GROUNDWATER REPORT

FALL 1999 – SPRING 2007

SAN JOAQUIN COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT

San Joaquin County
Flood Control and Water Conservation District

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Copies of the Fall 1999 to Spring 2007 Groundwater Report may be purchased for $50 and 36″X48″ Contour Maps for $25 each from:

San Joaquin County Department of Public Works
P.O. Box 1810
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Make checks payable to: San Joaquin County Department of Public Works

Preface

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The reader will find in this report that the groundwater level and quality data collected throughout San Joaquin County from fall 1999 to spring 2007 has been consolidated into one document.

For many years, the San Joaquin County Flood Control and Water Conservation District (District) has collected, analyzed and published this information as semi-annual groundwater reports. Over the past few years, the District has worked to consolidate several obsolete groundwater data bases and has developed a centrally-located, web-based Groundwater Data Center (GDC) that contains over 30-years of groundwater data collected by the County and other cooperating agencies. The GDC allows the public and interested parties to access groundwater data in San Joaquin County via the internet at anytime. The GDC also includes groundwater contours for spring and fall seasons as well as the capability to create hydrographs and reports for any well found in the GDC. The GDC can be accessed at www.sjwater.org.

Recently, information updates to the GDC were completed and will be updated regularly. The semi-annual hard-copy reports will also continue to be published in a timely manner.

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

City of Stockton Municipal Utilities Department

East Bay Municipal Utility District

Libby-Owens-Ford, Lathrop

Morada Area Association

Newark Sierra Paperboard Company

Pacific Gas and Electric Company

San Joaquin County Department of Public Works

State of California, Department of Water Resources, Central District

Stockton East Water District

United States Bureau of Reclamation

United States Geological Survey

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 1999 – Spring 2007 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 had utilized data from federal, state and local government agencies as well as non-governmental sources.

Water level data is collected on a semi-annual basis in the months of April and October, to observe groundwater levels before and after peak groundwater pumping conditions. Over 550 wells, including 300 measured by the County staff make up 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 Semiannual Groundwater Report is to provide information in 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 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 month. Therefore, groundwater quality data will be published only in the fall report. The groundwater depth and elevation data will be published in both the spring and fall.

Saline intrusion from the west is a continuing concern, affecting the quality of groundwater in the 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^-) using the Thomas Scientific 675 pH/ISE meter in conjunction with the ISE Cl^- Combination Electrode, and analyzed for Electrical Conductivity (EC) using DiST 3 by Hanna Instruments. Total Dissolved Solids (TDS) are calculated using the formula: TDS = 0.64 X EC (umhos). 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 I– Rainfall Data

Summary of Rainfall Distribution

The underlying groundwater basin levels in San Joaquin County responds to changes in annual precipitation. There are four total annual precipitation graphs included in this report (Figures 1-1 through 1-4). These graphs reflect three areas located across San Joaquin County and one area in Calaveras County. The station located at the Stockton Fire Station No. 4, as well as the station located in Tracy Carbona, has pertinent data beginning in 1940. Lodi station has data from 1949 to 2007. The Camp Pardee station has data available from 1949 to 2007.

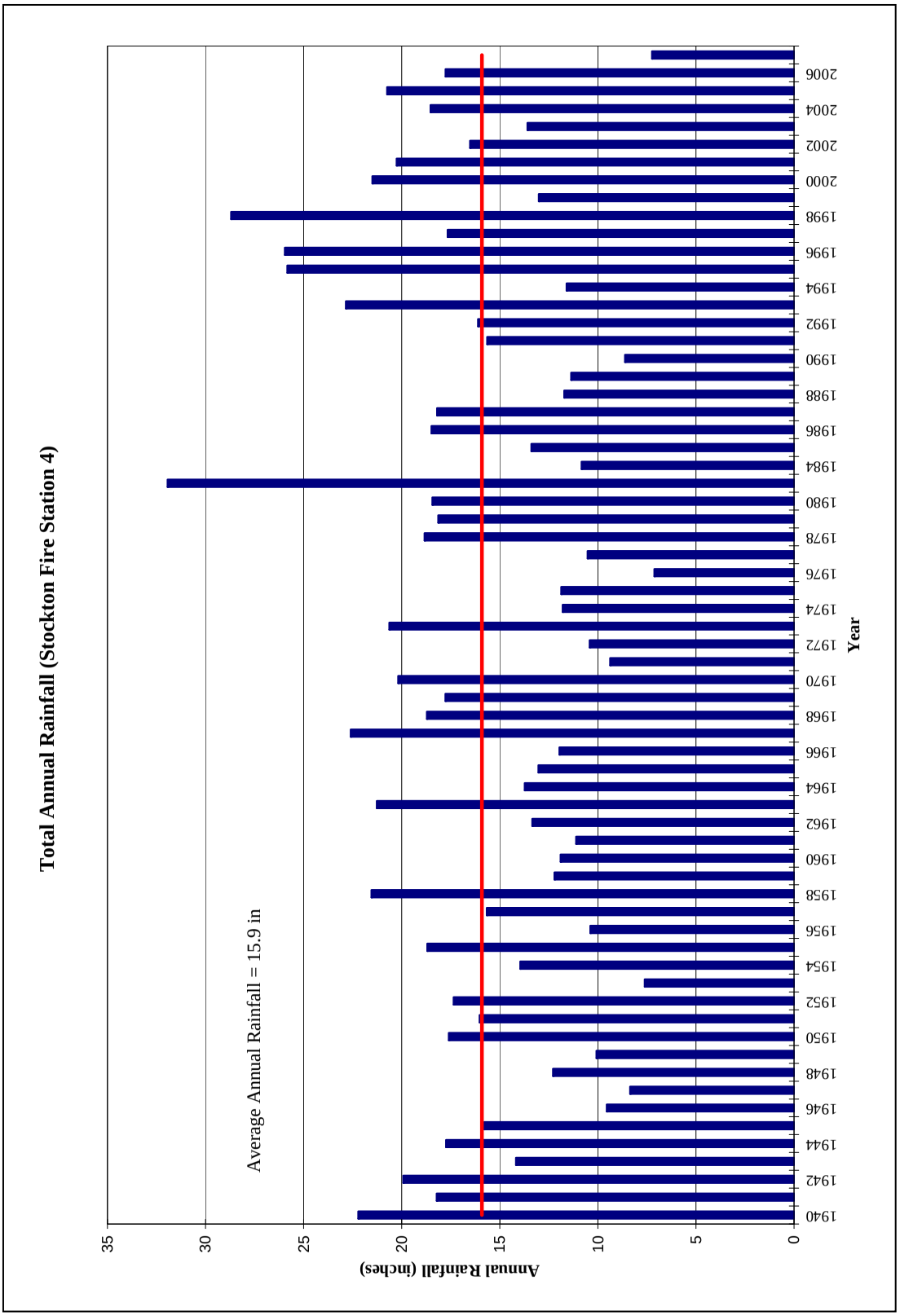

Figure 1-1: Total Annual Rainfall (Stockton Fire Station 4)

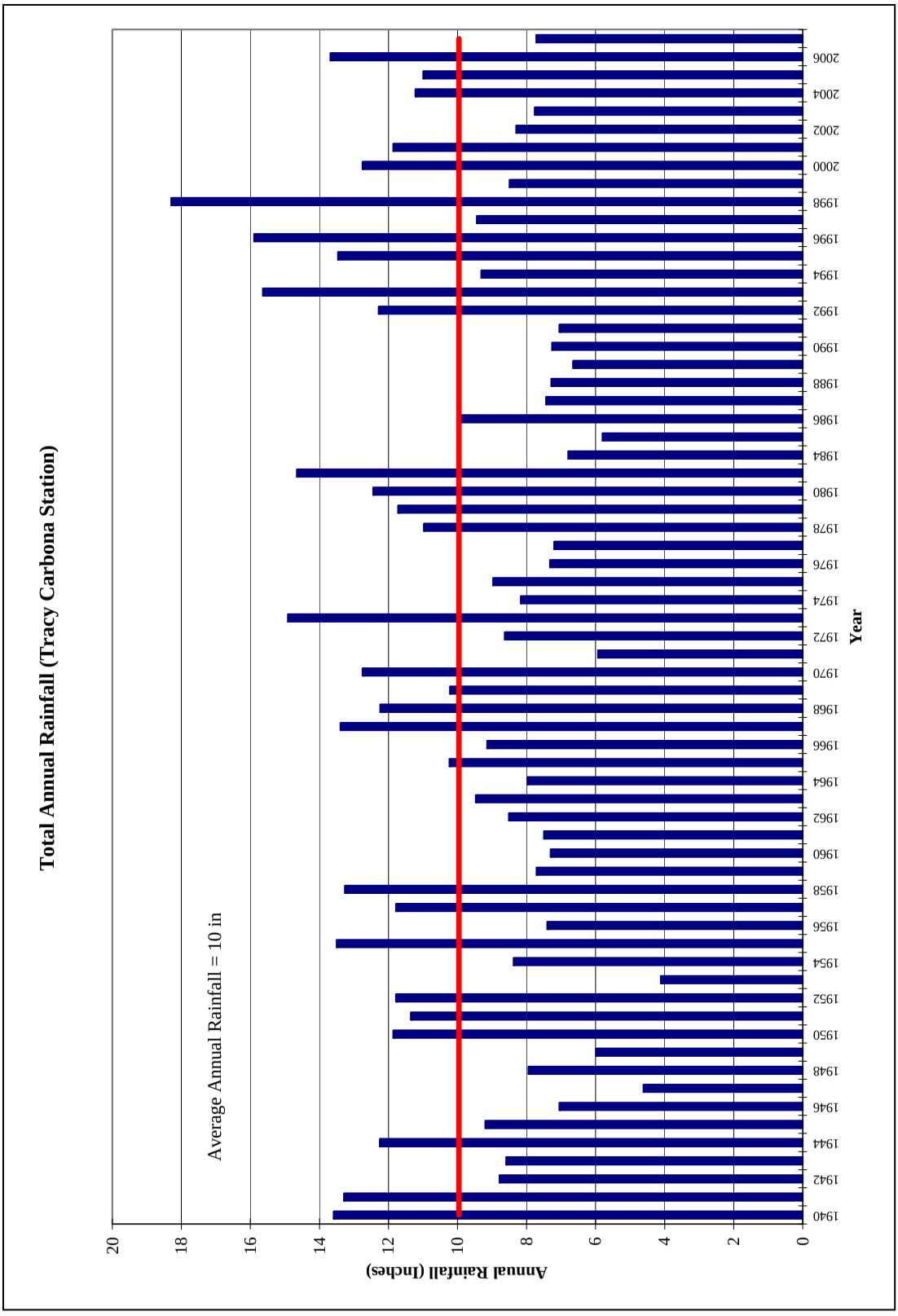

Figure 1-2: Total Annual Rainfall (Tracy Carbona Station)

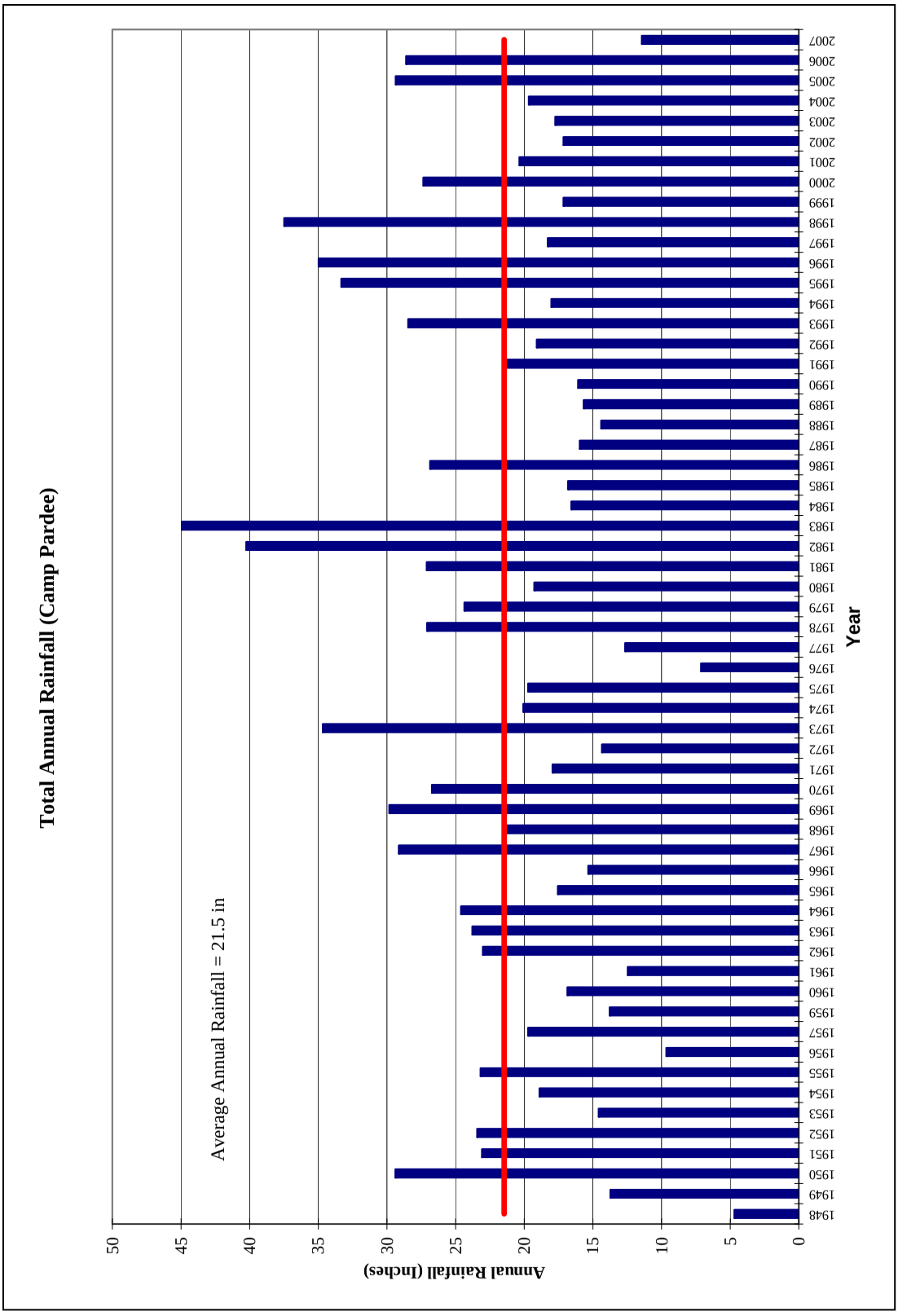

Figure 1-3: Total Annual Rainfall (Camp Pardee)

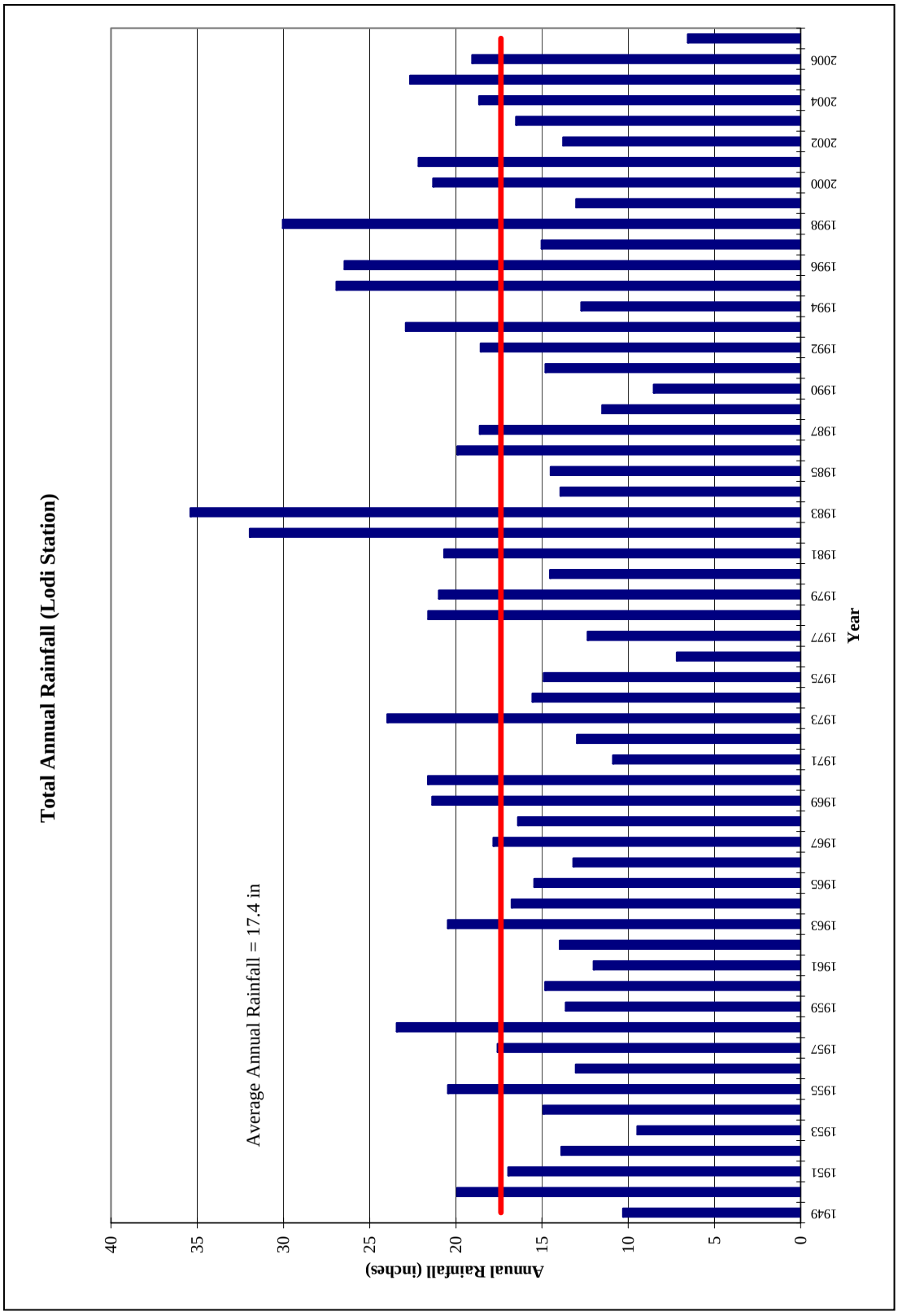

Figure 1-4: Total Annual Rainfall (Lodi Station)

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Section II – Groundwater Quality Monitoring

Summary of Groundwater Quality

The information contained in this Groundwater Report is summarized as follows:

North San Joaquin County – Since the groundwater quality monitoring program has been in effect, chlorides and TDS have increased over the years from 1977 to 2003 for this well.

North Stockton –Since the groundwater quality monitoring program has been in effect, chlorides have stayed constant in five of the wells tested. Three wells show a decrease in TDS since 1977. Two wells show an increase in TDS since 1977. No interpolation of the trend can be made for well 17M1 since we only have three data points available for this well.

Central Stockton –Since the groundwater quality monitoring program has been in effect, chlorides have increased over the years from 1977 to 2007 for this well. In the same time period TDS have slightly lowered in this well.

County Hospital Area - Since the groundwater quality monitoring program has been in effect, chlorides have increased over the years from 1977 to 2007 for all of these wells. Well 27R2 and well 34A3 show increases in TDS over the thirty year time frame. The other two wells in this area have maintained the same relative TDS concentrations over the years.

Lathrop – Three wells were sampled in Lathrop. Two wells show a slight increase in TDS and chlorides. One well shows a minor decrease in both TDS and chlorides.

