

San Joaquin County
Flood Control and Water Conservation District



Groundwater Report
Fall 2017



San Joaquin County Flood Control and Water Conservation District

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Copies of the Fall 2017 Groundwater Report may be purchased for \$30 and 36"X48" Contour Maps for \$25 each from:

San Joaquin County Department of Public Works

P.O. Box 1810

Stockton, California 95201

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Acknowledgements

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This Groundwater Report is a product of the commitment that the San Joaquin County Flood Control and Water Conservation District together with many other interested agencies made to sustain and enhance the groundwater resources of the Eastern San Joaquin Basin. The District extends thanks to...

California Water Service

City of Lathrop

City of Lodi

City of Manteca

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Most of all, we would like to thank all of the individual well owners, who give us access to their wells and in some cases some of their time.



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San Joaquin County Flood Control and Water Conservation District Fall 2017 Groundwater Report

Introduction

Since the fall of 1971, the San Joaquin County Flood Control and Water Conservation District has monitored groundwater levels and groundwater quality and has published the data in the Semi-annual Groundwater Report. This report utilizes data from federal, state and local government agencies as well as non-governmental sources.

Water level data is collected on a semi-annual basis, during the months of March and October, to observe groundwater levels before and after peak groundwater pumping conditions. Over 550 wells, of which 270 are measured by County staff, are included in the Monitoring Program. The exact number of wells varies from year to year, depending on circumstances such as destructions, new well construction, well accessibility, and well condition.

Purpose

The purpose of the Semi-annual Groundwater Report is to provide information on groundwater conditions in San Joaquin County and to publish the results of the groundwater monitoring program which consists of the following:

1. Monitor groundwater quality along a North-South line from the north of the City of Stockton to the City of Lathrop.
2. Measure groundwater levels on a County-wide basis.

In general, water quality data is more meaningful after peak production which usually occurs during the summer months. Therefore, groundwater quality data will be published only in the fall report. The groundwater depth and elevation data will be published both in the spring and fall.

Saline intrusion from the west is a continuing concern affecting the quality of groundwater in the Eastern San Joaquin Groundwater Basin. Groundwater quality analysis is completed on an annual basis, from approximately 18 municipal and domestic supply wells (exact number varies from year to year) located in proximity to the saline front.

Procedure

Groundwater quality sampling is conducted on an annual basis during the month of October, along with the Fall measurements. Approximately 18 wells are currently sampled. The exact number of wells may vary depending on well access and other conditions. Replicate groundwater samples (two) are analyzed for Chloride (Cl⁻) by BC Laboratories, Inc., and analyzed for Total dissolved solids (TDS). Electric conductivity is calculated using the formula: $EC = TDS / 0.64 * 1000$. Data is then stored in a database for accessibility and reporting requirements.

Water level measurements are performed with the use of either a steel chain or sounder. Data is then immediately recorded in field books and then stored in a database for accessibility and reporting requirements.

Section 1 – Rainfall Distribution

Summary of Rainfall Distribution

The underlying groundwater basin levels in San Joaquin County respond to changes in annual precipitation. There are four total annual precipitation graphs and four monthly precipitation graphs included in this report (Figures 1-1 through 1-8). These graphs reflect three areas located across San Joaquin County and one area in Calaveras County. The station located at the Stockton Fire Station, as well as the station located in Tracy Carbona, has data beginning in 1940. Lodi station has data from 1949 to 2017. The Camp Pardee station has data available from 1949 to 2017.

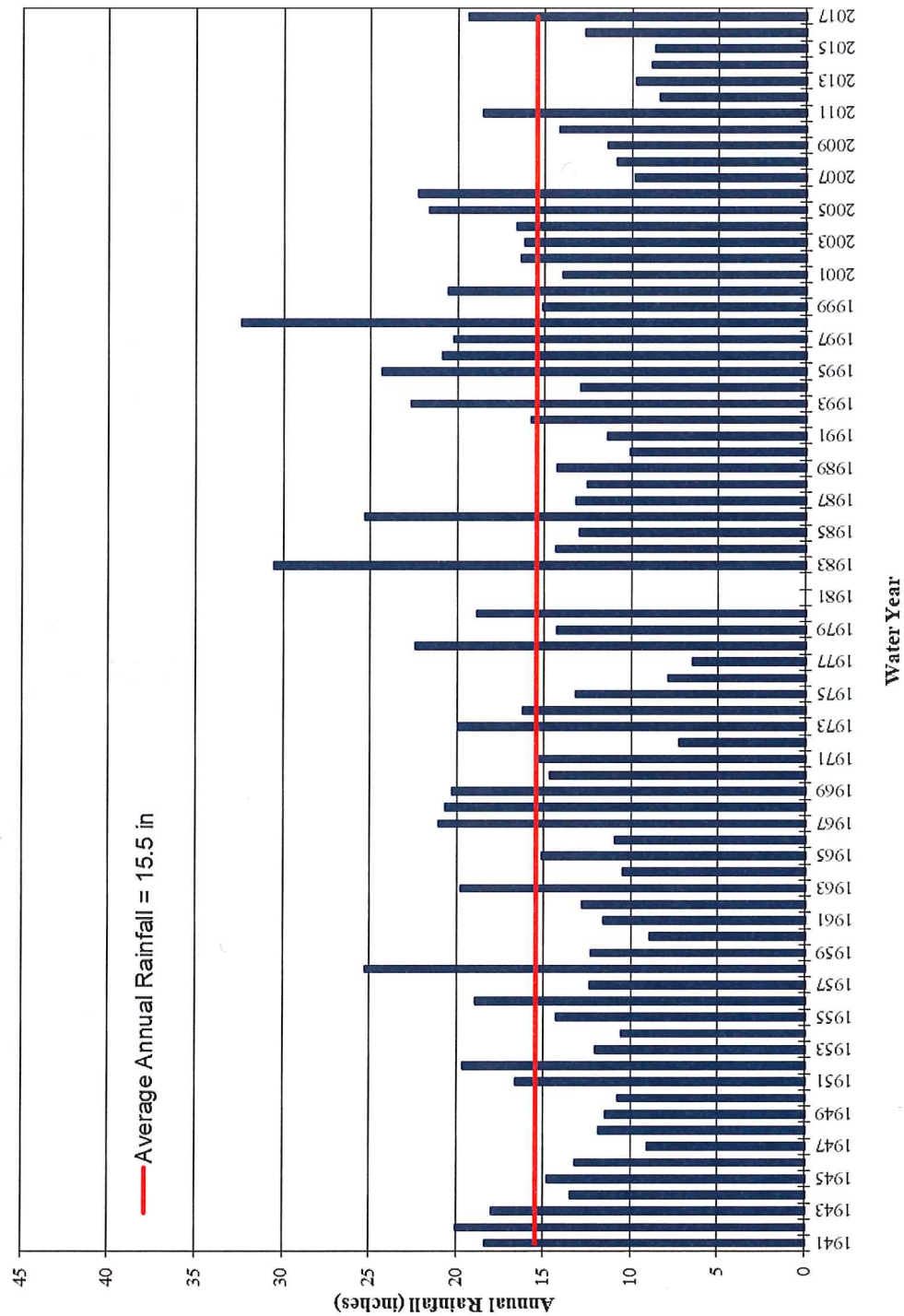


Figure 1-1: Total Annual Rainfall (Stockton Fire Station)

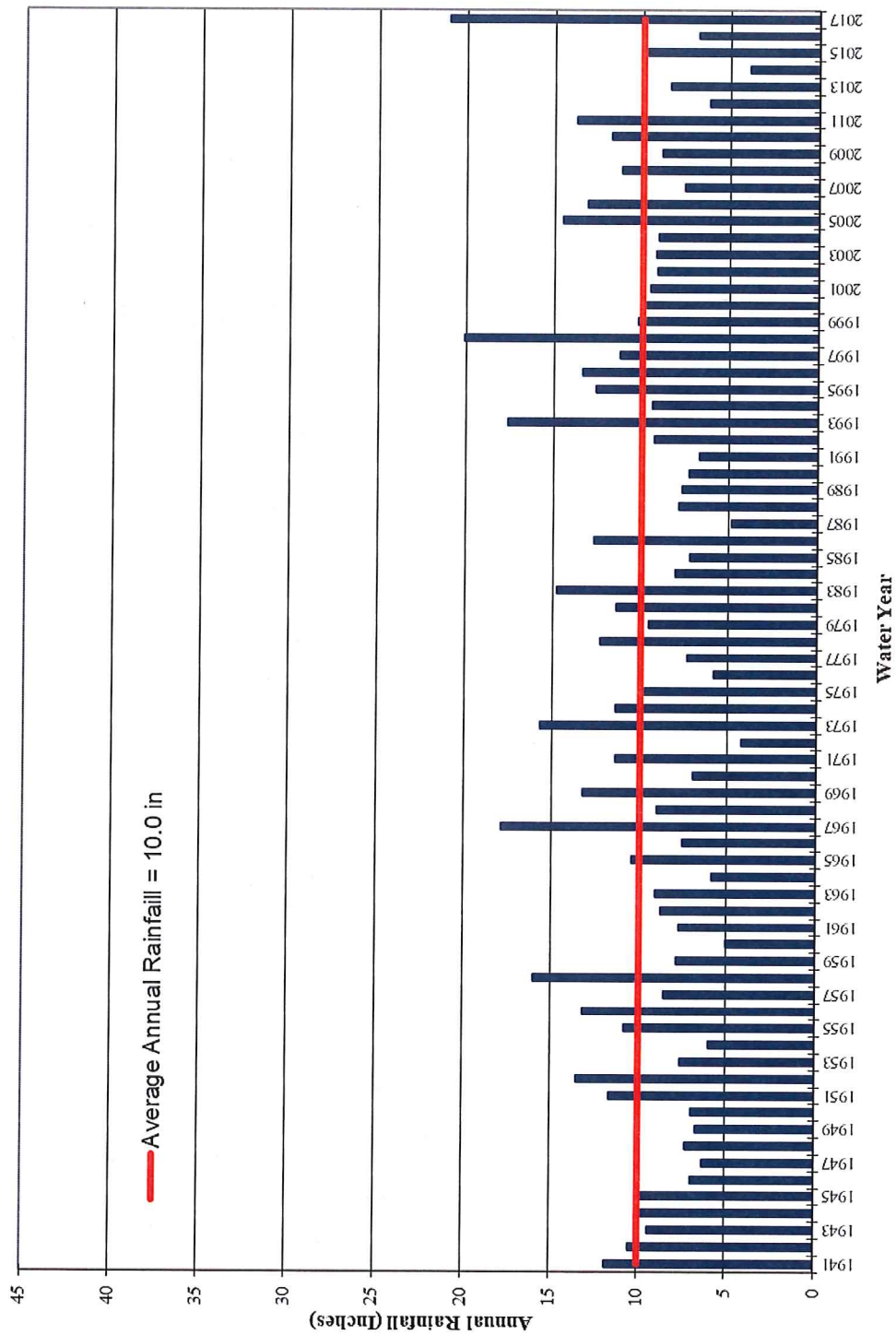


Figure 1-2: Total Annual Rainfall (Tracy Carbona Station)

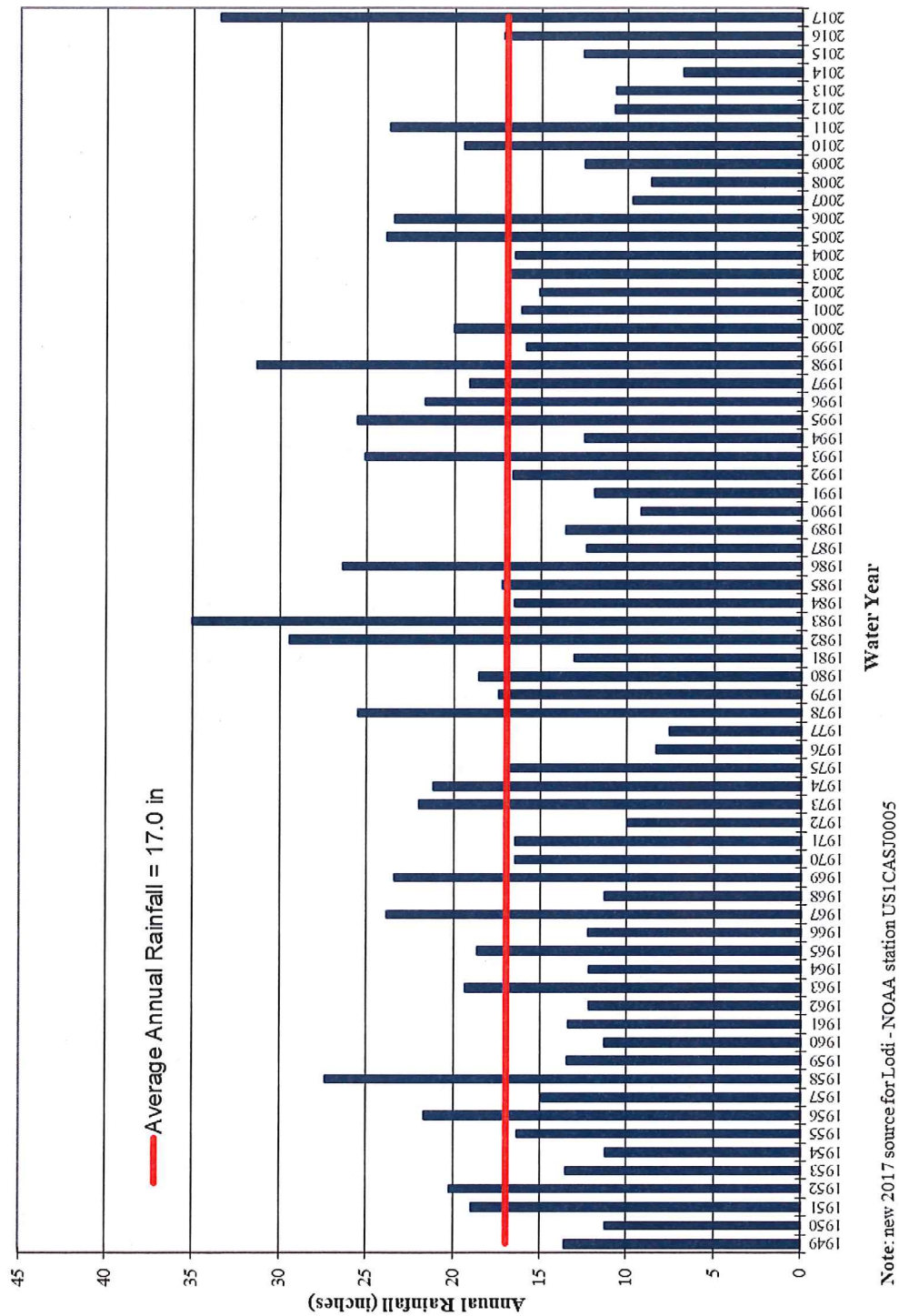


Figure 1-3: Total Annual Rainfall (Lodi Station)

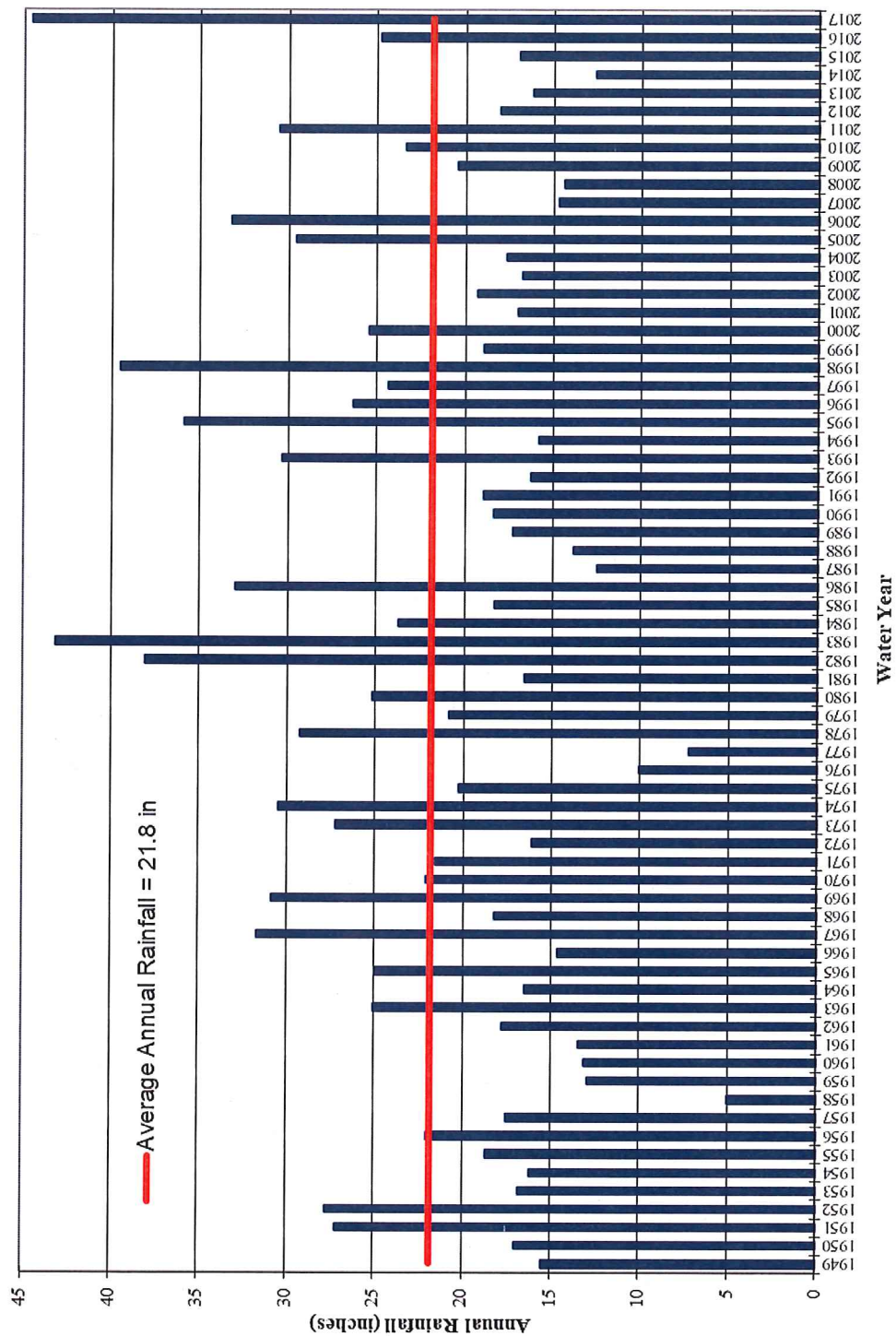


Figure 1-4: Total Annual Rainfall (Camp Pardee Station)

Monthly Rainfall Distribution

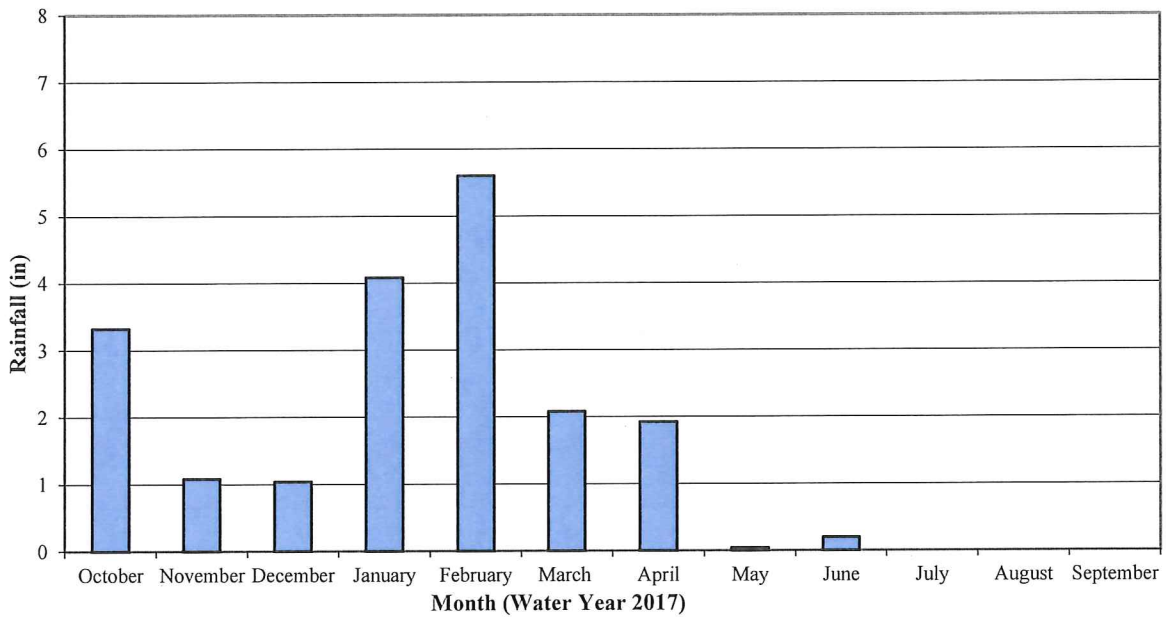


Figure 1-5: Monthly Rainfall Distribution (Stockton Fire Station)

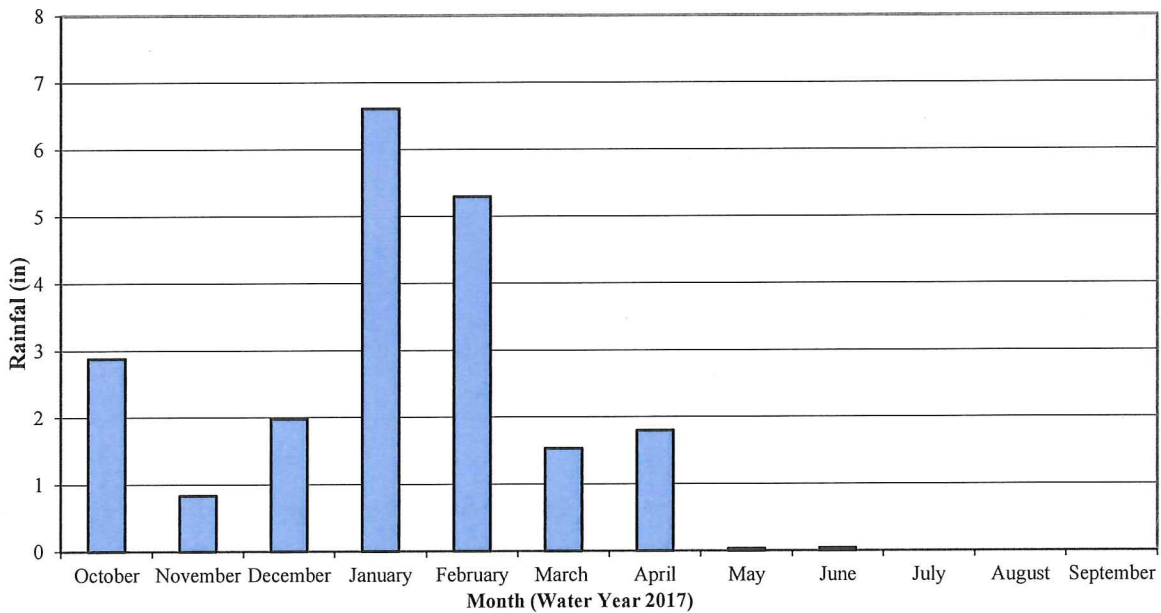


Figure 1-6: Monthly Rainfall Distribution (Tracy Carbona Station)

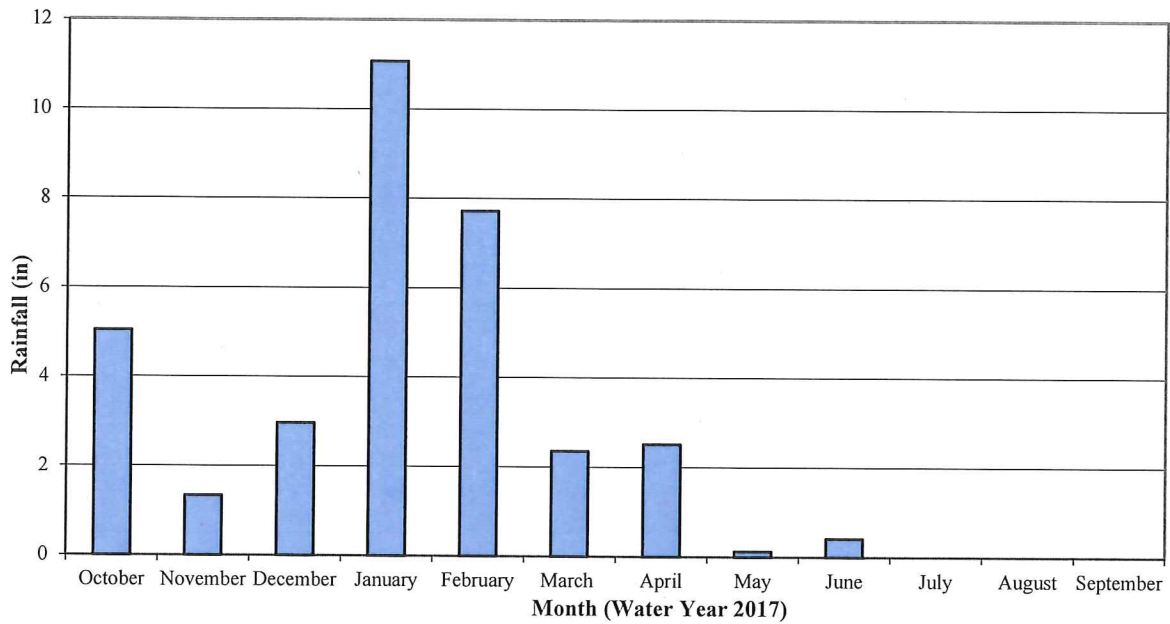


Figure 1-7: Monthly Rainfall Distribution (Lodi Station)

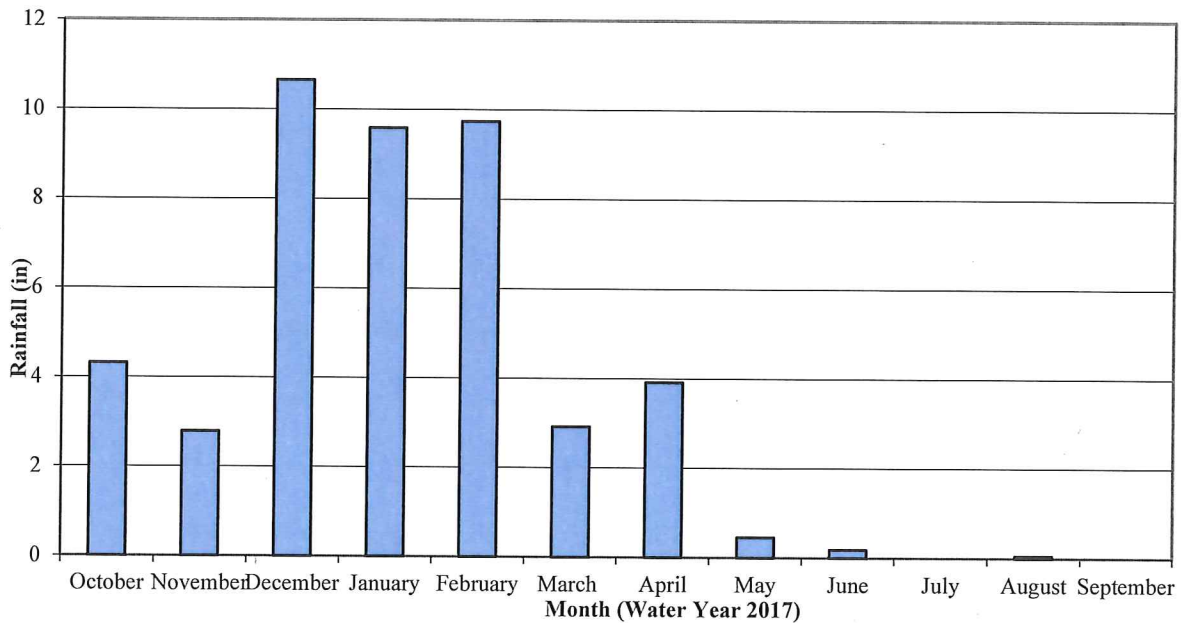


Figure 1-7: Monthly Rainfall Distribution (Camp Pardee Station)

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Section 2 – Groundwater Quality Monitoring

Summary of Groundwater Quality Results

The information contained in the Fall 2017 Groundwater Report is as follows:

North San Joaquin County – No wells were sampled.

North Stockton – Four wells were tested for Cl^- , EC and TDS in North Stockton. Three wells increased in Cl^- concentrations from fall 2016. Sample holding times for Cl^- were exceeded. Three wells increased in EC and TDS.

County Hospital Area – Due to access constraints no wells were tested in this area this year.

Lathrop – Two wells were sampled in Lathrop. One well increased in Cl^- concentrations from fall 2016. Sample holding times for Cl^- were exceeded. One well increased in EC and TDS.

