## **Texas Water Development Board**





## **RESERVOIR STORAGE**

### February 2009

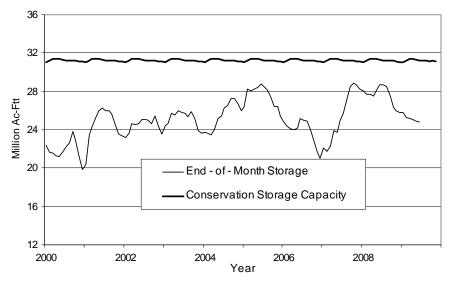
Near the end of February, the 109 reservoirs monitored for this report held 24.8 million acre-feet\* in conservation storage, or 80 percent of the conservation storage capacity of the state's 175 major water supply reservoirs. This is 93,340 acre-feet less than last month.

Storage was at 100% in 14 reservoirs, including Falcon and Amistad. Ten out of these 14 reservoirs are in the East Region. On the other hand, five lakes were at or below 10% full: O C Fisher Lake was still effectively empty, Palo Duro (1%) was almost empty, Lake Meredith and J B Thomas both at 8%, and E.V. Spence is 10% full.

The Southern Region (91%) is the only region having storage at or above 90% of capacity, and the High Plains (12%) and Trans-Pecos Regions (28%) remained very low. Storage increased in three regions and decreased in the remaining six in the past month, but increased in only two of the nine regions over the past 12 month period.

\* Only the Texas share of storage in border reservoirs is counted.

# CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Figures are based on end of the month data at 109 major reservoirs that represent 95 percent of the total conservation storage capacity of the 175 major water supply reservoirs in Texas. By definition, a major reservoir has a conservation storage capacity of 5,000 acre-feet or greater.

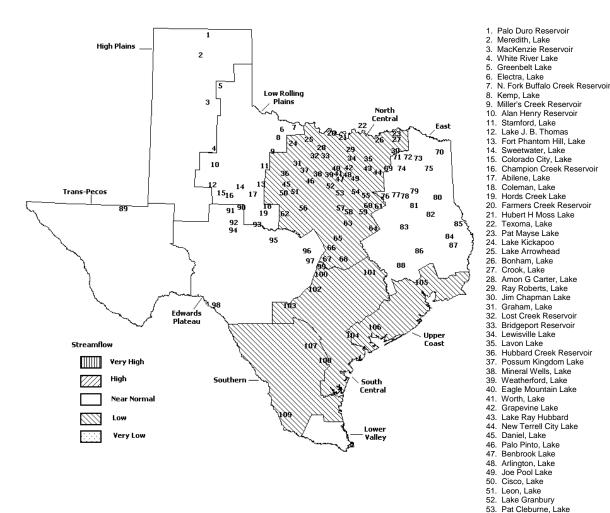
# **STREAMFLOW**

Of 29 reporting index stations in February, computed 30-day mean flows were very high (<5%) at 1 station, high (5% - 30%) at 1 station, low (70% - 95%) at 11 stations, very low (>95%) at 1 station, and near normal (30% - 70%) at the remaining 15 stations. Compared to January, flows have increased at 12 index stations and decreased at 15 stations.

On a regional basis, flows in February were low in the North Central, South Central, Upper Coast, and Southern Regions, but normal in all other regions. Streamflow in the Lower Valley Region is not monitored.

## FEBURARY STREAMFLOW CONDITIONS

#### Reservoirs Shown on Map



- 62. 85.
  - 56. Proctor Lake Whitney Lake Aquilla Lake 59 Navarro Mills Lake 60. Halbert, Lake Richland-Chambers Reservoir Lake Brownwood Waco Lake 64 Limestone Lake 65. Belton Lake Stillhouse Hollow Lake Georgetown, Lake Granger Lake Tawakoni Lake 70. Wright Patman Lake 98 Amistad Reservoir Intl. Travis, Lake 100. Austin, Lake 101. Somerville Lake Canyon Lake
  - Sulphur Springs, Lake Cypress Springs, Lake 73. Bob Sandlin, Lake 74. Fork Reservoir, Lake 75. O' the Pines, Lake Cedar Creek Reservoir Trinity Athens, Lake 78. Palestine, Lake Tyler, Lake 80. Murvaul, Lake Jacksonville, Lake Nacogdoches, Lake 83. Houston County Lake Sam Rayburn Reservoir Toledo Bend Reservoir 86. Livingston, Lake 87. B. A. Steinhagen Lake 88. Conroe, Lake Red Bluff Reservoir 90 Oak Creek Reservoir 91. E. V. Spence Reservoir O. C. Fisher Lake 93. O. H. Ivie Reservoir Twin Buttes Reservoir 95. Vrady Creek Reservoir 96. Buchanan, Lake Lyndon B Johnson, Lake

103 Medina Lake 104. Coleto Creek Reservoir

105. Lake Houston

Texana, Lake

108. Lake Corpus Christi 109. Falcon Reservoir, Intl.

Choke Canyon Reservoir

106.