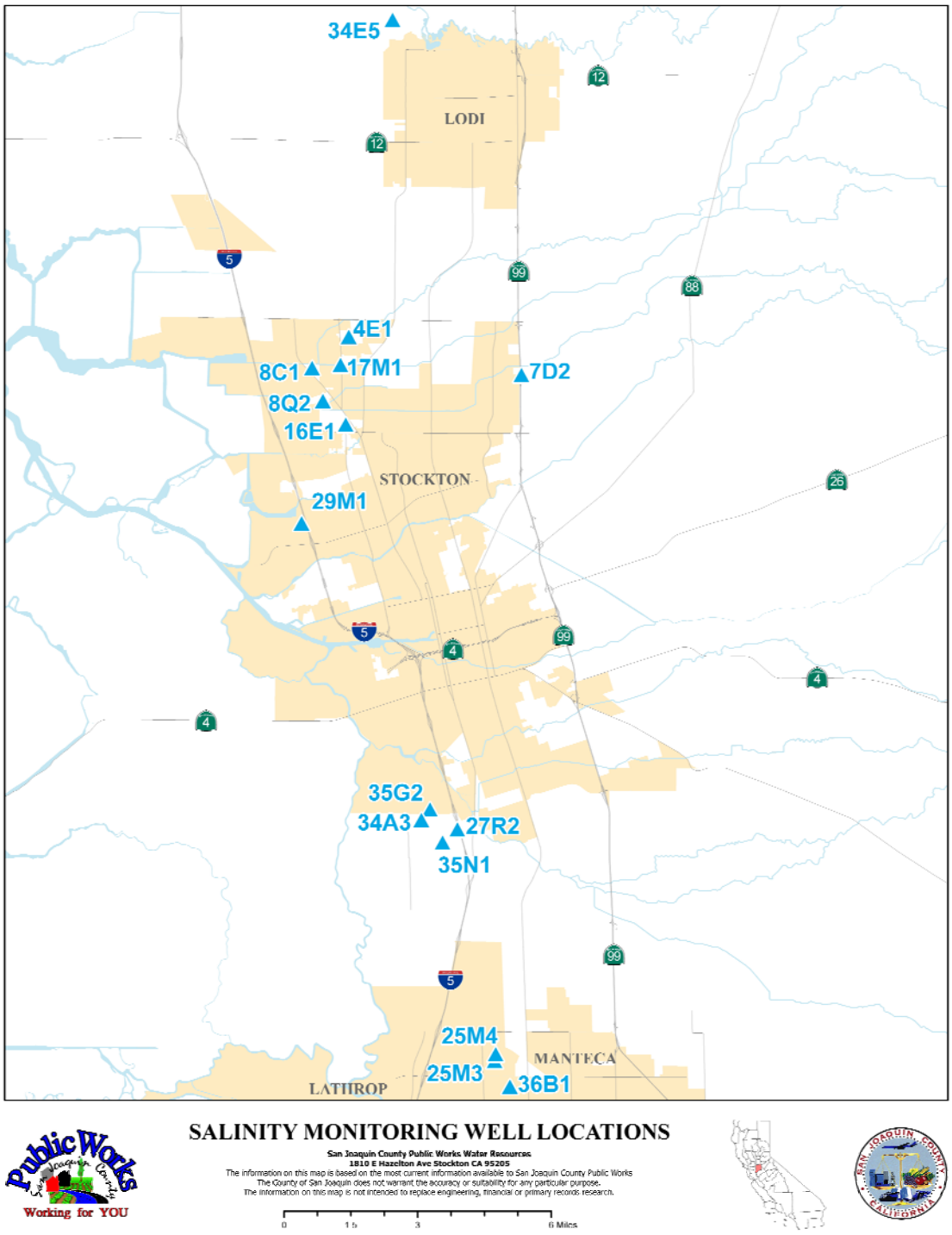

Figure 2-1: Salinity Monitoring Well Locations

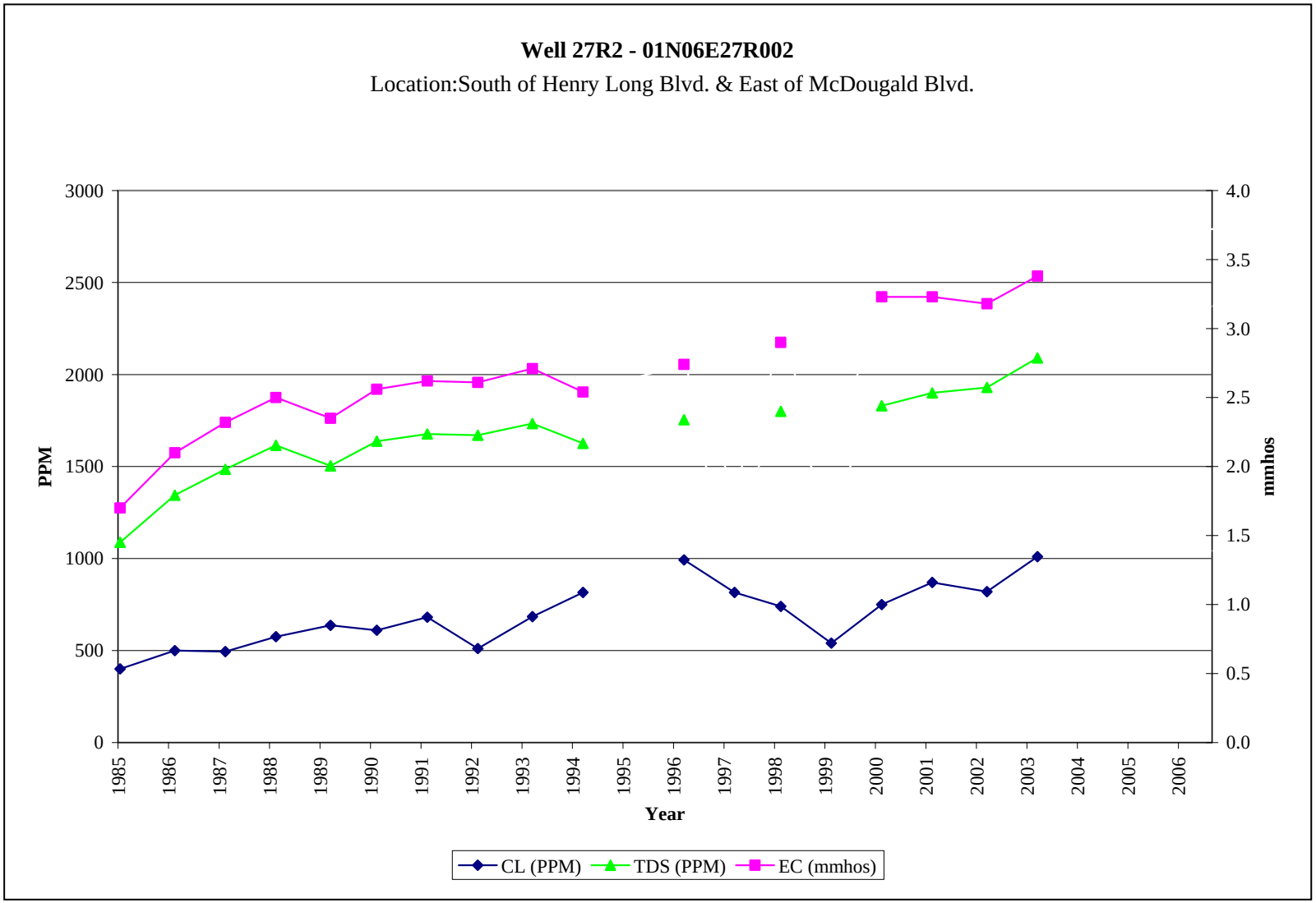

Figure 2-2: Quality Comparison Graph Well 27R2

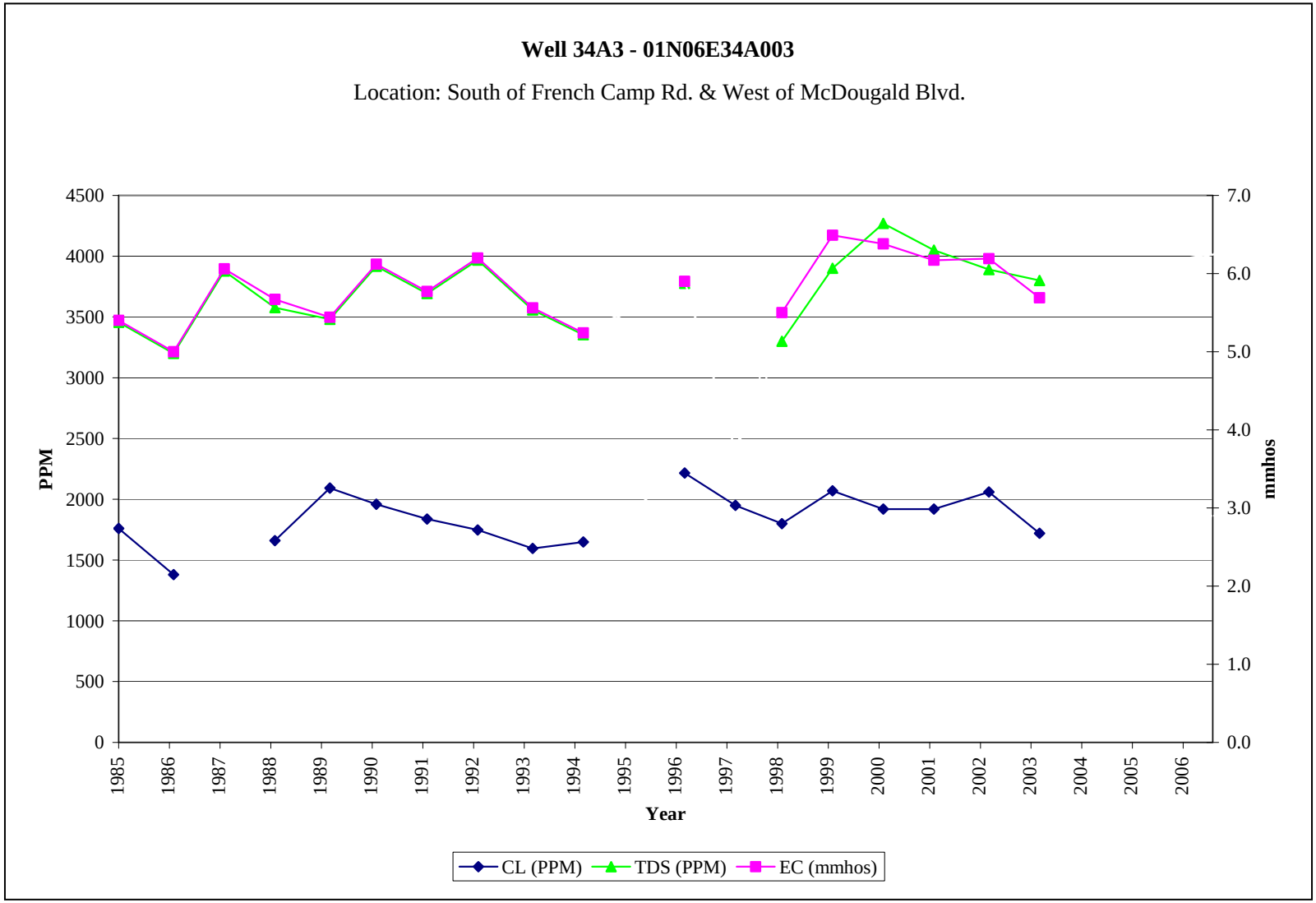

Figure 2-3: Quality Comparison Graph Well 34A3

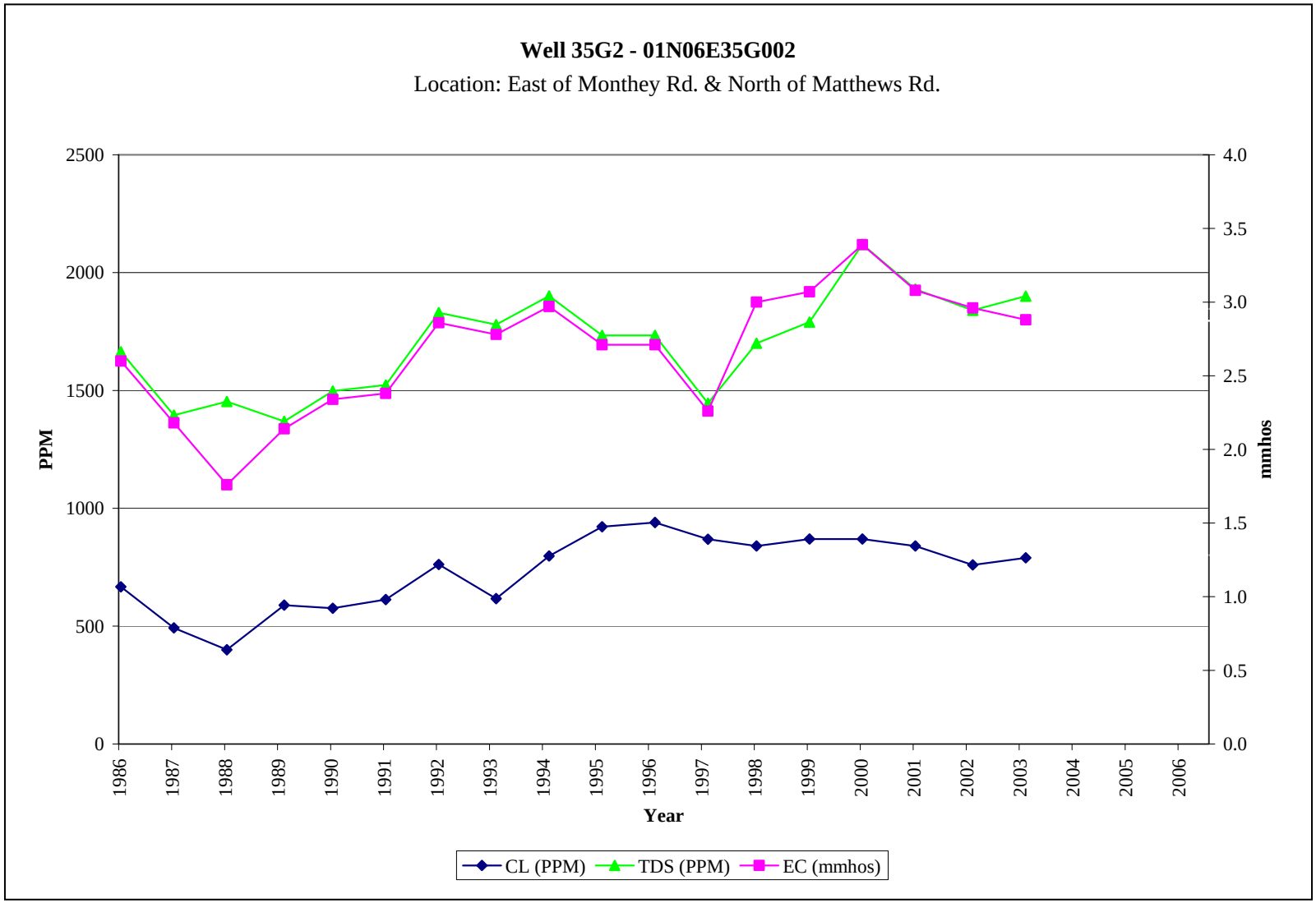

Figure 2-4: Quality Comparison Graph Well 35G2

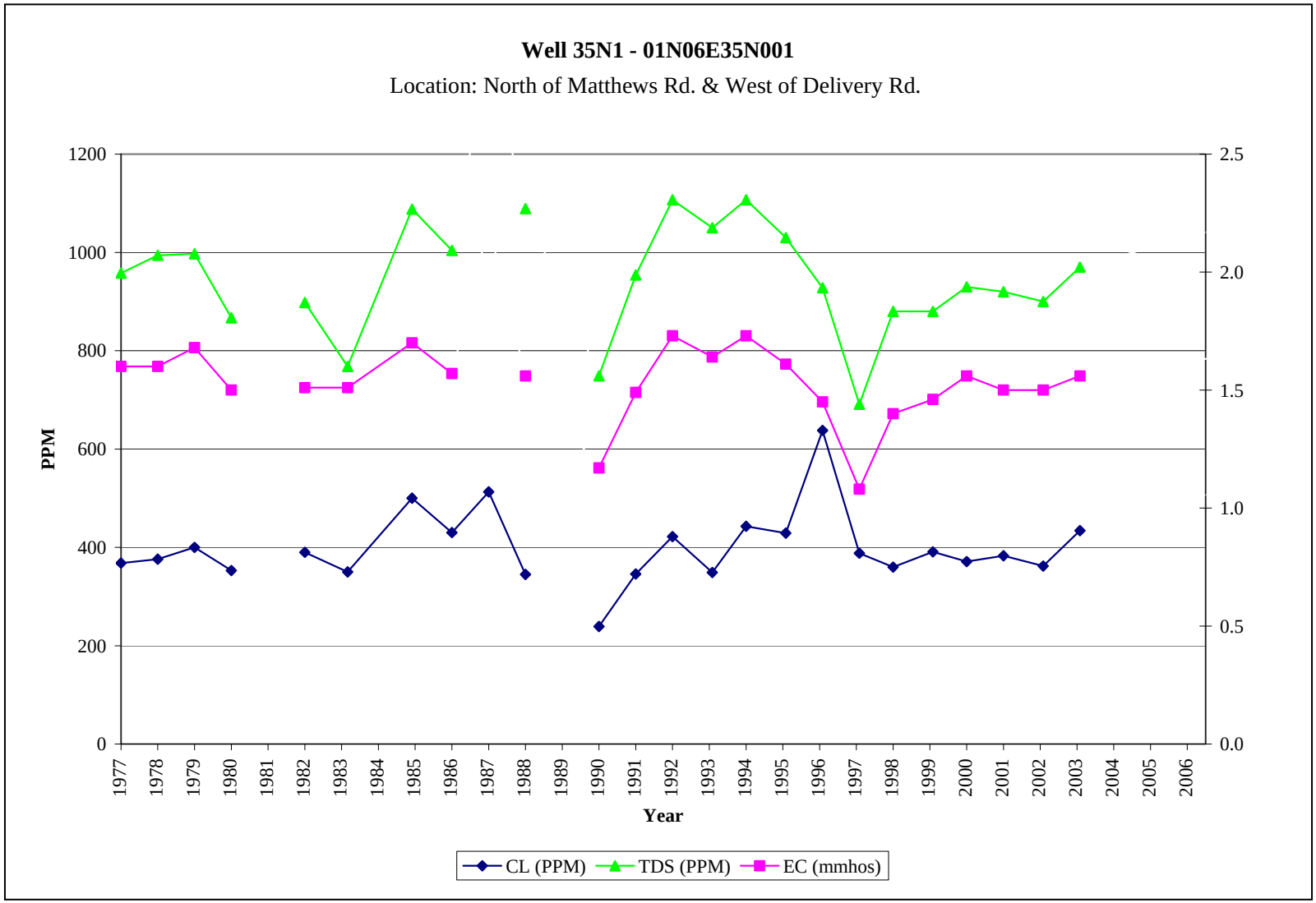

Figure 2-5: Quality Comparison Graph Well 35N1

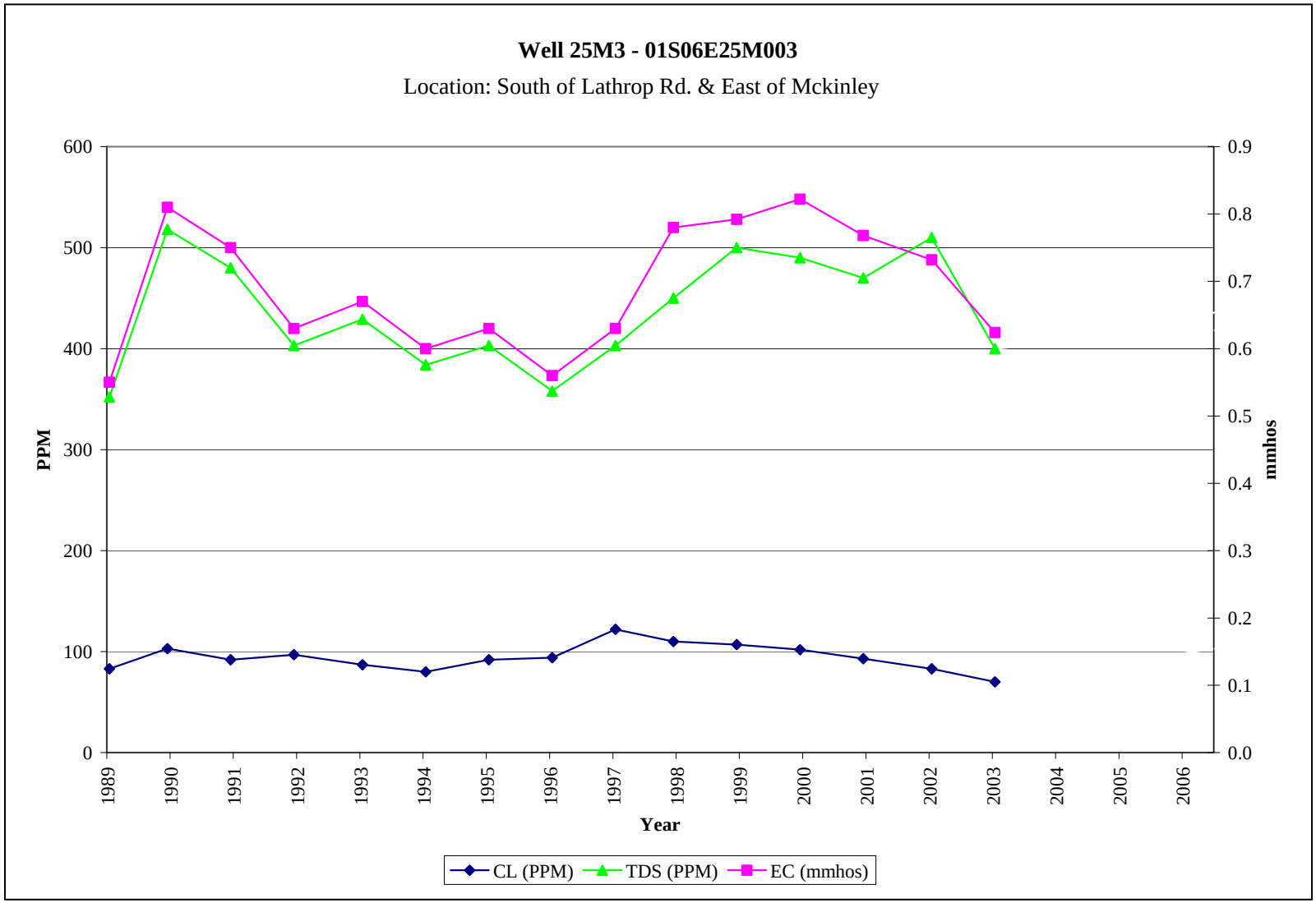

Figure 2-6: Quality Comparison Graph Well 25M3

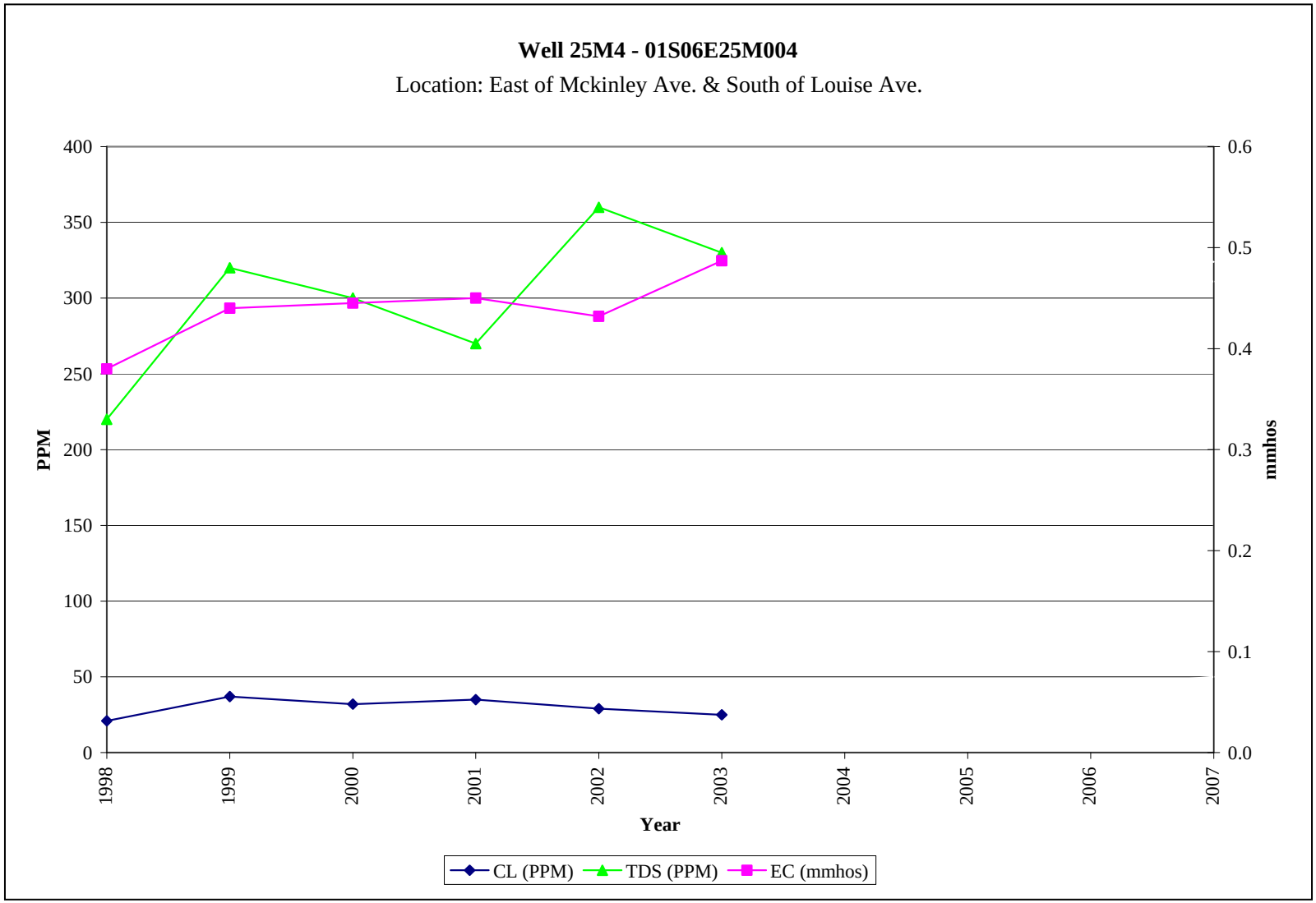

Figure 2-7: Quality Comparison Graph Well 25M4

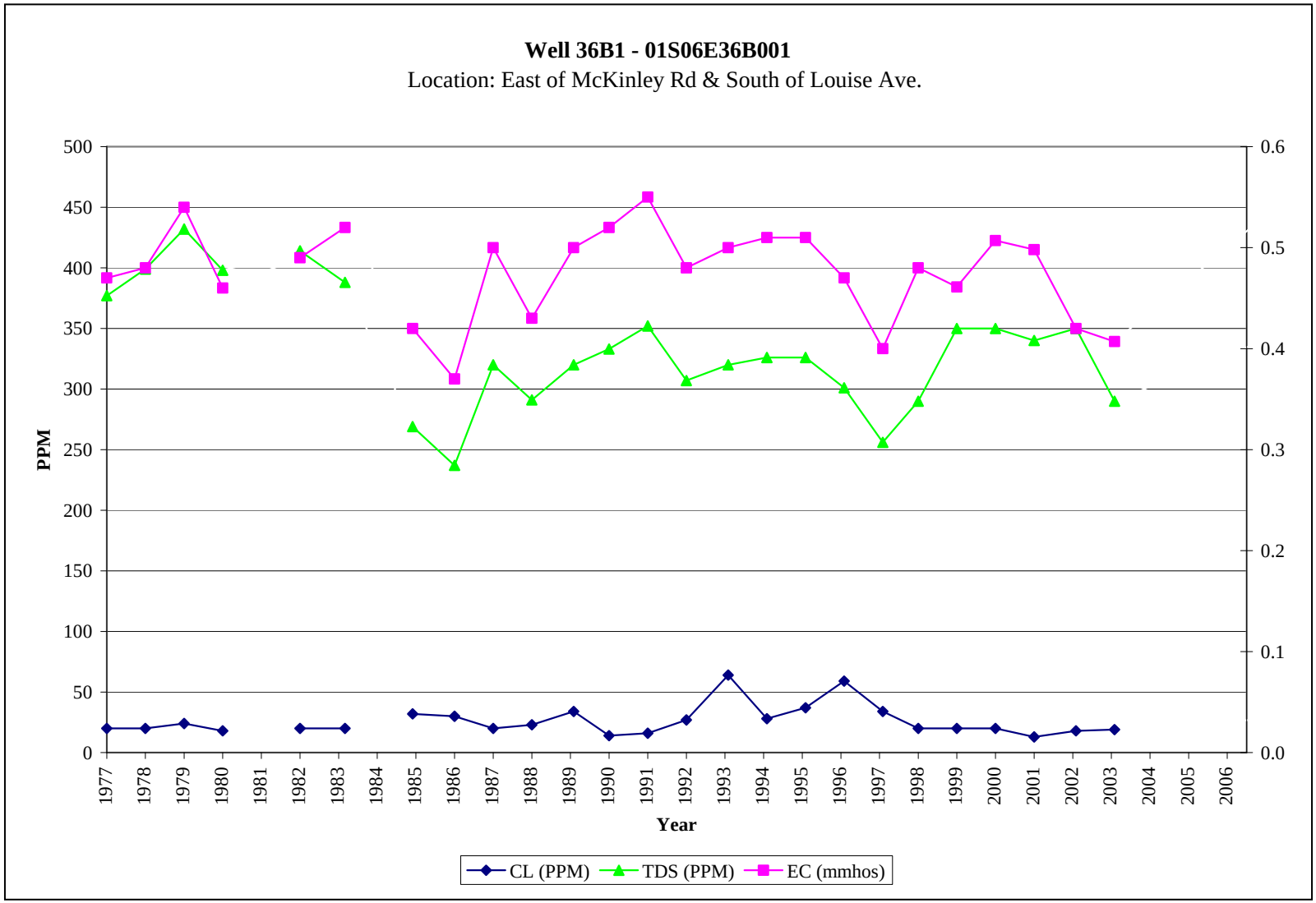

Figure 2-8: Quality Comparison Graph Well 36B1

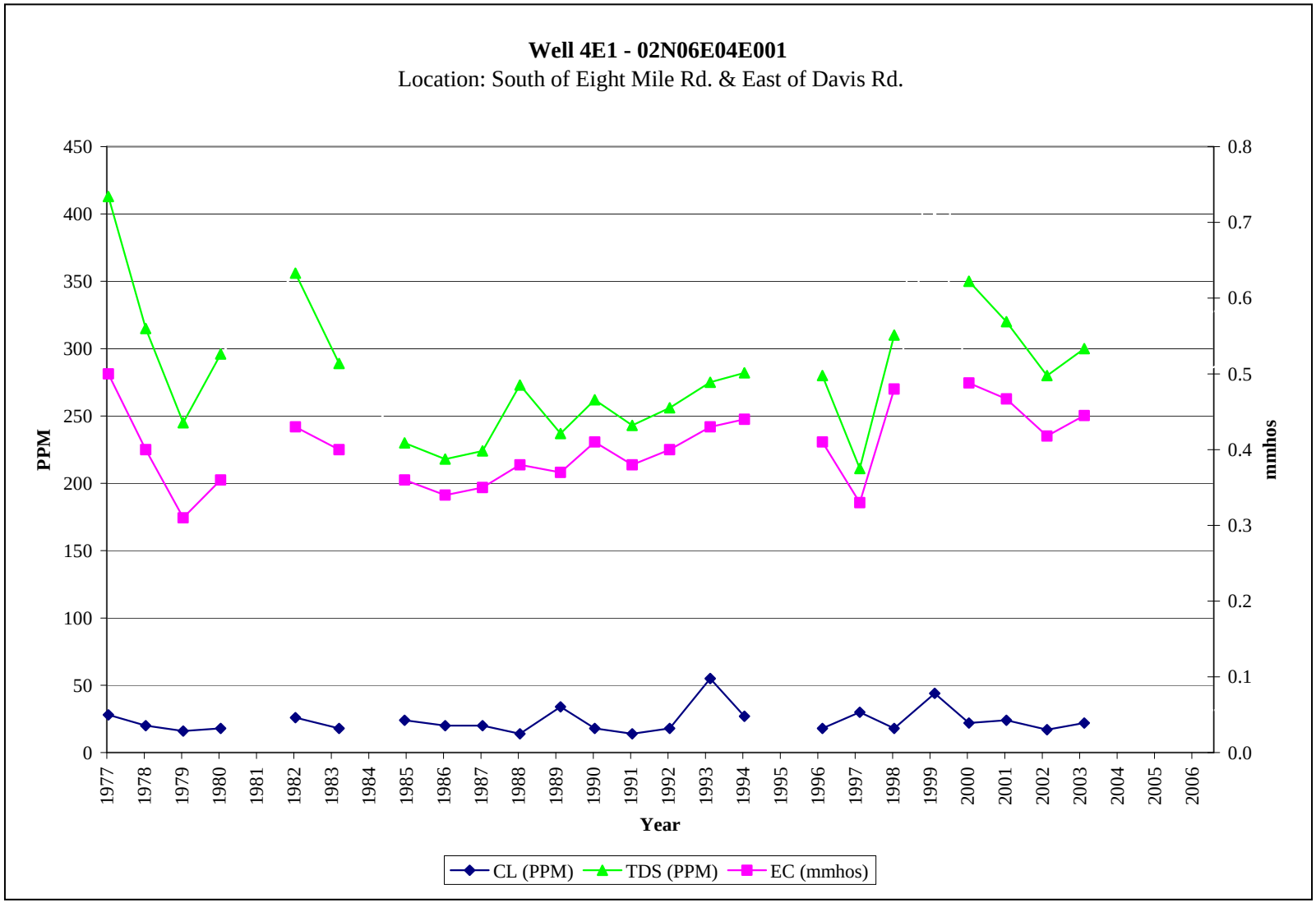

Figure 2-9: Quality Comparison Graph Well 4E1

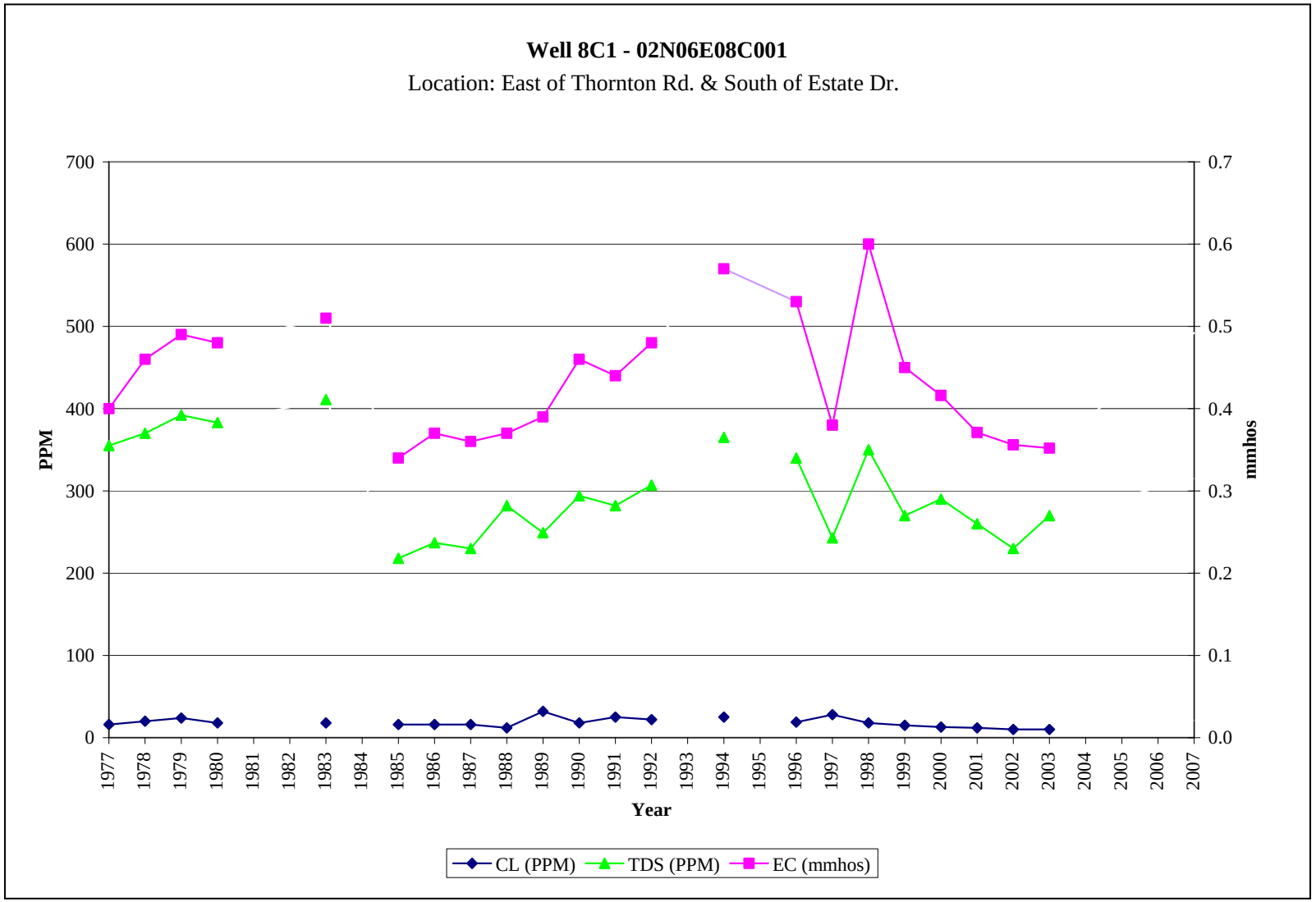

Figure 2-10: Quality Comparison Graph Well 8C1

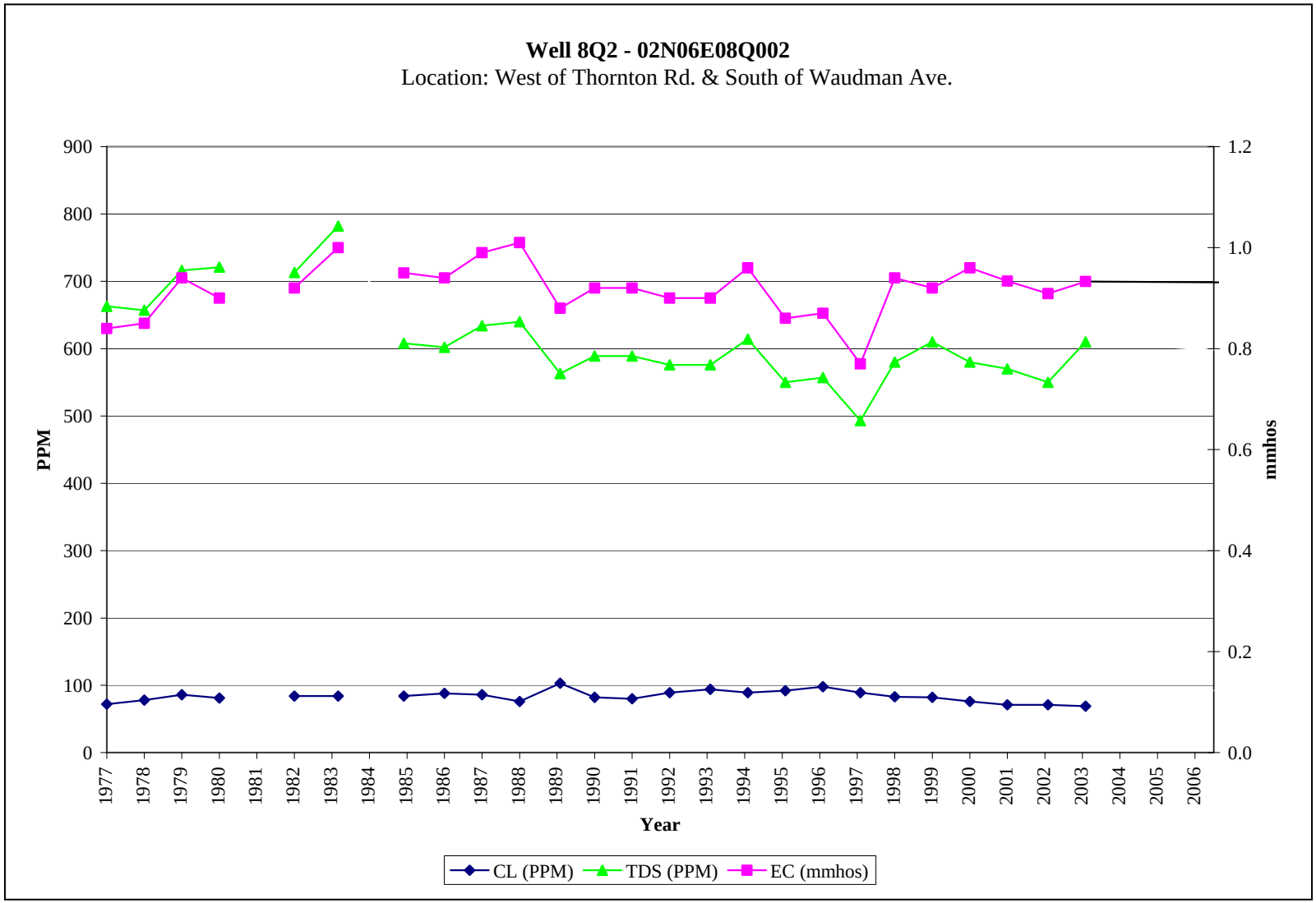

Figure 2-11: Quality Comparison Graph Well 8Q2

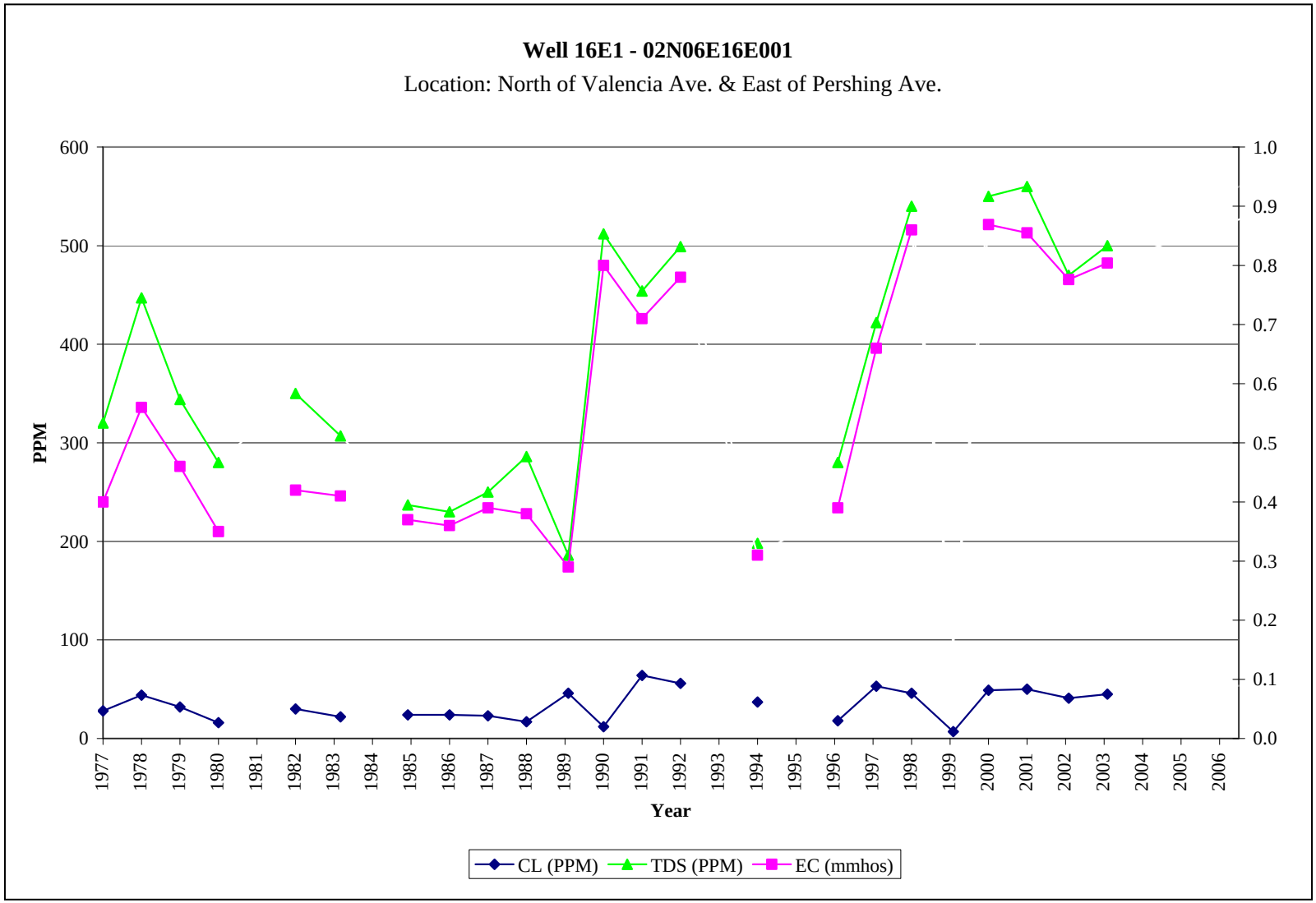

Figure 2-12: Quality Comparison Graph Well 16E1

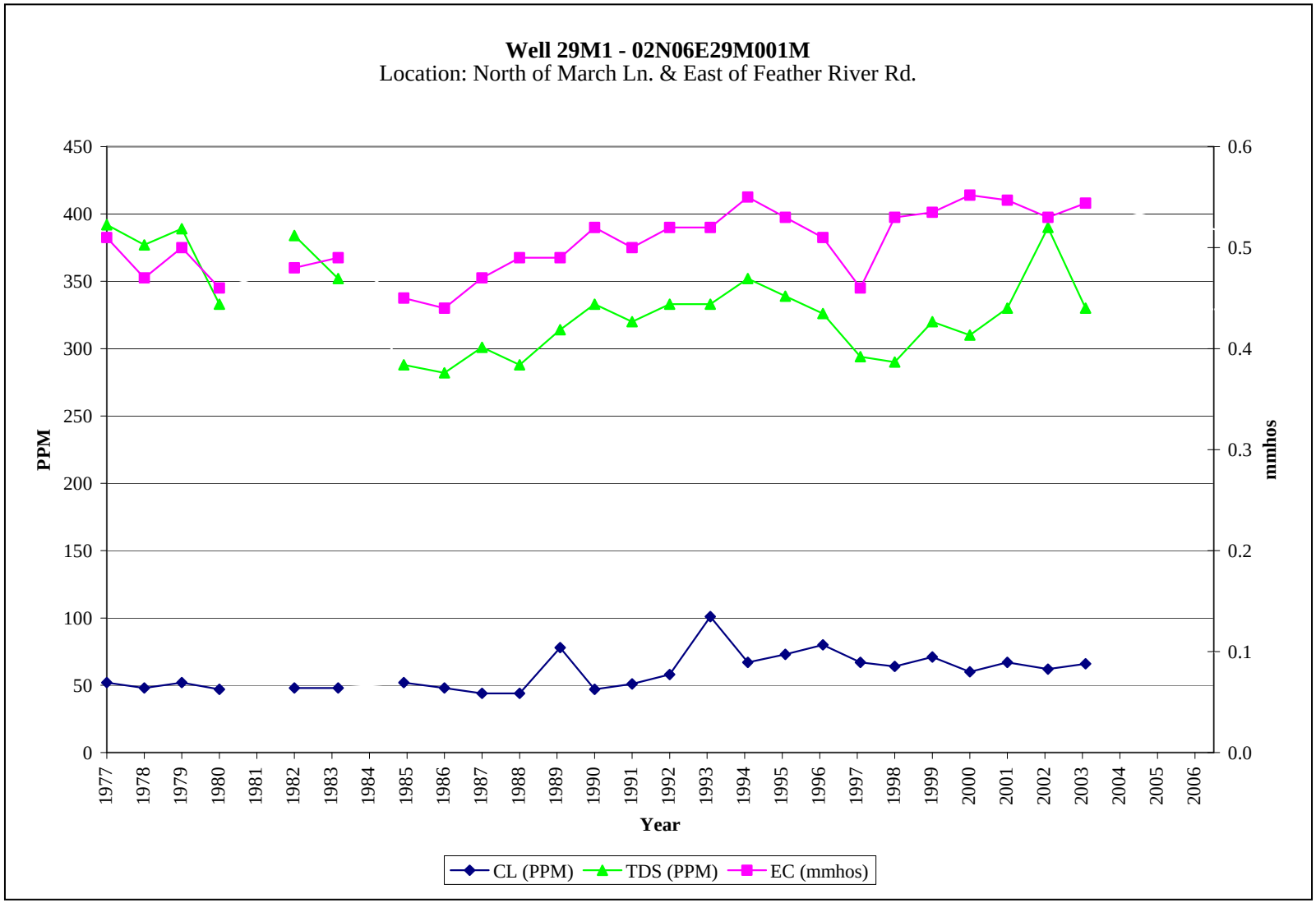

Figure 2-13: Quality Comparison Graph Well 29M1

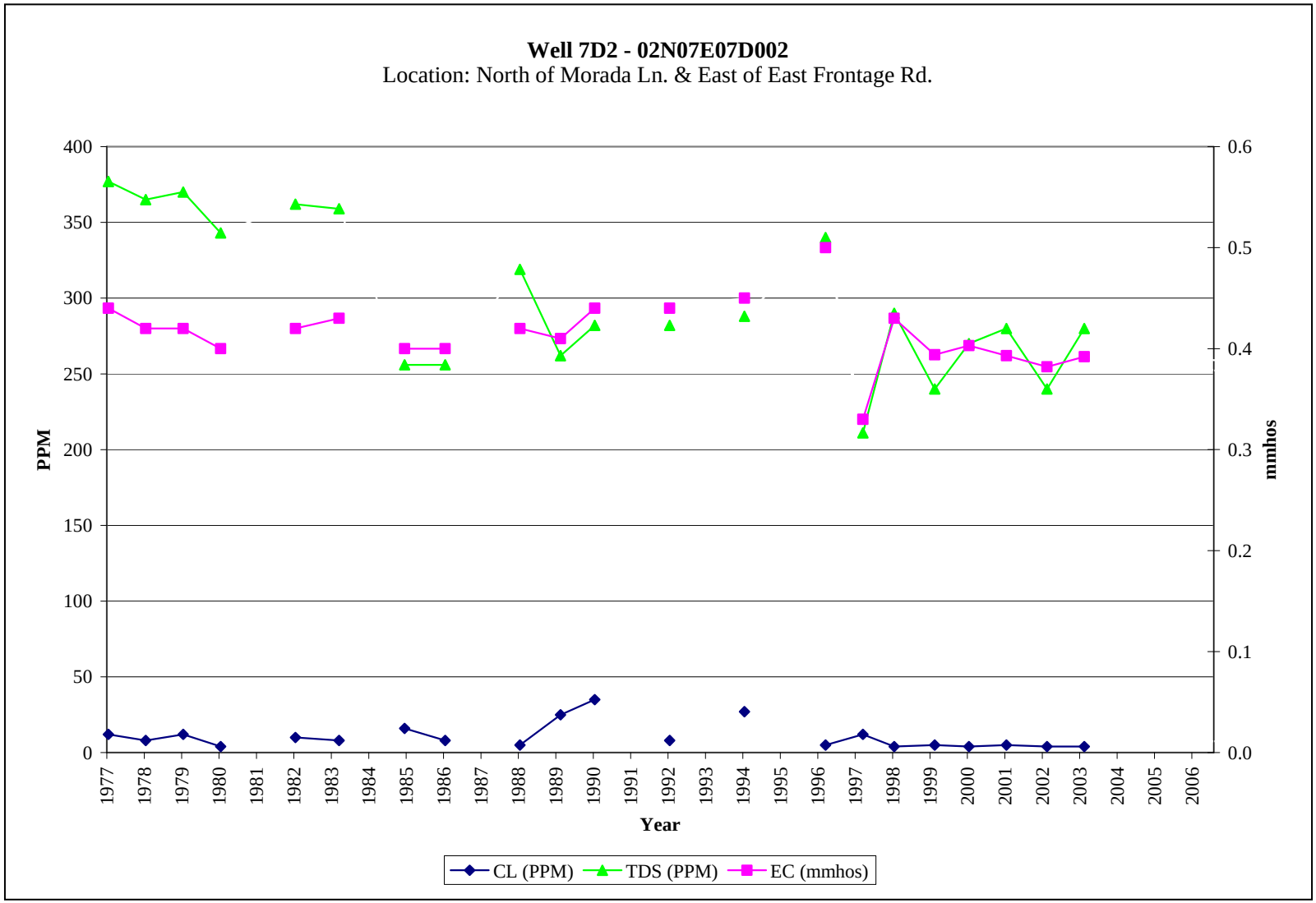

Figure 2-14: Quality Comparison Graph Well 7D2

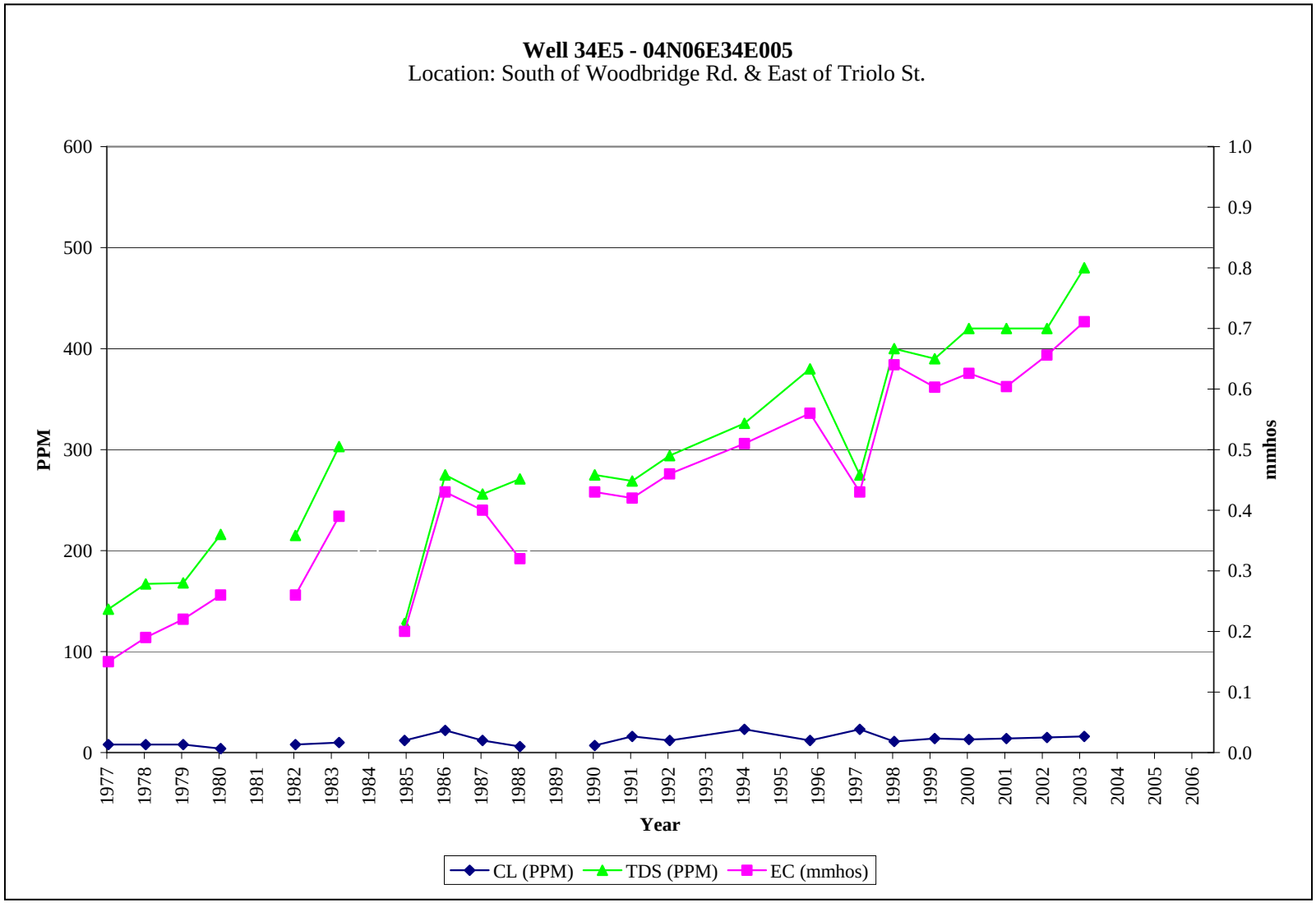

Figure 2-15: Quality Comparison Graph Well 34E5

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Section III – Fall Groundwater Elevation Monitoring

Summary of Fall 1999-2006 Groundwater Elevations

The information contained in the fall 1999 to fall 2006 Groundwater Report is summarized as follows:

GROUNDWATER ELEVATIONS

Banta-Carbona Irrigation District (BCID) – Three well were measured in the BCID area. Only one well was measured in both the fall of 1999 and fall of 20006, this well gained 1.1 feet in groundwater elevation.

Oakdale Irrigation District (OID) – Four wells were measured in the OID area. All four wells show an increase in groundwater elevations.

Central San Joaquin Water Conservation District (CSJWCD) – Fifty-four wells were measured in CSJWCD. Forty-nine of them were measured both in the fall of 1999 and fall 2006. Fourteen decreased in groundwater elevations. Thirty-four wells show an increase in groundwater elevations. One well's groundwater elevation remained constant.

Miscellaneous County Areas – Thirty-four wells measured across the County in areas that are not a part of any irrigation district. Twenty-nine wells were measured both in the fall of 1999 and in the fall of 2006. Nineteen wells descended in groundwater elevations. Nine wells increased in groundwater levels by 1.4 feet. One well's groundwater level remained constant.

North San Joaquin Water Conservation District (NSJWCD) – Forty-seven wells were measured in NSJWCD. Thirty-seven were measured in the fall of 1999 and fall of 2006. Twenty-five wells decreased in groundwater elevations. Nine wells increased in groundwater elevations. Three wells experienced no change in groundwater levels.

Stockton East Water District (SEWD) – Seventy-nine wells were measured in SEWD. Seventy one wells were measured in the fall of 1999 as well as in the fall of 2006. Forty-four wells decreased in groundwater elevations. Tweny-three wells show increases in groundwater elevations. Four wells experienced no change in groundwater elevations.

South San Joaquin Irrigation District (SSJID) – Seventeen wells were measured in the SSJID area. Sixteen wells were measured in the fall of 1999 and in the fall of 2006. Fifteen wells decreased in groundwater elevations. One well increased in groundwater elevations.

Woodbridge Irrigation District (WID) – Twenty eight wells were measured in the WID. Twenty-five wells were measured in the fall of 1999 and in the fall of 2006. Fifteen wells decreased in groundwater elevations. Nine wells increased in groundwater elevation. One of the well had no change.

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Table 3-1: Comparison of BCID Area Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
02S06E31N001	------	54.5	------
03S06E05E001	-13.0	------	------
03S06E27N001	76.2	77.3	1.1

Total Number of Wells	3
Total Number of Wells Compared	1
Number of Wells with Decrease	0
Number of Wells with Increase	1
Number of Wells with No Change	0

Table 3-2: Comparison of OID Area Water Eelvations

State Well ID	Fall 1999	Fall 2006	Difference
01S09E21J002	42.5	44.7	2.2
01S09E28M002	38.7	43.2	4.5
01S09E23N001	53.5	55.5	2.0
01S09E24R001	73.1	74.7	1.6

Total Number of Wells	4
Total Number of Wells Compared	4
Number of Wells with Decrease	0
Number of Wells with Increase	4
Number of Wells with No Change	0

Table 3-3: Comparison of CSJWCD Area Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
01S07E12H001	-19.3	-14.4	4.9
01S07E01J001	-25.1	-21.4	3.7
01S08E06D001	-26.6	-21.5	5.1
01S07E02J001	-30.0	-24.0	6.0
01N07E26H003	-37.2	-32.4	4.8
01S07E03D001	-29.5	------	------
01N07E15M002	-36.4	-38.5	-2.1
01N08E07M001	-50.1	-49.6	0.5
01N07E11M001	-29.7	-35.1	-5.4
01N07E14J002	-52.6	-39.6	13.0
01N07E13J002	-55.5	-45.5	10.0
01N07E24A001	-53.1	-40.6	12.5
01N07E24A001	-38.6	-40.6	-2.0
01N07E24R001	-59.5	-39.5	20.0
01N08E18A002	-36.0	-37.5	-1.5
01N08E16G001	-37.6	-36.5	1.1
01N08E16H002	-36.3	-35.5	0.8
01N08E22J001	-27.0	-33.6	-6.6
01N08E11L001	-40.4	-39.5	0.9
01N09E06N001	-40.5	------	------
01N09E05J001	-41.0	-11.4	29.6
01N09E05J001	-14.5	-11.4	3.1
01N09E01C001	6.3	15.7	9.4
01N09E13D001	5.0	18.2	13.2
01N09E15B002	-3.0	0.3	3.3
01N09E17D001	-34.5	-22.3	12.2
01N08E13J001	-42.2	-12.2	30.0
01N09E30C005	-25.7	-31.2	-5.5
01N08E36F001	-23.5	-19.4	4.1
01N09E31J001	-9.0	-0.7	8.3
01N08E35R002	-24.0	-22.8	1.2
01N08E35F001	-27.9	-42.9	-15.0
01N08E26A002	-30.3	-31.3	-1.0
01N08E23H00	-34.4	------	------
01N08E27R002	-30.4	------	------
01N08E33H001	-28.7	-25.7	3.0
01N08E29M002	-40.5	-39.6	0.9
01S08E05A001	-30.4	-49.9	-19.5
01S08E05R001	-27.8	-28.4	-0.6
01S08E04R001	-23.2	-25.2	-2.0
01S08E20B001	0.3	-7.2	-7.5
01S08E09Q001	-17.4	-17.4	0.0
01S08E15P001	-5.8	-4.6	1.2
01S08E23A001	5.7	1.4	-4.3

State Well ID	Fall 1999	Fall 2006	Difference
01S08E14B001	-6.2	-5.7	0.5
01S08E11F001	-16.9	-16.6	0.3
01S08E12B001	-9.7	-3.3	6.4
01S09E07N001	3.6	6.8	3.2
01S09E09R001	11.3	15.2	3.9
01S09E19Q002	15.0	15.6	0.6
01S09E07A001	-4.3	4.9	9.2
01S09E05H002	2.5	------	------
01N09E29R001	-7.0	-19.0	-12.0
01N09E19C001	-24.5	-21.5	3.0

Total Number of Wells	54
Total Number of Wells Compared	49
Number of Wells with Decrease	14
Number of Wells with Increase	34
Number of Wells with No Change	1

Table 3-4: Comparison of Miscellaneous County Areas Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
02S05E13N001	13.9	13.4	-0.5
01S05E35Q002	1.3	------	------
02S05E08B001	-4.7	-4.2	0.5
01S05E31R002	0.6	0.6	0.0
03S05E04H001	62.0	51.5	-10.5
02S05E24M001	-31.0	-32.5	-1.5
03S06E23C001	4.4	-2.7	-7.1
03S06E03F002	16.3	19.0	2.7
02S06E27E001	9.6	12.0	2.4
02S06E02P001	2.0	------	------
02S06E10F001	-6.5	------	------
02S06E26B001	7.0	6.7	-0.3
02S06E25J001	16.9	16.6	-0.3
02S07E31N001	15.0	15.5	0.5
01S06E14F001	-2.6	-5.6	-3.0
01S06E04J001	-3.0	-3.5	-0.5
01S07E15F002	1.8	-0.6	-2.4
01S07E14M001	5.5	4.7	-0.8
01S07E14P003	4.2	3.2	-1.0
01S08E29K001	17.0	11.0	-6.0
01S08E19R001	14.3	5.8	-8.5
01S08E30C002	17.1	9.7	-7.4

State Well ID	Fall 1999	Fall 2006	Difference
01S07E13J001	-3.6	-3.4	0.2
01N09E22G002	-0.4	------	------
01S09E11J002	43.0	34.2	-8.8
01S09E02R001	35.3	------	------
01N09E36P001	16.5	23.0	6.5
03N06E29C001	-25.8	-26.3	-0.5
03N06E15C004	-13.0	-19.0	-6.0
04N06E34J002	24.6	22.4	-2.2
04N06E17G004	3.5	4.0	0.5
04N05E03D003	-9.1	-2.3	6.8
05N05E28L003	-3.2	-3.7	-0.5
04N05E16N001	-9.0	-8.7	0.3

Total Number of Wells	34
Total Number of Wells Compared	29
Number of Wells with Decrease	19
Number of Wells with Increase	9
Number of Wells with No Change	1

Table 3-5: Comparison of NSJWCD Area Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
03N08E22A001	-37.6	-40.4	-2.8
03N08E07J001	-35.3	------	------
03N08E19C001	-35.3	------	------
03N07E25G001	-39.3	------	------
03N07E33G002	-38.5	------	------
03N07E18D012	-22.3	-23.5	-1.2
03N07E08E002	-16.6	-19.5	-2.9
03N07E09C001	-16.0	-19.3	-3.3
03N07E17D004	-20.0	-22.1	-2.1
03N07E17K002	-26.5	-33.5	-7.0
03N07E19J004	-33.5	-42.0	-8.5
03N07E22M002	-30.0	-35.2	-5.2
03N07E21L003	-31.5	------	------
03N07E23C002	-35.0	-32.3	2.7
03N07E15C004	-30.5	-27.5	3.0
03N07E03R001	-18.3	-18.8	-0.5
04N07E33H001	27.0	28.8	1.8
04N07E28J002	-13.7	-13.2	0.5
04N07E27C002	-12.5	-19.5	-7.0
04N07E21F001	-8.8	-23.9	-15.1

State Well ID	Fall 1999	Fall 2006	Difference
04N07E12E001	-35.5	-35.5	0.0
05N07E34Q001	-38.9	-40.4	-1.5
05N07E34G001	-40.3	-36.6	3.7
05N08E31R001	-30.7	------	------
04N08E06N002	-31.7	-41.7	-10.0
04N08E17A001	-25.3	-17.3	8.0
04N08E17J001	-19.3	-21.2	-1.9
04N08E21M001	-20.9	-20.7	0.2
04N08E14K001	6.9	0.4	-6.5
04N09E31M001	------	-3.4	------
04N08E32N001	-26.7	-28.7	-2.0
04N07E36L001	-11.5	-18.1	-6.6
04N06E25R001	4.5	0.0	-4.5
04N06E24F001	-13.0	-20.0	-7.0
04N07E19K001	-8.1	-16.1	-8.0
04N07E17N001	-31.3	-31.3	0.0
04N07E07A001	-30.5	------	------
05N07E31J001	-24.0	-24.0	0.0
05N07E31Q001	-18.9	------	------
05N06E36R001	-20.5	-19.5	1.0
04N06E12C004	-16.5	-20.9	-4.4
04N06E12N002	-17.9	-23.1	-5.2
04N06E06N012	0.4	1.9	1.5
04N06E15B002	-1.2	-4.0	-2.8
04N06E23K00	-0.5	-8.0	-7.5
04N06E27D002	18.6	------	------
03N06E36N001	-51.6	-57.3	-5.7

Total Number of Wells	47
Total Number of Wells Compared	37
Number of Wells with Decrease	25
Number of Wells with Increase	9
Number of Wells with No Change	3

Table 3-6: Comparison of SEWD Area Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
01N06E27R002	-9.2	-9.2	0.0
01S06E01C002	-8.0	-7.8	0.2
01S07E06M002	-8.1	-4.9	3.2
01S07E08J002	-6.5	-4.3	2.2
01S07E05A001	-23.5	------	------
01N07E21R001	-53.5	-40.2	13.3
01N07E20G001	-42.0	-37.8	4.2
01N07E19G001	-30.0	-33.8	-3.8
01N07E01M002	-48.0	-48.5	-0.5
01N08E03P001	-49.5	-46.0	3.5
01N08E04E001	-47.5	-44.5	3.0
02N08E32L002	-47.7	-49.0	-1.3
02N08E33E001	-42.1	-45.6	-3.5
02N09E28N001	-19.1	-8.4	10.7
01N06E05M004	-8.5	-7.5	1.0
01N07E08R002	-37.5	------	------
02N07E35L001	-43.1	-49.0	-5.9
02N07E36H001	-47.7	-52.5	-4.8
02N08E28H002	-34.6	-51.6	-17.0
02N08E15M002	-55.7	-45.6	10.1
02N08E14C001	-38.5	-43.0	-4.5
02N08E12C002	-26.7	-26.5	0.2
03N09E25R001	95.0	91.0	-4.0
03N09E36G001	92.2	101.2	9.0
02N09E03A001	66.1	64.6	-1.5
02N09E04H001	57.6	51.0	-6.6
02N09E09D001	-8.3	-8.3	0.0
02N09E05H001	-1.3	-3.5	-2.2
02N09E08N001	-21.9	-19.9	2.0
02N09E22D001	-8.9	-16.4	-7.5
02N09E18Q001	-37.6	-40.8	-3.2
02N08E24J001	-42.1	-47.6	-5.5
02N08E24P001	-42.9	-29.4	13.5
02N08E13K001	-42.6	-32.2	10.4
02N08E20F001	-58.8	-51.7	7.1
02N08E20F001	-45.8	-51.7	-5.9
02N07E24B001	-45.6	-49.9	-4.3
02N07E26N001	-45.8	-49.5	-3.7
02N07E33H001	-45.0	------	------
02N07E33H001	-34.0	------	------
02N07E28N004	-36.5	-38.6	-2.1
02N07E32R001	-27.6	-14.6	13.0
02N07E31M001	-24.8	-24.8	0.0
02N07E30E001	-28.7	-31.0	-2.3
02N07E20N002	-31.0	-39.0	-8.0
02N07E16L001	-44.8	-56.3	-11.5

State Well ID	Fall 1999	Fall 2006	Difference
02N07E16F002	-45.4	-55.4	-10.0
02N07E21A002	-47.3	-56.2	-8.9
02N07E27D001	-48.2	------	------
02N07E15C001	-48.8	-56.3	-7.5
02N07E10F002	-43.8	-47.9	-4.1
02N07E11F001	-45.0	-49.5	-4.5
02N07E12D002	-44.0	------	------
02N07E11R002	-45.0	-51.0	-6.0
02N08E18C001	-60.7	------	------
02N08E08N001	-49.5	-47.0	2.5
02N08E16D001	-48.1	-53.1	-5.0
02N08E09G002	-44.0	-26.0	18.0
02N08E05C001	-42.5	-46.5	-4.0
02N08E03G002	-38.5	-39.5	-1.0
02N08E04C001	-42.0	-44.8	-2.8
03N08E27R001	-37.0	-38.4	-1.4
03N07E36J001	-39.3	-30.8	8.5
03N07E35L001	-48.5	-45.5	3.0
03N07E35C002	-39.8	-42.6	-2.8
02N07E03D001	-37.9	-43.0	-5.1
02N07E08D001	-44.7	-46.2	-1.5
02N07E08K003	-42.3	-51.1	-8.8
02N07E07R005	-36.8	-45.6	-8.8
02N06E24F001	-27.5	-34.5	-7.0
02N05E01A001	-7.1	0.0	7.1
01S06E10G001	-19.6	-11.8	7.8
02N08E10H002	-41.1	-41.1	0.0
02N06E24J002	-24.3	-29.2	-4.9
02N06E13R002	-25.0	-34.5	-9.5
02N06E26H001	-28.0	-38.0	-10.0
02N06E03D003	-22.3	-26.2	-3.9
02N06E03A003	-23.3	-25.7	-2.4
02N06E02B001	------	------	------

Total Number of Wells	79
Total Number of Wells Compared	71
Number of Wells with Decrease	44
Number of Wells with Increase	23
Number of Wells with No Change	4

Table 3-7: Comparison of SSJID Area Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
02S07E07D002	11.3	9.5	-1.8
02S07E09M001	23.2	------	------
02S07E11N002	37.4	35.7	-1.7
02S07E26B001	33.0	30.0	-3.0
02S07E19H001	20.5	21.5	1.0
01S07E26G001	20.0	15.5	-4.5
01S07E25E001	19.0	15.0	-4.0
01S07E27K001	17.0	15.2	-1.8
02S08E06J001	32.5	25.2	-7.3
02S08E08E001	35.7	26.2	-9.5
02S08E07R001	42.6	37.5	-5.1
02S08E08A001	36.5	30.4	-6.1
02S08E04M001	30.5	26.5	-4.0
01S08E25Q001	27.9	9.5	-18.4
01S09E29M002	38.0	36.1	-1.9
02S09E03K001	68.0	63.1	-4.9
01S09E34A001	57.0	56.5	-0.5

Total Number of Wells	17
Total Number of Wells Compared	16
Number of Wells with Decrease	15
Number of Wells with Increase	1
Number of Wells with No Change	0

