

WATER LEVEL MEASUREMENT
and
PERTINENT WELL DATA
CODING PROCEDURE MANUAL

MAJOR AND MINOR AQUIFERS

8/30/82

<u>New Code</u>	<u>Title</u>	<u>Counties</u>
1	Alluvium & Bolson Deposits (El Paso Area) 001, 275, 421, 422, 425, 426, 427, 428	El Paso, Hudspeth
2	Alluvium & Bolson Deposits (Salt Basin Area) 001, 275, 423, 424, 420 only in Hudspeth Co.	Culberson, Jeff Davis, Presidio, Hudspeth. * Includes Red Light Draw, Green River Valley and Presidio-Red Fox Bolsons
3	Alluvium & Bolson Deposits (Pecos Area) 001, 275, 242	Andrews, Crane, Loving, Pecos, Reeves, Ward, Winkler
4	Alluvium & Bolson Deposits (Seymour Formation) 162, 163	Baylor, Briscoe, Childress, Clay, Collingsworth, Cottle Dickens, Fisher, Foard, Hall, Hardeman, Haskell, Jones, Kent, King, Knox, Motley, Stonewall, Wichita, Wilbarger Tom Gageso. * Includes Leona Fin.
5	Alluvium & Bolson Deposits (Brazos River). 001	Austin, Bosque, Brazos Burlinson, Falls, Fort Bend, Grimes, Hill, McLennan, Milam, Robertson, Waller, Washington
6	Blaine Gypsum 008, 009, 060, 061	
7	Blossom Sand 012, 013	
8	Bone Springs & Victoria Peak Limestone 014, 015, 354	
9	Capitan Limestone = Cpx 028, 029, 350	
10	Carrizo-Wilcox 030, 031, 032, 033, 190, 191, 250, 257, 259, 266, 308, 309, 410, 440, 441, 404	
11	Edwards (Balcones Fault Zone) 050, 051, 066, 067, 068, 069, 072, 073, 074, 075, 076, 077, 212, 213, 284, 302, 376	Bell, Bexar, Comal Hays, Kinney, Medina, Travis, Uvalde, Williamson

- 12 Edwards-Trinity (High Plains)
050, 051, 066, 067, 068, 069,
072, 073, 074, 075, 076, 077,
180, 181, 182, 183, 212, 213,
220, 227, 236, 272, 376, 414,
415, 429, 430
Bailey, Borden, Cochran,
Dawson, Gaines, Garza,
Hale, Hockley, Lamb, Lubbock
Lynn, Terry, Yoakum
- 13 Edwards-Trinity (Plateau)
050, 051, 066, 067, 068, 069,
072, 073, 074, 075, 076, 077,
178, 179, 180, 181, 212, 213,
220, 227, 240, 272, 276, 279,
289, 300, 301, 302, 311, 312,
331, 334, 376, 377, 414, 415,
429, 430, 435, 437
Bandera, Brewster, Concho,
Crane, Crockett, Culberson,
Ector, Edwards, Gillespie,
Glasscock, Howard, Irion,
Jeff Davis, Kendall, Kerr,
Kimble, Mason, McCulloch,
Menard, Midland, Pecos,
Reagan, Real, Reeves,
Schleicher, Sterling, Sutton
Terrell, Tom Green, Upton,
Val Verde
- 14 Ellenburger-San Saba
070, 071, 239, 281, 431
- 15 Gulf Coast
006, 007, 034, 035, 036, 037,
038, 039, 040, 041, 084, 085, 086,
087, 088, 089, 090, 091, 092, 093,
094, 095, 096, 097, 098, 099, 108,
109, 110, 111, 114, 115, 116, 117,
132, 133, 134, 135, 192, 193, 194,
195, 196, 197, 198, 199, 206, 217,
218, 243, 260, 261, 262, 263, 264,
268, 271, 294, 317, 318, 378, 379,
380, 381, 382, 383, 384
- 16 Hickory Sandstone
100, 101
- 17 Igneous Rocks
176, 177, 288, 280
- 18 Marathon Limestone
386
- 19 Marble Falls Limestone
118, 119
- 20 Nacatoch Sand
122, 123
- 21 ~~Ogallala~~ ~~High Plains~~ Ogallala
136, 137
- 22 Other Undifferentiated
001, 002, 004, 005, 016, 017,
018, 019, 020, 021, 022, 023,
024, 025, 026, 027, 042, 043,
044, 045, 046, 047, 048, 049,
052, 053, 054, 055, 058, 059,

Other Undifferentiated (cont.)

064, 065, 078, 079, 104, 105,
106, 107, 112, 113, 120, 121,
124, 125, 126, 127, 128, 129,
130, 131, 154, 155, 158, 159,
166, 167, 168, 169, 170, 171,
172, 173, 174, 175, 187, 188,
189, 204, 205, 208, 211, 215,
238, 244, 245, 247, 251, 252,
254, 256, 258, 267, 273, 274,
278, ~~280~~, 282, 283, 292, 293,
296, 313, 315, 316, 320, 321,
322, 323, 324, 325, 326, 327,
328, 329, 330, 332, 333, 335,
336, 337, 338, 339, 340, 341,
342, 343, 344, 345, 346, 347,
348, 349, 351, 352, 353, 355,
356, 357, 358, 359, 361, 362,
363, 364, 365, 366, 367, 370,
371, 372, 373, 374, 375, 387,
388, 389, 391, 392, 393, 394,
395, 396, 398, 399, 400, 401,
402, 403, 411, 412, 413, 416,
432, 433, 434, 438

23 Purgatorie-Dakota
265

24 Queen City
140, 141, 310

25 Rustler
146, 147

26 Santa Rosa
160, 161

27 Sparta Sand
164, 165, 277

28 Trinity Group
080, 081, 082, 083, 138,
139, 178, 179, 180, 181,
182, 183, 186, 212, 220,
269, 270, 276, 279, 285,
286, 287, 289, 290, 295,
299, 300, 301, 303, 305,
312, 319, 334, 377, 385,
408, 409, 429, 430, 435,
437, 302

Bell, Bosque, Brown, Burnet
Callahan, Coleman, Collin,
Comanche, Cooke, Coryell,
Dallas, Delta, Denton, East
land, Ellis, Erath, Falls,
Fannin, Grayson, Hamilton,
Hill, Hood, Hunt, Johnson,
Kaufman, Lamar, Lampasas,
Limestone, McLennan, Milam,
Mills, Montague, Navarro,
Nolan, Parker, Red River,
Rockwall, Runnels, Somervell
Tarrant, Taylor, Travis,
Williamson, Wise

All of the codes below will have to be checked individually whenever they occur:

003, 010, 011, 056, 057, 062, 063, 102, 103, 142, 143, 144, 145, 148, 149, 150,
151, 152, 153, 156, 157, 184, 185, 202, 203, 207, 209, 210, 214, 216, 219, 221,
222, 223, 224, 225, 226, 228, 230, 231, 232, 233, 234, 235, 236, 237, 241, 242,
246, 248, 249, 253, 255, 268, 291, 297, 298, 304, 306, 307, 314, 360, 368, 369,
390, 397, 405, 406, 407, 417, 418, 419, 436, 439

If any of the codes below occur outside of the previously designated counties,
then they will have to be checked individually:

050, 051, 066, 067, 068, 069, 072, 073, 074, 075, 076, 077, 080, 081, 082,
083, 138, 139, 178, 179, 180, 181, 182, 183, 212, 213, 220, 227, 240, 269,
270, 272, 276, 279, 284, 285, 286, 287, 289, 290, 295, 299, 300, 301, 302,
303, 305, 311, 312, 319, 331, 334, 376, 377, 385, 408, 409, 414, 415, 427,
275, 435, 437, 275, 236, 248, 268, 162, 163

COUNTY CODE DESIGNATIONS

(AA)-001-Anderson	(HH)-052-Crane	(LL)-103-Hartley
(AB)-002-Andrews	(HJ)-053-Crockett	(LP)-104-Haskell
(AD)-003-Angelina	(HK)-054-Crosby	(LR)-105-Hays
(AH)-004-Aransas	(HL)-055-Culberson	(LS)-106-Hemphill
(AJ)-005-Archer	(HP)-056-Dallam	(LT)-107-Henderson
(AK)-006-Armstrong	(HR)-057-Dallas	(LU)-108-Hidalgo
(AL)-007-Atascosa	(HS)-058-Dawson	(LW)-109-Hill
(AP)-008-Austin	(HT)-059-Deaf Smith	(LX)-110-Hockley
(AR)-009-Bailey	(HU)-060-Delta	(LY)-111-Hood
(AS)-010-Bandera	(HW)-061-Denton	(LZ)-112-Hopkins
(AT)-011-Bastrop	(HX)-062-DeWitt	(PA)-113-Houston
(AU)-012-Baylor	(HY)-063-Dickens	(PB)-114-Howard
(AW)-013-Bee	(HZ)-064-Dimmit	(PD)-115-Hudspeth
(AX)-014-Bell	(JA)-065-Donley	(PH)-116-Hunt
(AY)-015-Bexar	(JB)-066-Duval	(PJ)-117-Hutchinson
(AZ)-016-Blanco	(JD)-067-Eastland	(PK)-118-Irion
(BA)-017-Borden	(JH)-068-Ector	(PL)-119-Jack
(BB)-018-Bosque	(JJ)-069-Edwards	(PP)-120-Jackson
(BD)-019-Bowie	(JK)-070-Ellis	(PR)-121-Jasper
(BH)-020-Brazoria	(JL)-071-El Paso	(PS)-122-Jeff Davis
(BJ)-021-Brazos	(JP)-072-Erath	(PT)-123-Jefferson
(BK)-022-Brewster	(JR)-073-Falls	(PU)-124-Jim Hogg
(BL)-023-Briscoe	(JS)-074-Fannin	(PW)-125-Jim Wells
(BP)-024-Brooks	(JT)-075-Fayette	(PX)-126-Johnson
(BR)-025-Brown	(JU)-076-Fisher	(PY)-127-Jones
(BS)-026-Burleson	(JW)-077-Floyd	(PZ)-128-Karnes
(BT)-027-Burnet	(JX)-078-Foard	(RA)-129-Kaufman
(BU)-028-Caldwell	(JY)-079-Fort Bend	(RB)-130-Kendall
(BW)-029-Calhoun	(JZ)-080-Franklin	(RD)-131-Kenedy
(BX)-030-Callahan	(KA)-081-Freestone	(RH)-132-Kent
(BY)-031-Cameron	(KB)-082-Frio	(RJ)-133-Kerr
(BZ)-032-Camp	(KD)-083-Gaines	(RK)-134-Kimble
(DA)-033-Carson	(KH)-084-Galveston	(RL)-135-King
(DB)-034-Cass	(KJ)-085-Garza	(RP)-136-Kinney
(DD)-035-Castro	(KK)-086-Gillespie	(RR)-137-Kleberg
(DH)-036-Chambers	(KL)-087-Glasscock	(RS)-138-Knox
(DJ)-037-Cherokee	(KP)-088-Goliad	(RT)-139-Lamar
(DK)-038-Childress	(KR)-089-Gonzales	(RU)-140-Lamb
(DL)-039-Clay	(KS)-090-Gray	(RW)-141-Lampasas
(DP)-040-Cochran	(KT)-091-Grayson	(RX)-142-La Salle
(DR)-041-Coke	(KU)-092-Gregg	(RY)-143-Lavaca
(DS)-042-Coleman	(KW)-093-Grimes	(RZ)-144-Lee
(DT)-043-Collin	(KX)-094-Guadalupe	(SA)-145-Leon
(DU)-044-Collingsworth	(KY)-095-Hale	(SB)-146-Liberty
(DW)-045-Colorado	(KZ)-096-Hall	(SD)-147-Limestone
(DX)-046-Comal	(LA)-097-Hamilton	(SH)-148-Lipscomb
(DY)-047-Comanche	(LB)-098-Hansford	(SJ)-149-Live Oak
(DZ)-048-Concho	(LD)-099-Hardeman	(SK)-150-Llano
(HA)-049-Cooke	(LH)-100-Hardin	(SL)-151-Loving
(HB)-050-Coryell	(LJ)-101-Harris	(SP)-152-Lubbock
(HD)-051-Cottle	(LK)-102-Harrison	(SR)-153-Lynn

