

Subject: Request for an Aquifer Exemption Expansion

From: Railroad Commission of Texas

To: EPA- District 6

1201 Elm St

Dallas, Texas 75270

Purpose:

The Railroad Commission of Texas ("RRC") requests a field expansion of the Acleto Creek field. The following is included in this request:

1. Aquifer Exemption Checklist
2. RRC Map Images of Current and requested field boundary
3. Shapefile Layer (.shp file to be attached in email)
4. References

An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" in 40 CFR § 146.3 may be determined to be an "exempted aquifer". Class II wells must meet the criteria under 146.4(a) and criteria specified by least one of the following sections: 146.4(b)(1), 146.4(b)(2), 146.4(b)(3), 146.4(b)(4), or 146.4(c).

Location of proposed aquifer exemption

- Township, Section, Range, Quarter Section, or other method used to identify the area
 - James Bradley A-38 and James Bradley A-37
- Latitude and longitude:
 - GIS LAT (NAD83) 29.277058
 - GIS LONG (NAD83) -97.910925
- Distance to the nearest city/town:
 - 5 mi. ENE from Stockdale
- Name of aquifer or portion of aquifer to be exempted:
 - Aquifer to be exempted is the Lower Wilcox aquifer.
- Areal extent of the area proposed for exemption:
 - Perimeter: 21.021795 Miles
 - Area: 10.283888 Square Miles
- Depth and thickness of the aquifer:
 - Depth: 2,436'-2,721'
 - Thickness: 285' feet at the largest interval between the subject wells.
- TDS content of the aquifer, including the TDS at the top and bottom of the proposed zone to be exempted, and the locations and depths of all fluid samples taken.
 - TDS of aquifer is between 3,000-10,000 TDS.

1. **Must meet the criterion in §146.4(a): The proposed aquifer or portion of the aquifer for which the exemption is requested is not currently used as a drinking water source.**

a. Are there any public or private drinking water wells within and nearby the proposed well? (Minimum review area of 5 miles)