Table 3-8: Comparison of WID Area Water Elevations

State Well ID	Fall 1999	Fall 2006	Difference
03N05E14C001	-8.0	-3.3	4.7
03N05E13L001	-9.0	-9.0	0.0
03N06E18M003	-13.1	-12.6	0.5
03N06E30R001	-21.6	-24.2	-2.6
03N06E32R001	-23.0	-26.5	-3.5
03N06E20D002	-16.0	-19.1	-3.1
03N06E07H003	-5.5	-11.1	-5.6
03N06E05N003	-2.0	-7.0	-5.0
03N06E17A004	-15.7	-20.2	-4.5

State Well ID	Fall 1999	Fall 2006	Difference
03N06E10D001	-8.4	-6.9	1.5
03N06E27E001	-24.2	-25.2	-1.0
03N06E26P002	-17.7	-23.7	-6.1
04N06E29A001	------	------	------
04N06E29N002	8.9	4.1	-4.8
04N05E36H003	8.0	6.1	-1.9
04N06E30E001	10.4	5.2	-5.2
04N05E24J004	7.4	5.8	-1.6
04N05E13R004	0.7	0.3	-0.4
04N05E13H001	0.0	2.0	2.0
04N05E14B002	-6.2	0.1	6.3
04N05E10K001	-4.3	-4.0	0.3
05N05E32M001	-6.1	-7.0	-0.9
04N05E05H001	-3.6	-3.5	0.1
04N05E09D001	-6.8	-6.5	0.3
04N05E22H001	-9.0	------	------
04N05E14P001	-1.5	1.0	2.5
04N05E26F001	12.1	0.4	-11.7
02S04E15R001	56.2	------	------

Total Number of Wells	28
Total Number of Wells Compared	25
Number of Wells with Decrease	15
Number of Wells with Increase	9
Number of Wells with No Change	1

