about Groundwater Use

AUGUST 18-24, 2006 · WWW.CO

THE COMMU

Serving Eastern Parker County, Texas: Ale

PARKER COUNTY

Where's my 'fraccing' water

Residents hope to voice dry well woes soon

By Albert D. Villegas and Kathy Chruscielski
The Community News

Parker County water wells reportedly continue to run dry (see *The Community News*, Aug. 4, 2006) and, according to Pct. 4 Commissioner Jim Webster, as long as there is legislation exempting gas and oil companies from following

Weatherford T

WEDNESDAY, OCTOBER 4, 2006

Growing with the Commu

Water is on many Parker Co

BY TERRY EVANS
Weatherford Telegram Writer

Kathy Chruscielski sat quietly Monday at the back of the Parker County Commissioners Courtroom.

She listened to a detailed explanation of a three-part report called Groundwater and Groundwater Management Options for Parker County, presented by Dr. Robert Mace.

why Parker County needs a groundwater conservation district (GCD) designed to regulate how water in the part of the Trinity Aquifer that runs under their properties is used.

Chruscielski (pronounced Crush-shell-ski) was silent as County Judge Mark Riley and the Commissioners heard from residents who resented that the oil and gas industry enjoys ex-

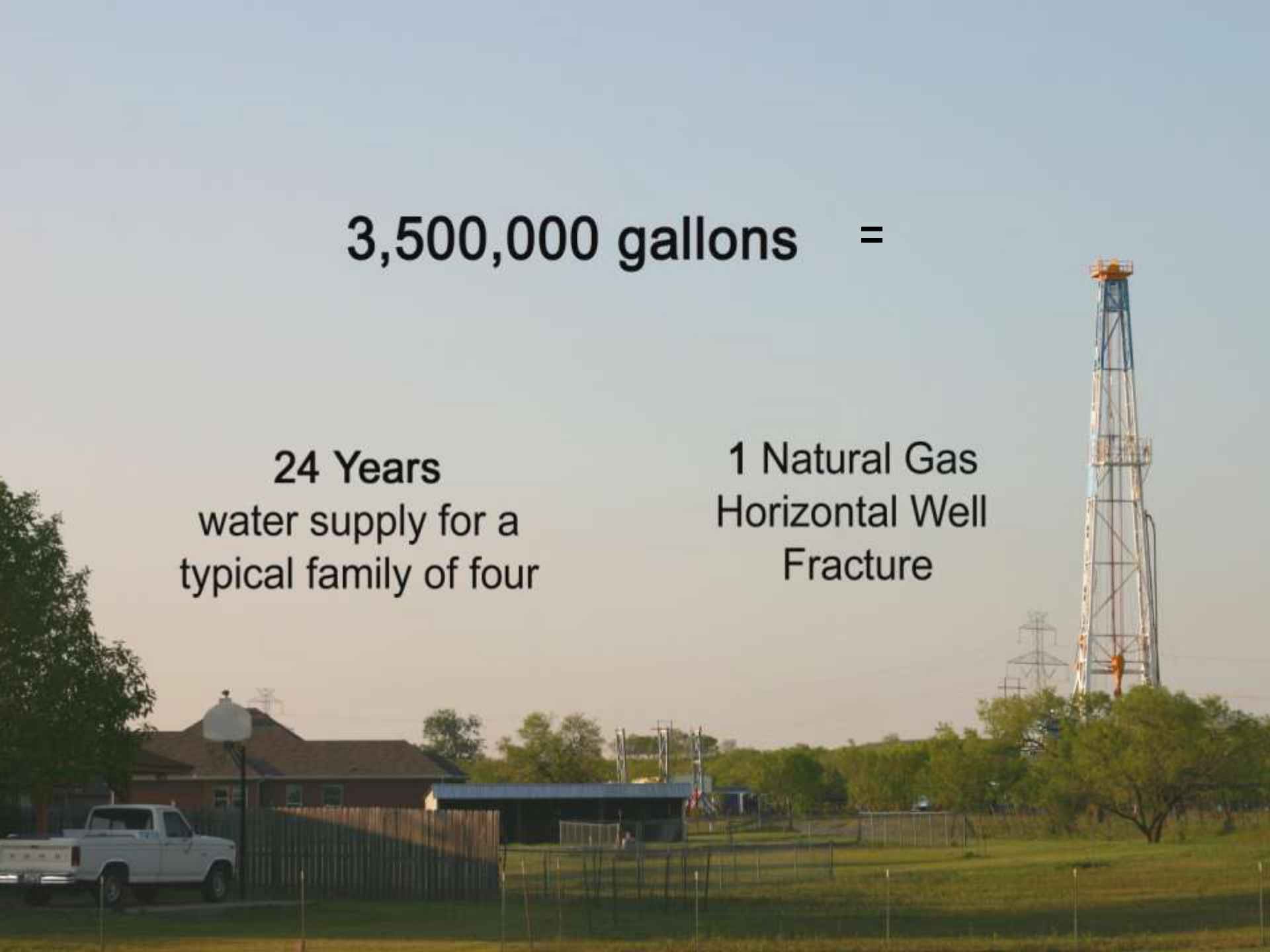
subject of water in Parker County.

A resident of Remuda Ranch, in an unincorporated part of far southeast Parker County, Chruscielski tried to explain why she believes water is an issue that deserves the attention of a GCD.

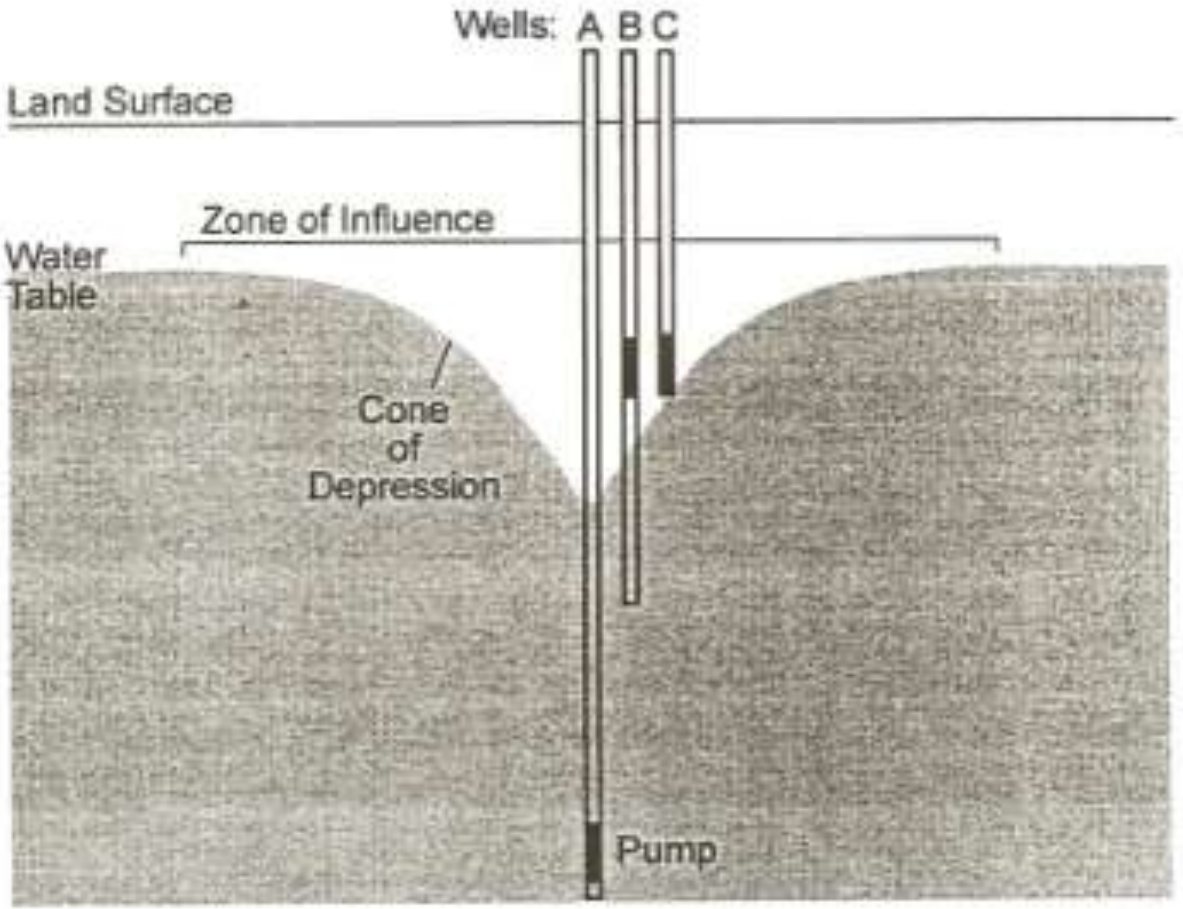
From the North Central Texas Council of Governments' Web site, she found that the an-

states that the hold uses 400 day. Consideri ber of housel year, 480 hom lons a day over than 70 millio she said.