COUNTY CODE DESIGNATIONS

(SS)-154-McCulloch	(WW)-205-San Patricio
(ST)-155-McLennan	(WX)-206-San Saba
(SU)-156-McMullen	(WY)-207-Schleicher
(SW)-157-Madison	(WZ)-208-Scurry
(SX)-158-Marion	(XA)-209-Shackelford
(SY)-159-Martin	(XB)-210-Shelby
(SZ)-160-Mason	(XD)-211-Sherman
(TA)-161-Matagorda	(XH)-212-Smith
(TB)-162-Maverick	(XJ)-213-Somervell
(TD)-163-Medina	(XK)-214-Starr
(TH)-164-Menard	(XL)-215-Stephens
(TJ)-165-Midland	(XP)-216-Sterling
(TK)-166-Milam	(XR)-217-Stonewall
(TL)-167-Mills	(XS)-218-Sutton
(TP)-168-Mitchell	(XT)-219-Swisher
(TR)-169-Montague	(XU)-220-Tarrant
(TS)-170-Montgomery	(XW)-221-Taylor
(TT)-171-Moore	(XX)-222-Terrell
(TU)-172-Morris	(XY)-223-Terry
(TW)-173-Motley	(XZ)-224-Throckmorton
(TX)-174-Nacogdoches	(YA)-225-Titus
(TY)-175-Navarro	(YB)-226-Tom Green
(TZ)-176-Newton	(YD)-227-Travis
(UA)-177-Nolan	(YH)-228-Trinity
(UB)-178-Nueces	(YJ)-229-Tyler
(UD)-179-Ochiltree	(YK)-230-Upshur
(UH)-180-Oldham	(YL)-231-Upton
(UJ)-181-Orange	(YP)-232-Uvalde
(UK)-182-Palo Pinto	(YR)-233-Val Verde
(UL)-183-Panola	(YS)-234-Van Zandt
(UP)-184-Parker	(YT)-235-Victoria
(UR)-185-Parmer	(YU)-236-Walker
(US)-186-Pecos	(YW)-237-Waller
(UT)-187-Polk	(YX)-238-Ward
(UU)-188-Potter	(YY)-239-Washington
(UW)-189-Presidio	(YZ)-240-Webb
(UX)-190-Rains	(ZA)-241-Wharton
(UY)-191-Randall	(ZB)-242-Wheeler
(UZ)-192-Reagan	(ZD)-243-Wichita
(WA)-193-Real	(ZH)-244-Wilbarger
(WB)-194-Red River	(ZJ)-245-Willacy
(WD)-195-Reeves	(ZK)-246-Williamson
(WH)-196-Refugio	(ZL)-247-Wilson
(WJ)-197-Roberts	(ZP)-248-Winkler
(WK)-198-Robertson	(ZR)-249-Wise
(WL)-199-Rockwall	(ZS)-250-Wood
(WP)-200-Runnels	(ZT)-251-Yoakum
(WR)-201-Rusk	(ZU)-252-Young
(WS)-202-Sabine	(ZW)-253-Zapata
(WT)-203-San Augustine	(ZW)-254-Zavala
(WU)-204-San Jacinto	

<u>WATERSHED</u>	<u>CODE</u>
Canadian River	01
Red River	02
Sulphur River	03
Cypress River	04
Sabine River	05
Neches River	06
Neches-Trinity Rivers	07
Trinity River	08
Trinity-San Jacinto Rivers	09
San Jacinto River	10
San Jacinto-Brazos Rivers	11
Brazos River	12
Brazos-Colorado Rivers	13
Colorado River	14
Colorado-Lavaca Rivers	15
Lavaca River	16
Lavaca-Guadalupe Rivers	17
Guadalupe River	18
San Antonio River	19
San Antonio-Nueces Rivers	20
Nueces River	21
Nueces-Rio Grande Rivers	22
Rio Grande River	23

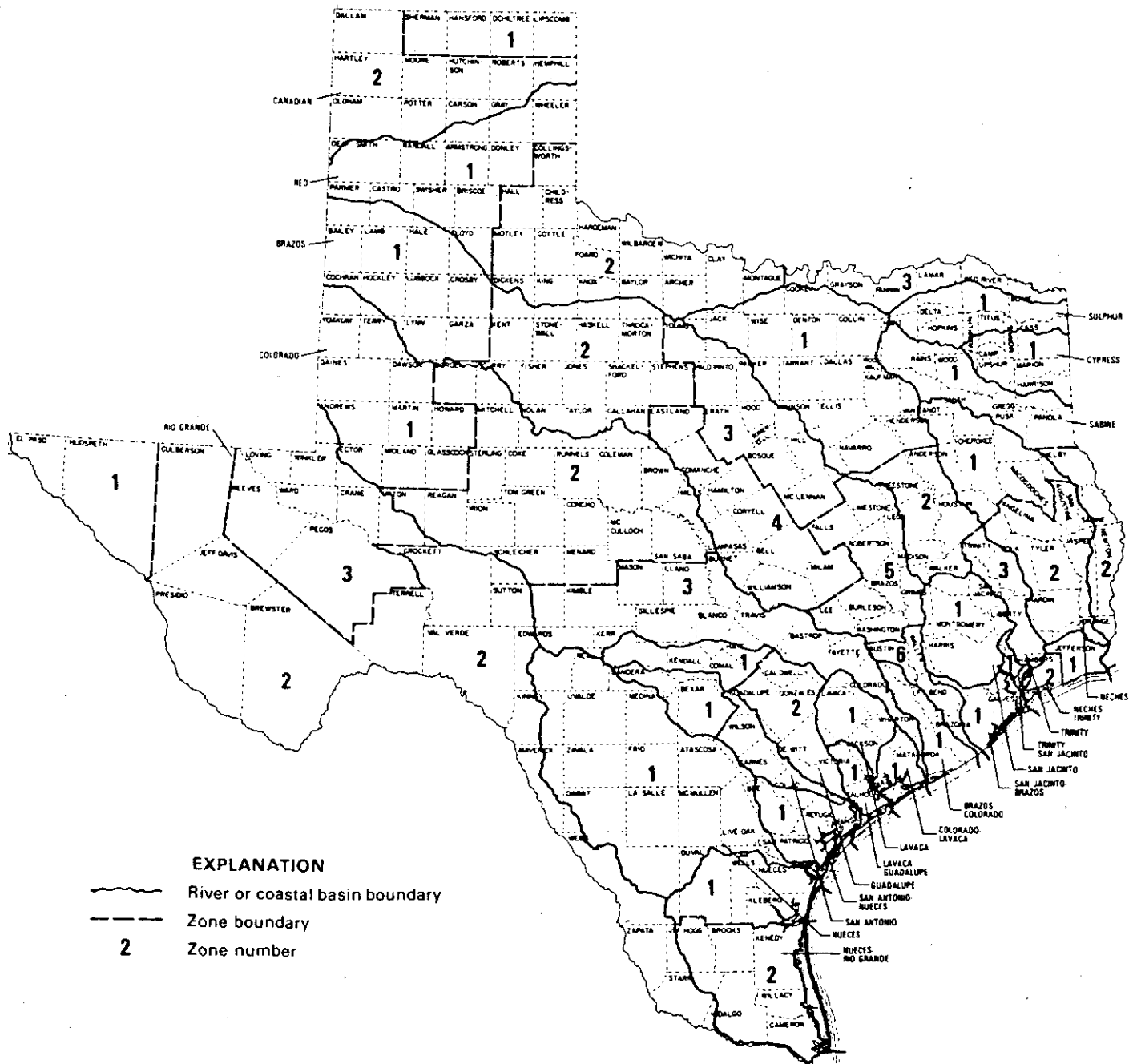


Figure 4. River and Coastal Basins and Zones

waste facilities involves technical review and public hearings where interested persons can be parties to the proceedings and present evidence and positions;

5. Enforcement—a principal tool for compelling adherence to State permits and standards that protect the quality of Texas waters;

6. Construction Grants—planning and financial assistance to local governments constructing wastewater treatment plants improves State water quality and lessens environmental impacts associated with human use; and

7. Hazardous Waste Management—a recently-

TEXAS DEPARTMENT OF WATER RESOURCES
P.O. BOX 13087, CAPITOL STATION
AUSTIN, TEXAS 78711

INSTRUCTION AND CODING PROCEDURE MANUAL
TO BE USED WHEN RECORDING WATER-LEVEL
MEASUREMENTS AND PERTINENT WELL DATA ON
WATER-LEVEL FIELD MEASUREMENT SHEETS

February 1980

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-Introduction-

All water-level data is processed for filing on computer tape and, therefore, it is necessary that all information concerning the date of measurement, the measurement, the Agency making the measurement, the method used to make the measurement, pertinent remarks concerning the measurement, the well use, the distance of the measuring point (MP) above or below land surface datum (LSD) and the depth to water from the measuring point be properly entered and/or coded on the measurement sheet. (See water-level measurement sheet on Page 2)

-Directions-

1. DATE OF CURRENT MEASUREMENT:

The month, day and year the measurement is made should be entered as follows:

Example

January 12, 1970 enter as 01 12 70

November 2, 1970 enter as 11 02 70

August 5, 1902 enter as 08 05 02

2. CURRENT DEPTH TO WATER FROM LSD:

No entry needs to be made in this column unless there is immediate need for the information. The mathematical procedure necessary for this measurement is accomplished by the computer and the measurement will appear on subsequent printouts. To determine this measurement, simply subtract the MP (if above LSD) from or add the MP (if below LSD) to the measured depth to water from MP.

TEXAS DEPARTMENT OF WATER RESOURCES—WATER LEVEL MEASUREMENTS

AS OF

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8. OLD WELL NUMBER

19. COORDINATES

20. YR. REC. BEGINS

21. LAST CHEMICAL ANALYSIS

1. STATE WELL NUMBER 13. LAND SURFACE DATUM ELEVATION
 2. DEPTH OF WELL 14. COMPLETION INTERVAL

DATE OF CURRENT MEASUREMENT			CURRENT DEPTH TO WATER FROM LSD	CHANGE IN LEVEL SINCE THE LAST MEASUREMENT	Measurement Number	DEPTH TO WATER FROM MP	MP	Measuring Agency	Measurement Method	REMARKS	WELL USE	FIELD OBSERVATIONS
MO.	DAY	YR.										
1.			2.	3.	4.	5.	6.	7.	8.	9.	10.	ANY NOTES PERTAINING TO MEASUREMENT

15. AQUIFER

16. WATERSHED

17. COUNTY

11. WELL CLASS - STATE WELL NUMBER

3. CHANGE IN LEVEL SINCE THE LAST MEASUREMENT:

No entry needed, the computer calculates this value which will appear on subsequent printouts. If needed, simply determine the difference between the current measurement and the immediately preceding one.