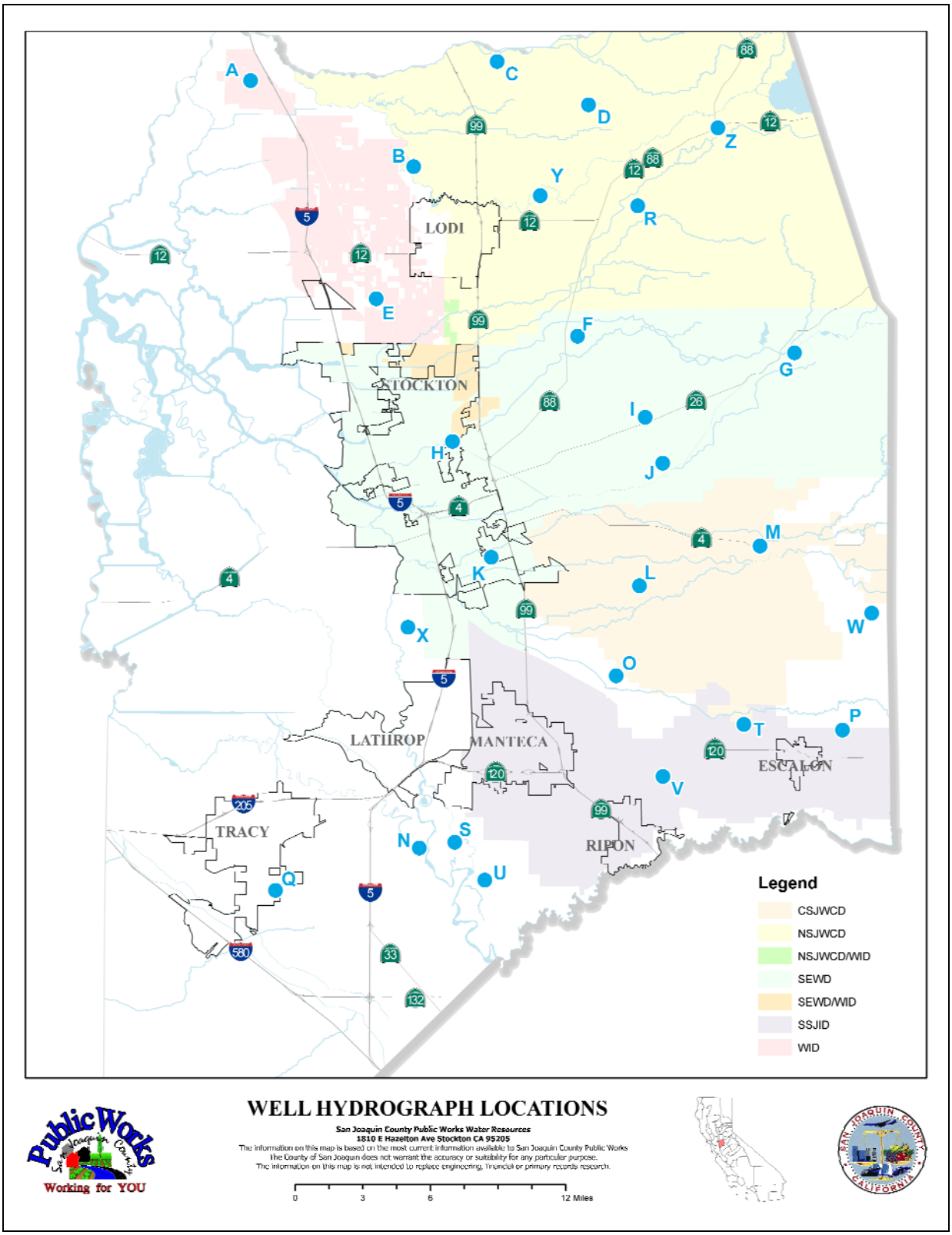

Figure 3-1: Well Hydrograph Locations

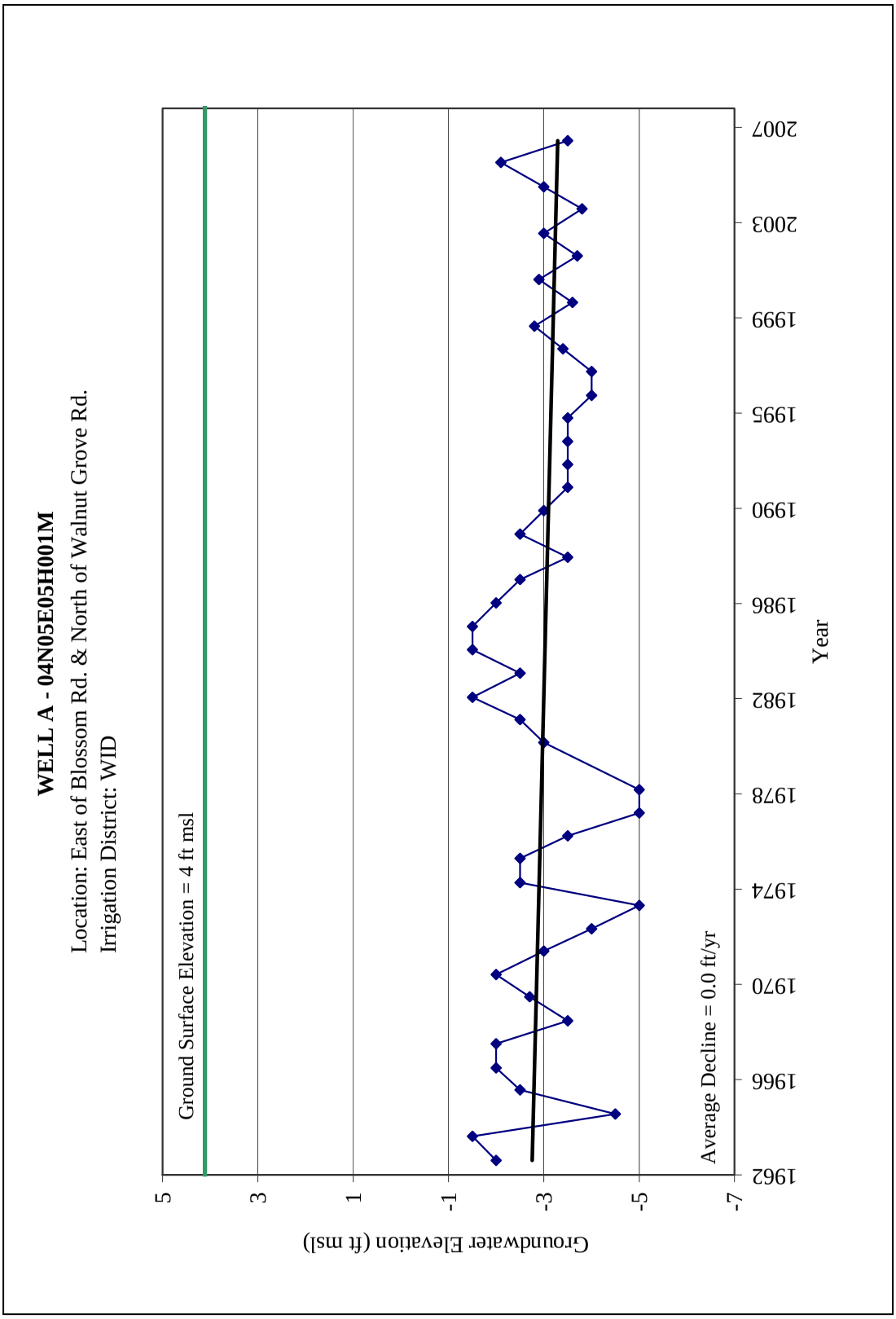

Figure 3-2: Fall Hydrograph Well A

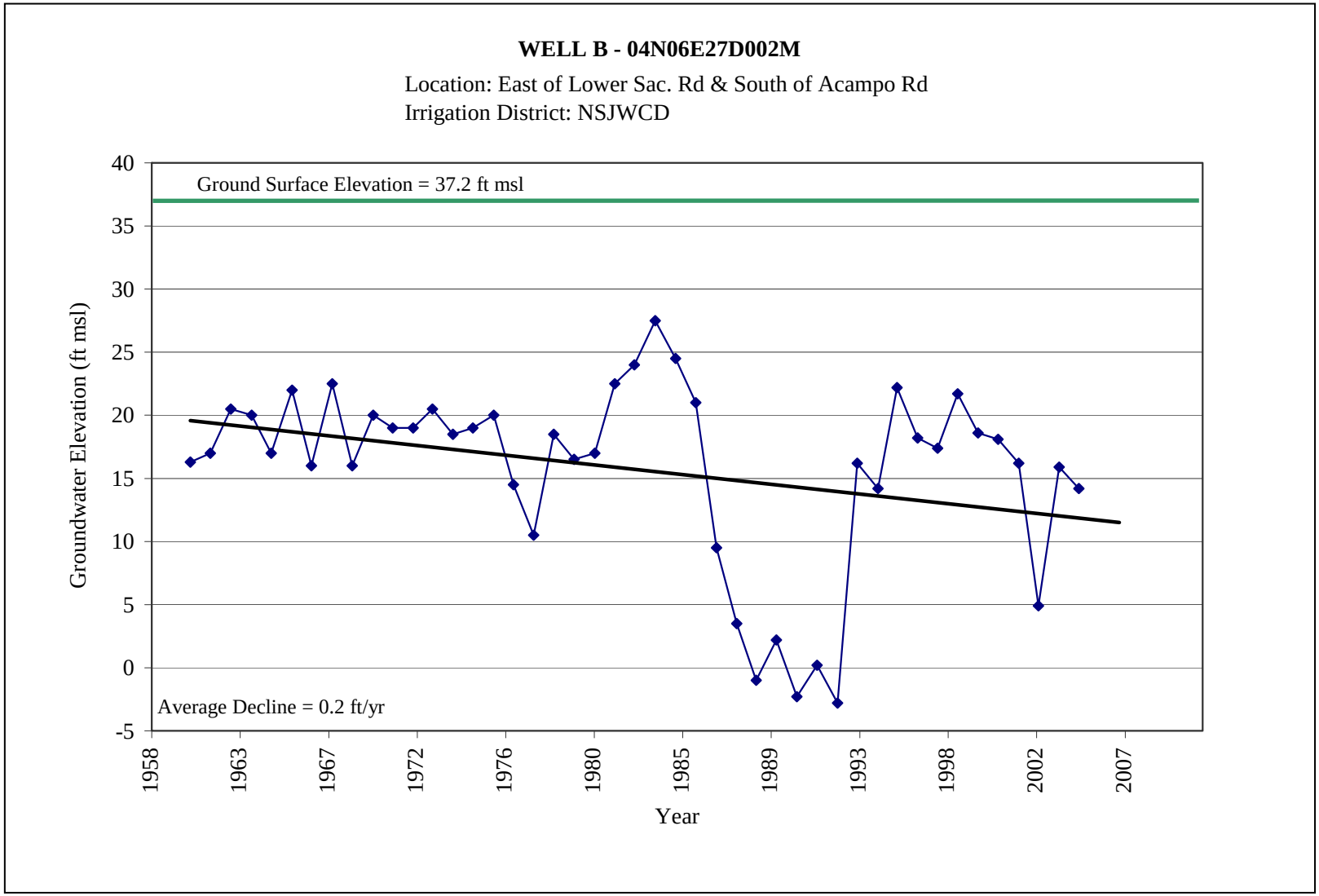

Figure 3-3: Fall Hydrograph Well B

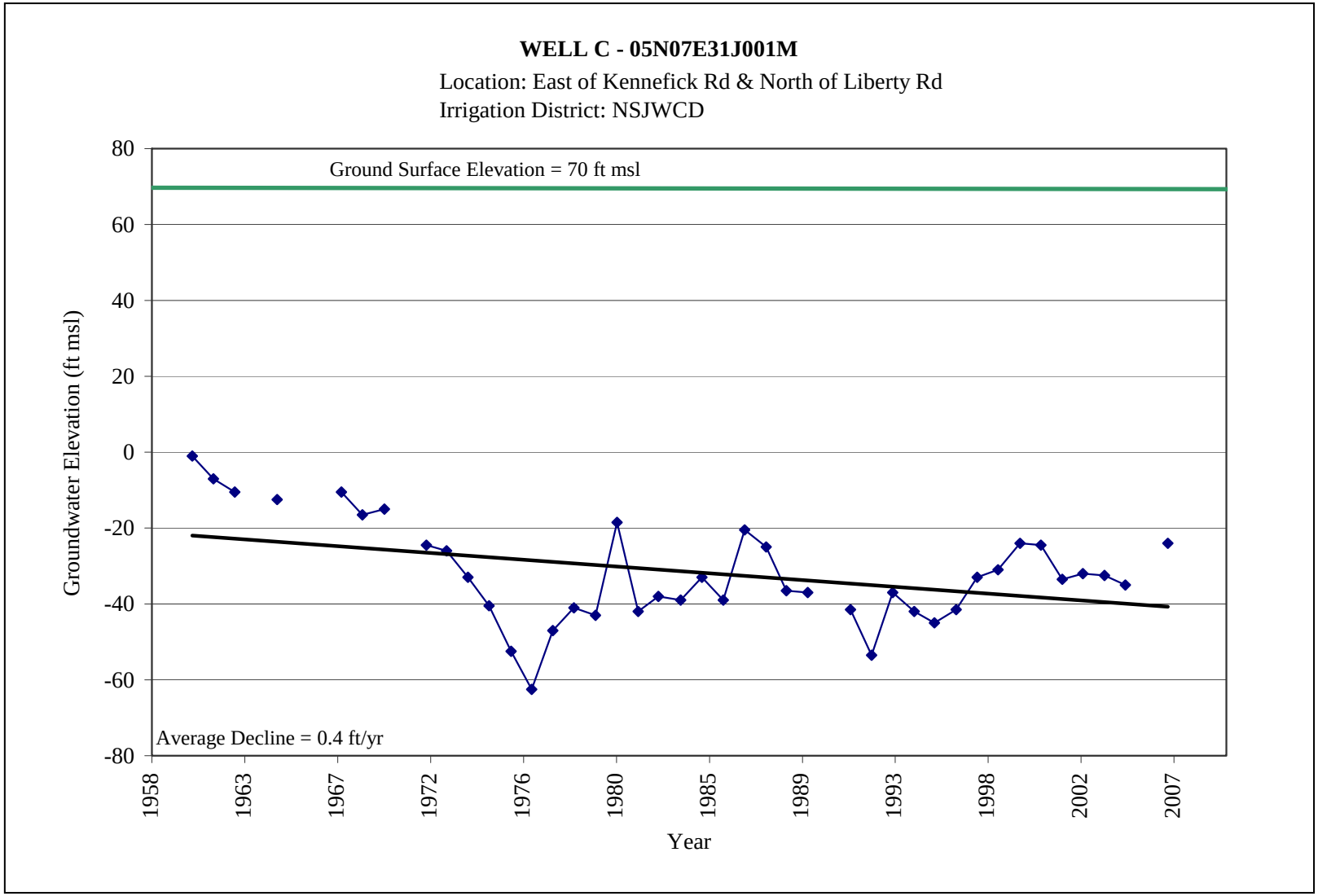

Figure 3-4: Fall Hydrograph Well C

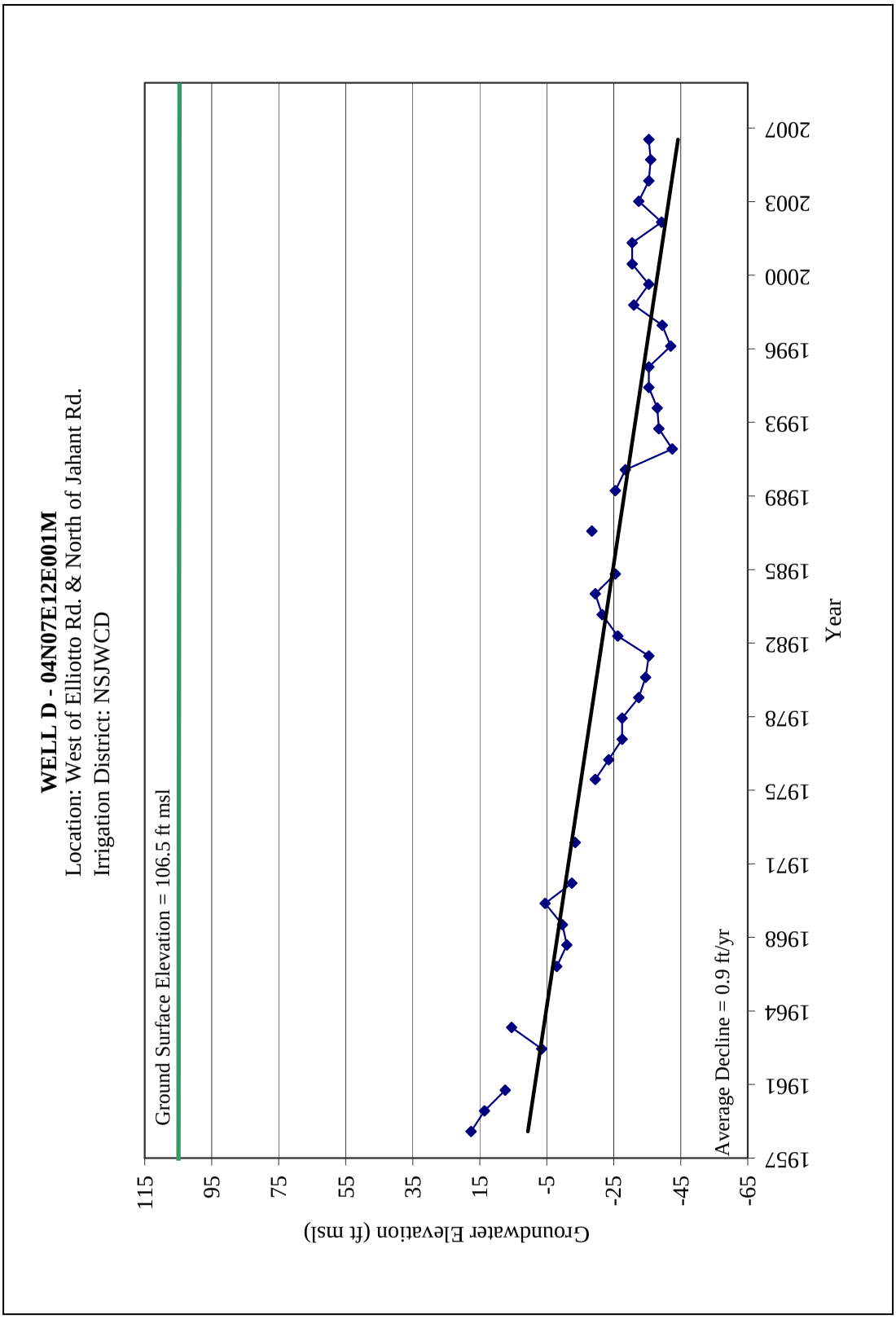

Figure 3-5: Fall Hydrograph Well D

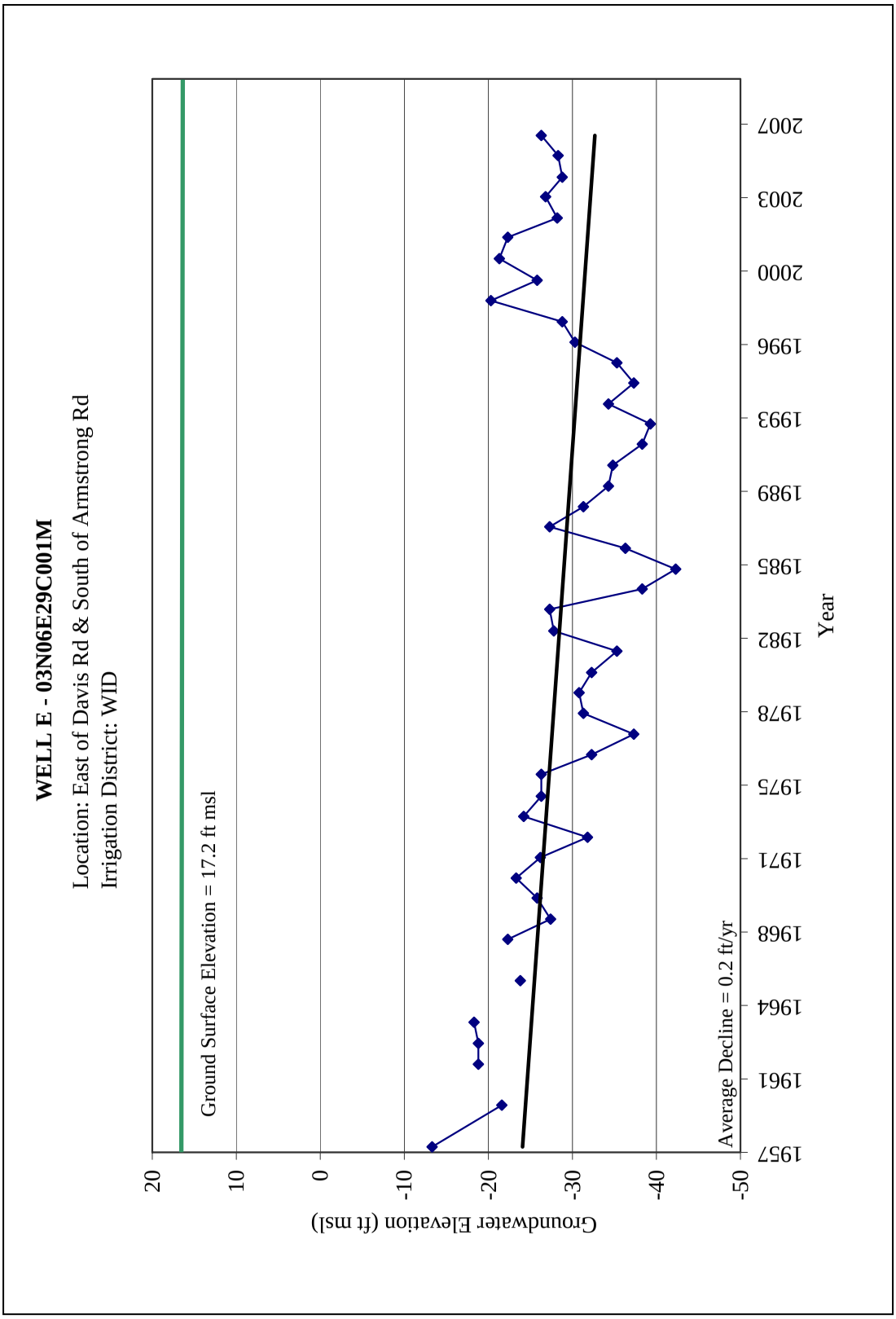

Figure 3-6: Fall Hydrograph Well E

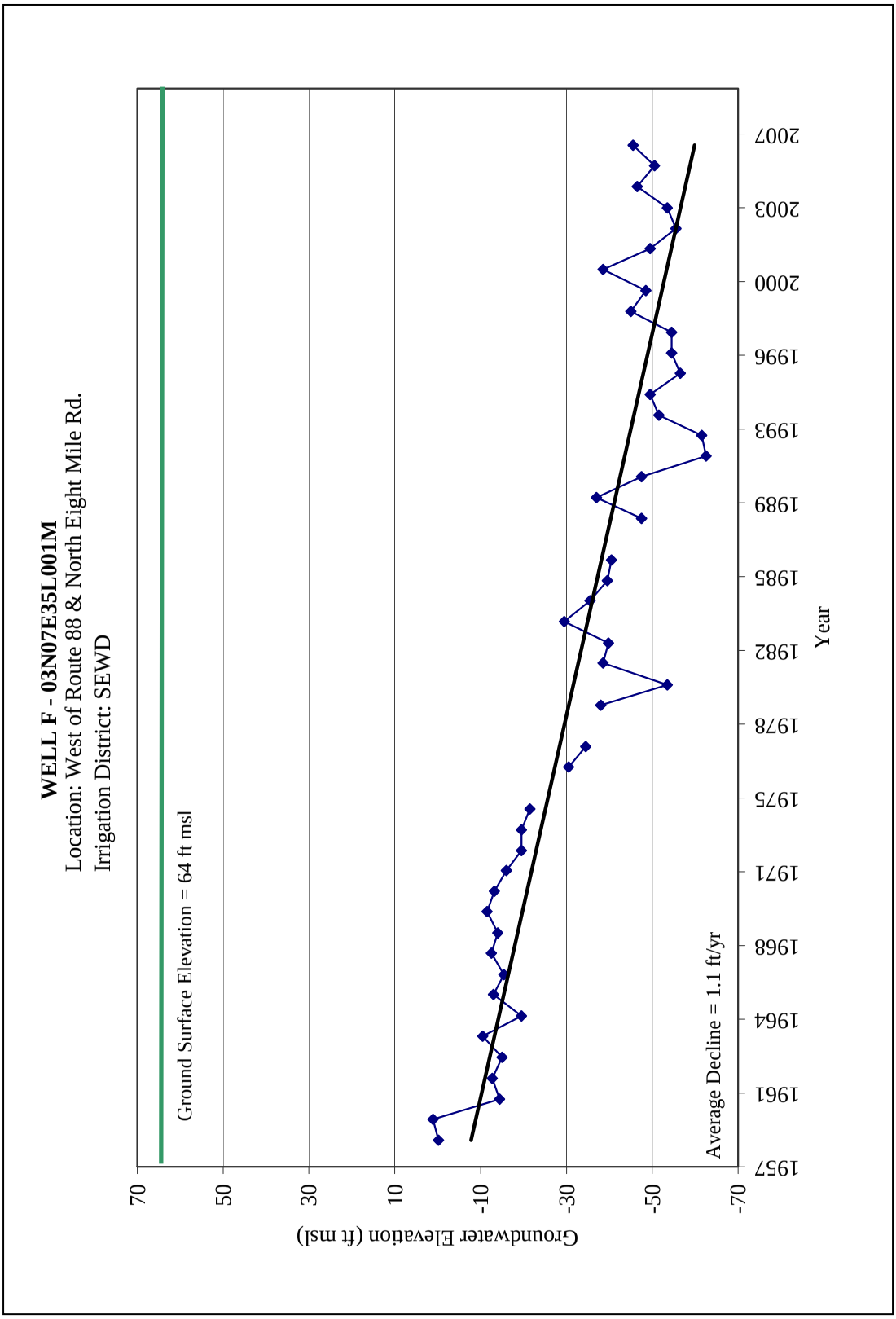

Figure 3-7: Fall Hydrograph Well F

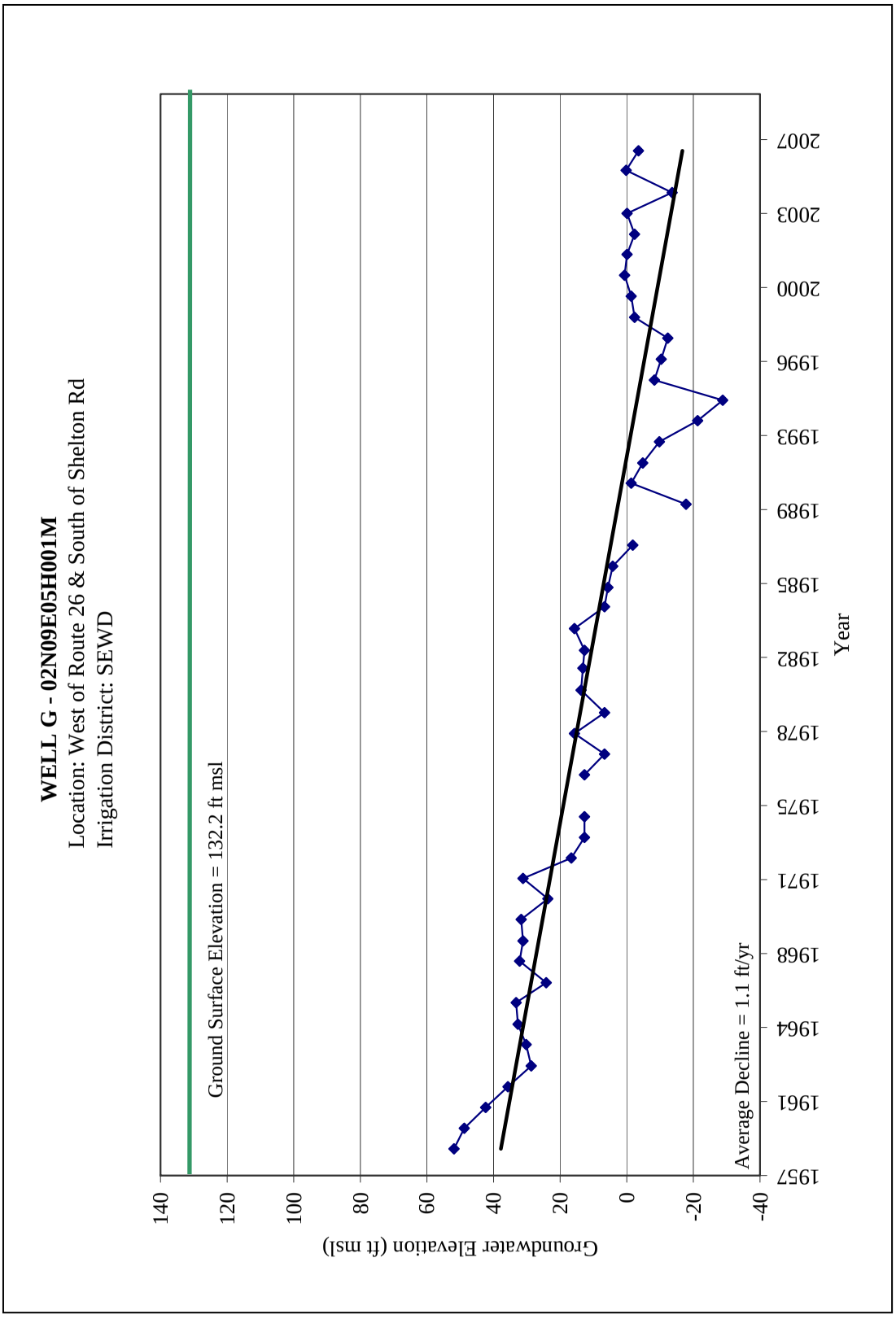

Figure 3-8: Fall Hydrograph Well G

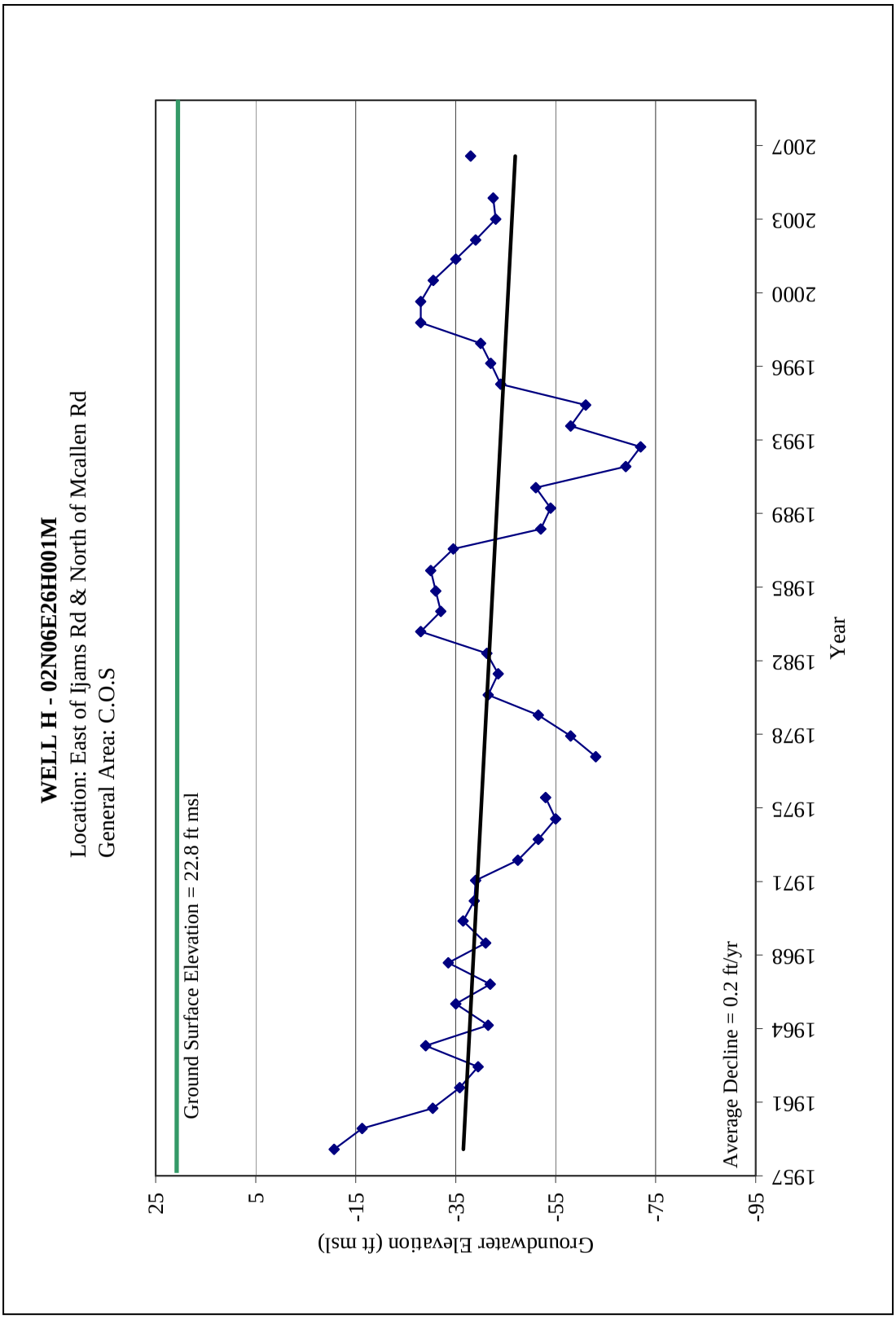

Figure 3-9: Fall Hydrograph Well H

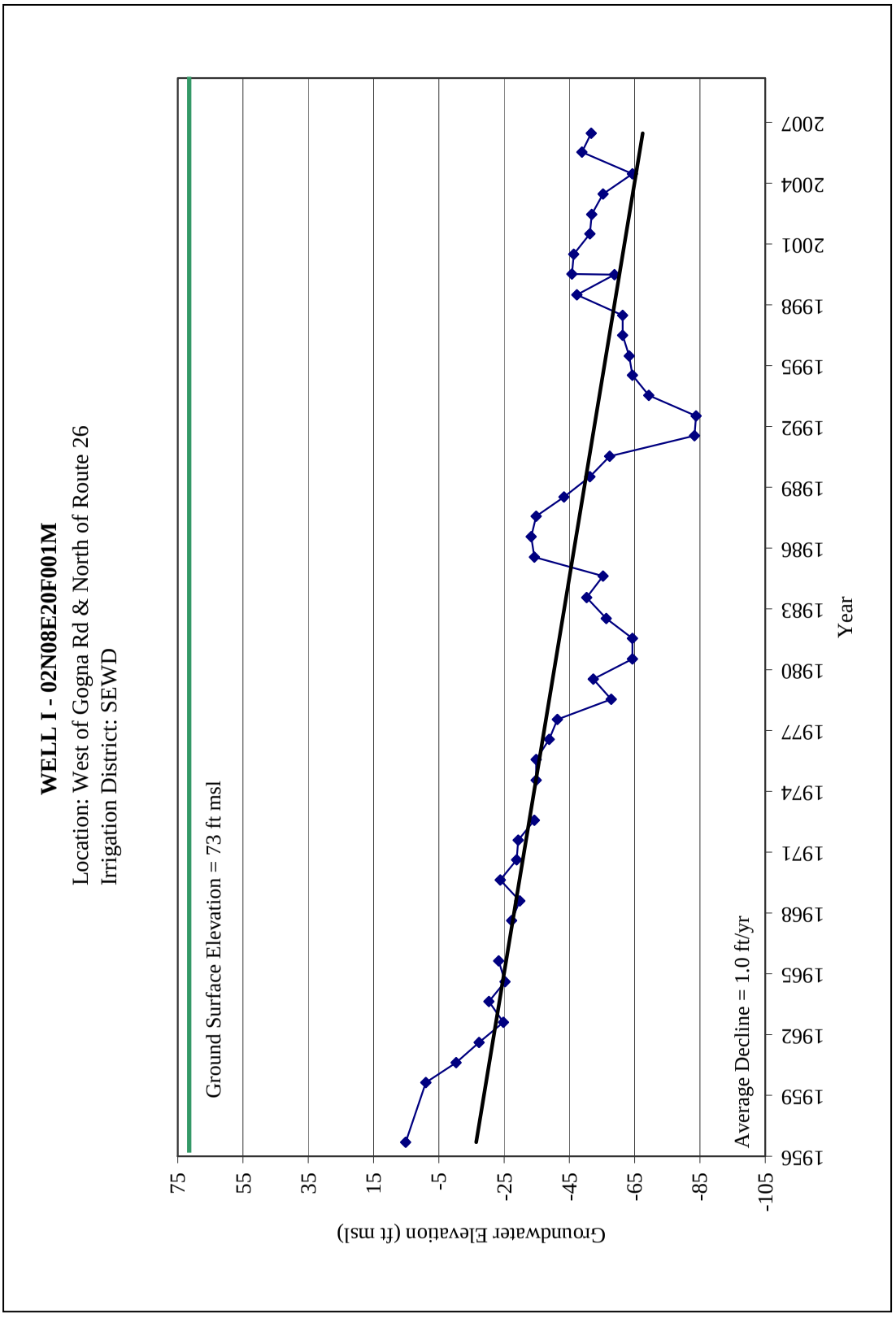

Figure 3-10: Fall Hydrograph Well I

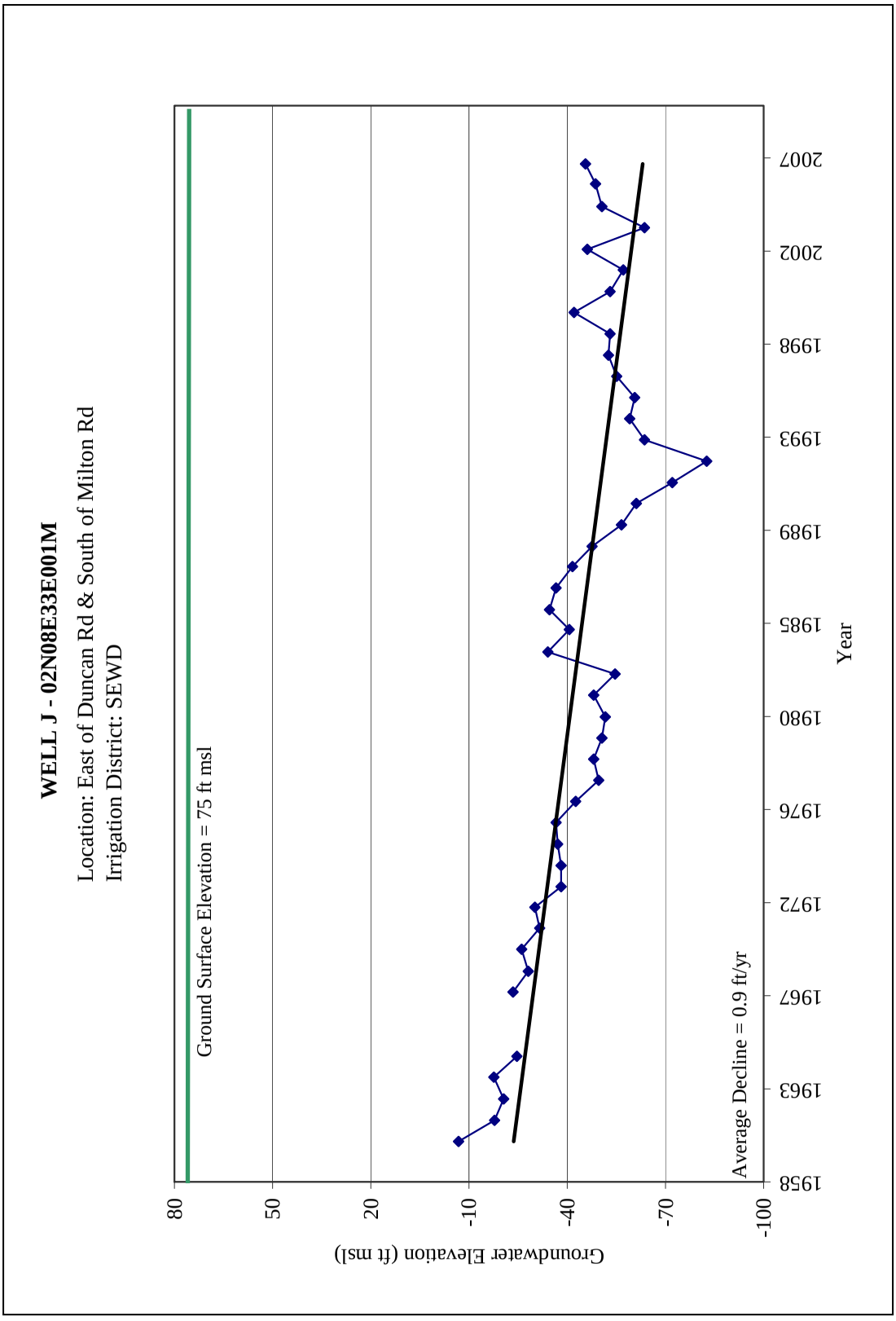

Figure 3-11: Fall Hydrograph Well J

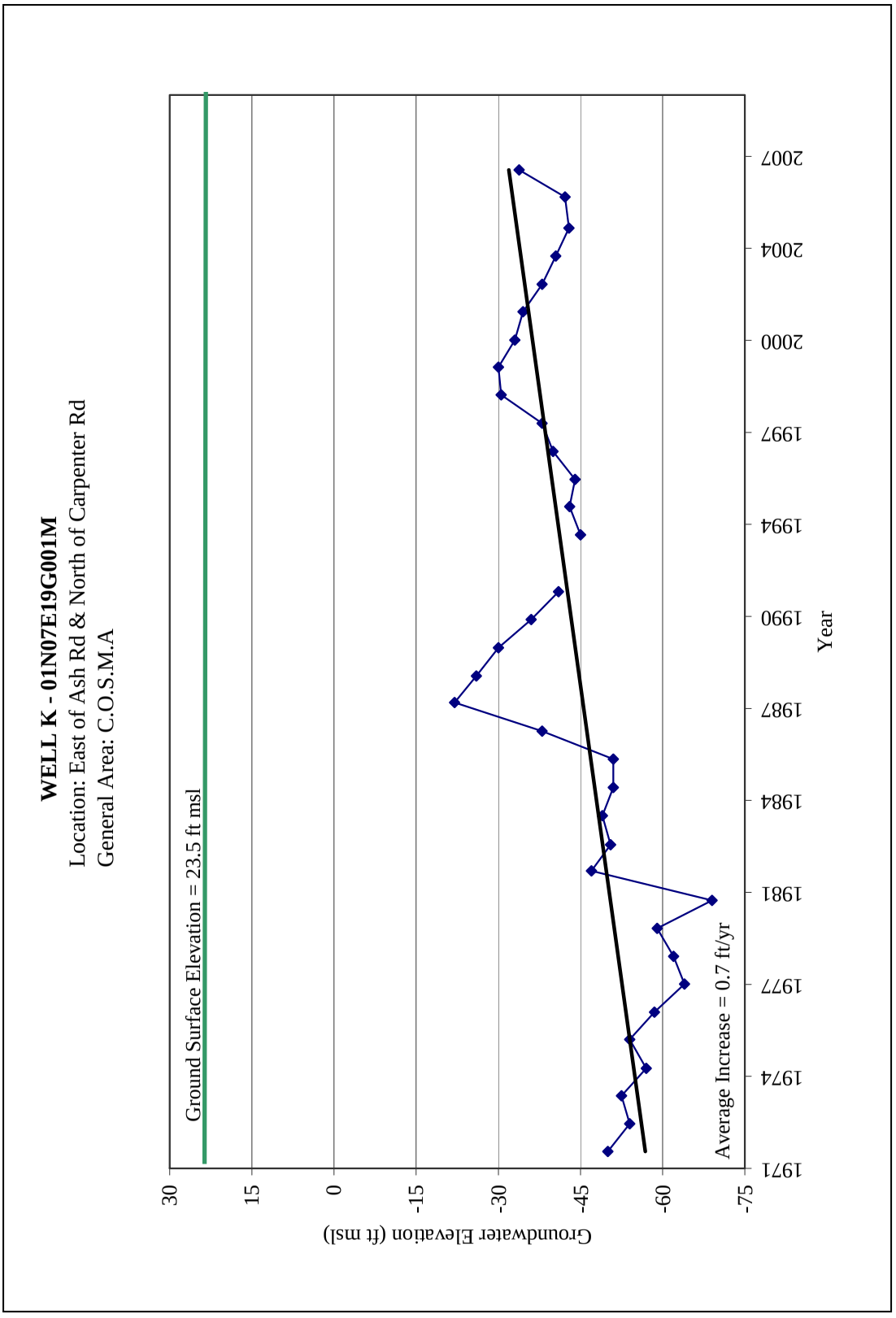

Figure 3-12: Fall Hydrograph Well K

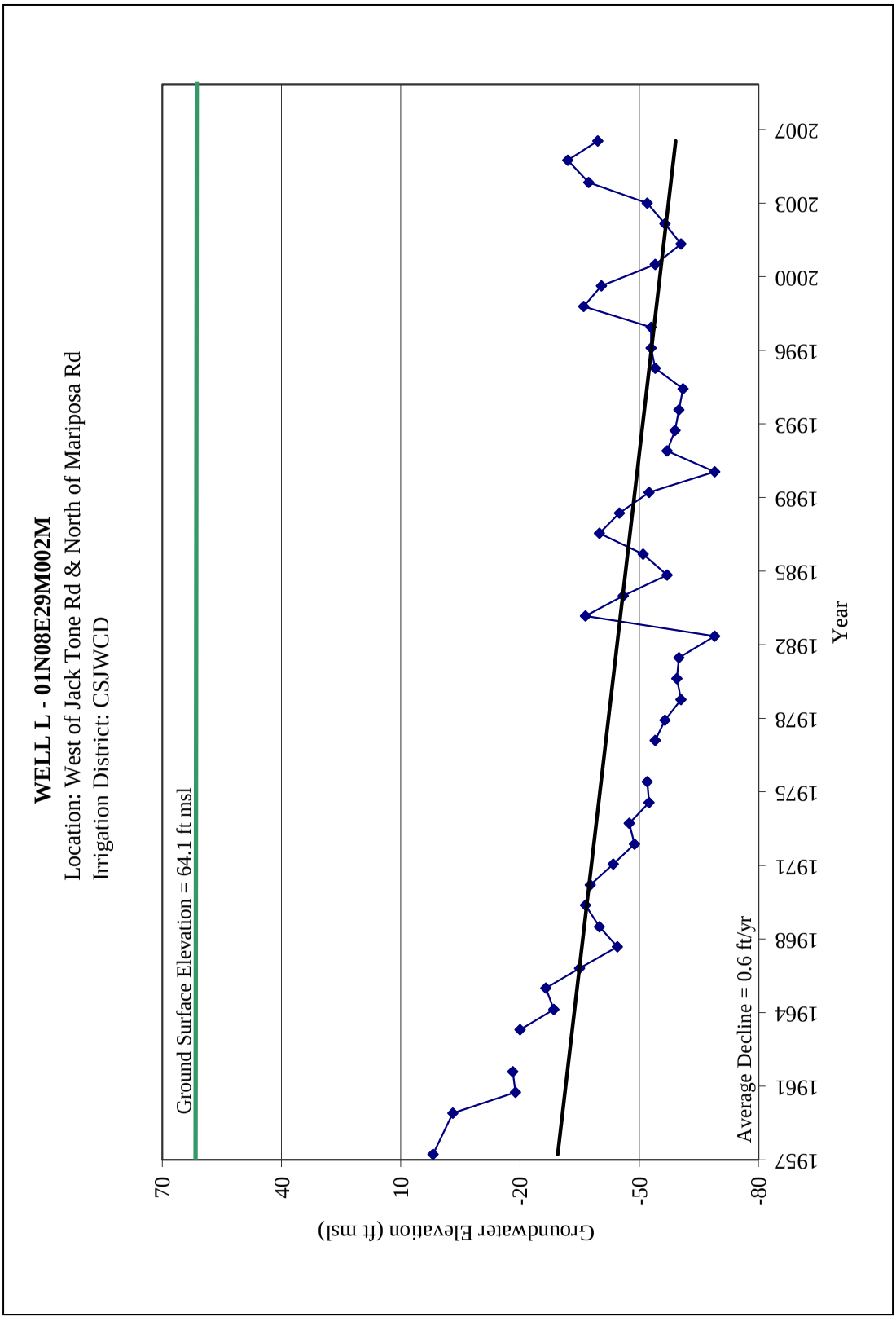

Figure 3-13: Fall Hydrograph Well L

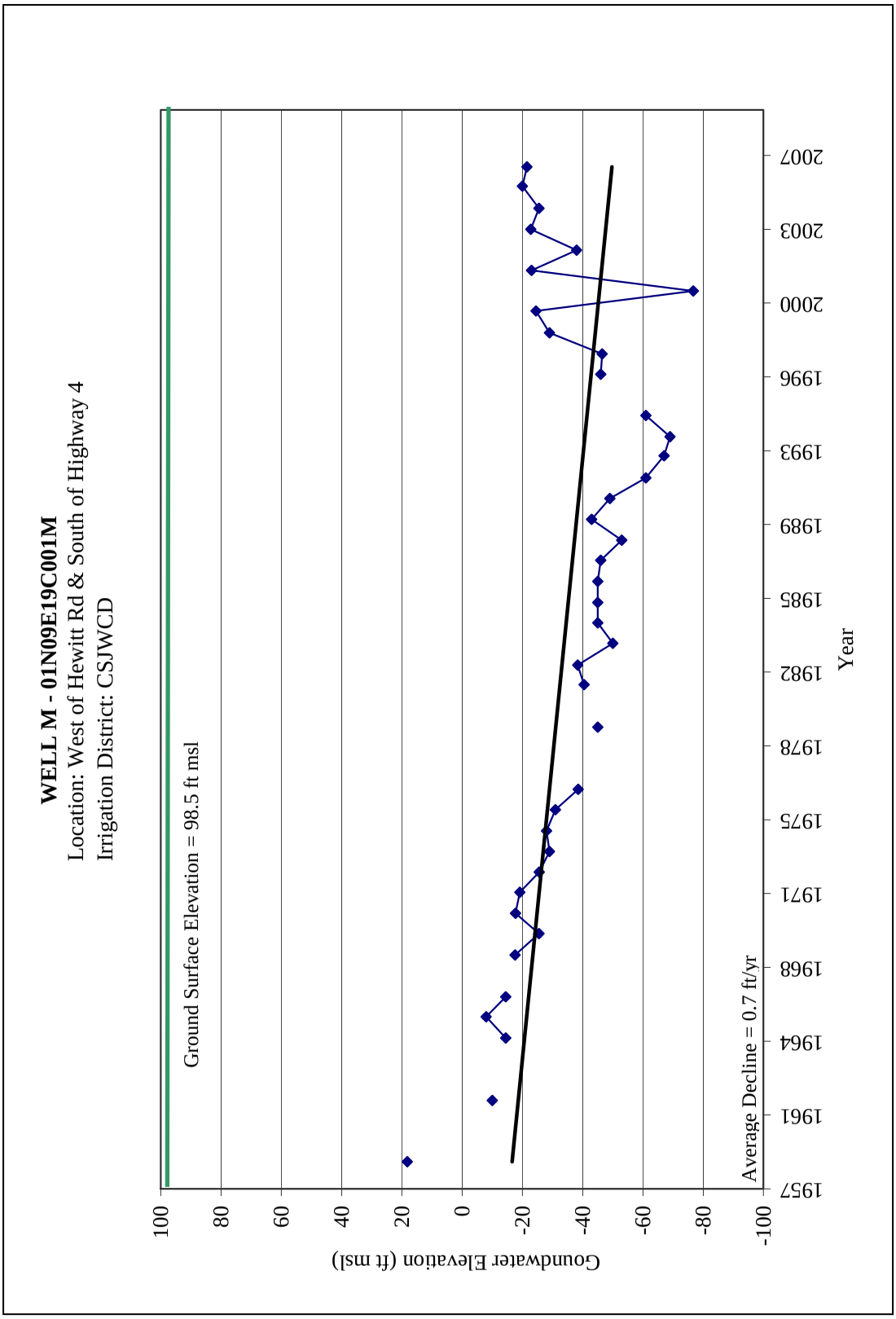

Figure 3-14: Fall Hydrograph Well M

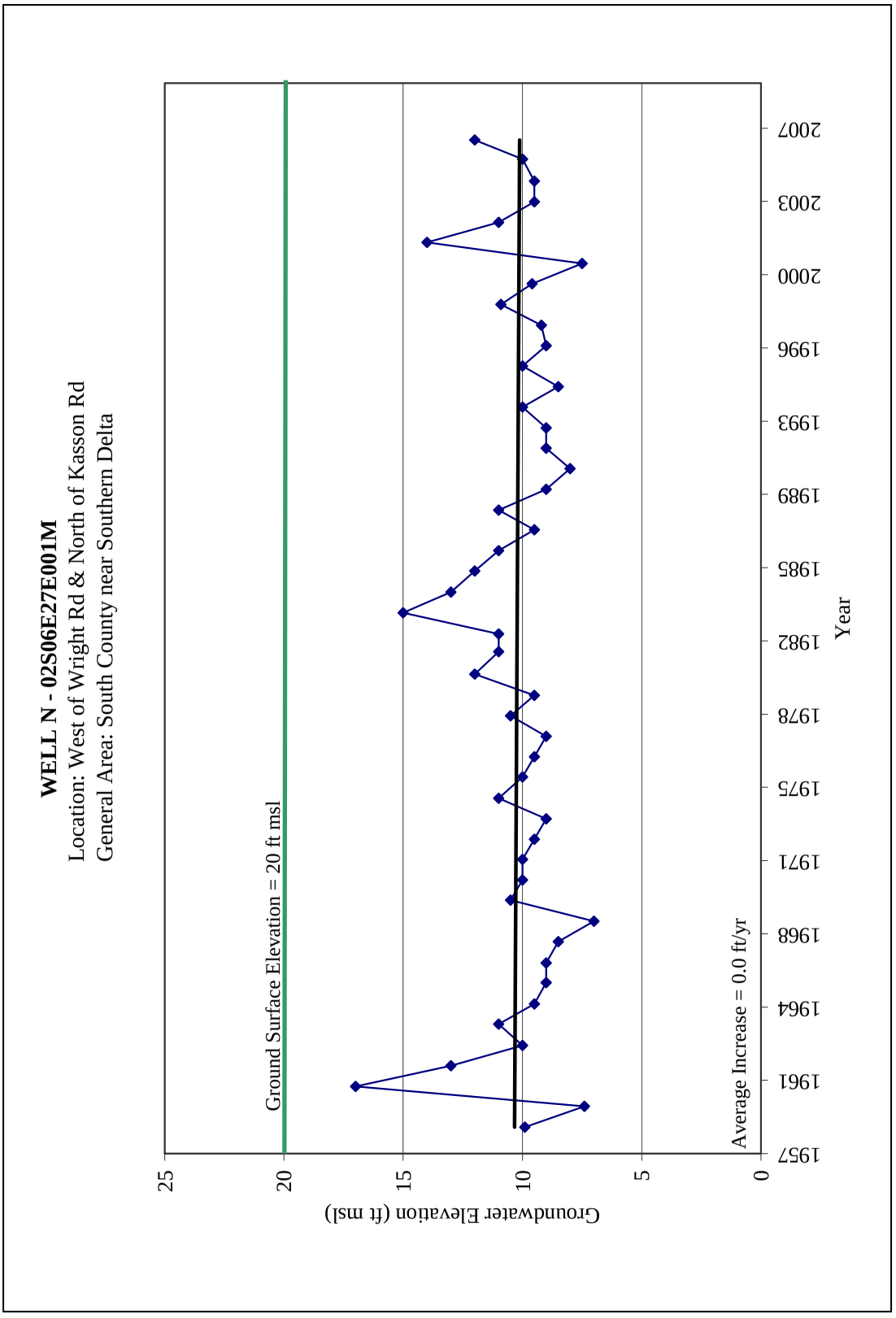

Figure 3-15: Fall Hydrograph Well N

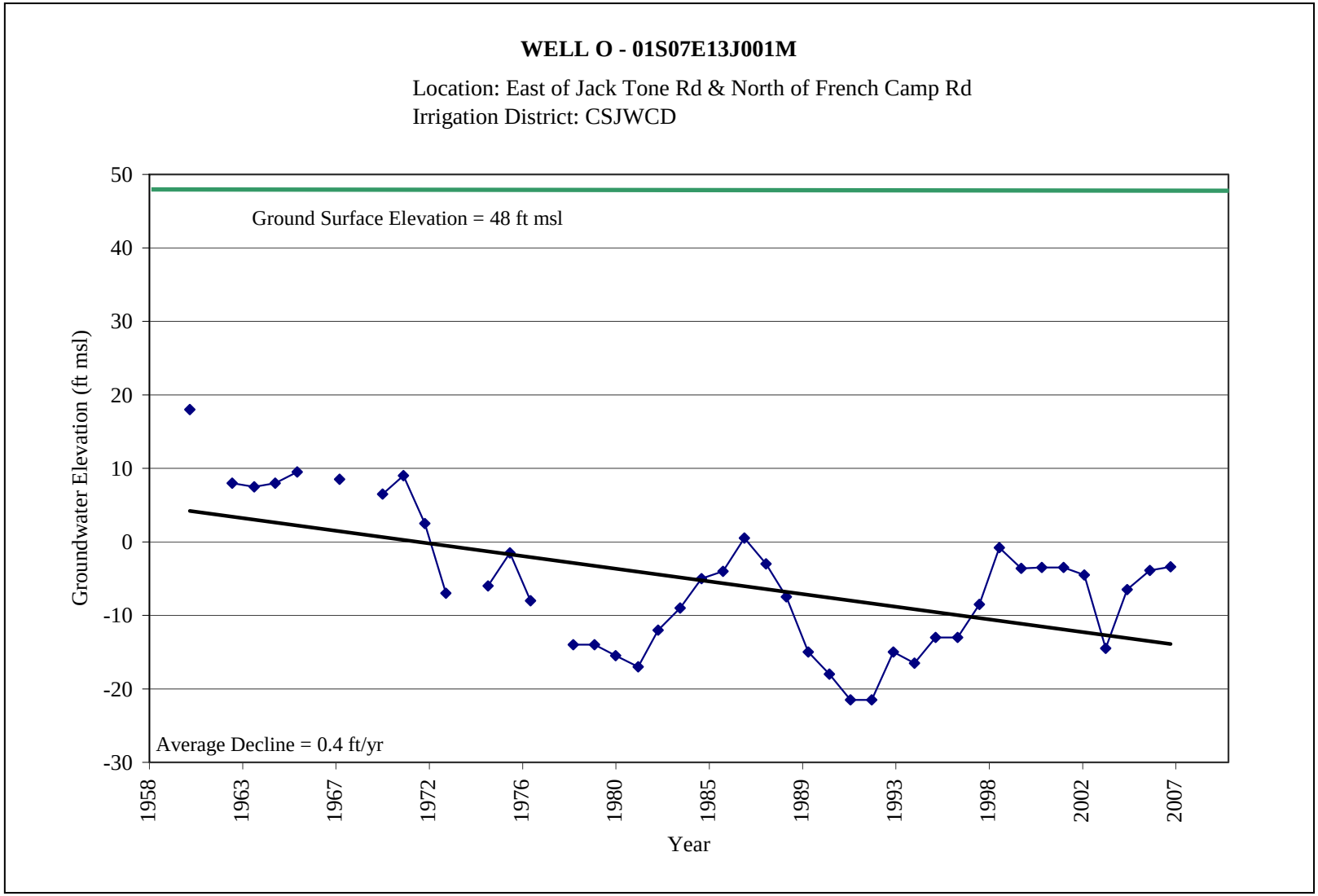

Figure 3-16: Fall Hydrograph Well O

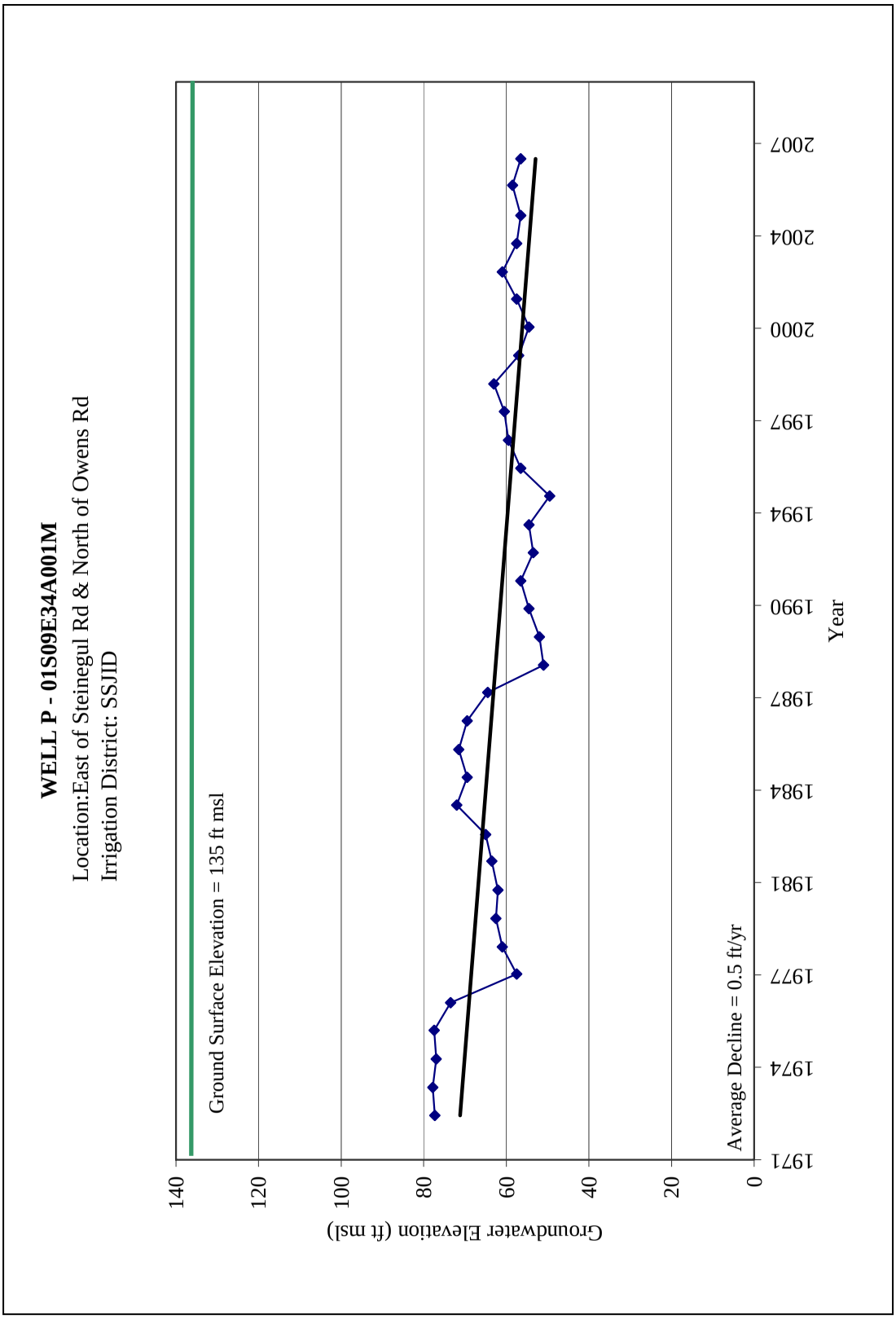

Figure 3-17: Fall Hydrograph Well P

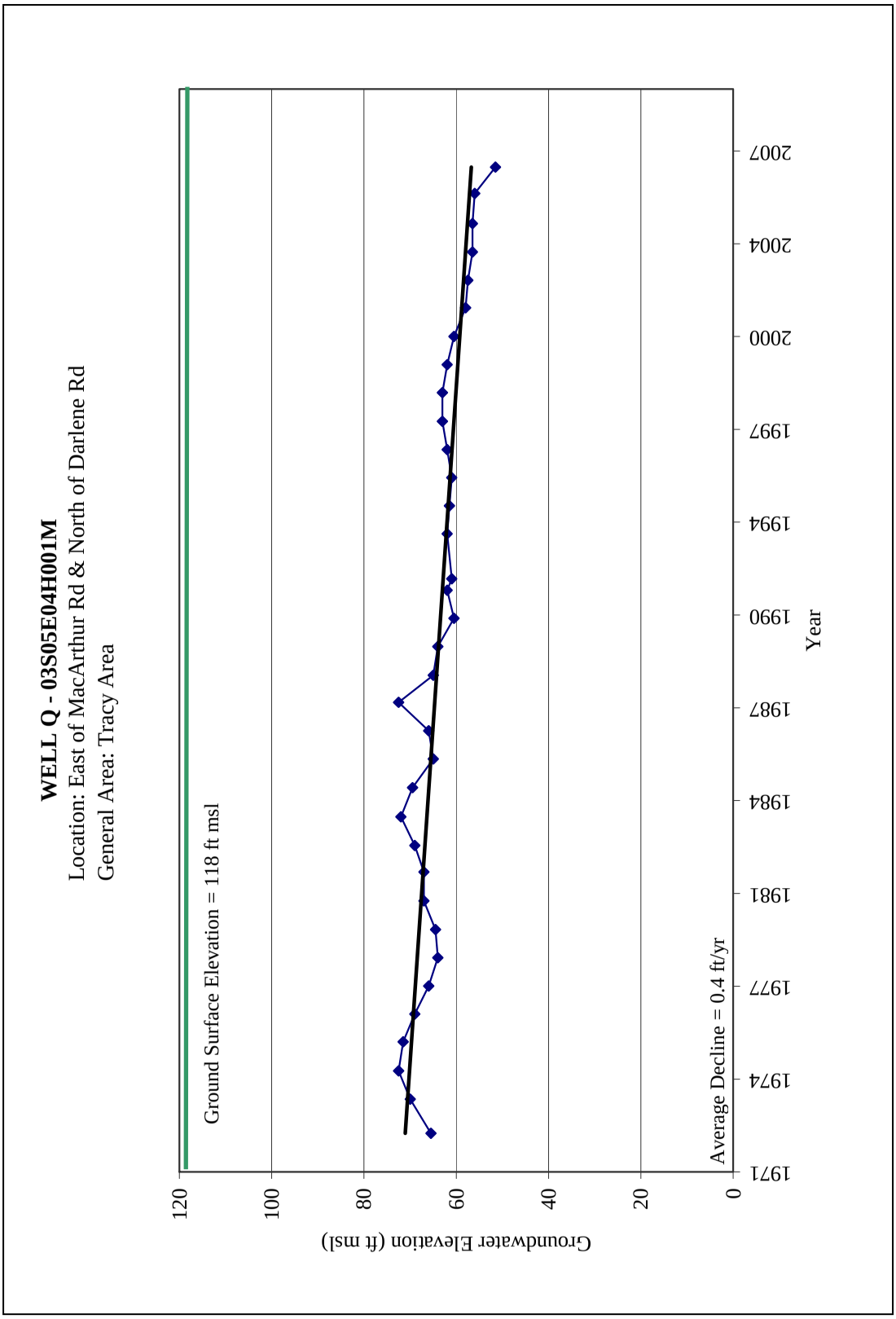

Figure 3-18: Fall Hydrograph Well Q

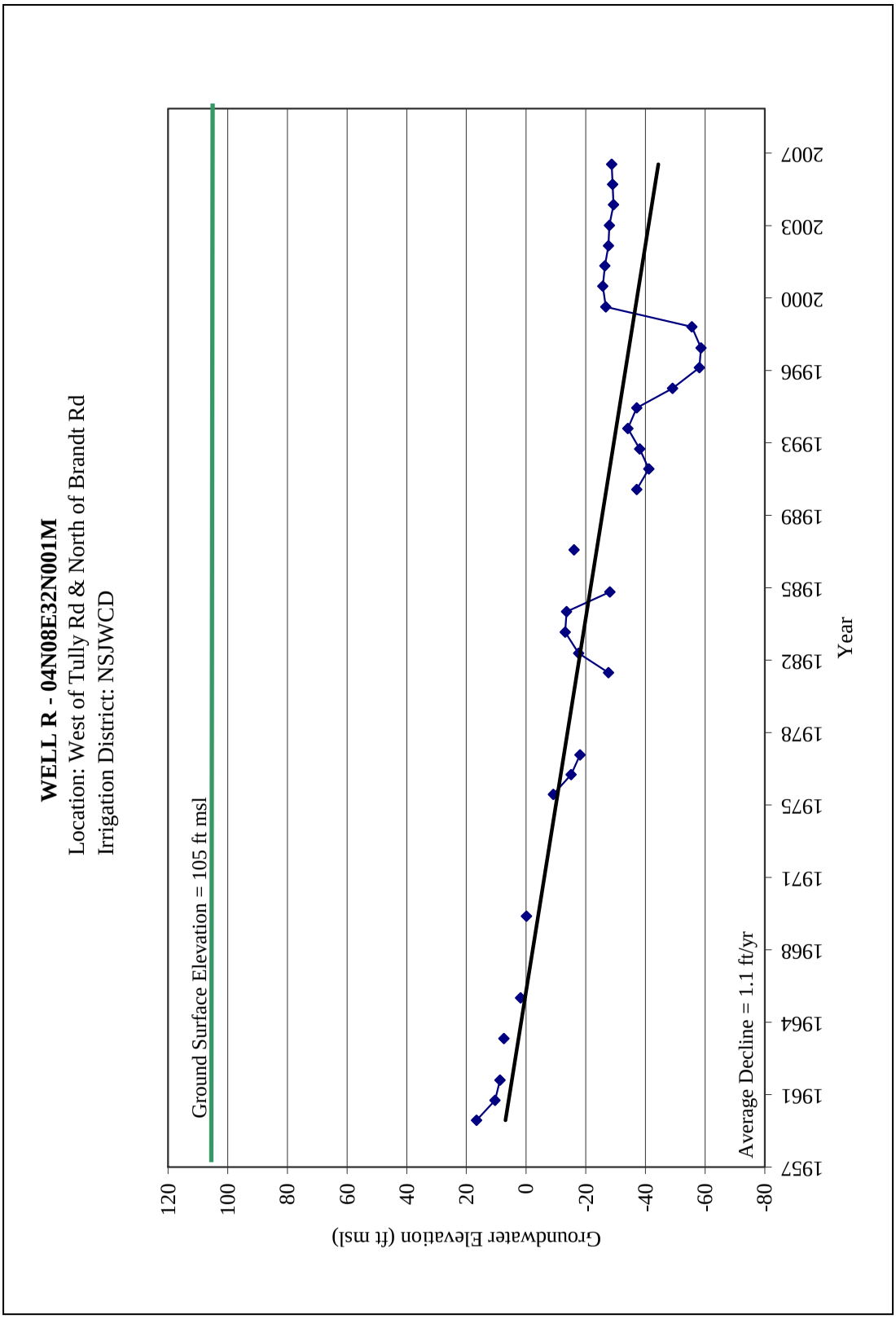

Figure 3-19: Fall Hydrograph Well R

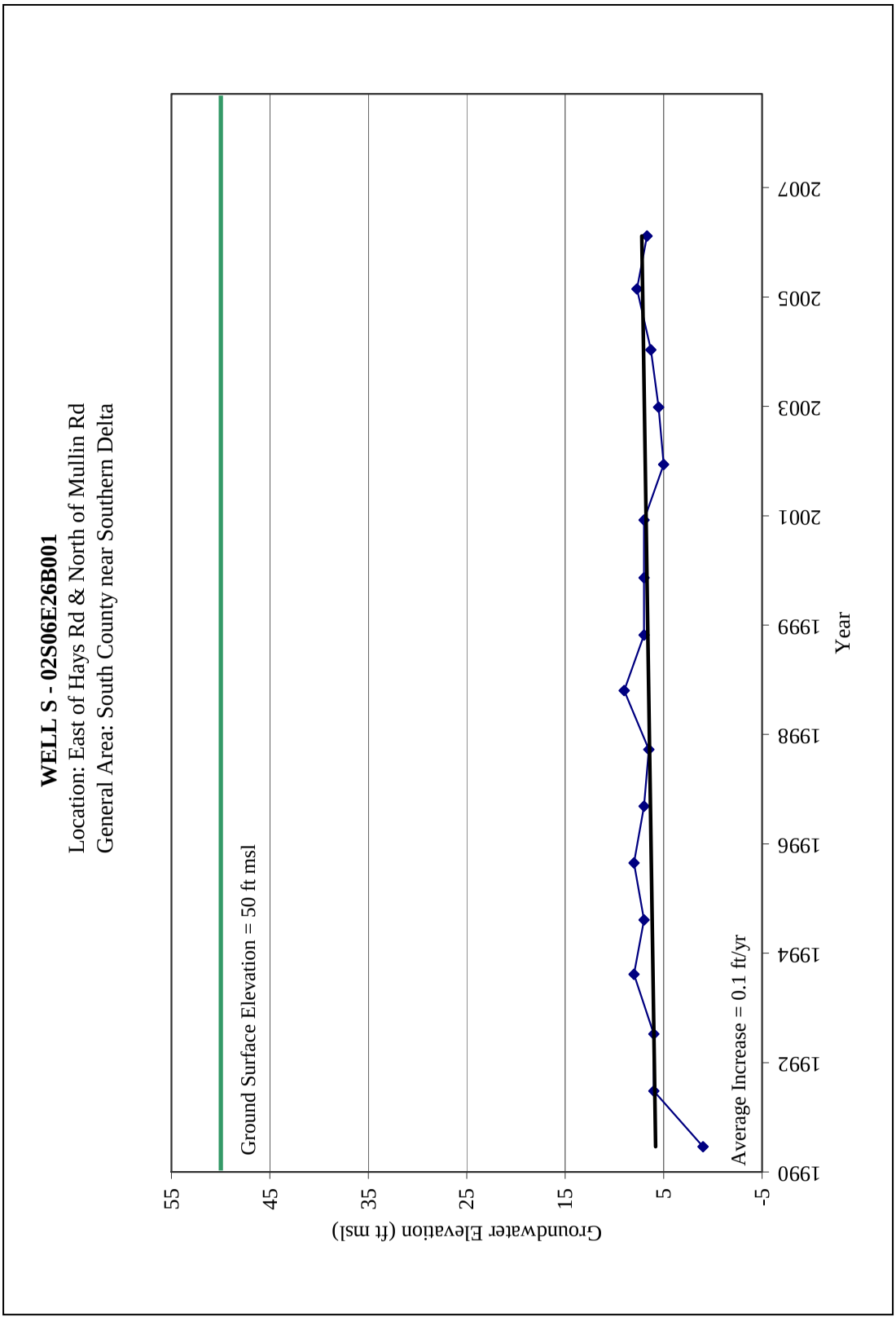

Figure 3-20: Fall Hydrograph Well S

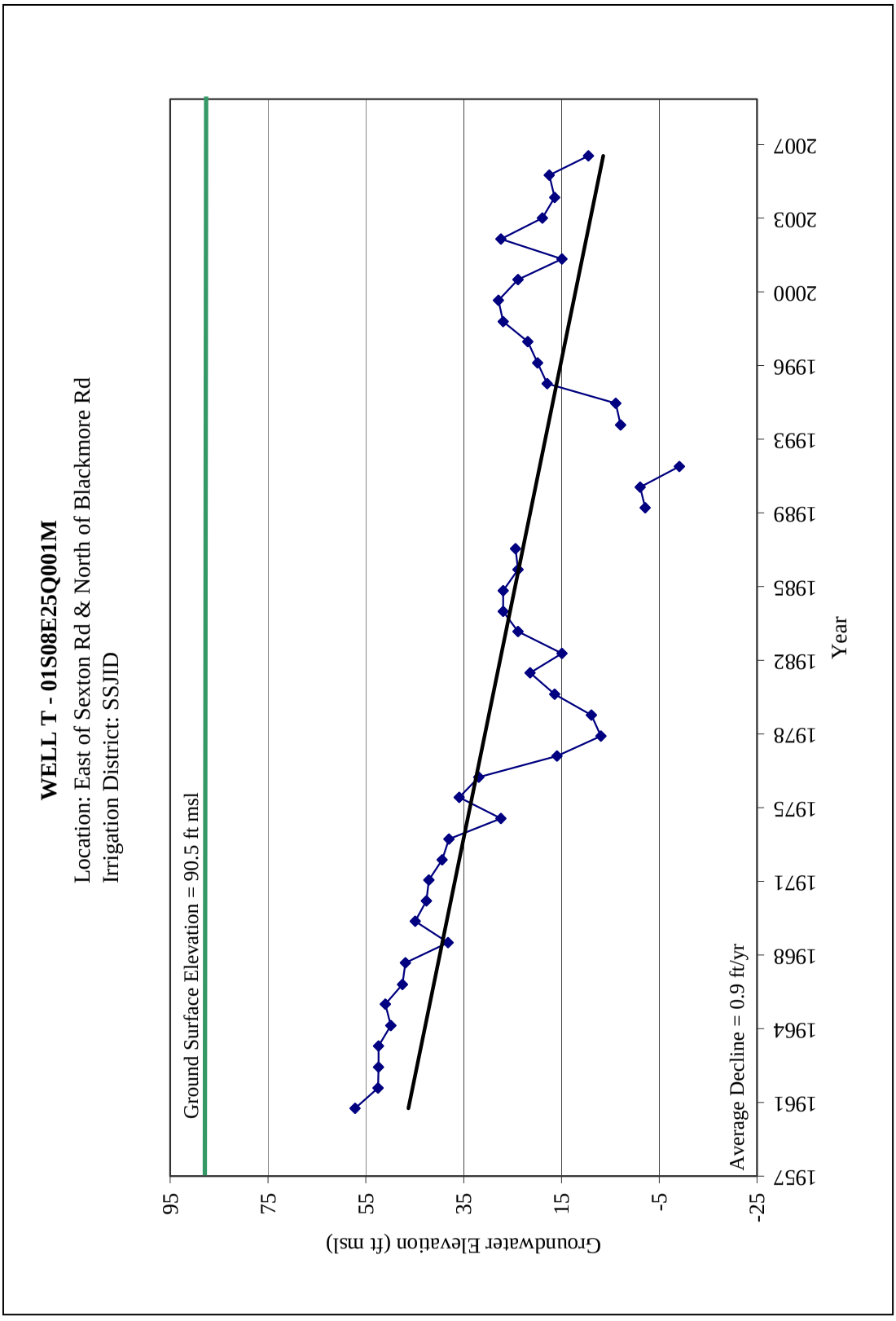

Figure 3-21: Fall Hydrograph Well T

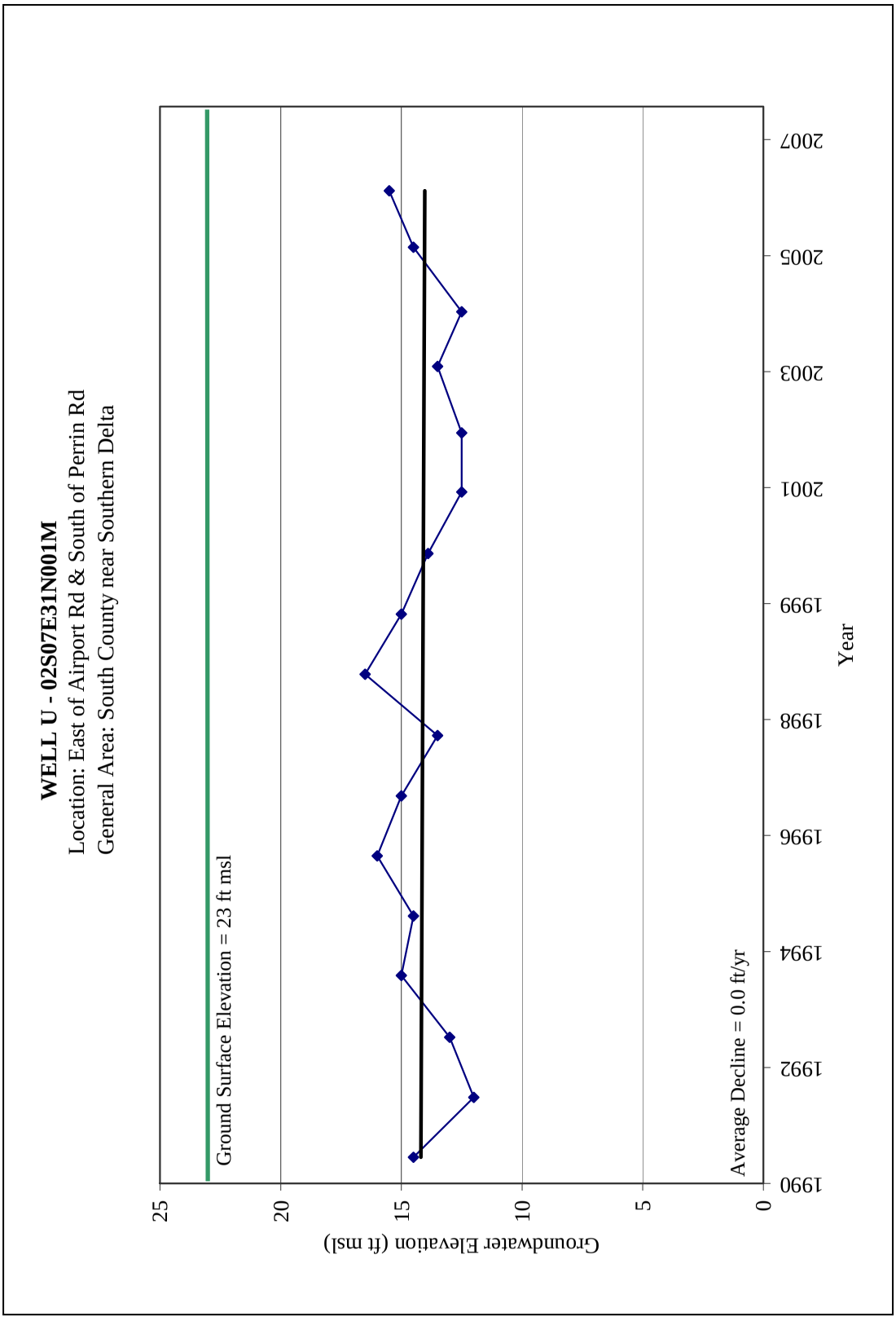

Figure 3-22: Fall Hydrograph Well U

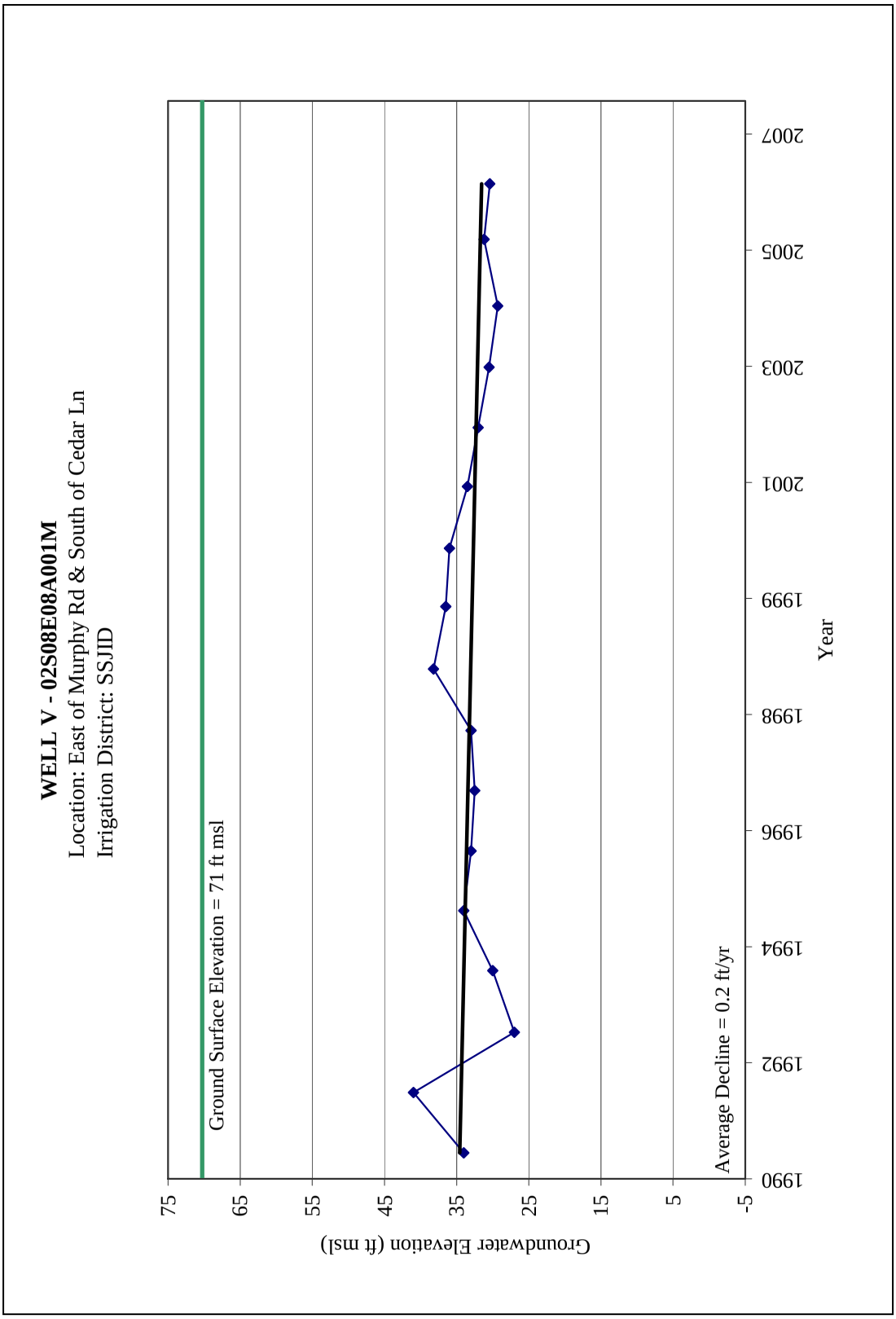

Figure 3-23: Fall Hydrograph Well V

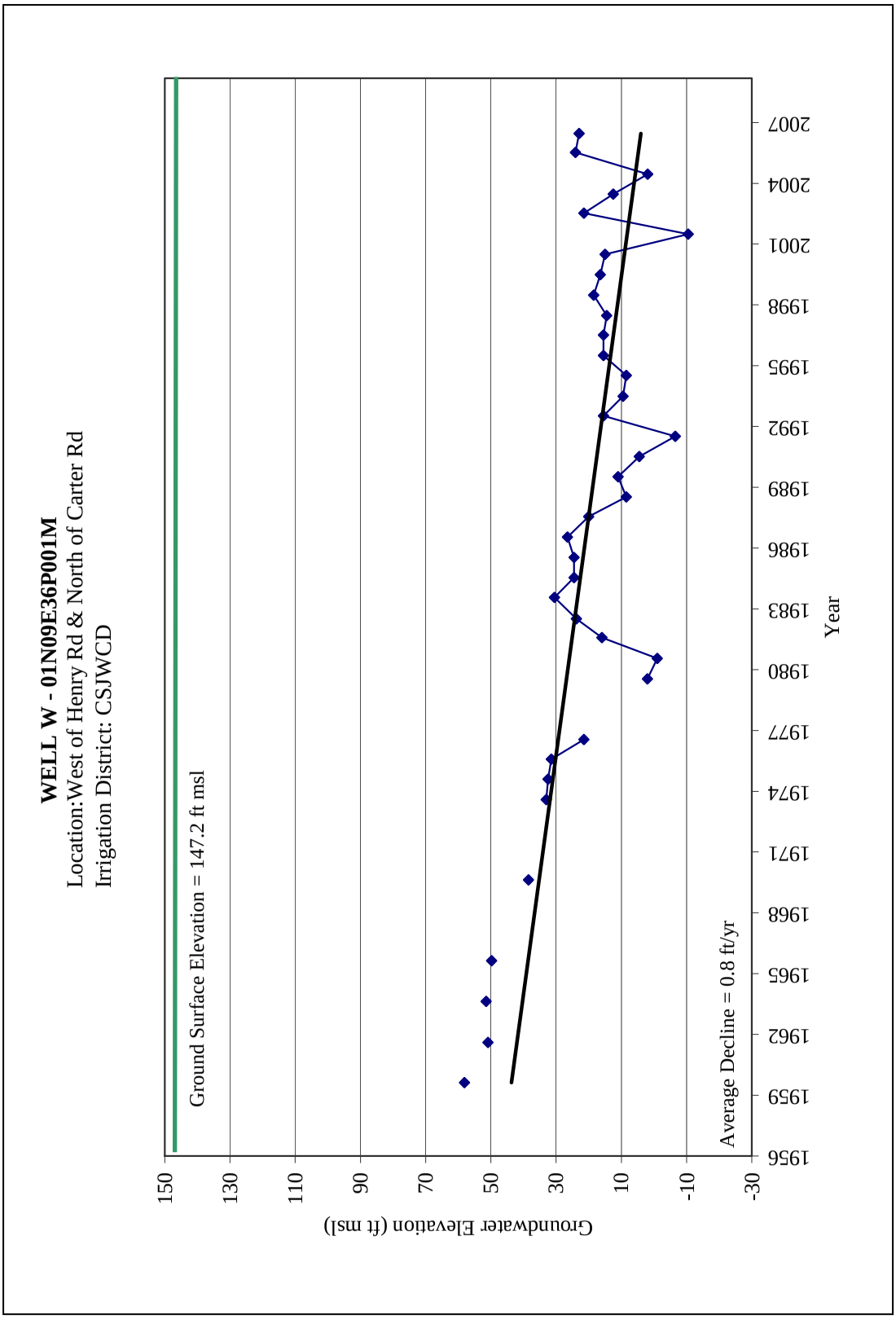

Figure 3-24: Fall Hydrograph Well W

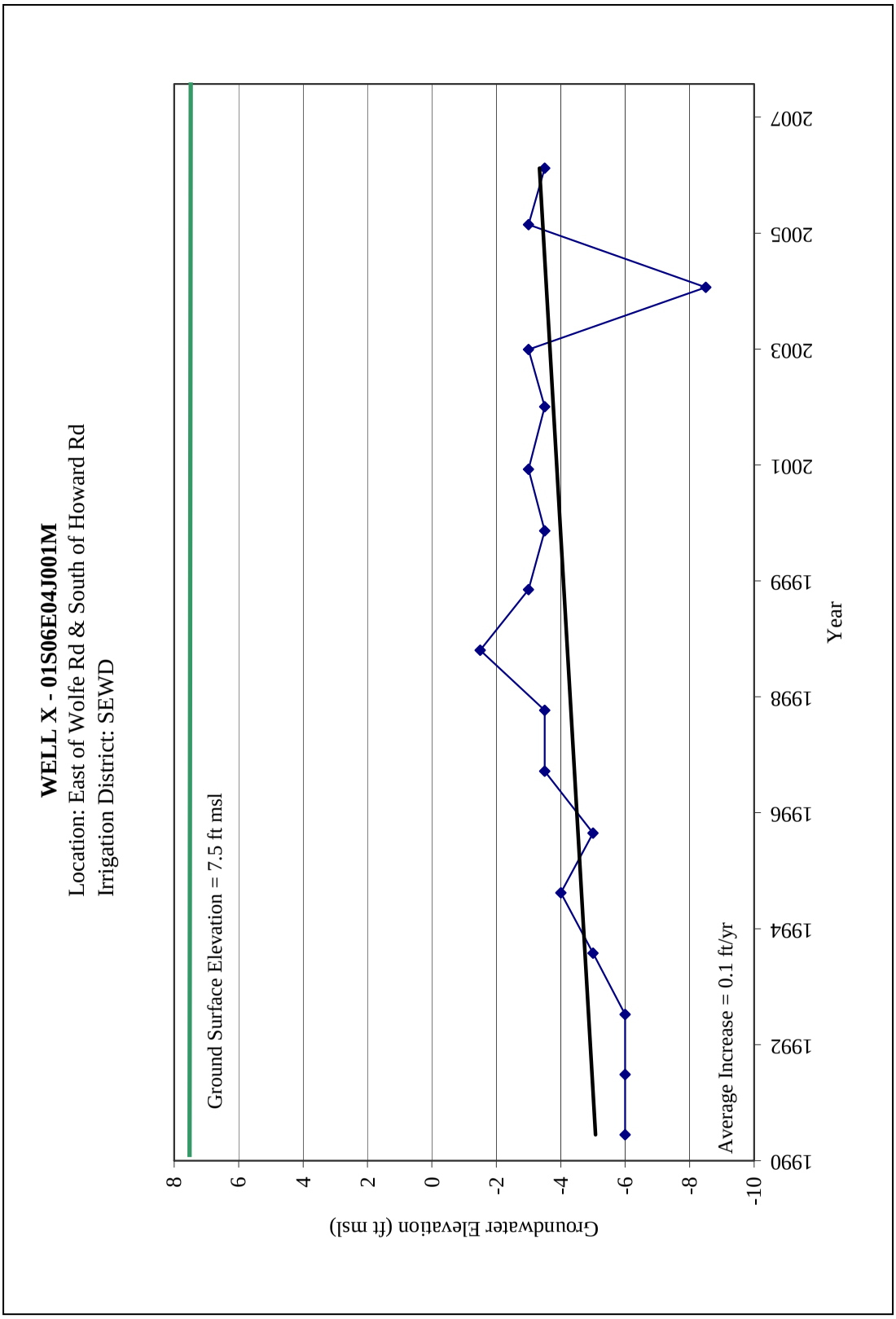

Figure 3-25: Fall Hydrograph Well X

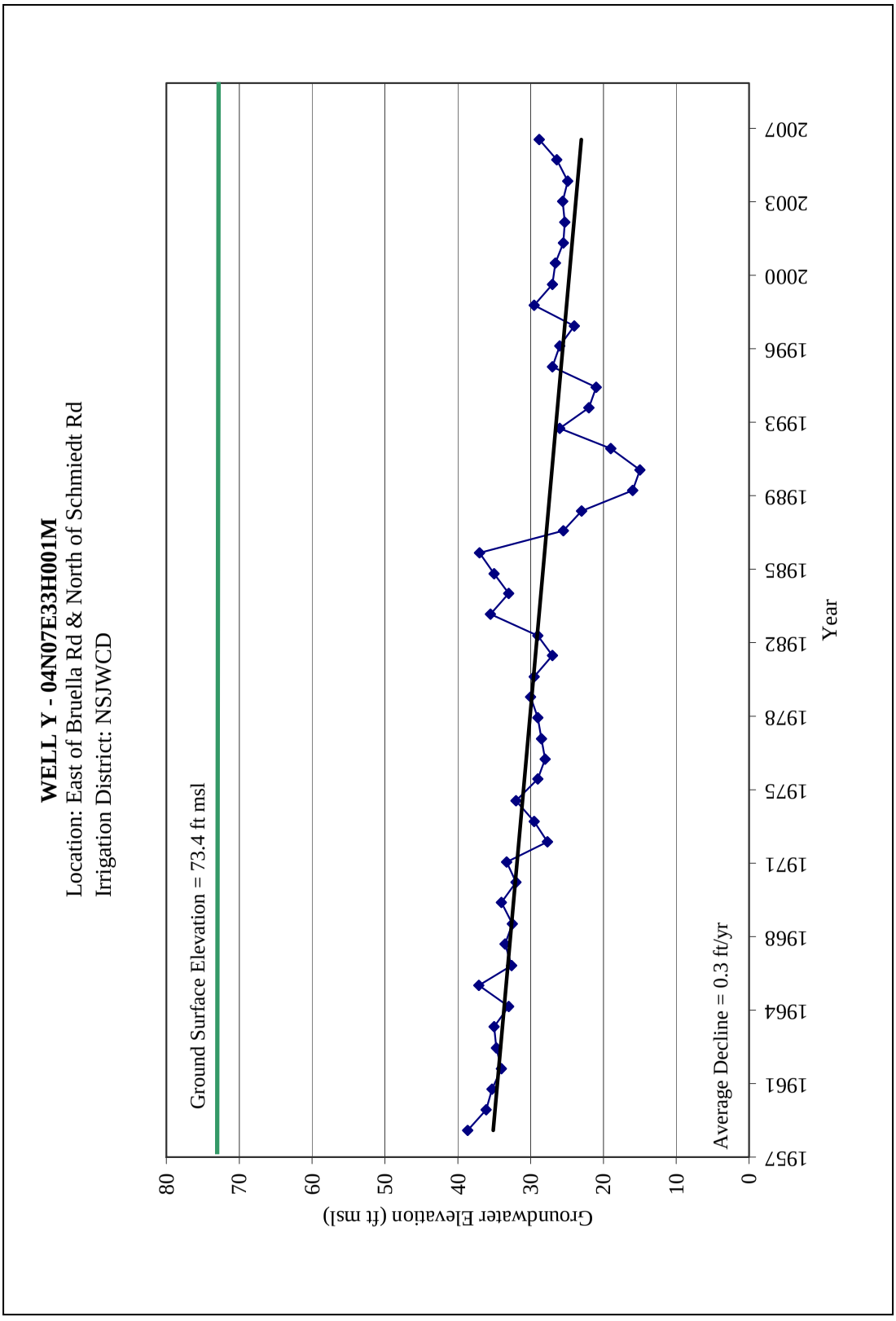

Figure 3-26: Fall Hydrograph Well Y

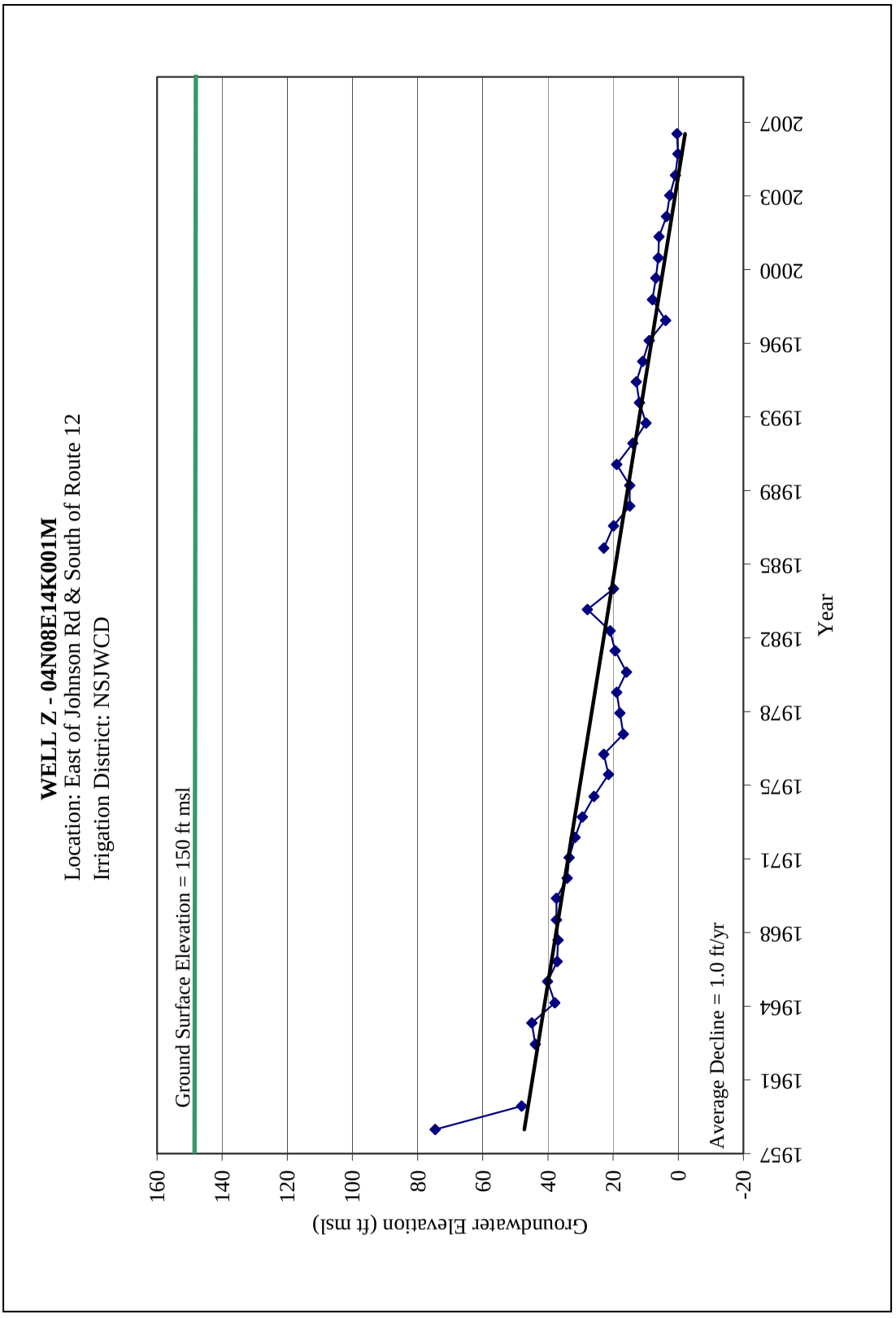

Figure 3-27: Fall Hydrograph Well Z

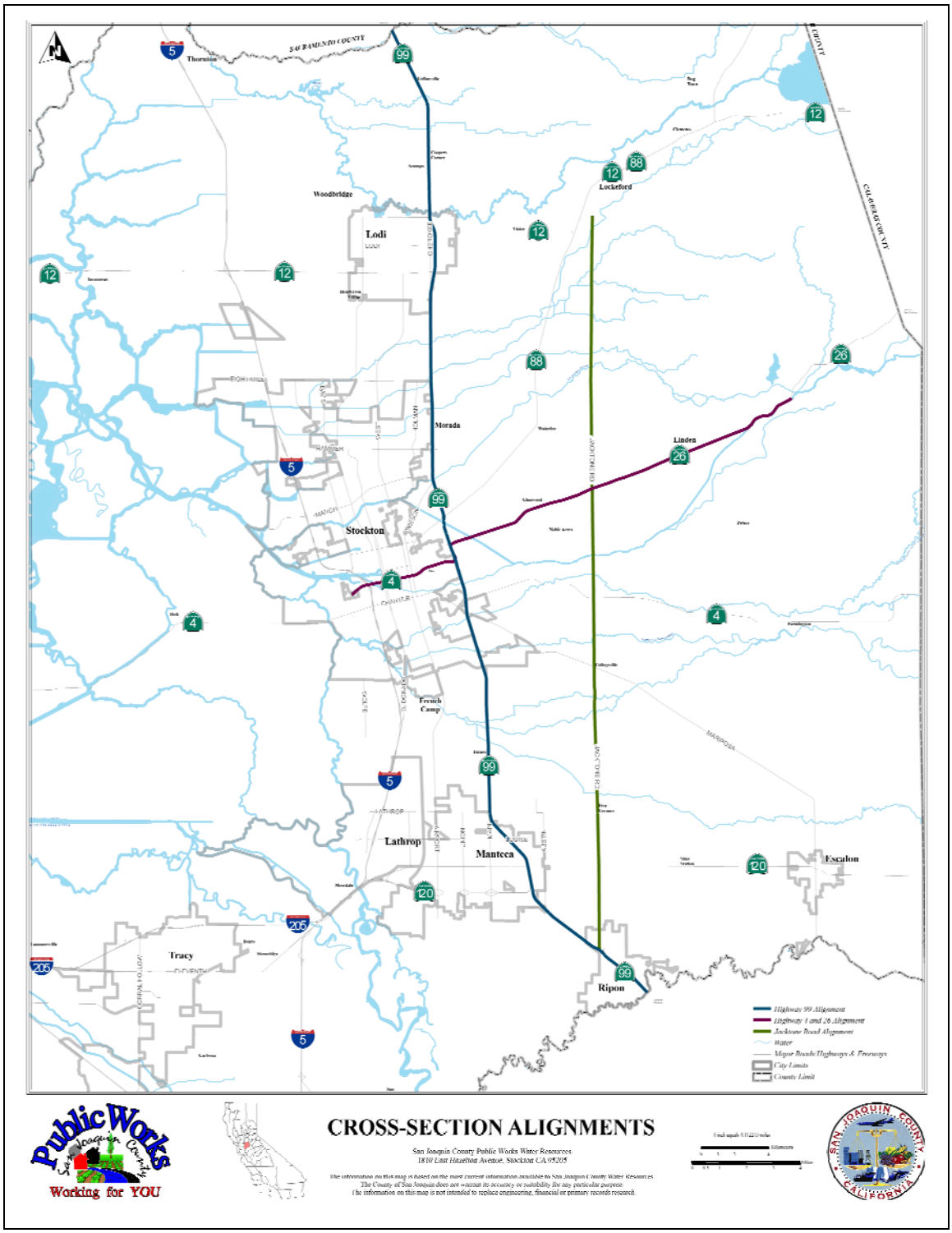

Figure 3-28: Cross Section Alignments

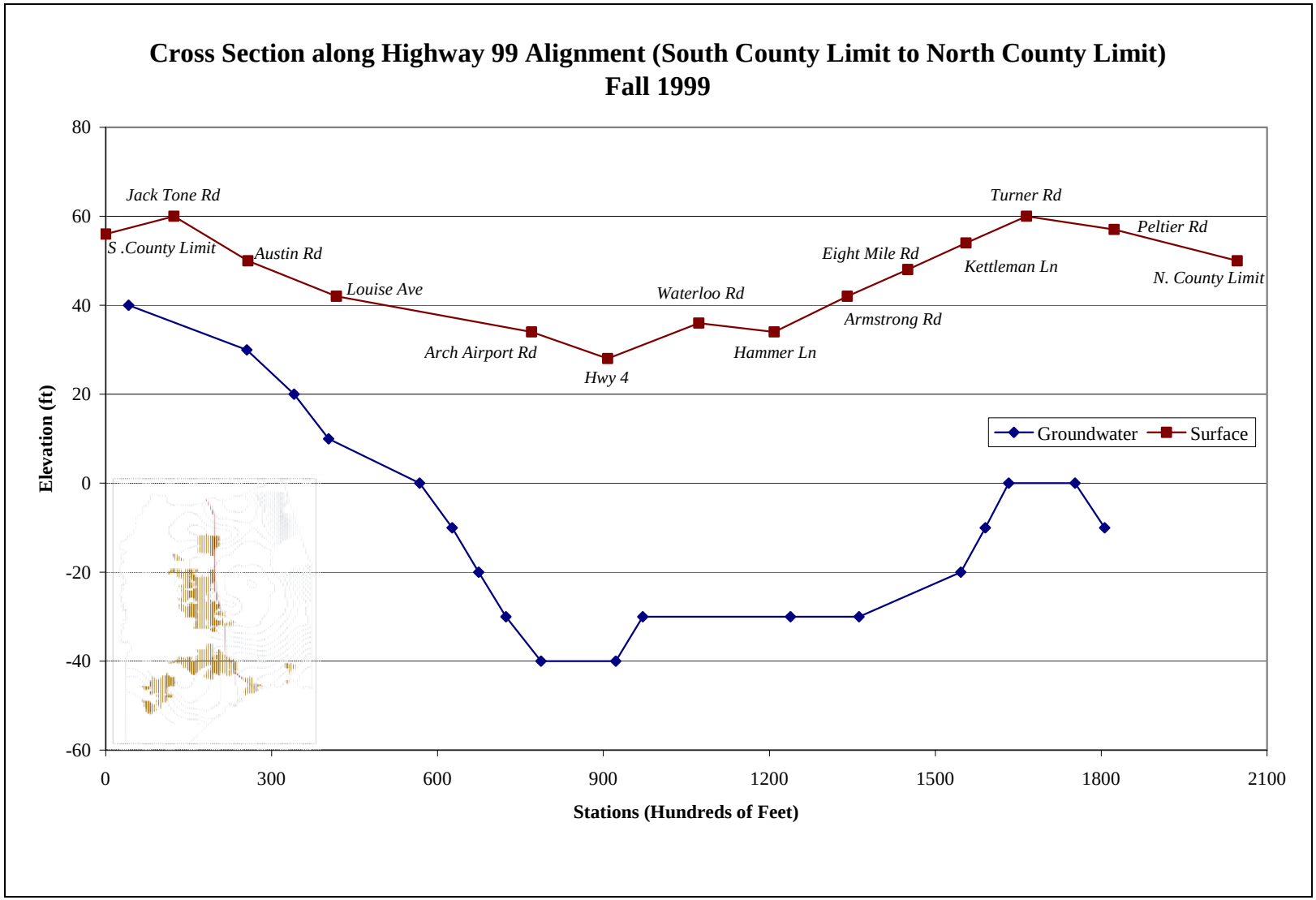

Figure 3-29: Highway 99 Cross Section Fall 1999

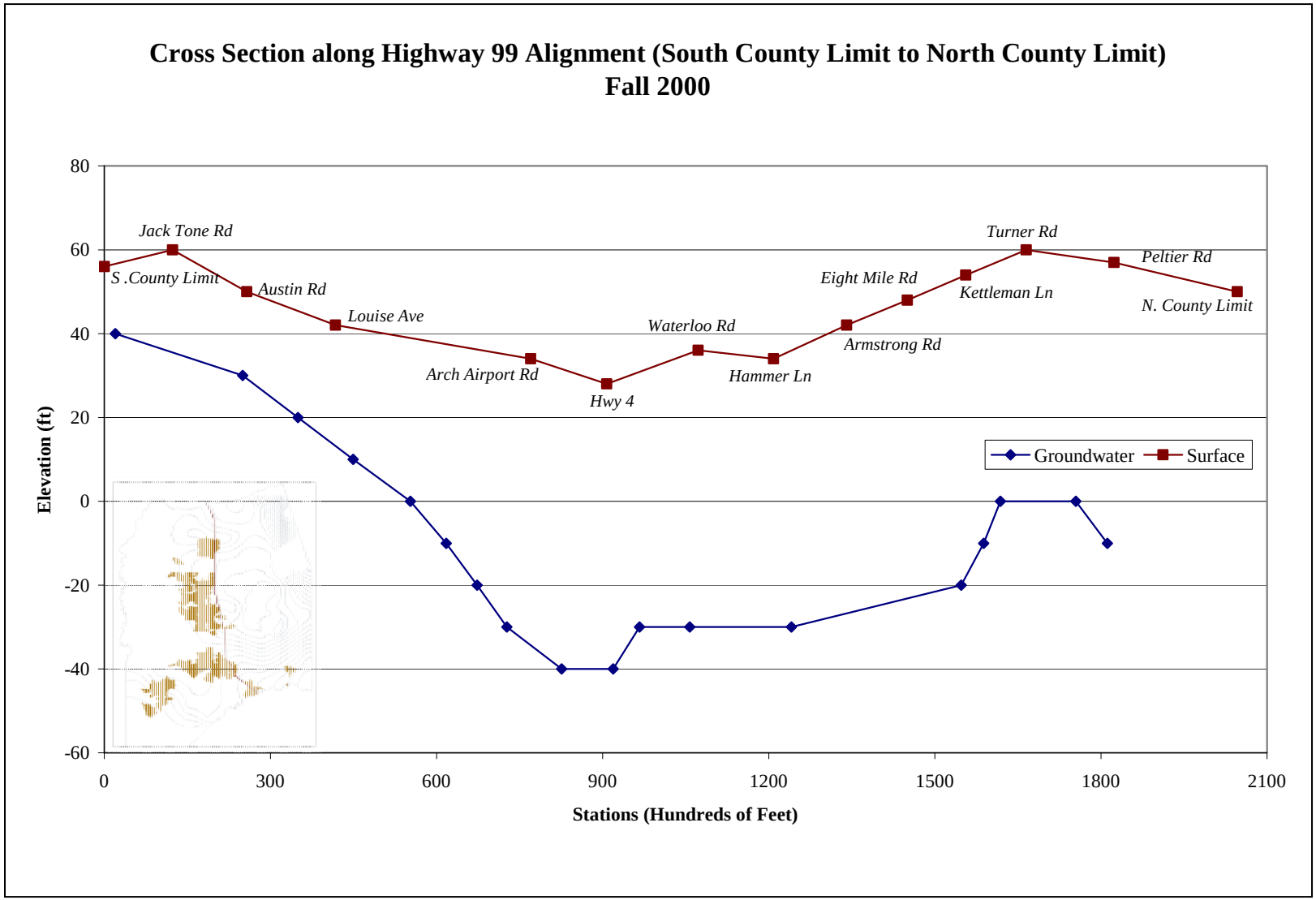

Figure 3-30: Highway 99 Cross Section Fall 2000

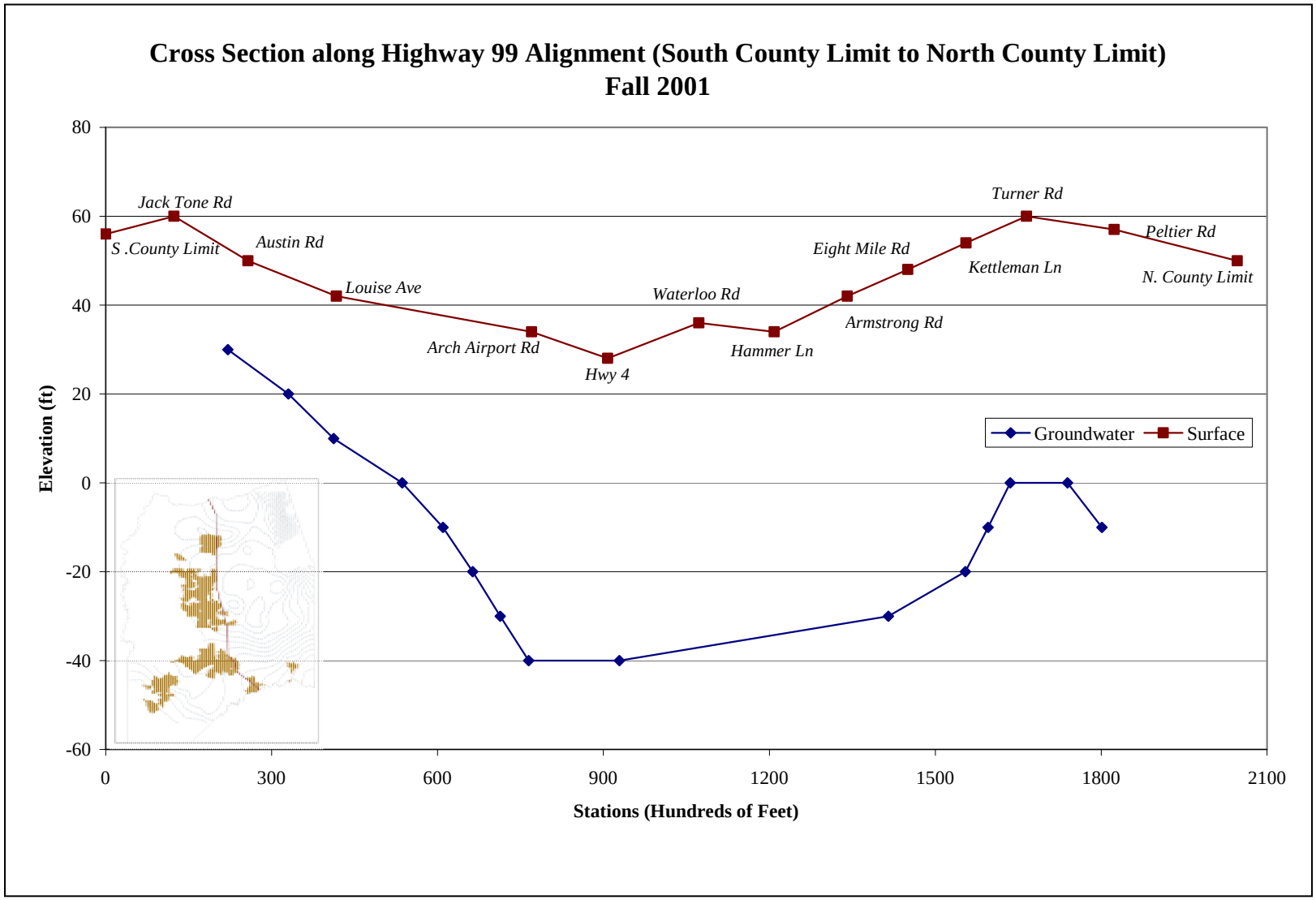

Figure 3-31: Highway 99 Cross Section Fall 2001

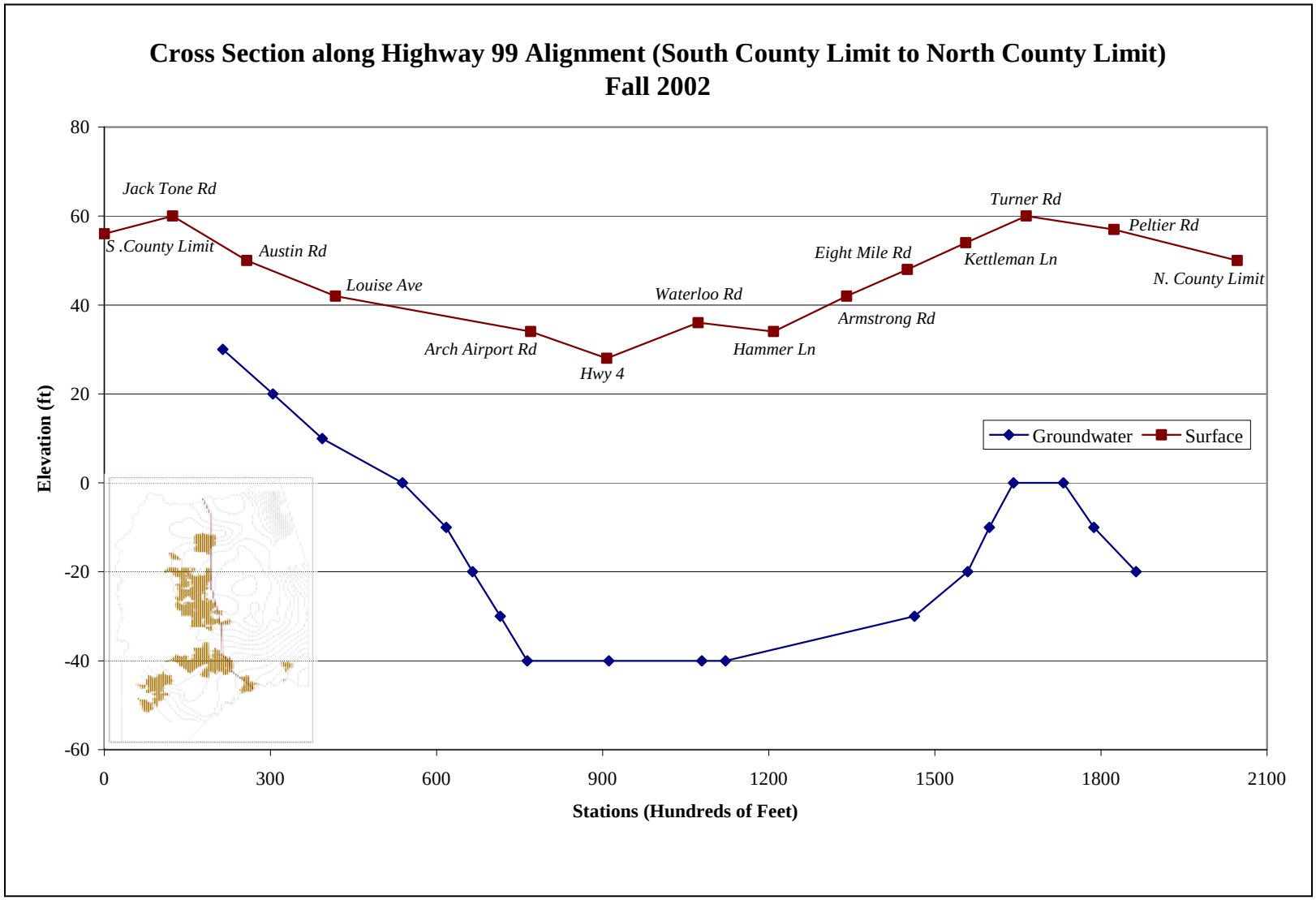

Figure 3-32: Highway 99 Cross Section Fall 2002

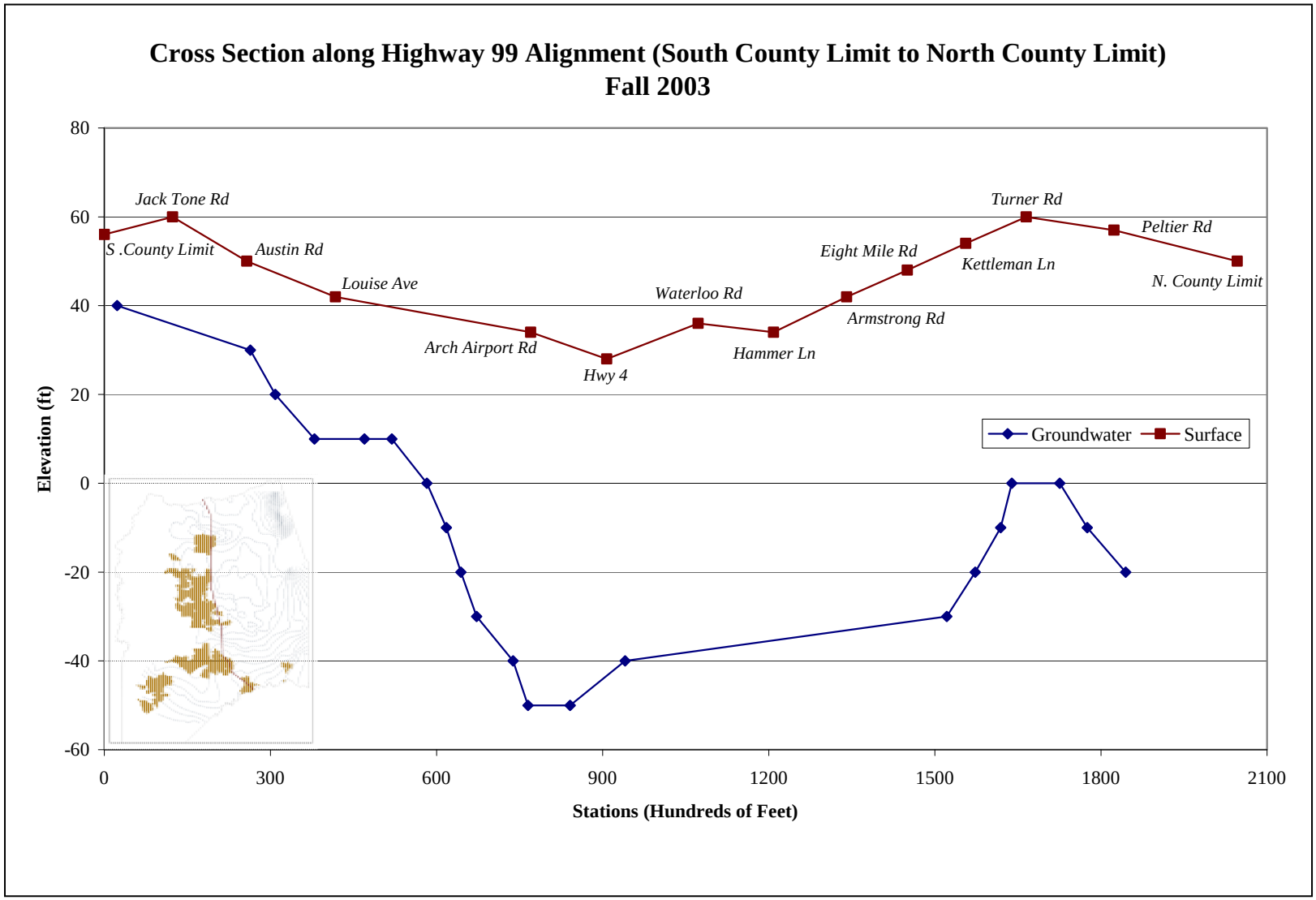

Figure 3-33: Highway 99 Cross Section Fall 2003

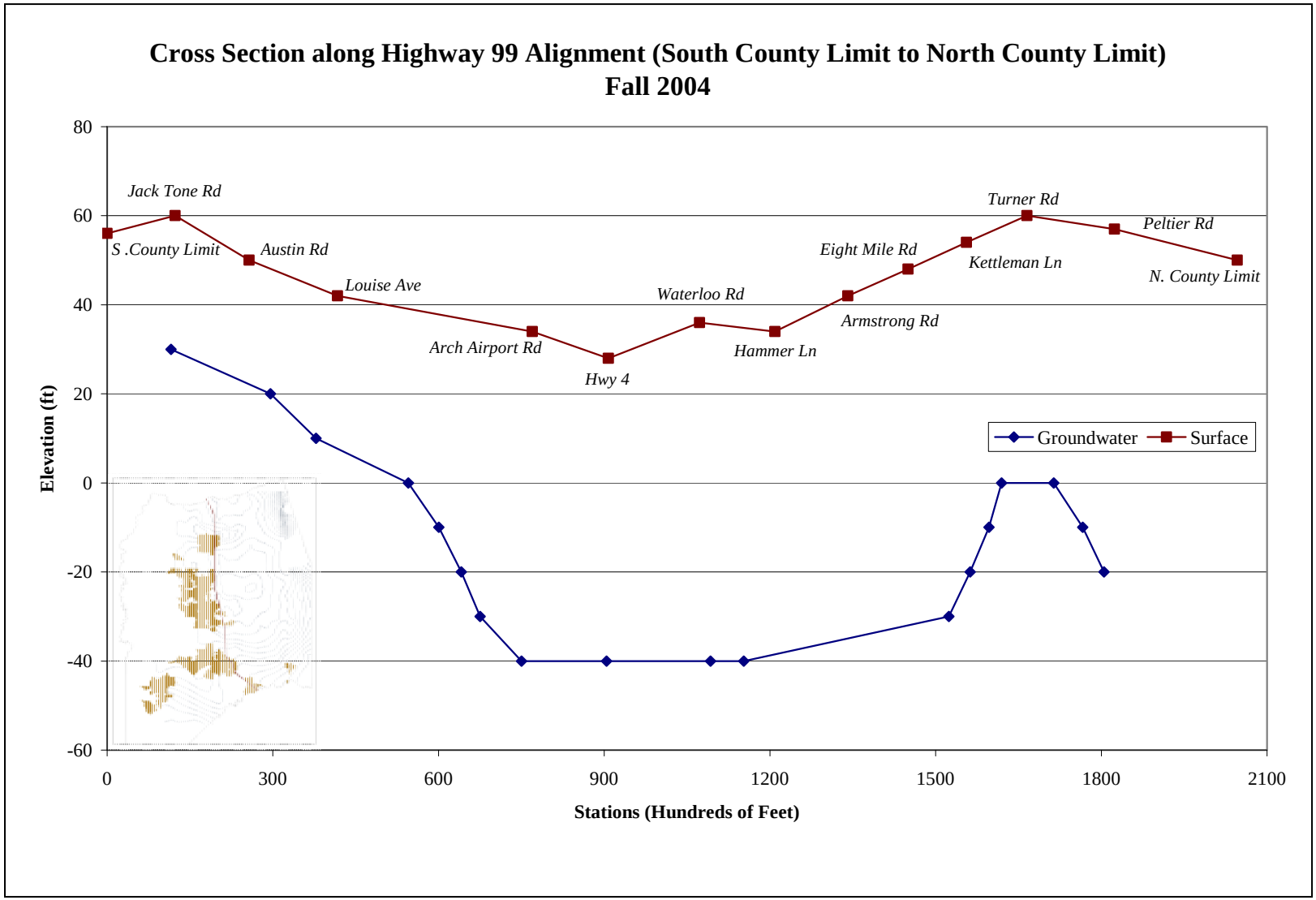

Figure 3-34: Highway 99 Cross Section Fall 2004

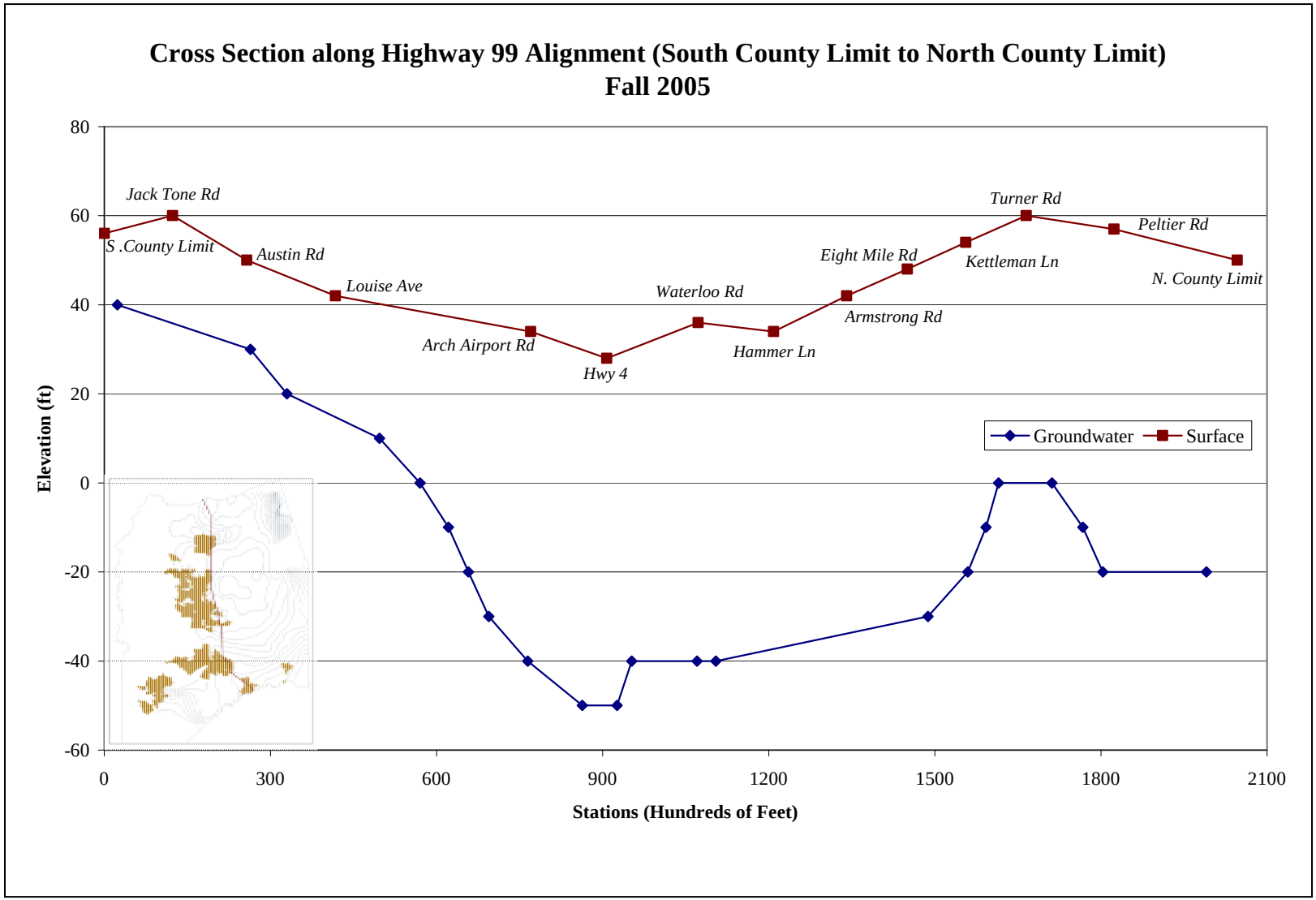

Figure 3-35: Highway 99 Cross Section Fall 2005

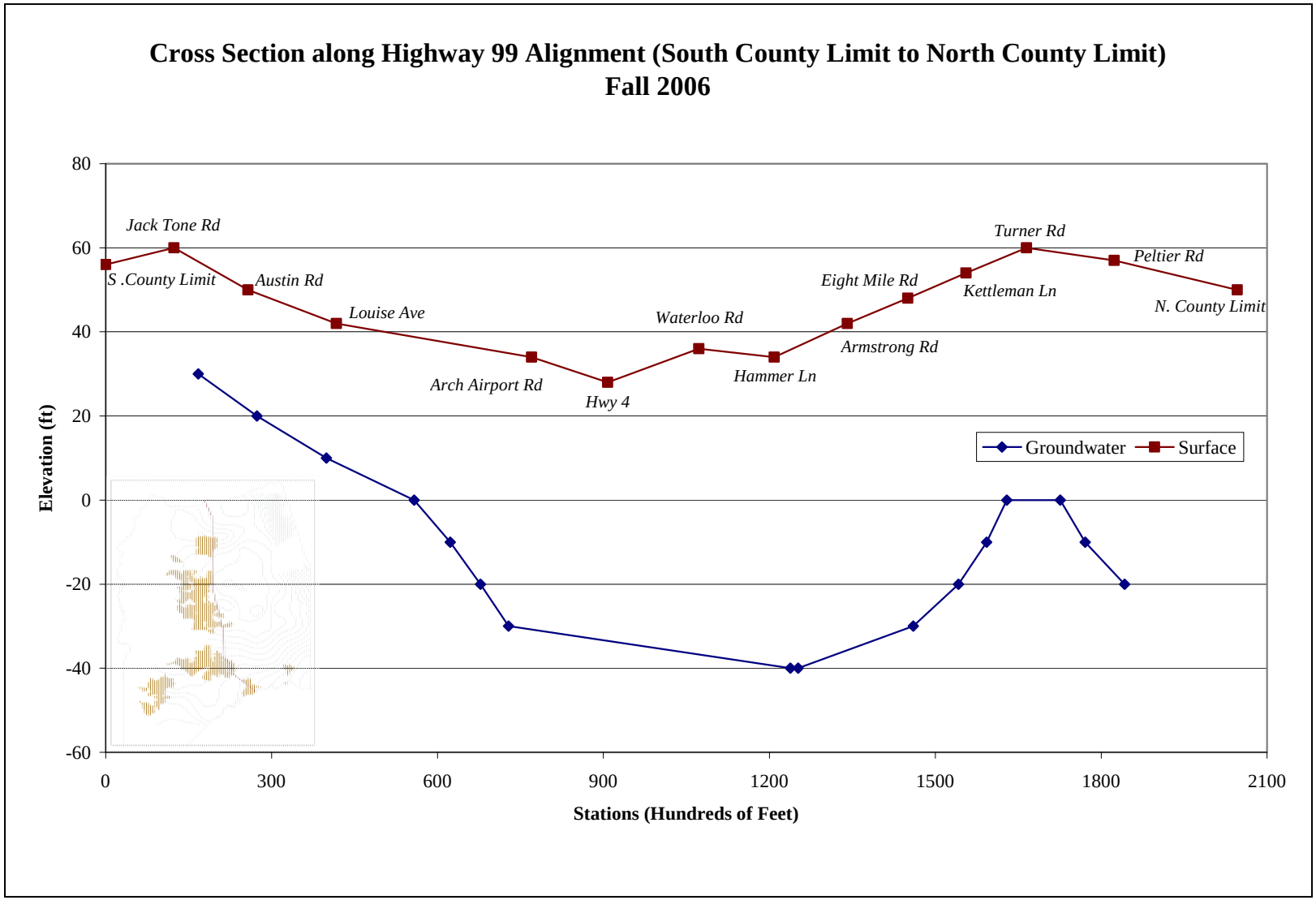

Figure 3-36: Highway 99 Cross Section Fall 2006

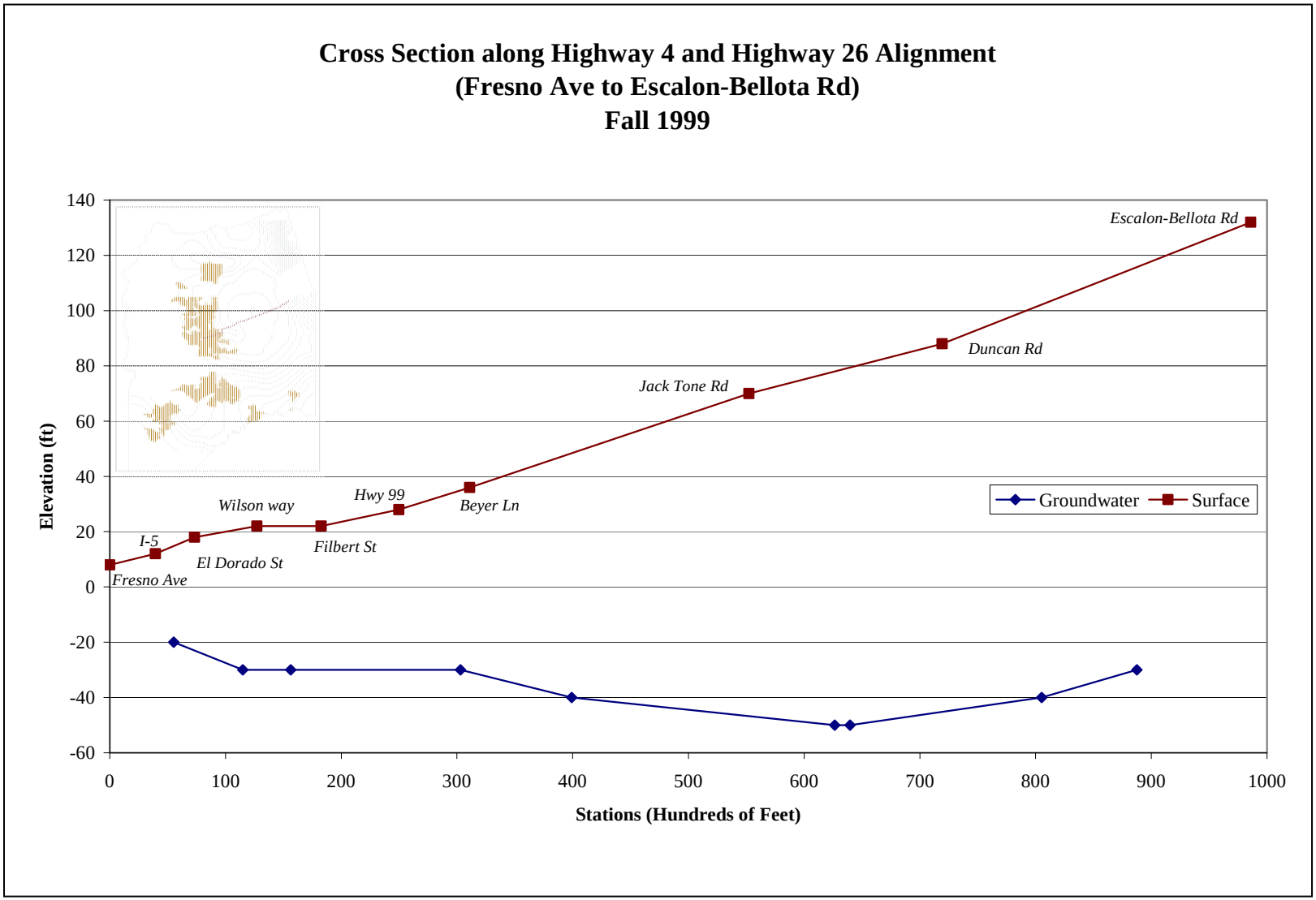

Figure 3-37: Highway 4 & Highway 26 Cross Section Fall 1999

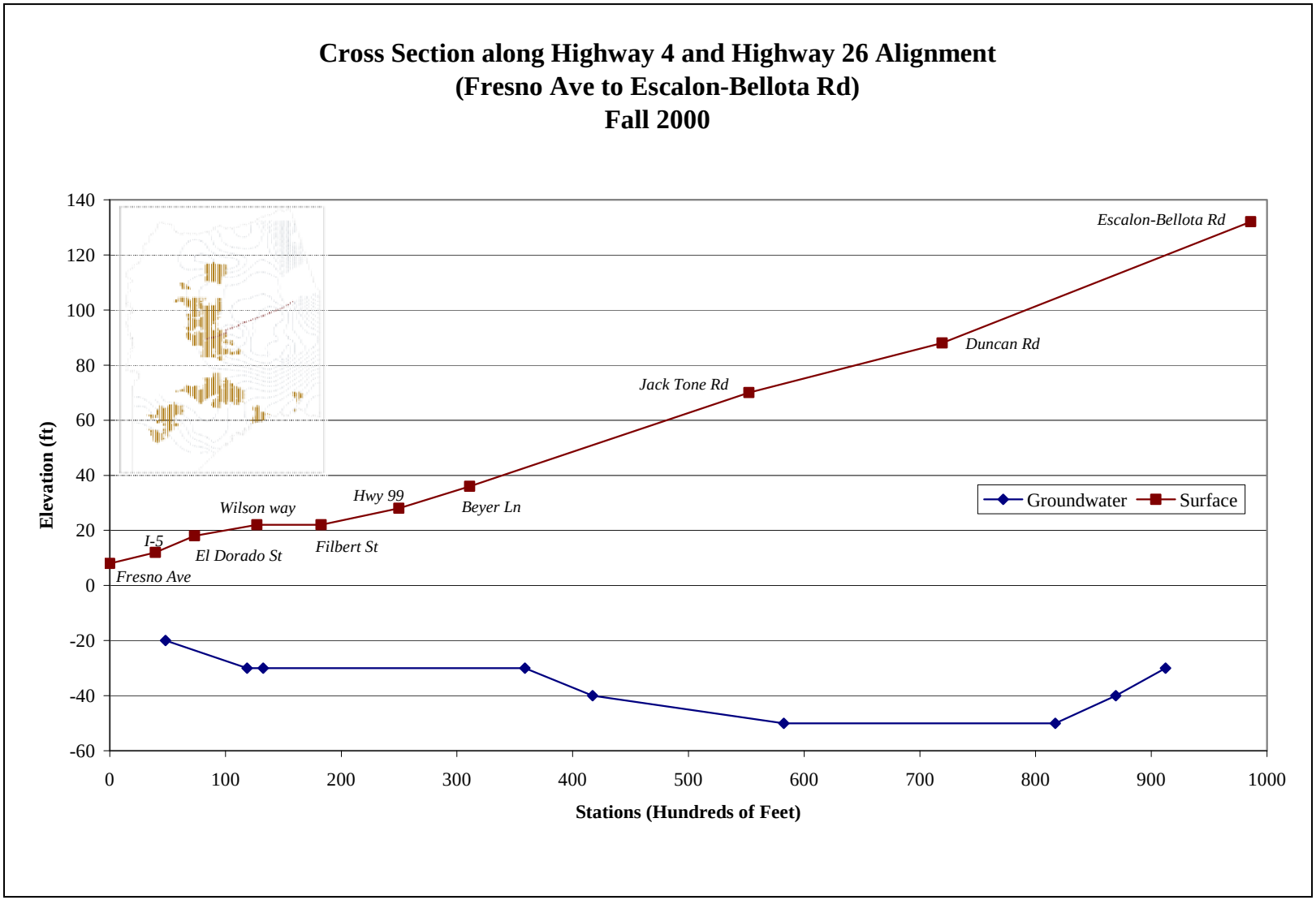

Figure 3-38: Highway 4 & Highway 26 Cross Section Fall 2000

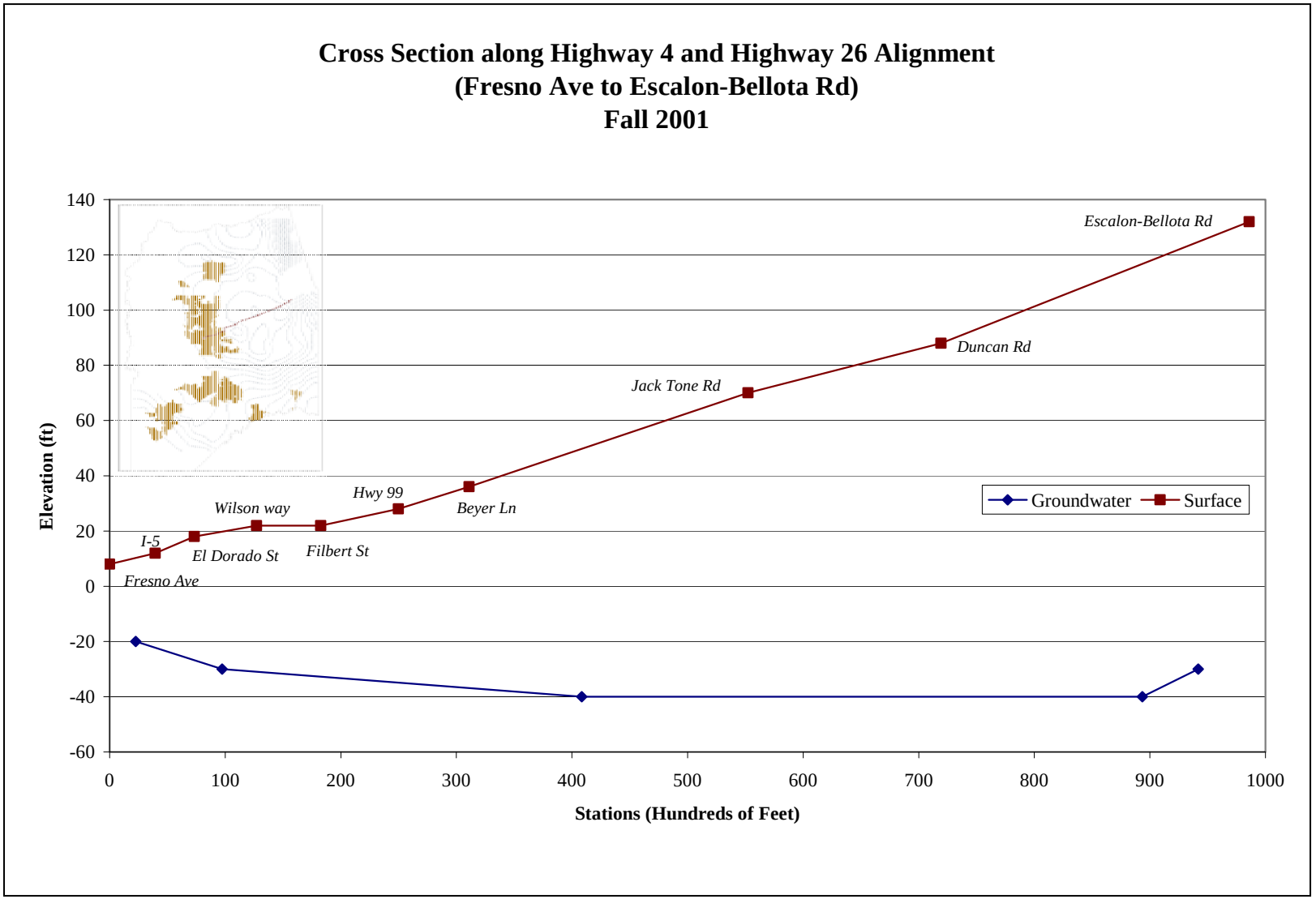

Figure 3-39: Highway 4 & Highway 26 Cross Section Fall 2001

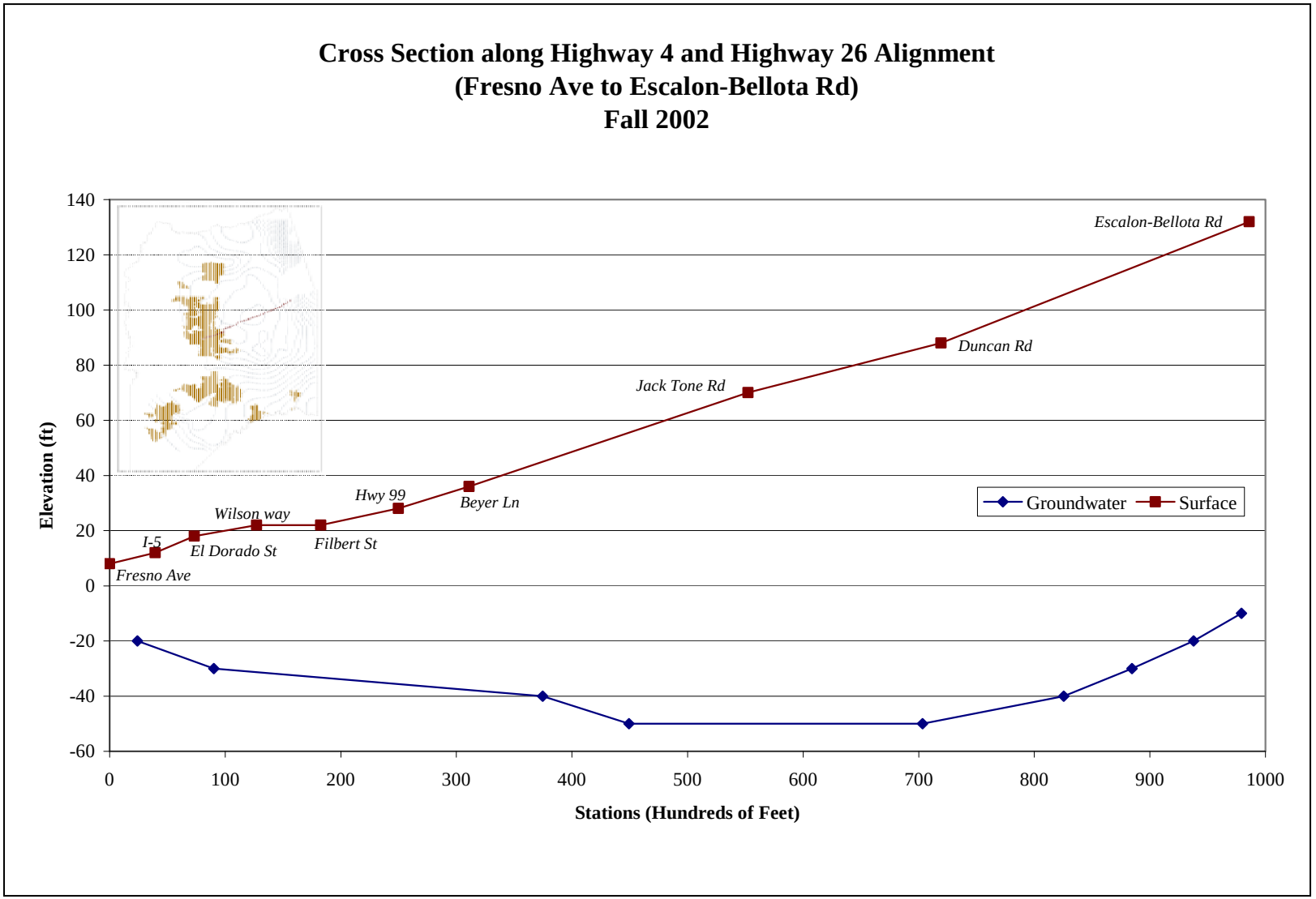

Figure 3-40: Highway 4 & Highway 26 Cross Section Fall 2002

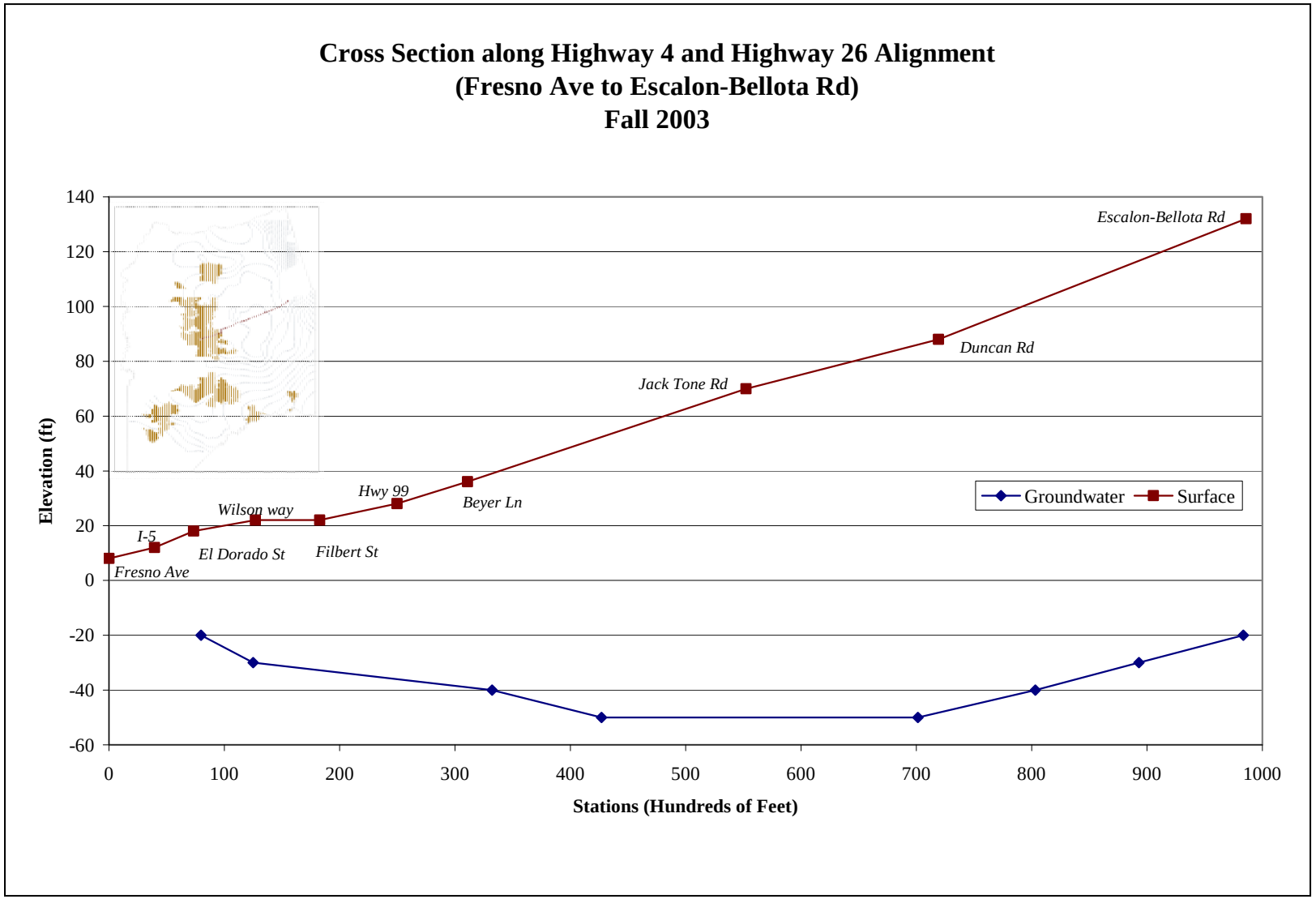

Figure 3-41: Highway 4 & Highway 26 Cross Section Fall 2003

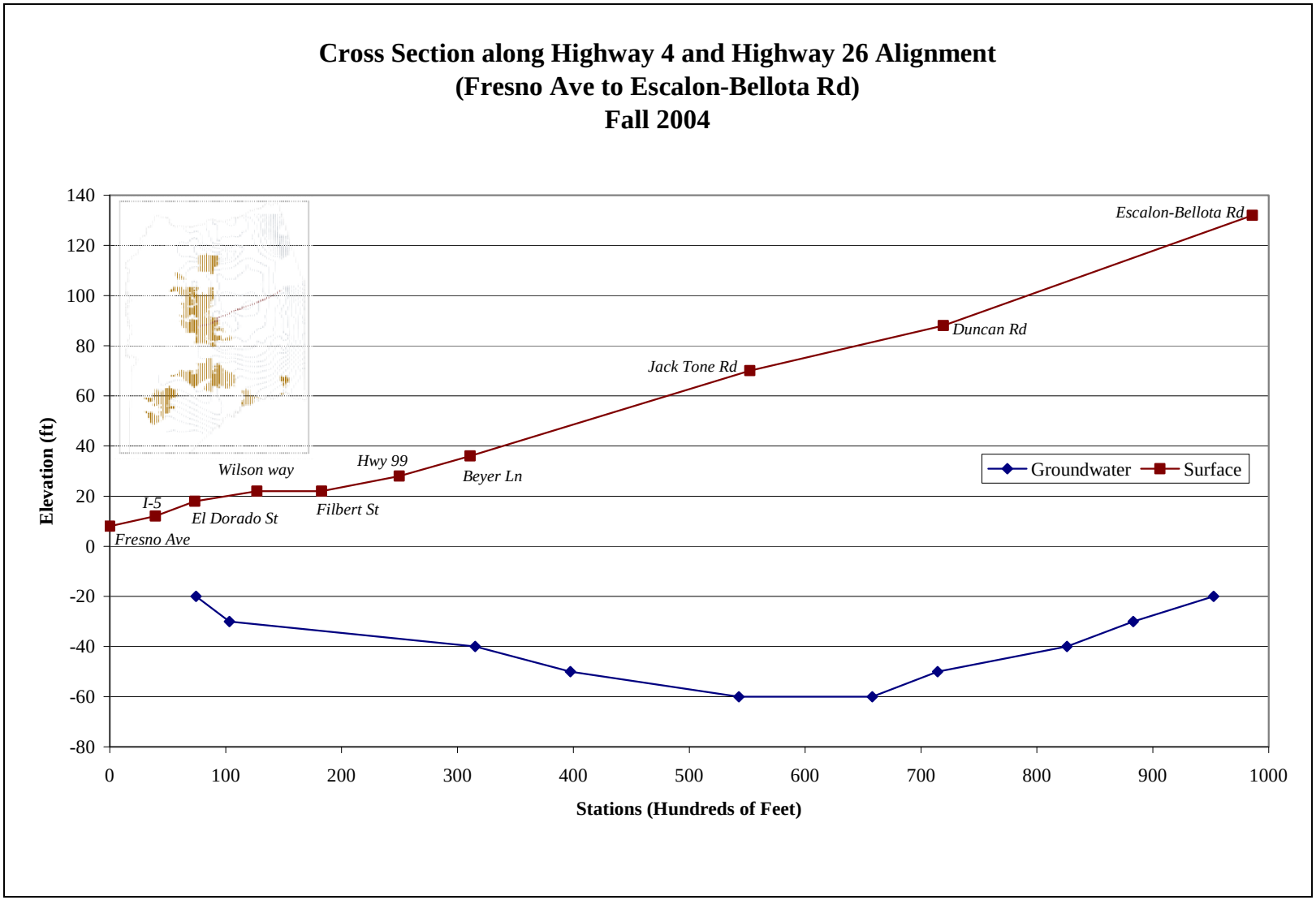

Figure 3-42: Highway 4 & Highway 26 Cross Section Fall 2004

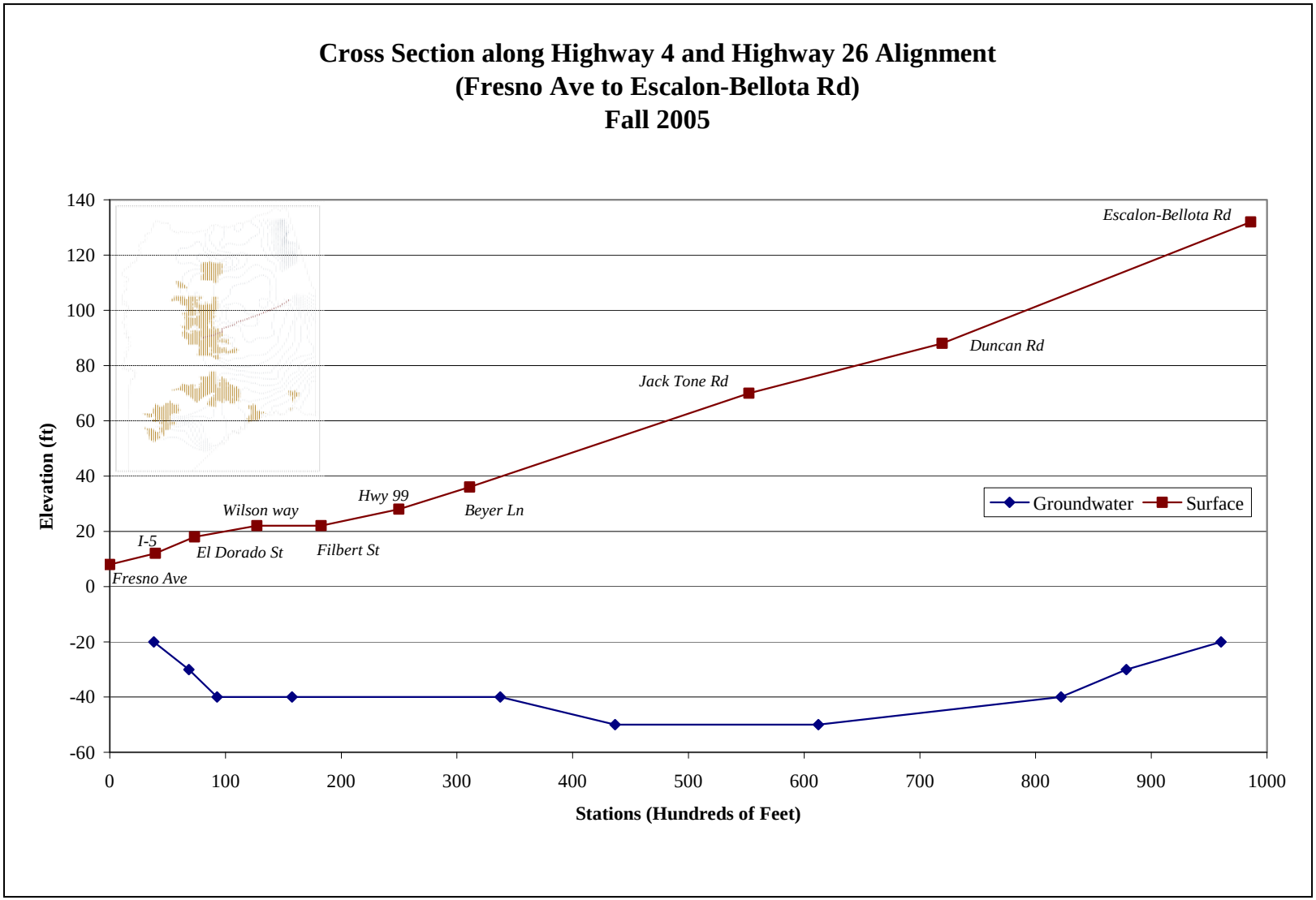

Figure 3-43: Highway 4 & Highway 26 Cross Section Fall 2005