Waxahacie, Lake 55. Bardwell Lake

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake	No.			Change since		Change since		
or Reservoir	on	Storage	Storage		Late January		Late Febru	ary
	Map	Capacity	Late Feb.	2009	2009		2008	
		(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)
	_	HIGH PL		_		_		_
Palo Duro Reservoir	1	60,897	894	1	-139	0	211	0
Meredith, Lake (Texas)	2	500,000	61,148	12	-1,233	0	14,226	3
Meredith, Lake (Texas & Oklahoma)	(2)	779,556	61,148	8	-1,233	0	14,226	2
MacKenzie Reservoir	3	46,429	5,698	12	-52	0	-1,544	-3
White River Lake	4	29,880	6,541	22	-118	0	5,431	18
TOTAL		637,206	74,281	12	-1,542	0	18,324	3
		LOW ROLLING	PLAINS					
Greenbelt Lake	5	59,500	18,359	31	9	0	-3,500	-6
*Electra, Lake	6	5,626	882	16	-40	-1	-805	-14
N. Fork Buffalo Crk Reservoir	7	15,400	3,883	25	-77	-1	-842	-5
Kemp, Lake	8	245,308	160,484	65	-6,635	-3	-82,866	-34
Millers Creek Reservoir	9	27,888	15,576	56	-499	-2	-6,952	-25
Alan Henry Reservoir	10	94,808	92,363	97	-403	0	1,764	2
Stamford, Lake	11	51,570	34,203	66	-1,075	-2	-14,442	-28
J B Thomas, Lake	12	199,931	15,663	8	-499	0	-7,325	- 4
Fort Phantom Hill, Lake	13	70,030	60,585	87	-1,458	-2	-2,868	-4
Sweetwater, Lake	14	10,006	7,361	74	-106	-1	-90	-1
Colorado City, Lake	15	31,793	21,430	67	-282	-1	-5,116	-16
Champion Creek Reservoir	16	41,618	8,874	21	-51	0	-532	-1
Abilene, Lake	17	6,099	3,459	57	-216	-4	-1,955	-32
Coleman, Lake	18	38,076	27,379	72	-422	-1	-6,914	-18
Hords Creek Lake	19	5,684	2,662	47	-139	-2	-1,941	-34
TOTAL		903,337	473,163	52	-11,893	-1	-134,384	-15
		NODELL GE	ATOTO A T					
Nocona, Lake (Farmers Crk)	20	NORTH CE 21,445	16,606	77	-250	-1	-2,423	-11
Hubert H Moss Lake	21	24,058	20,839	87	-29	0	-1,723	-7
Texoma, Lake (Texas)	22	1,185,688	1,185,688	100	-24,021	-2	26,432	2
Texoma, Lake (Texas & Oklahoma)	(22)	2,371,376	2,371,376	100	-48,042	-2	52,864	2
*Pat Mayse Lake	23	118,100	105,170	89	-439	0	-12,930	-11
Kickapoo, Lake	24	85,825	38,103	44	-989	-1	-19,618	-23
Arrowhead, Lake	25	235,997	153,535	65	-3,318	-1	-49,134	-21
Bonham, Lake	26	11,026	7,807	71	-200	-2	-3,167	-29
Crook, Lake	27	9,195	8,699	95	-10	0	-392	-4
Amon G Carter, Lake	28	19,903	15,840	80	-109	-1	-1,959	-10
Ray Roberts, Lake	29	798,758	717,215	90	-5,389	-1	-67,853	-8
Jim Chapman Lake (Cooper)	30	260,332	151,831	58	-2,645	-1	-108,501	-42
Graham, Lake	31	45,260	39,711	88	-808	-2	1,175	3
*Lost Creek Reservoir	32	11,950	10,219	86	-97	-1	-927	-8
Bridgeport, Lake	33	366,236	267,411	73	-6,172	-2	-47,031	-13
Lewisville Lake	34	543,988	424,188	78	-1,031	0	-108,774	-20
Lavon Lake	35	443,844	358,654	81	-1,687	0	-51,171	-12
Hubbard Creek Reservoir	36	318,067	252,256	79	-5,040	-2	-25,452	-8
Possum Kingdom Lake	37	540,340	491,257	91	-6,048	-1	-24,674	-5
*Mineral Wells, Lake	38	7,065	5,065	72	-66	-1	-913	-13
Weatherford, Lake	39	18,645	11,711	63	-309	-2	-4,044	-22
Eagle Mountain Lake	40	182,500	144,401	79	839	0	-16,228	-22
Worth, Lake	41	24,500	17,046	70	-1,195	-5	-4,053	-17
Grapevine Lake	41	164,702	116,270	71	-2,182	-5 -1	-37,223	-23
Ray Hubbard, Lake	43	452,040	408,682	90	-2,182 -6,475	-1	-42,531	-23
New Terrell City Lake	44			90 84	-6,475 -33	-1		
Daniel, Lake	44	8,583 9,435	7,244 6 332	67	-33 -240	-3	-1,339 -1 208	-16
			6,332			-3 -3	-1,208 -7,360	-13
Palo Pinto, Lake Benbrook Lake	46 47	27,150 85 648	13,632	50 73	-741 1 703		-7,360 -16,168	-27 -19
Arlington, Lake	47 48	85,648 38 740	62,743 25 755	66	1,703 -358	2 -1	-16,168 -8 717	-19 -23
ALITHYCOH, DAKE	48	38,740	25,755	90	-358	-1	-8,717	-23