4. MEASUREMENT NUMBER:

Entry in this column should be made if more than one measurement on the same date is to be added to the computer tape. Enter each measurement in chronological order on separate lines in the "Depth to Water from MP" column. Number the measurements beginning with the number "1" and proceeding with "2", "3", etc. in this column until all measurements entered for the particular date have been numbered. Repeat the measurement date for each measurement.

5. DEPTH TO WATER FROM MP:

The actual measurement in feet and/or tenths or hundredths of a foot taken from the MP should be entered in this column. A plus (+) sign before the measurement indicates a flowing well. The computer will subtract this column and print out the correct current depth to water from the LSD in Column 2.

6. MP:

The height of the MP in feet and/or tenths of a foot above or below LSD should be entered in this column. A plus (+) sign should precede the MP if it is above the LSD or a minus (-) sign should precede it if it is below the LSD.

Example:

+01.50 for above LSD

-01.50 for below LSD

7. Measuring Agency:

The code for the agency or other entity for which you are employed or represent should be entered here when you make the water-level measurement. When entering previously made measurements, enter the code for the agency or entity responsible.

Agency and/or Others Making the Measurement	<u>Code</u>
Texas Department of Water Resources and Predecessor Agencies-----	01
(Texas Water Development Board)-----	01
(Texas Board of Water Engineers)-----	01
(Texas Water Commission)-----	01
U.S. Geological Survey-----	02
High Plains Underground Water Conservation District Number 1-----	03
North Plains Underground Water Conservation District Number 2-----	04
Lamb County Electric Cooperative-----	05
Bailey County Electric Cooperative-----	06
U.S. Department of Agriculture - Soil and Water Conservation Service-----	07
Panhandle Ground Water Conservation District Number 3----	08
Measurements made by any Agency and/or others prior to 1961, or the record is not clear as to source of the measurement-----	99

Registered Water Well Driller-----	09
City Water Superintendent-----	10
Ground Water Supply District Operators (Co-op's - FHA, etc.)-----	11
Professional Ground Water Consultants-----	12
Well Owner (Assumed to be a reliable measurement)-----	13
Industrial Plant-----	14
Bureau of Reclamation-----	15
International Boundary and Water Commission-----	16

8. Measurement Method:

The code for the method used to make the measurement should be entered here.

Proper codes for measuring methods:	<u>Code</u>
Steel Tape-----	1
E-Line (M-Scope, "Drawdown Gauge")-----	2
Air line-----	3
Pressure gauge-----	4
Ruler (slightly flowing well)-----	5
Taken from publication-----	6
Taken from driller's log-----	7
Tape with float (water-level recorders)-----	8
Unknown-----	9
Garden hose & steel tape-----	A
Logging sonde-----	B

9. REMARKS:

Entry of one proper code to reflect remarks, if any, pertaining to the current measurement should be made in this column.

<u>Remarks</u>	<u>Code</u>
No irregularities relative to measurement-----	Leave Blank
Remarks not assembled for data collected before 1961-----	01
Well pumping (pumping level measurement)----- Note: Use Code 14 if no measurement is obtained	02
Well or wells pumping nearby-----	03
Well pumped recently-----	04
Near wet weather lake (possible recharge factor)----- Note: Code 36 denotes another recharge factor	05
(Artificial) Recharge Operation at or near well-----	06
Questionable measurement, casing wet or leaking----- Note: Use Code 15 when no measurement is obtained	07
Questionable measurement, wet, spotty mark----- Note: For use with open hole (no casing) completion; otherwise use Code 07	08
Questionable measurement, leaking air line----- Note: Use Code 20 when no measurement is obtained	09
No measurement - well destroyed-----	10
No measurement, well temporarily inaccessible (covered with rocks, debris, well thoroughly winterized, etc.)-----	11
No measurement, tape hangs-----	12

<u>Remarks</u>	<u>Code</u>
No measurement, unable to insert tape in casing-----	13
No measurement, pumping----- Note: If measurement is obtained use Code 02	14
No measurement, casing leaking or wet----- Note: Use Code 07 when measurement is obtained	15
No measurement, unable to locate well----- Note: For use <u>if</u> reason(s) are other than those in Code 22 (ex: covered over indefinitely but not destroyed)	16
No measurement, well apparently dry, unable to reach water----- Note: Use when reported well depth was reached without finding water	17
No measurement, well apparently caved, unable to reach water----- Note: Use only when depth reached appears to be or is obviously too shallow to be actual well depth and well is to be dropped from program; otherwise use Code 21	18
Questionable measurement, pressure shut-in connection leaking----- Note: For use when measuring flowing well, use Code 09 for air line method	19
No measurement, pressure shut-in connection leaking ----- Note: May be used on flowing well or when attempting measurement by air line method	20
No measurement, well filled with debris----- Note: Do not confuse with Code 18, should be used when condition appears to be temporary	21
No measurement, well apparently improperly located on map or description of well location inadequate-----	22
No measurement, reason not stated----- Note: For use when recording data from outside sources	23

<u>Remarks</u>	<u>Code</u>
Measurements discontinued, no reason stated----- Note: For use when recording data from outside sources	24
No measurement, well flowing and unable to shut-in-----	25
No measurement, well dropped from observation program (not needed or unsatisfactory - see well schedule remarks)-----	26
No measurement, road temporarily inaccessible (road muddy, road plowed up, sand bars across road, etc.)-----	27
Questionable measurement, reason for which is not clearly understood by measurer-----	28
No measurement, unable to reach water----- Note: For use when water level is beyond reach of measuring equipment at hand	29
Owner does not want well measured (drop from active program)-----	30
No measurement, gate locked-----	31
No measurement, pump house locked-----	32
Questionable measurement; tape does not fall free-----	33
No measurement, temporary, hazardous condition for measurer (bad animal, bad terrain, etc.)----- Note: Use Code 39 when condition appears permanent and well will be dropped from program	34
Questionable measurement, deleted after review by Section Head-----	35
Questionable measurement, possible surface run-off due to recent heavy rains (a recharge factor)-----	36
No measurement, well reviewed by Section Head and deleted from current annual measurement due to national energy crisis limitations-----	37

Remarks

Code

Questionable measurement, measurement may be
from another well-----38

Well dropped from program because of continuing
very hazardous conditions to measurer
(ex.-vicious animals)-----39

No measurement, currently deleted due to work
priorities or staff or unnecessary for water
table configuration control in the area-----40

Measurement deviation from previous measurements
is due to well work over resulting in change
of producing interval-----41

No measurement due to long-term priority field
work in connection with an Ogallala Aquifer
System Study-----42

10. WELL USE:

This designation is intended to reflect that use to which the well is put and will be visually checked for changes each time the well is measured.

Well Use:

- Municipal or public supply-----1
- Domestic-----2
- Stock-----3
- Irrigation-----4
- Industrial-----5
- Irrigation and domestic-----6
- Domestic and stock-----7
- Irrigation and stock-----8
- Irrigation, domestic and stock-----9
- Recorder well (not used as a supply well)-----A
- Water Level observation well, not used as a supply well-----B
- Water quality observation well, not used as a supply well-----C
- Water-level observation and water quality observation well, not used as a supply well-----D
- Minor stock (chickens, turkeys, fish farm, etc.)-----E
- Minor irrigation (garden, lawn, etc.)-----F
- Public supply stand-by well-----G
- Limited public supply & minor stock-----H
- Industrial and public supply (limited)-----J
- Unknown (taken from publication)-----K

Well Use:

Household (not used for human consumption)-----L

Well equipped but not in use-----M

Well not equipped and not in use-----N

11. STATE WELL NUMBER:

Enter the assigned State well number for the well (See "Well Numbering System" on Page 14 for explanation).

12. DEPTH OF WELL:

This is very desirable information to have and every effort should be made to secure this depth either by actual measurement attempt or by contacting the landowner, well driller or any other reliable source.

Record this depth to the nearest foot.

13. LAND SURFACE DATUM ELEVATION:

This is very desirable information and every effort should be made to secure this elevation from topographic maps, private surveys, or actual measurement. Record the elevation to the nearest foot.

14. COMPLETION INTERVAL

This information is primarily intended to help identify the aquifer(s) or water-productive zone(s) within an aquifer in which a well is developed. The complete casing and screen record should be shown on the well schedule if it is possible to obtain. Entry of the depth at which the first perforation or screen begins and that depth at which all perforations or

screen ends are the only two depths which can be entered for computer filing.

Example:

If a well was perforated or screened from 341 feet to 500 feet, from 520 feet to 1230 feet, and from 3015 feet to 3045 feet, entry of 341-3045 feet should be made in the "Completion Interval". In partially cased wells, the completion interval recorded is that interval from the bottom of the casing to the bottom of the hole. Depths recorded should be to the nearest foot.

15. **AQUIFER:**

Most major and minor aquifers have been assigned a code (See attached list of Aquifer Codes beginning on Page 15). The numeric code and name of the aquifer(s) should be listed opposite the printed word "Aquifer." If there is no code number for an identified aquifer, a request for review of the well(s) involved should be made in order to determine a proper code number.

16. **WATERSHED:**

The actual physical location of the well when spotted on a county highway map or topographic map should be accurate enough to determine the major watershed in which the well is located. The watershed and its numeric code from the list on Page 44 should be listed opposite the word "watershed."

17. COUNTY:

The county along with its assigned numeric code from the list beginning on Page 45 should be listed opposite the printed word "County."

18. OLD WELL NUMBER:

This is a previously assigned well number for the well. This number has previously been published in a report. In some instances more than one number has been published for the same well; if so, both numbers should be listed as the old well numbers.

In Ground Water Conservation Districts which issue permits, and the permits are assigned numbers, the Permit number should be listed as the old well number.

19. COORDINATES:

The latitude and longitude of the well should be entered. Determine to the nearest second.

20. YEAR RECORD BEGINS:

The year in which the first water level from the well was obtained should be listed here.

21. LAST CHEMICAL ANALYSIS

The year in which the last chemical analysis of water from the well was made should be listed here.