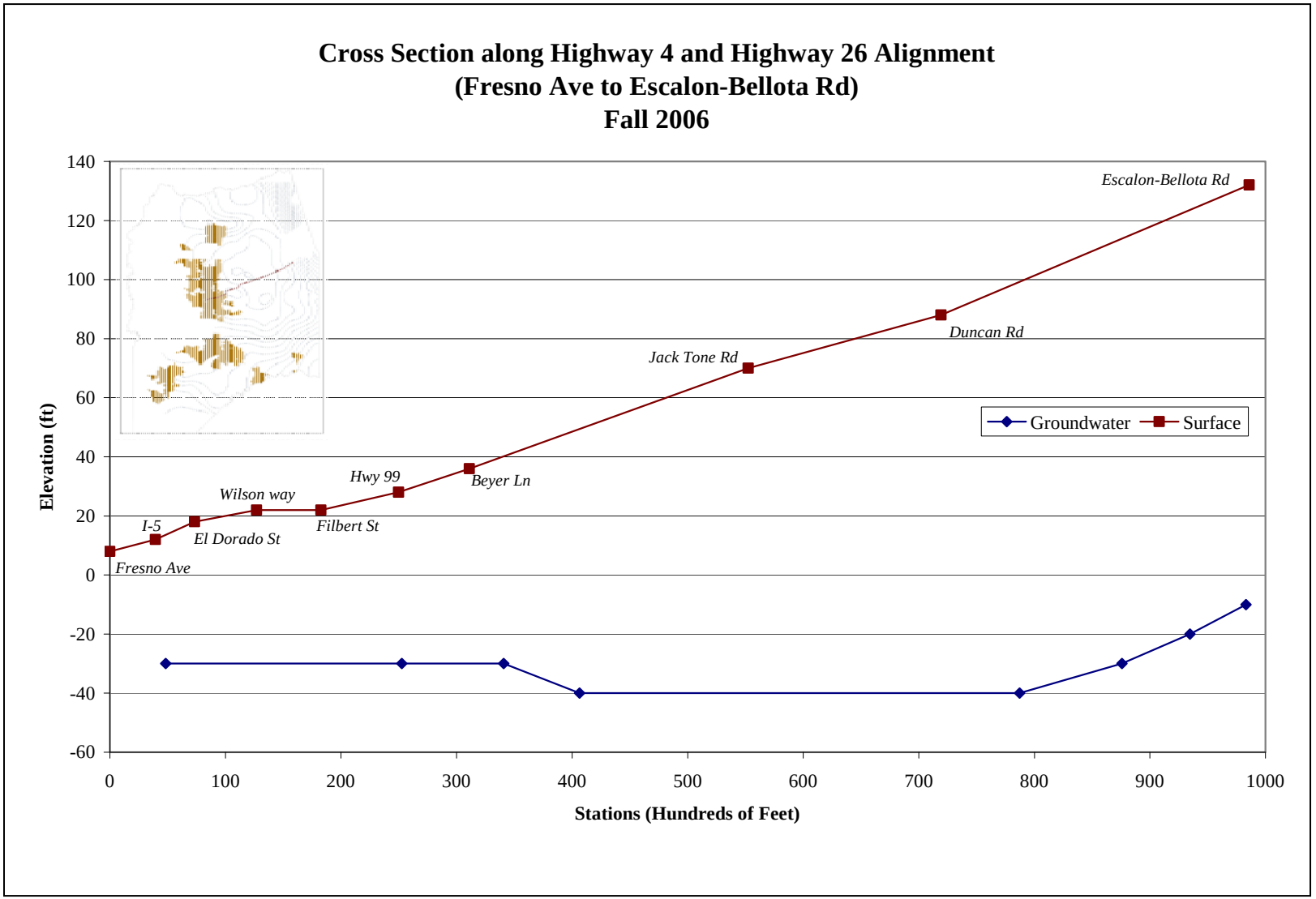

Figure 3-44: Highway 4 & Highway 26 Cross Section Fall 2006

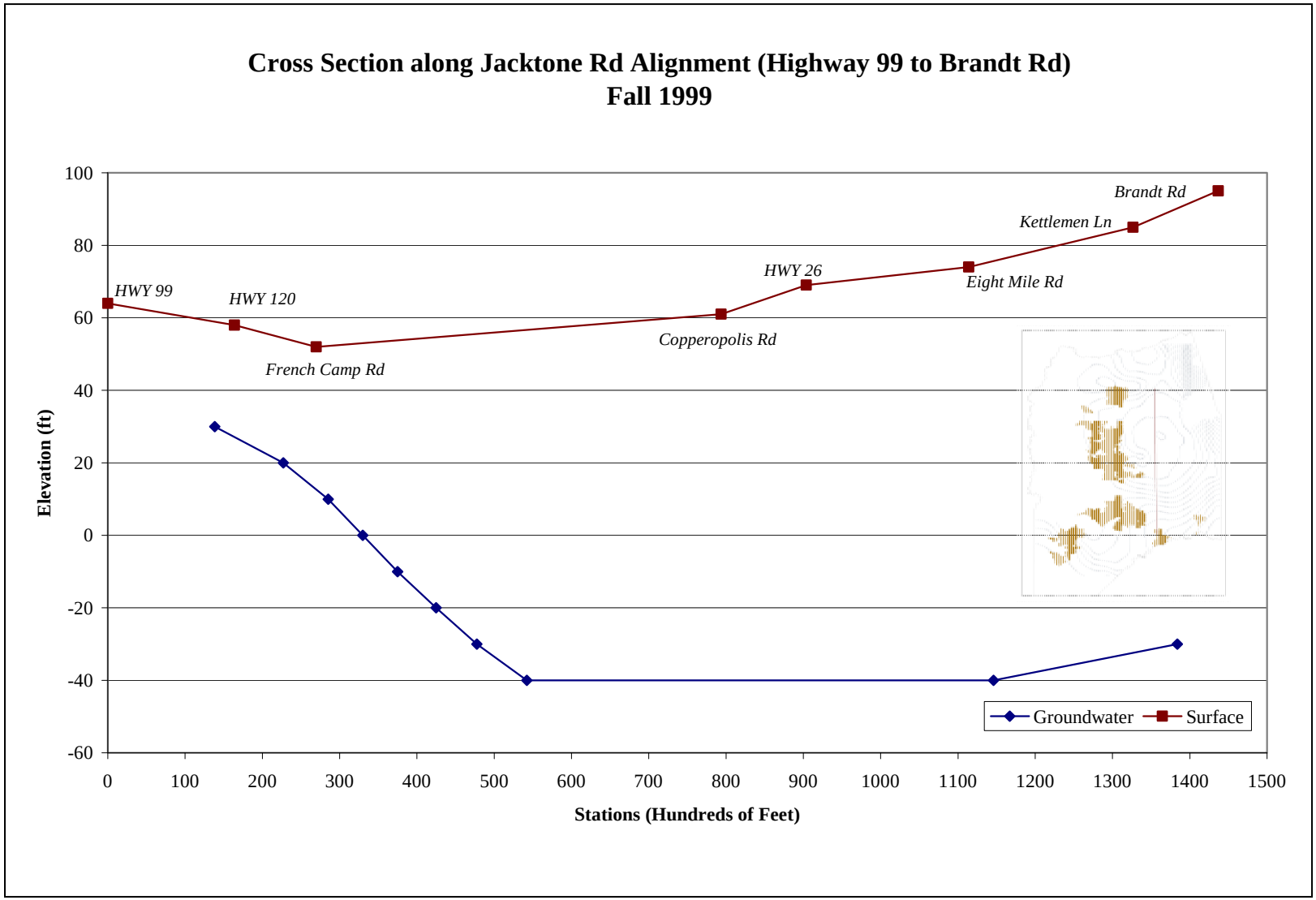

Figure 3-45: Jacktone Rd Cross Section Fall 1999

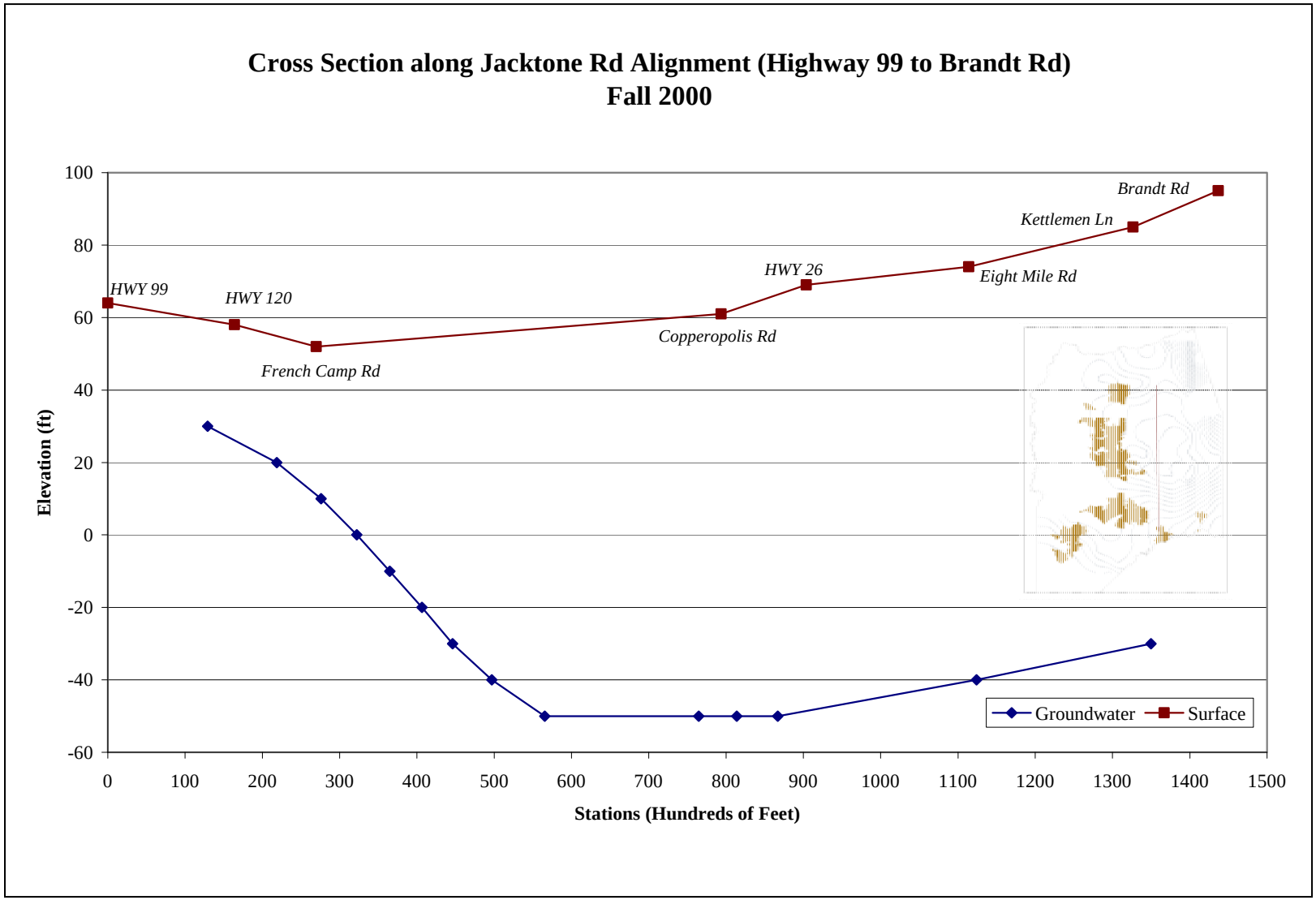

Figure 3-46: Jacktone Rd Cross Section Fall 2000

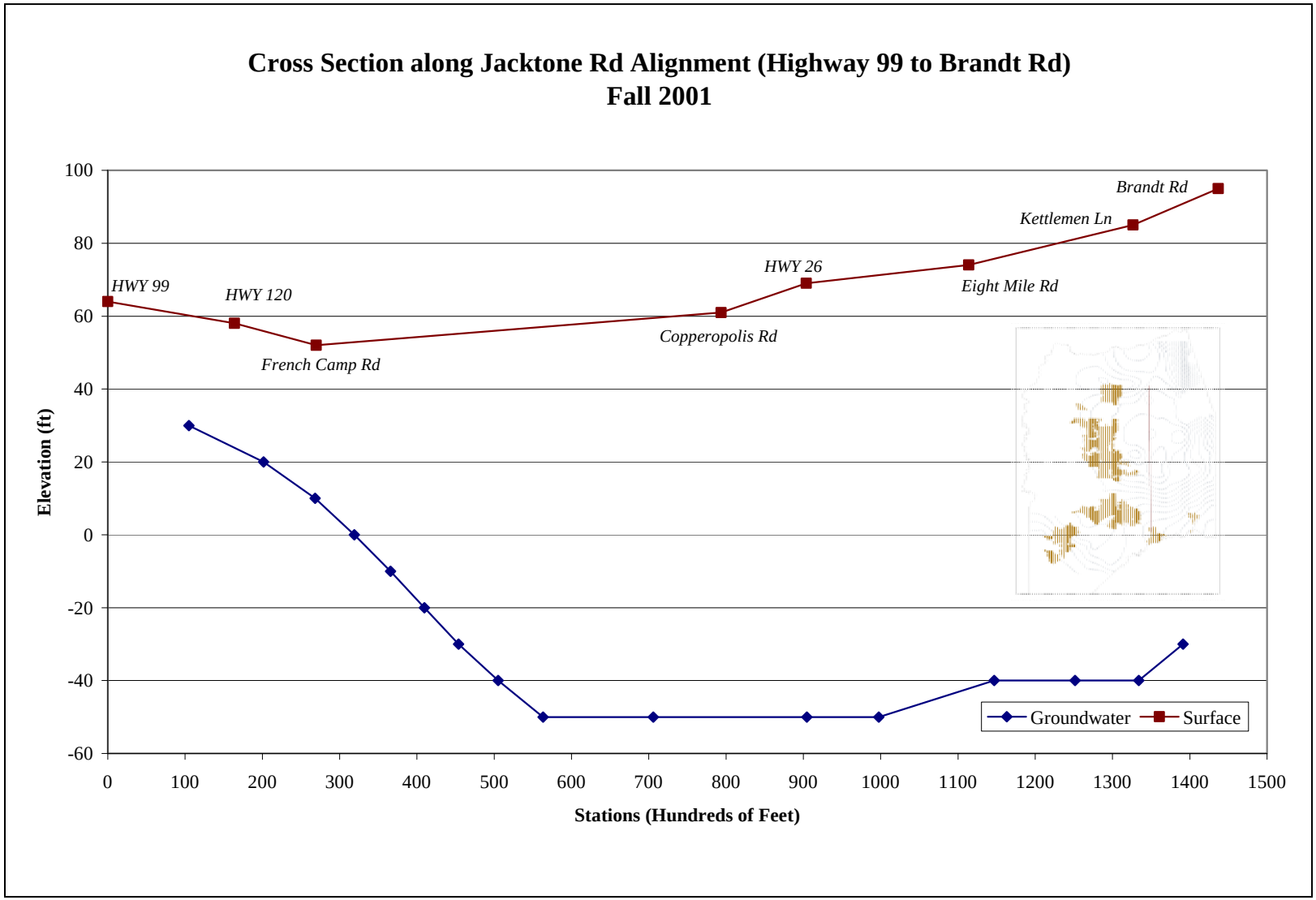

Figure 3-47: Jacktone Rd Cross Section Fall 2001

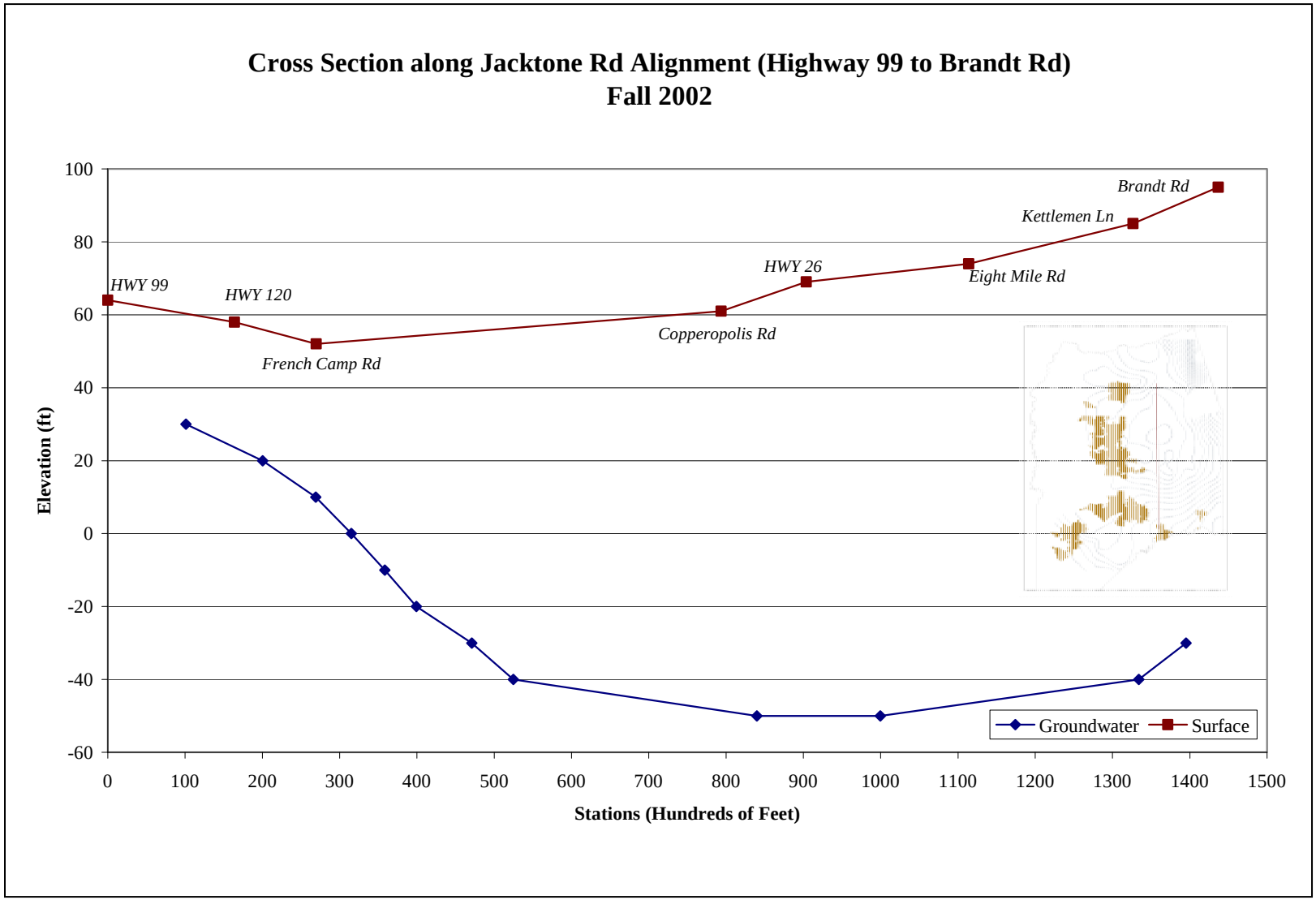

Figure 3-48: Jacktone Rd Cross Section Fall 2002

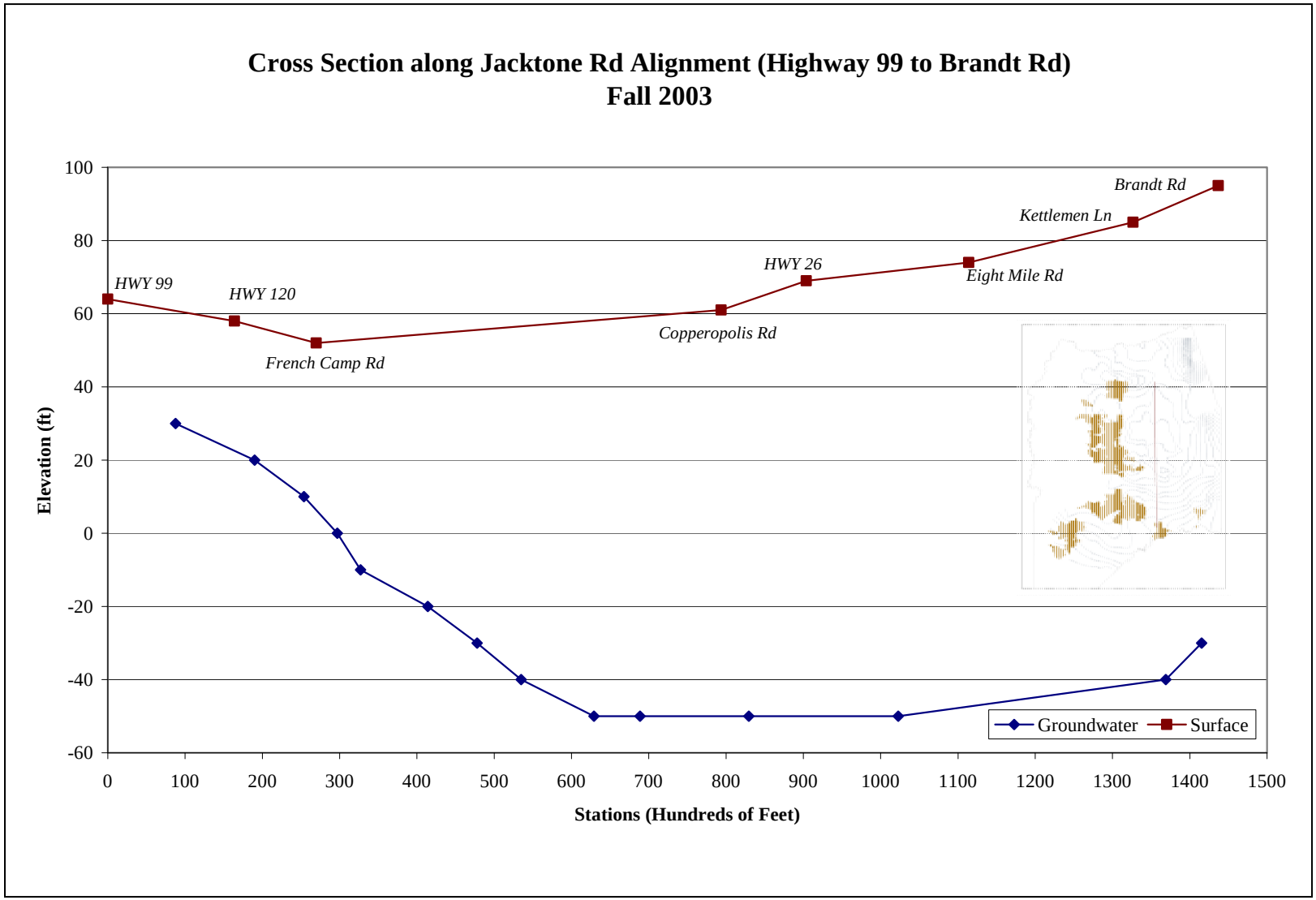

Figure 3-49: Jacktone Rd Cross Section Fall 2003

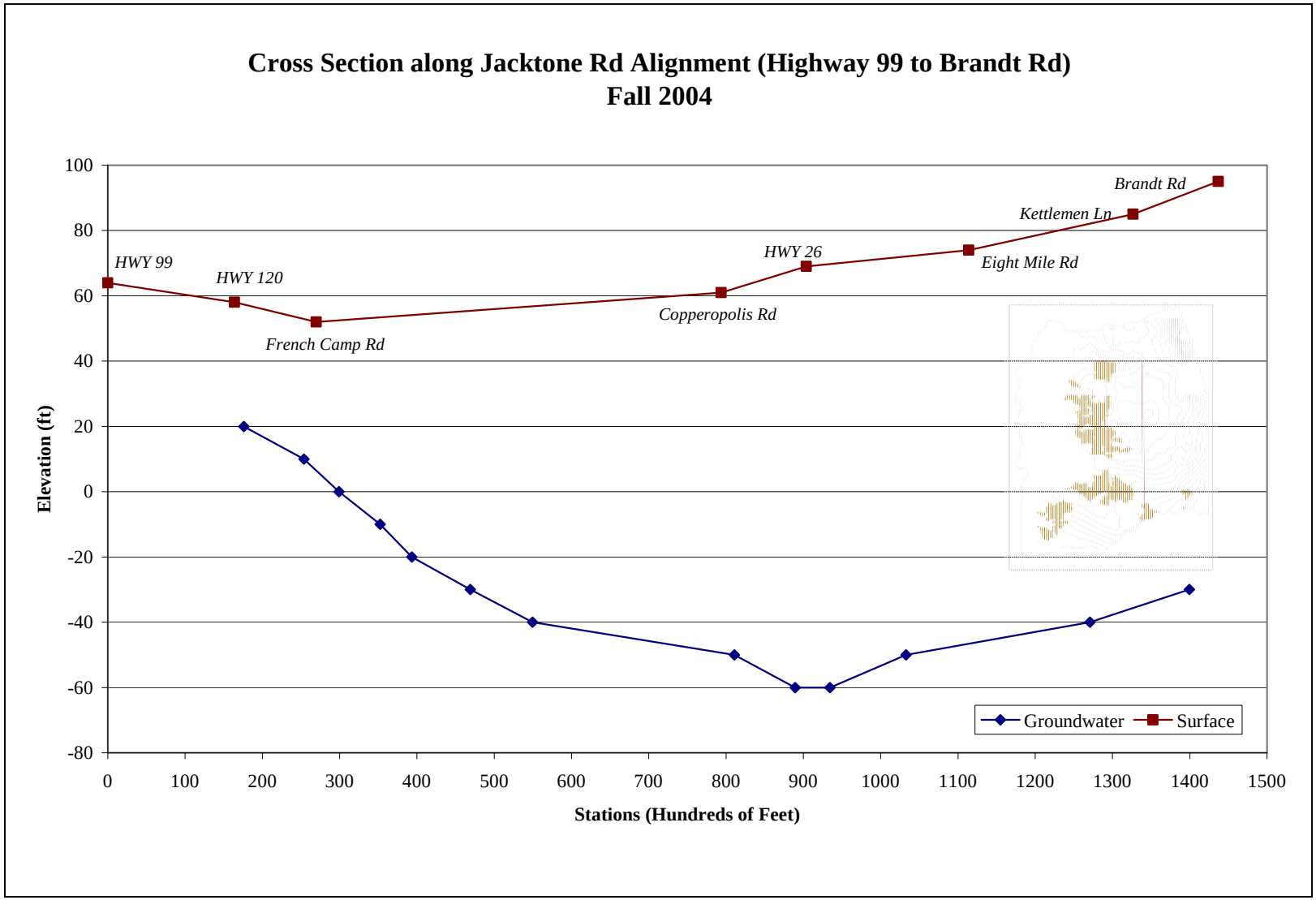

Figure 3-50: Jacktone Rd Cross Section Fall 2004

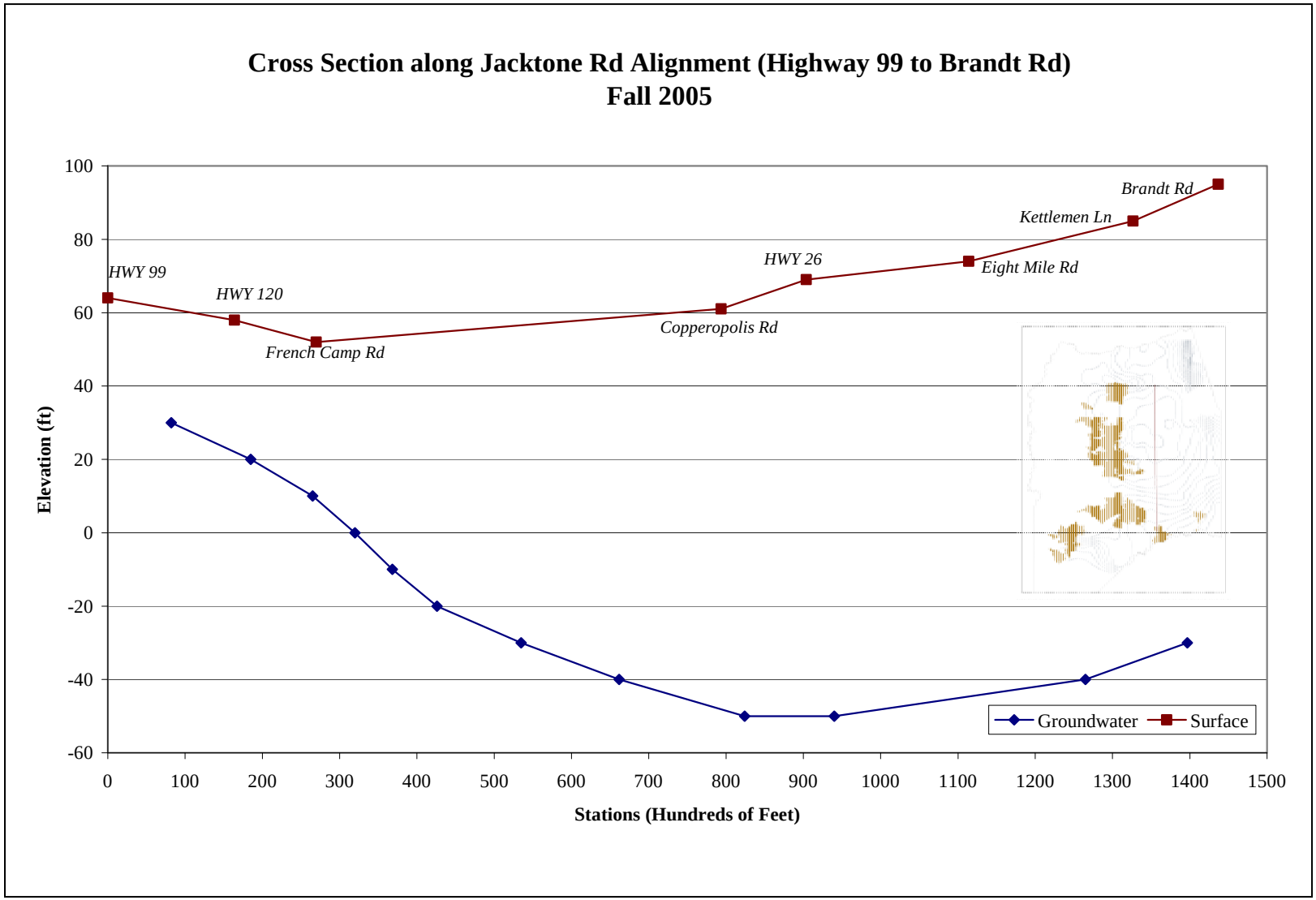

Figure 3-51: Jacktone Rd Cross Section Fall 2005

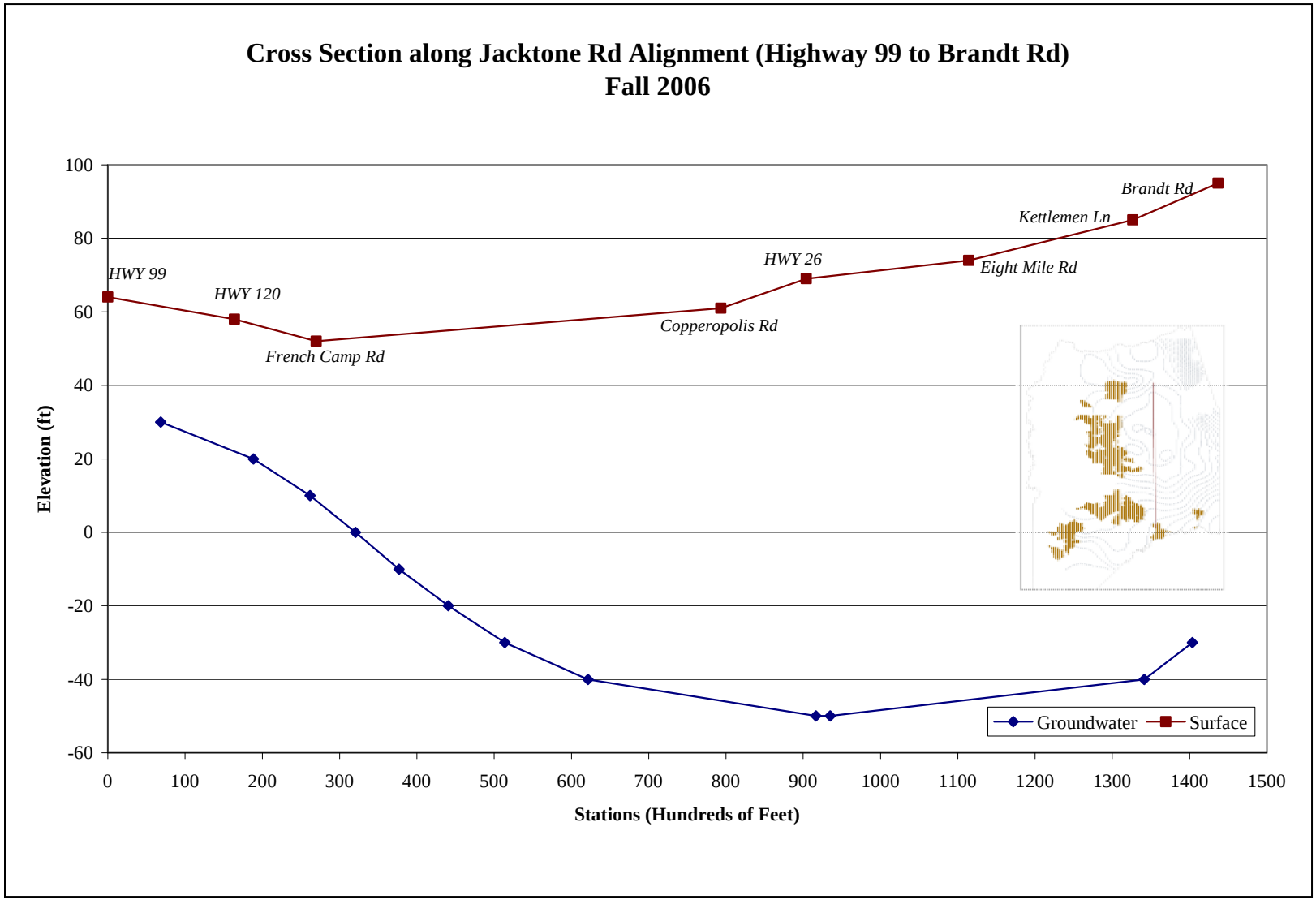

Figure 3-52: Jacktone Rd Cross Section Fall 2006

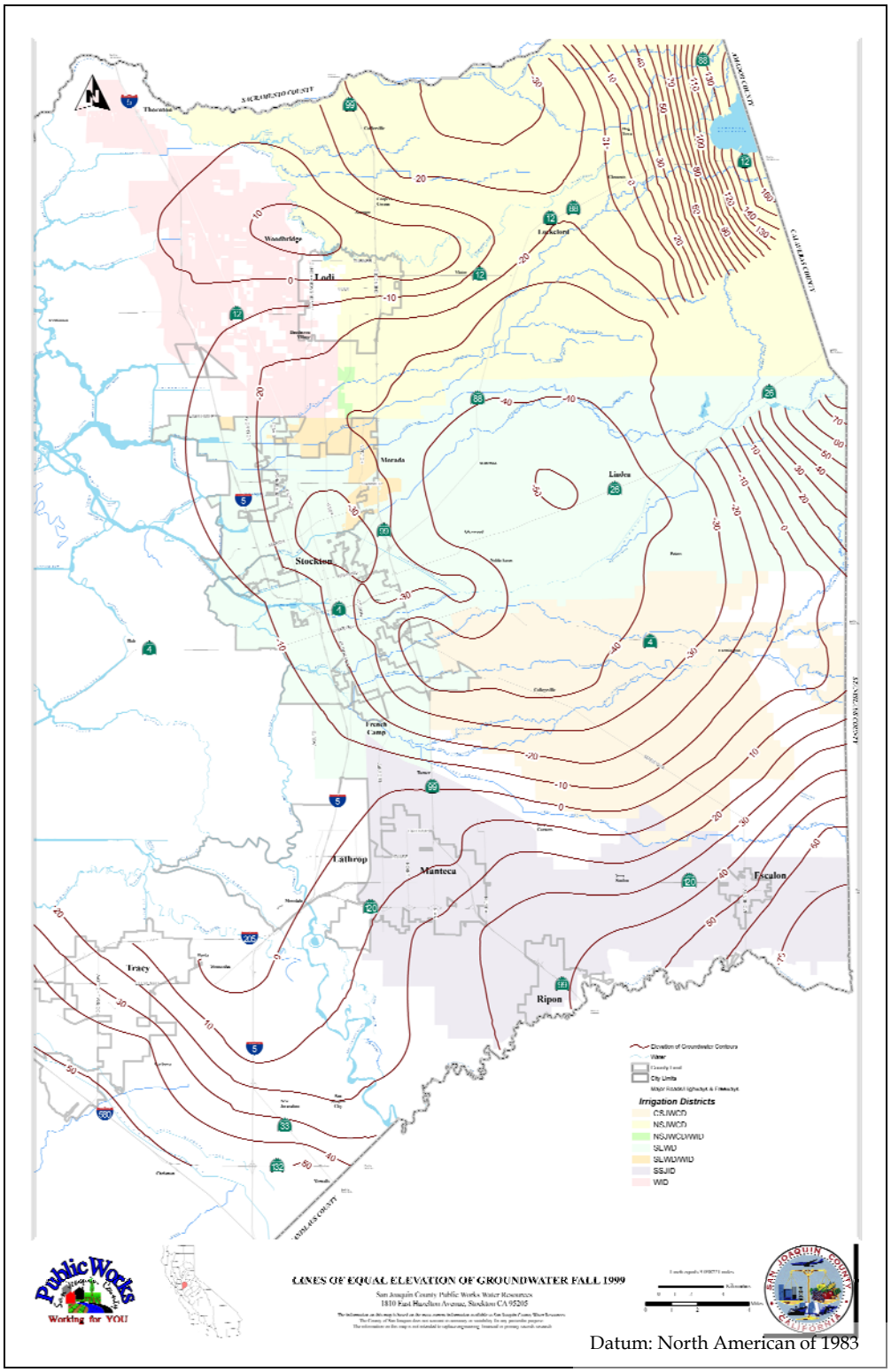

Figure 3-53: Lines of Equal Elevation of Groundwater Fall 1999

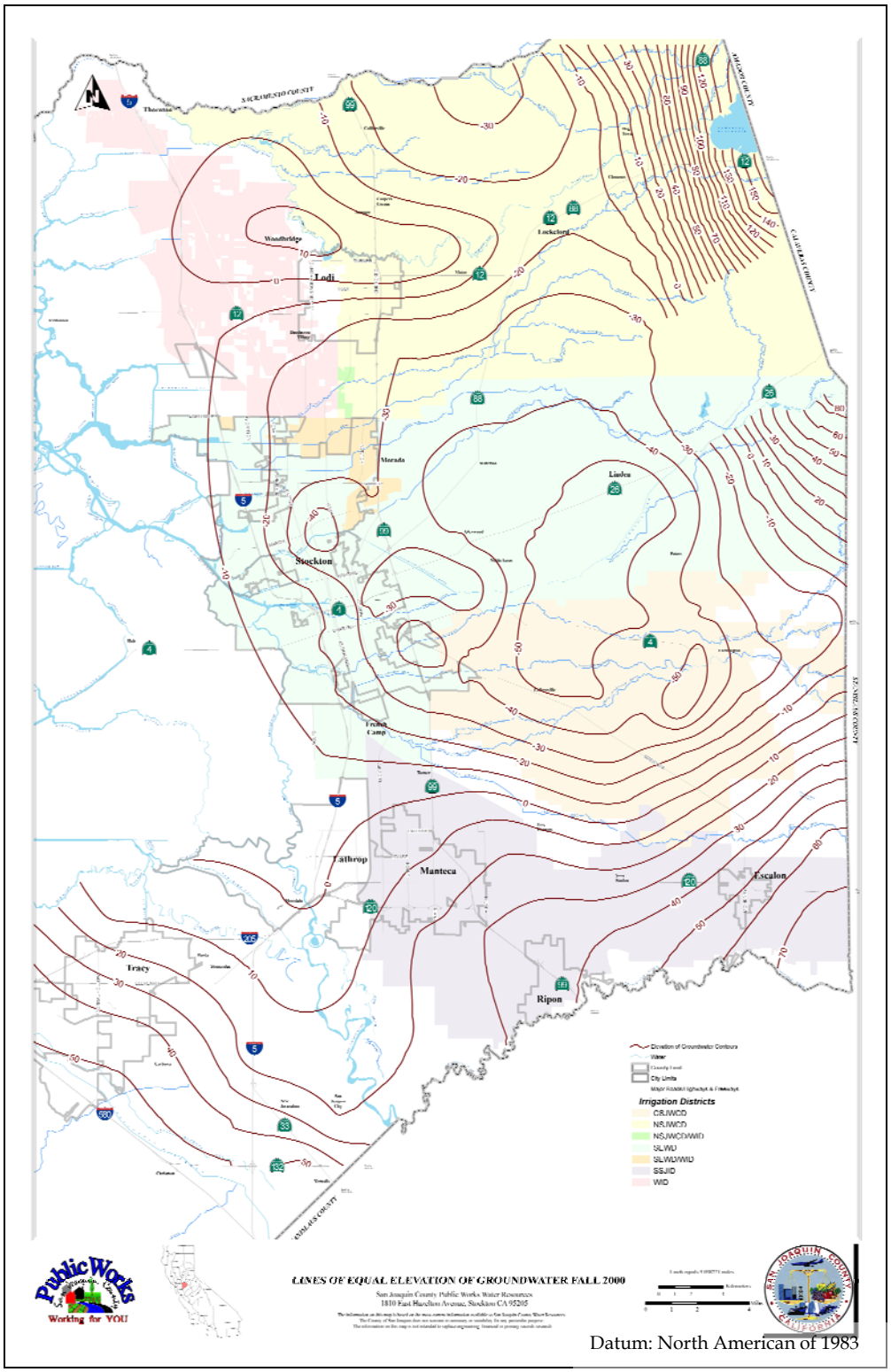

Figure 3-54: Lines of Equal Elevation of Groundwater Fall 2000

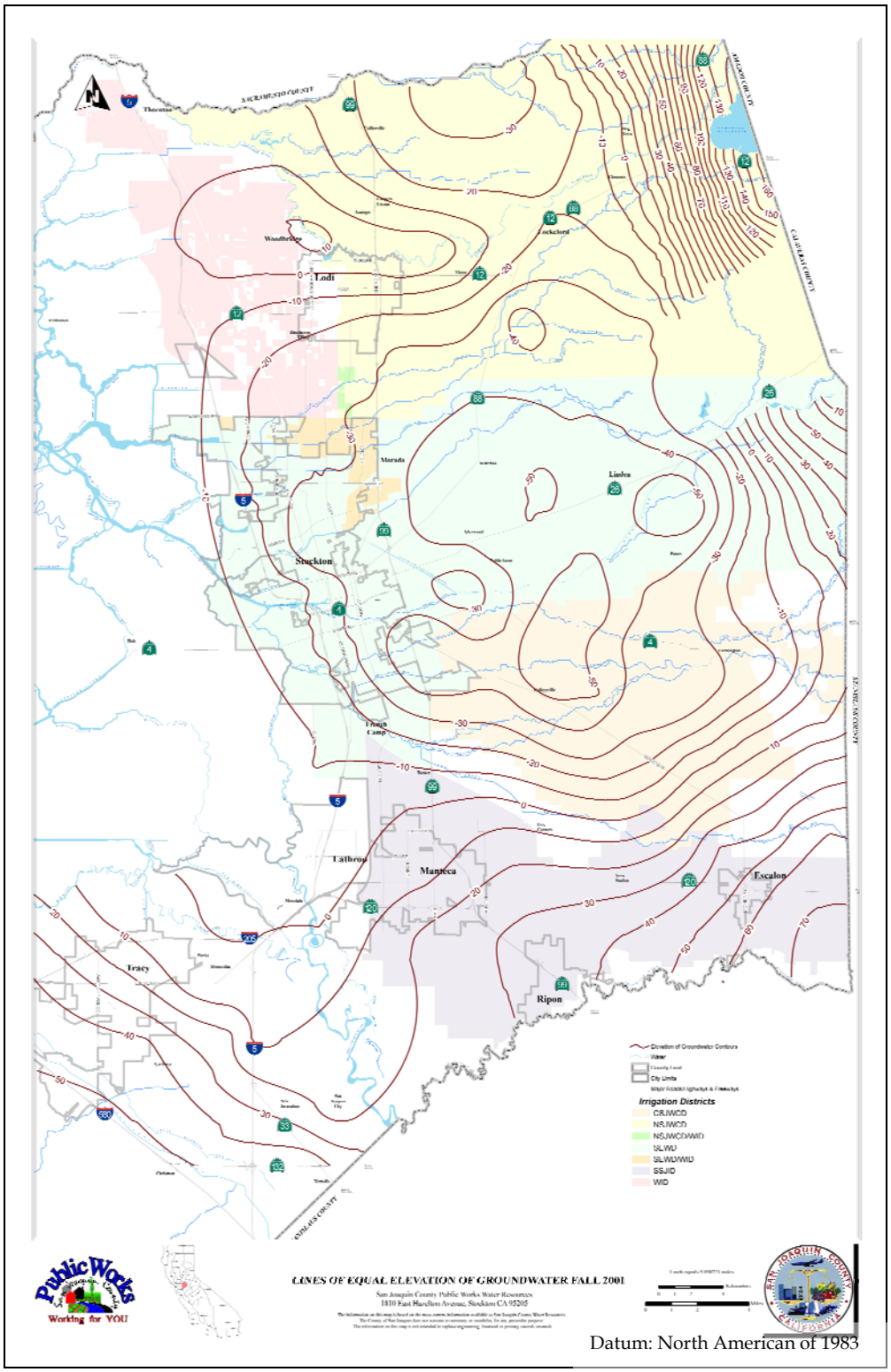

Figure 3-55: Lines of Equal Elevation of Groundwater Fall 2001

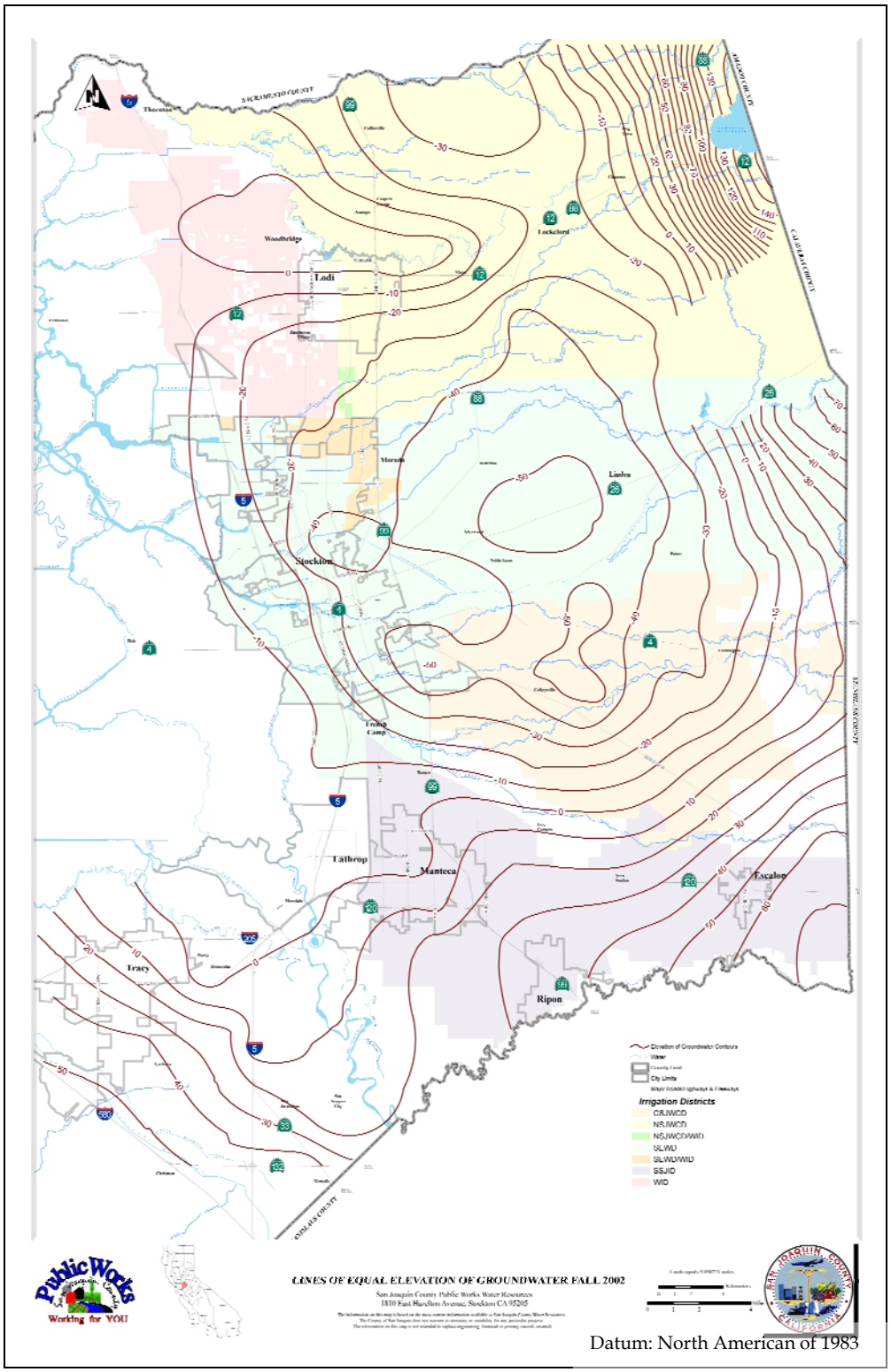

Figure 3-56: Lines of Equal Elevation of Groundwater Fall 2002

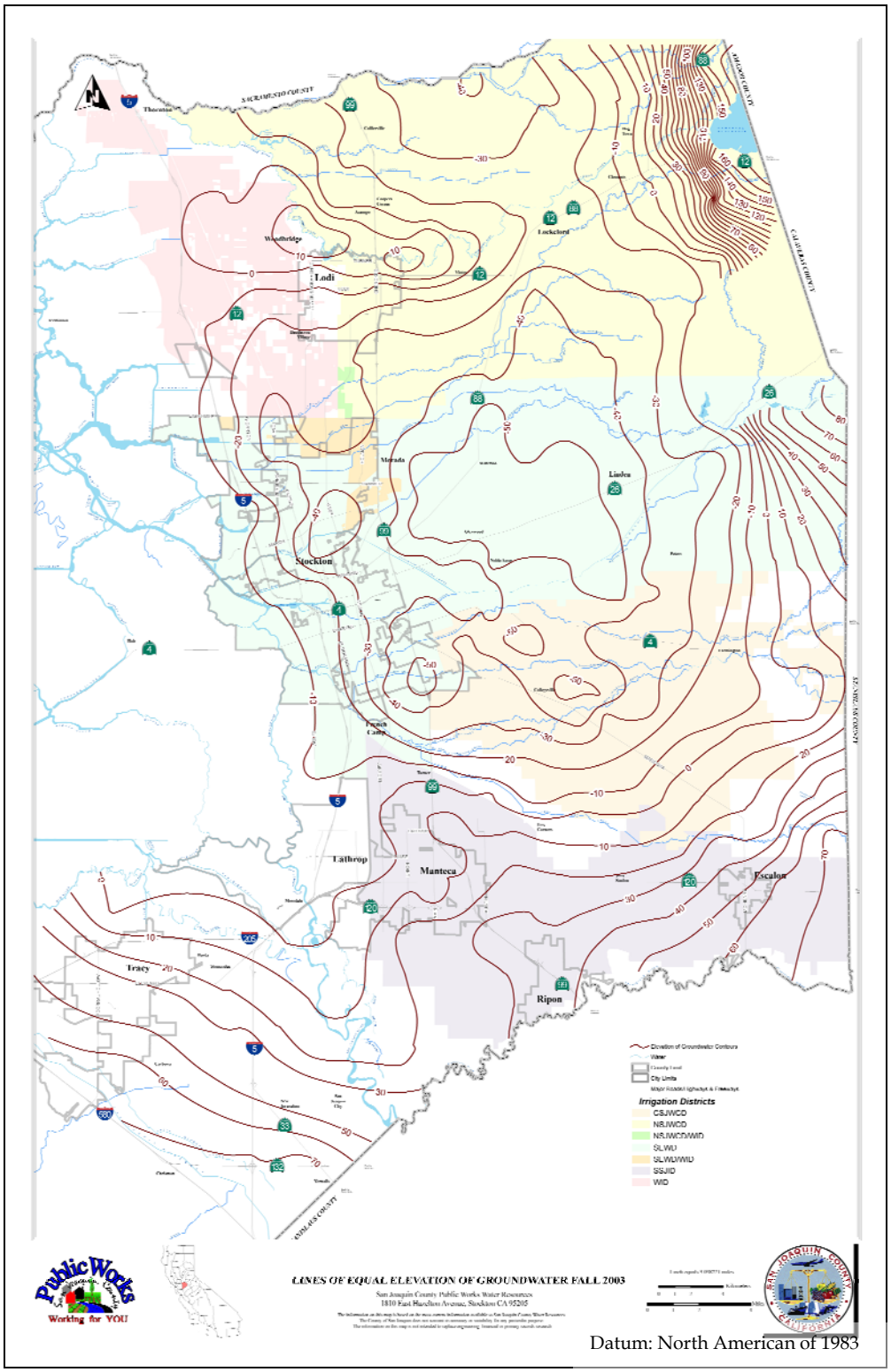

Figure 3-57: Lines of Equal Elevation of Groundwater Fall 2003

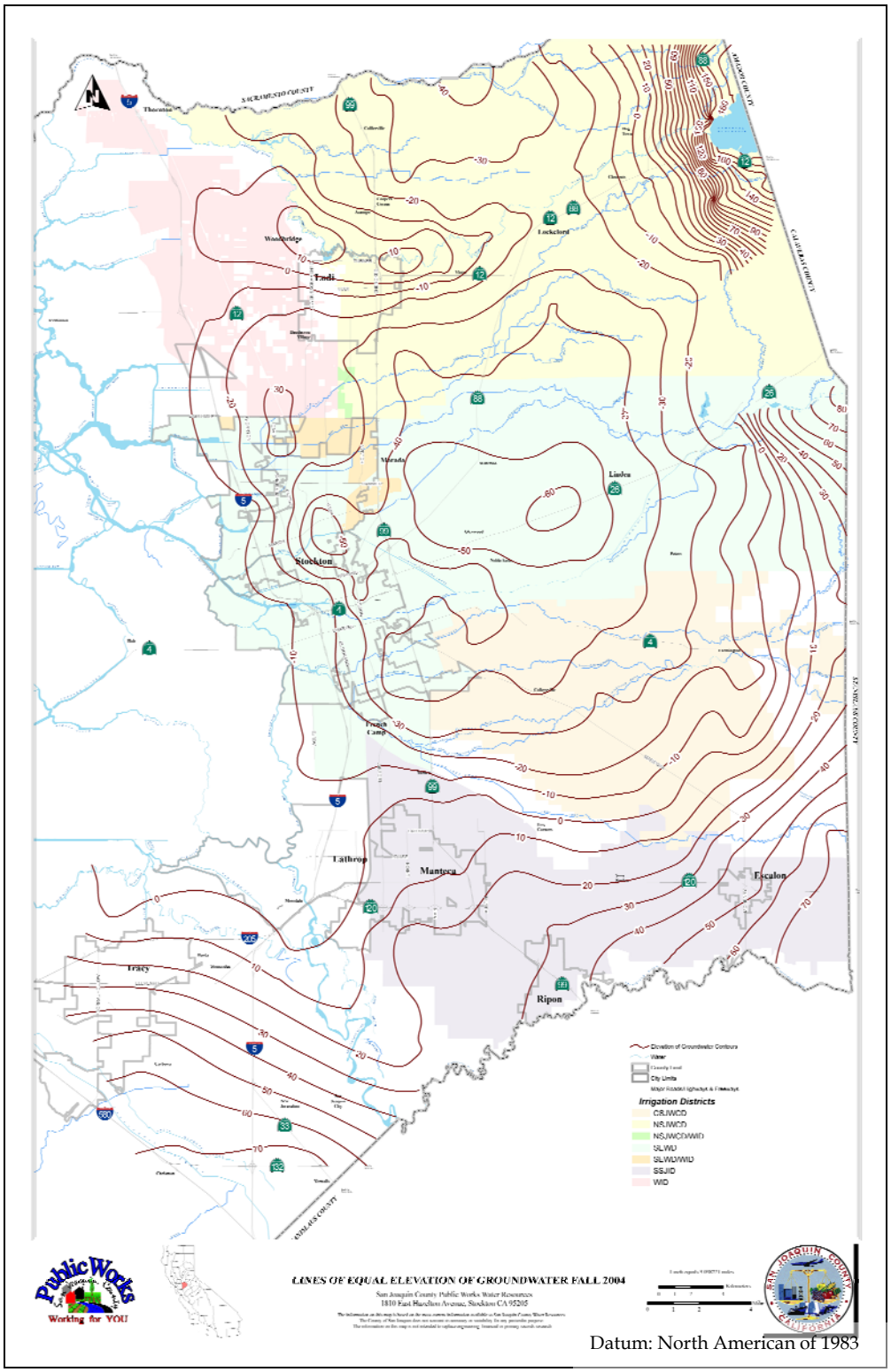

Figure 3-58: Lines of Equal Elevation of Groundwater Fall 2004

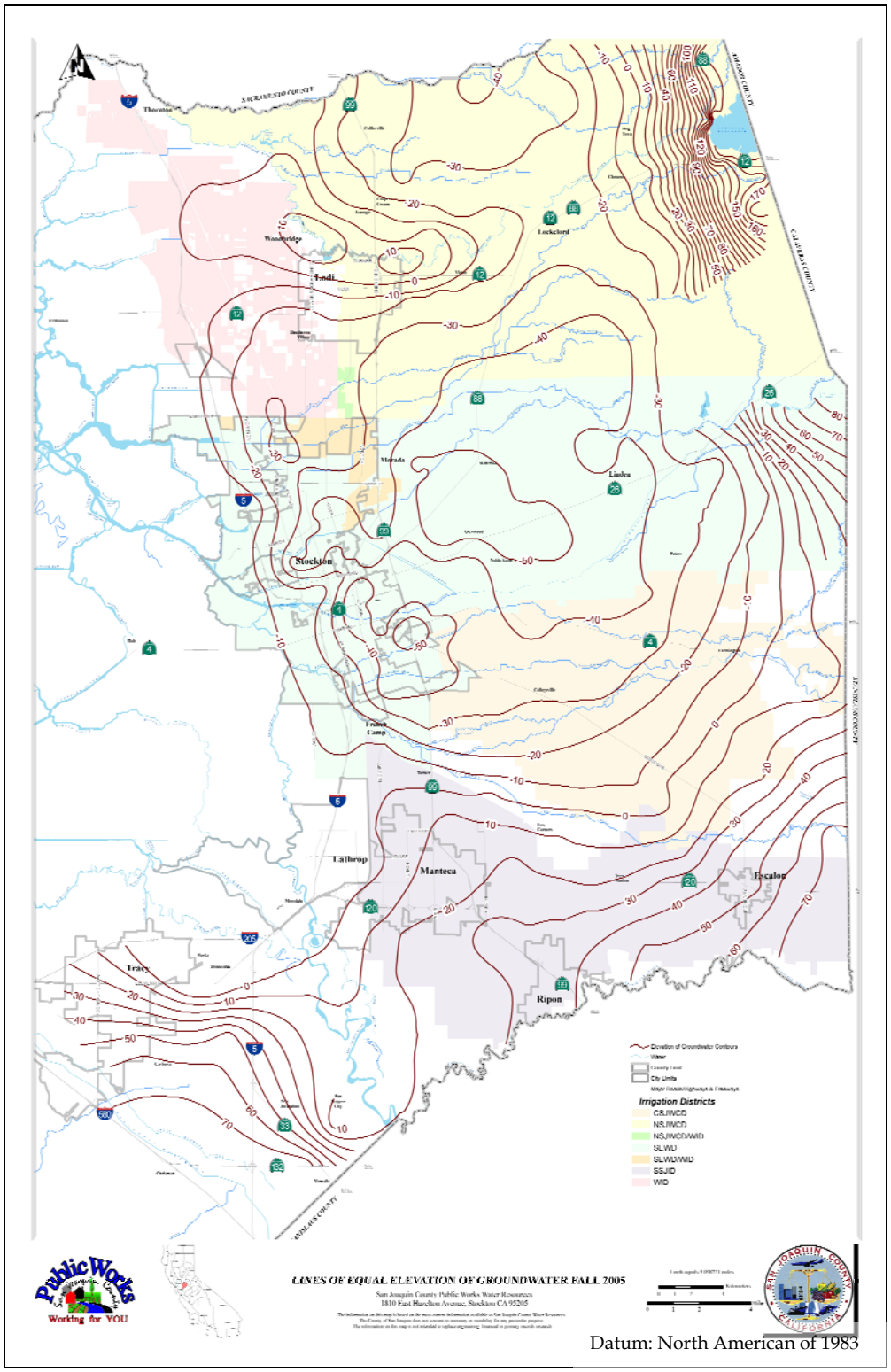

Figure 3-59: Lines of Equal Elevation of Groundwater Fall 2005

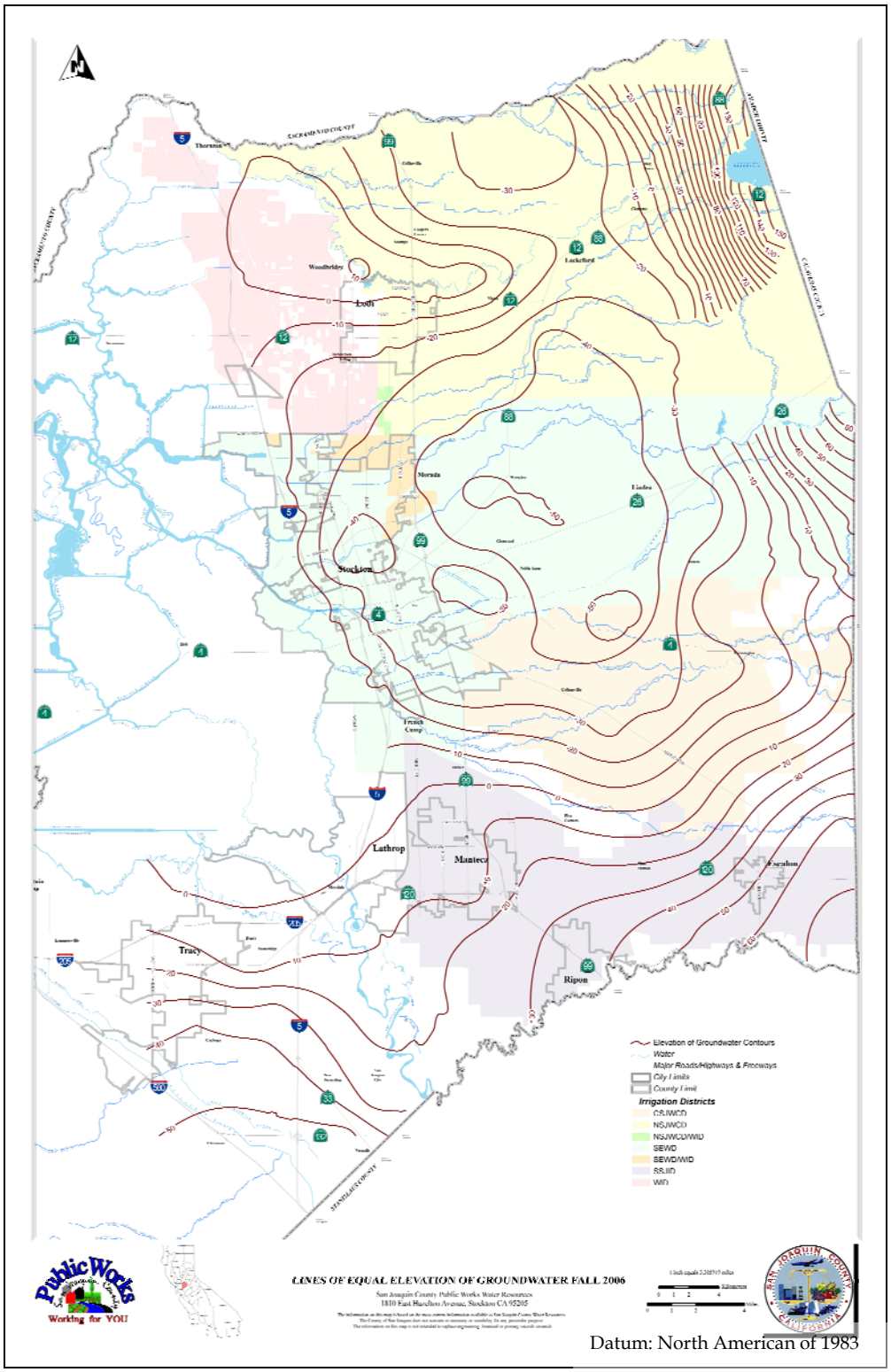

Figure 3-60: Lines of Equal Elevation of Groundwater Fall 2006

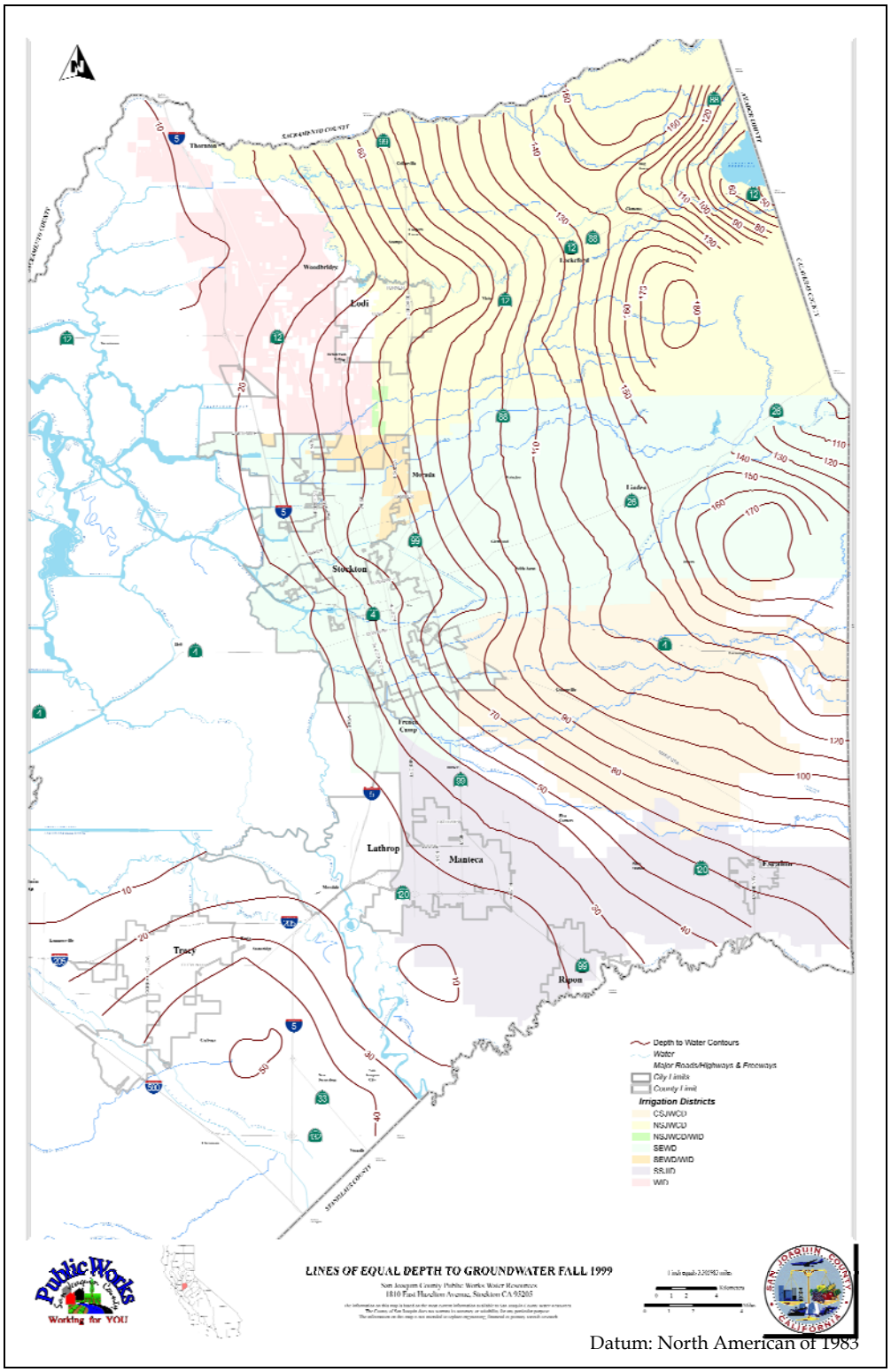

Figure 3-61: Lines of Equal Depth of Groundwater Fall 1999

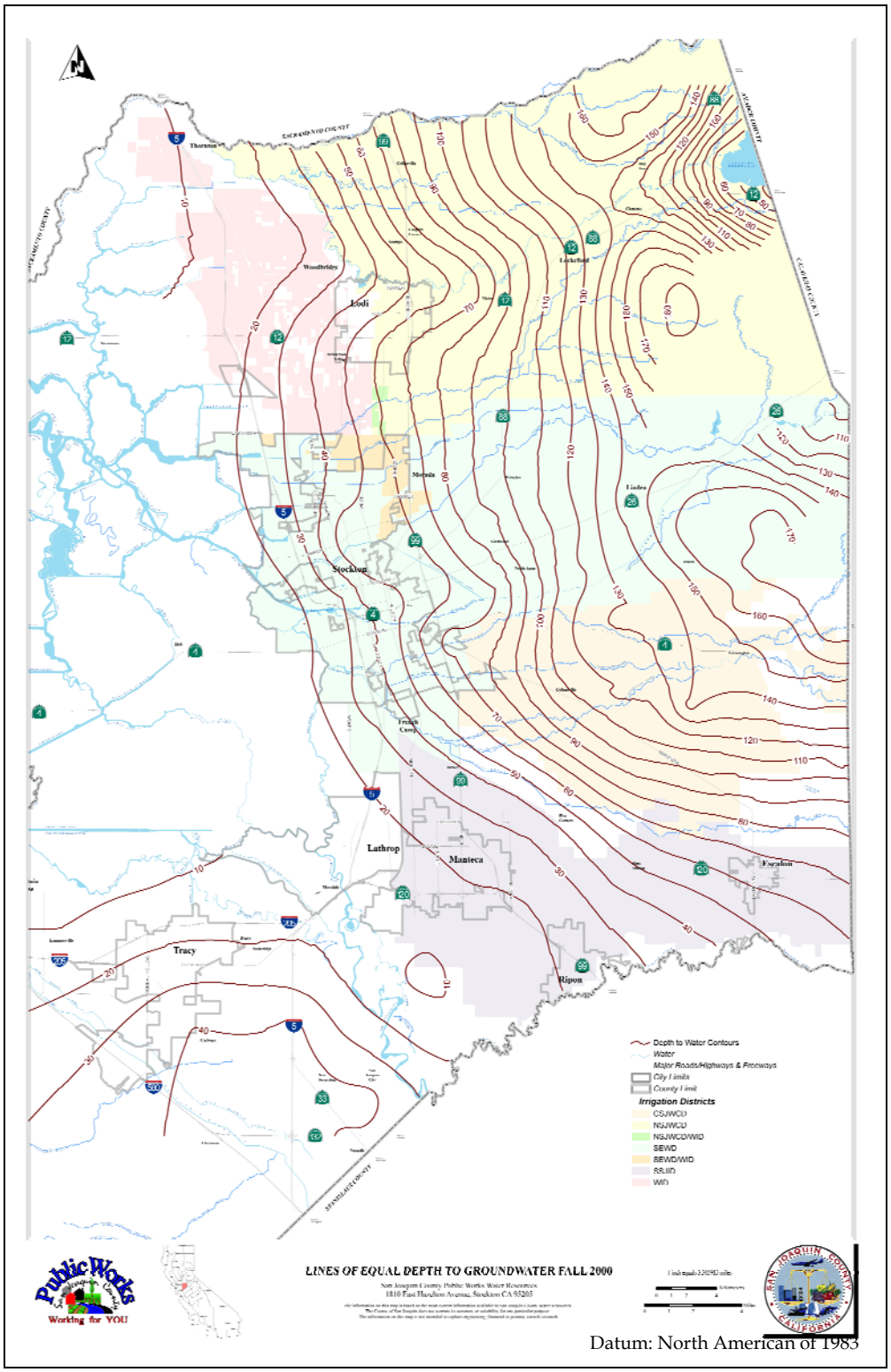

Figure 3-62: Lines of Equal Depth of Groundwater Fall 2000

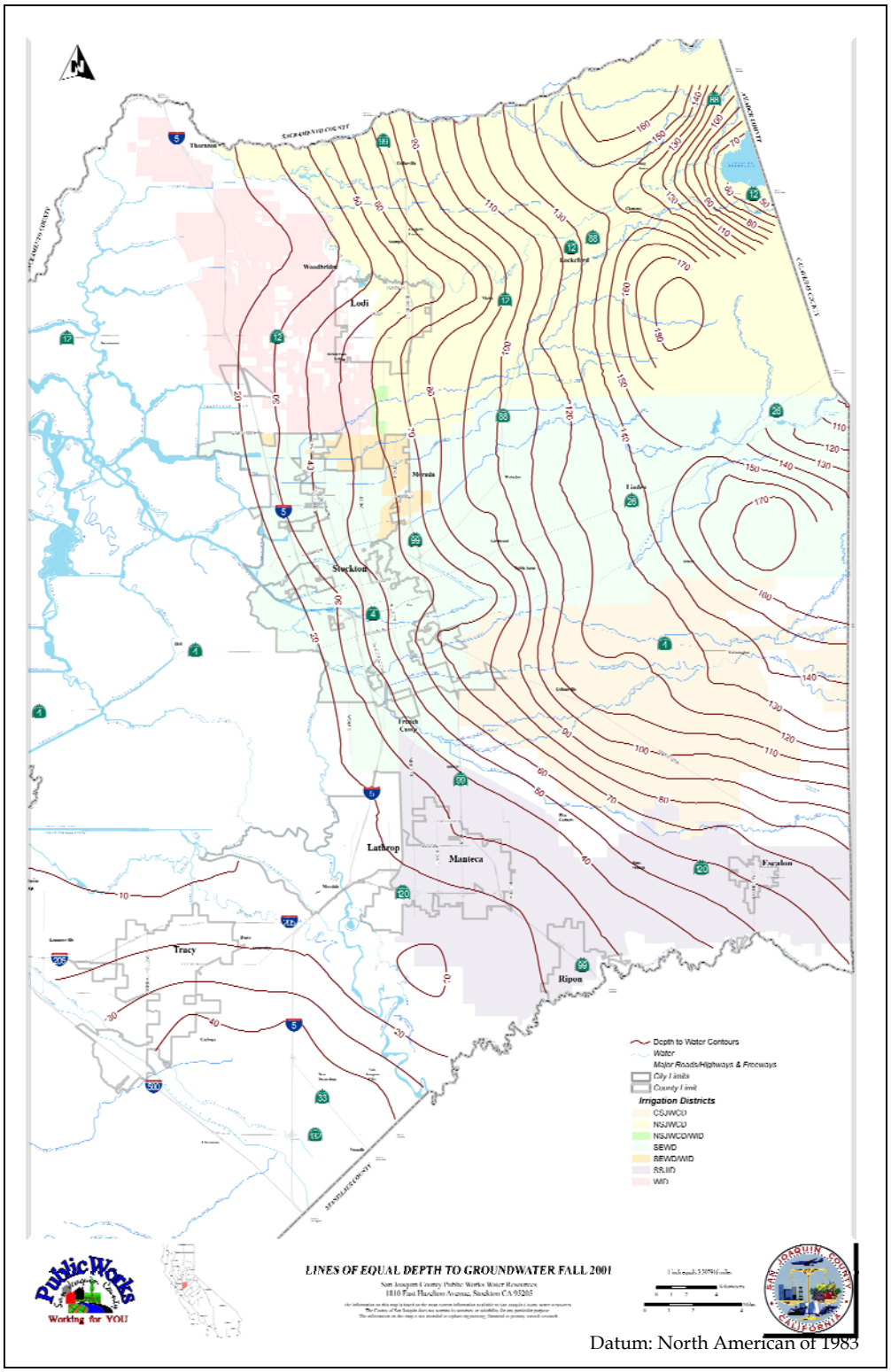

Figure 3-63: Lines of Equal Depth of Groundwater Fall 2001

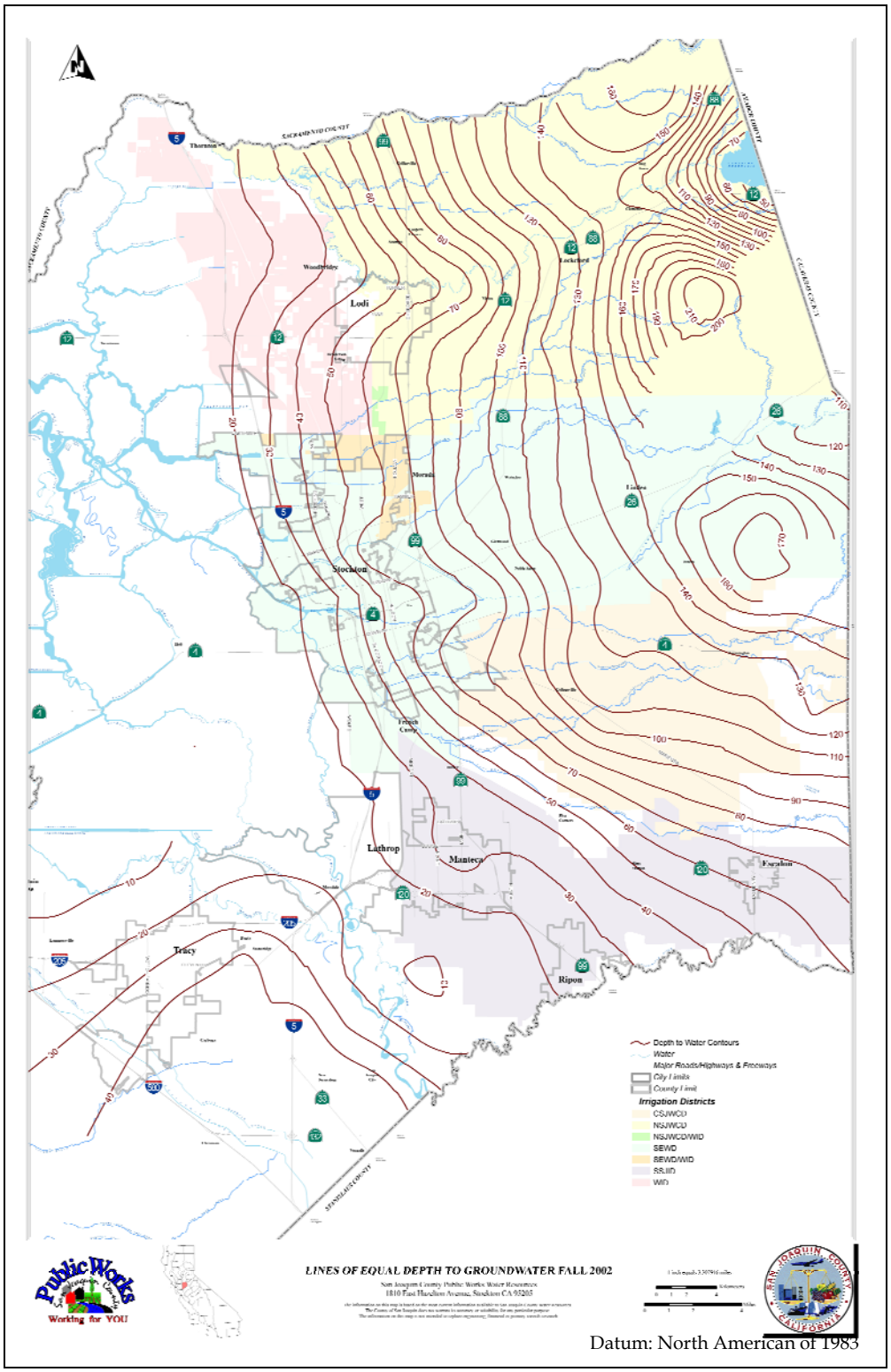

Figure 3-64: Lines of Equal Depth of Groundwater Fall 2002

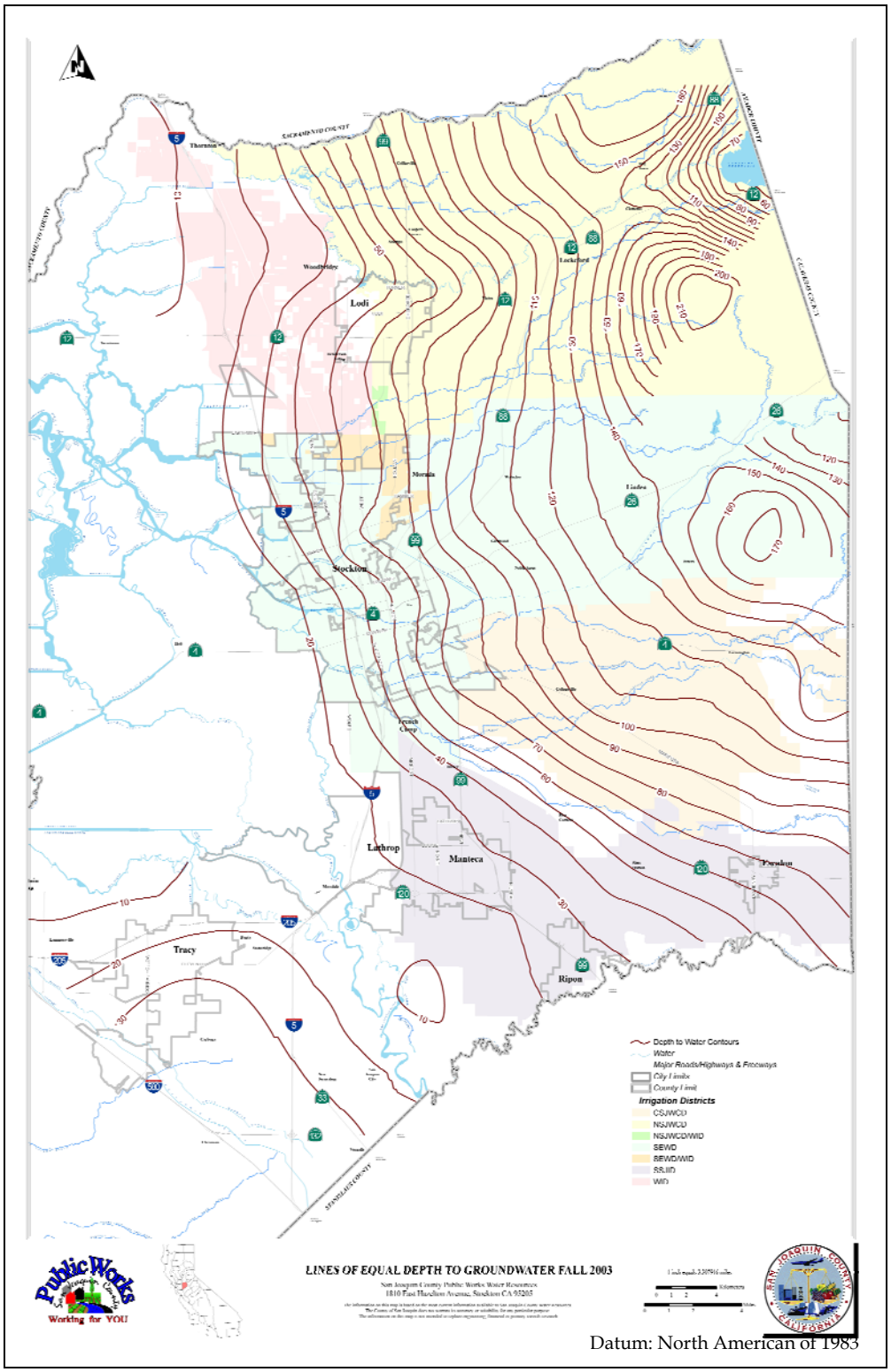

Figure 3-65: Lines of Equal Depth of Groundwater Fall 2003

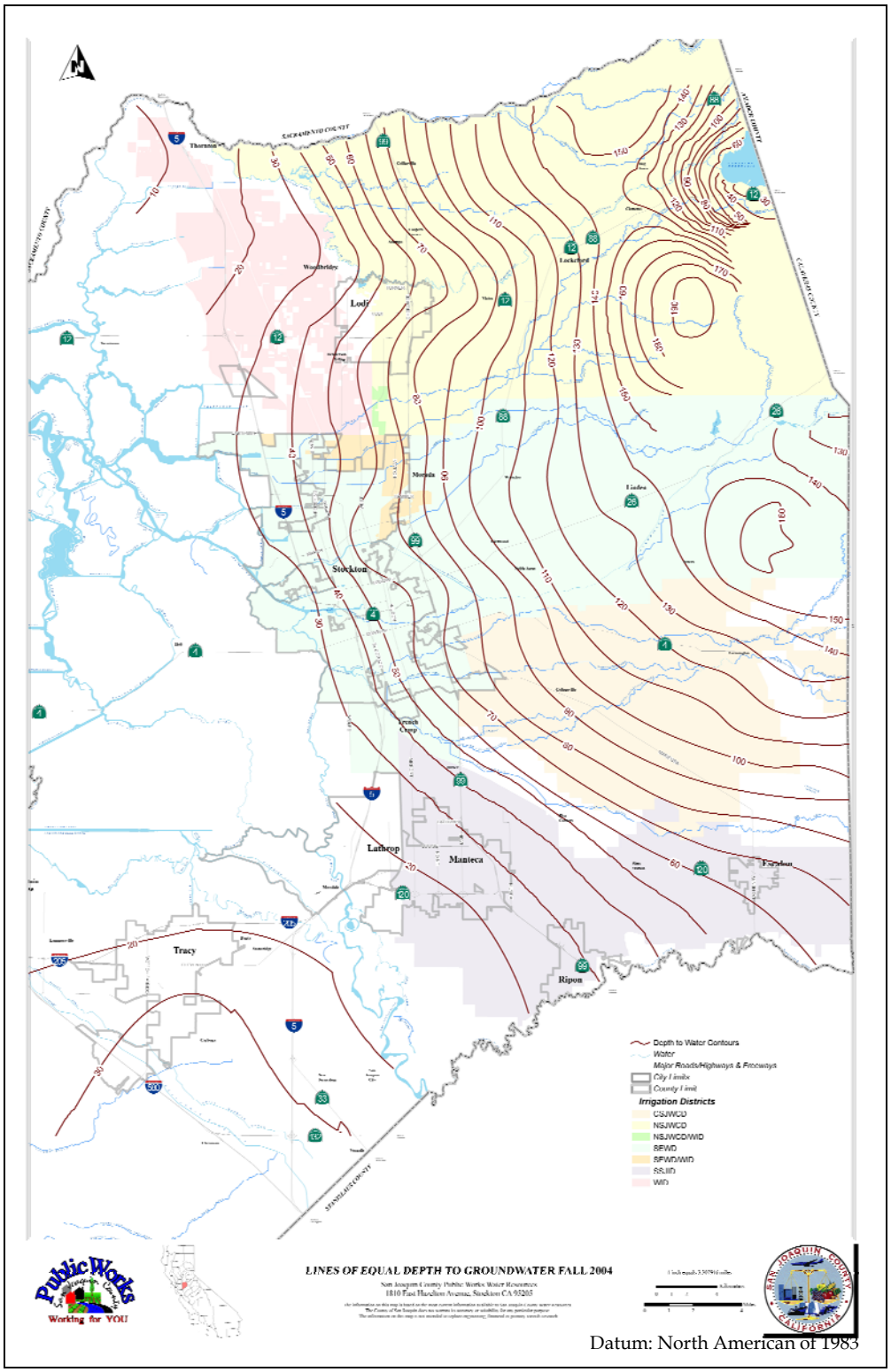

Figure 3-66: Lines of Equal Depth of Groundwater Fall 2004

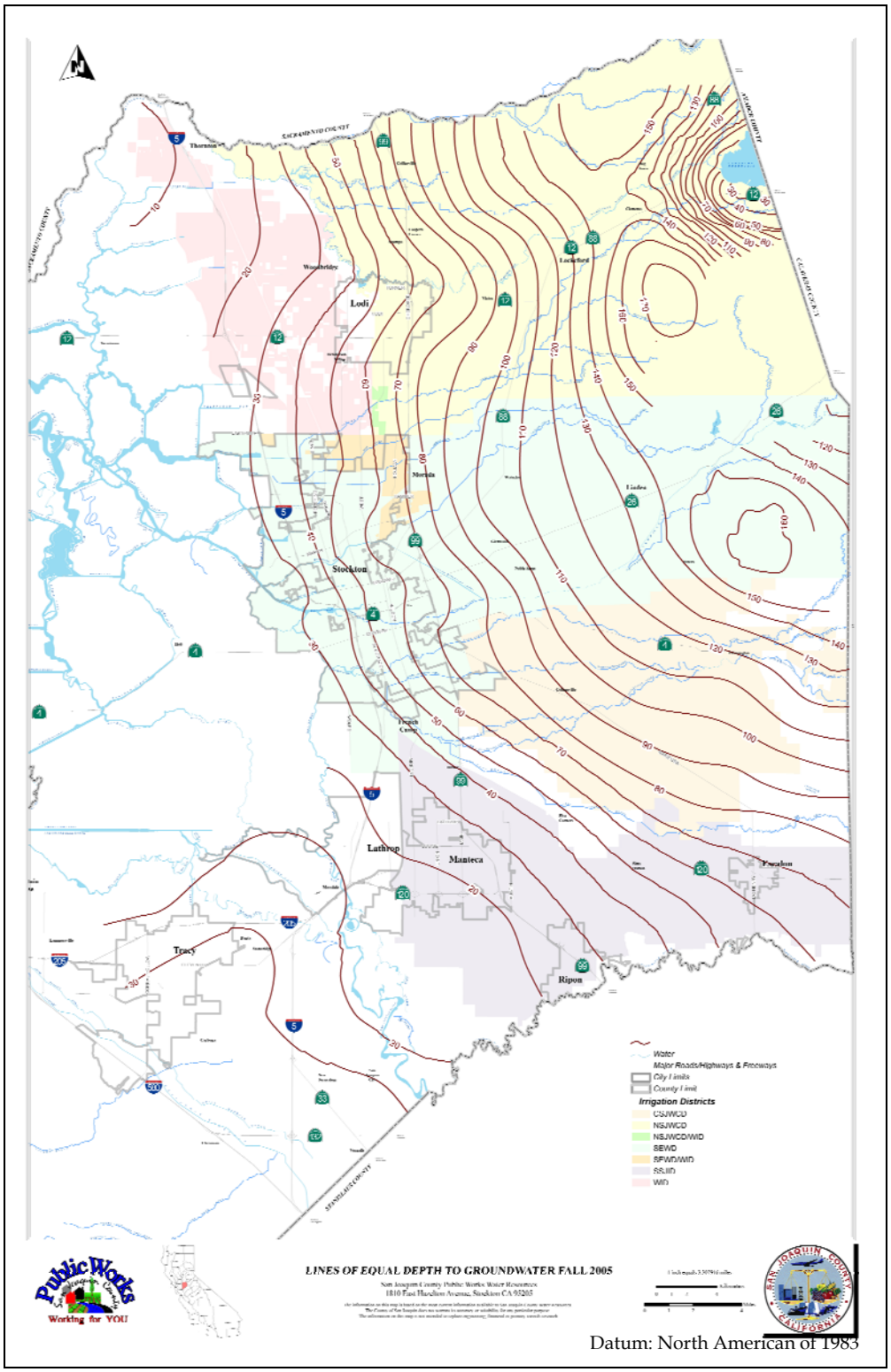

Figure 3-67: Lines of Equal Depth of Groundwater Fall 2005

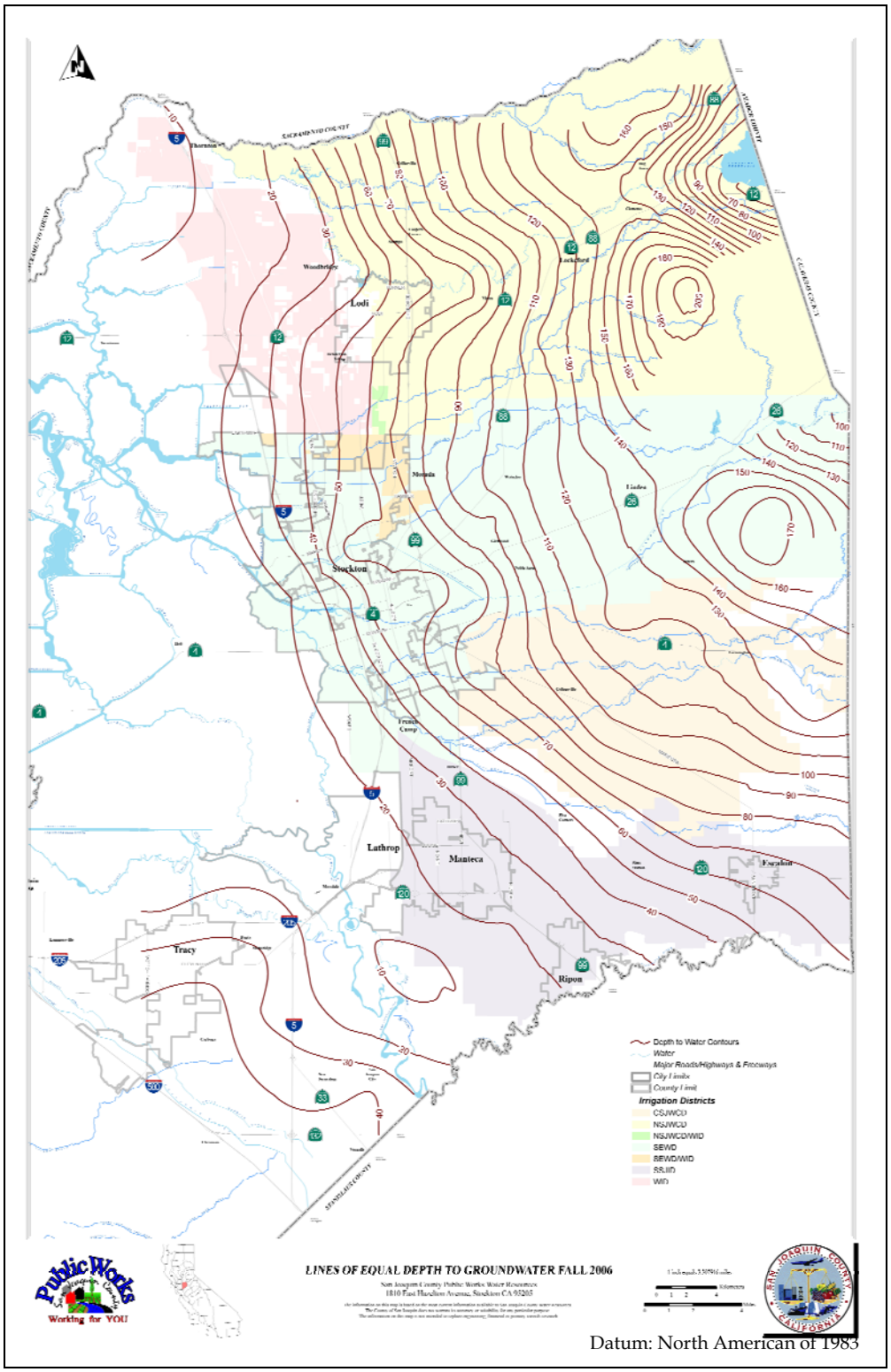

Figure 3-68: Lines of Equal Depth of Groundwater Fall 2006

Section IV – Spring Groundwater Elevation Monitoring

Summary of Spring 2000-2007 Groundwater Elevations

The information contained in the Spring 2000-2007 Groundwater Report is summarized as follows:

GROUNDWATER ELEVATIONS

Banta-Carbona Irrigation District (BCID) – Three well are measured in the BCID area. Two of the three wells were measured in the spring of 2000 and spring 2006, both of these wells increased in groundwater elevation.

Oakdale Irrigation District (OID) – Five wells were measured in the OID area. Three wells decreased in groundwater elevations, while one well increased in groundwater elevation. The other well did not change in groundwater elevation.

Central San Joaquin Water Conservation District (CSJWCD) – Fifty-one wells were measured in CSJWCD. Forty-nine of them were measured in the spring of 2000 and spring 2006. Eighteen decreased in groundwater elevations. Thirty-one wells increased in groundwater elevations.

Miscellaneous County Areas – Thirty-five wells measured across the County in areas that are not a part of any irrigation district. Twenty-nine wells were measured in the spring of 2000 and spring 2006. Twenty-seven wells descended in groundwater elevations. Two wells increased in groundwater elevations.