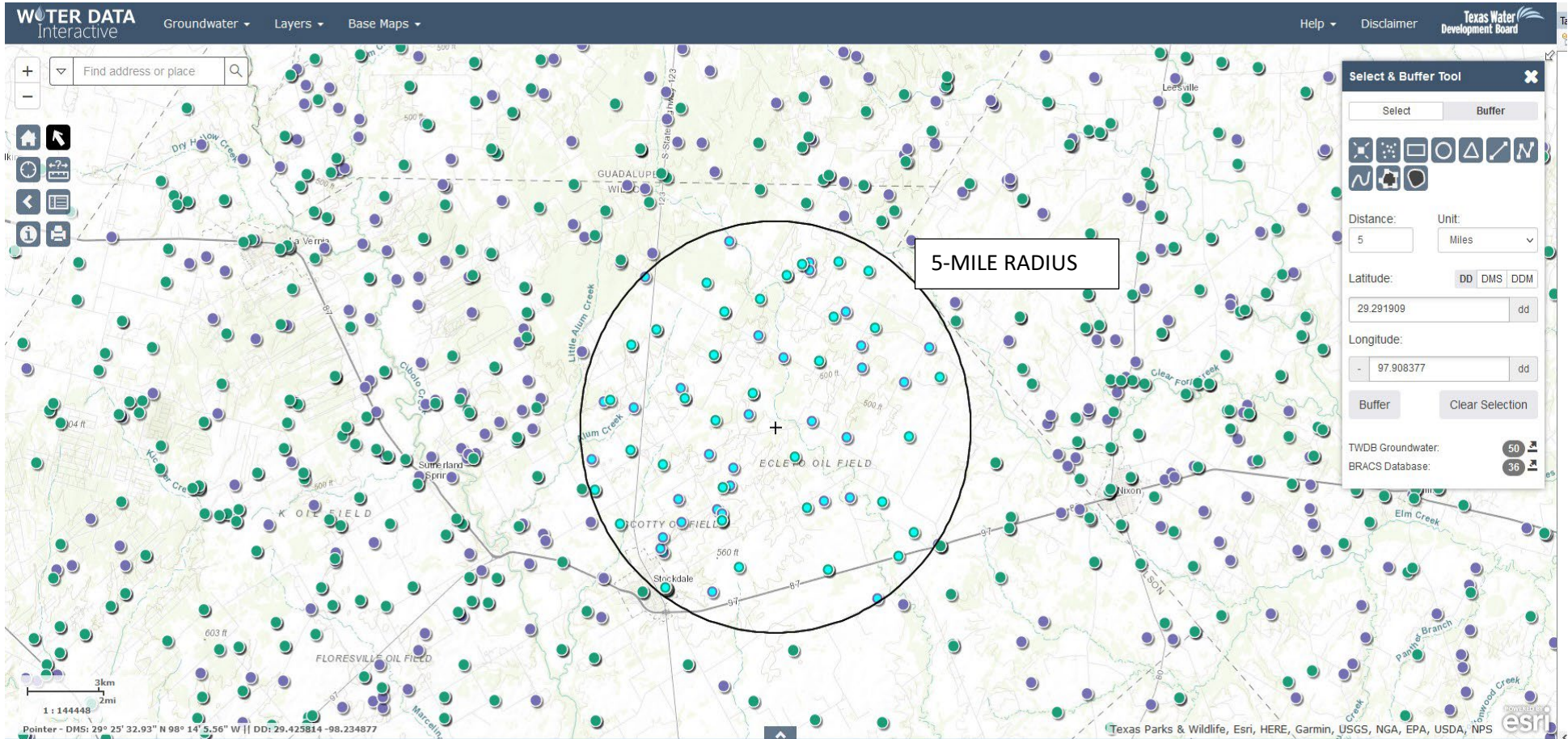


Figure One: Map of water well within a 5-mile radius of subject

- b. Water well table: Table of all inventoried water wells showing: Well Name/#, Owner, (Private/Public), Contact information, Purpose of well (Public Water Supply, Domestic, Irrigation, Livestock, etc.), depth of source water, name of aquifer, well completion data, age of well (if known), and the primary source of well data (Applicant/State/EPA).

Data Source	County	Well Depth (ft)	Total Depth (ft)	Well Owner	Type of Well	Latitude (DD)	Longitude (DD)
TDLR Digital Water Well Reports	WILSON	120	120	PATTY MISHLER	Withdrawal of Water	29.2575	-97.974443
TDLR Digital Water Well Reports	WILSON	180	180	K.A. Love	Withdrawal of Water	29.246388	-97.856111
TWDB Groundwater Database	WILSON	192	192	Francis Natalla	Withdrawal of Water	29.235277	-97.955
TDLR Digital Water Well Reports	WILSON	200	200	LLOYD RADICKE	Withdrawal of Water	29.270554	-97.930554
TDLR Digital Water Well Reports	WILSON	200	200	Fred Canales	Withdrawal of Water	29.254722	-97.849721
TDLR Digital Water Well Reports	WILSON	260	260	BILLY TUBERVILLE	Withdrawal of Water	29.336944	-97.914722
TDLR Digital Water Well Reports	WILSON	300	300	LEE RIHN	Withdrawal of Water	29.263333	-97.894999
TDLR Digital Water Well Reports	WILSON	331	331	L. E. Bosanko	Withdrawal of Water	29.281388	-97.9
TDLR Digital Water Well Reports	WILSON	340	340	Ray Wilson	Withdrawal of Water	29.27861	-97.956111
TDLR Digital Water Well Reports	WILSON	350	350	Dennis Korzekwa	Withdrawal of Water	29.28861	-97.851666
TDLR Digital Water Well Reports	WILSON	378	378	Tony Perez	Withdrawal of Water	29.346944	-97.868888
TDLR Digital Water Well Reports	WILSON	377	380	Dave Gutacker	Withdrawal of Water	29.342777	-97.937499
TWDB Groundwater Database	WILSON	385	385	C. Wiley	Withdrawal of Water	29.32611	-97.958888
TDLR Digital Water Well Reports	WILSON	390	390	Joe Randall Cotter	Withdrawal of Water	29.242499	-97.923888
TDLR Digital Water Well Reports	WILSON	444	444	Ted Wesley	Withdrawal of Water	29.301388	-97.978332
TWDB Groundwater Database	WILSON	460	460	City of Stockdale	Withdrawal of Water	29.235277	-97.954722
TDLR Digital Water Well Reports	WILSON	460	460	Robbie and Gloria Tidwell	Withdrawal of Water	29.309444	-97.83861
TDLR Digital Water Well Reports	WILSON	380	471	Jeff and Carmen Mero	Withdrawal of Water	29.265277	-97.863055
TDLR Digital Water Well Reports	Wilson	520	520	BRIAN and PATRICIA SMITH	Withdrawal of Water	29.350277	-97.881666
TDLR Digital Water Well Reports	WILSON	522	522	Reed, Rick	Withdrawal of Water	29.294166	-97.93361
TWDB Groundwater Database	WILSON	525	525	Andry G. Watkins	Withdrawal of Water	29.303611	-97.918054
TDLR Digital Water Well Reports	WILSON	525	536	Collins, Earl	Withdrawal of Water	29.326666	-97.866111
TWDB Groundwater Database	WILSON	546	546	Marion Scrabarezyk	Withdrawal of Water	29.320832	-97.969443
TWDB Groundwater Database	WILSON	594	594	Arnold Lambeck, Jr.	Withdrawal of Water	29.315	-97.889999
TWDB Groundwater Database	WILSON	600	600	J. H. Bain, Jr.	Withdrawal of Water	29.345277	-97.903611
TWDB Groundwater Database	WILSON	650	650	Lester W. Hutt	Withdrawal of Water	29.301944	-97.946666
TWDB Groundwater Database	WILSON	650	650	Lester W. Hutt	Withdrawal of Water	29.332499	-97.929999
TWDB Groundwater Database	WILSON	674	674	Sarah Linda Bain	Withdrawal of Water	29.349166	-97.896944
TWDB Groundwater Database	WILSON	700	700	Donald Stracbein	Withdrawal of Water	29.317221	-97.934444
TDLR Digital Water Well Reports	Wilson	700	700	Luke May	Withdrawal of Water	29.330554	-97.88361
TWDB Groundwater Database	WILSON	720	720	Lester W. Hutt	Withdrawal of Water	29.28361	-97.969721
TWDB Groundwater Database	wilson	916	916	City of Stockdale	Withdrawal of Water	29.234999	-97.955
TWDB Groundwater Database	WILSON	972	972	City of Stockdale	Withdrawal of Water	29.234721	-97.954444
TWDB Groundwater Database	WILSON	1010	1017	Dick Ware	Withdrawal of Water	29.241388	-97.88611
TWDB Groundwater Database	WILSON	1050	1160	Sunko WSC	Withdrawal of Water	29.25898	-97.93094
TCEQ Digital Geophysical Well Logs	WILSON	765	2512	M. H. Skrobarcek	Withdrawal of Water	29.269721	-97.984999