Multiply th thousands of p have wells on t get water fro

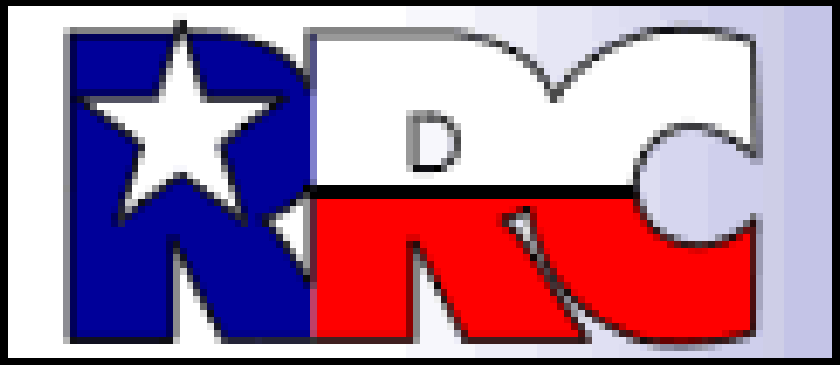

3,500,000 gallons =
24 Years
water supply for a
typical family of four
1 Natural Gas
Horizontal Well
Fracture

When wells go dry

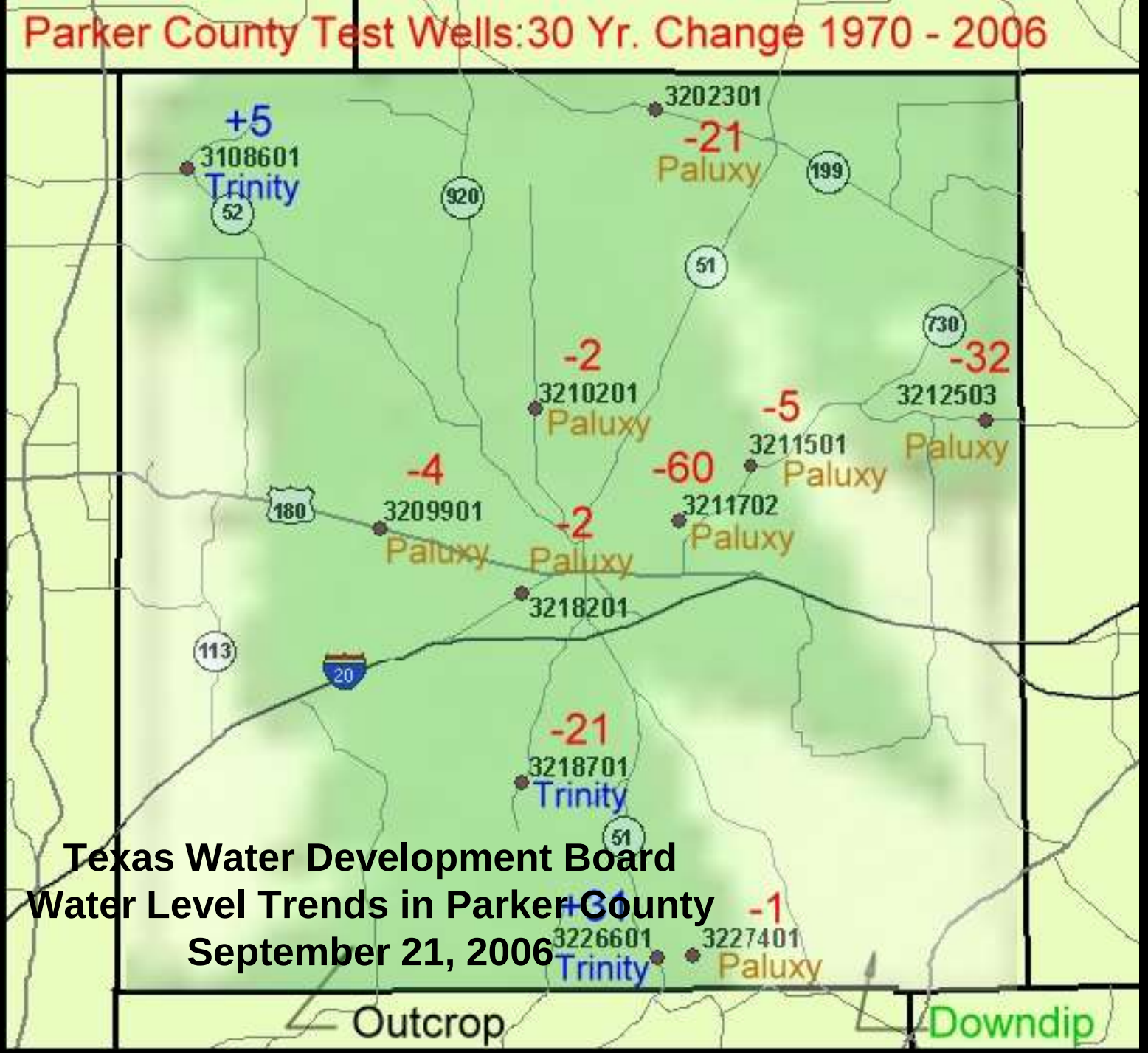


TWDB graphic

Parker County
Texas
Well Activity
08/21/2008

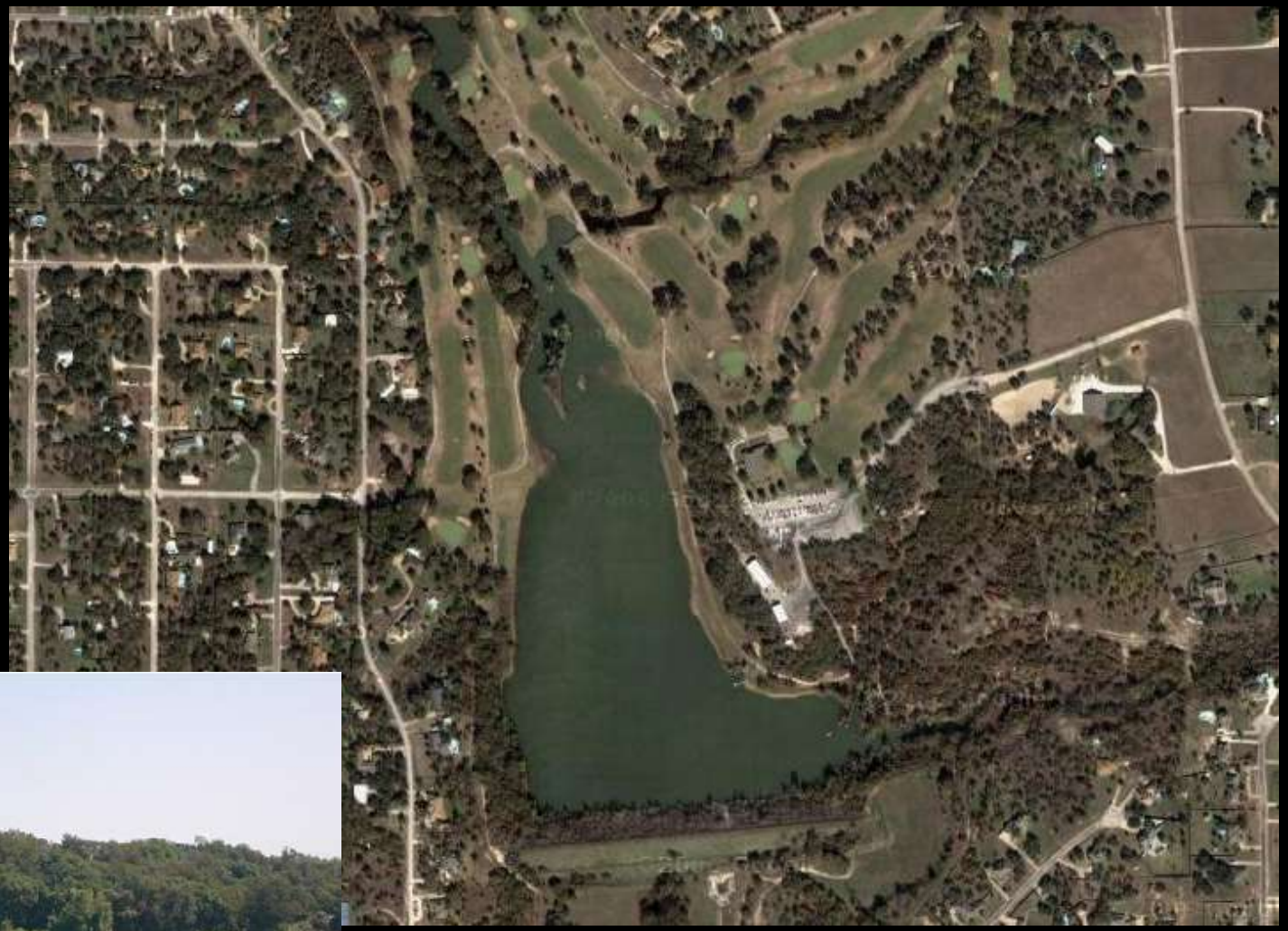


Texas Railroad Commission

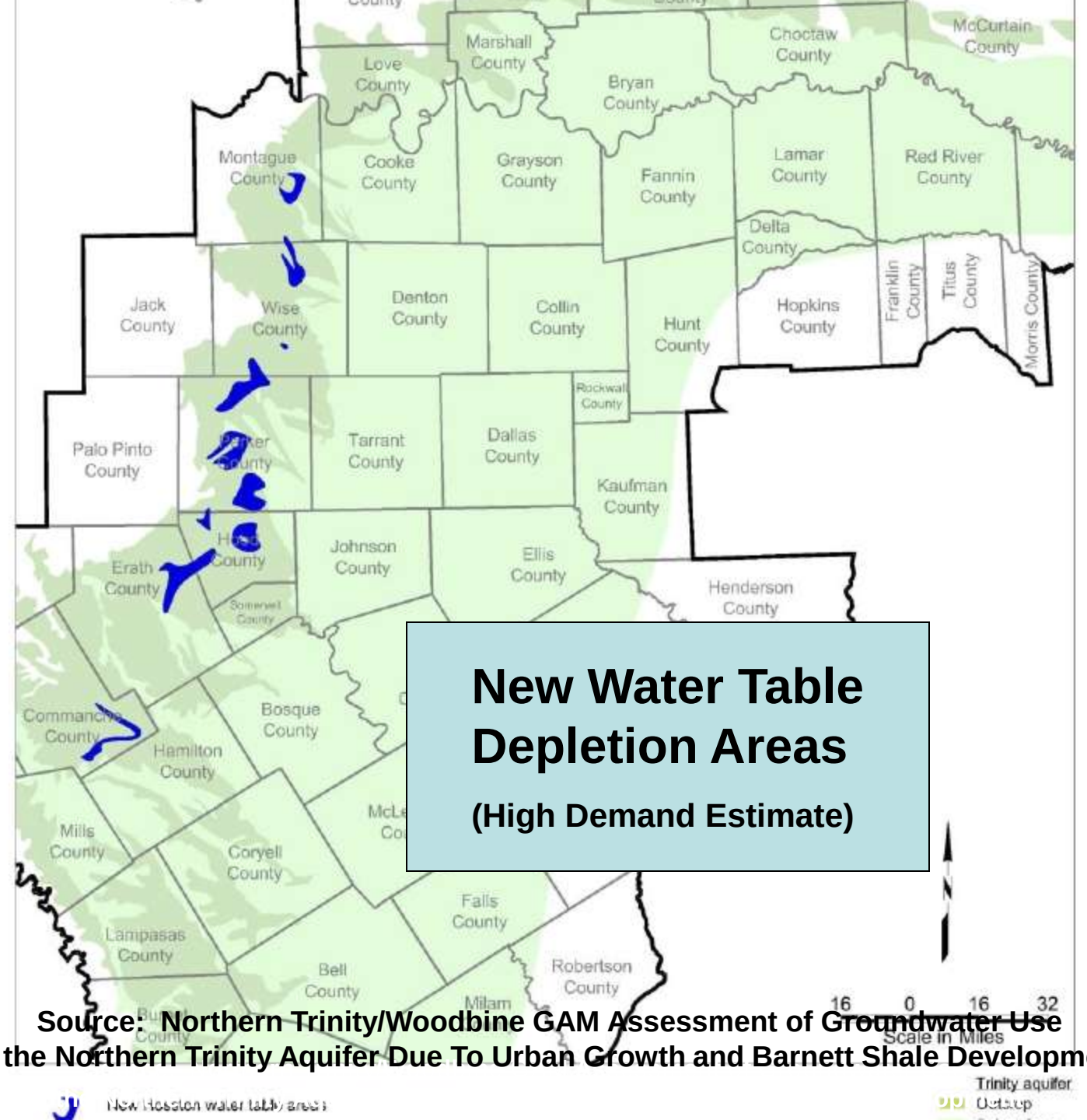

Parker County Test Wells:30 Yr. Change 1970 - 2006
+5
3108601
Trinity
3202301
-21
Paluxy
-2
3210201
Paluxy
-5
3211501
Paluxy
-32
3212503
Paluxy
-4
3209901
Paluxy
-60
3211702
Paluxy
-2
Paluxy
3218201
-21
3218701
Trinity
-1
3227401
Paluxy
Texas Water Development Board
Water Level Trends in Parker County
September 21, 2006
Outcrop
Downdip

R. J. Smelley Dairy, Parker County

Covered Bridge Canyon Estates, Parker County



Squaw Creek Valley Golf Course
Willow Park, Texas



New Water Table Depletion Areas

(High Demand Estimate)

Source: Northern Trinity/Woodbine GAM Assessment of Groundwater Use in the Northern Trinity Aquifer Due To Urban Growth and Barnett Shale Development

“…a critical issue because the delivery of alternative surface water supplies is **not** projected to be **economically feasible**.”