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake	No.	Conservation		Conservation		Change since		Change since	
or Reservoir	on	Storage	Storage		Late January		Late February		
	Map	Capacity	Late Feb. 2009		2009		2008		
		(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)	
	NORT	H CENTRAL (C	Continue)						
Joe Pool Lake	49	142,861	124,001	87	-211	0	-13,546	-9	
*Cisco, Lake	50	26,000	18,871	73	-258	-1	-1,926	-7	
Leon, Lake	51	26,421	20,463	77	-365	-1	-3,815	-14	
Granbury, Lake	52	128,046	114,793	90	6,268	5	-3,874	-3	
Pat Cleburne, Lake	53	25,730	19,174	75	-318	-1	-5,203	-20	
Waxahachie, Lake	54	10,779	9,302	86	-989	-9	-1,170	-11	
Bardwell Lake	55	46,122	35,491	77	-812	-2	-10,631	-23	
Proctor Lake	56	55,457	35,120	63	-546	-1	-18,824	-34	
Whitney, Lake	57	553,349	364,761	66	619	0	-42,529	-8	
Aquilla Lake	58	45,092	33,043	73	-561	-1	-9,295	-21	
Navarro Mills Lake	59	55,817	40,255	72	-906	-2	-11,257	-20	
*Halbert, Lake	60	6,033	3,169	53	-127	-2	-2,292	-38	
Richland-Chambers Reservoir	61	1,103,816	899,065	81	-10,474	-1	-151,847	-14	
*Brownwood, Lake	62	131,429	100,578	77	-1,552	-1	-19,592	-15	
Waco, Lake	62	198,943	173,402	87	-928	0	-25,541	-13	
Limestone, Lake	64	208,015	174,491	84	-1,152	-1	-15,741	-8	
Belton Lake	65	435,225	397,608	91	-2,062	0	-37,617	-9	
Stillhouse Hollow Lake	66	227,771	193,756	85	-2,069	-1	-34,015	-15	
Georgetown, Lake	67	36,823	17,858	48	511	1	-14,433	-39	
Granger Lake	68	52,525	39,215	75	169	0	-13,310	-25	
Tawakoni, Lake	69	888,126	710,952	80	1,960	0	-151,411	-17	
TOTAL		10,463,400	8,609,278	82	-81,142	-1	-1,225,775	-12	
		EAS	r.						
Wright Patman Lake	70	122,593	122,593	100	0	0	0	0	
*Sulphur Springs, Lake	71	17,838	14,945	84	16	0	-2,893	-16	
Cypress Springs, Lake	72	67,689	67,413	100	449	1	-276	0	
Bob Sandlin, Lake	73	200,579	200,579	100	0	0	0	0	
Fork Reservoir, Lake	74	604,927	582,752	96	1,320	0	-20,063	-3	
O the Pines, Lake	75	238,933	238,933	100	0	0	0	0	
Cedar Creek Reservoir in Trinity	76	644,686	561,414	87	-3,028	0	-78,771	-12	
Athens, Lake	77	29,435	28,843	98	215	1	-592	-2	
Palestine, Lake	78	370,907	370,907	100	0	0	0	0	
Tyler, Lake	79	73,256	73,256	100	0	0	0	0	
Murvaul, Lake	80	38,284	38,284	100	0	0	0	0	
Jacksonville, Lake	81	30,300	30,232	100	162	1	-68	0	
Nacogdoches, Lake	82	39,521	35,438	90	41	0	-3,698	-9	
Houston County Lake	83	17,113	17,113	100	0	0	-5,058	0	
Sam Rayburn Reservoir	84	2,857,077	2,225,601	78	47,319	2	-345,705	-12	
Toledo Bend Reservoir (Texas)	85	2,236,450	1,985,028	89	47,280	2	-139,144	-6	
Toledo Bend Reservoir (TX & LA)	(85)	4,472,900	3,970,056	89	94,560	2	-278,289	-6	
*Livingston, Lake	86	1,741,867	1,741,867	100	94,300	0	2,867	0	
B A Steinhagen Lake	87	66,966	53,565	80	4,544	7	-2,621	-4	
Conroe, Lake	88	416,188	393,536	95	372	0	-22,652	-5	
TOTAL	00	9,814,609	8,782,299	89	98,690	1	-613,616	-6	
101701		J, 014, 003	0,102,233	0,3	30,030	_	-013,016	-0	
		TRANS-P	ECOS						
Red Bluff Reservoir	89	289,670	79,977	28	261	0	-27,589	-10	
TOTAL		289,670	79,977	28	261	0	-27,589	-10	

#### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

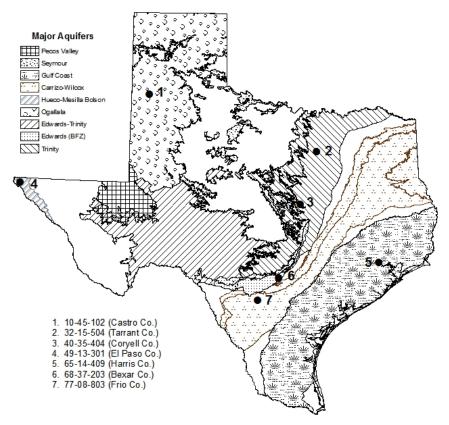
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Name of Lake	No.	Conservation	Conservation		Change since		Change since	
or Reservoir	on	Storage	Storage		Late January		Late February	
	Map	Capacity	Late Feb.	2009	2009		2008	
		(acre-feet)	(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)
		EDWARDS P	LATEAU					
Oak Creek Reservoir	90	39,260	29,498	75	-519	-1	-8,273	-21
E V Spence Reservoir	91	517,272	50,248	10	-1,260	0	-21,657	-4
O C Fisher Lake	92	79,483	0	0	0	0	0	0
*O H Ivie Reservoir	93	554,335	298,454	54	-4,178	-1	-71,638	-13
Twin Buttes Reservoir	94	177,850	45,409	26	-815	0	-25,085	-14
Brady Creek Reservoir	95	29,110	13,811	47	-298	-1	-1,468	-5
Buchanan, Lake	96	875,610	572,643	65	-516	0	-247,772	-28
Lyndon B Johnson, Lake	97	113,690	112,854	99	0	0	6,056	5
*Amistad Reservoir (Texas)	98	1,840,849	1,895,000	103	16,000	1	-384,000	-21
*Amistad Reservoir (TX & Mexico)	(98)	3,275,532	3,275,532	100	0	0	421,532	13
TOTAL		4,227,459	3,017,917	71	8,414	0	-753,837	-18
		SOUTH CE	NTRAL					
Travis, Lake	99	1,113,902	685,656	62	-12,299	-1	-428,246	-38
*Austin, Lake	100	21,804	20,972	96	0	0	-105	0
Somerville Lake	101	147,104	113,718	77	-1,526	-1	-33,386	-23
Canyon Lake	102	378,781	290,473	77	-1,729	0	-88,062	-23
Medina Lake	103	254,823	130,813	51	-5,636	-2	-102,091	-40
*Coleto Creek Reservoir	104	31,040	23,351	75	87	0	-7,219	-23
TOTAL		1,947,454	1,264,983	65	-21,103	-1	-659,109	-34
		UPPER C	OAST					
Houston, Lake	105	128,863	128,863	100	0	0	0	0
Texana, Lake	106	153,246	101,100	66	-8,448	-6	-46,004	-30
TOTAL		282,109	229,963	82	-8,448	-3	-46,004	-16
		SOUTH	ERN					
Choke Canyon Reservoir	107	695,262	552,674	79	-6,564	-1	-121,038	-17
Corpus Christi, Lake	108	256,961	161,845	63	-3,010	-1	-87,708	-34
*Falcon Reservoir (Texas)	109	1,551,034	1,563,000	101	-67,000	-4	386,000	25
*Falcon Reservoir (TX & Mexico)	(109)	2,646,817	2,646,817	100	0	0	1,251,817	47
TOTAL		2,503,257	2,277,519	91	-76,574	-3	177,254	7
STATE TOTAL		31,068,501	24,809,380	80	-93,337	0	-3,264,736	-11
					,	-		