State Well Number	Owner	Water Use	Elevation (ft)	Well Depth (ft)	Latitude (DD)	Longitude (DD)	County	Well Type
6742401 - Scanned Doct Union Valley Baptist Church		Institution	418	24	29.32	-97.843056	Wilson	Withdrawal of Water
6741201 - Scanned Doct H. S. Hastings		Domestic	515	68	29.357223	-97.927778	Wilson	Withdrawal of Water
6749205 - Scanned Doct Francis Natalla		Domestic	470	192	29.235278	-97.955001	Wilson	Withdrawal of Water
6750103 - Scanned Doct Thomas Loessin		Domestic	409	265	29.231389	-97.865278	Wilson	Withdrawal of Water
6741102 - Scanned Doct Harold Lynn		Unused	590	272	29.344722	-97.963612	Wilson	Withdrawal of Water
6741401 - Scanned Doct C. Wiley		Unused	536	385	29.326111	-97.958889	Wilson	Withdrawal of Water
6749202 - Scanned Doct City of Stockdale Well #2		Other	472	460	29.235	-97.954723	Wilson	Withdrawal of Water
6741501 - Scanned Doct Andry G. Watkins		Unused	471	525	29.303612	-97.918055	Wilson	Withdrawal of Water
6741405 - Scanned Doct Marion Scrabarezyk		Irrigation	532	546	29.320833	-97.969444	Wilson	Withdrawal of Water
6741601 - Scanned Doct Arnold Lambeck, Jr.		Stock	510	594	29.315001	-97.89	Wilson	Withdrawal of Water
6741301 - Scanned Doct J. H. Bain, Jr.		Irrigation	505	600	29.345278	-97.903612	Wilson	Withdrawal of Water
6741502 - Scanned Doct Lester W. Hutt		Irrigation	545	650	29.301945	-97.946667	Wilson	Withdrawal of Water
6741503 - Scanned Doct Lester W. Hutt		Irrigation	545	650	29.3325	-97.93	Wilson	Withdrawal of Water
6741304 - Scanned Doct Sarah Linda Bain Lse. Charles F		Irrigation	519	674	29.349167	-97.896945	Wilson	Withdrawal of Water
6741506 - Scanned Doct Donald Stracbein		Irrigation	512	700	29.317222	-97.934445	Wilson	Withdrawal of Water
6741702 - Scanned Doct Lester W. Hutt		Irrigation	480	720	29.283611	-97.969722	Wilson	Withdrawal of Water
6741701 - Scanned Doct M. H. Skrobarcek		Irrigation	480	765	29.269722	-97.985	Wilson	Withdrawal of Water
6749201 - Scanned Doct City of Stockdale Well #3		Unused	470	916	29.235	-97.9547222	Wilson	Withdrawal of Water
6749206 - Scanned Doct City of Stockdale		Public Supply	471	972	29.2346583	-97.9544972	Wilson	Withdrawal of Water
6749207 - Scanned Doct City of Stockdale Well #4		Public Supply	486	980	29.233611	-97.935278	Wilson	Withdrawal of Water
6749301 - Scanned Doct Dick Ware		Irrigation	450	1010	29.241389	-97.886111	Wilson	Withdrawal of Water
6742404 - Scanned Doct W. E. Williamson		Unused	512	1055	29.312778	-97.871667	Wilson	Withdrawal of Water
6741801 - Scanned Doct J. P. Lorenz		Unused	547	1086	29.261112	-97.931111	Wilson	Withdrawal of Water
6741809 - Scanned Doct Sunko WSC Well #4		Public Supply	551	1124	29.259167	-97.931111	Wilson	Withdrawal of Water
6741810 - Scanned Doct Sunko WSC		Public Supply	547	1160	29.2585917	-97.9309556	Wilson	Withdrawal of Water

Figure Two: Table of all water wells in 5-mile radius from well API: 4249331260. Primary data source is the Texas Water Development Board's Water Data Interactive, an online GIS for water well data.