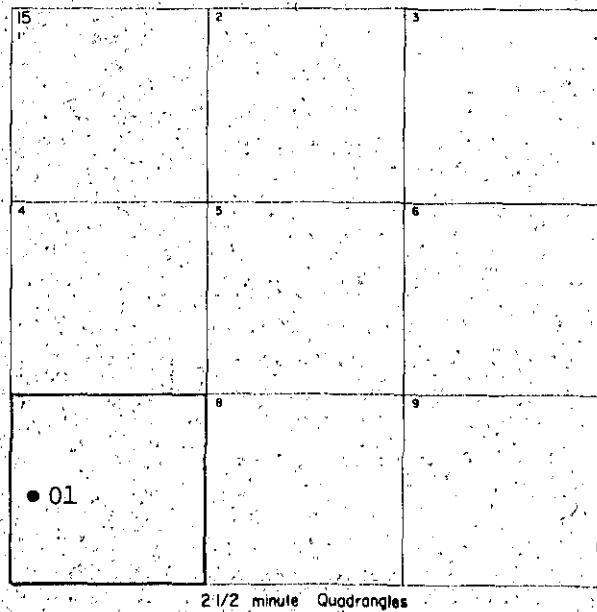
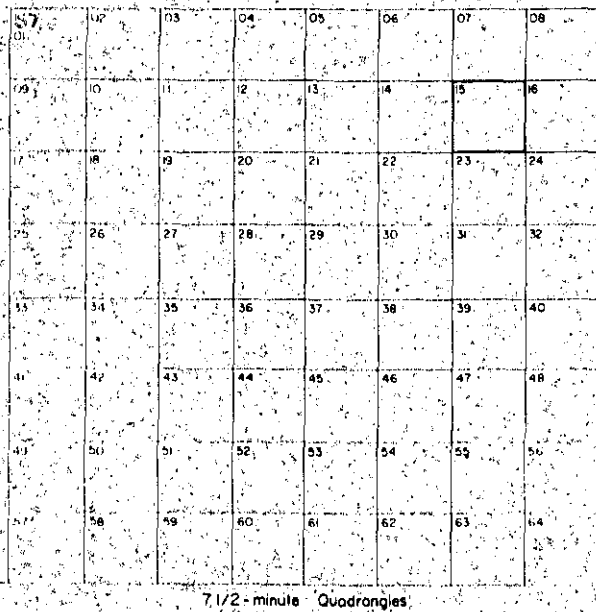
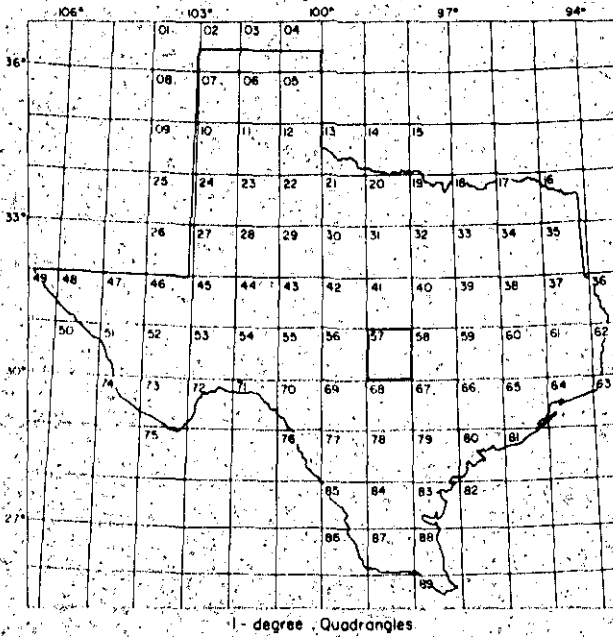
The small boxes in the upper right hand part of the page with "Normal", "Publ.", and "USGS" beside them refer to the computer source file of data appearing on the page and will be indicated by an "X" in the appropriate box(s) on each printout of data.

WELL-NUMBERING SYSTEM

LOCATION OF WELL 57-15-701
 57 1-degree quadrangle
 15 7½-minute quadrangle
 7 2½-minute quadrangle
 01 Well number within
 2½-minute quadrangle

To facilitate the location of wells and avoid duplication of well numbers, the Texas Department of Water Resources has adopted a statewide well-numbering system. It is based on division of the State into a grid of 1-degree quadrangles formed by degrees of latitude and longitude and the repeated division of these quadrangles into smaller ones as shown on the following diagram.

Each 1-degree quadrangle is divided into sixty-four 7½-minute quadrangles, each of which is further divided into nine 2½-minute quadrangles. Each 1-degree quadrangle in the State has been assigned an identification number. The 7½-minute quadrangles are numbered consecutively from left to right, beginning in the upper left-hand corner of the 1-degree quadrangle, and the 2½-minute quadrangles within each 7½-minute quadrangle are similarly numbered. The first 2 digits of a well number identify the 1-degree quadrangle; the third and fourth digits, the 7½-minute quadrangle; the fifth digit identifies the 2½-minute quadrangle; and the last 2 digits identify the well within the 2½-minute quadrangle.



NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
001	ALLUVIUM QAL
002	ARROYO FORMATION PLA
003	ARROYO FORMATION - ALLUVIUM PLA-QAL
004	AUSTIN CHALK KGAC
005	AUSTIN CHALK - ALLUVIUM KGAC-QAL
006	BEAUMONT CLAY QB
007	BEAUMONT CLAY - ALLUVIUM QB-QAL
008	BLAINE FORMATION PGB
009	BLAINE FORMATION - ALLUVIUM PGB-QAL
010	BLAINE FORMATION - SAN ANGELO SANDSTONE PGB-PGSA
011	BLAINE FORMATION - SAN ANGELO SANDSTONE - ALLUVIUM PGB-PGSA - QAL
012	BLOSSOM SAND KGBL
013	BLOSSOM SAND - ALLUVIUM KGBL-QAL
014	BONE SPRING LIMESTONE PLBS
015	BONE SPRING - ALLUVIUM PLBS-QAL
016	BULLWAGON DOLOMITE PLVB

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

017	BULLWAGON DOLOMITE - ALLUVIUM PLVB-QAL
018	BULLWAGON DOLOMITE - ARROYO FORMATION PLVB-PLA
019	BULLWAGON DOLOMITE - ARROYO FORMATION - ALLUVIUM PLVB-PLA- QAL
020	BULLWAGON DOLOMITE - STANDPIPE LIMESTONE PLVB-PLAS
021	BULLWAGON DOLOMITE - STANDPIPE LIMESTONE - ALLUVIUM PLVB-PLAS- QAL
022	BULLWAGON DOLOMITE - STANDPIPE LIMESTONE - ARROYO FORMATION PLVB-PLAS- PLA
023	BULLWAGON DOLOMITE - STANDPIPE LIMESTONE - ARROYO FORMATION - ALLUVIUM PLVB-PLAS- PLA-QAL
024	CANYON GROUP PNC
025	CANYON GROUP - ALLUVIUM PNC-QAL
026	CANYON GROUP - STRAWN GROUP PNC-PNS
027	CANYON GROUP - STRAWN GROUP - ALLUVIUM PNC-PNS- QAL
028	CAPITAN LIMESTONE PGC
029	CAPITAN LIMESTONE - ALLUVIUM PGC-QAL
030	CARRIZO SAND TC
031	CARRIZO SAND - ALLUVIUM TC-QAL
032	CARRIZO SAND - WILCOX GROUP TC-TWI

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
033	CARRIZO SAND - WILCOX GROUP - ALLUVIUM TC-TWI-QAL
034	CATAHOULA TUFF TCT
035	CATAHOULA TUFF - ALLUVIUM TCT-QAL
036	CATAHOULA TUFF - LAGARTO CLAY TCT-TL
037	CATAHOULA TUFF - LAGARTO CLAY - ALLUVIUM TCT-TL-QAL
038	CATAHOULA TUFF - OAKVILLE SANDSTONE TCT-TOK
039	CATAHOULA TUFF - OAKVILLE SANDSTONE - ALLUVIUM TCT-TOK-QAL
040	CATAHOULA-JASPER TCT-T JAS
041	CATAHOULA-JASPER-ALLUVIUM TCT-T JAS-QAL
042	CISCO GROUP PNCS
043	CISCO GROUP - ALLUVIUM PNCS-QAL
044	CISCO GROUP - CANYON GROUP PNCS-PNC
045	CISCO GROUP - CANYON GROUP - ALLUVIUM PNCS-PNC-QAL
046	CISCO GROUP - CANYON GROUP - STRAWN GROUP PNCS-PNC-PNS
047	CISCO GROUP - CANYON GROUP - STRAWN GROUP - ALLUVIUM PNCS-PNC-PNS-QAL
048	CISCO GROUP - STRAWN GROUP PNCS-PNS

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
049	CISCO GROUP - STRAWN GROUP - ALLUVIUM PNC5-PNS- QAL
050	COMANCHE PEAK LIMESTONE KCCP
051	COMANCHE PEAK LIMESTONE - ALLUVIUM KCCP-QAL
052	COOK MOUNTAIN FORMATION TCM
053	COOK MOUNTAIN FORMATION - ALLUVIUM TCM-QAL
054	COOK MOUNTAIN FORMATION - MOUNT SELMAN FORMATION TCM-TMS
055	COOK MOUNTAIN FORMATION - MOUNT SELMAN FORMATION - ALLUVIUM TCM-TMS- QAL
056	DOCKUM GROUP TRD
057	DOCKUM GROUP - ALLUVIUM TRD-QAL
058	DOG CREEK SHALE PGDC
059	DOG CREEK SHALE - ALLUVIUM PGDC-QAL
060	DOG CREEK SHALE - BLAINE FORMATION PGDC-PGB
061	DOG CREEK SHALE - BLAINE FORMATION - ALLUVIUM PGDC-PGB- QAL
062	DOG CREEK SHALE - BLAINE FORMATION - SAN ANGELO SANDSTONE PGDC-PGB- PGSA
063	DOG CREEK SHALE-BLAINE FORMATION-SAN ANGELO SANDSTONE-ALLUVIUM UM PGDC-PGB- PGSA-QAL
064	DOG CREEK SHALE - SAN ANGELO SANDSTONE PGDC-PGSA

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

065 DOG CREEK SHALE - SAN ANGELO SANDSTONE - ALLUVIUM
PGDC-PGSA- QAL

066 EDWARDS LIMESTONE OR EDWARDS AND ASSOCIATED LIMESTONES
KCE

067 EDWARDS LIMESTONE OR EDWARDS AND ASSOCIATED LIMESTONES - ALLUVIUM
KCE-QAL

068 EDWARDS LIMESTONE - COMANCHE PEAK LIMESTONE
KCE-KCCP

069 EDWARDS LIMESTONE - COMANCHE PEAK LIMESTONE - ALLUVIUM
KCE-KCCP- QAL

070 ELLENBURGER GROUP
OE

071 ELLENBURGER GROUP - ALLUVIUM
OE-QAL

072 GEORGETOWN LIMESTONE
KCGT

073 GEORGETOWN LIMESTONE - ALLUVIUM
KCGT-QAL

074 GEORGETOWN LIMESTONE - COMANCHE PEAK LIMESTONE
KCGT-KCCP

075 GEORGETOWN LIMESTONE - COMANCHE PEAK LIMESTONE - ALLUVIUM
KCGT-KCCP- QAL

076 GEORGETOWN LIMESTONE - EDWARDS LIMESTONE
KCGT-KCE

077 GEORGETOWN LIMESTONE - EDWARDS LIMESTONE - ALLUVIUM
KCGT-KCE- QAL

078 MINERAL WELLS FORMATION
PNSMW

079 GARNER FORMATION
PNSG

080 GLEN ROSE LIMESTONE
KCGR

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
081	GLEN ROSE LIMESTONE - ALLUVIUM KCGR-QAL
082	GLEN ROSE LIMESTONE - TRAVIS PEAK FORMATION KCGR-KCTP
083	GLEN ROSE LIMESTONE - TRAVIS PEAK FORMATION - ALLUVIUM KCGR-KCTP-QAL
084	GOLIAD SAND TG
085	GOLIAD SAND - ALLUVIUM TG-QAL
086	GOLIAD SAND - BEAUMONT CLAY TG-QB
087	GOLIAD SAND - BEAUMONT CLAY - ALLUVIUM TG-QB-QAL
088	GOLIAD SAND - LISSIE SAND TG-QL
089	GOLIAD SAND - LISSIE SAND - ALLUVIUM TG-QL-QAL
090	GOLIAD SAND - LISSIE SAND - BEAUMONT CLAY TG-QL-QB
091	GOLIAD SAND - LISSIE SAND - BEAUMONT CLAY - ALLUVIUM TG-QL-QB-QAL
092	GOLIAD SAND - WILLIS SAND TG-QW
093	GOLIAD SAND - WILLIS SAND - ALLUVIUM TG-QW-QAL
094	GOLIAD SAND - WILLIS SAND - BEAUMONT CLAY TG-QW-QB
095	GOLIAD SAND - WILLIS SAND - BEAUMONT CLAY - ALLUVIUM TG-QW-QB-QAL
096	GOLIAD SAND - WILLIS SAND - LISSIE SAND TG-QW-QL