<sup>\*</sup> Conservation volume is used as conservation storage capacity because the dead storage is unknown.

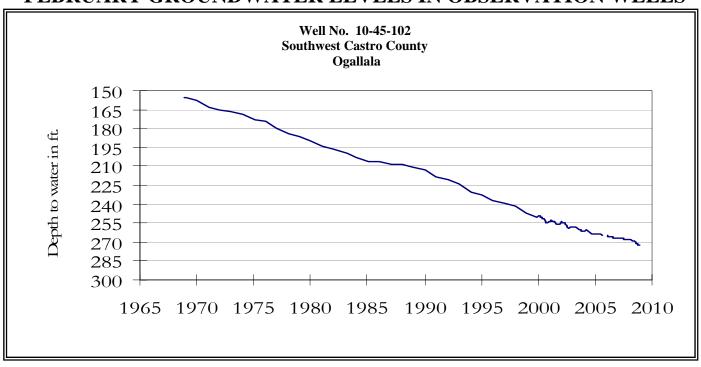
#### Note

Conservation storage capacity is the space available to store water above the lowest outlet and below the top of conservation pool, or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in the dead storage. Conservation storage percentage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir on date shown. Percent change is given by 100\*(current conservation storage - past conservation storage)/conservation storage capacity. Figures shown are for the Texas share of conservation storage in all reservoirs.

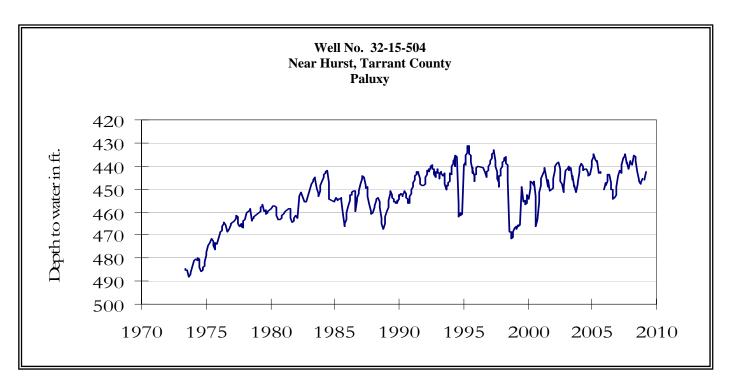
### GROUND WATER LEVELS IN OBSERVATION WELLS



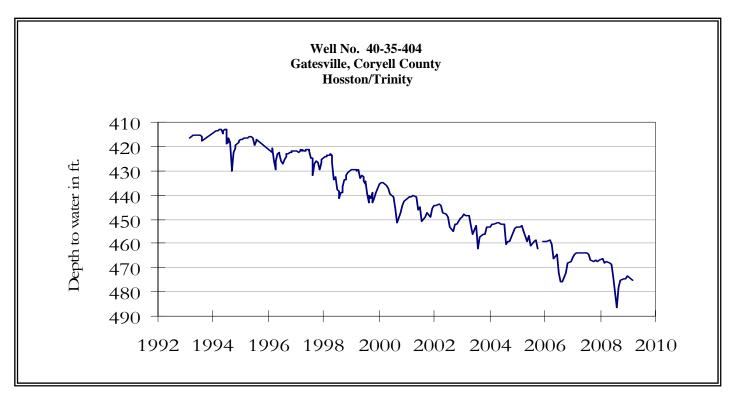
## FEBRUARY GROUNDWATER LEVELS IN OBSERVATION WELLS