North San Joaquin Water Conservation District (NSJWCD) – Forty-seven wells were measured in NSJWCD. Forty were measured in the spring of 2000 and spring 2006. Thirty-eight wells decreased in groundwater elevations. Two wells increased in groundwater elevations.

Stockton East Water District (SEWD) – Seventy-five wells were measured in SEWD. Sixty wells were measured in the spring of 2000 and spring 2006. Fifty-three wells decreased in groundwater elevations. Seven wells increased in groundwater elevations.

South San Joaquin Irrigation District (SSJID) – Seventeen wells were measured in the SSJID area. Fifteen wells were measured in the spring of 2000 and spring 2006. All fifteen wells decreased in groundwater elevations.

Woodbridge Irrigation District (WID) – Twenty eight wells were measured in the WID. All twenty-eight wells were measured in the spring of 2000 and spring 2006. Twenty-seven wells decreased in groundwater elevations. One well increased in groundwater elevation.

Table 4-1: Comparison of BCID Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
02S06E31N001	44.1	53.5	9.4
03S06E05E001	6.7	------	------
03S06E27N001	73.8	75.8	2.0

Total Number of Wells	3
Total Number of Wells Compared	2
Number of Wells with Decrease	0
Number of Wells with Increase	2
Number of Wells with No Change	0

Table 4-2: Comparison of OID Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
01S09E21J002	42.5	47.1	4.6
01S09E21J002	49.4	47.1	-2.3
01S09E28M002	41.7	41.7	0.0
01S09E23N001	59.9	57.6	-2.3
01S09E24R001	77.1	74.1	-3.0

Total Number of Wells	5
Total Number of Wells Compared	5
Number of Wells with Decrease	3
Number of Wells with Increase	1
Number of Wells with No Change	1

Table 4-3: Comparison of CSJWCD Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
01S07E12H001	-11.7	-10.0	1.7
01S07E01J001	-18.1	-15.9	2.2
01S08E06D001	-19.6	-17.6	2.0
01S07E02J001	-29.5	-25.0	4.5
01N07E26H003	-36.6	-28.0	8.6
01S07E03D001	-24.0	------	------
01N07E15M002	-31.0	-34.5	-3.5
01N08E07M001	-33.8	-54.6	-20.8
01N07E11M001	-27.1	-35.5	-8.4
01N07E14J002	-28.6	-37.6	-9.0
01N07E13J002	-32.5	-47.5	-15.0
01N07E24A001	-30.1	-45.1	-15.0
01N07E24R001	-32.5	-44.0	-11.5
01N08E18A002	-26.5	-46.0	-19.5
01N08E16G001	-26.9	-28.3	-1.4
01N08E16H002	-25.3	-26.6	-1.3
01N08E22J001	-24.0	-25.5	-1.5
01N08E11L001	-28.5	-29.2	-0.7
01N09E06N001	-23.0	-21.9	1.1
01N09E05J001	-10.5	-6.5	4.0
01N09E01C001	13.3	15.7	2.4
01N09E13D001	23.0	20.1	-2.9
01N09E15B002	0.5	4.6	4.1
01N09E17D001	-15.1	-11.7	3.4
01N08E13J001	-24.2	-15.2	9.0
01N09E30C005	-5.7	-3.2	2.5
01N08E36F001	-20.0	-6.3	13.7
01N09E31J001	-8.5	5.6	14.1
01N08E35R002	-22.0	-9.0	13.0
01N08E35F001	-12.9	-23.4	-10.5
01N08E26A002	-13.8	-13.3	0.5
01N08E23H00	-19.9	0.0	19.9
01N08E27R002	-18.2	-17.5	0.7
01N08E33H001	-17.7	------	------
01N08E29M002	-25.0	-41.5	-16.5
01S08E05A001	-22.4	-16.4	6.0
01S08E05R001	-17.1	-16.3	0.8
01S08E04R001	-14.1	-12.7	1.4
01S08E20B001	2.3	-0.2	-2.5
01S08E09Q001	-19.9	-6.9	13.0
01S08E15P001	-0.5	0.7	1.2
01S08E14B001	2.8	4.3	1.5
01S08E11F001	-6.9	-2.9	4.0
01S08E12B001	1.8	4.9	3.1
01S09E07N001	13.5	13.7	0.2
01S09E09R001	25.8	24.3	-1.5

State Well ID	Spring 2000	Spring 2007	Difference
01S09E19Q002	22.0	25.8	3.8
01S09E07A001	9.2	10.4	1.2
01S09E05H002	12.9	22.3	9.4
01N09E29R001	-2.5	-16.5	-14.0
01N09E19C001	-14.0	-11.0	3.0

Total Number of Wells	51
Total Number of Wells Compared	49
Number of Wells with Decrease	18
Number of Wells with Increase	31
Number of Wells with No Change	0

Table 4-4: Comparison of Miscellaneous County Areas Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