Source: Northern Trinity/Woodbine GAM Assessment of Groundwater Use in the Northern Trinity Aquifer Due To Urban Growth and Barnett Shale Development

Bottled water logistics

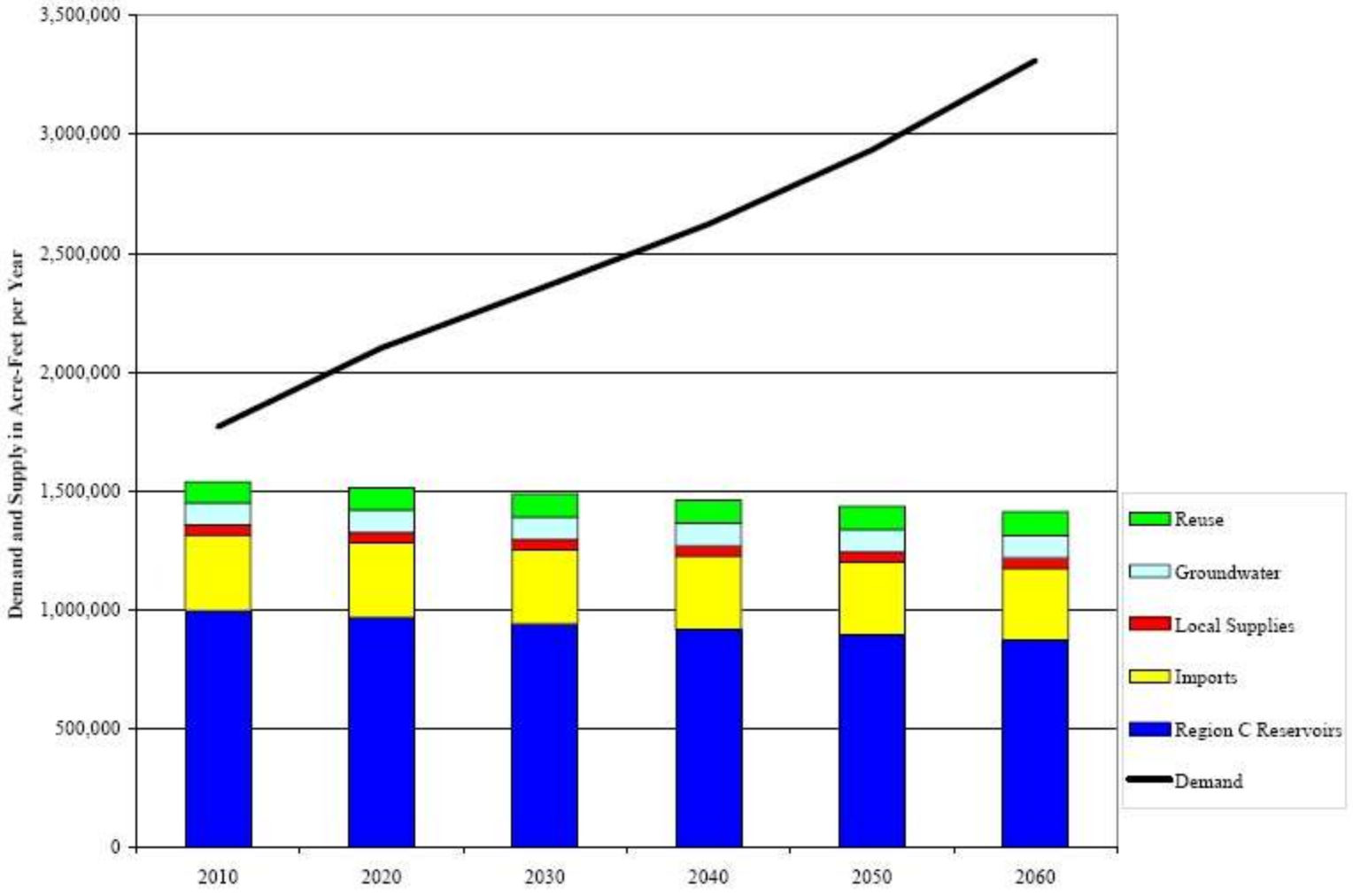
bathing and laundry

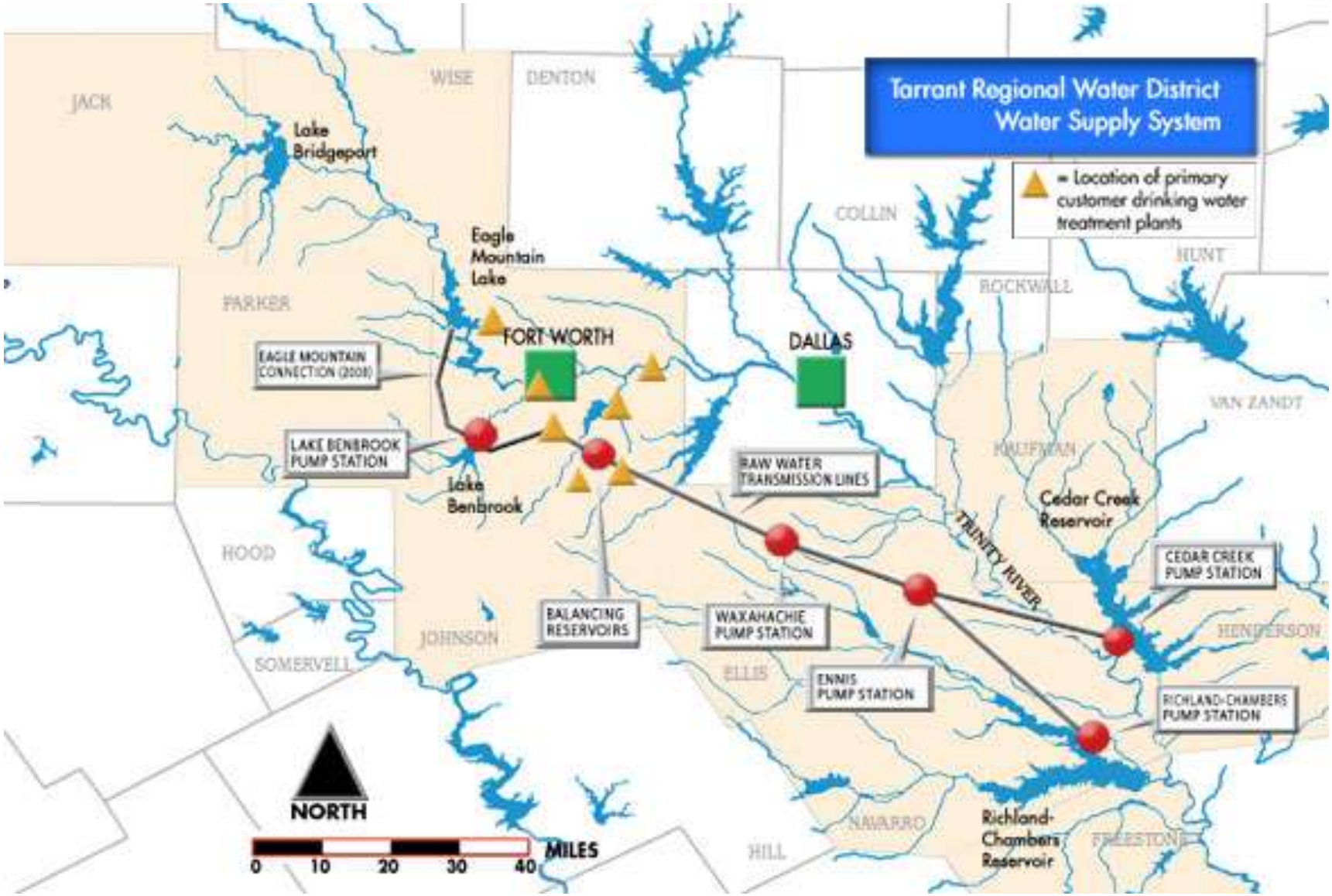
livestock (50 gal./day)