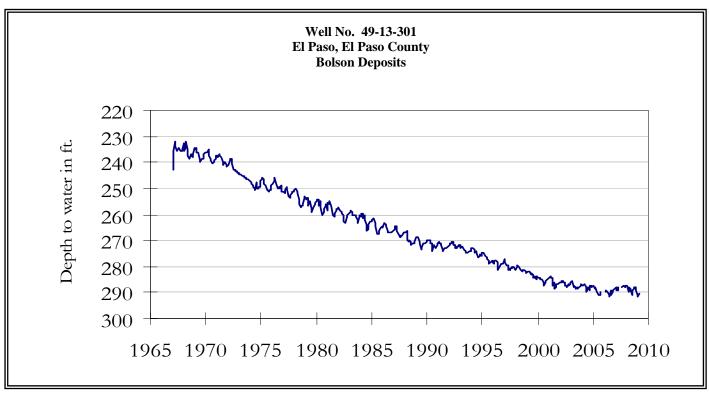
The late February water level measurement in this Ogallala Aquifer well, elevation 3,816 feet above sea level, was 274.72 feet below land surface. This measurement was 6.67 feet below last year's measurement, and 118.72 feet below the initial measurement recorded in 1968. No water level measurements were recorded for September through December 2005, December 2008, and January 2009.



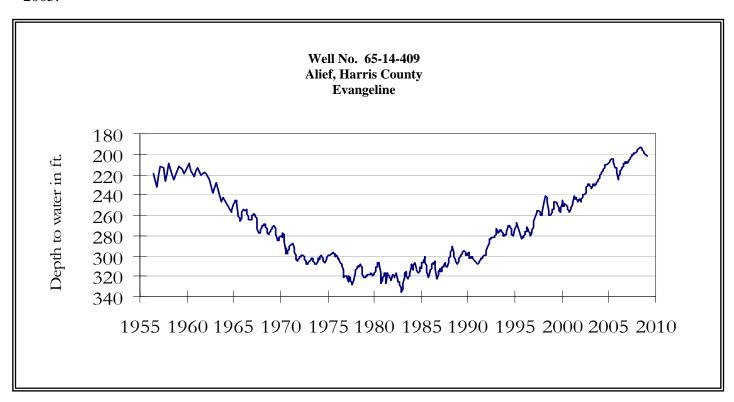
The late February water level measurement in this Paluxy Formation Trinity Aquifer well, elevation 535 feet above sea level, was 442.66 feet below land surface. This measurement was 3.68 feet above last month's measurement, 3.09 feet below last year's measurement, and 64.66 feet below the initial measurement recorded in 1953. No water level measurements were recorded for September or October 2005 and December 2008.



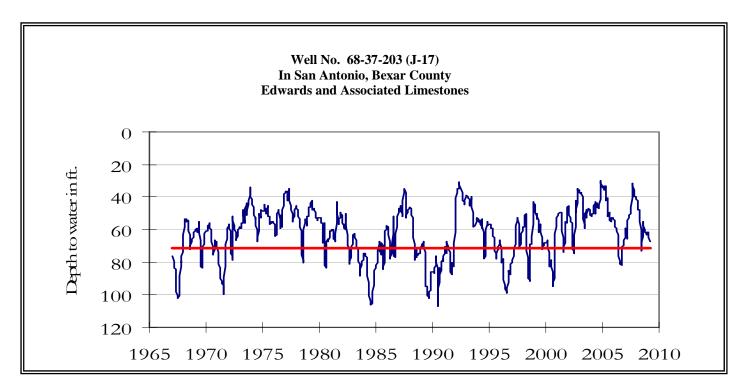
The late February water level measurement in this Hosston Formation Trinity Aquifer well, elevation 823 feet above sea level, was 475.24 feet below land surface. This water level was 0.40 feet below last month's measurement, 7.37 feet below last year's measurement, and 183.24 feet below the initial measurement recorded in 1955. No water level measurement was recorded for October 2005.