- c. Pertinent map(s) visually showing the areal extent of exemption boundary, depth and thickness of the aquifer proposed for exemption, all known subsurface structures such as faults affecting the aquifer, and each of the inventoried water well locations by well # or owner name.

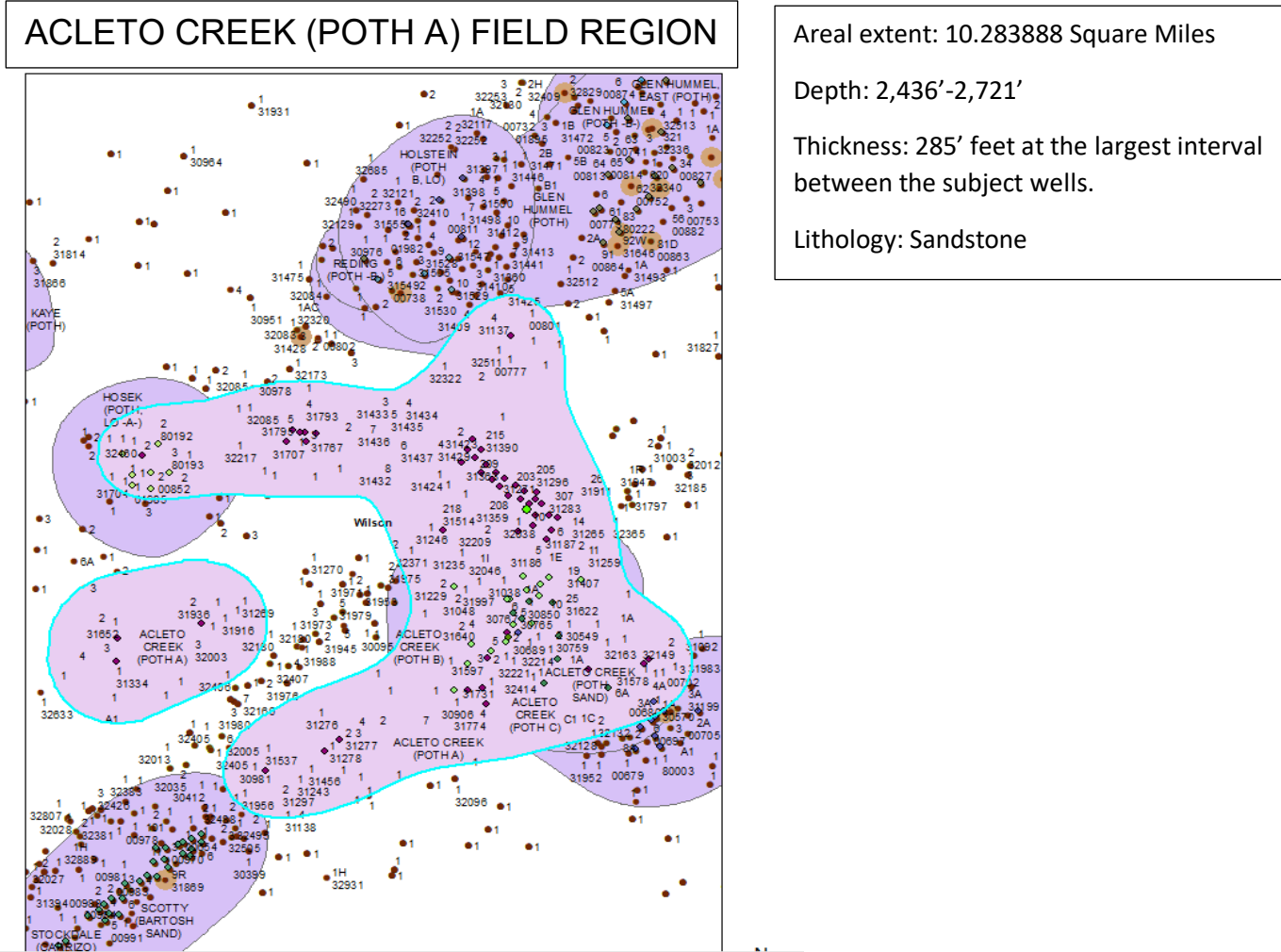


Figure Three: Map showing areal extent of exemption.