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

097 GOLIAD SAND - WILLIS SAND - LISSIE SAND - ALLUVIUM
TG-QW-QL- QAL

098 GOLIAD SAND - WILLIS SAND - LISSIE SAND - BEAUMONT CLAY
TG-QW-QL- QB

099 GOLIAD-CHICOT
TG-Q CH

100 HICKORY SANDSTONE
CH

101 HICKORY SANDSTONE - ALLUVIUM
CH-QAL

102 HICKORY SANDSTONE - ELLENBURGER GROUP
CH-OE

103 HICKORY SANDSTONE - ELLENBURGER GROUP - ALLUVIUM
CH-OE-QAL

104 JACKSON GROUP
TJ

105 JACKSON GROUP - ALLUVIUM
TJ-QAL

106 JACKSON GROUP - YEGUA FORMATION
TJ-TY

107 JACKSON GROUP - YEGUA FORMATION - ALLUVIUM
TJ-TY-QAL

108 KINGSVILLE SAND
TJK

109 KINGSVILLE SAND - ALLUVIUM
TJK-QAL

110 LAGARTO CLAY
TL

111 LAGARTO CLAY - ALLUVIUM
TL-QAL

112 LEONA FORMATION
QLE

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

113	LEONA FORMATION - ALLUVIUM QLE-QAL
114	LISSIE SAND QL
115	LISSIE SAND - ALLUVIUM QL-QAL
116	LISSIE SAND - BEAUMONT CLAY QL-QB
117	LISSIE SAND - BEAUMONT CLAY - ALLUVIUM QL-QB-QAL
118	MARBLE FALLS LIMESTONE PNBMF
119	MARBLE FALLS LIMESTONE - ALLUVIUM PNBMF-QAL
120	MOUNT SELMAN FORMATION TMS
121	MOUNT SELMAN FORMATION - ALLUVIUM TMS-QAL
122	NACATOCH SAND KGNA
123	NACATOCH SAND - ALLUVIUM KGNA-QAL
124	NAVARRO GROUP KGN
125	NAVARRO GROUP - ALLUVIUM KGN-QAL
126	NAVARRO GROUP - AUSTIN CHALK KGN-KGAC
127	NAVARRO GROUP - AUSTIN CHALK - ALLUVIUM KGN-KGAC-QAL
128	NAVARRO GROUP - TAYLOR GROUP KGN-KGT

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
129	NAVARRO GROUP - TAYLOR GROUP - ALLUVIUM KGN-KGT- QAL
130	NAVARRO GROUP - TAYLOR GROUP - AUSTIN CHALK KGN-KGT- KGAC
131	NAVARRO GROUP - TAYLOR GROUP - AUSTIN CHALK - ALLUVIUM KGN-KGT- KGAC-QAL
132	OAKVILLE SANDSTONE TOK
133	OAKVILLE SANDSTONE - ALLUVIUM TOK-QAL
134	OAKVILLE SANDSTONE - LAGARTO CLAY TOK-TL
135	JASPER-ALLUVIUM T JAS-QAL
136	OGALLALA FORMATION TO
137	OGALLALA FORMATION - ALLUVIUM TO-QAL
138	PALUXY FORMATION KCPA
139	PALUXY FORMATION - ALLUVIUM KCPA-QAL
140	QUEEN CITY SAND TQC
141	QUEEN CITY SAND - ALLUVIUM TQC-QAL
142	QUEEN CITY SAND - SPARTA SAND TQC-TS
143	QUEEN CITY SAND - SPARTA SAND - ALLUVIUM TQC-TS-QAL
144	QUEEN CITY SAND - WILCOX GROUP TQC-TWI

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
145	QUEEN CITY SAND - WILCOX GROUP - ALLUVIUM TQC-TWI- QAL
146	RUSTLER FORMATION POR
147	RUSTLER FORMATION - ALLUVIUM POR-QAL
148	RUSTLER FORMATION - CAPITAN LIMESTONE POR-PGC
149	RUSTLER FORMATION - CAPITAN LIMESTONE - ALLUVIUM POR-PGC- QAL
150	RUSTLER FORMATION - SAN ANDRES FORMATION POR-PGSN
151	RUSTLER FORMATION - SAN ANDRES FORMATION - ALLUVIUM POR-PGSN- QAL
152	RUSTLER FORMATION - SAN ANDRES FORMATION - CAPITAN LIMESTONE POR-PGSN- PGC
153	RUSTLER FORMATION - SAN ANDRES FORMATION - CAPITAN LIMESTONE - ALLUVIUM POR-PGSN- PGC-QAL
154	SAN ANDRES FORMATION PGSN
155	SAN ANDRES FORMATION - ALLUVIUM PGSN-QAL
156	SAN ANDRES FORMATION - CAPITAN LIMESTONE PGSN-PGC
157	SAN ANDRES FORMATION - CAPITAN LIMESTONE - ALLUVIUM PGSN-PGC- QAL
158	SAN ANGELO SANDSTONE PGSA
159	SAN ANGELO SANDSTONE - ALLUVIUM PGSA-QAL
160	SANTA ROSA SANDSTONE TPSR

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
161	SANTA ROSA SANDSTONE - ALLUVIUM TRDSR-QAL
162	SEYMOUR FORMATION QS
163	SEYMOUR FORMATION - ALLUVIUM QS-QAL
164	SPARTA SAND TS
165	SPARTA SAND - ALLUVIUM TS-QAL
166	STANDPIPE LIMESTONE PLAS
167	STANDPIPE LIMESTONE - ALLUVIUM PLAS-QAL
168	STANDPIPE LIMESTONE - ARROYO FORMATION PLAS-PLA
169	STANDPIPE LIMESTONE - ARROYO FORMATION - ALLUVIUM PLAS-PLA-QAL
170	STRAWN GROUP PNS
171	STRAWN GROUP - ALLUVIUM PNS-QAL
172	TAYLOR GROUP KGT
173	TAYLOR GROUP - ALLUVIUM KGT-QAL
174	TAYLOR GROUP - AUSTIN CHALK KGT-KGAC
175	TAYLOR GROUP - AUSTIN CHALK - ALLUVIUM KGT-KGAC-QAL
176	TERTIARY VOLCANICS TV

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
177	TERTIARY VOLCANICS - ALLUVIUM TV-QAL
178	TRAVIS PEAK FORMATION KCTP
179	TRAVIS PEAK FORMATION - ALLUVIUM KCTP-QAL
180	TRINITY GROUP OR TRINITY SAND(S) UNDIFFERENTIATED KCT
181	TRINITY SAND(S) UNDIFFERENTIATED-ALLUVIUM KCT-QAL
182	TRAVIS PEAK - PALUXY FORMATIONS KCTP -KCPA
183	TRAVIS PEAK - PALUXY - ALLUVIUM KCTP-KCPA-QAL
184	TRINITY GROUP-WOODBINE FORMATION KCT-KGW
185	TRINITY GROUP-WOODBINE FORMATION-ALLUVIUM KCT-KGW- QAL
186	COW CREEK LIMESTONE-HOSSTON FORMATION KCCC-KCHO
187	EL PICO CLAY TEP
188	UVALDE GRAVEL TU
189	UVALDE GRAVEL - ALLUVIUM TU-QAL
190	WILCOX GROUP TWI
191	WILCOX GROUP - ALLUVIUM TWI-QAL
192	WILLIS SAND QW

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

193	WILLIS SAND - ALLUVIUM QW-QAL
194	WILLIS SAND - BEAUMONT CLAY QW-QB
195	WILLIS SAND - BEAUMONT CLAY - ALLUVIUM QW-QB-QAL
196	WILLIS SAND - LISSIE SAND QW-QL
197	WILLIS SAND - LISSIE SAND - ALLUVIUM QW-QL-QAL
198	WILLIS SAND - LISSIE SAND - BEAUMONT CLAY QW-QL-QB
199	WILLIS SAND - LISSIE SAND - BEAUMONT CLAY - ALLUVIUM QW-QL-QB-QAL
200	WOODBINE FORMATION KGW
201	WOODBINE FORMATION - ALLUVIUM KGW-QAL
202	WOODBINE FORMATION - PALUXY FORMATION KGW-KCPA
203	WOODBINE FORMATION - PALUXY FORMATION - ALLUVIUM KGW-KCPA-QAL
204	YEGUA FORMATION TY
205	YEGUA FORMATION - ALLUVIUM TY-QAL
206	GOLIAD SAND - LAGARTO CLAY TG-TL
207	CARRIZO SAND - SPARTA SAND TC-TS
208	PERMIAN SYSTEM P

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

209 COOK MOUNTAIN FORMATION - CARRIZO SAND
TCM-TC

210 TRINITY SAND(S) UNDIFFERENTIATED-OGALLALA FORMATION
KCT-TO

211 CLEAR FORK GROUP
PLCF

212 EDWARDS LIMESTONE-TRINITY SAND(S) UNDIFFERENTIATED
KCE-KCT

213 FREDERICKSBURG GROUP
KCF

214 PERMIAN - PALUXY FORMATION
P-KCPA

215 WICHITA GROUP
PLW

216 WOODBINE FORMATION - TRAVIS PEAK FORMATION
KGM-KCTP

217 CATAHOULA-JASPER-EVANGELINE-WILLIS-LISSIE
TCT-T JAS-T EV-QW-QL

218 CATAHOULA-JASPER-EVANGELINE-WILLIS-LISSIE-BEAUMONT
TCT-T JAS-T EV-QW-QL-QB

219 CARRIZO SAND - BEAUMONT CLAY
TC-QB

220 GLEN ROSE LIMESTONE-TRINITY SAND(S) UNDIFFERENTIATED
KCGR-KCT

221 MIDWAY GROUP - WILCOX GROUP
TM-TWI

222 CATAHOULA TUFF - JACKSON GROUP
TCT-TJ

223 WILCOX GROUP - SPARTA SAND
TWI-TS

224 OGALLALA FORMATION - SANTA ROSA SANDSTONE
TO-TRDSR

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
225	TRIASSIC SYSTEM TR
226	CARRIZO SAND - LEONA FORMATION TC-QLF
227	FREDERICKSBURG - WASHITA GROUP KCF-KCW
228	TRINITY SAND(S) UNDIFFERENTIATED-PENNSYLVANIAN SYSTEM UNDIFFERENTIATED KCT-PN
229	MIDWAY GROUP TM
230	MIDWAY - NACATOCH TM-KGNA
231	ELLENBURGER GROUP - GLEN ROSE LIMESTONE OE-KCGR
232	CAMBRIAN SYSTEM C
233	PALEOZOIC ERA PALEO
234	QUEEN CITY - CARRIZO TQC-TC
235	CAMBRIAN - CRETACEOUS C-K
236	CRETACEOUS SYSTEM K
237	SAN SABA - HENSEL CSS-KCHE
238	PRE-CAMBRIAN PREC
239	TANYARD FORMATION OT
240	TRINITY SAND(S) UNDIFFERENTIATED-FREDERICKSBURG GROUP-ALLUVIUM KCT-KCF- QAL