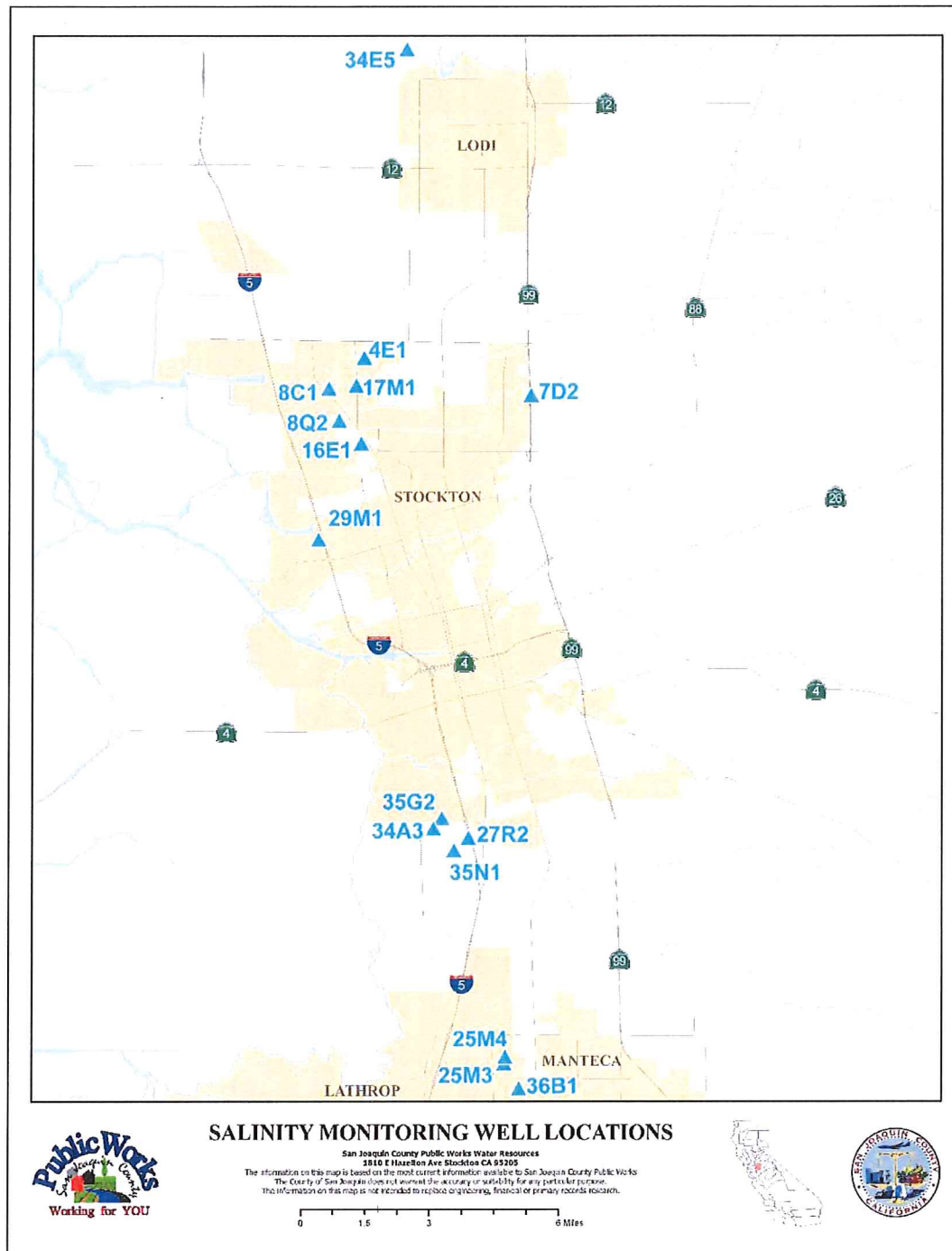


Figure 2-1: Salinity Monitoring Well Locations

Table 2-1: Groundwater Quality Mineral Analysis Fall 2017

Well	Chloride ¹ (ppm)	EC* (mmho)	TDS (ppm)
34A3	-	-	-
35G2	-	-	-
35N1	-	-	-
25M3	64	0.734	470
25M4	37	0.531	340
36B1	-	-	-
4E1	30	0.688	440
8C1	38	0.828	530
8Q2	-	-	-
16E1	-	-	-
17M1	-	-	-
29M1	83	0.609	390
7D2	5.3	0.484	310
34E5	-	-	-

*EC values are calculated by the following formula: $EC = TDS / (0.64 * 1000)$

¹ Sample holding times for Chloride were exceeded before test occurred.

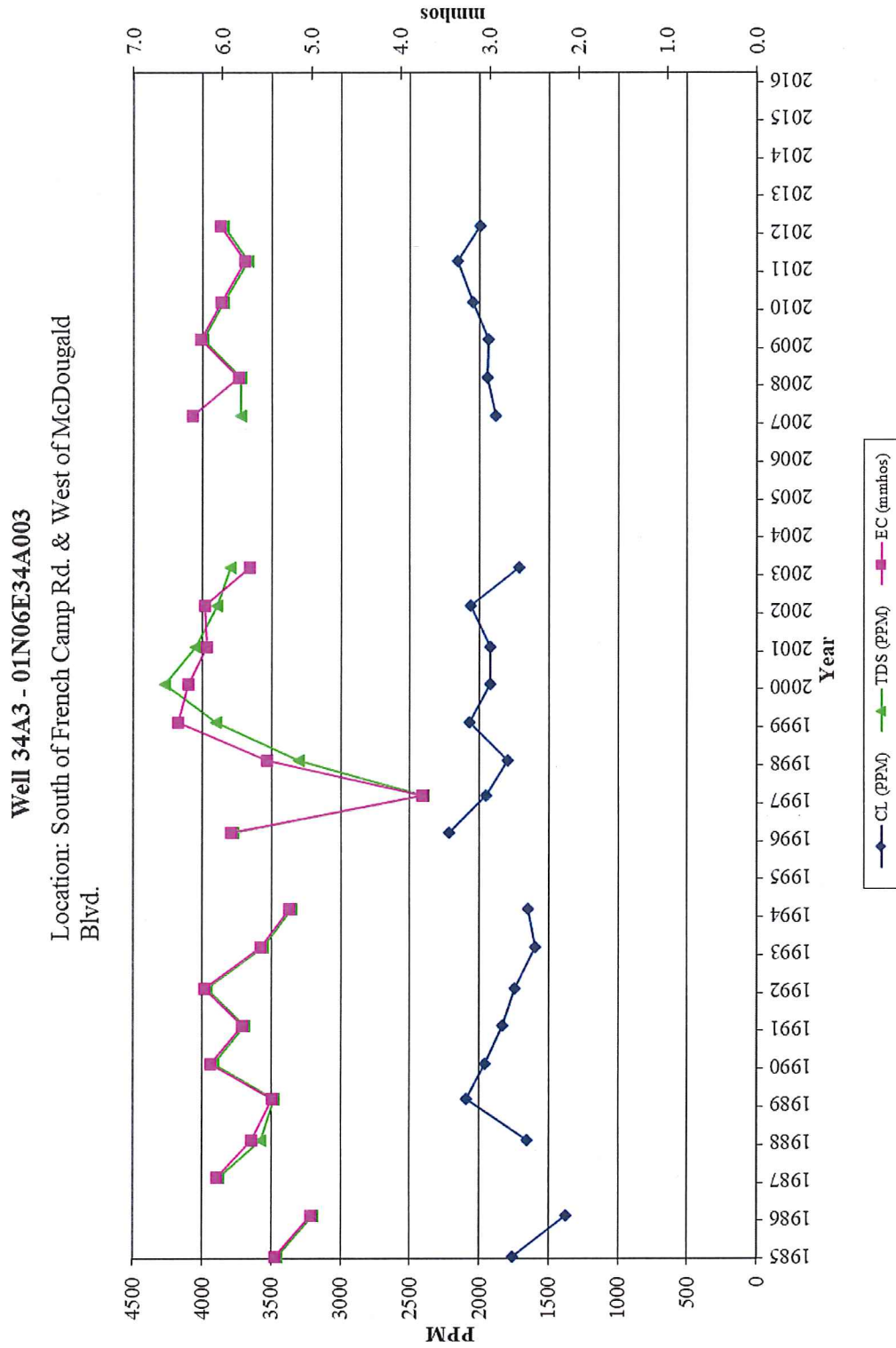


Figure 2-2: Quality Comparison Graph Well 34A3

Well 35G2 - 01N06E35G002

Location: East of Monthey Rd. & North of Matthews Rd.

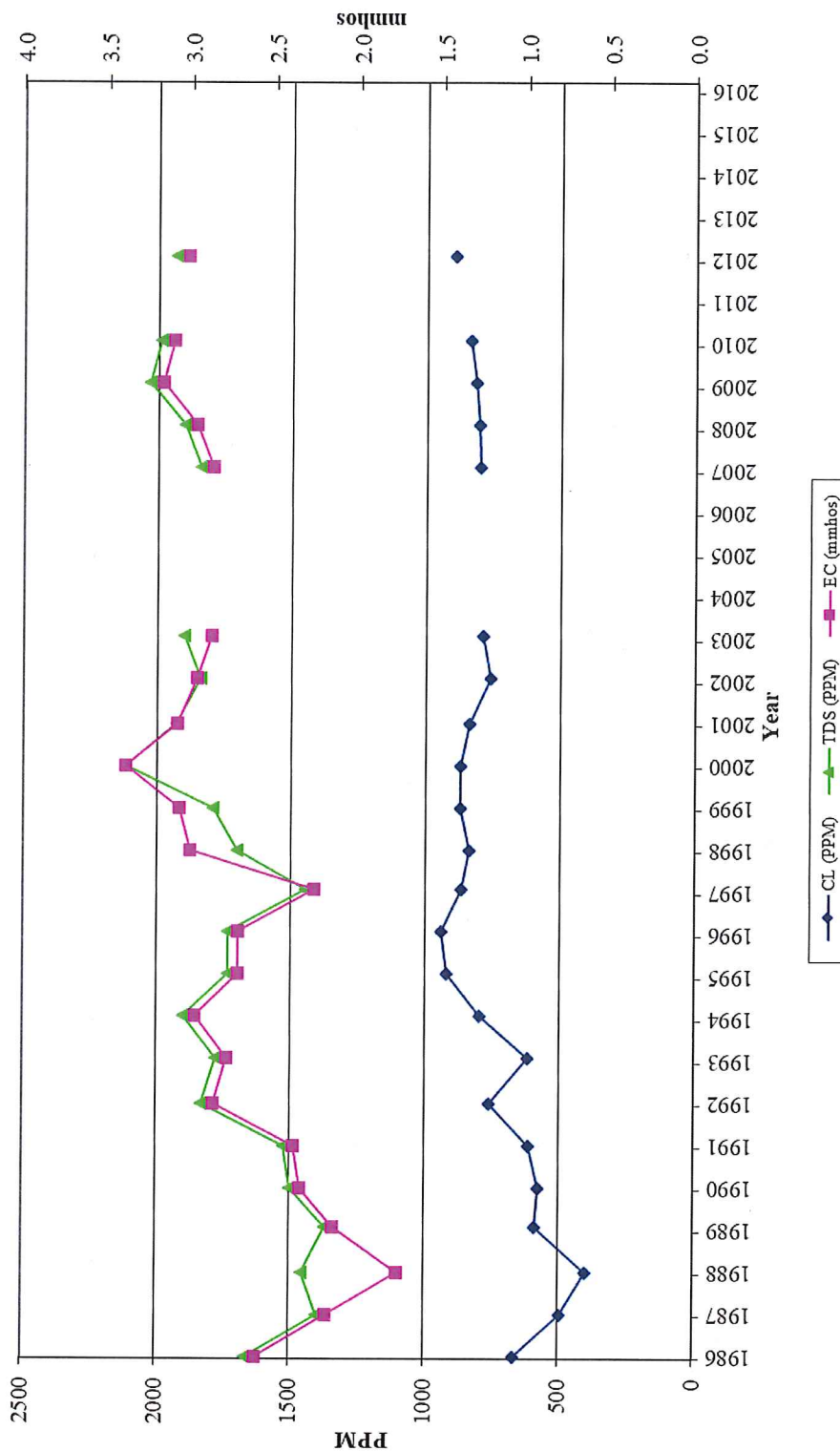


Figure 2-3: Quality Comparison Graph Well 35G2

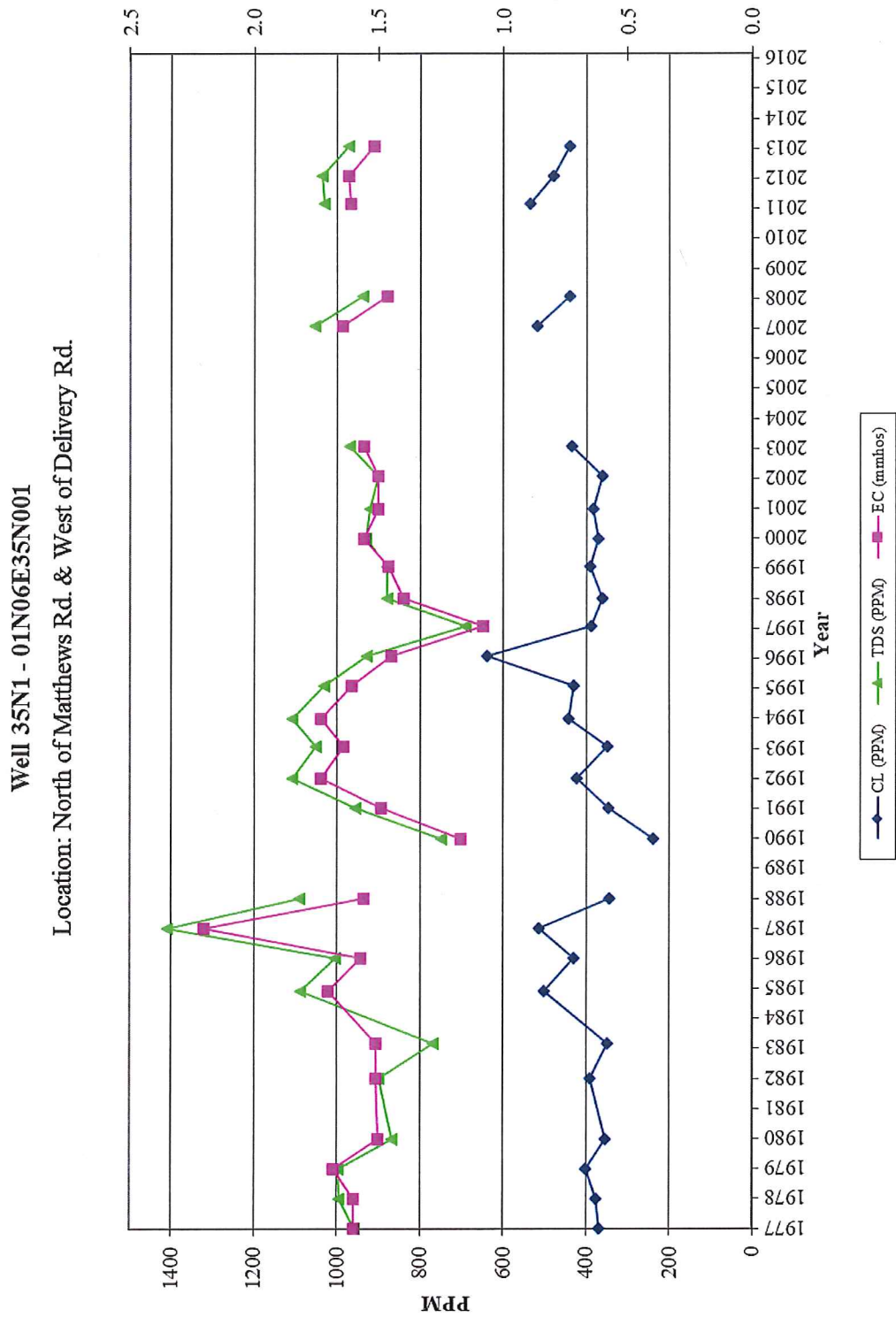


Figure 2-4: Quality Comparison Graph Well 35N1

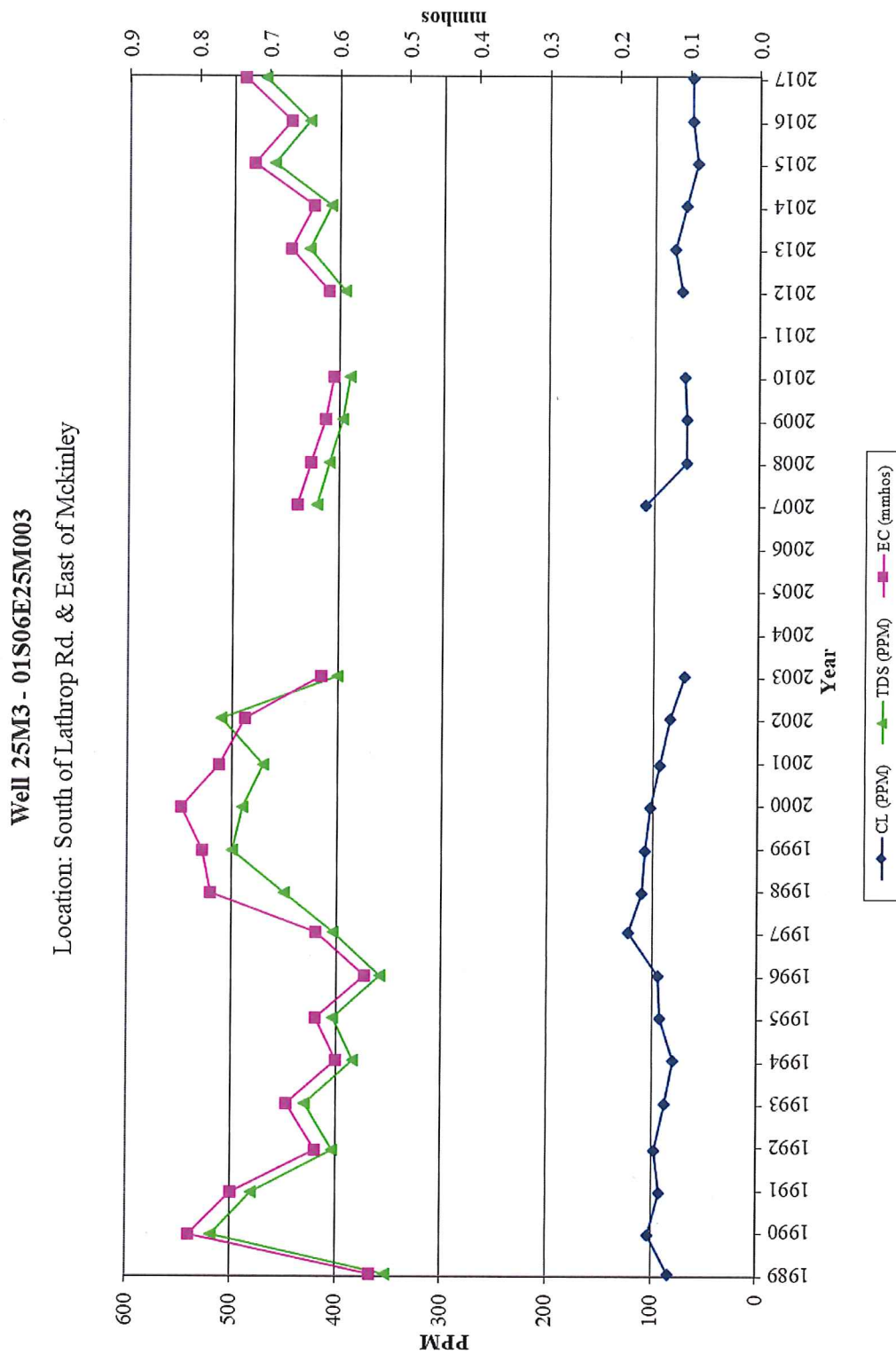


Figure 2-5: Quality Comparison Well 25M3

Well 25M4 - 01S06E25M004
Location: East of Mckinley Ave. & South of Louise Ave.

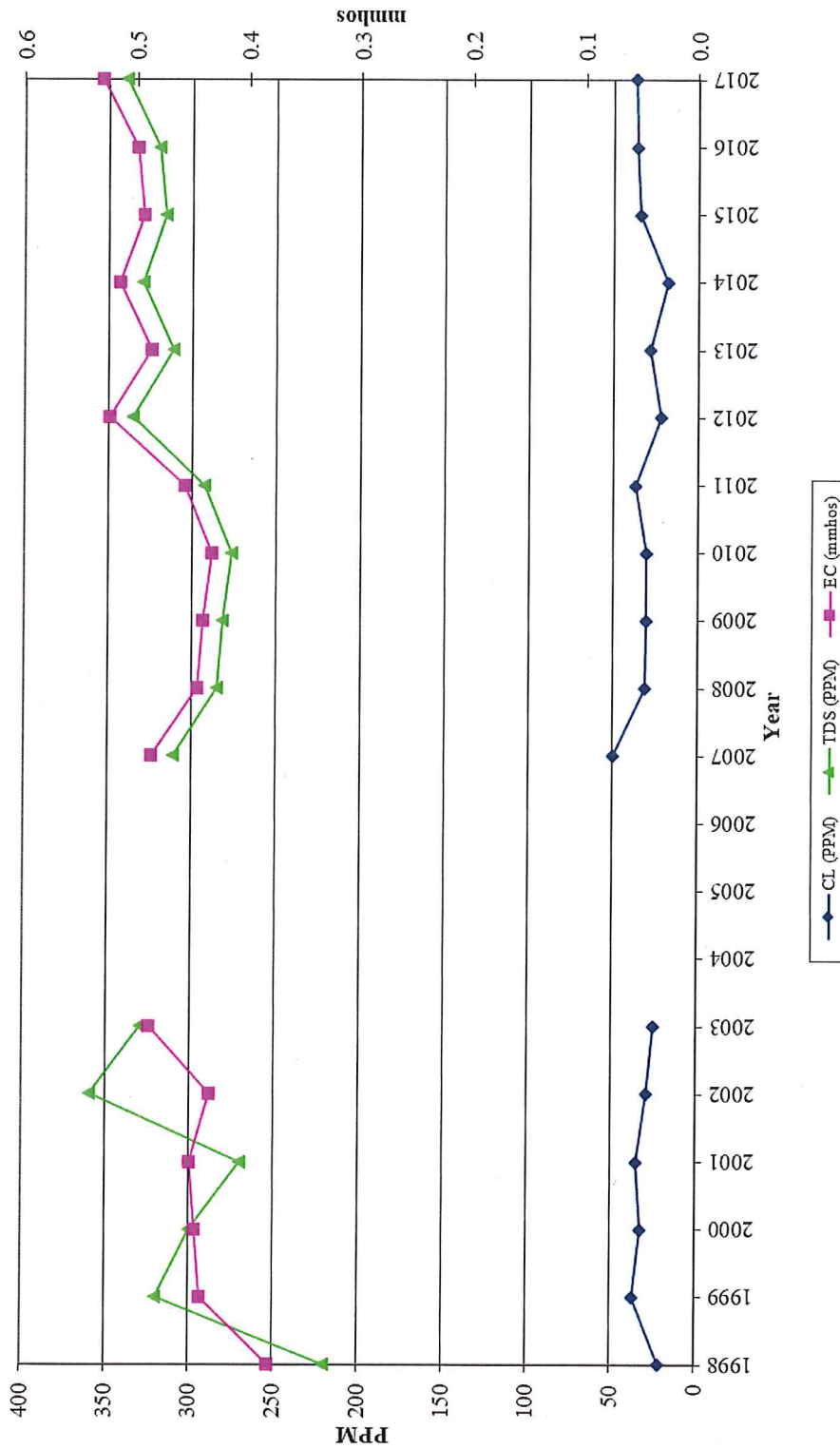


Figure 2-6: Quality Comparison Well 25M4

Well 36B1 - 01S06E36B001
Location: East of McKinley Rd & South of Louise Ave.

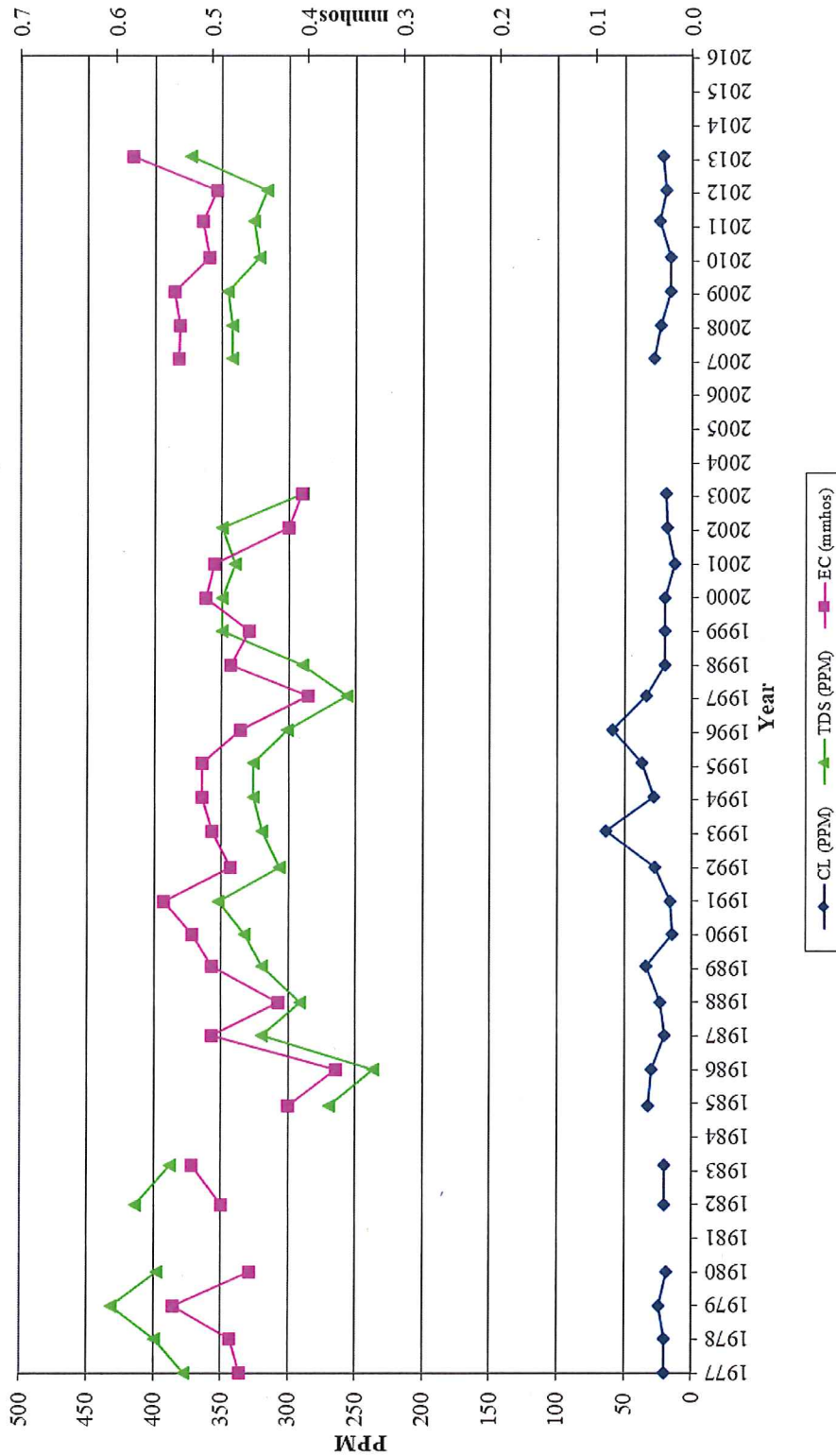


Figure 2-7: Quality Comparison Well 36B1

Well 4E1 - 02N06E04E001
Location: South of Eight Mile Rd. & East of Davis Rd.

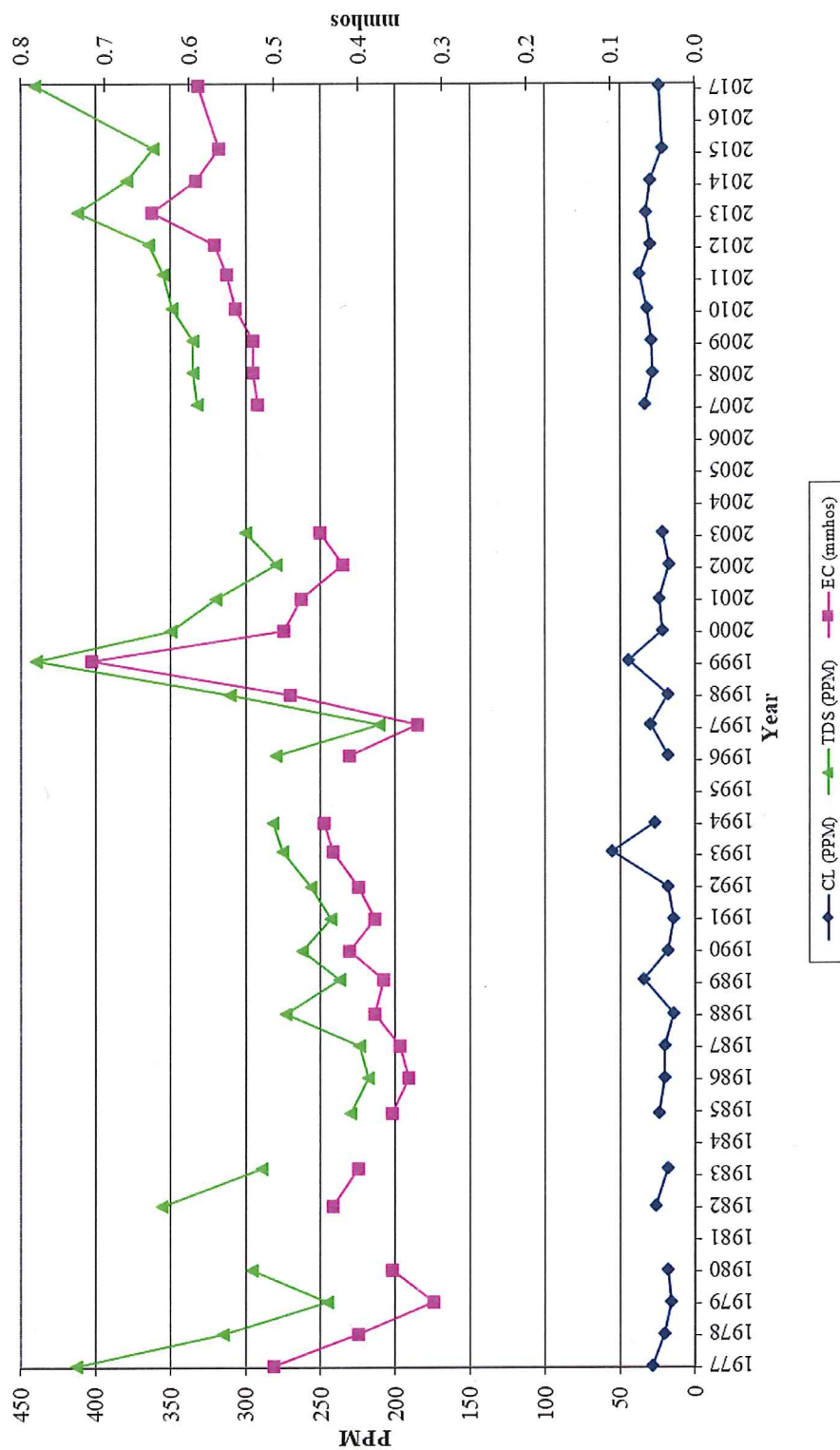


Figure 2-8: Quality Comparison Well 4E1

Well 8C1 - 02N06E08C001

Location: East of Thornton Rd. & South of Estate Dr.