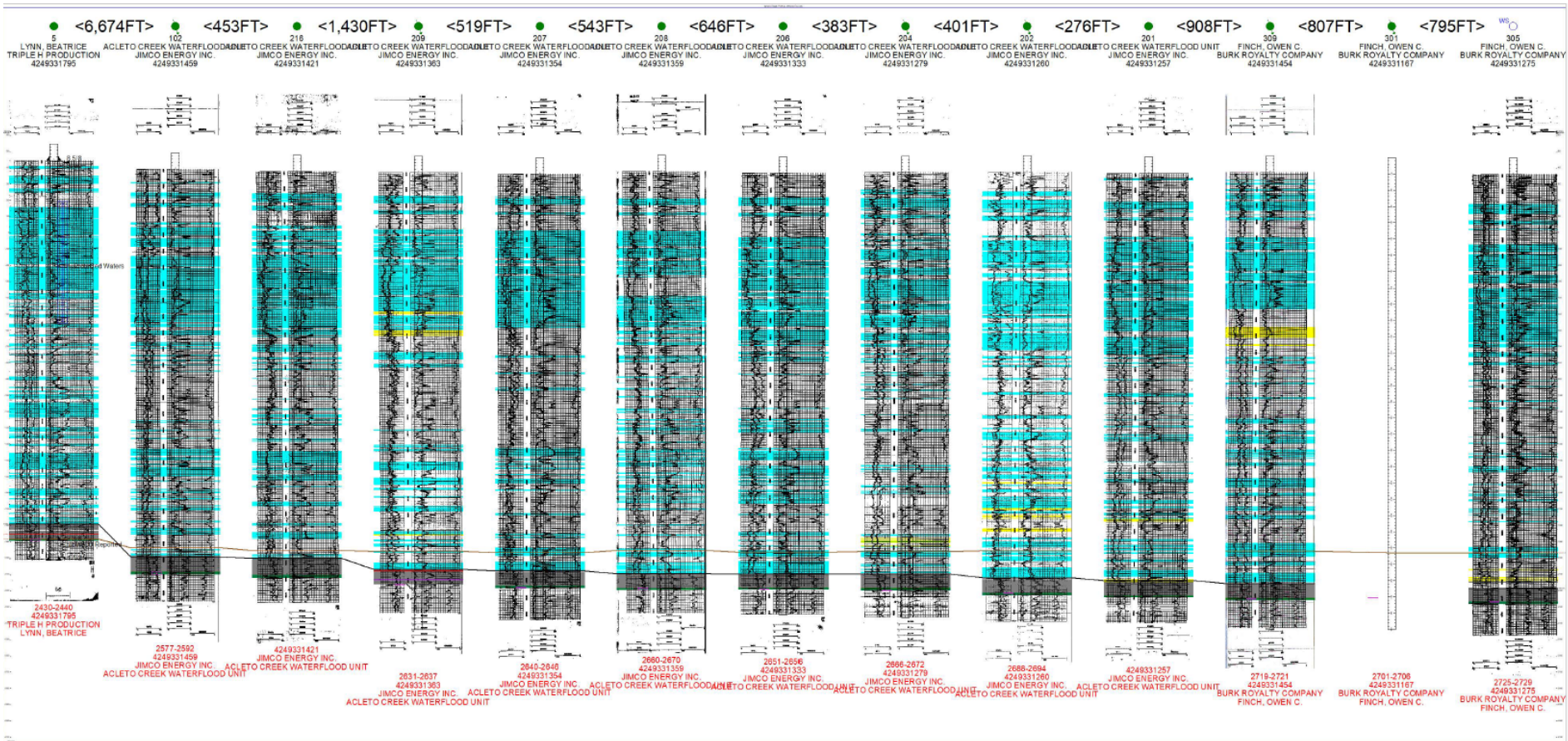


Figure Four: Cross-section of the aquifer, showing the depth and thickness of the aquifer proposed for exemption and all known subsurface structures.

- d. Map showing the areal extent of exemption boundary, all domestic water wells considered potentially down gradient of the exemption and hydraulically connected to the exemption. If wells are deemed horizontally and/or vertically isolated from the exemption, this should be foot noted on the Table as well. Use arrow(s) to indicate the direction and speed of ground water in the aquifer proposed for exemption.
 - i. Referred to Figure three.
2. **Demonstration that the aquifer or portion thereof is mineral, hydrocarbon or geothermal energy producing per 146.4(b)(1)**
- a. Production history of other wells in the vicinity which produce from the horizon in question.