02S05E13N001	11.6	11.1	-0.5
01S05E35Q002	1.3	------	------
02S05E08B001	0.7	-2.7	-3.4
01S05E31R002	4.2	-0.4	-4.6
01S05E31R002	1.4	-0.4	-1.8
03S05E04H001	61.5	58.0	-3.5
02S05E24M001	-10.5	------	------
03S06E23C001	29.5	17.8	-11.7
03S06E03F002	17.9	16.0	-1.9
02S06E27E001	10.4	8.5	-1.9
02S06E02P001	4.5	------	------
02S06E10F001	-6.8	------	------
02S06E26B001	10.9	7.4	-3.5
02S06E25J001	17.3	14.6	-2.7
02S07E31N001	17.0	12.5	-4.5
01S06E14F001	1.4	2.4	1.0
01S06E04J001	4.0	-1.5	-5.5
01S07E15F002	4.8	3.4	-1.4
01S07E14M001	7.7	5.6	-2.1
01S07E14P003	6.2	4.7	-1.5
01S08E29K001	18.5	12.0	-6.5
01S08E19R001	15.3	3.3	-12.0
01S08E30C002	17.4	14.6	-2.8
01S07E13J001	2.0	0.5	-1.5
01N09E22G002	4.7	------	------
01S09E11J002	47.1	43.2	-3.9
01S09E02R001	33.8	39.9	6.1
01N09E36P001	27.0	------	------
03N06E29C001	-14.3	-25.3	-11.0

State Well ID	Spring 2000	Spring 2007	Difference
03N06E15C004	-9.5	-21.5	-12.0
04N06E34J002	23.5	17.6	-5.9
04N06E17G004	10.1	5.3	-4.9
04N05E03D003	1.5	-2.6	-4.1
05N05E28L003	2.1	-2.1	-4.2
04N05E16N001	-5.5	-7.5	-2.0

Total Number of Wells	35
Total Number of Wells Compared	29
Number of Wells with Decrease	27
Number of Wells with Increase	2
Number of Wells with No Change	0

Table 4-5: Comparison of NSJWCD Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
03N08E22A001	-31.5	-35.4	-3.9
03N08E07J001	-28.3	------	------
03N08E19C001	-30.3	-49.3	-19.0
03N07E25G001	-41.3	-33.4	7.9
03N07E33G002	-32.0	-35.0	-3.0
03N07E18D012	-15.2	-19.2	-4.0
03N07E08E002	-9.2	-13.3	-4.1
03N07E09C001	-7.4	-13.2	-5.8
03N07E17D004	-12.5	-17.5	-5.0
03N07E17K002	-17.7	-23.4	-5.7
03N07E19J004	-31.5	-43.5	-12.0
03N07E22M002	-26.0	-30.5	-4.5
03N07E21L003	-20.0	------	------
03N07E23C002	------	-29.5	------
03N07E15C004	-15.5	-21.5	-6.0
03N07E03R001	-6.8	-27.3	-20.5
04N07E33H001	32.5	27.5	-5.0
04N07E28J002	-1.7	-16.7	-15.0
04N07E27C002	-4.0	-23.0	-19.0
04N07E21F001	-8.2	-13.5	-5.3
04N07E12E001	-21.0	-36.0	-15.0
05N07E34Q001	-23.7	-28.7	-5.0
05N07E34G001	-24.7	-30.6	-5.9
05N08E31R001	-22.3	------	------
04N08E06N002	-24.7	-25.2	-0.5
04N08E17A001	-14.8	-26.3	-11.5
04N08E17J001	-12.3	-16.6	-4.3
04N08E21M001	-15.5	-19.6	-4.1

State Well ID	Spring 2000	Spring 2007	Difference
04N08E14K001	11.1	-12.8	-23.9
04N09E31M001	-2.4	------	------
04N08E32N001	-27.1	-25.8	1.3
04N07E36L001	-9.5	-13.1	-3.6
04N06E25R001	10.0	-4.0	-14.0
04N06E24F001	-1.0	-5.0	-4.0
04N07E19K001	-4.1	-18.6	-14.5
04N07E17N001	-11.3	-35.8	-24.5
04N07E07A001	-19.0	-31.5	-12.5
05N07E31J001	-21.5	-35.5	-14.0
05N07E31Q001	-10.1	-12.9	-2.8
05N06E36R001	-14.8	-16.6	-1.8
04N06E12C004	-14.3	-17.7	-3.4
04N06E12N002	-8.2	-14.3	-6.1
04N06E06N012	7.4	------	------
04N06E15B002	2.6	------	------
04N06E23K00	7.5	-2.0	-9.5
04N06E27D002	24.7	19.0	-5.7
03N06E36N001	-50.4	-58.4	-8.0

Total Number of Wells	47
Total Number of Wells Compared	40
Number of Wells with Decrease	38
Number of Wells with Increase	2
Number of Wells with No Change	0

Table 4-6: Comparison of SEWD Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
01S06E01C002	-3.6	-7.2	-3.6
01S07E06M002	-4.8	-6.1	-1.3
01S07E08J002	-1.4	-1.5	-0.1
01S07E05A001	-15.0	------	------
01N07E21R001	-47.5	-32.8	14.7
01N07E20G001	-33.0	------	------
01N07E19G001	-27.0	-28.0	-1.0
01N07E01M002	-33.0	-43.0	-10.0
01N08E03P001	-28.0	-37.5	-9.5
01N08E04E001	-32.0	-41.5	-9.5
02N08E32L002	------	-38.4	------
02N08E33E001	-31.6	-45.6	-14.0
02N09E28N001	------	-14.6	------
01N06E05M004	-4.5	-6.5	-2.0
01N07E08R002	-33.3	------	------
02N07E35L001	-34.6	-38.0	-3.4

State Well ID	Spring 2000	Spring 2007	Difference
02N07E36H001	-37.7	-42.5	-4.8
02N08E28H002	-30.6	-56.6	-26.0
02N08E14C001	-30.0	-41.5	-11.5
02N08E12C002	-21.8	-22.2	-0.4