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

241 TRINITY SAND(S) UNDIFFERENTIATED-FREDERICKSBURG GROUP-OGALLALA
KCT-KCF-TO

242 PECOS AQUIFER
OK, PEC

243 EVANGELINE-WILLIS-LISSIE
T EV-QW-QL

244 WHITE HORSE GROUP - ALLUVIUM
PGWH-QAL

245 QUARTERMASTER - WHITE HORSE GROUP
PQ-PGWH

246 OGALLALA - TRIASSIC
TO-TR

247 PENNSYLVANIAN SYSTEM
PN

248 GLEN ROSE - FREDERICKSBURG
KCGR-KCF

249 ALLUVIUM-BLAINE FORMATION-OGALLALA
QAL-PGB-TO

250 WILCOX - REKLAW
TWI-TREK

251 GOBER CHALK
KGGC

252 PEASE RIVER GROUP
PGPR

253 CARRIZO - WILCOX - YEGUA
TC-TWI-TY

254 REKLAW FORMATION
TREK

255 CARRIZO-WILCOX-QUEEN CITY
TC-TWI-TQC

256 WECHES FORMATION
TWE

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

257

WECHES - WILCOX
TWE-TWI

258

ANACACHO LIMESTONE
KGAN

259

INDIO FORMATION
TI

260

ALTA LOMA SAND
QALM

261

ALTA LOMA - BEAUMONT
QALM-QB

262

LOWER RIO GRANDE VALLEY AQUIFER
QT LRG

263

MERCEDES - SEBASTIAN AQUIFER
Q MS

264

LINN FAYSVILLE AQUIFER
QT LF

265

DAKOTA GROUP
KD

266

CARRIZO - MT. SELMAN
TC-TMS

267

FRIO CLAY
TF

268

FRIO - CATAHOULA
TF-TCT

269

HOSSTON FORMATION
KCHO

270

PEARSALL FORMATION
KCP

271

GULF COAST AQUIFER
QT GC

272

ANTLERS SAND
KCA

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
273	CHOZA FORMATION PLC
274	CHOZA AND LEONA PLC-QLE
275	BOLSON DEPOSITS TBD
276	HENSEL MEMBER KCHE
277	LAREDO FORMATION TLA
278	WASHITA-BUDA KCW-KCB
279	HENSEL - HOSSTON - TRAVIS PEAK KCHE-KCHO-KCTP
280	WEATHERED GRANITE <i>Group</i> PRECG
281	SAN SABA LIMESTONE CSS
282	HONEYCUT FORMATION OH
283	THREADGILL MEMBER OTH
284	EDWARDS AND ASSOCIATED LIMESTONES-(BALCONES FAULT ZONE AQUIFER) KCEB
285	UPPER GLEN ROSE LIMESTONE KCGRU
286	HENSEL - LOWER GLEN ROSE - COW CREEK LIMESTONE KCHE-KCGRL-KCCC
287	HOSSTON - SLIGO LIMESTONE KCHO-KCS
288	IGNEOUS ROCKS (TERTIARY) TIG

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

289	HENSEL - HOSSTON KCHE-KCHO
290	UPPER GLEN ROSE - HENSEL KCGRU-KCHE
291	MARBLE FALLS AND ELLENBURGER PNBMF-OE
292	QUATERNARY TERRACE DEPOSITS QTER
293	QUARTERMASTER FORMATION PQ
294	CHICOT AQUIFER Q CH
295	GLEN ROSE-HENSEL KCGR-KCHE
296	WHITEHORSE GROUP PGWH
297	PENNSYLVANIAN - TRAVIS PEAK PN-KCTP
298	PENNSYLVANIAN - ANTLERS PN-KCA
299	PALUXY - GLEN ROSE KCPA-KCGR
300	HENSEL - PEARSALL KCHE-KCP
301	PEARSALL - HOSSTON KCP-KCHO
302	PALUXY - EDWARDS AND ASSOCIATED LIMESTONES KCPA-KCE
303	GLEN ROSE - HENSEL - HOSSTON KCGR-KCHE- KCHO
304	WOODBINE - PALUXY - TRAVIS PEAK KGW-KCPA- KCTP

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
305	GLEN ROSE LIMESTONE-TWIN MOUNTAINS FORMATION KCGR-KCTM
306	ANTLERS SAND-ALLUVIUM KCA-QAL
307	HOSSTON - PALUXY - WOODBINE KCHO-KCPA- KGW
308	BIGFORD MEMBER TB
309	BIGFORD - CARRIZO TB-TC
310	QUEEN CITY -- REKLAW TQC-TREK
311	WASHITA GROUP KCW
312	TWIN MOUNTAINS FORMATION KCTM
313	AUSTIN CHALK - PENNSYLVANIAN KGAC-PN
314	CYPRESS AQUIFER T CYP
315	OCHOA SERIES PO
316	ARTESIA GROUP PGA
317	EVANGELINE AQUIFER T EV
318	JASPER AQUIFER T JAS
319	LOWER GLEN ROSE LIMESTONE KCGRL
320	EOLIAN DEPOSITS QED

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

321 QUATERNARY SYSTEM
Q

322 TERTIARY SYSTEM
T

323 ESCONDIDO FORMATION
KGES

324 SAN MIGUEL FORMATION
K GSM

325 UPSON CLAY
K GUP

326 WOLFE CITY SAND
K GWC

327 AUSTIN GROUP
K GA

328 EAGLE FORD SHALE
K GEF

329 BUDA LIMESTONE
K CB

330 PAWPAW FORMATION
K CPP

331 DEVIL'S RIVER LIMESTONE
K CDR

332 COX SAND
K CCX

333 MAXON SAND
K CMX

334 COW CREEK LIMESTONE
K CCC

335 CHINLE FORMATION
TRDC

336 TRUJILLO FORMATION
TRDTR

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
337	TECOVAS FORMATION TRDT
338	MISSISSIPPIAN SYSTEM M
339	DEVONIAN SYSTEM D
340	SILURIAN SYSTEM S
341	DEWEY LAKE REDBEDS PODL
342	SALADO FORMATION POS
343	CASTILE FORMATION POC
344	GUADALUPE SERIES PG
345	DELAWARE MOUNTAIN GROUP PGDM
346	YATES SANDSTONE PGY
347	SEVEN RIVERS FORMATION PGSR
348	QUEEN FORMATION PGQ
349	GRAYBURG FORMATION PGG
350	GOAT SEEP FACIES PGGS
351	FLOWERPOT SHALE PGF
352	GILLIAM LIMESTONE PGGL

NUMERIC
AQUIFER
CODE AQUIFER NAME / AQUIFER ABBREVIATION

- 353 LEONARD SERIES
 PL
- 354 VICTORIO PEAK MEMBER
 PLVP
- 355 VALE FORMATION
 PLV
- 356 MERKEL DOLOMITE
 PLCM
- 357 LUEDERS FORMATION
 PLWL
- 358 WOLFCAMP SERIES
 PW
- 359 HUECO LIMESTONE
 PWH
- 360 BEND GROUP
 PNB
- 361 GAP-TANK FORMATION
 PNG
- 362 HAYMOND FORMATION
 PNH
- 363 DIMPLE LIMESTONE
 PND
- 364 TESNUS FORMATION
 PNT
- 365 ORDOVICIAN SYSTEM
 O
- 366 GORMAN FORMATION
 OG
- 367 STAENDEBACH MEMBER
 OS
- 368 WILBERNS FORMATION
 CW

NUMERIC
AQUIFER
CODE AQUIFER NAME / AQUIFER ABBREVIATION

- 369 RILEY FORMATION
 CR
- 370 MORGAN CREEK LIMESTONE
 CMC
- 371 WELGE SANDSTONE
 CWG
- 372 LION MOUNTAIN SANDSTONE
 CLM
- 373 CAP MOUNTAIN LIMESTONE
 CCM
- 374 PACKSADDLE SCHIST
 PRECPS
- 375 VALLEY SPRING GNEISS
 PRECVS
- 376 WALNUT CLAY
 KCWN
- 377 SLIGO FORMATION
 KCS
- 378 UPPER CHICOT
 Q CHU
- 379 LOWER CHICOT
 Q CHL
- 380 CHICOT-EVANGELINE
 Q CH-T-EV
- 381 BURKEVILLE AQUICLUDE
 T BURK
- 382 UPPER JASPER
 T JASU
- 383 UPPER JASPER-EVANGELINE
 T JASU- T EV
- 384 BURKEVILLE-EVANGELINE
 T BURK- T EV

NUMERIC
AQUIFER
CODE AQUIFER NAME / AQUIFER ABBREVIATION

385 LOWER GLEN ROSE-HOSSTON
KCGRL-KCHO

386 MARATHON LIMESTONE
OMR

387 CANE RIVER FORMATION
TCR

388 CHOZA-SAN ANGELO
PLC-PGSA

389 CHOZA - BULLWAGON
PLC-PLVB

390 SEYMOUR - CHOZA
QS-PLC

391 CHOZA-ALLUVIUM
PLC-QAL

392 VALE-ALLUVIUM
PLV-QAL

393 CHOZA-VALE
PLC-PLV

394 ALLUVIUM-CHOZA-BULLWAGON
QAL-PLC- PLVB

395 MERKEL DOLOMITE-SAN ANGELO
PLCM-PGSA

396 IGNEOUS ROCKS (CRETACEOUS)
KI

397 ALLUVIUM - LOWER CRETACEOUS
QAL-KC

398 BELLE PLAINS FORMATION
PLBP

399 ADMIRAL FORMATION
PWAD

400 PUTNAM FORMATION
PWP

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
401	MORAN FORMATION PMM
402	PUEBLO FORMATION PWPB
403	WHITEHORSE-DOG CREEK PGWH-PGDC
404	SIMSBORO SAND MEMBER TWIS
405	ELLENBURGER-CAMBRIAN OE-C
406	TRINITY SAND(S) UNDIFFERENTIATED-ELLENBURGER GROUP KCT-OE
407	LEONA FORMATION - ANTLERS' SAND QLE-KCA
408	GLEN ROSE - PEARSALL KCGR-KCP
409	HENSEL - COW CREEK KCHE-KCCC
410	LEONA-WILCOX QLE-TWI
411	BRAZOS RIVER CONGLOMERATE PNSBR
412	MILLSAP LAKE FORMATION PNSML
413	LEONA FORMATION - BULLWAGON DOLOMITE QLE-PLVB
414	UPPER CRETACEOUS (UNDIFFERENTIATED) KG
415	LOWER CRETACEOUS (UNDIFFERENTIATED) KC
416	JURASSIC SYSTEM (UNDIFFERENTIATED) J

NUMERIC AQUIFER CODE	AQUIFER NAME / AQUIFER ABBREVIATION
417	CRETACEOUS-JURASSIC K-J
418	OGALLALA-JURASSIC TO-J
419	OGALLALA-DAKOTA GROUP OR SANDSTONE TO-KD
420	SALT BOLSON AQUIFER QTAL TV 0
421	RED LIGHT BOLSON AQUIFER QTAL TV 1
422	GREEN RIVER BOLSON AQUIFER QTAL TV 2
423	PRESIDIO BOLSON AQUIFER QTAL TV 3
424	REDFORD BOLSON AQUIFER QTAL TV 4
425	EAGLE BOLSON AQUIFER QTAL TV 5
426	HUECO BOLSON AQUIFER QTAL 6
427	RIO GRANDE ALLUVIUM (TRANS-PECOS AREA) QAL RG
428	MESILLA BOLSON AQUIFER QTAL 8
429	TWIN MOUNTAINS - PALUXY FORMATIONS KCTM-KCPA
430	TWIN MOUNTAINS - PALUXY - ALLUVIUM KCTM-KCPA-QAL
431	ELLENBURGER GROUP - SAN SABA LIMESTONE OE-CSS
432	TASCOTAL FORMATION TVT