Property values

2007 Draft Texas Water Plan Region C

Figure ES.3
Comparison of Currently Available Supplies and Projected Demands

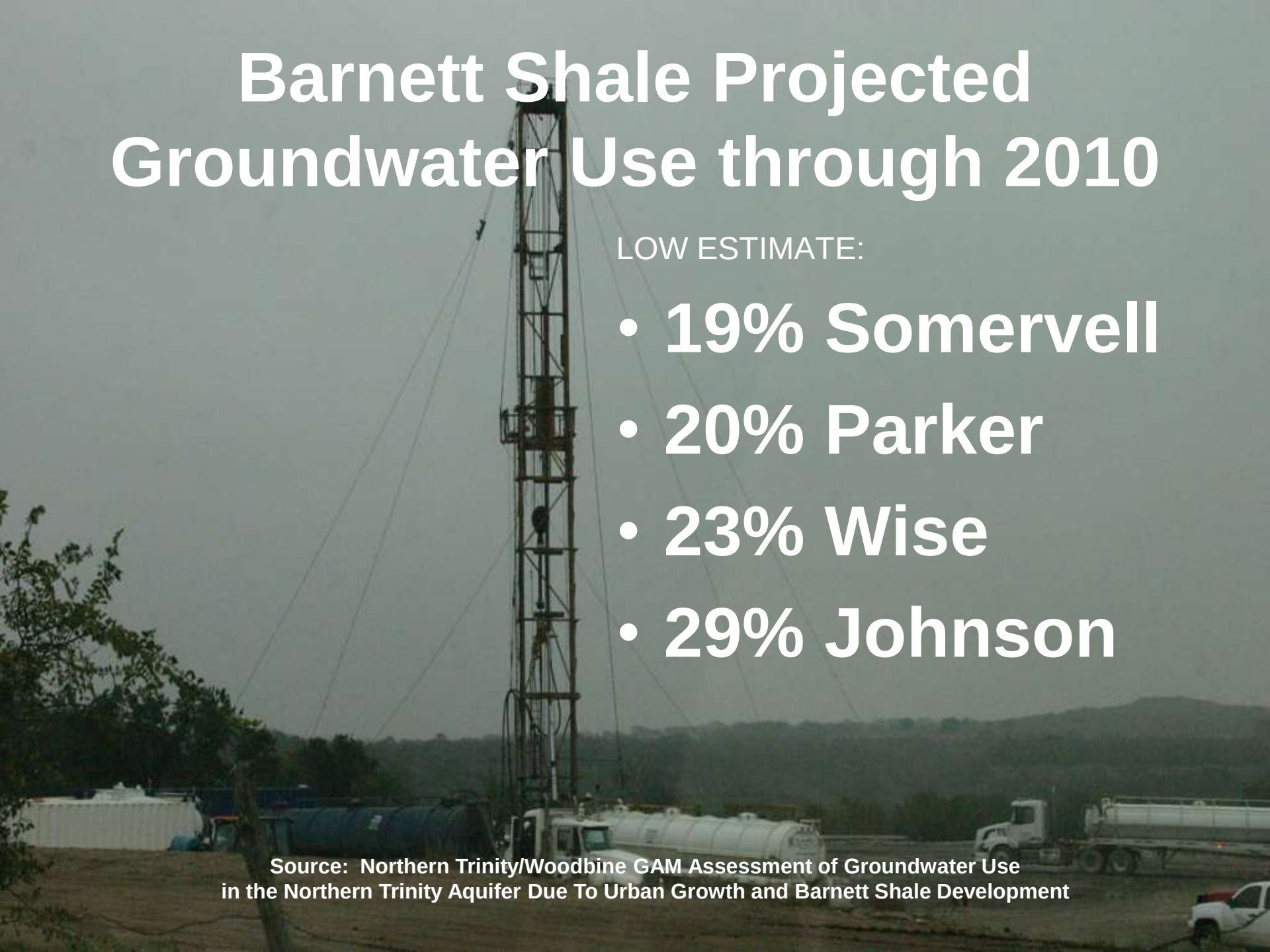



Tarrant Regional Water District
Water Supply System
= Location of primary customer drinking water treatment plants
JACK
WISE
DENTON
COLLIN
HUNT
ROCKWALL
VAN ZANDT
KAUFMAN
PARKER
HOOD
JOHNSON
SOMERVELL
ELLIS
NAVARRO
HILL
HENDERSON
FREESTONE
Lake Bridgeport
Eagle Mountain Lake
FORT WORTH
DALLAS
EAGLE MOUNTAIN CONNECTION (2008)
LAKE BENBROOK PUMP STATION
Lake Benbrook
RAW WATER TRANSMISSION LINES
Cedar Creek Reservoir
TRINITY RIVER
CEDAR CREEK PUMP STATION
BALANCING RESERVOIRS
WAXAHACHIE PUMP STATION
ENNIS PUMP STATION
RICHLAND-CHAMBERS PUMP STATION
Richland-Chambers Reservoir
NORTH
0 10 20 30 40
MILES

Barnett Shale Projected Groundwater Use through 2010

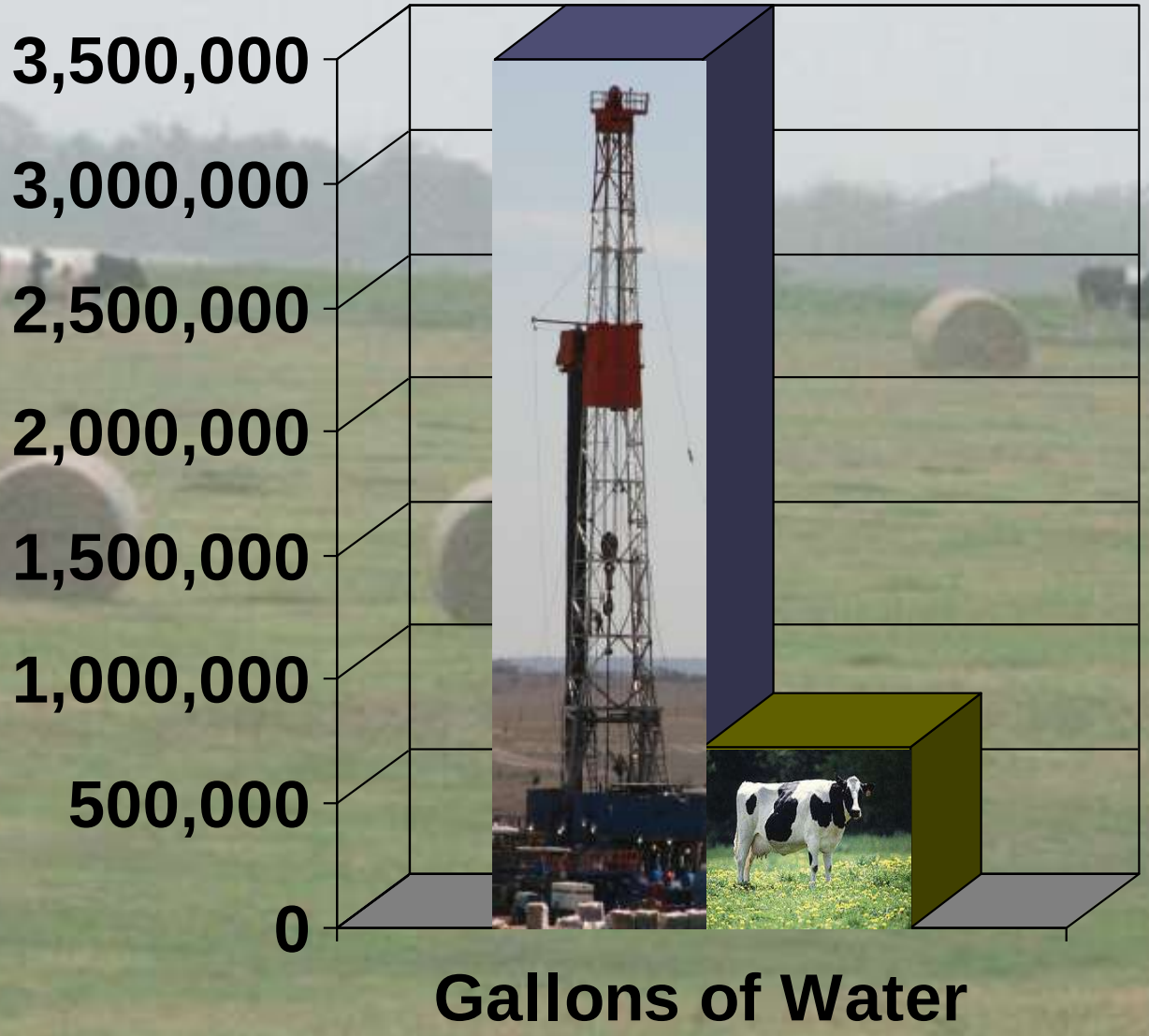
LOW ESTIMATE:

- 19% Somervell
- 20% Parker
- 23% Wise
- 29% Johnson



Source: Northern Trinity/Woodbine GAM Assessment of Groundwater Use in the Northern Trinity Aquifer Due To Urban Growth and Barnett Shale Development

40 Acre Well Site vs. 40 Head of Cattle



Recycling

Barnett Shale Water

Weatherford Telegram

Energy companies strive to reuse water

The use of water to hydraulically fracture gas wells is relatively new to North Texas.