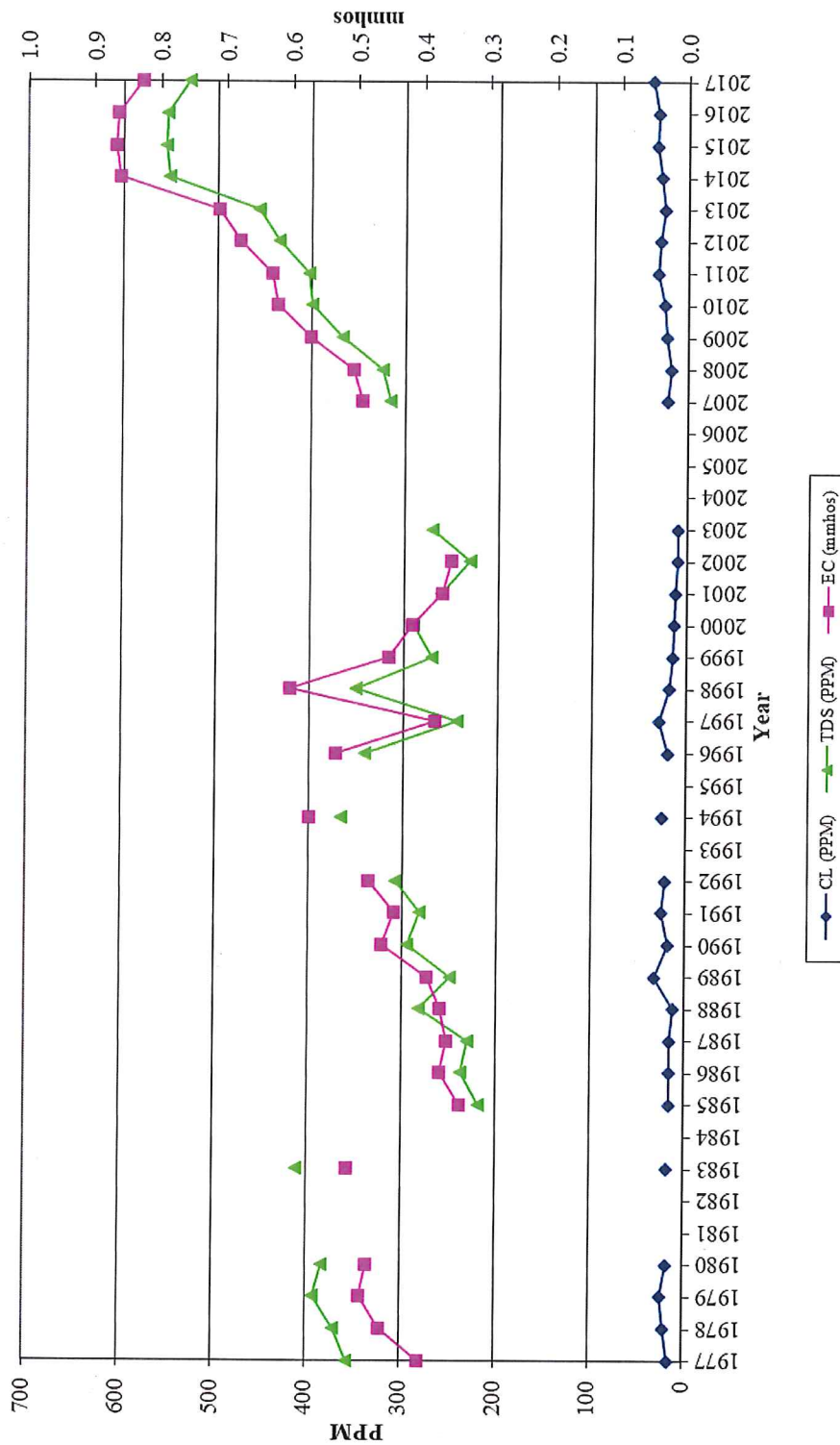


Figure 2-9: Quality Comparison Well 8C1

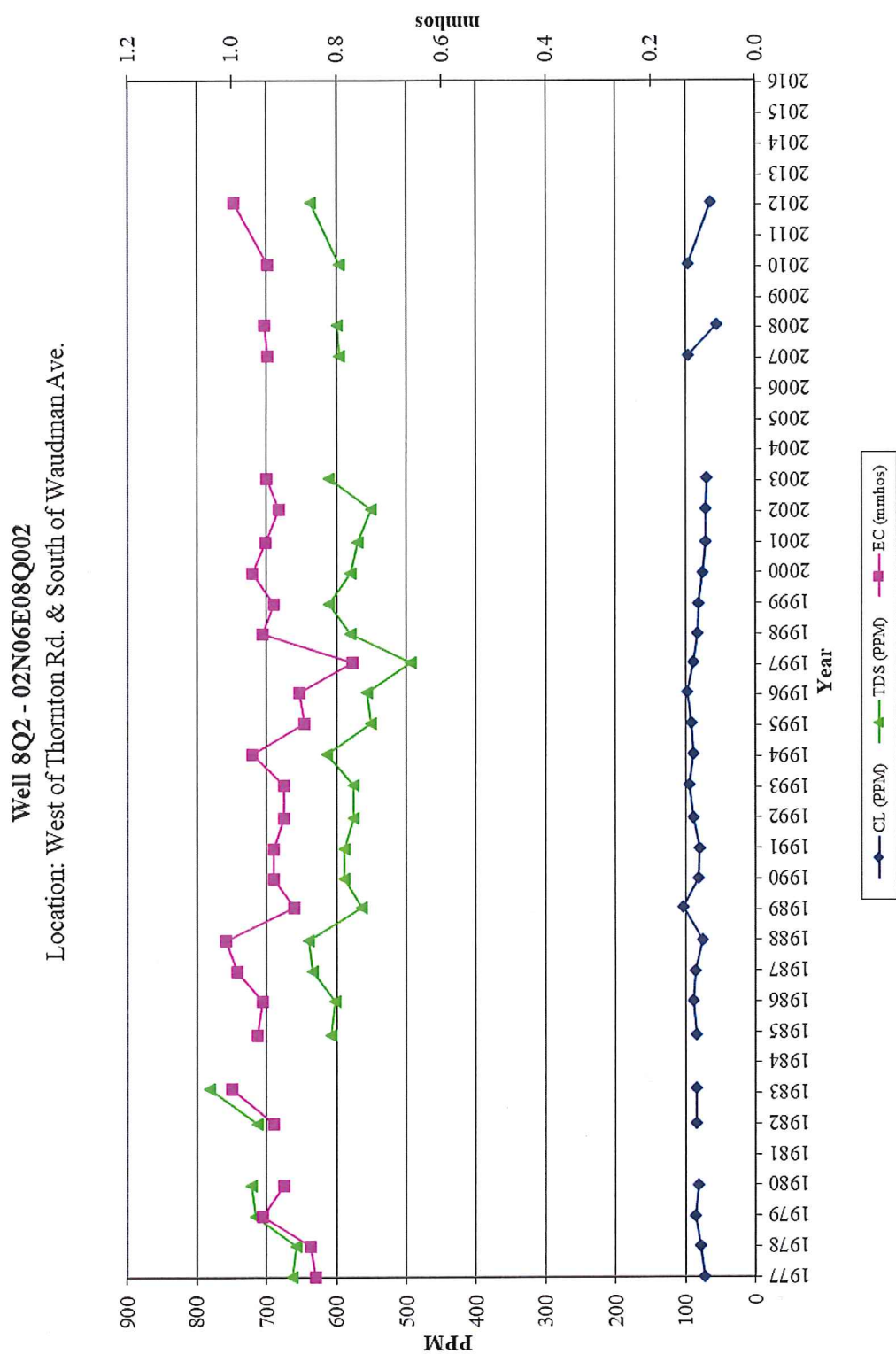


Figure 2-10: Quality Comparison Well 8Q2

Well 16E1 - 02N06E16E001

Location: North of Valencia Ave. & East of Pershing Ave.

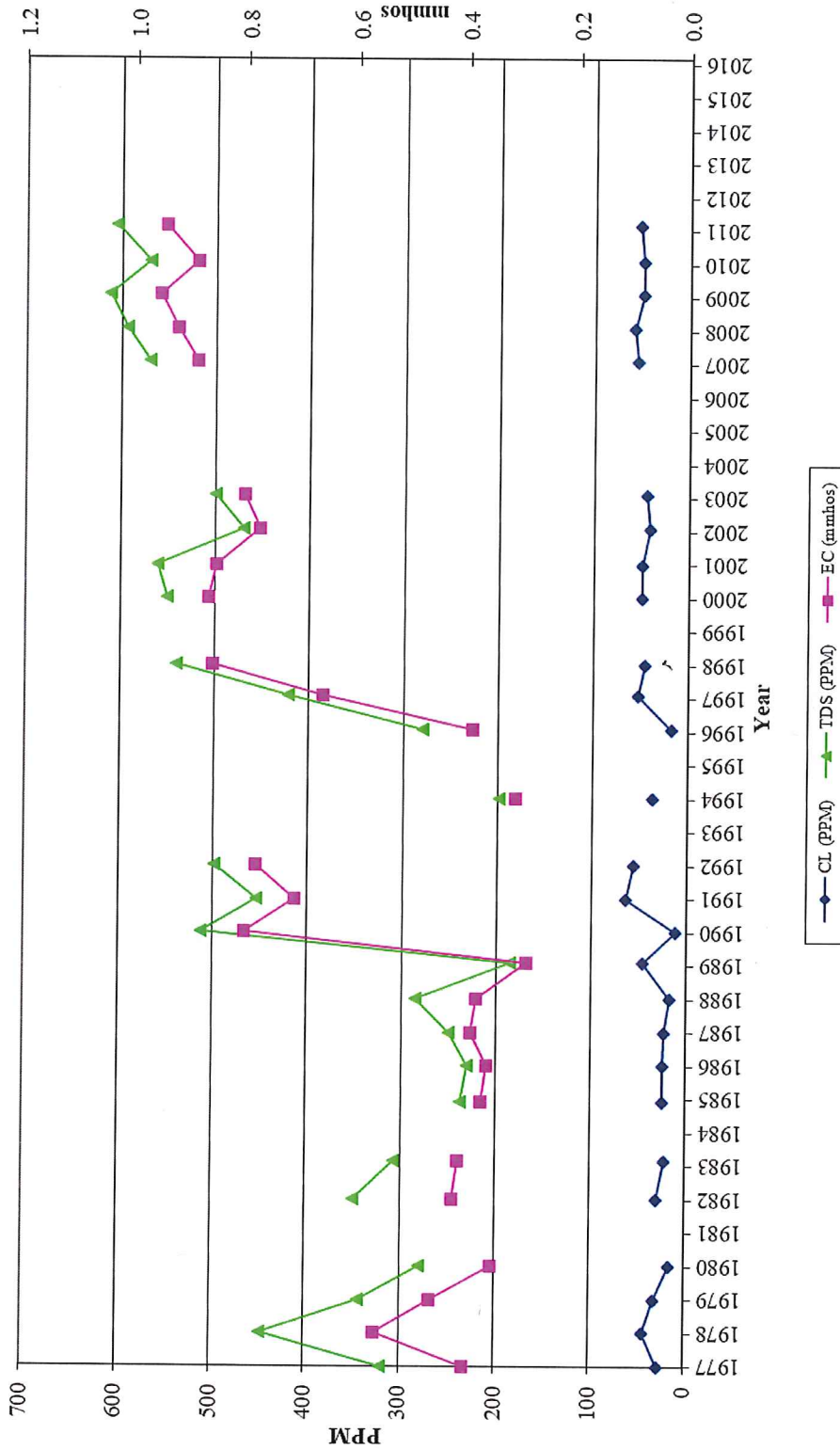


Figure 2-11: Quality Comparison Well 16E1

Well 17M1- 02N06E17M001
Location: Colonial Heights

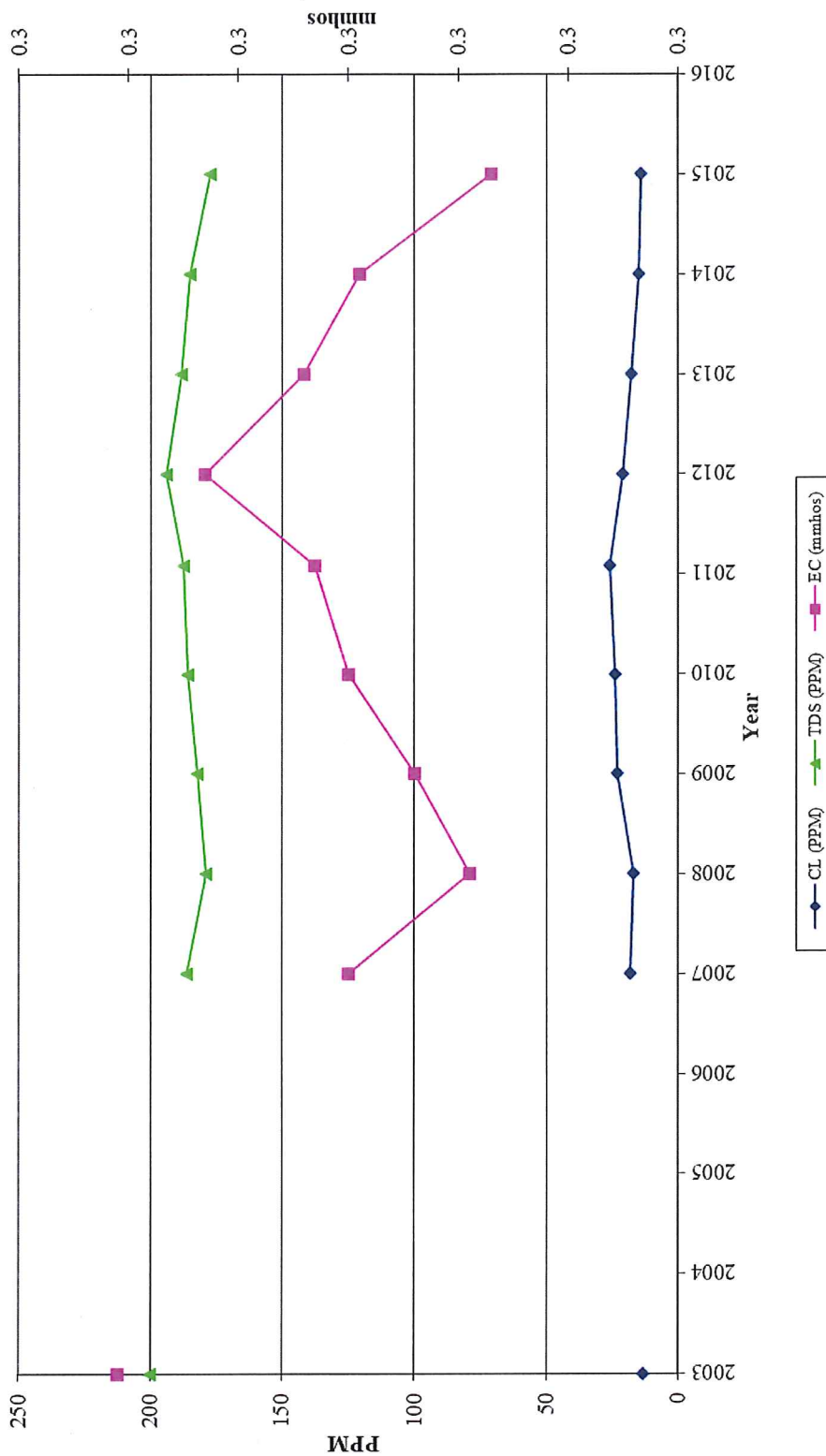


Figure 2-12: Quality Comparison Well 17M1

Well 29M1 - 02N06E29M001M
Location: North of March Ln. & East of Feather River Rd.

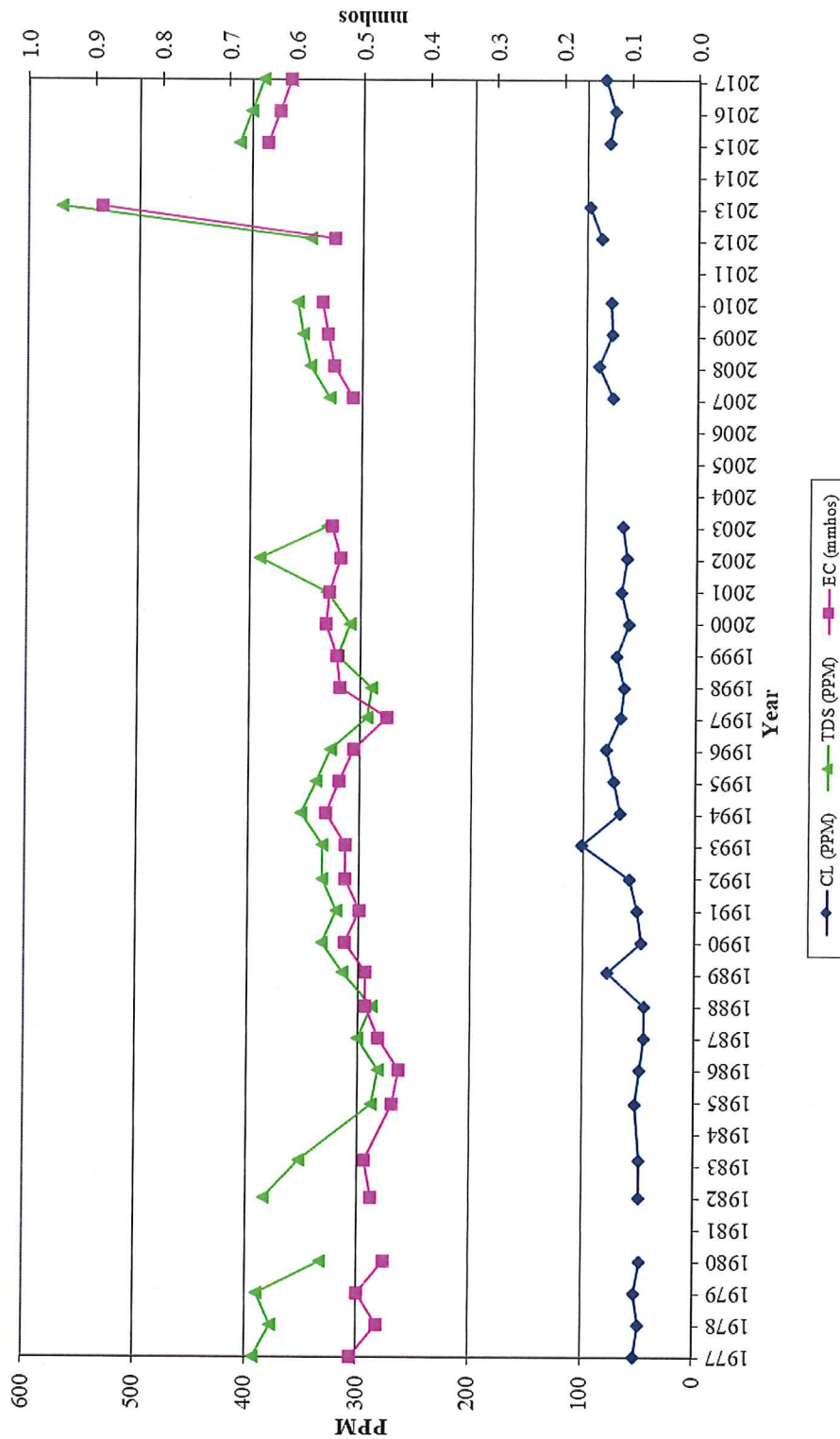


Figure 2-13: Quality Comparison Well 29M1

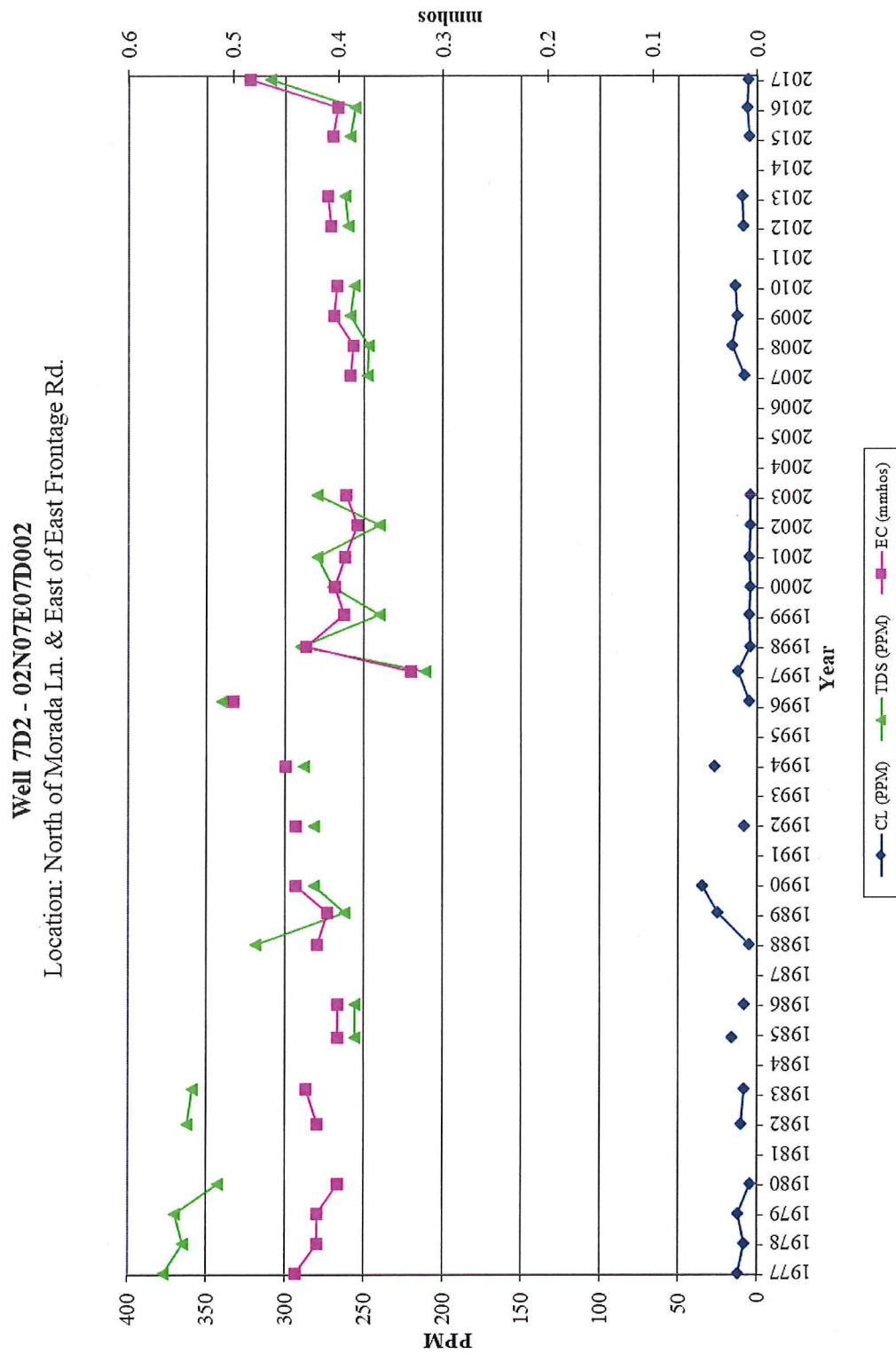


Figure 2-14: Quality Comparison Well 7D2

Well 34E5 - 04N06E34E005
Location: South of Woodbridge Rd. & East of Triolo St.

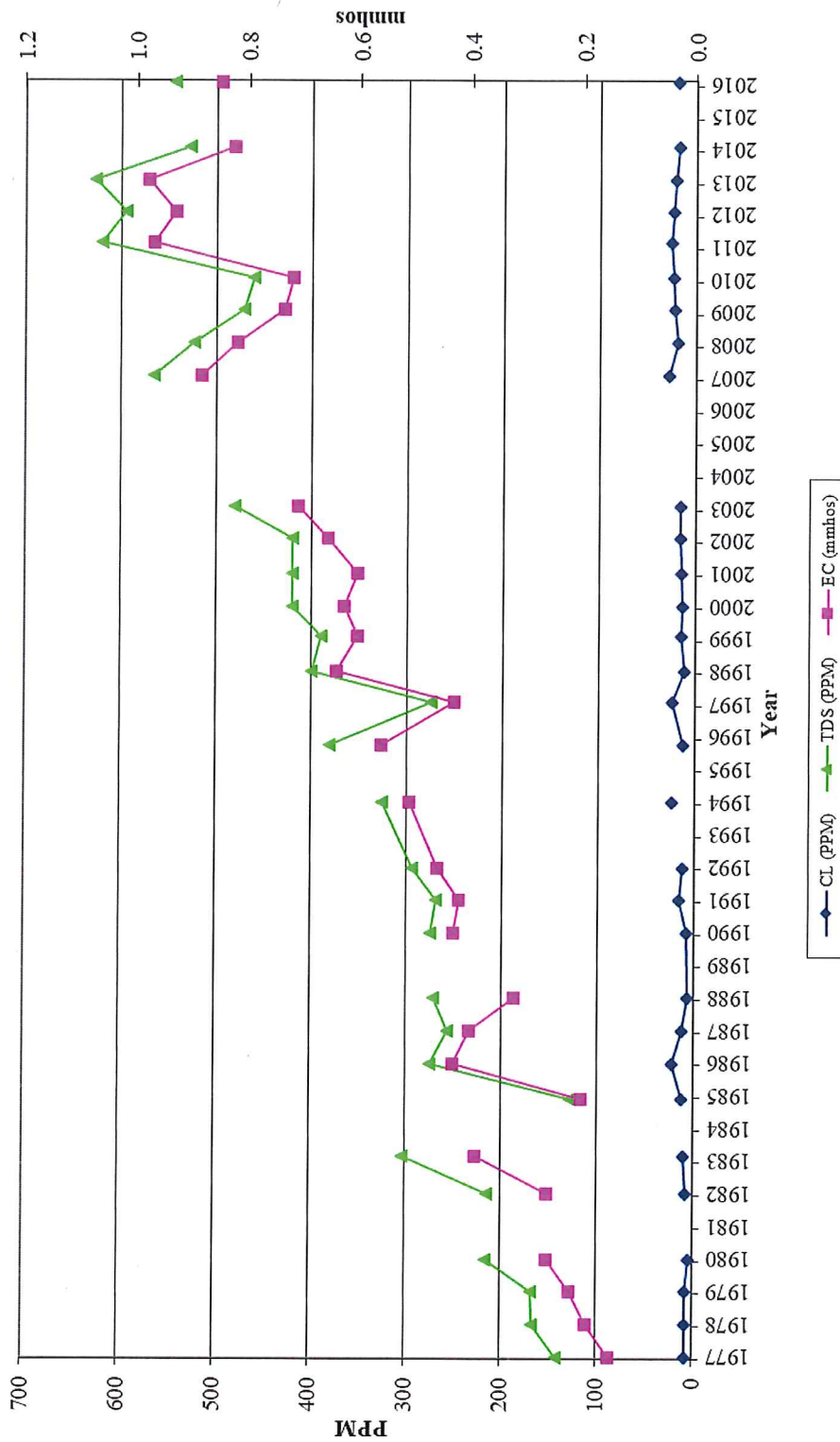


Figure 2-15: Quality Comparison Well 35E5

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Section 3 – Groundwater Elevation Monitoring

Summary of Groundwater Elevations

The information contained in the Fall 2017 Groundwater Report is summarized as follows:

GROUNDWATER LEVELS

Central San Joaquin Water Conservation District (CSJWCD) – Twenty-three (23) wells could be compared in CSJWCD. Seven (7) show decreases in groundwater levels. Sixteen (16) wells show increases in groundwater levels.

North San Joaquin Water Conservation District (NSJWCD) – One-hundred twelve (112) wells were compared in NSJWCD. Twenty-seven (27) wells decreased in groundwater levels. Eighty-three (83) wells increased in groundwater levels. Two (2) wells had no change in groundwater levels.

Oakdale Irrigation District (OID) – One (1) well was compared in the OID area. The well decreased in groundwater level.

Stockton East Water District (SEWD) – Fifty-eight (58) wells were compared in SEWD. Sixteen (16) wells decreased in groundwater levels. Forty-two (42) wells increased in groundwater levels.

South San Joaquin Irrigation District (SSJID) – Twenty-two (22) wells were compared in the SSJID area. Seven (7) wells decreased in groundwater levels. Fifteen (15) wells increased in groundwater levels.

Woodbridge Irrigation District (WID) – Twenty-two (22) wells were compared in WID. One (1) wells decreased in groundwater levels. Twenty-one (21) well increased in groundwater level.

Southwest County Areas – Thirty-two (32) wells were compared across the Southwest County. Five (5) wells decreased in groundwater levels. Twenty-six (26) wells increased in groundwater levels. One (1) well had no change in groundwater level.