NUMERIC
AQUIFER
CODE

AQUIFER NAME / AQUIFER ABBREVIATION

433 RAWLS BASALT
TVR

434 YEGUA FORMATION-COOK MOUNTAIN
TY-TCH

435 HENSEL-LOWER GLEN ROSE
KCHE-KCGRL

436 OGALLALA-WHITEHORSE GROUP
TO-PGWH

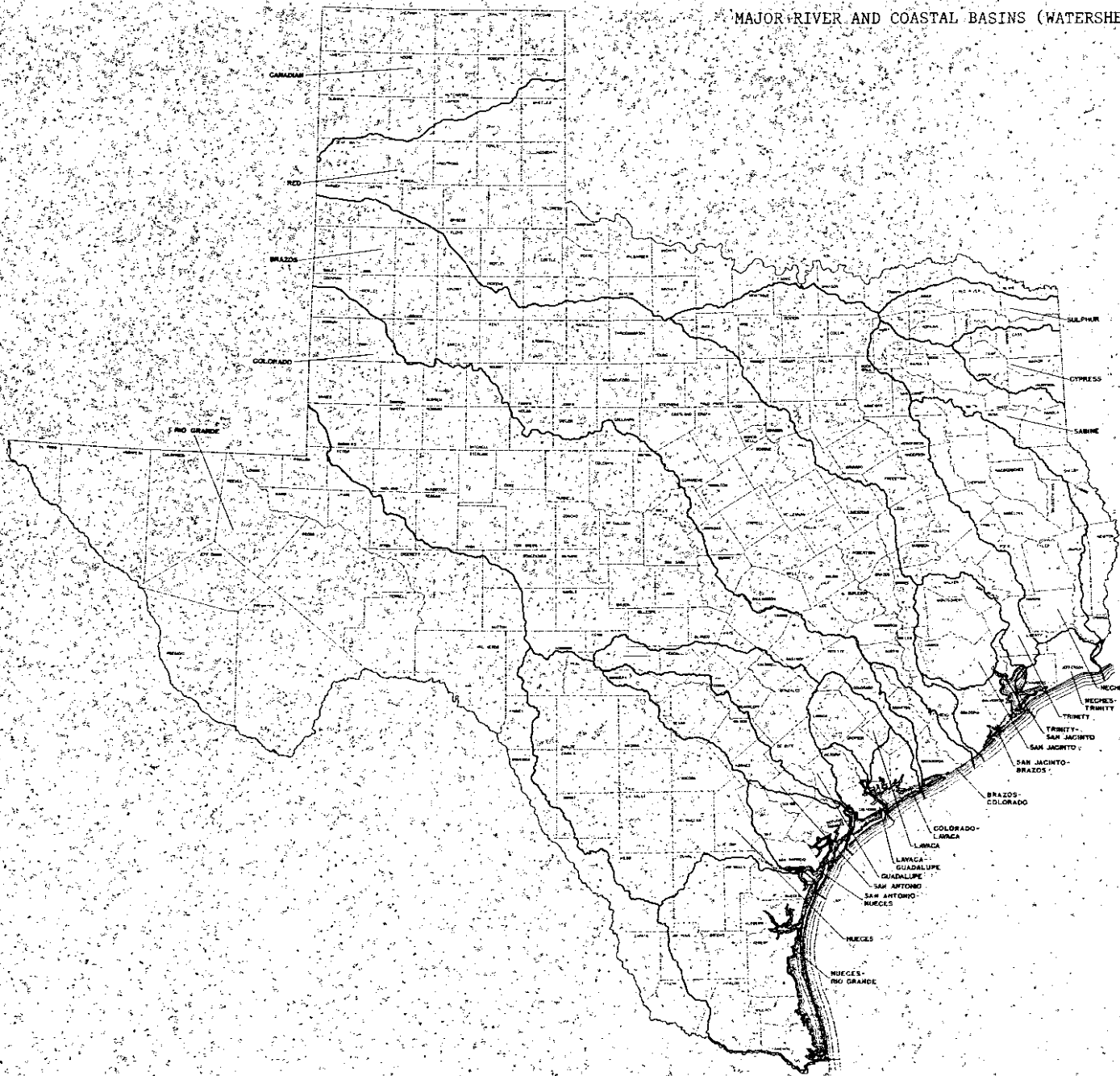
437 UPPER GLEN ROSE-LOWER GLEN ROSE
KCGRU-KCGRL

438 Alluvium - Perm.

439 Triassic - Perm.

440 Calvert Bluff

441 Hooper



<u>WATERSHED</u>	<u>CODE</u>
Canadian River	01
Red River	02
Sulphur River	03
Cypress River	04
Sabine River	05
Neches River	06
Neches-Trinity Rivers	07
Trinity River	08
Trinity-San Jacinto Rivers	09
San Jacinto River	10
San Jacinto-Brazos Rivers	11
Brazos River	12
Brazos-Colorado Rivers	13
Colorado River	14
Colorado-Lavaca Rivers	15
Lavaca River	16
Lavaca-Guadalupe Rivers	17
Guadalupe River	18
San Antonio River	19
San Antonio-Nueces Rivers	20
Nueces River	21
Nueces-Rio Grande Rivers	22
Rio Grande River	23