Water fracs have been performed in the Barnett Shale only since 1997. Fracturing a vertical well to completion can used more than 1.2 million gallons, while fracturing a horizontal well can use more than 3.5 million gallons.

In addition, the wells may be refractured multiple times during several years of production.

Water is an integral part of natural gas production, and the energy producers operating in Parker County are pioneers in the application of water recycling technology in the Barnett Shale.

"In North Texas we are operating seven recycling units with a combined treatment capacity of 500,000 gallons of water per day," said Brad Foster, vice president and general manager of Devon Energy Production Central Division. "At full treatment capacity, up to 85 percent of the water we recover from fracture completions in the Barnett Shale could be reused, significantly re-

January, the Texas Water Development Board published a study of a 19-county area that includes the Barnett Shale development area. This report, "Northern Trinity/ Woodbine Aquifer Groundwater Availability Model, Assessment of Groundwater Use in the Northern Trinity Aquifer Due to Urban Growth and Barnett Shale Development," includes estimates of water used in Barnett Shale development. This report can be found at www.twdb.state.tx.us/publications/pub.asp.

Recognizing the concerns with water use in the area, over the past few years several companies have applied for, and the Commission has approved, pilot projects in the Barnett Shale to reduce the amount of fresh water used in development activities.

Fountain Quail Water Management of Jacksboro has been testing a recycling pro-

Jay Ewing, completion and construction supervisor for Devon Energy Corp., looks at water recycled from one of the units that allow Devon to recycle up to 85 percent of recovered water for use in other well completion projects.

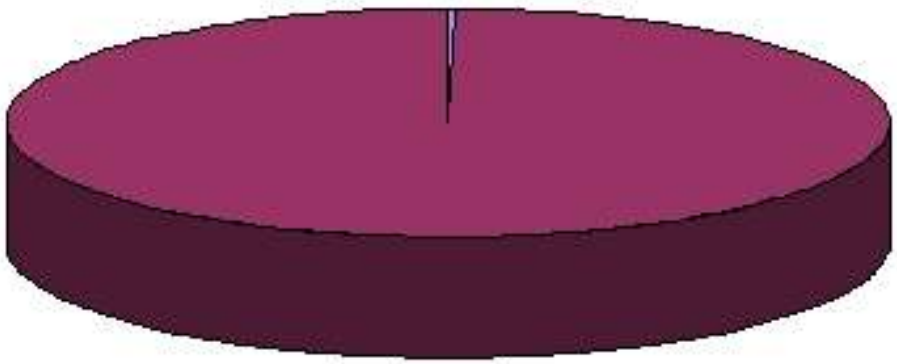
Shale well. To date, this project has processed more than 1.5 million barrels of returned fracture fluid to recover more than 1.2 million barrels of reusable water.

DTE Gas Resources Inc. was granted authority in April 2006 to conduct a pilot project. It is authorized to store, handle, treat

On-Site Water Treatment Magazine 2006

Recycled Water in the Barnett Shale

6519 Existing Wells x 3.5 million gal. each



- RECYCLED WATER 0.3%
  1.2 million barrels to date
  (66 million gal.)
- WASTE DISPOSAL 99.7%
  22.75 Billion Gallons to date