Table 3-1 Comparison of CSJWCD Water Levels

State Well ID	Fall 2017	Fall 2016	Change
01N07E11L001	-58.9	****	****
01N07E13J002	****	****	****
01N07E14J002	-59.6	-62.6	3.0
01N07E24A001	****	****	****
01N07E24R001	****	****	****
01N07E26H003	-32.8	****	****
01N07E32A001	-19.8	-24.4	4.6
01N08E09L001	****	****	****
01N08E11L001	-62.5	****	****
01N08E13J001	-52.7	-62.2	9.5
01N08E16G001	-50.5	-56.2	5.7
01N08E16H002	-77.3	-54.9	-22.4
01N08E16P001	-52.3	****	****
01N08E18A002	-56.0	-74.5	18.5
01N08E22J001	-44.0	-57.5	13.5
01N08E26A002	****	****	****
01N08E27R002	****	****	****
01N08E29M002	****	****	****
01N08E35F001	-62.9	-64.9	2.0
01N08E36F001	-60.0	-58.0	-2.0
01N09E05J001	****	****	****
01N09E06N001	****	****	****
01N09E13D001	****	****	****
01N09E15B002	****	****	****
01N09E17D001	****	-37.2	****
01N09E17M001	-48.2	-37.2	-11.0
01N09E19C001	-57.5	-44.0	-13.5
01N09E21J001	-15.6	****	****
01N09E22G002	-30.4	****	****
01N09E29R001	****	****	****
01N09E30C005	-33.7	-35.2	1.5
01N09E31J001	****	****	****
01N09E35K001	-0.6	****	****
01S07E01J001	-37.6	-40.8	3.2
01S07E02J001	****	****	****
01S07E12H001	****	****	****
01S07E13J001	****	****	****
01S08E04R001	-63.5	-66.0	2.5
01S08E05A001	-72.4	-76.4	4.0

State Well ID	Fall 2017	Fall 2016	Change
01S08E05R001	-39.8	-64.8	25.0
01S08E06D001	-35.1	-41.7	6.6
01S08E09Q001	-36.9	****	****
01S08E11F001	-33.9	-32.7	-1.2
01S08E12B001	****	****	****
01S08E14B001	-30.9	-62.4	31.5
01S08E15P001	****	****	****
01S08E20B001	****	****	****
01S08E23A001	****	****	****
01S09E02R001	****	****	****
01S09E05H002	-17.7	****	****
01S09E07A001	-37.3	-35.3	-2.0
01S09E07N001	20.7	-30.3	51.0
01S09E09R001	-3.7	-19.7	16.0
01S09E11J002	****	****	****
01S09E18R003	****	-47.0	****
01S09E19Q002	-7.0	5.0	-12.0
Total Number of Wells			56
Total Number of Comparable Wells			23
Number of Wells with Decrease			7
Number of Wells with Increase			16
Number of Wells with No Change			0
Range of Change			-22.4 to 51.0
Average Change			5.8

Table 3-2 Comparison of NSJWCD Water Levels

State Well ID	Fall 2017	Fall 2016	Change
03N06E04C001	7.7	-1.6	9.3
03N06E23A003	****	-30.4	****
03N06E24M003	****	****	****
03N06E25C001	****	-42.6	****
03N06E25H015	****	****	****
03N06E36N001	****	****	****
03N07E03R001	-32.3	-36.3	4.0
03N07E05D005	****	18.5	****
03N07E08B012	****	-26.1	****
03N07E08E002	-30.0	-39.0	9.0
03N07E09C001	-29.7	-48.7	19.0
03N07E09C003	****	-28.5	****
03N07E09P002	****	-39.1	****

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State Well ID	Fall 2017	Fall 2016	Change
03N07E12P001	-52.6	-56.0	3.5
03N07E15C004	-44.5	-50.5	6.0
03N07E17A006	****	-38.6	****
03N07E17D003	-26.6	-30.5	3.9
03N07E17D004	-29.4	-27.4	-2.0
03N07E17K002	****	****	****
03N07E18D012	-29.0	-36.0	7.0
03N07E18M002	****	-36.2	****
03N07E19J004	-72.0	-62.0	-10.0
03N07E19Q012	-43.3	-46.7	3.4
03N07E20C012	-41.6	-45.0	3.4
03N07E21L003	****	-59.0	****
03N07E22C011	-48.7	-51.3	2.6
03N07E23C002	-48.6	-53.6	5.0
03N07E23K011	-54.1	-54.0	-0.1
03N07E25G001	****	****	****
03N07E26G012	-55.5	-55.7	0.2
03N07E32Q012	-52.6	-57.7	5.1
03N07E33G002	****	-55.0	****
03N08E04Q001	-52.1	-49.2	-2.9
03N08E05K011	-47.3	-46.0	-1.3
03N08E07J001	****	****	****
03N08E17B001	-55.9	-55.8	-0.1
03N08E17Q011	****	-59.6	****
03N08E19C001	****	****	****
03N08E19M003	-59.1	-59.6	0.5
03N08E22A001	****	-60.3	****
04N06E02R011	****	****	****
04N06E03A012	-8.1	-24.2	16.1
04N06E06N012	****	****	****
04N06E12C004	****	****	****
04N06E12N002	-36.8	-43.8	7.0
04N06E15B002	-17.7	-19.7	2.0
04N06E16A011	-2.5	-14.3	11.8
04N06E16C001	-9.0	****	****
04N06E16K011	6.7	-2.3	9.0
04N06E23D004	-21.4	-29.5	8.1
04N06E23K00	-13.0	-18.0	5.0
04N06E24D012	-17.1	-20.9	3.8
04N06E24F001	-21.0	-29.0	8.0
04N06E25B001	-11.7	-17.8	6.1
04N06E25R001	-3.0	-12.0	9.0

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State Well ID	Fall 2017	Fall 2016	Change
04N06E27D002	14.7	0.7	14.0
04N06E27Q012	18.6	12.3	6.3
04N06E36J012	10.2	5.4	4.8
04N07E01B011	****	****	****
04N07E02R001	-49.2	-49.4	0.2
04N07E04B012	-55.8	-53.9	-1.9
04N07E04Q012	-52.3	-53.8	1.5
04N07E07A001	****	****	****
04N07E07H011	-46.2	-47.8	1.6
04N07E11D012	-50.9	-50.9	0.0
04N07E12E001	****	-52.5	****
04N07E12G012	****	-45.4	****
04N07E14P011	-40.0	-40.0	0.0
04N07E15B012	****	****	****
04N07E16D001	-45.1	-46.4	1.3
04N07E17J013	****	****	****
04N07E17N001	-37.3	-41.3	4.0
04N07E19K001	-25.6	-32.1	6.5
04N07E19R011	-21.6	-28.2	6.6
04N07E20H003	****	-36.7	****
04N07E21F001	-35.3	-43.8	8.5
04N07E23J012	-35.6	-38.0	2.4
04N07E24N002	-35.2	-36.6	1.4
04N07E25G015	-30.6	-21.5	-9.1
04N07E27C002	-29.5	-44.5	15.0
04N07E28J002	-24.2	-30.7	6.5
04N07E28P011	6.9	-0.1	7.0
04N07E29N012	-6.0	-8.4	2.4
04N07E31Q031	24.5	16.5	8.0
04N07E32F011	8.4	1.1	7.3
04N07E33H001	27.0	15.0	12.0
04N07E34K011	-13.3	-19.2	5.9
04N07E35C002	****	****	****
04N07E35E013	****	****	****
04N07E36L001	-28.9	-33.8	4.9
04N08E01K001	46.6	46.1	0.5
04N08E02E011	-15	-13.9	-1.1
04N08E04P014	-55.1	-44.8	-10.3
04N08E06C002	****	****	****
04N08E06N002	****	****	****
04N08E11M012	-13.9	-14.2	0.3
04N08E12A011	72.3	67.4	4.9

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State Well ID	Fall 2017	Fall 2016	Change
04N08E12B011	50	46.5	3.5
04N08E12N001	18.7	15.6	3.1
04N08E14B011	-6.2	-7.5	1.3
04N08E14K001	-12.6	-16.1	3.5
04N08E15D011	-27.4	-26.4	-1.0
04N08E15J011	-20.7	-22.3	1.6
04N08E17A001	****	****	****
04N08E17J001	-39.5	-39.0	-0.5
04N08E21M001	-44.1	-41.1	-3.0
04N08E22C015	-27.8	-26.7	-1.1
04N08E26A012	****	****	****
04N08E27J011	-26.8	-25.1	-1.7
04N08E28E001	****	****	****
04N08E32N001	-47.6	-66.1	18.5
04N08E34Q011	-43.2	-40.3	-2.9
04N09E05E099	161.5	156.2	5.3
04N09E06H098	179.9	174.7	5.2
04N09E06H099	211.7	205.8	5.9
04N09E06J098	211.3	205.7	5.6
04N09E06J099	167.5	164.1	3.4
04N09E06K097	110.9	111.0	-0.1
04N09E06K099	123.3	123.4	-0.1
04N09E06L011	95.5	****	****
04N09E07B098	156.2	151.6	4.6
04N09E07B099	155.1	149.9	5.2
04N09E07D012	80.5	78.5	2.0
04N09E07E011	86.7	****	****
04N09E08N096	177	169.9	7.1
04N09E08N097	172.5	166.2	6.3
04N09E08N098	170.6	163.2	7.4
04N09E08N099	174.3	166.9	7.4
04N09E08P099	180.4	175.3	5.1
04N09E08R099	183.5	182.1	1.4
04N09E16Q002	145.3	136.3	9.0
04N09E17A099	176.9	176.4	0.5
04N09E17E001	135.7	134.0	1.7
04N09E17E099	157.2	153.8	3.4
04N09E17F099	163.3	160.1	3.2
04N09E17G099	165.1	163.4	1.7
04N09E18A011	****	****	****
04N09E18D002	31.2	46.7	-15.5
04N09E18N011	****	0.3	****

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State Well ID	Fall 2017	Fall 2016	Change
04N09E20M001	111.8	110.0	1.8
04N09E21A001	****	165.0	****
04N09E28C002	186.1	184.5	1.6
05N06E36R001	-14.8	****	****
05N07E31J001	-62.0	-67.0	5.0
05N07E34G001	****	****	****
05N07E34Q001	****	****	****
05N08E24Q011	43.8	52.0	-8.2
05N08E25P011	51.1	51.3	-0.2
05N08E32R011	-43.8	****	****
05N08E35K012	-3.0	-2.2	-0.8
05N09E30C011	159.4	159.6	-0.2
05N09E30M011	****	143.0	****
05N09E31L011	123.8	121.9	1.9
DWS-IPS	****	-4.4	****
Harney MW-1	****	-35.6	****
Harney MW-2	-41.2	-39.2	-2.0
Harney MW-3	-47.9	-47.2	-0.7
Harney MW-4	-48.8	-47.8	-1.0
North G-1	****	****	****
North G-3D	-55.6	-55.7	0.1
North G-4	****	-54.4	****
North G-5	-52.5	-51.2	-1.3
North G-6	-49.8	-49.9	0.1

Total Number of Wells	164
Total Number of Comparable Wells	112
Number of Wells with Decrease	27
Number of Wells with Increase	83
Number of Wells with No Change	2
Range of Change	-15.5 to 19.0
Average Change	3.6

Table 3-3 Comparison of OID Water Levels

State Well ID	Fall 2017	Fall 2016	Change
01S09E21J002	24.9	28.6	-3.7
01S09E23N001	****	****	****
01S09E24R001	****	****	****
01S09E28M002	****	****	****
Total Number of Wells			4
Total Number of Comparable Wells			1
Number of Wells with Decrease			1
Number of Wells with Increase			0
Number of Wells with No Change			0
Range of Change			-3.7
Average Change			-3.7

Table 3-4 Comparison of SEWD Water Levels

State Well ID	Fall 2017	Fall 2016	Change
01N06E01J001	****	****	****
01N06E01M001	****	-40.0	****
01N06E02C001	-12.7	-21.3	8.6
01N06E04J003	-13.2	-19.1	5.9
01N06E04J004	-8.57	-13.07	4.5
01N06E04J005	-3.71	-6.41	2.7
01N06E05H001	-9.59	-8.99	-0.6
01N06E05M004	-10.5	****	****
01N06E12A001	****	-27.0	****
01N06E12F001	****	****	****
01N06E12G001	****	-37.8	****
01N06E23J001	****	****	****
01N06E27R002	****	-8.5	****
01N06E36C003	****	-19.7	****
01N06E36C004	****	-14.7	****
01N06E36C005	****	-12.7	****
01N07E01A002	****	****	****
01N07E01M002	-70.0	-71.0	1.0
01N07E02G001	****	****	****
01N07E03D002	****	****	****
01N07E03D003	****	****	****
01N07E03D004	****	****	****
01N07E03D005	****	****	****

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State Well ID	Fall 2017	Fall 2016	Change
01N07E03L001	****	****	****
01N07E03M001	8.0	****	****
01N07E04R001	-21.5	-59	37.5
01N07E05A001	****	-53.0	****
01N07E08B001	****	****	****
01N07E08H002	****	-48.0	****
01N07E08P001	****	-35.5	****
01N07E09E004	-39.0	****	****
01N07E09H001	****	****	****
01N07E09Q003	-39.0	-56.0	17.0
01N07E10D001	-46.0	-61.0	15.0
01N07E10G001	-48.0	****	****
01N07E16M001	****	-48.0	****
01N07E17D001	****	-36.5	****
01N07E17D002	****	-38.5	****
01N07E18B001	****	-32.0	****
01N07E18D001	****	-26.0	****
01N07E18E003	****	-27.0	****
01N07E18L001	****	-25.0	****
01N07E19G001	****	****	****
01N07E20G001	****	****	****
01N07E21R001	****	****	****
01N08E03P001	****	****	****
01S06E01C002	-4.0	-9.6	5.6
01S06E02D004	****	-20.4	****
01S06E02G002	****	-9.5	****
01S06E10G001	-4.8	-11.8	7.0
01S07E06M002	-5.0	****	****
01S07E08J002	-4.0	-11.6	7.6
02N05E01A002	-28.6	-32.8	4.2
02N05E01A003	-17.8	-21.3	3.5
02N05E01A004	-14.9	-17.6	2.7
02N05E01A005	-12.7	-15.1	2.4
02N05E01A006	-9.7	-11.6	1.9
02N06E03A003	-28.8	-35.8	7.0
02N06E06C002	****	****	****
02N06E08N001	-25.4	-29.7	4.3
02N06E08N002	-23.5	-27.2	3.7
02N06E08N003	-21.6	-23.5	1.9
02N06E11H004	****	****	****
02N06E11H005	****	****	****
02N06E11H006	****	****	****

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State Well ID	Fall 2017	Fall 2016	Change
02N06E11H007	****	****	****
02N06E13R002	****	****	****
02N06E20E001	-17.5	-21.1	3.6
02N06E20E002	-16.6	-19.6	3.0
02N06E20E003	-15.2	-18.1	2.9
02N06E22B001	****	-37.0	****
02N06E22G001	****	-32.0	****
02N06E22G002	****	-38.0	****
02N06E22Q001	****	-39.5	****
02N06E22Q002	****	-36.0	****
02N06E24F001	-29.5	-41.0	11.5
02N06E24J002	-31.3	-43.3	12.0
02N06E26L001	****	-33.0	****
02N06E27B001	****	****	****
02N06E27H001	****	-42.0	****
02N06E27K001	****	-48.0	****
02N06E27K002	****	-44.0	****
02N06E27L001	****	-34.0	****
02N06E27P001	****	-41.0	****
02N06E34C001	****	-41.0	****
02N06E35B001	****	-37.0	****
02N06E36A001	****	-46.0	****
02N06E36D001	****	-40.5	****
02N06E36D001	****	****	****
02N06E36F001	****	-38.5	****
02N06E36G001	****	-52.0	****
02N06E36N003	****	-41.5	****
02N06E36R003	****	-37.0	****
02N07E03D001	-71.7	-79.7	8.0
02N07E06P002	****	-45.8	****
02N07E08D001	-66.2	-75.2	9.0
02N07E08K003	-77.0	-71.0	-6.0
02N07E08R002	-61.8	-68.6	6.8
02N07E10F002	****	-66.4	****
02N07E11F001	****	-90.0	****
02N07E11R002	-70.0	-78.0	8.0
02N07E15C001	****	****	****
02N07E16F002	-68.3	****	****
02N07E16L001	-71.3	****	****
02N07E18H002	****	-51.7	****
02N07E20N002	-43.0	-54.0	11.0
02N07E21A002	-44.8	-77.8	33.0

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State Well ID	Fall 2017	Fall 2016	Change
02N07E21K002	-79.0	-78.0	-1.0
02N07E21N001	****	****	****
02N07E23B001	****	-77.0	****
02N07E24B001	-76.1	-73.1	-3.0
02N07E24Q001	****	****	****
02N07E26H003	****	****	****
02N07E26N001	-72.2	-75.3	3.1
02N07E28K002	****	-74.0	****
02N07E28N004	-41.0	-64.4	23.4
02N07E28P001	****	****	****
02N07E29B001	-47.4	****	****
02N07E29M002	-59.0	-62.0	3.0
02N07E30E001	****	****	****
02N07E30H001	-36.5	-54.0	17.5
02N07E30K001	****	-49.0	****
02N07E31M001	-13.8	****	****
02N07E32J002	-26.5	-58.0	31.5
02N07E32M002	-5.0	-45.0	40.0
02N07E32R001	-4.6	****	****
02N07E33L001	-41.0	-63.0	22.0
02N07E34R001	-72.0	****	****
02N07E35L001	****	****	****
02N07E36H001	****	****	****
02N08E03G002	-83.7	-63.7	-20.0
02N08E04C001	-81.5	-67.5	-14.0
02N08E05C001	-81.5	-71.5	-10.0
02N08E08N001	-72.5	-74.5	2.0
02N08E09G002	-7.0	****	****
02N08E10H002	-96.1	****	****
02N08E13K001	-44.6	****	****
02N08E14C001	-68.0	-48.0	-20.0
02N08E15M002	****	-69.7	****
02N08E16D001	-88.1	-75.1	-13.0
02N08E18C001	-72.7	-83.7	11.0
02N08E20F001	****	****	****
02N08E24J001	****	****	****
02N08E24P001	****	****	****
02N08E28H002	-51.6	****	****
02N08E32L002	****	****	****
02N08E33E001	-91.6	-71.6	-20.0
02N09E03A001	****	****	****
02N09E04H001	****	****	****

State Well ID	Fall 2017	Fall 2016	Change
02N09E05H001	****	****	****
02N09E05N001	-30.4	-29.4	-1.0
02N09E08N001	****	****	****
02N09E09D001	****	****	****
02N09E18Q001	****	****	****
02N09E22D001	****	****	****
02N09E28N001	****	****	****
03N07E28K012	****	-57.8	****
03N07E35C002	-79.8	-75.8	-4.0
03N07E35L001	-74.5	-69.0	-5.5
03N07E36J001	-71.3	-72.3	1.0
03N08E27R001	****	****	****
03N09E25R001	86.6	80.7	5.9
03N09E36G001	70.2	****	****
C-1	****	****	****
Foothill MW-1	55.8	58.4	-2.5
Foothill MW-2R	37.7	39.0	-1.3
Foothill MW-3	-22.9	-21.7	-1.3

Total Number of Wells	167
Total Number of Comparable Wells	58
Number of Wells with Decrease	16
Number of Wells with Increase	42
Number of Wells with No Change	0
Range of Change	-20.0 to 40.0
Average Change	5.0

Table 3-5 Comparison of SSJID Water Levels

State Well ID	Fall 2017	Fall 2016	Change
01S07E09Q001	****	****	****
01S07E14M001	-9.1	****	****
01S07E14P003	-10.8	-14.8	4.0
01S07E15F002	-10.6	-14.1	3.5
01S07E18L001	4.9	-0.1	5.0
01S07E21G001	10.1	4.7	5.4
01S07E25E001	2.0	-1.0	3.0
01S07E25R001	****	6.5	****
01S07E26G001	****	-1.5	****
01S07E27K001	3.6	0.6	3.0
01S07E30R001	****	5.0	****
01S07E36D001	10.7	11.8	-1.2

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State Well ID	Fall 2017	Fall 2016	Change
01S08E19R001	****	****	****
01S08E25Q001	****	****	****
01S08E29K001	****	-5.0	****
01S08E30C002	-3.0	-5.4	2.4
01S08E34Q001	11.8	-4.3	16.1
01S08E35R002	19.6	18.0	1.6
01S09E29M002	33.4	****	****
01S09E33J002	45.3	45.7	-0.4
01S09E33P001	40.7	41.3	-0.6
01S09E34A001	****	****	****
02S07E07D002	9.0	7.3	1.7
02S07E07Q001	21.8	****	****
02S07E08R001	25.7	22.1	3.6
02S07E10B002	20.3	****	****
02S07E11N002	27.4	25.4	2.0
02S07E19H001	20.0	18.5	1.5
02S07E22N002	23.3	****	****
02S08E04M001	13.5	****	****
02S08E06J001	15.0	14.0	1.0
02S08E07R001	29.0	****	****
02S08E08A001	21.4	24.0	-2.6
02S08E08E001	18.2	****	****
02S08E09J001	30.4	28.9	1.5
02S08E12D001	30.0	32.7	-2.7
02S09E03K001	****	****	****
02S09E07D001	30.4	34.1	-3.7
02S09E12R001	62.2	62.8	-0.6

Total Number of Wells	41
Total Number of Comparable Wells	22
Number of Wells with Decrease	7
Number of Wells with Increase	15
Number of Wells with No Change	0
Range of Change	-3.7 to 16.1
Average Change	2.0

Table 3-6 Comparison of WID Water Levels

State Well ID	Fall 2017	Fall 2016	Change
03N05E13L001	****	****	****
03N05E14C001	0.3	-2.9	3.2
03N06E04P012	****	-8.359	****
03N06E05N003	-5.1	-12.1	7.0
03N06E07D013	****	****	****
03N06E07H003	-11.0	-23.0	12.0
03N06E09N011	****	****	****
03N06E10D001	2.1	****	****
03N06E15C004	****	****	****
03N06E17A004	-18.7	-31.7	13.0
03N06E18M003	-10.1	-18.1	8.0
03N06E20D002	-15.5	****	****
03N06E26P002	-30.7	-36.7	6.0
03N06E27E001	-37.2	-43.2	6.0
03N06E29C001	-23.3	-29.3	6.0
03N06E30R001	-21.5	-36.0	14.5
03N06E32R001	-23.0	-29.0	6.0
04N05E10K001	-3.1	-5.1	2.0
04N05E13C012	****	****	****
04N05E13H001	3.4	****	****
04N05E13R004	0.0	-12.0	12.0
04N05E14B002	-3.4	-8.9	5.5
04N05E14P001	1.0	-3.0	4.0
04N05E22H001	****	-13.0	****
04N05E24J004	6.3	-4.2	10.5
04N05E26F001	3.2	-1.8	5.0
04N05E36C004	****	****	****
04N05E36H003	6.4	9.4	-3.0
04N06E17G004	5.0	-7.5	12.5
04N06E18R012	****	****	****
04N06E19R012	****	****	****
04N06E29N002	2.6	-8.0	10.6
04N06E30E001	7.2	-4.3	11.5
04N06E34J002	26.4	21.4	5.0
05N05E28L003	-5.5	-7.0	1.5

Total Number of Wells	35
Total Number of Comparable Wells	22
Number of Wells with Decrease	1
Number of Wells with Increase	21
Number of Wells with No Change	0
Range of Change	-3.0 to 14.5
Average Change	7.2

Table 3-7 Comparison of Southwest County Areas
Water Levels

State Well ID	Fall 2017	Fall 2016	Change
01S05E31R002	0.6	0.1	0.5
01S06E04J001	-2.0	-2.0	0.0
01S06E14F001	0.4	****	****
01S06E15F001	****	-0.7	****
01S06E23C003	****	-0.9	****
01S06E26K001	****	-2.7	****
02S04E15R001	48.4	54.9	-6.5
02S05E08B001	-2.3	-2.2	-0.1
02S05E13N001	****	****	****
02S06E10K001	4.0	2.0	2.0
02S06E25J001	17.8	17.3	0.5
02S06E26B001	****	****	****
02S06E27E001	9.0	****	****
02S06E31N001	49.0	49.5	-0.5
02S06E31N001	51.9	51.7	0.2
03S05E04H001	****	****	****
03S06E03F002	14.5	****	****
03S06E23C001	-1.2	****	****
03S06E27N001	56.80	62.8	-6.0
03S06E27N001	66.1	66.5	-0.4
Corral MW-4	228.1	223.5	4.6
Corral MW-5	229.4	226.3	3.1
Corral MW-6	-36.1	-57.8	21.7
Corral MW-7	1.0	-1.3	2.2
MW-1A	-18.3	-28.5	10.2
MW-1B	-27.8	-39.7	12.0
MW-1C	-27.9	-40.3	12.4
MW-2A	-24.0	-36.3	12.2
MW-2B	-28.8	-42.6	13.7
MW-2C	-29.1	-42.7	13.6

San Joaquin County Flood Control and Water Conservation District Groundwater Report

State Well ID	Fall 2017	Fall 2016	Change
MW-3A	-22.8	-33.8	11.0
MW-3B	-29.1	-43.4	14.3
MW-3C	-29.9	-44.4	14.4
MW-4A	-24.6	-36.9	12.3
MW-4B	-29.0	-42.2	13.3
MW-4C	-29.2	-42.4	13.2
MW-5A	-26.6	-35.3	8.7
MW-5B	-25.9	-36.2	10.3
MW-5C	-25.2	-34.9	9.7
MW-6A	-21.9	-30.6	8.8
MW-6B	-25.1	-35.4	10.3
MW-6C	-23.6	-32.8	9.3
Total Number of Wells			42
Total Number of Comparable Wells			32
Number of Wells with Decrease			5
Number of Wells with Increase			26
Number of Wells with No Change			1
Range of Change			-6.5 to 21.7
Average Change			7.2

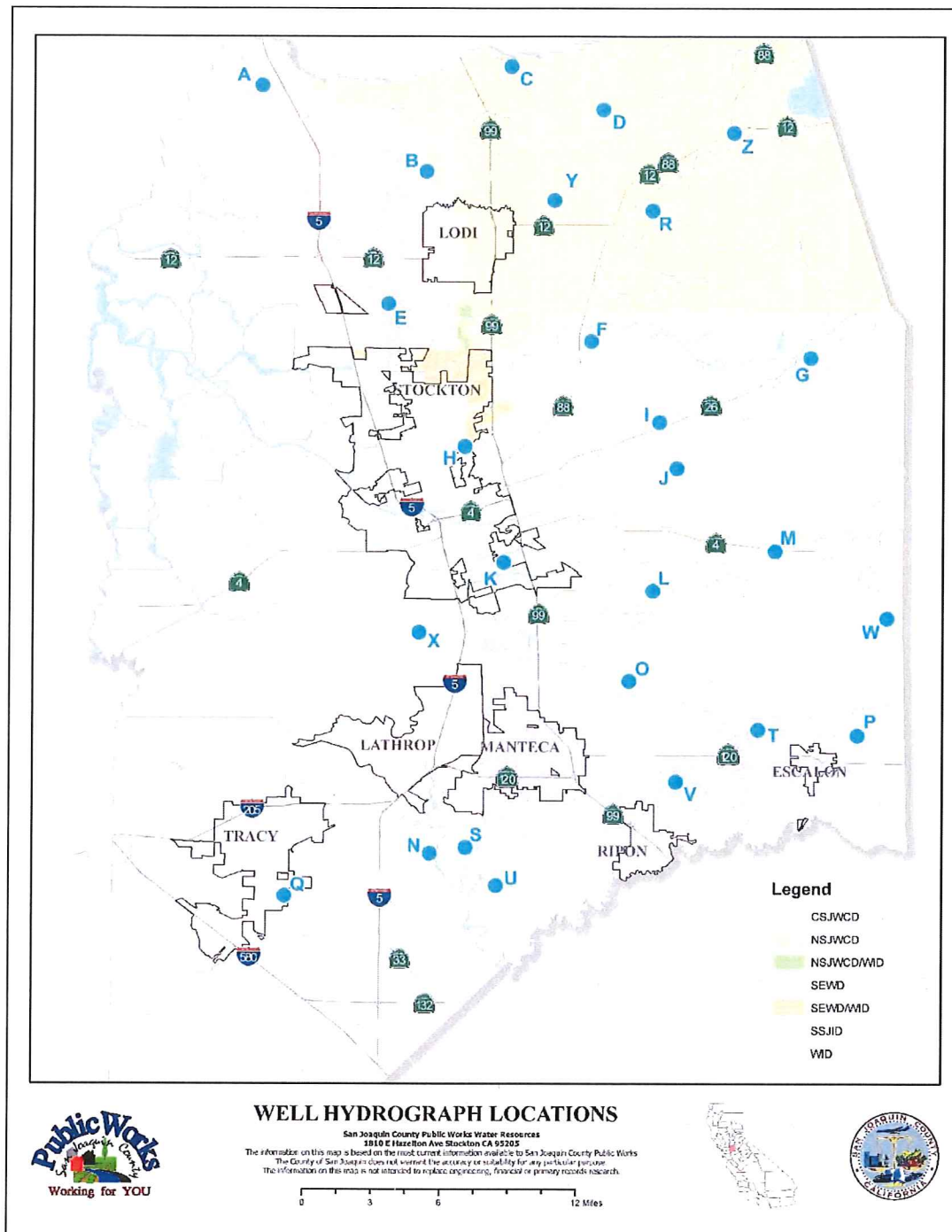


Figure 3-1: Well Hydrograph Locations

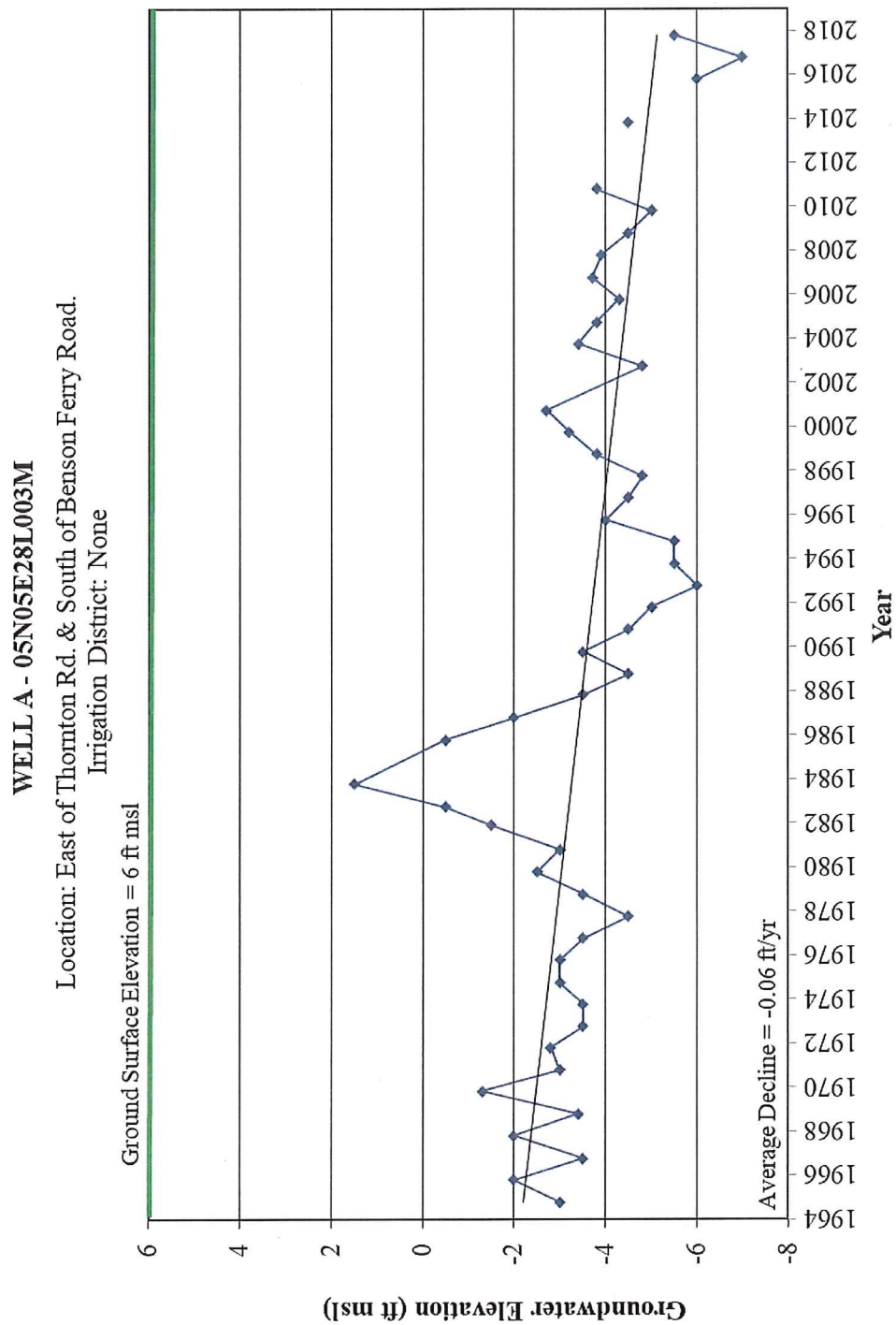


Figure 3-2: Fall Hydrograph Well A

WELL B - 04N06E27D002M
 Location: East of Lower Sac. Rd & South of Acampo Rd
 Irrigation District: NSJWCD

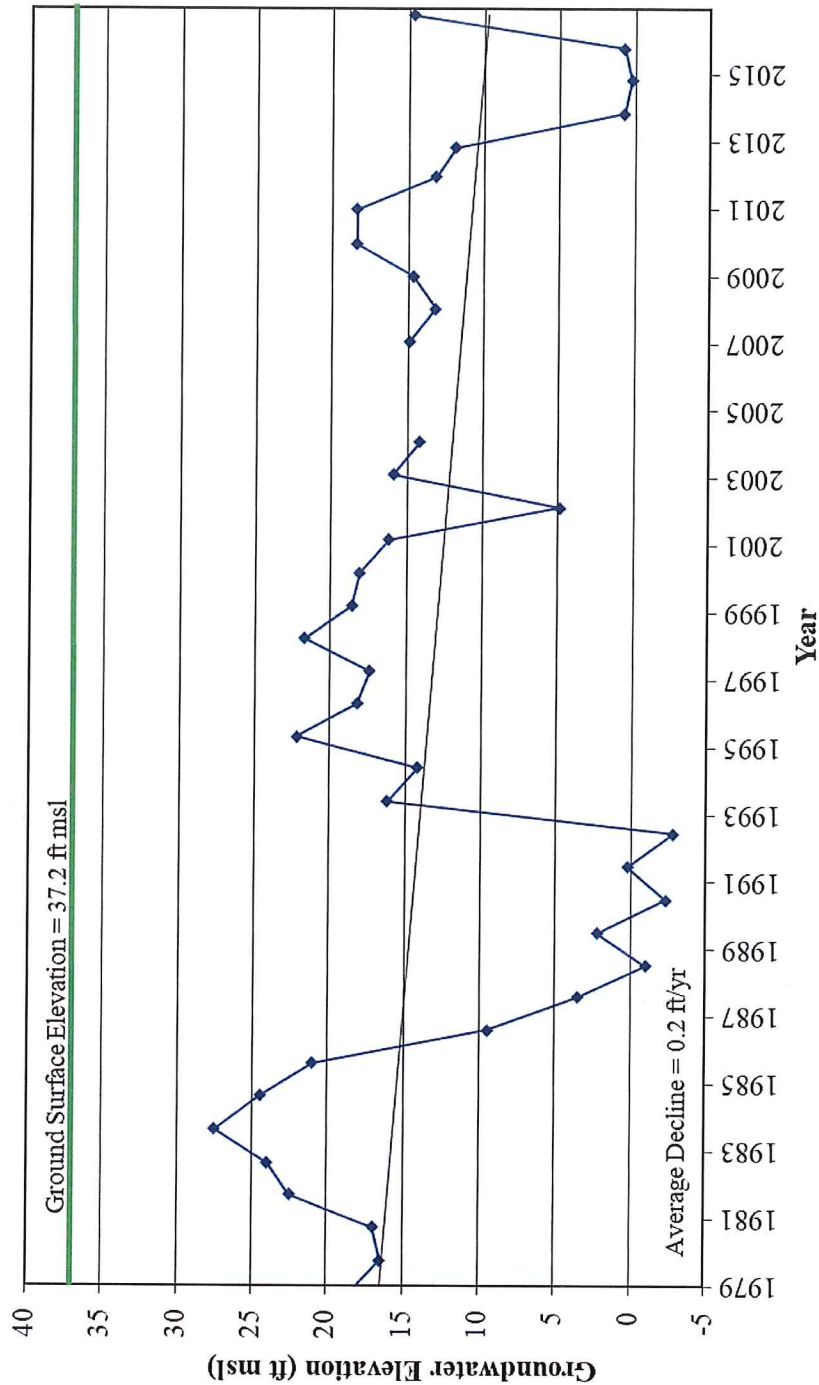


Figure 3-3: Fall Hydrograph Well B

WELL C - 05N06E36R001M

Location: North of Liberty Rd. & West of North Cherokee Ln.