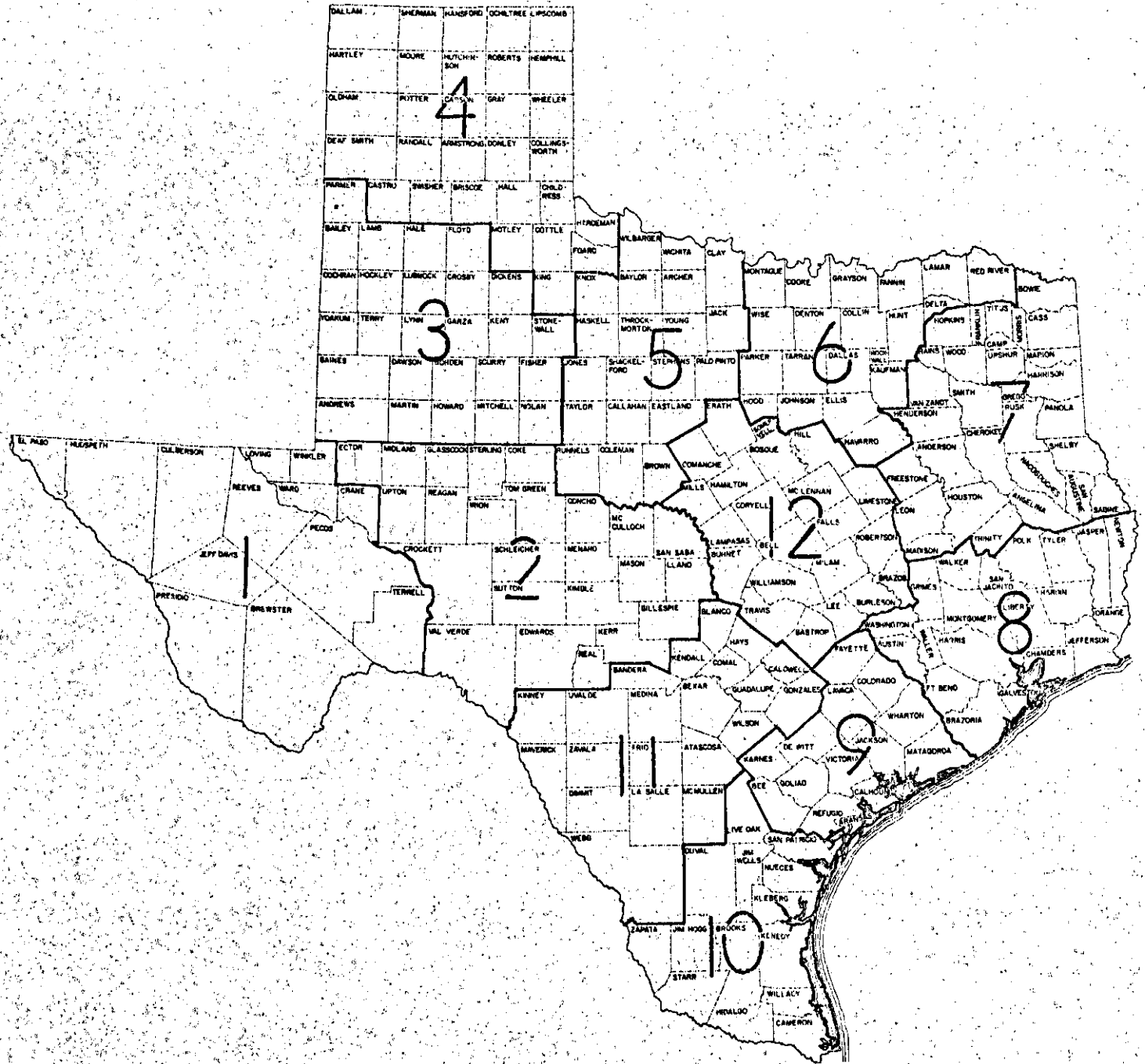
COUNTY CODE DESIGNATIONS

(AA)-001-Anderson	(HH)-052-Crane	(LL)-103-Hartley
(AB)-002-Andrews	(HJ)-053-Crockett	(LP)-104-Haskell
(AD)-003-Angelina	(HK)-054-Crosby	(LR)-105-Hays
(AH)-004-Aransas	(HL)-055-Culberson	(LS)-106-Hemphill
(AJ)-005-Archer	(HP)-056-Dallam	(LT)-107-Henderson
(AK)-006-Armstrong	(HR)-057-Dallas	(LU)-108-Hidalgo
(AL)-007-Atascosa	(HS)-058-Dawson	(LW)-109-Hill
(AP)-008-Austin	(HT)-059-Deaf Smith	(LX)-110-Hockley
(AR)-009-Bailey	(HU)-060-Delta	(LY)-111-Hood
(AS)-010-Bandera	(HW)-061-Denton	(LZ)-112-Hopkins
(AT)-011-Bastrop	(HX)-062-DeWitt	(PA)-113-Houston
(AU)-012-Baylor	(HY)-063-Dickens	(PB)-114-Howard
(AW)-013-Bee	(HZ)-064-Dimmit	(PD)-115-Hudspeth
(AX)-014-Bell	(JA)-065-Donley	(PH)-116-Hunt
(AY)-015-Bexar	(JB)-066-Duval	(PJ)-117-Hutchinson
(AZ)-016-Blanco	(JD)-067-Eastland	(PK)-118-Irion
(BA)-017-Borden	(JH)-068-Ector	(PL)-119-Jack
(BB)-018-Bosque	(JJ)-069-Edwards	(PP)-120-Jackson
(BD)-019-Bowie	(JK)-070-Ellis	(PR)-121-Jasper
(BH)-020-Brazoria	(JL)-071-El Paso	(PS)-122-Jeff Davis
(BJ)-021-Brazos	(JP)-072-Erath	(PT)-123-Jefferson
(BK)-022-Brewster	(JR)-073-Falls	(PU)-124-Jim Hogg
(BL)-023-Briscoe	(JS)-074-Fannin	(PW)-125-Jim Wells
(BP)-024-Brooks	(JT)-075-Fayette	(PX)-126-Johnson
(BR)-025-Brown	(JU)-076-Fisher	(PY)-127-Jones
(BS)-026-Burleson	(JW)-077-Floyd	(PZ)-128-Karnes
(BT)-027-Burnet	(JX)-078-Foard	(RA)-129-Kaufman
(BU)-028-Caldwell	(JY)-079-Fort Bend	(RB)-130-Kendall
(BW)-029-Calhoun	(JZ)-080-Franklin	(RD)-131-Kenedy
(BX)-030-Callahan	(KA)-081-Freestone	(RH)-132-Kent
(BY)-031-Cameron	(KB)-082-Frio	(RJ)-133-Kerr
(BZ)-032-Camp	(KD)-083-Gaines	(RK)-134-Kimble
(DA)-033-Carson	(KH)-084-Galveston	(RL)-135-King
(DB)-034-Cass	(KJ)-085-Garza	(RP)-136-Kinney
(DD)-035-Castro	(KK)-086-Gillespie	(RR)-137-Kleberg
(DH)-036-Chambers	(KL)-087-Glasscock	(RS)-138-Knox
(DJ)-037-Cherokee	(KP)-088-Goliad	(RT)-139-Lamar
(DK)-038-Childress	(KR)-089-Gonzales	(RU)-140-Lamb
(DL)-039-Clay	(KS)-090-Gray	(RW)-141-Lampasas
(DP)-040-Cochran	(KT)-091-Grayson	(RX)-142-La Salle
(DR)-041-Coke	(KU)-092-Gregg	(RY)-143-Lavaca
(DS)-042-Coleman	(KW)-093-Grimes	(RZ)-144-Lee
(DT)-043-Collin	(KX)-094-Guadalupe	(SA)-145-Leon
(DU)-044-Collingsworth	(KY)-095-Hale	(SB)-146-Liberty
(DW)-045-Colorado	(KZ)-096-Hall	(SD)-147-Limestone
(DX)-046-Comal	(LA)-097-Hamilton	(SH)-148-Lipscomb
(DY)-047-Comanche	(LB)-098-Hansford	(SJ)-149-Live Oak
(DZ)-048-Concho	(LD)-099-Hardeman	(SK)-150-Llano
(HA)-049-Cooke	(LH)-100-Hardin	(SL)-151-Loving
(HB)-050-Coryell	(LJ)-101-Harris	(SP)-152-Lubbock
(HD)-051-Cottle	(LK)-102-Harrison	(SR)-153-Lynn

COUNTY CODE DESIGNATIONS

(SS)-154-McCulloch	(WW)-205-San Patricio
(ST)-155-McLennan	(WX)-206-San Saba
(SU)-156-McMullen	(WY)-207-Schleicher
(SW)-157-Madison —	(WZ)-208-Scurry
(SX)-158-Marion —	(XA)-209-Shackelford
(SY)-159-Martin	(XB)-210-Shelby —
(SZ)-160-Mason	(XD)-211-Sherman
(TA)-161-Matagorda	(XH)-212-Smith —
(TB)-162-Maverick —	(XJ)-213-Somervell
(TD)-163-Medina	(XK)-214-Starr
(TH)-164-Menard	(XL)-215-Stephens
(TJ)-165-Midland	(XP)-216-Sterling
(TK)-166-Milam —	(XR)-217-Stonewall
(TL)-167-Mills	(XS)-218-Sutton
(TP)-168-Mitchell	(XT)-219-Swisher
(TR)-169-Montague	(XU)-220-Tarrant
(TS)-170-Montgomery	(XW)-221-Taylor
(TT)-171-Moore	(XX)-222-Terrell
(TU)-172-Morris —	(XY)-223-Terry
(TW)-173-Motley	(XZ)-224-Throckmorton
(TX)-174-Nacogdoches —	(YA)-225-Titus —
(TY)-175-Navarro —	(YB)-226-Tom Green
(TZ)-176-Newton	(YD)-227-Travis
(UA)-177-Nolan	(YH)-228-Trinity —
(UB)-178-Nueces	(YJ)-229-Tyler
(UD)-179-Ochiltree	(YK)-230-Upshur —
(UH)-180-Oldham	(YL)-231-Upton
(UJ)-181-Orange	(YP)-232-Uvalde
(UK)-182-Palo Pinto	(YR)-233-Val Verde
(UL)-183-Panola —	(YS)-234-Van Zandt —
(UP)-184-Parker	(YT)-235-Victoria
(UR)-185-Parmer	(YU)-236-Walker
(US)-186-Pecos	(YW)-237-Waller
(UT)-187-Polk	(YX)-238-Ward
(UU)-188-Potter	(YY)-239-Washington —
(UW)-189-Presidio	(YZ)-240-Webb
(UX)-190-Rains —	(ZA)-241-Wharton
(UY)-191-Randall	(ZB)-242-Wheeler
(UZ)-192-Reagan	(ZD)-243-Wichita
(WA)-193-Real	(ZH)-244-Wilbarger
(WB)-194-Red River —	(ZJ)-245-Willacy
(WD)-195-Reeves	(ZK)-246-Williamson —
(WH)-196-Refugio	(ZL)-247-Wilson
(WJ)-197-Roberts	(ZP)-248-Winkler
(WK)-198-Robertson —	(ZR)-249-Wise
(WL)-199-Rockwall	(ZS)-250-Wood —
(WP)-200-Runnels	(ZT)-251-Yoakum
(WR)-201-Rusk —	(ZU)-252-Young
(WS)-202-Sabine —	(ZW)-253-Zapata
(WT)-203-San Augustine —	(ZW)-254-Zavala —
(WU)-204-San Jacinto	

LOCATION OF GROUND-WATER AREAS



RELATIONSHIP OF TOPOGRAPHIC MAP CODE INDEX TO WATER WELL INDEX

<u>One-Degree Grids</u>				<u>7½-Minute Quadrangles</u>			
Water Well Index	Topographic Map Code Index	Well Index Continued	Map Code Index Continued	Water Well Index	Topographic Map Code Index	Well Index Continued	Map Code Index Continued
01	3603	46	3103	01	333	46	131
02	3602	47	3104	02	334	47	142
03	3601	48	3105	03	343	48	141
04	3600	49	3106	04	344	49	223
05	3500	50	3005	05	433	50	224
06	3501	51	3004	06	434	51	213
07	3502	52	3003	07	443	52	214
08	3503	53	3002	08	444	53	123
09	3403	54	3001	09	332	54	124
10	3402	55	3000	10	331	55	113
11	3401	56	3099	11	342	56	114
12	3400	57	3098	12	341	57	222
13	3499	58	3097	13	432	58	221
14	3498	59	3096	14	431	59	212
15	3497	60	3095	15	442	60	211
16	3394	61	3094	16	441	61	122
17	3395	62	3093	17	323	62	121
18	3396	63	2993	18	324	63	112
19	3397	64	2994	19	313	64	111
20	3398	65	2995	20	314		
21	3399	66	2996	21	423		
22	3300	67	2997	22	424		
23	3301	68	2998	23	413		
24	3302	69	2999	24	414		
25	3303	70	2900	25	322		
26	3203	71	2901	26	321		
27	3202	72	2902	27	312		
28	3201	73	2903	28	311		
29	3200	74	2904	29	422		
30	3299	75	2803	30	421		
31	3298	76	2800	31	412		
32	3297	77	2899	32	411		
33	3296	78	2898	33	233		
34	3295	79	2897	34	234		
35	3294	80	2896	35	243		
36	3193	81	2895	36	244		
37	3194	82	2796	37	133		
38	3195	83	2797	38	134		
39	3196	84	2798	39	143		
40	3197	85	2799	40	144		
41	3198	86	2699	41	232		
42	3199	87	2698	42	231		
43	3100	88	2697	43	242		
44	3101	89	2597	44	241		
45	3102			45	132		

FACTORS FOR CONVERTING SELECTED ENGLISH UNITS TO INTERNATIONAL
SYSTEM (SI) UNITS

Multiply English units	By	To obtain SI units
<u>Length</u>		
inches (in)	25.4	millimeters (mm)
	2.54	centimeters (cm)
	0.0254	meters (m)
feet (ft)	0.3048	meters (m)
miles (mi)	1609	meters (m)
	1.609	kilometers (km)
<u>Area</u>		
acres	4047	square meters (m ²)
	0.4047	square hectometers (hm ²)
	0.004047	square kilometers (km ²)
square inches (in ²)	6.452	square centimeters (cm ²)
square feet (ft ²)	0.0929	square meters (m ²)
square miles (mi ²)	2.590	square kilometers (km ²)
<u>Volume</u>		
gallons (gal)	3.785	liters (l)
	3.785	cubic decimeters (dm ³)
	0.003785	cubic meters (m ³)
million gallons (10 ⁶ gal)	3785	cubic meters (m ³)
	0.003785	cubic hectometers (hm ³)

Multiply English units	By	To obtain SI units
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Volume--Continued

cubic inches (in ³)	16.39	milliliters (ml)
	0.01639	liters (l)
	16.39×10^{-6}	cubic meters (m ³)
cubic feet (ft ³)	28.32	liters (l)
	28.32	cubic decimeters (dm ³)
	0.02832	cubic meters (m ³)
	0.002832	cubic hectometers (hm ³)
	2.832×10^{-6}	cubic kilometers (km ³)
cubic feet per second-day (ft ³ /s-d)	2447	cubic meters (m ³)
	0.002447	cubic hectometers (hm ³)
acre-feet (acre-ft)	1233	cubic meters (m ³)
	0.001233	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
acre-feet per year (acre-ft/yr)	1233	cubic meters per year (m ³ /yr)
barrel (42 gal)	0.1590	cubic meters (m ³)
<u>Flow</u>		
cubic feet per second (ft ³ /s)	28.32	liters per second (l/s)
	28.32	cubic decimeters per second (dm ³ /s)
	0.02832	cubic meters per second (m ³ /s)

Multiply English units	By	To obtain SI units
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Flow--Continued

cubic feet per second per square mile [(ft ³ /s)/mi ²]	0.01093	cubic meters per second per square kilometer [(m ³ /s)/km ²]
feet per second (ft/s)	30.48	centimeters per second (cm/s)
feet per mile (ft/mi)	0.189	meters per kilometer (m/km)
feet per day (ft/d)	0.3048	meters per day (m/d)
feet per year (ft/yr)	0.3048	meters per year (m/yr)
square feet per day (ft ² /d)	0.0929	square meters per day (m ² /d)
gallons per minute (gal/min)	0.06309	liters per second (l/s)
	0.06309	cubic decimeters per second (dm ³ /s)
	6.309x10 ⁻⁵	cubic meters per second (m ³ /s)
gallons per day (gal/d)	3.785	liters per day (l/d)
gallons per minute per foot [(gal/min)/ft]	0.207	liters per second per meter [(l/s)/m]
gallons per day per square foot [(gal/d)/ft ²]	40.74	liters per day per square meter [(l/d)/m ²]
million gallons per day (million gal/d)	43.81	cubic decimeters per second (dm ³ /s)
	0.04381	cubic meters per second (m ³ /s)
	3.785	million liters per day (million l/d)