View by: [Monthly Totals](#) | [Annual Totals](#) | [County](#) | [Operator](#) | [Lease](#) | [District](#)

Search Criteria:
 Field Name: ACLETO CREEK (POTH A) , Field No.: 00467505
 Initial View: Lease
 Well Type: Both
 Date Range: Jan 1993 - Jan 2022

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8 results								Page: 1 of 1	Page Size: View All
Lease Name	Lease No.	District No.	Well No.	OIL (BBL)	Casinghead (MCF)	GW Gas (MCF)	Condensate (BBL)		
ACLETO CREEK WATERFLOOD UNIT	09051 Links	01		411,232	21	0	0		
ELKINS, ALEX	09758 Links	01		8	0	0	0		
ELKINS, JESSE	06908 Links	01		2,864	18	0	0		
ELKINS, JESSE -C-	08253 Links	01		6,911	19	0	0		
H & P PARTNERS	14114 Links	01		17,577	0	0	0		
LYNN, BEATRICE	10518 Links	01		12,475	21	0	0		
MONTGOMERY, E. E.	10210 Links	01		0	0	0	0		
RICHTER, PAUL	11531 Links	01		8,169	102	0	0		
Total				459,236	181	0	0		

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Figure Five: Production history for the lease from January 1993 to January 2022.

- b. Description of the project, if it is an enhanced recovery operation including the number of wells and their location.
 - i. Wells are currently being used for enhanced recovery and are in a zone that contains hydrocarbons.

This enhanced oil recovery field is called the Acleto Creek (Poth A) Wilcox Waterflood Unit.
- c. Provide a summary of logging indicating that commercially producible quantities of hydrocarbons are present.
 - i. Refer to figure four.

BACKGROUND AND STATEMENT OF FACT ACLETO CREEK FIELD [SUBMITTAL DATE]

TWDB Brackish Water Project

In 2015, the 84th Texas Legislature passed House Bill 30 (HB 30), directing TWDB to identify and designate brackish groundwater production zones in aquifers of the state by December 1, 2032. Under HB 30, TWDB is tasked with identifying and designating brackish groundwater production zones in areas of the state with moderate to high availability and productivity of brackish groundwater that can be used to reduce the use of fresh groundwater and that meet certain criteria. One of the criteria is that TWDB not designate as a brackish groundwater production zone an area of a geologic stratum that is designated or used for wastewater injection through the use of injection wells permitted under Texas Water Code Chapter 27.

As directed by HB 30, TWDB began the multi-year project to map and characterize the brackish portions of Texas aquifers. TWDB staff has completed three studies: the Pecos Valley Aquifer in West Texas, Gulf Coast Aquifer in a four-county area in the Lower Rio Grande Valley, and the Sparta, Queen City, and Carrizo Wilcox aquifers in part of a two-county area in south-central Texas.

TWDB has identified certain wells that appear to be permitted to inject into USDW for which an aquifer exemption has not been granted and provided a list of those wells to the RRC.

TWDB and RRC GAU geologists have been working together to determine how each agency determined water quality with depth for these wells. The GAU used currently available data in their analysis some of which would not have been available at time of the original determination.

A list of wells was provided by Texas Water Development Board (TWDB) Bracs Program (Brackish Water Study) for the coastal Plains area. The study included the following counties:

- Atascosa, Bastrop, Bee, Bexar, Caldwell, Dewitt, Dimmit, Fayette, Frio, Guadalupe, Gonzales, Karnes, LaSalle, Lavaca, Lee, Live Oak, Maverick, McMullen, Uvalde, Webb, Wilson and Zavala Counties.

The list of wells provided by TWDB were evaluated by The Groundwater Advisory Unit along with UIC department of the Railroad Commission of Texas and reviewed the highlighted injection wells for the following criteria:

- Class of Injection
- Aquifer Exemptions
- Fluid Source Limits

- Historical volumes of injection
- Permit status
- Completion status
- Field inclusion or exclusion
- Geologic Isolation
- Permitted injection interval
- Completion injection interval
- Casing requirements
- BUQW depth MD
- USDW depth MD
- TWDB USDW depth MD
- Groundwater permitting agency (Texas Commission on Environmental Quality, Texas Water Commission, Texas Water Development Board)
- GW2 Groundwater Determination at time of permit
- No Harm or May Harm Letters at time of permit

The GAU examined the highlighted wells at the historical time of the permitting process, and GAU applied the latest methods and data to the same wells. The subject wells were examined in a cross-section format using available raster and digital (LAS) logs. When possible, the cross section demonstrated the surface elevation, casing shoe and tubing depth. In addition, injection intervals, BUQW and USDWs, and local formations were identified. The subject wells were then overlaid as to compare the TWDB water quality measured results. The TWDB applied the Rwa method evaluation, and the GAU applied the Mean Ro TDS Method. Most times, both agencies were in agreement in their study of the BUQWs, USDWs and geologic isolation. When possible, the injection interval of the subject well was compared to a screened water well in relative correlative interval that had a laboratory water quality analytical report.