Irrigation District: NSJWCD

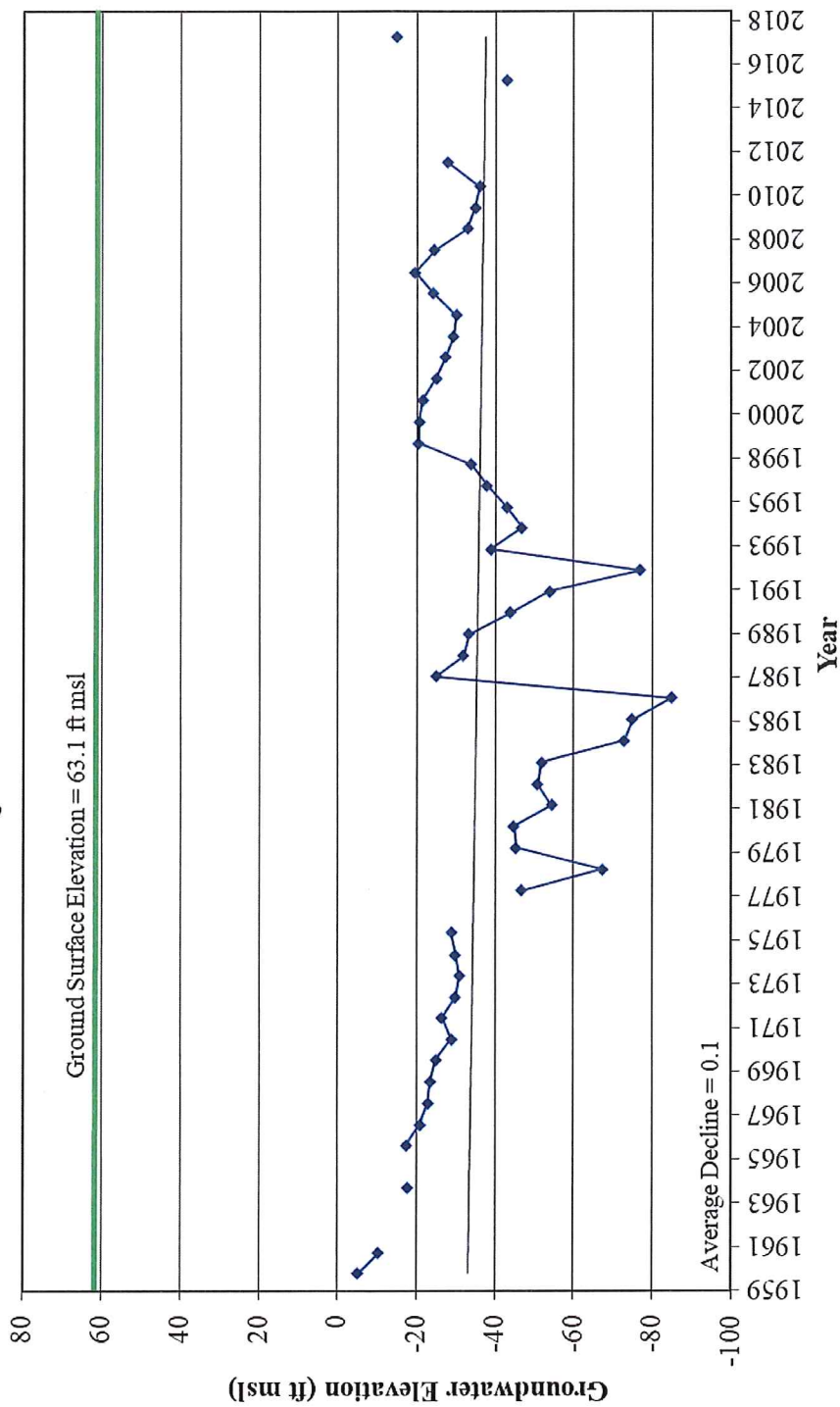


Figure 3-4: Fall Hydrograph Well C

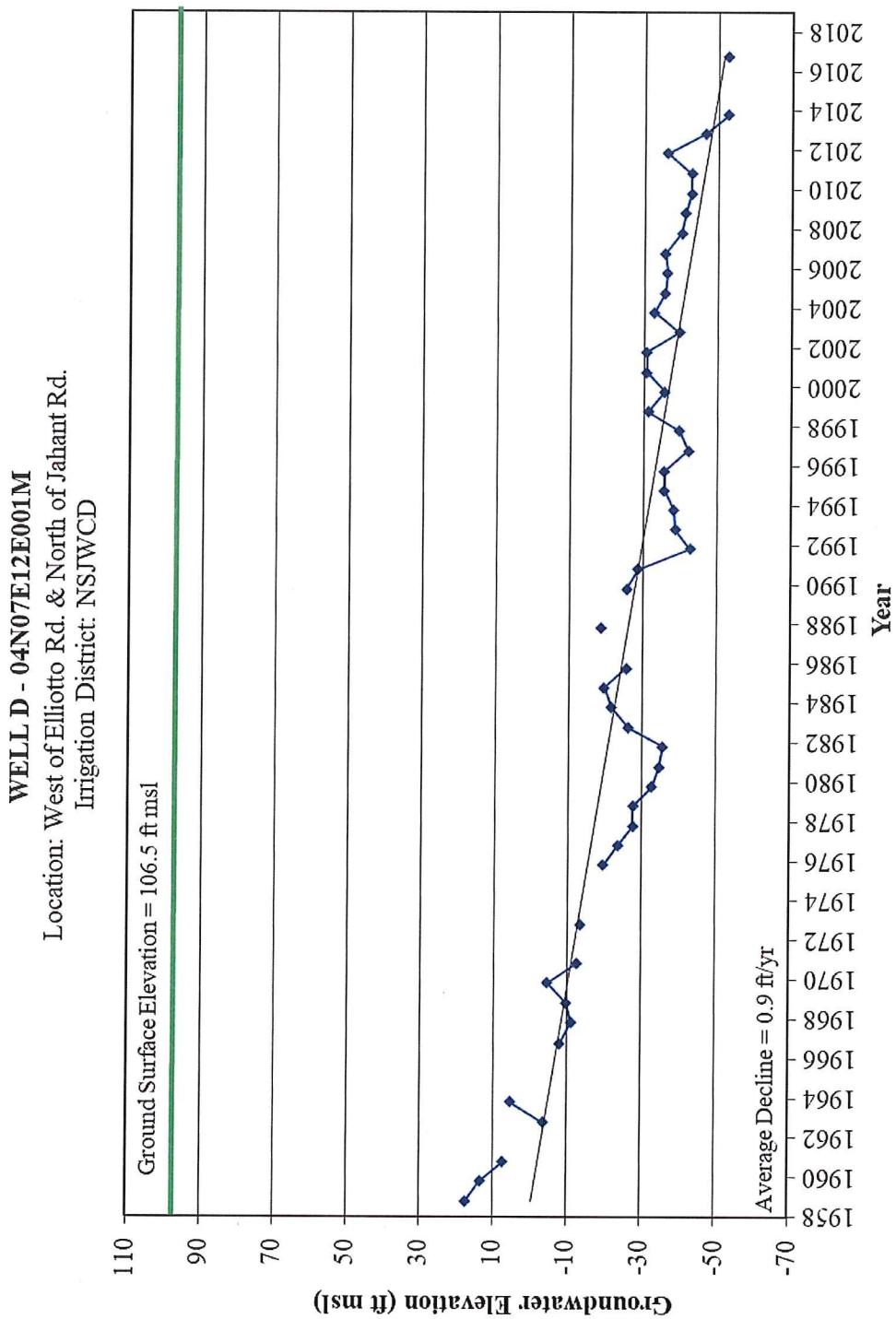


Figure 3-5: Fall Hydrograph Well D

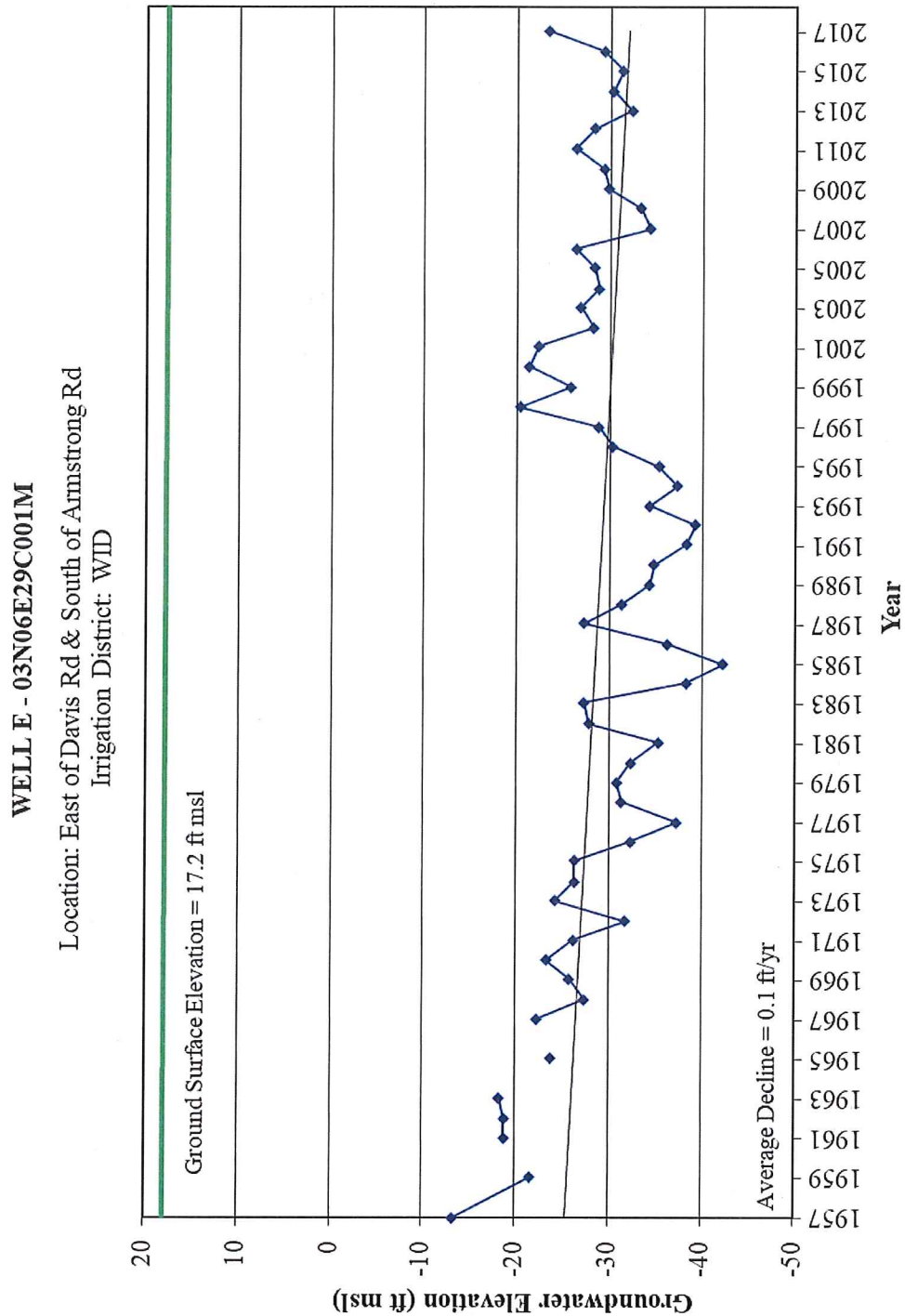


Figure 3-6: Fall Hydrograph Well E

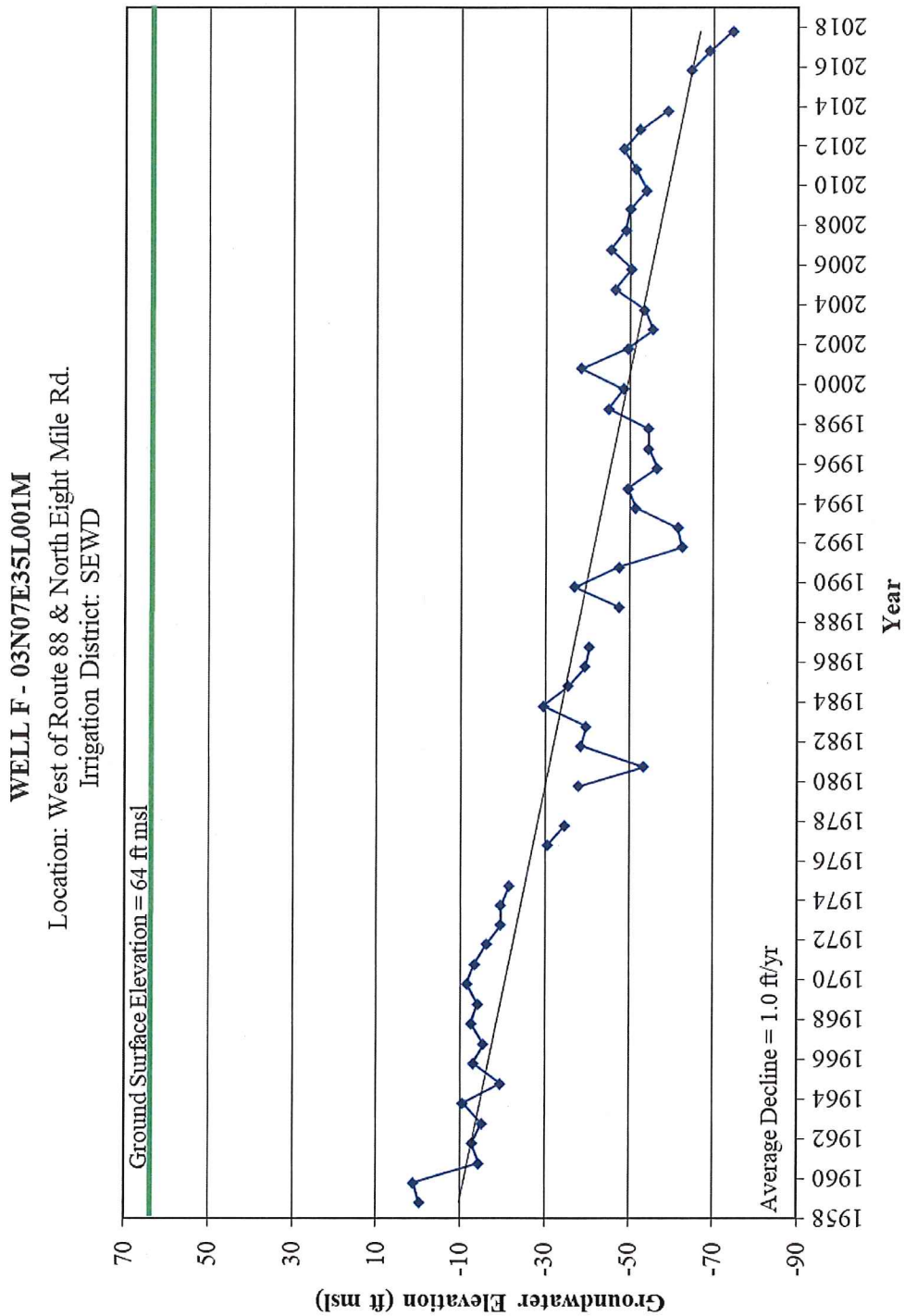


Figure 3-7: Fall Hydrograph Well F

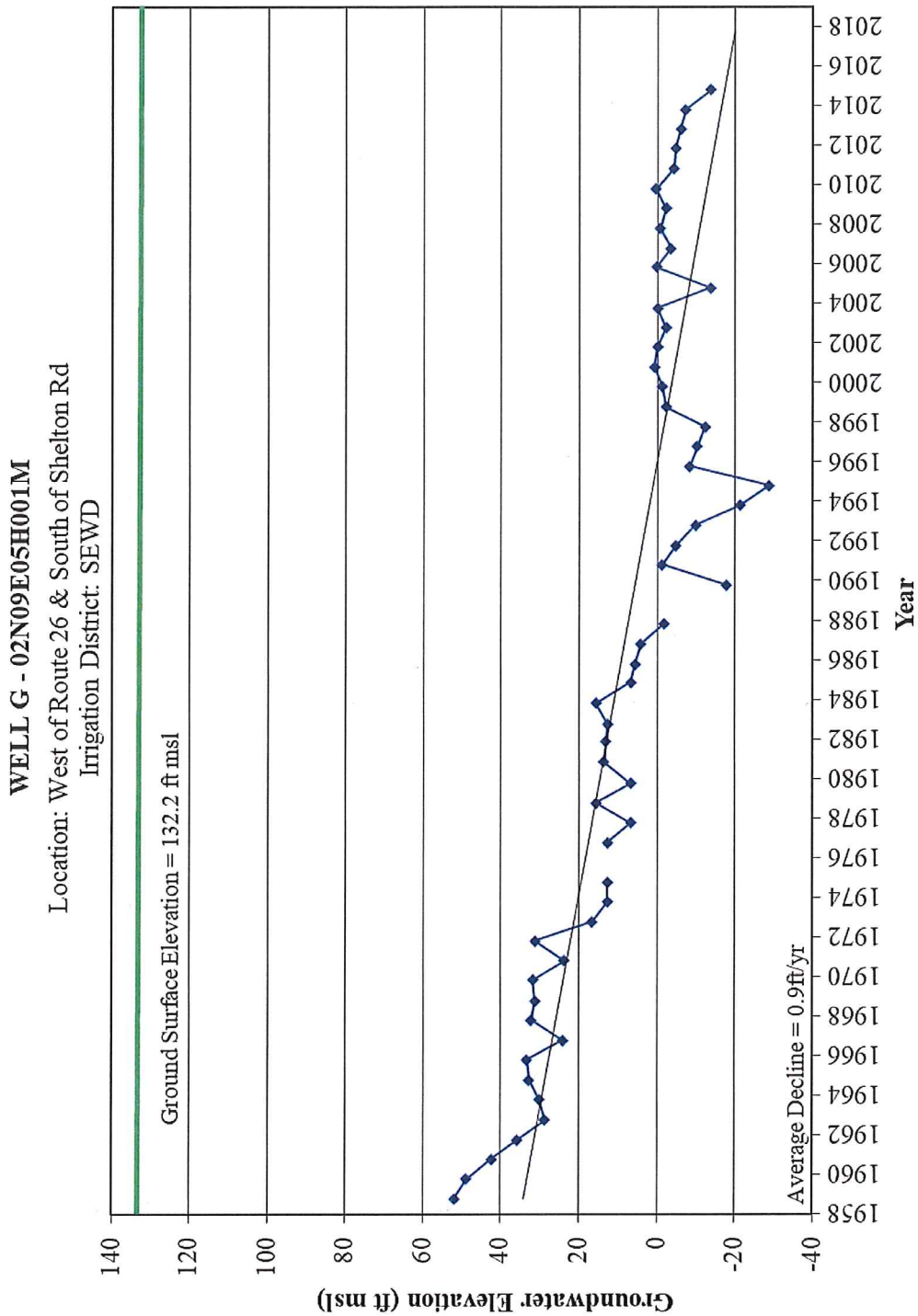


Figure 3-8: Fall Hydrograph Well G

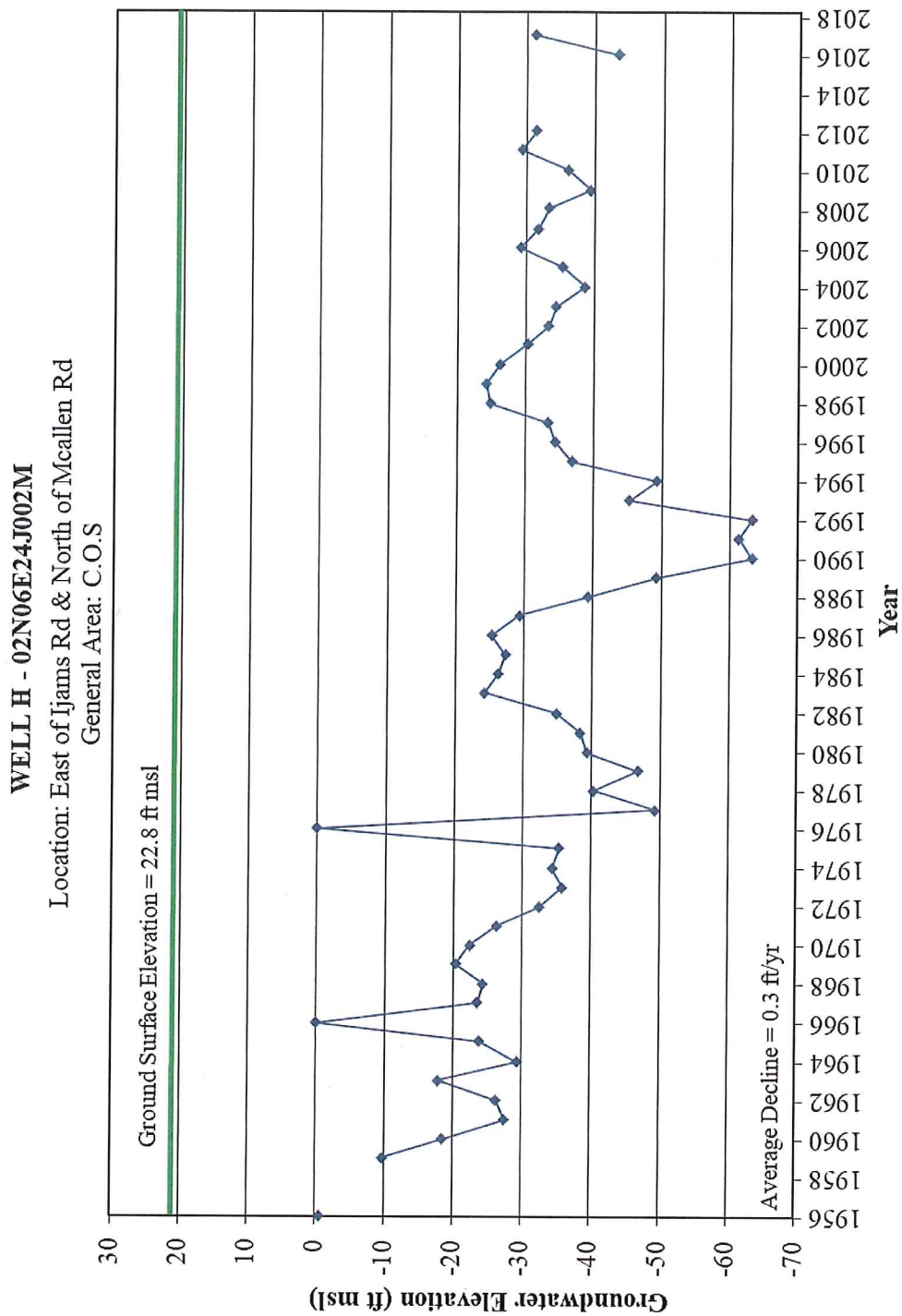


Figure 3-9: Fall Hydrograph Well H

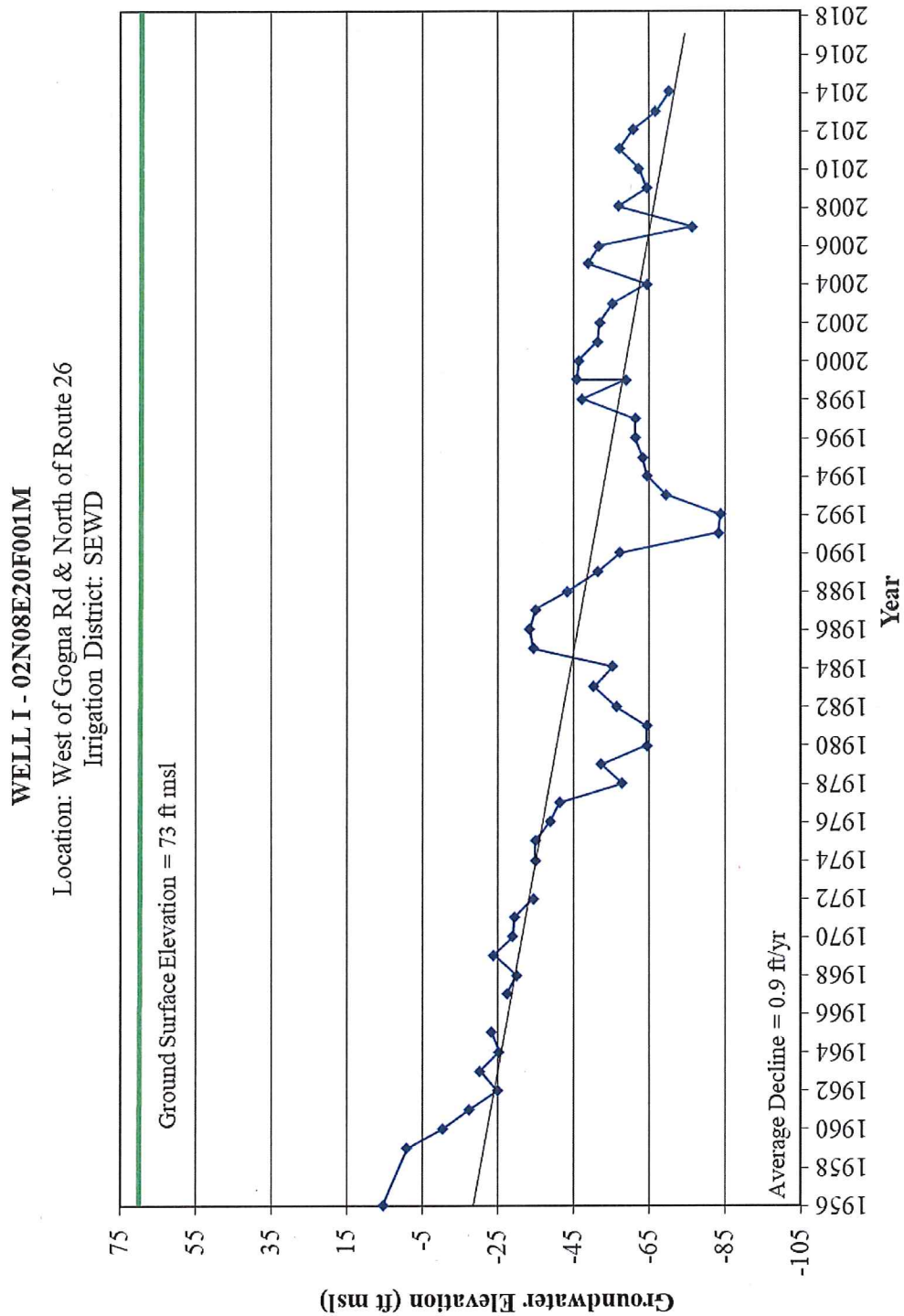


Figure 3-10: Fall Hydrograph Well I

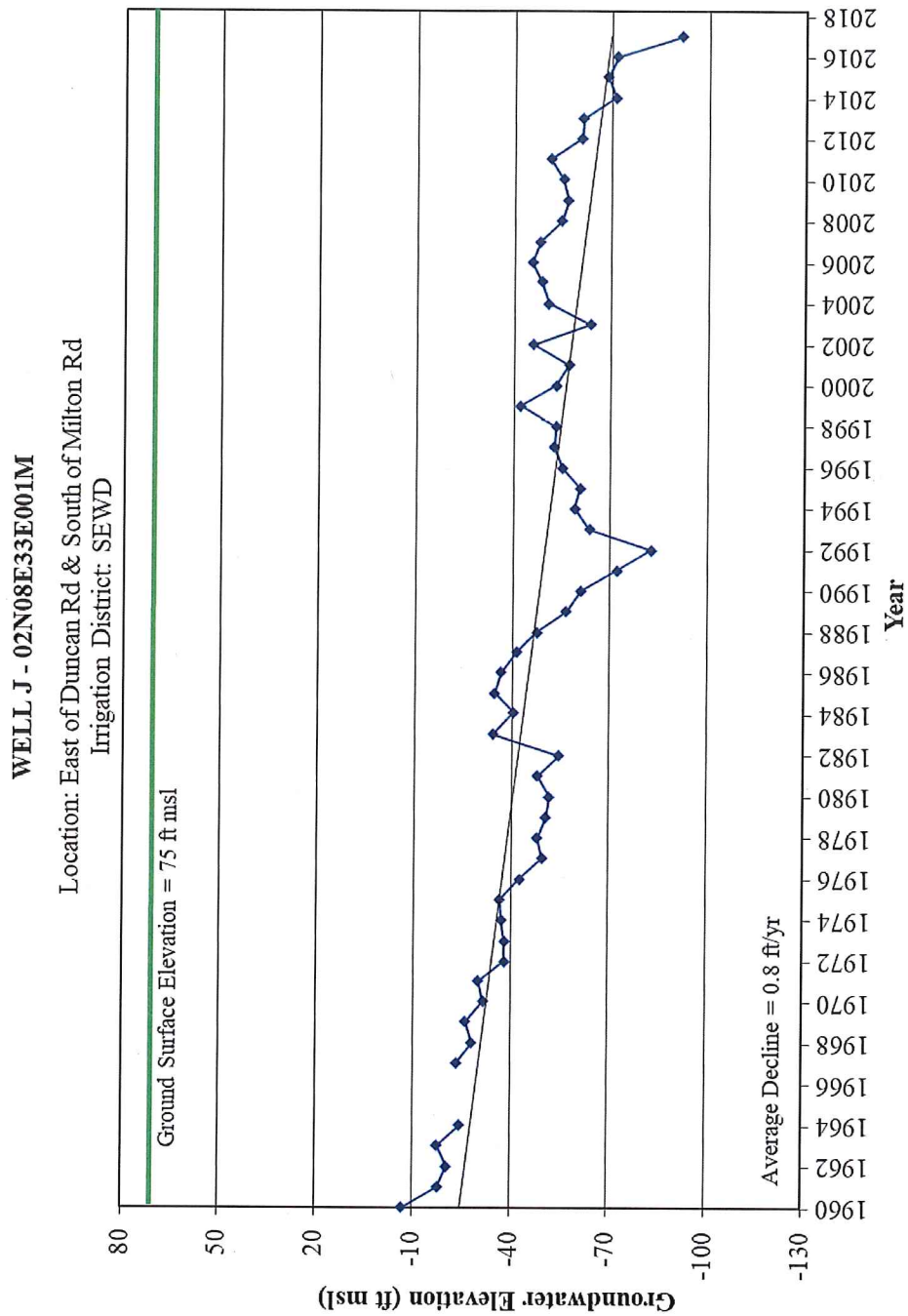


Figure 3-11: Fall Hydrograph Well J