The late February water level measurement in this Hueco Bolson Aquifer well, elevation 3,882 feet above sea level, was 290.52 feet below land surface. This water level was 0.85 feet above last month's measurement, 0.58 feet below last year's measurement, and 58.62 feet below the initial measurement in 1964. No water level measurements were recorded for May through July 2007, and October or December 2005.

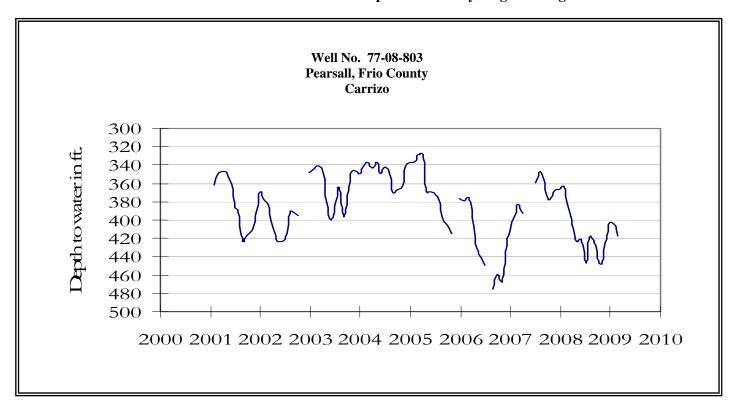


The late February water level measurement in this Evangeline Formation Gulf Coast Aquifer well, elevation 66 feet above sea level, was 201.69 feet below land surface. This was 0.26 feet below last month's measurement, 6.59 feet below last year's measurement, and 66.19 feet below the initial measurement recorded in 1947.



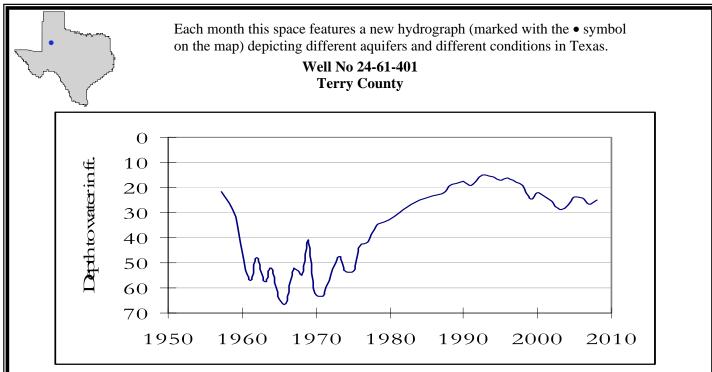
The late February water level measurement in this Edwards (BFZ) Aquifer well, elevation 731 feet above sea level, was 67.34 feet below land surface. This was 5.11 feet below last month's measurement, 19.84 feet below last year's measurement, and 20.70 feet below the initial measurement recorded in 1962.

\*\*\* Water levels below the red line indicate Edwards Aquifer Authority Stage 1 drought restrictions. \*\*\*



The late February water level measurement in this Carrizo-Wilcox Aquifer well, elevation 652 feet above sea level, was 416.72 feet below land surface. This was 12.07 feet below last month's measurement, 28.79 feet below last year's measurement, and 136.72 feet below the initial measurement recorded in 1963. No water level measurements were recorded for April and May 2007, July 2006, November 2005, and October through November 2002.

#### HYDROGRAPH OF THE MONTH



This water level observation well, located 14 miles southwest of Brownfield, at an elevation of 3337 feet ASL, was completed in the Edwards-Trinity High Plains aquifer. The aquifer is mainly used for irrigation purposes and water level declines have been observed in some irrigated areas.

#### February, 2009

Water level measurements were available for all seven key monitoring wells. Water levels rose in two of the seven monitoring wells since the beginning of February, ranging from 0.85 feet in the El Paso Co. Heuco Bolson well to 3.68 feet in the Tarrant Co. Trinity well. Water levels declined in the remaining monitoring wells, ranging from 0.26 feet in the Harris Co. Gulf Coast well to 12.07 feet in the Frio Co. Carrizo well. The J-17 well in San Antonio recorded a water level of 67.34 feet below land surface, 5.11 feet below last month's measurement. This water level is 3.66 feet above the Stage 1 critical management level.

TEXAS WATER DEVELOPMENT BOARD 1700 N. CONGRESS AVE. P.O. BOX 13231 AUSTIN TX 78711-3231