As a result of the review the water quality, a handful of injection wells were identified as to be injecting to a USDW as measured by the TWDB. The GAU then followed up by measuring the water quality of the injection interval of the subject well. (Permitted and completed intervals). Once TDS was measured, the subject well was flagged and turned over to the UIC department for administrative disposition.

Review of Subject Wells

Once with UIC, the cross-sections produced were reviewed for the following GAU color codes.

- BUQW 0-3,000 mg/L (GAU color code blue)
- USDW 3,000-10,000 mg/L (GAU color code yellow)
- Waters greater than 10,000 mg/L (GAU color code red)
- Geologic Isolation (GAU color code grey)

These GAU codes allowed UIC to make permit modifications based on the depth of the USDW and the amount of geologic isolation present.

The following was presented and reviewed by UIC:

RRC Aquifer Exemption Map

ACLETO CREEK (POTH A) FIELD REGION

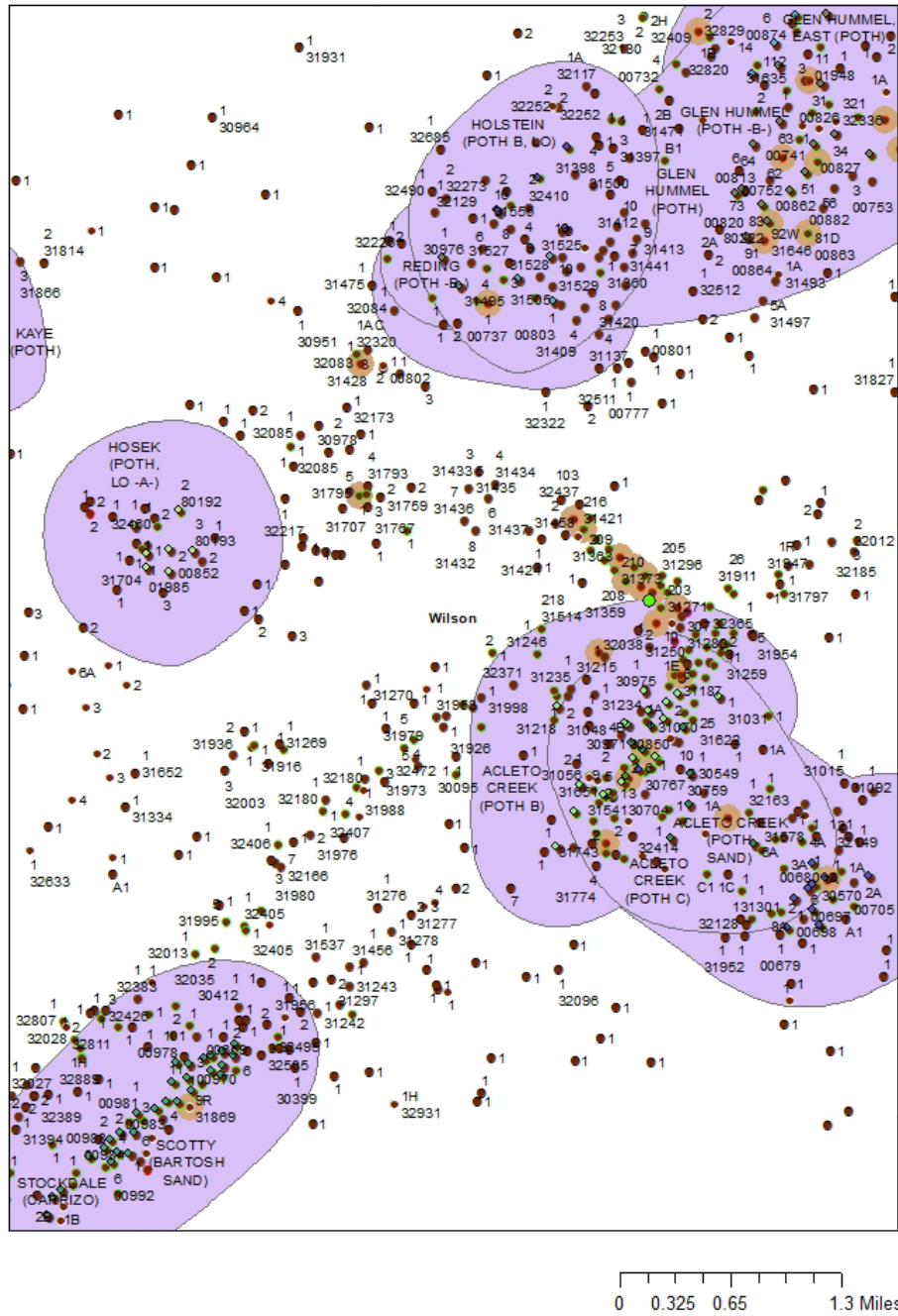


Figure Six: Current Acleto Creek (Poth A) field in RRC Aquifer Exemption Map.