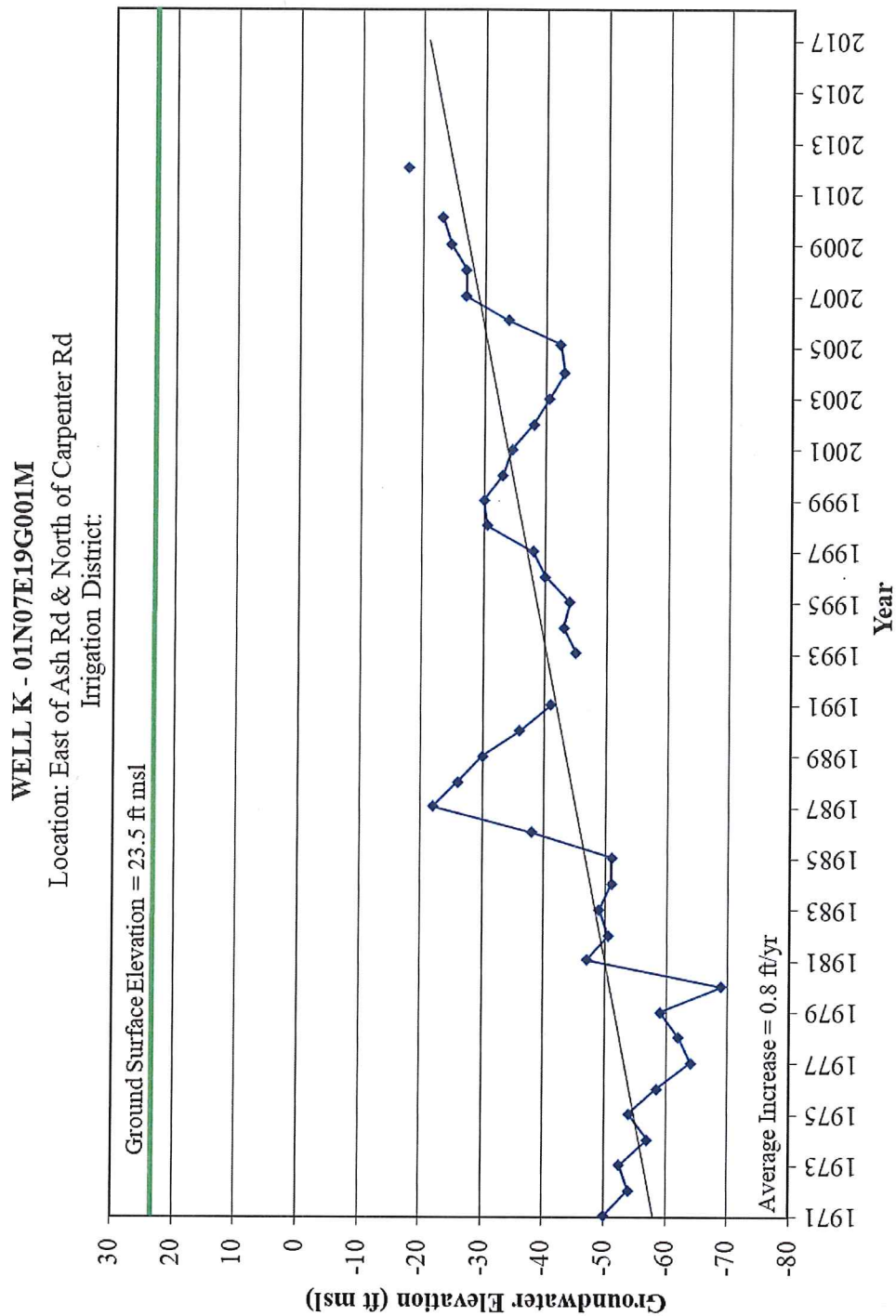


Figure 3-12: Fall Hydrograph Well K

WELL L - 01N08E29M002M
 Location: West of Jack Tone Rd & North of Mariposa Rd

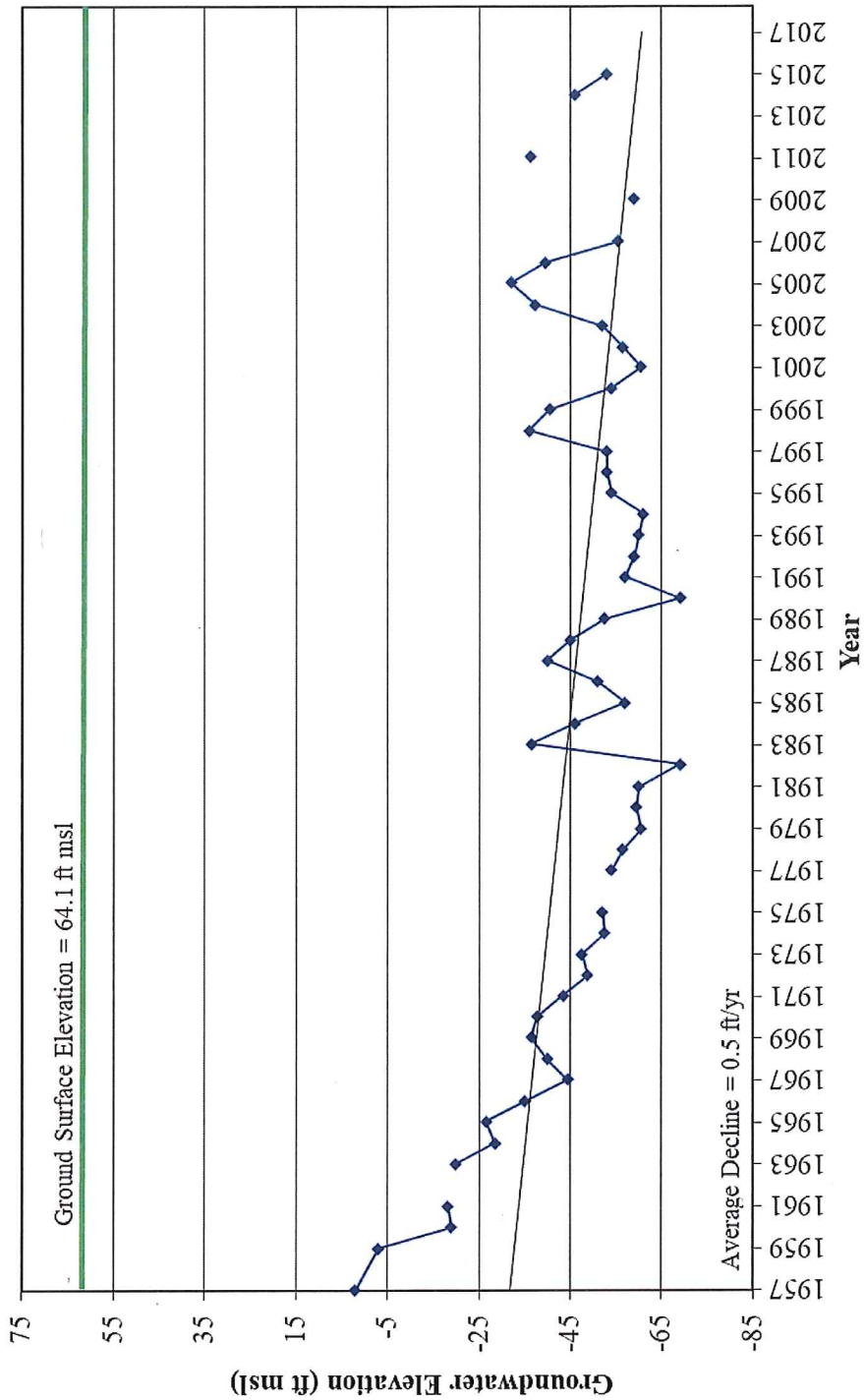


Figure 3-13: Fall Hydrograph Well L

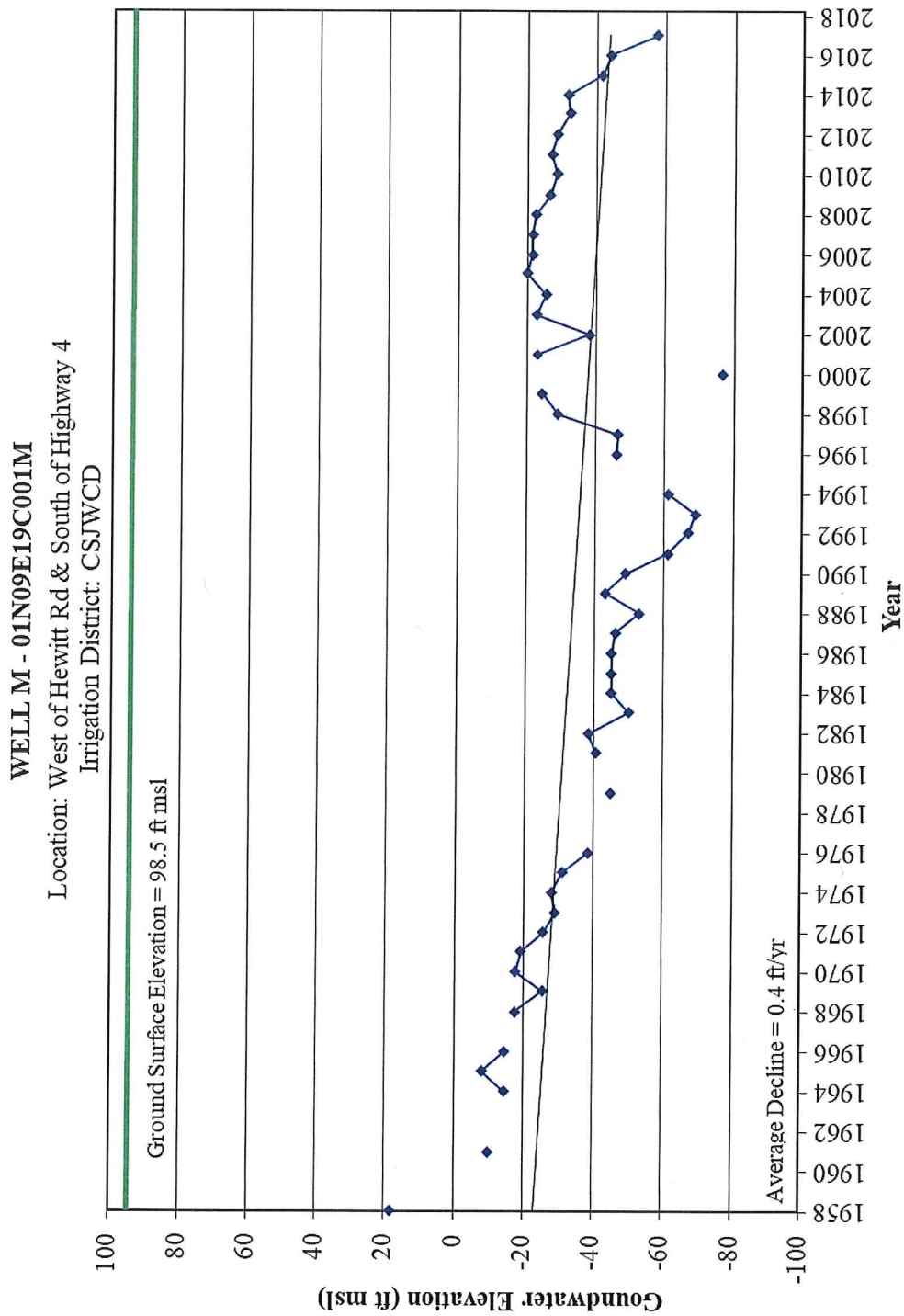


Figure 3-14: Fall Hydrograph Well M

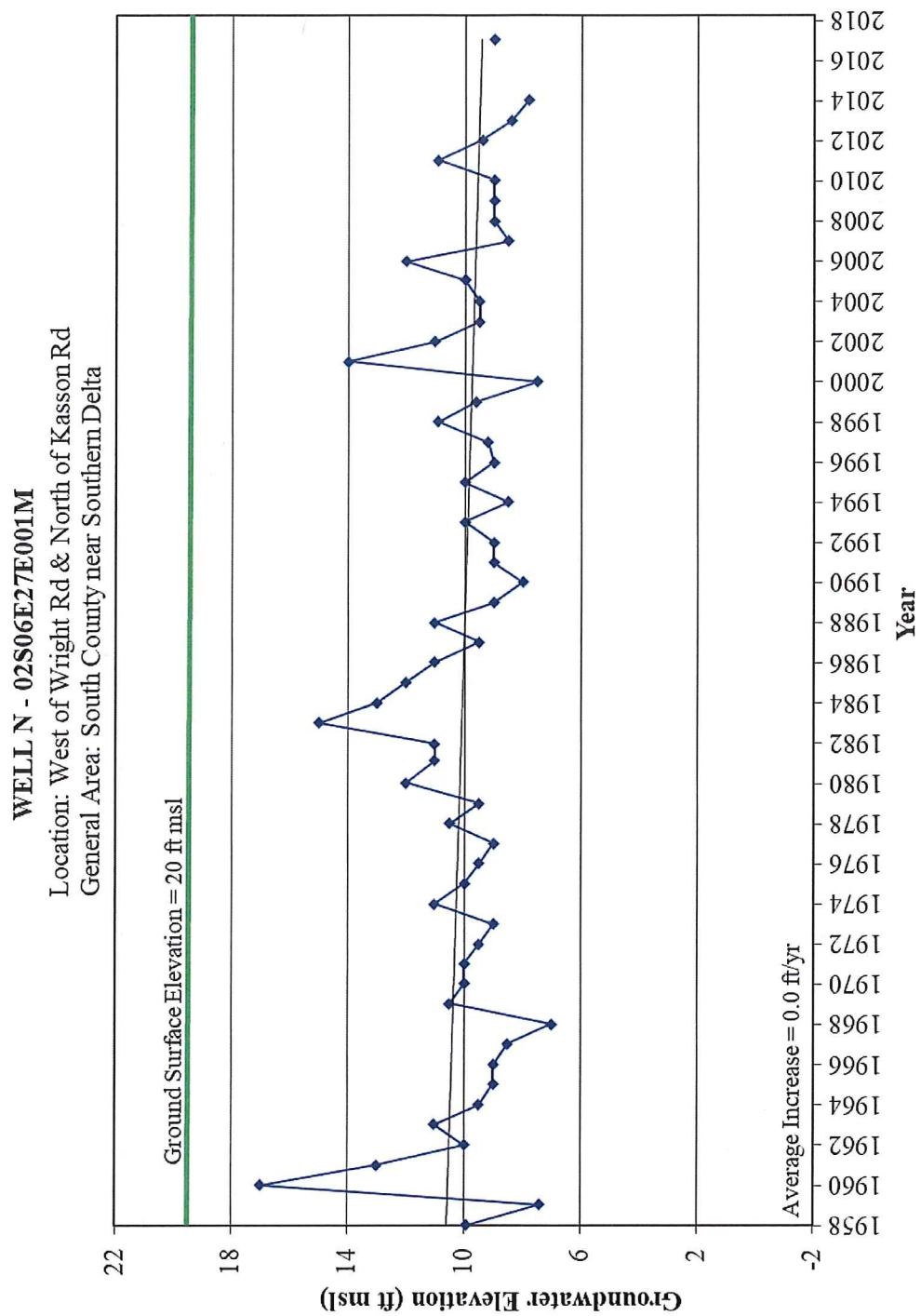


Figure 3-15: Fall Hydrograph Well N

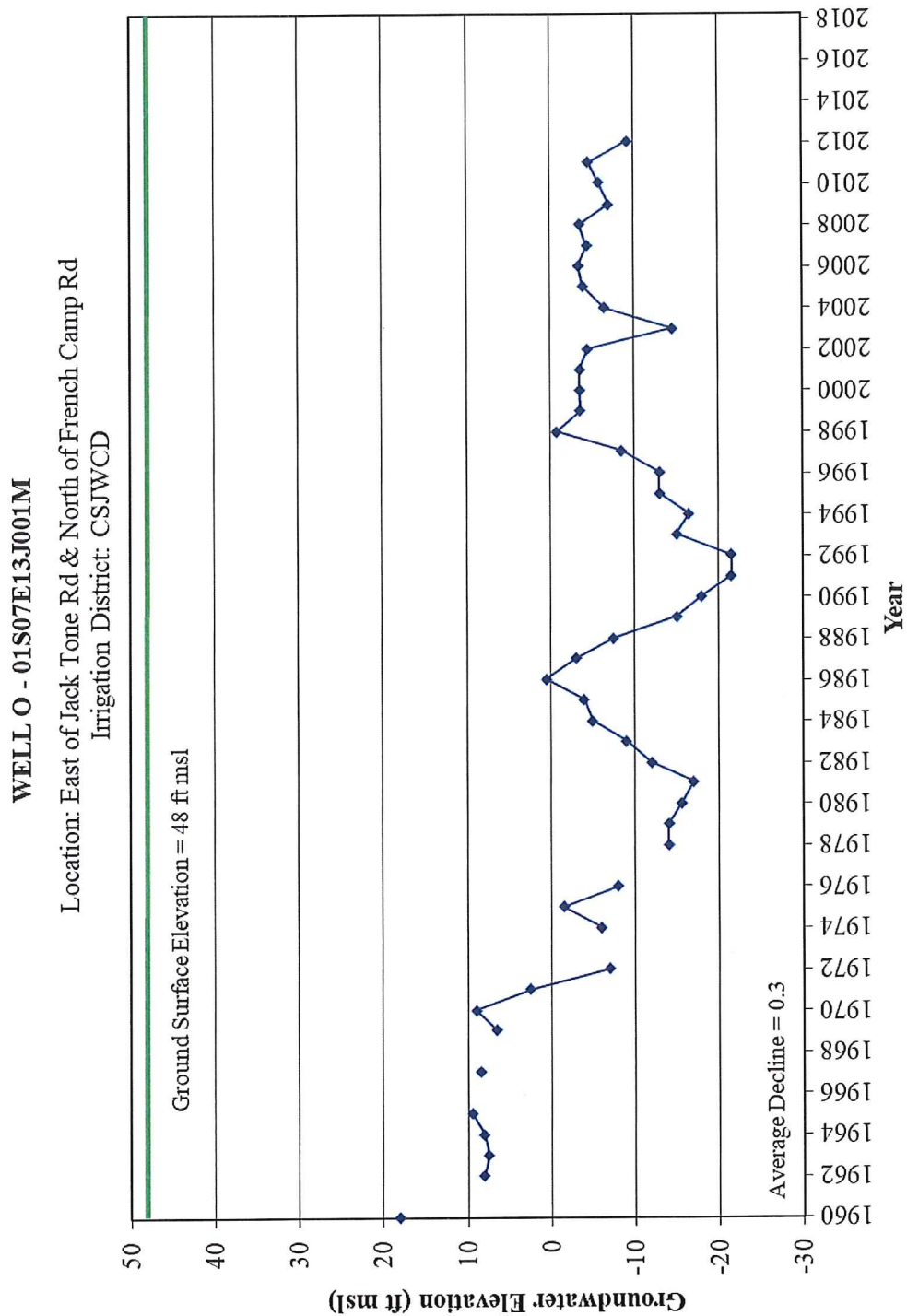


Figure 3-16: Fall Hydrograph Well O

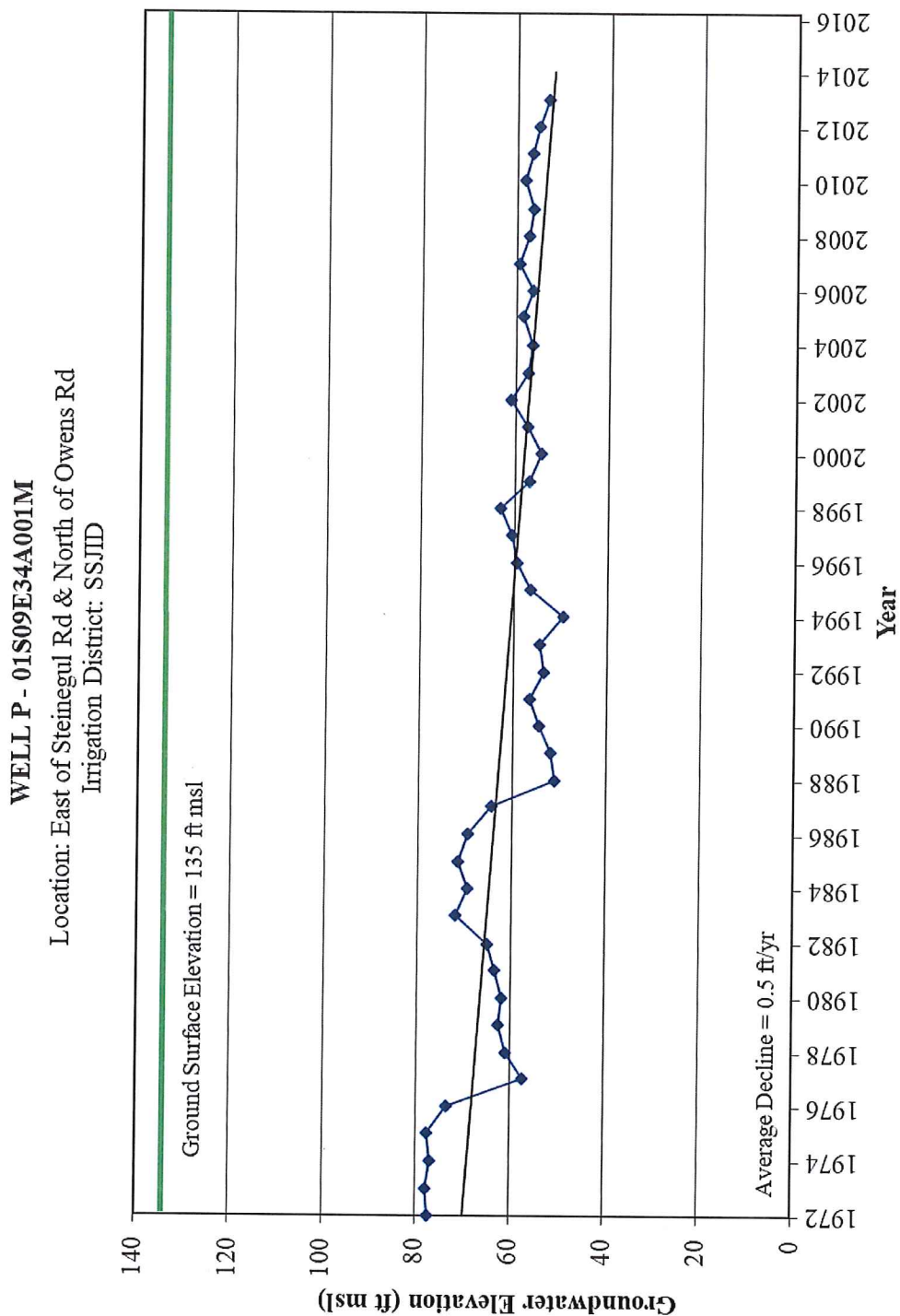


Figure 3-17: Fall Hydrograph Well P

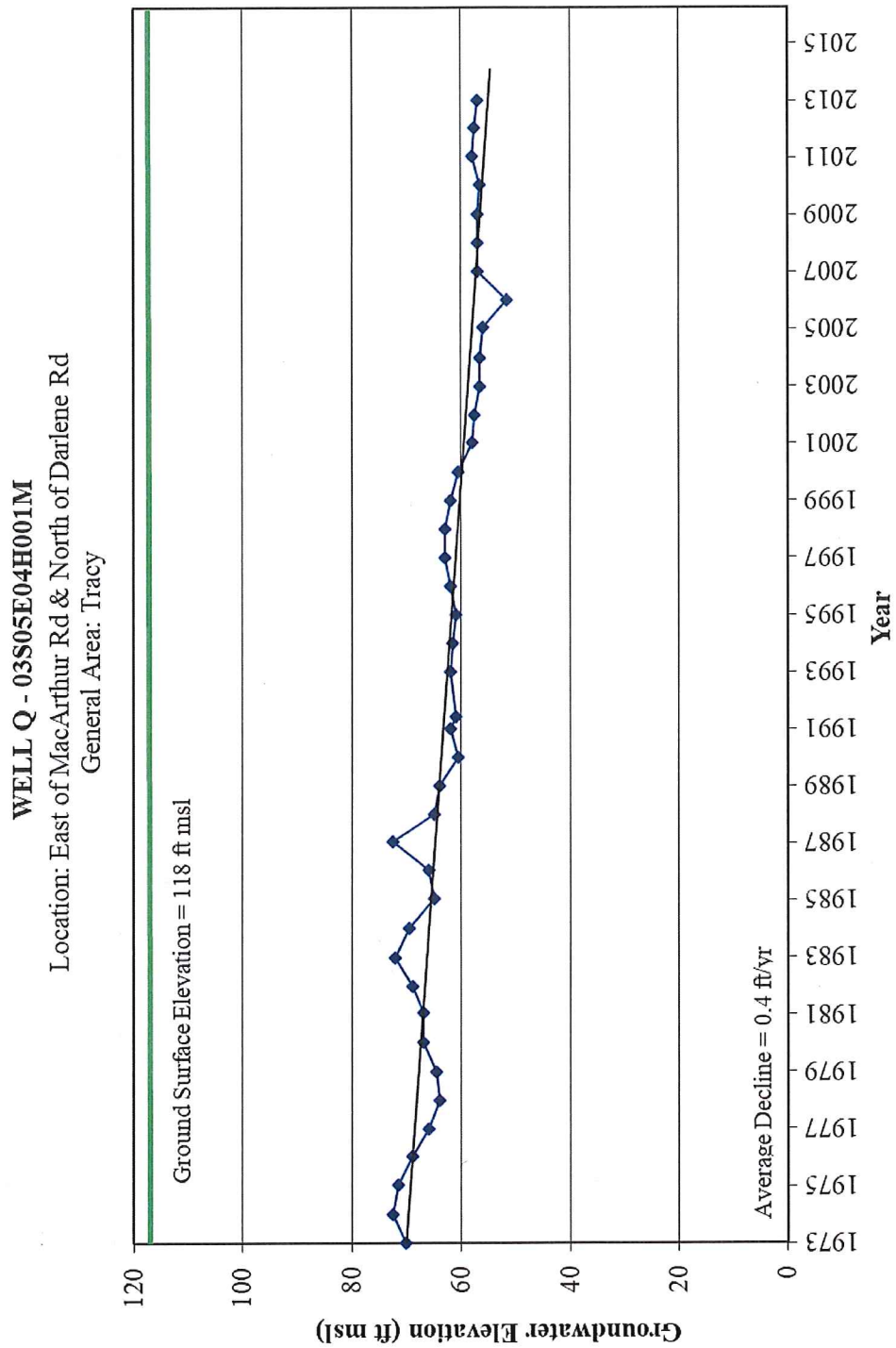


Figure 3-18: Fall Hydrograph Well Q

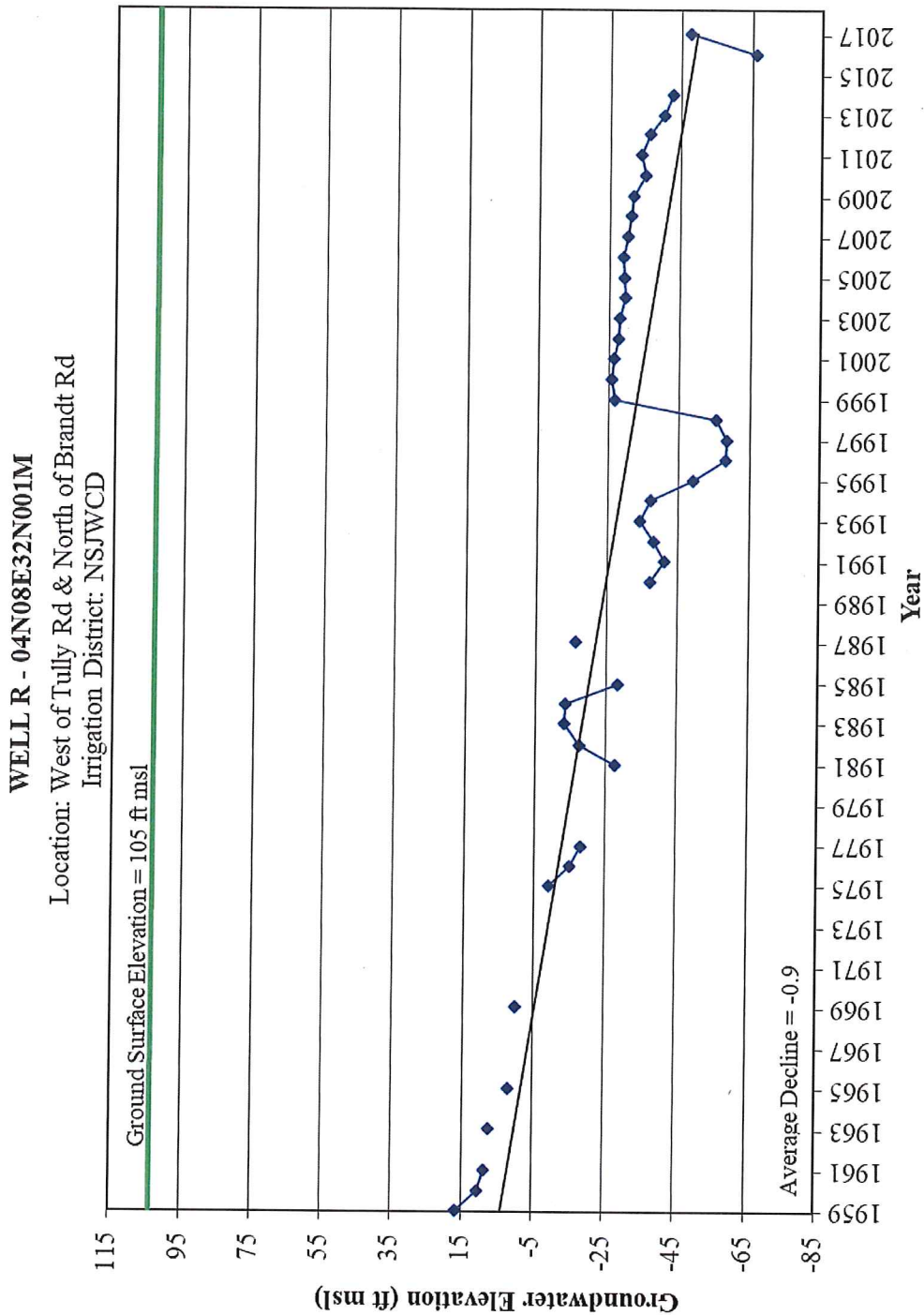