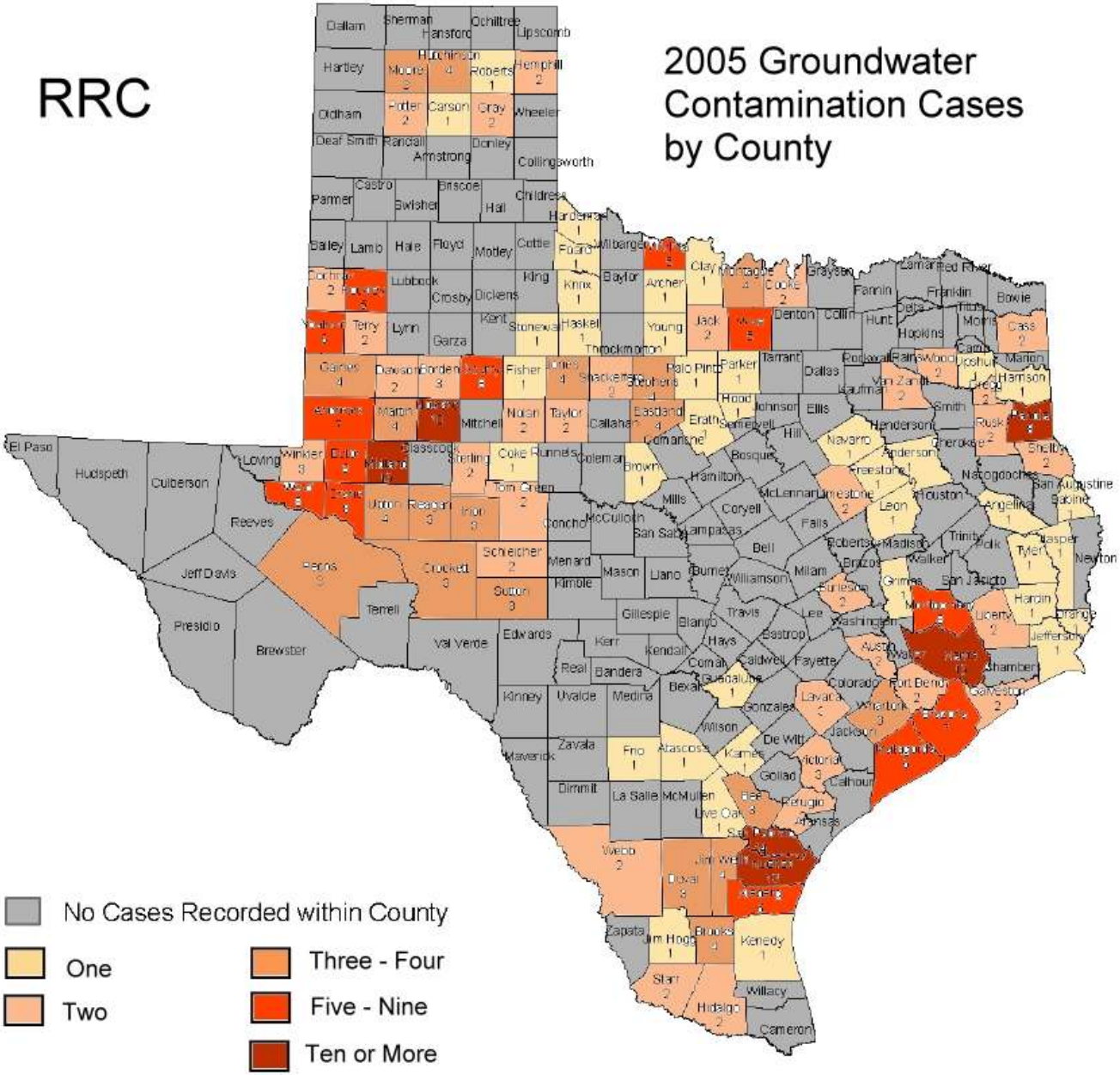
Groundwater Contamination

July 2005 EPA OIG Photo

Panola County Water Well

RRC

2005 Groundwater Contamination Cases by County

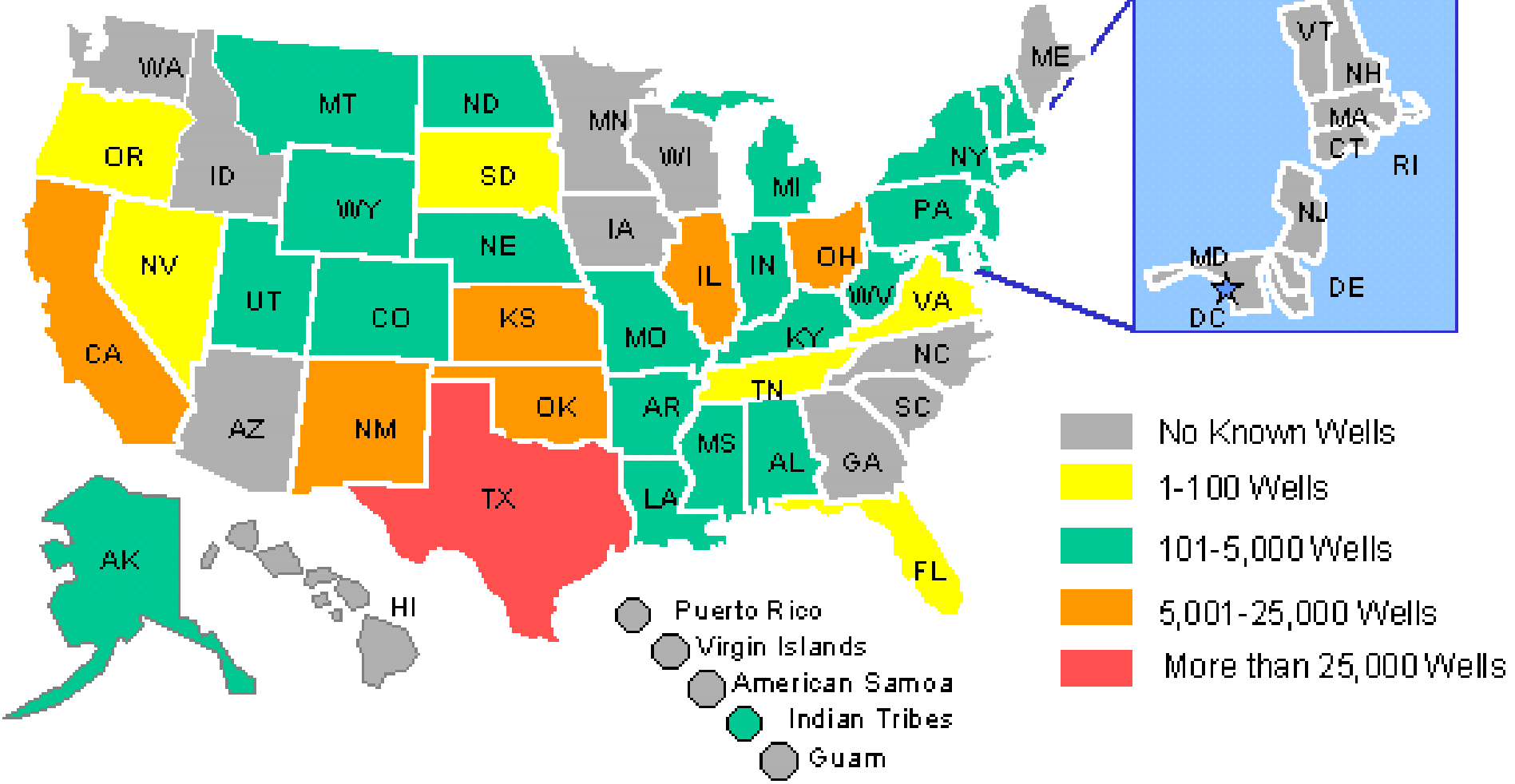


2
5
Jack County
Wise County
Denton County
Collin County
1
1
Parker County
Tarrant County
Dallas County
1
Hood County
Johnson County
Ellis County
1
Somervell County
Groundwater Contamination Cases 2005 RRC

Oil and Gas
Groundwater Contamination

Injection Wells
Gas Well Blowout
Pipeline leaks
Spills
Frac Water Pits

UIC Class II Oil&Gas Wells



Contaminated Soil around the Mitchell Saltwater Disposal Facility

Many incidents are never reported

Reports may take months or years

“…as much as 3 years I was told when I inquired about a "major" oil and gas waste spill ... it appears that the oil company removed and replaced the contaminated soil and repaired the pipeline during late night hours and never reported it to the RRC District Office. ” **Bill Gordon**

Trinity River, Fort Worth near Chesapeake Gas Well Site

Photos by Don Young October 12, 2007

Barnett Shale
Injection Disposal Well Incidents

- 1 of 4 in Parker County 25%
- 2 of 27 in Wise County 7.4%

Hydro FX Injection Disposal Well

4 miles west of Boyd

Wise County

– shut down January 2007

– Relatively new well (about 5 years old)

Wise County

“unknown chemical dump”

2006

Chico
Wise County
2005

An injection well accident
forced saltwater to
bubble out of the ground

Doc's Tank Trucks
Injection Disposal Well
Parker County

30' x 80' area of oil and produced water pollution

"casing pressure…indicating a downhole integrity problem"

"groundwater in the area is likely to be contaminated"

RAILROAD COMMISSION OF TEXAS
OIL AND GAS DIVISION

APPLICATION TO DISPOSE OF OIL AND GAS WASTE BY INJEC
INTO A FORMATION NOT PRODUCTIVE OF OIL AND GA

2. Operator P-5 No.

1. Operator Name: BENCO OPERATING COMPANY Inc.

3. Operator Address: 204 TENNESSEE, GRAHAM, TEXAS, 76450

4. County: TARRANT

5. RRC District No.

6. Field Name: NEWARK, EAST (BARNETT SHALE)

7. Field Number

8. Lease Name: FW SWD

9. Lease/Gas ID No.

10. Well is ___ miles in a NE direction from ALEDO (center of nearest town).

12. Legal description of location including distance and direction from survey lines: 660' FNL, 1650' FWL of A

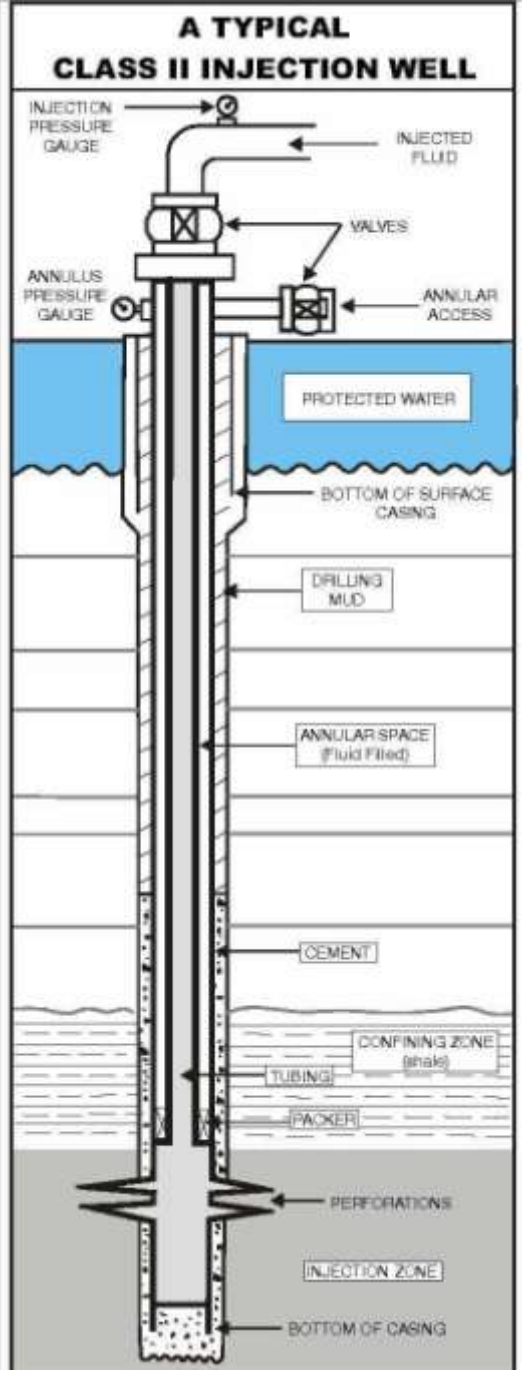
13. Latitude/Longitude, if known (Optional) Lat. 32° 43' 04.400"N Long. 97°32'