RRC Aquifer Exemption Map with New Field

ACLETO CREEK (POTH A) FIELD REGION

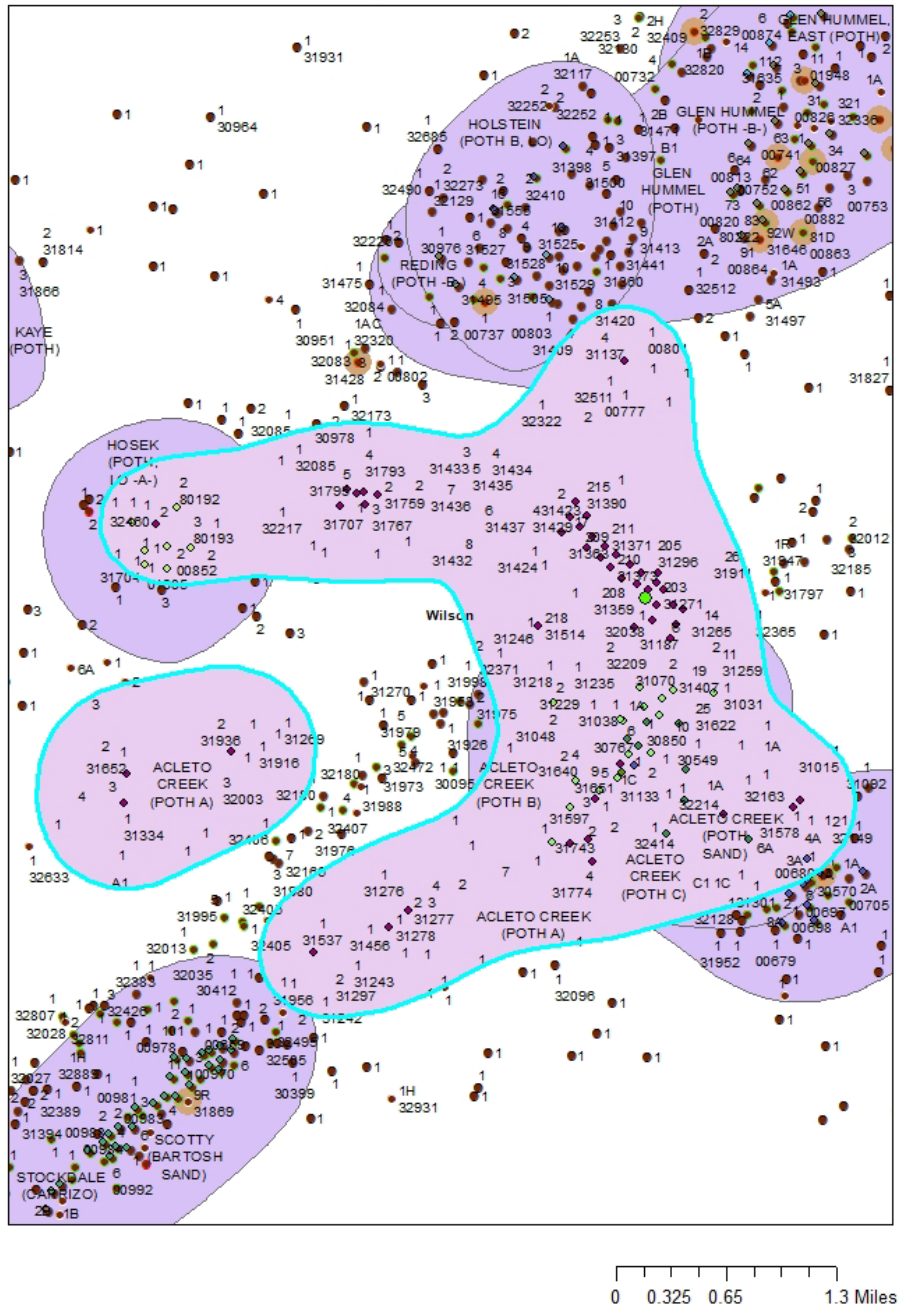


Figure Seven: Image of proposed new Acleto Creek (Poth A) field.

REFERENCES

1. <https://www3.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer>
2. <http://webapps2.rrc.texas.gov/EWA/productionQueryAction.do>
3. <https://www.epa.gov/uic/aquifer-exemptions-map>
4. https://www.epa.gov/uic/aquifer-exemptions-map#AE_facts
5. <https://www.rrc.texas.gov/oil-and-gas/applications-and-permits/injection-storage-permits/oil-and-gas-waste-disposal/injection-disposal-permit-procedures/aquifer-exemptions/>
6. <https://www.rrc.texas.gov/oil-and-gas/applications-and-permits/injection-storage-permits/oil-and-gas-waste-disposal/injection-disposal-permit-procedures/aquifer-exemptions/aquifer-exemption-review/>