Figure 3-19: Fall Hydrograph Well R

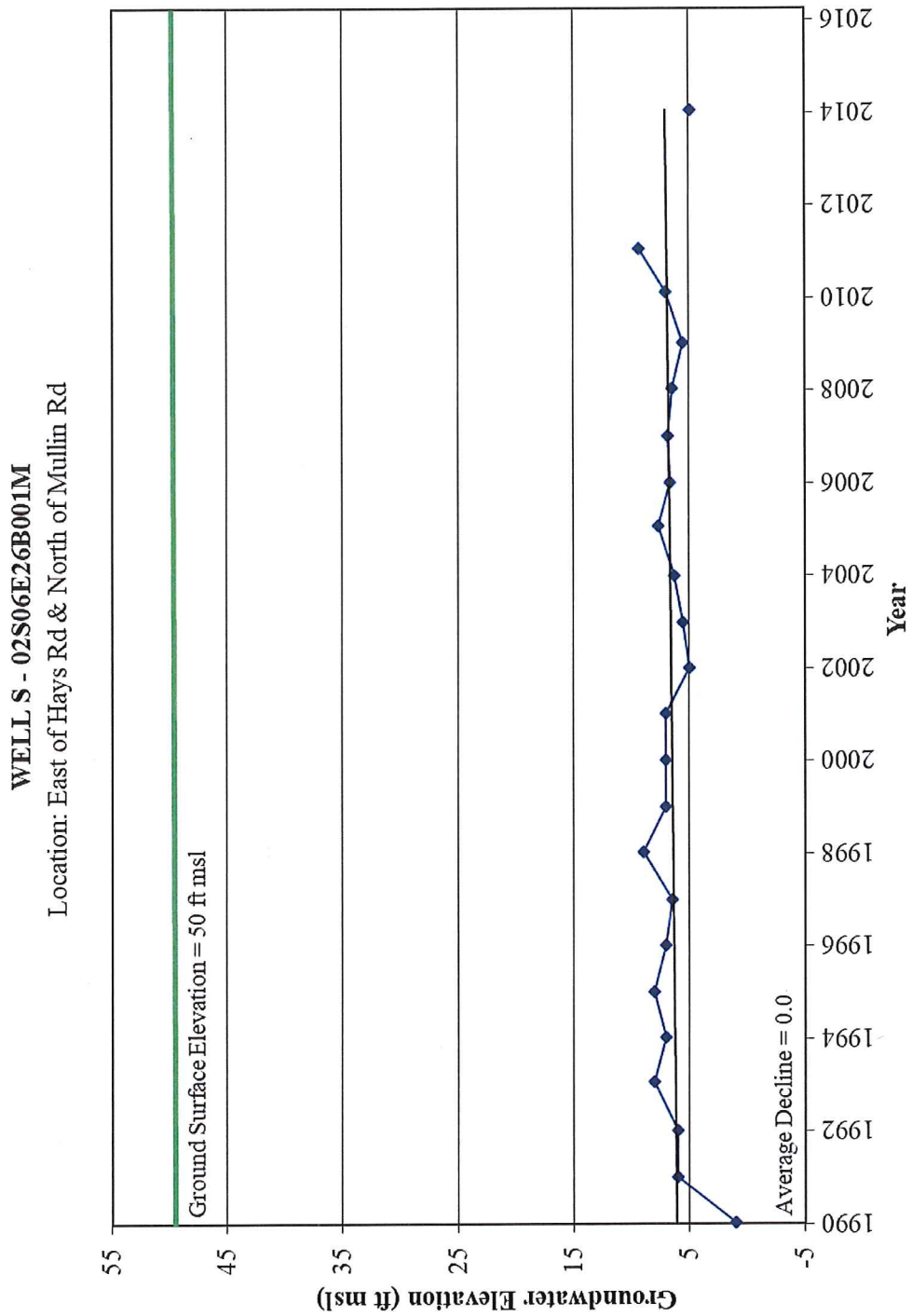


Figure 3-20: Fall Hydrograph Well S

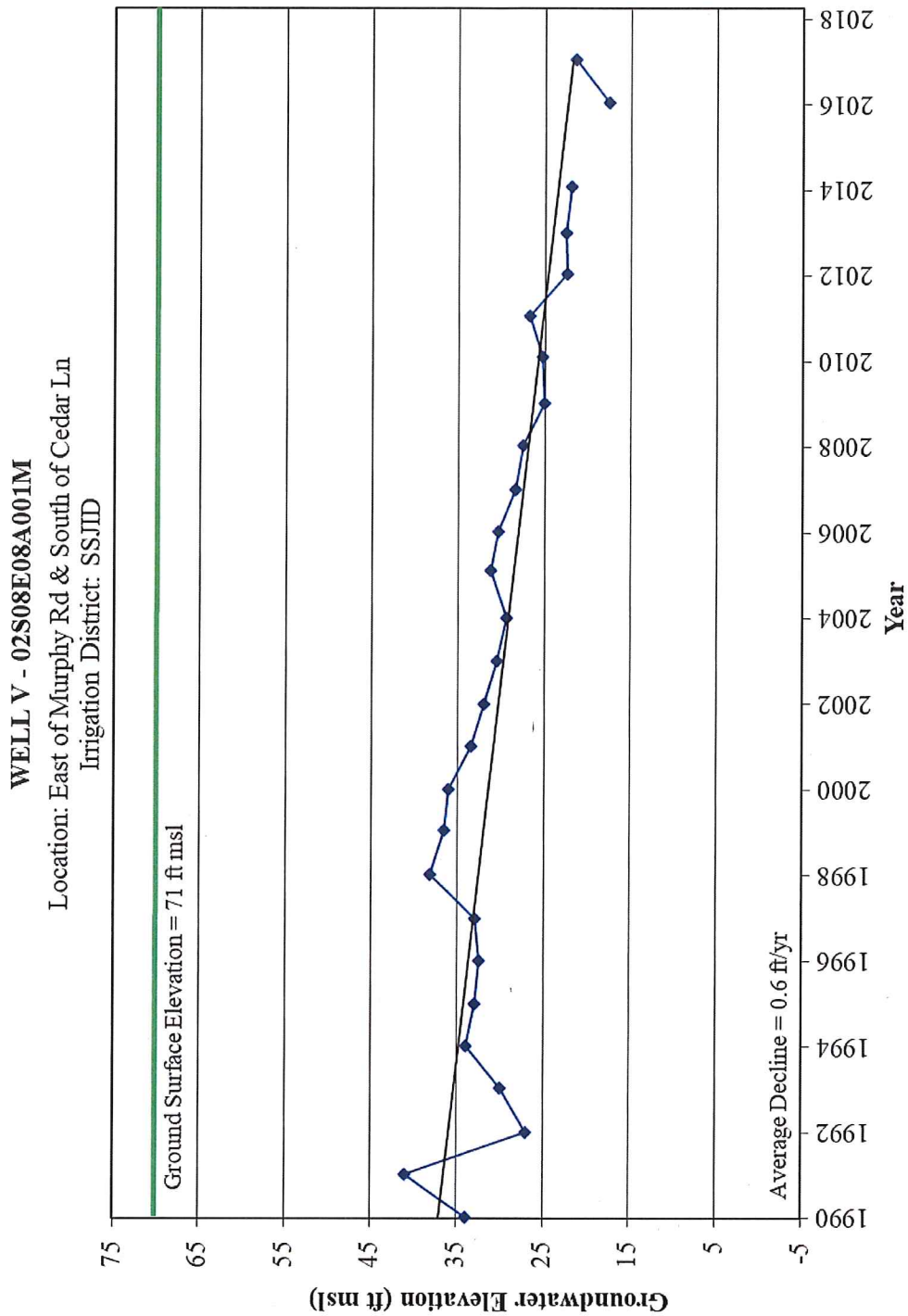


Figure 3-23: Fall Hydrograph Well V

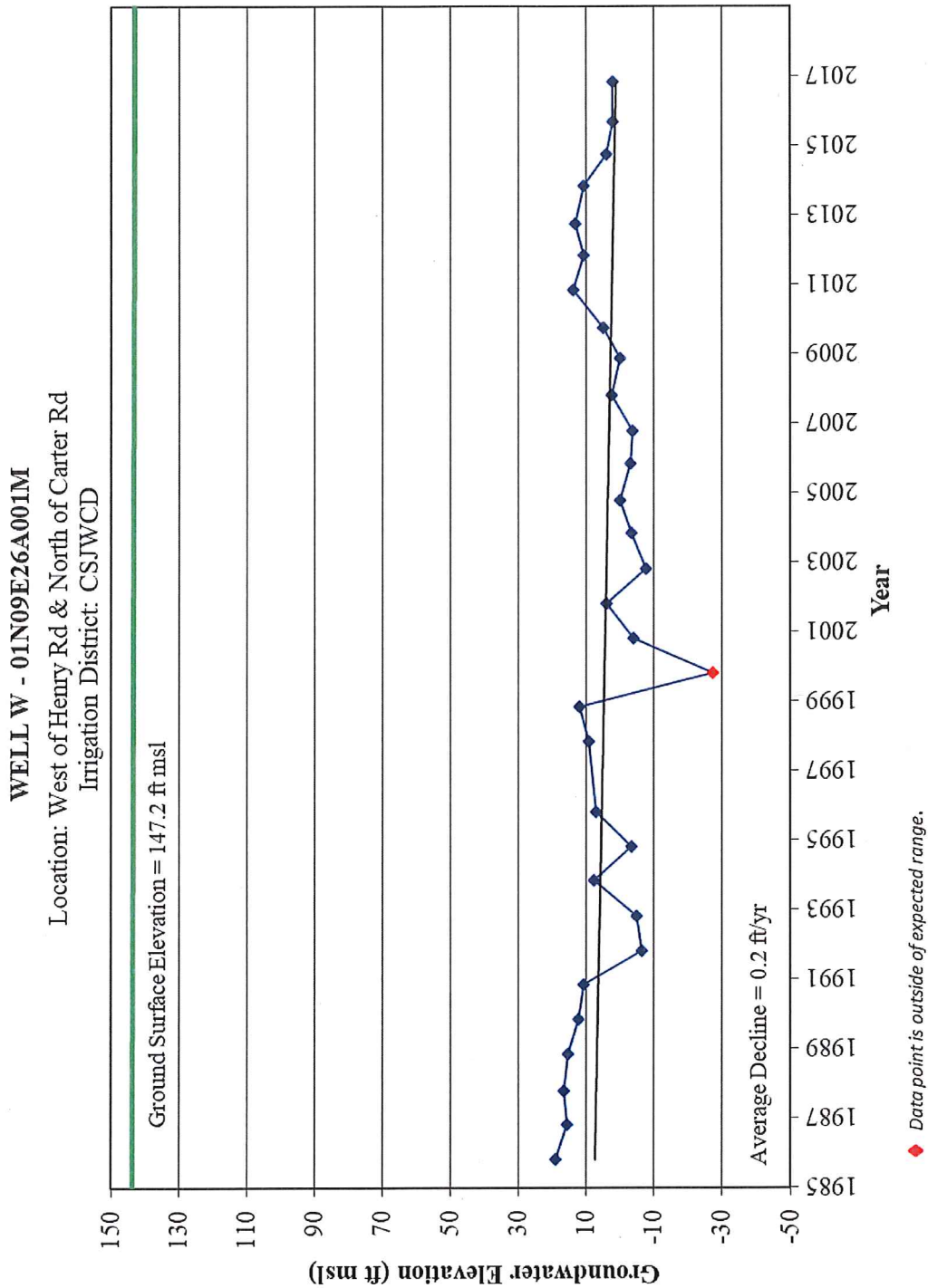


Figure 3-23: Fall Hydrograph Well W

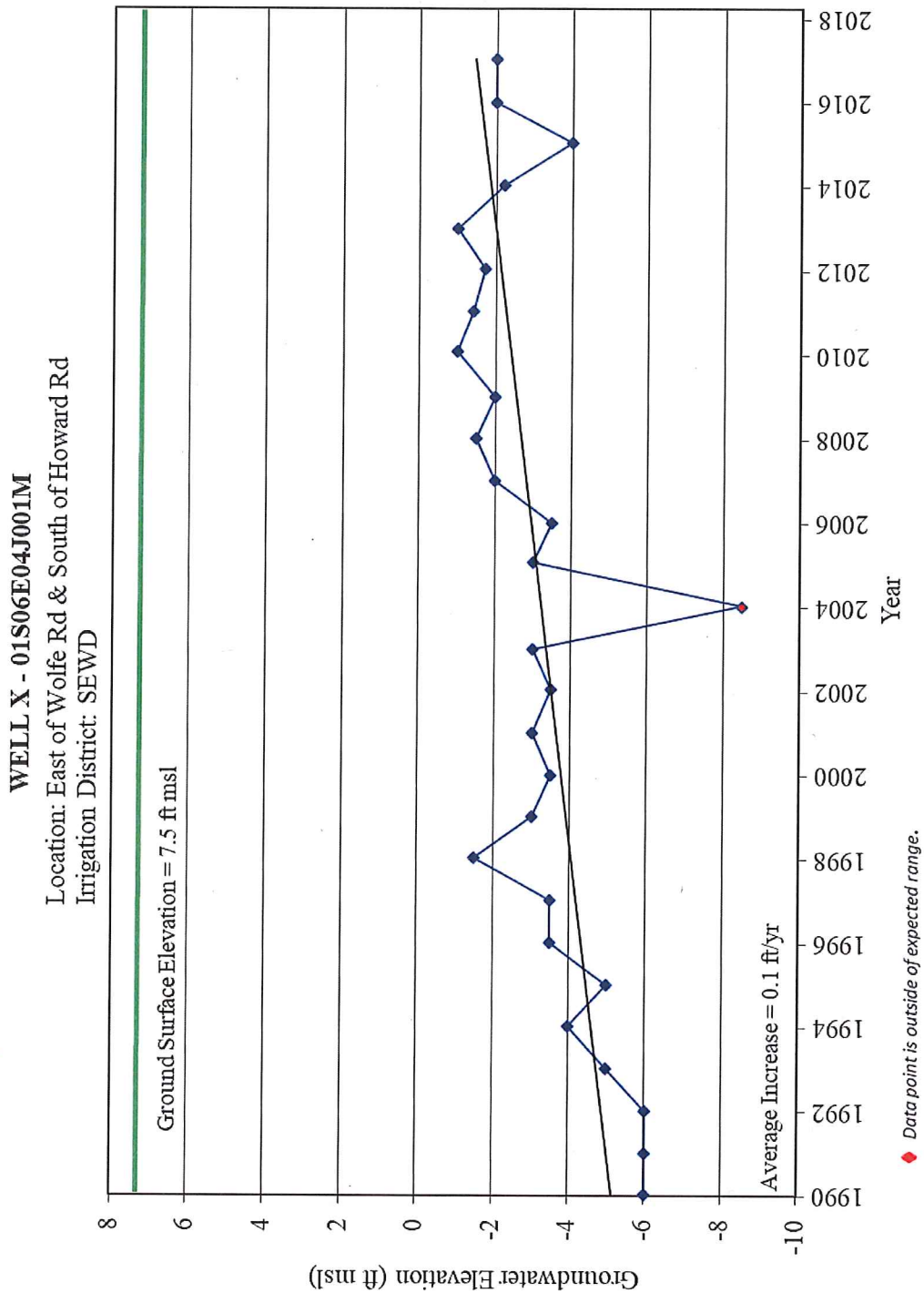


Figure 3-23: Fall Hydrograph Well X

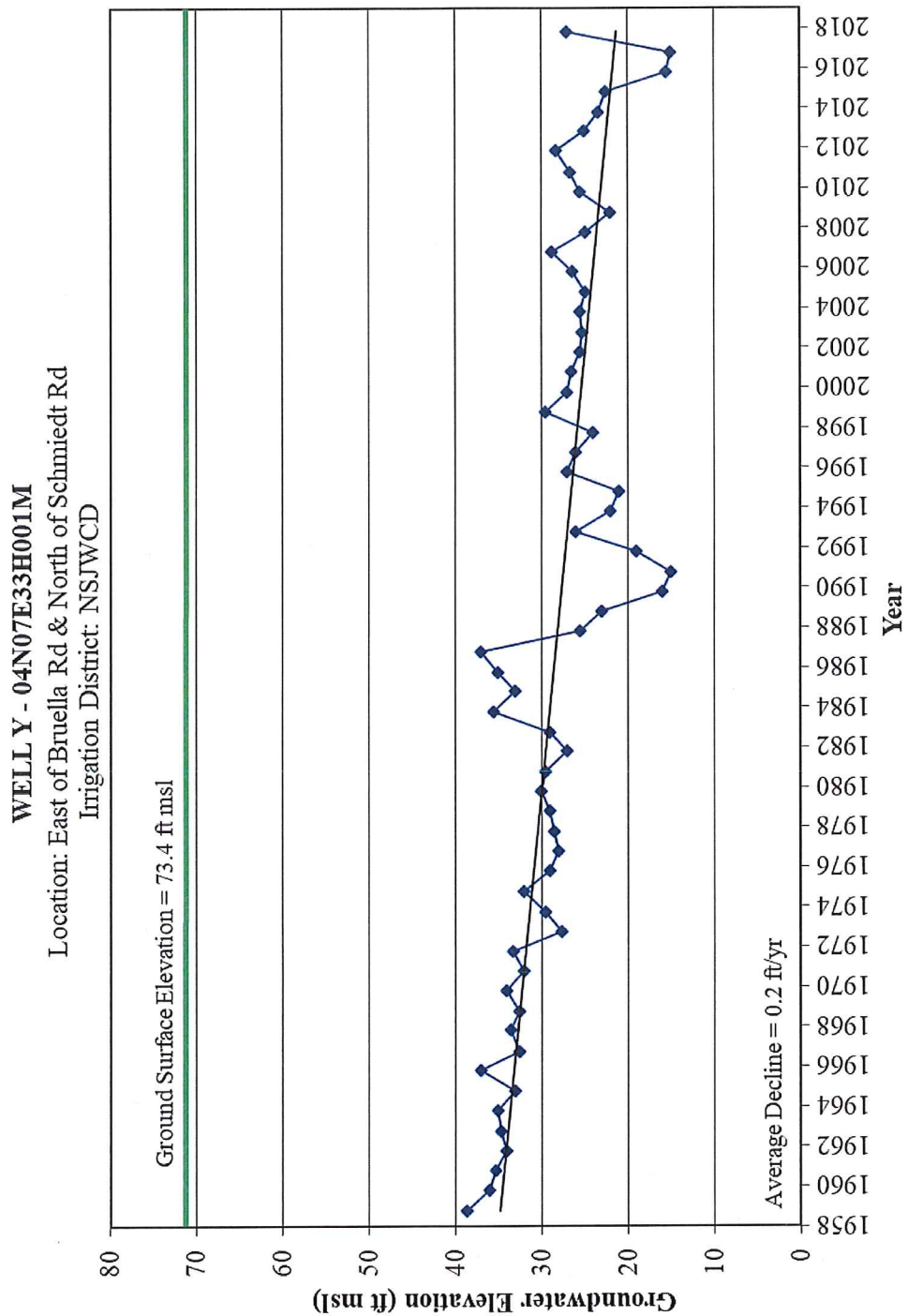


Figure 3-24: Fall Hydrograph Well Y

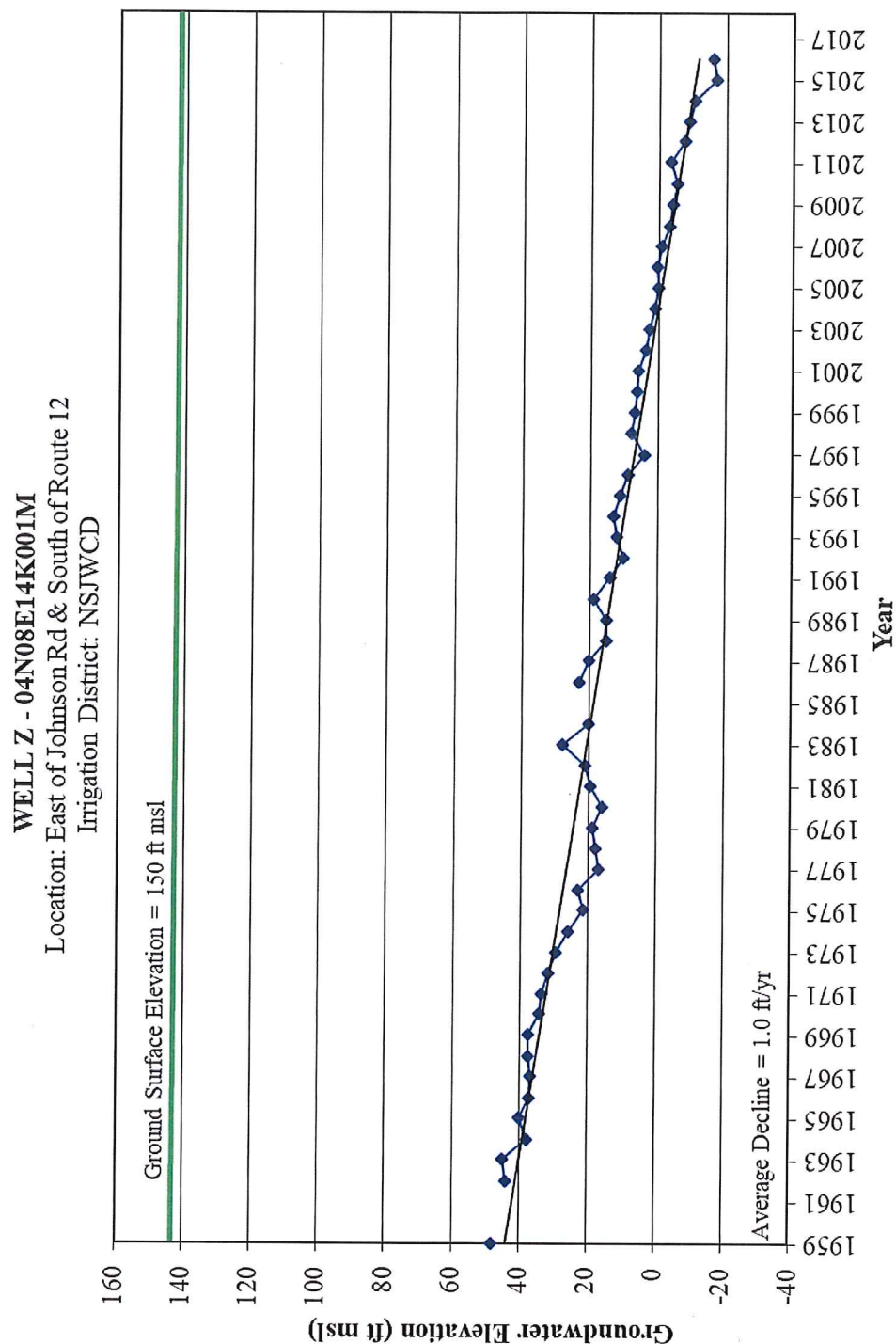


Figure 3-25: Fall Hydrograph Well Z

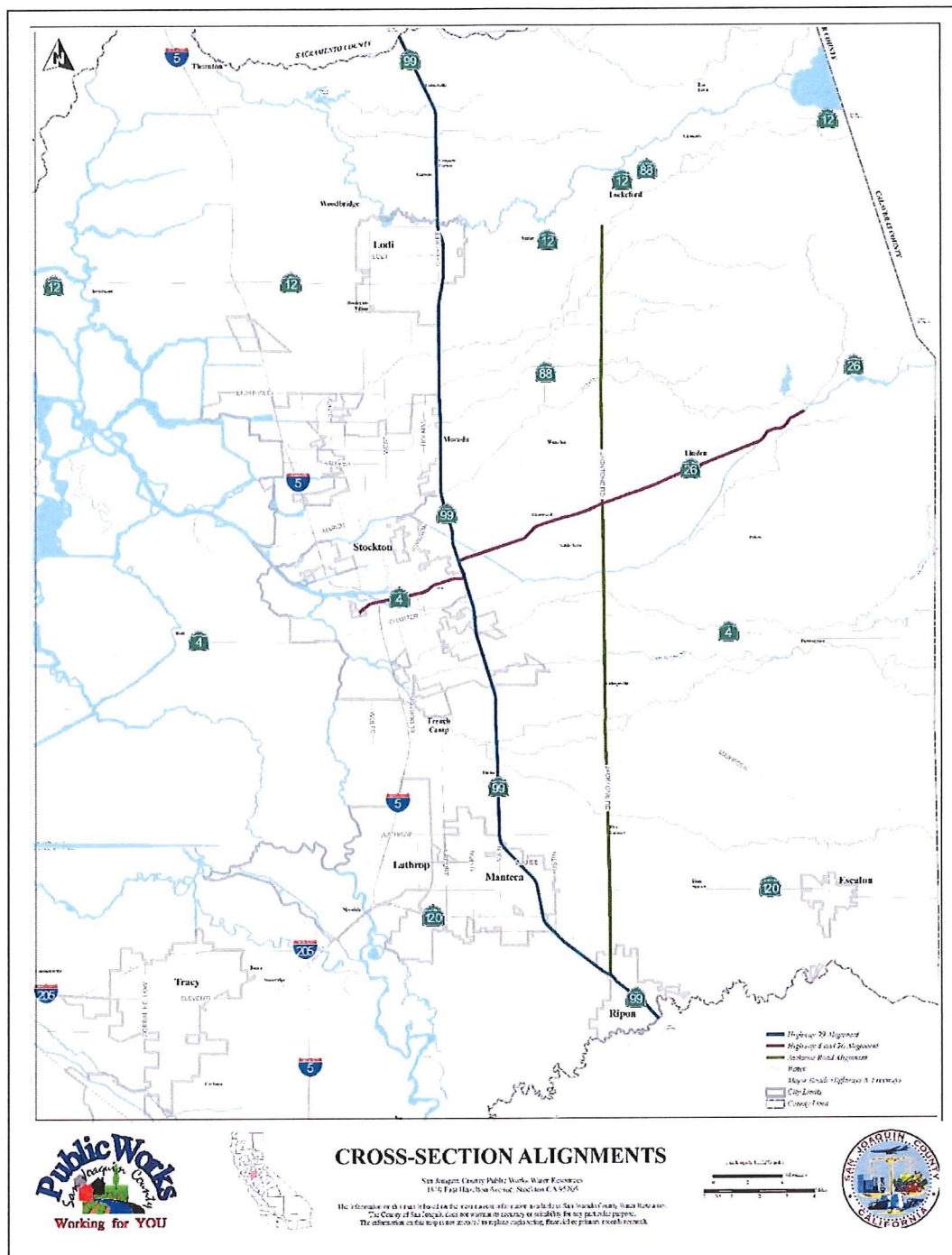


Figure 3-28: Cross Section Alignments

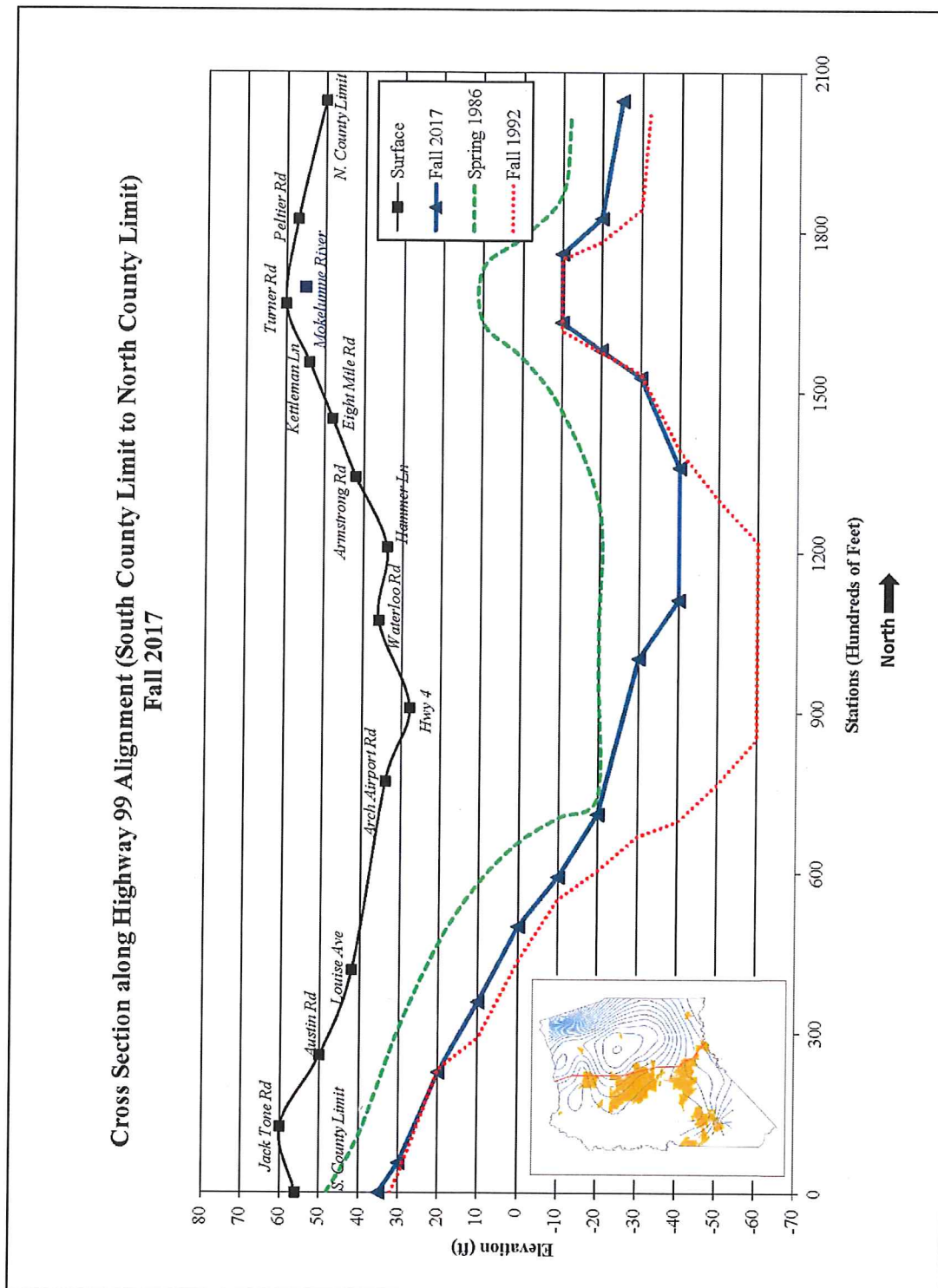