14. New Permit: Yes ☒ No ☐ If no, amendment of Permit No.

15. Reason for amendment: Pressure ☐ Volume ☐ Interval ☐ Commercial ☐ Other

16. Well No. 1 | 17. API No. 42-___-00000 PROPOSED | 18. Date Drilled | 19. Total Depth 12

Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	Cement Sacks (#)	Top of cement



City of Annetta North
Parker County

Increased salinity

in deep Trinity water wells

“indications that old oil and gas wells near Aledo are the problem”

Barnett Shale Pipeline Accidents

Parker County March 11, 2007

Barnett Shale Pipeline Leaks

Enbridge Springtown Gas Plant

March 29, 2004

“About 11 barrels of condensate were released into a cattle stock pond from our North Texas natural gas system after a seam failure caused a pipeline leak.”

Enbridge Annual Report

Spills

20% of all oil and gas industry
spills contaminated water:

14% of all spills affected groundwater

Colorado study by Oil and Gas Accountability Project
Between June 2002 and June 2006

Urban Area Water Disposal

- **Moratorium** on new salt water injection wells in Fort Worth
- Saline is **highly corrosive** to pipe
- Unable to use **eminent domain** rights for water pipelines

Environmental Protection Agency

Tarrant Regional Water District

Texas Water Development Board

Texas Commission on Environmental Quality

Texas Railroad Commission

Enforcement

- **46.6% active leases have not been inspected in five years**
- **32 Inspectors** cover 86 counties
- **10,570** existing and permitted wells in the Barnett Shale

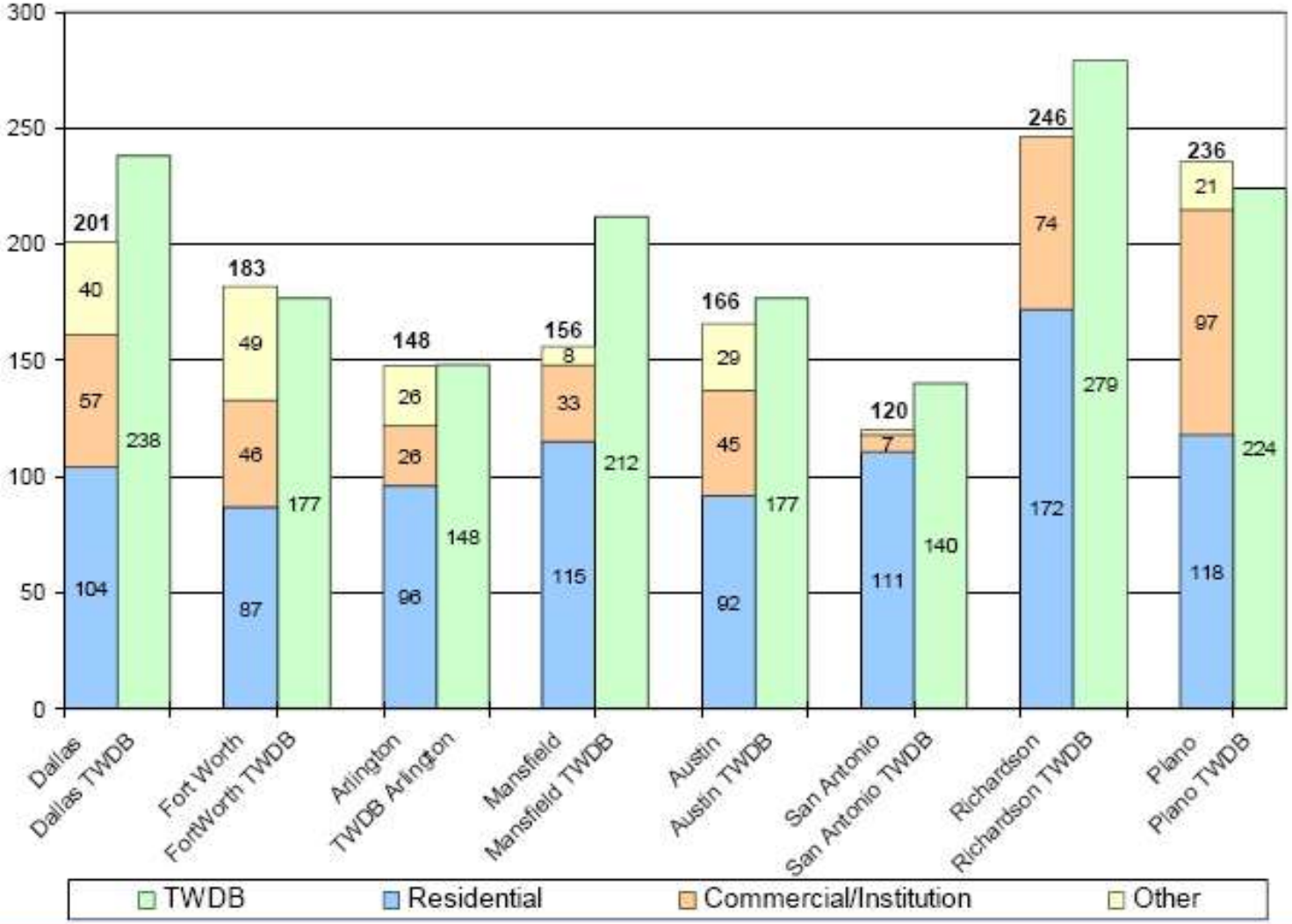
“(polluters) often have economic benefits that exceed their penalties, which could reduce their incentive to comply."

2003 Texas State Auditor’s Report

Now What?

2004 GPCD Totals

Snapshot of 2004 per capita values for select Texas cities



Conservative?
STOP LIBERAL
WATERING
www.yahoogroups.com/group/PARCHED

- Fort Worth Citizens Against Natural Gas Drilling Ordinance (FW CAN DO)
- Erath Citizens for Clean Water
- PARCHED Parker Area Residents Committed to Halting Excessive Drilling

Groundwater Availability Certification

Parker County

requires a 30 year groundwater availability certification on new platts prior to approval

Upper Trinity Groundwater Conservation District

Hood County
Wise County
Parker County
Montague Cou

Groundwater bill passes on last day of session

Oil, gas concessions included; confirmation election next step

GALEN SCOTT
gscott@weatherforddemocrat.com

Unanimous votes in the Texas House and Senate ushered enabling legislation for the Upper Trinity Groundwater District to Gov. Rick
Pending

Upper Trinity Groundwater Conservation District

- Does **not** exempt Oil and Gas

- passed **unanimously** by legislature

  pending public election November 6th

PARKER COUNTY - WEATHERFORD

Just try living without it.

SAVE WATER. Nothing can replace it.

We can’t drink natural gas.