Figure 3-29: Highway 99 Cross Section Fall 2017

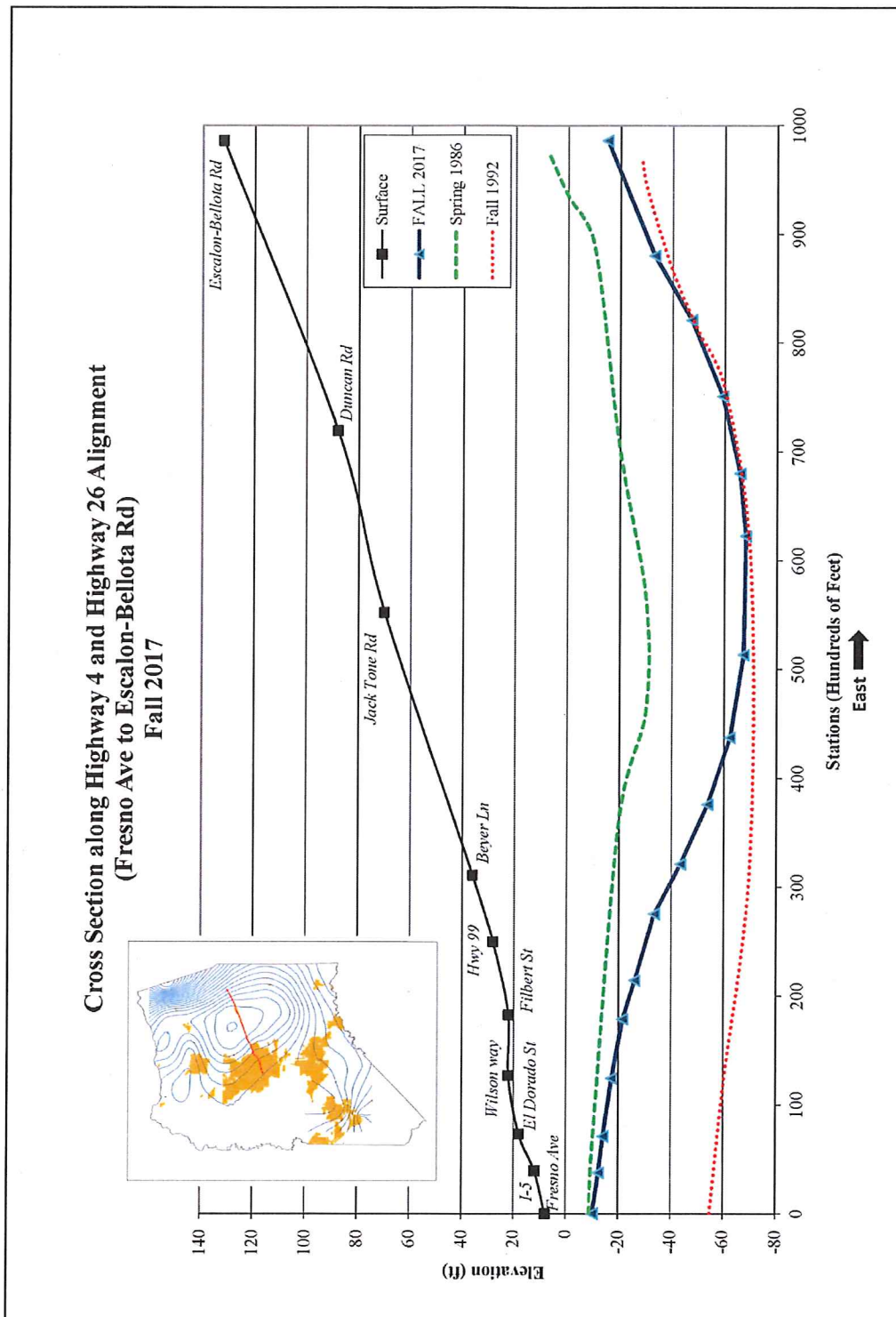


Figure 3-30: Highway 4 Cross Section Fall 2017

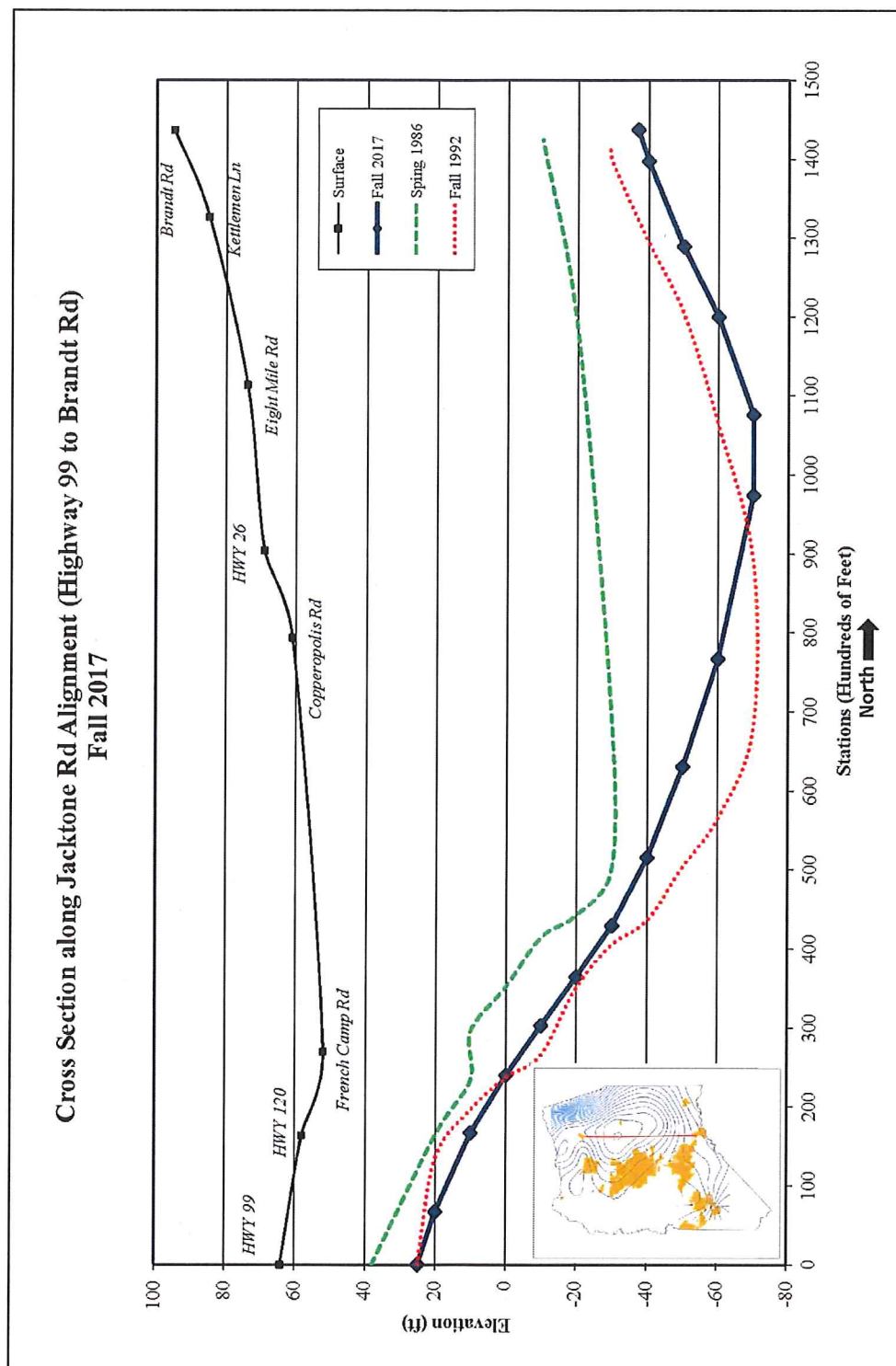


Figure 3-31: Jacktone Rd Cross Section Fall 2017

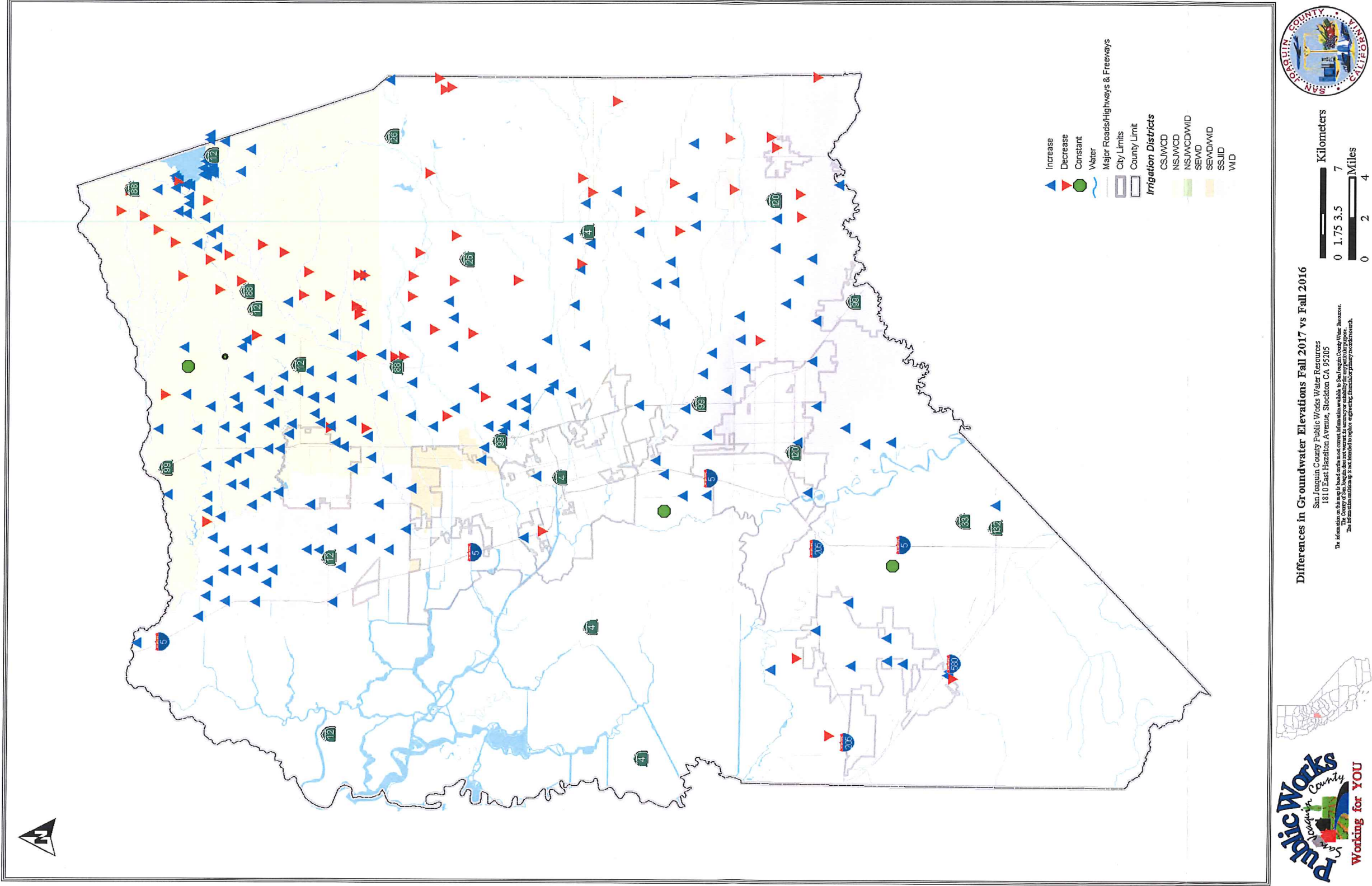


Figure 3-32: Differences in Groundwater Elevation Fall 2017

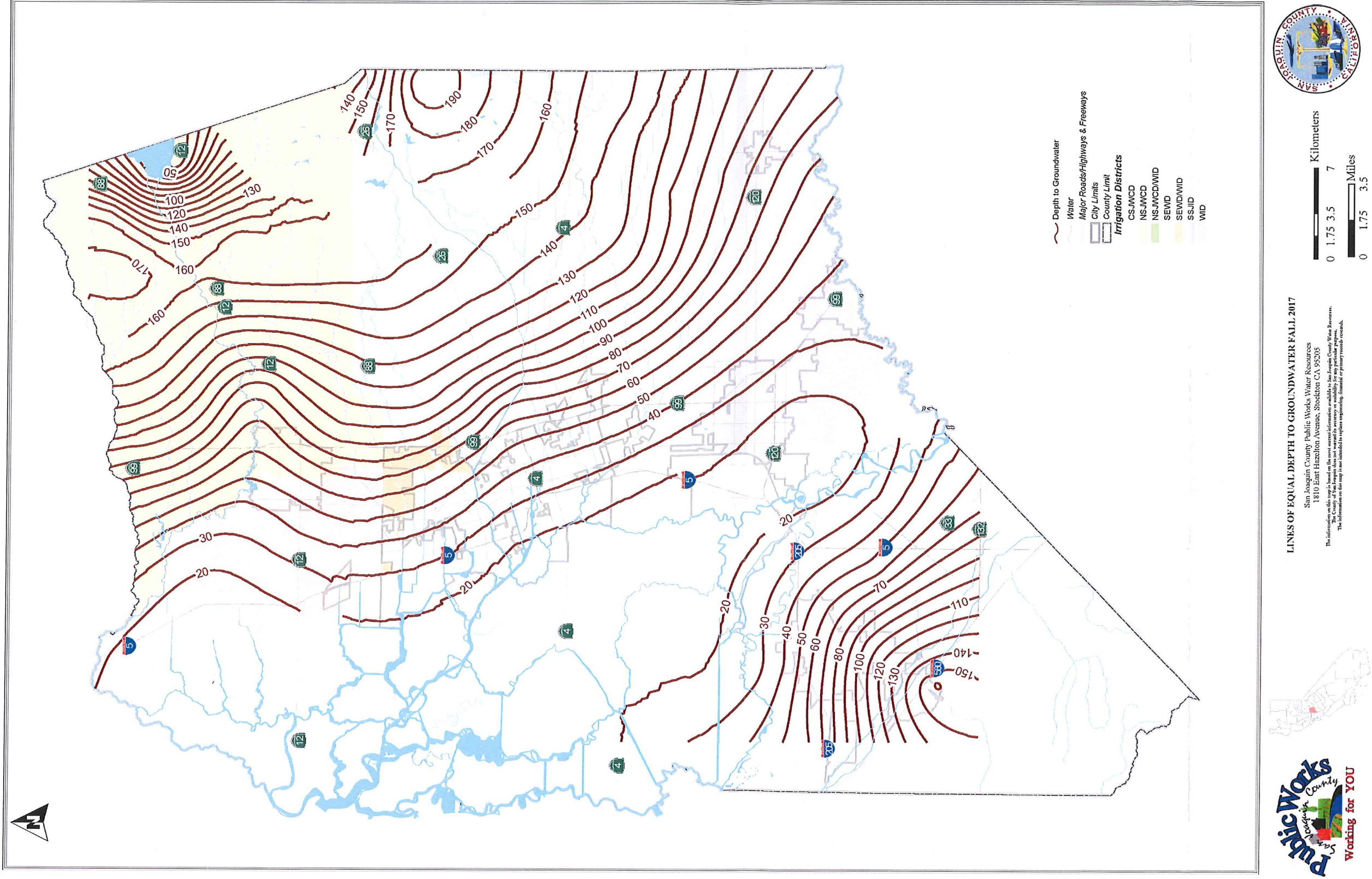


Figure 3-33: Lines of Equal Depth to Groundwater Fall 2017

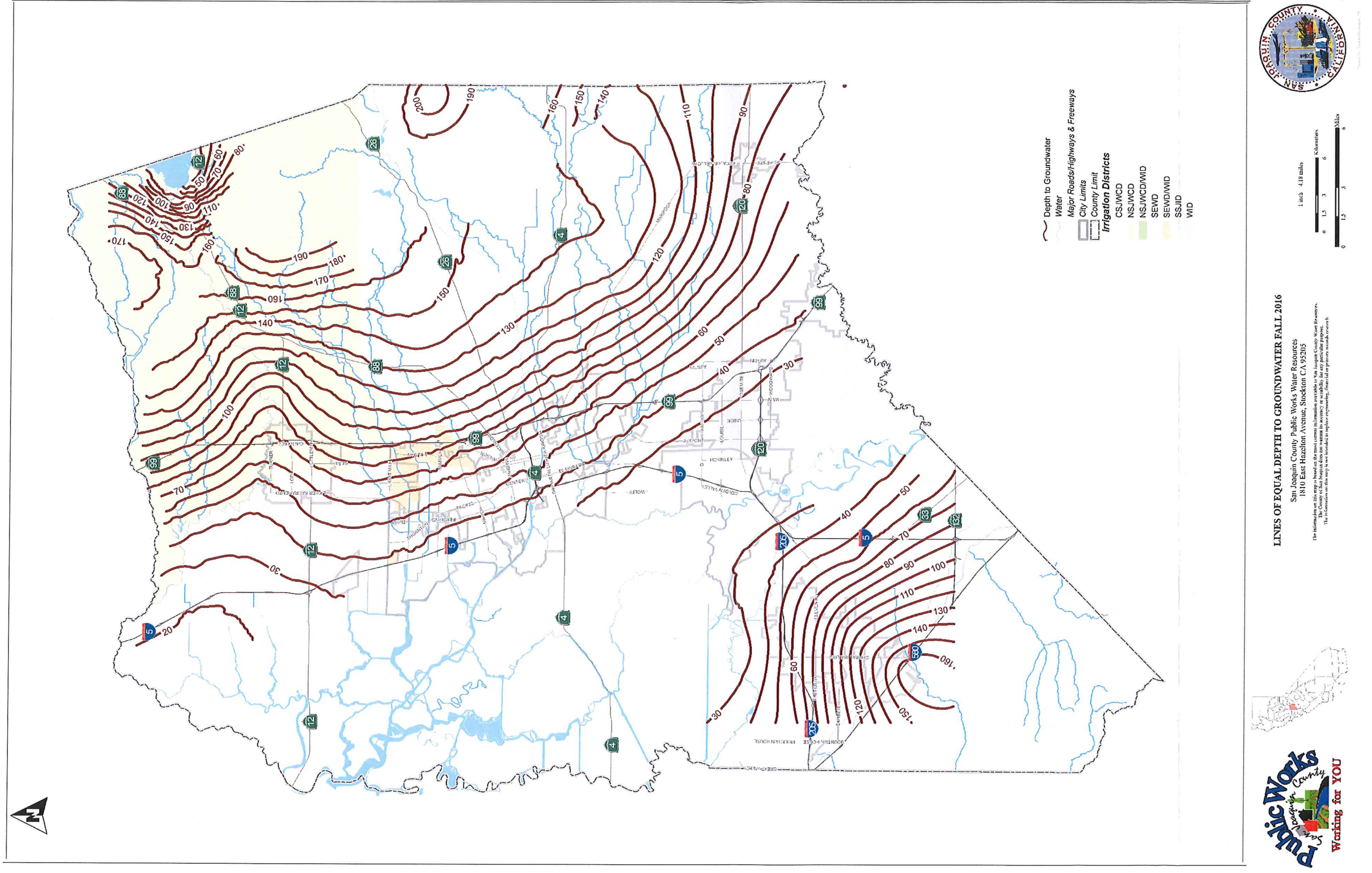
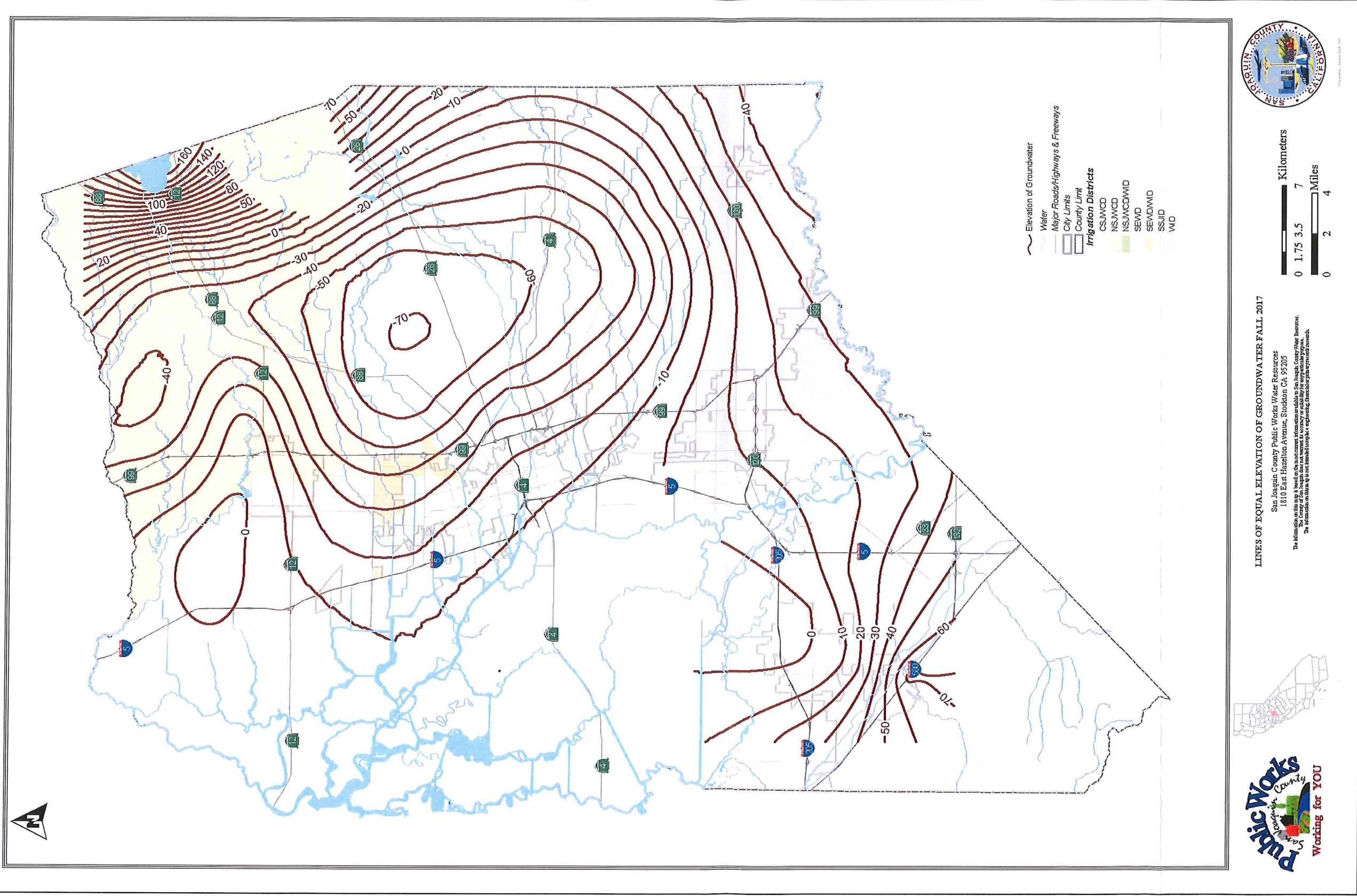


Figure 3-34: Lines of Equal Depth to Groundwater Fall 2016



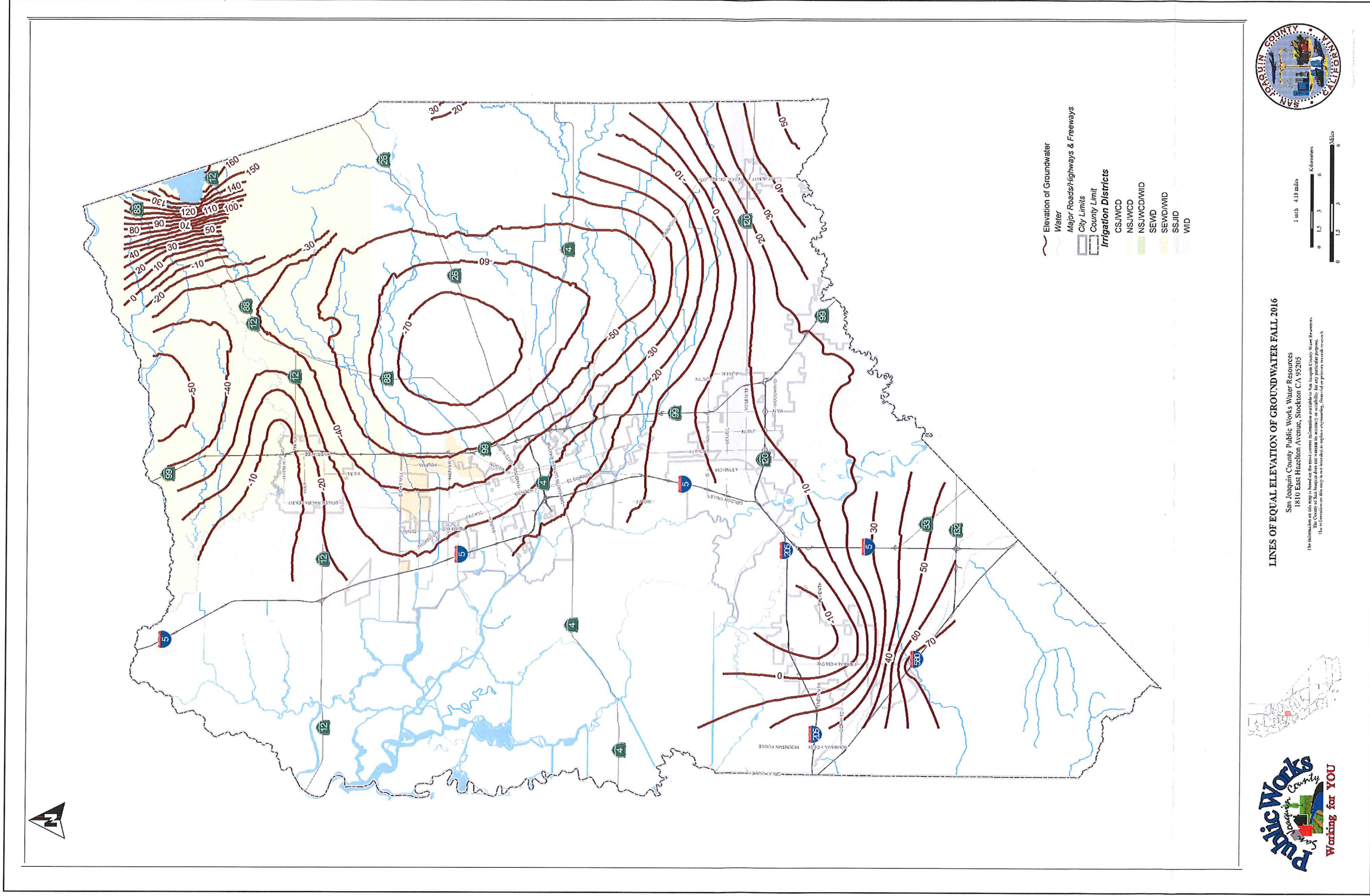


Figure 3-36: Lines of Equal Elevation of Groundwater Fall 2016