03N09E25R001	96.5	93.5	-3.0
03N09E36G001	93.2	79.2	-14.0
02N09E03A001	75.1	83.1	8.0
02N09E04H001	60.6	57.3	-3.3
02N09E09D001	1.7	-13.8	-15.5
02N09E05H001	0.8	------	------
02N09E08N001	-18.8	------	------
02N09E22D001	3.6	5.6	2.0
02N09E18Q001	-29.6	-29.9	-0.3
02N08E24J001	-48.1	-65.1	-17.0
02N08E24P001	-30.4	-27.4	3.0
02N08E13K001	-36.6	-41.6	-5.0
02N08E20F001	-54.3	-71.8	-17.5
02N07E24B001	-50.1	-42.6	7.5
02N07E26N001	-35.2	-39.2	-4.0
02N07E33H001	-28.0	------	------
02N07E28N004	-29.7	-32.3	-2.6
02N07E32R001	-10.1	-22.1	-12.0
02N07E31M001	-14.8	-20.8	-6.0
02N07E30E001	-17.5	-27.3	-9.8
02N07E20N002	-27.5	-32.0	-4.5
02N07E16L001	-34.8	-41.8	-7.0
02N07E16F002	-35.4	-41.4	-6.0
02N07E21A002	-37.0	-44.2	-7.2
02N07E27D001	-37.5	------	------
02N07E15C001	-34.3	-49.8	-15.5
02N07E10F002	-33.3	------	------
02N07E11F001	-31.0	-50.0	-19.0
02N07E12D002	-30.5	------	------
02N07E11R002	-35.0	------	------
02N08E18C001	-32.7	-48.5	-15.8
02N08E08N001	-35.5	-49.5	-14.0
02N08E16D001	-31.6	-32.1	-0.5
02N08E09G002	-30.0	-39.0	-9.0
02N08E05C001	-29.5	-36.5	-7.0
02N08E04C001	-31.7	-39.5	-7.8
03N08E27R001	-33.5	-36.4	-2.9
02N08E03G002	-31.0	-35.3	-4.3
03N07E36J001	-25.3	-44.3	-19.0
03N07E35L001	-28.0	-42.5	-14.5
03N07E35C002	-29.1	-34.5	-5.4
02N07E03D001	-30.0	-35.0	-5.0
02N07E08D001	-40.7	-51.2	-10.5
02N07E08K003	------	-40.9	------
02N07E07R005	-29.4	------	------

State Well ID	Spring 2000	Spring 2007	Difference
02N06E24F001	-22.5	-28.5	-6.0
02N05E01A001	-2.9	------	------
01S06E10G001	-13.1	-4.3	8.8
01N06E27R002	-17.5	-7.2	10.3
02N08E10H002	-30.6	-33.4	-2.8
02N06E24J002	-21.3	-37.5	-16.2
02N06E13R002	-29.5	-44.0	-14.5
02N06E26H001	-19.0	-25.0	-6.0
02N06E03D003	-19.1	-24.3	-5.2
02N06E03A003	-20.8	-29.8	-9.0

Total Number of Wells	75
Total Number of Wells Compared	60
Number of Wells with Decrease	53
Number of Wells with Increase	7
Number of Wells with No Change	0

Table 4-7: Comparison of SSJID Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
02S07E07D002	12.6	7.9	-4.7
02S07E09M001	24.3	------	------
02S07E11N002	36.7	33.3	-3.4
02S07E26B001	34.8	31.0	-3.8
02S07E19H001	22.5	20.0	-2.5
01S07E26G001	16.5	14.5	-2.0
01S07E25E001	17.5	14.0	-3.5
01S07E27K001	16.0	13.2	-2.8
02S08E06J001	33.0	26.4	-6.6
02S08E08E001	37.7	30.2	-7.5
02S08E07R001	44.1	35.0	-9.1
02S08E08A001	39.0	31.5	-7.5
02S08E04M001	35.0	24.5	-10.5
01S08E25Q001	30.9	------	------
01S09E29M002	39.3	38.1	-1.2
02S09E03K001	69.0	64.5	-4.5
01S09E34A001	66.0	61.5	-4.5

Total Number of Wells	17
Total Number of Wells Compared	15
Number of Wells with Decrease	15
Number of Wells with Increase	0
Number of Wells with No Change	0

Table 4-8: Comparison of WID Area Water Elevations

State Well ID	Spring 2000	Spring 2007	Difference
03N05E14C001	1.2	-4.3	-5.5
03N05E13L001	-3.0	-10.0	-7.0
03N06E18M003	-6.6	-11.1	-4.5
03N06E30R001	-13.7	-19.0	-5.3
03N06E32R001	-16.0	-23.0	-7.0
03N06E20D002	-7.0	-12.5	-5.5
03N06E07H003	-3.2	-9.0	-5.8
03N06E05N003	0.0	-8.0	-8.0
03N06E17A004	-10.7	-21.7	-11.0
03N06E10D001	-2.9	-12.4	-9.5
03N06E27E001	-21.2	-20.2	1.0
03N06E26P002	-17.3	-22.1	-4.9
04N06E29A001	18.8	9.4	-9.4
04N06E29N002	11.0	2.9	-8.1
04N05E36H003	9.9	2.6	-7.3
04N06E30E001	13.7	4.7	-9.0
04N05E24J004	11.8	4.4	-7.4
04N05E13R004	8.0	1.6	-6.4
04N05E13H001	8.5	1.5	-7.0
04N05E14B002	9.1	1.9	-7.3
04N05E10K001	1.5	-3.6	-5.1
05N05E32M001	-2.3	-5.2	-2.9
04N05E05H001	0.4	-3.3	-3.7
04N05E09D001	-3.0	-7.3	-4.3
04N05E22H001	-0.5	-6.0	-5.5
04N05E14P001	6.5	-3.0	-9.5
04N05E26F001	6.9	1.2	-5.7
02S04E15R001	56.0	53.0	-3.0

Total Number of Wells	28
Total Number of Wells Compared	28
Number of Wells with Decrease	27
Number of Wells with Increase	1
Number of Wells with No Change	0

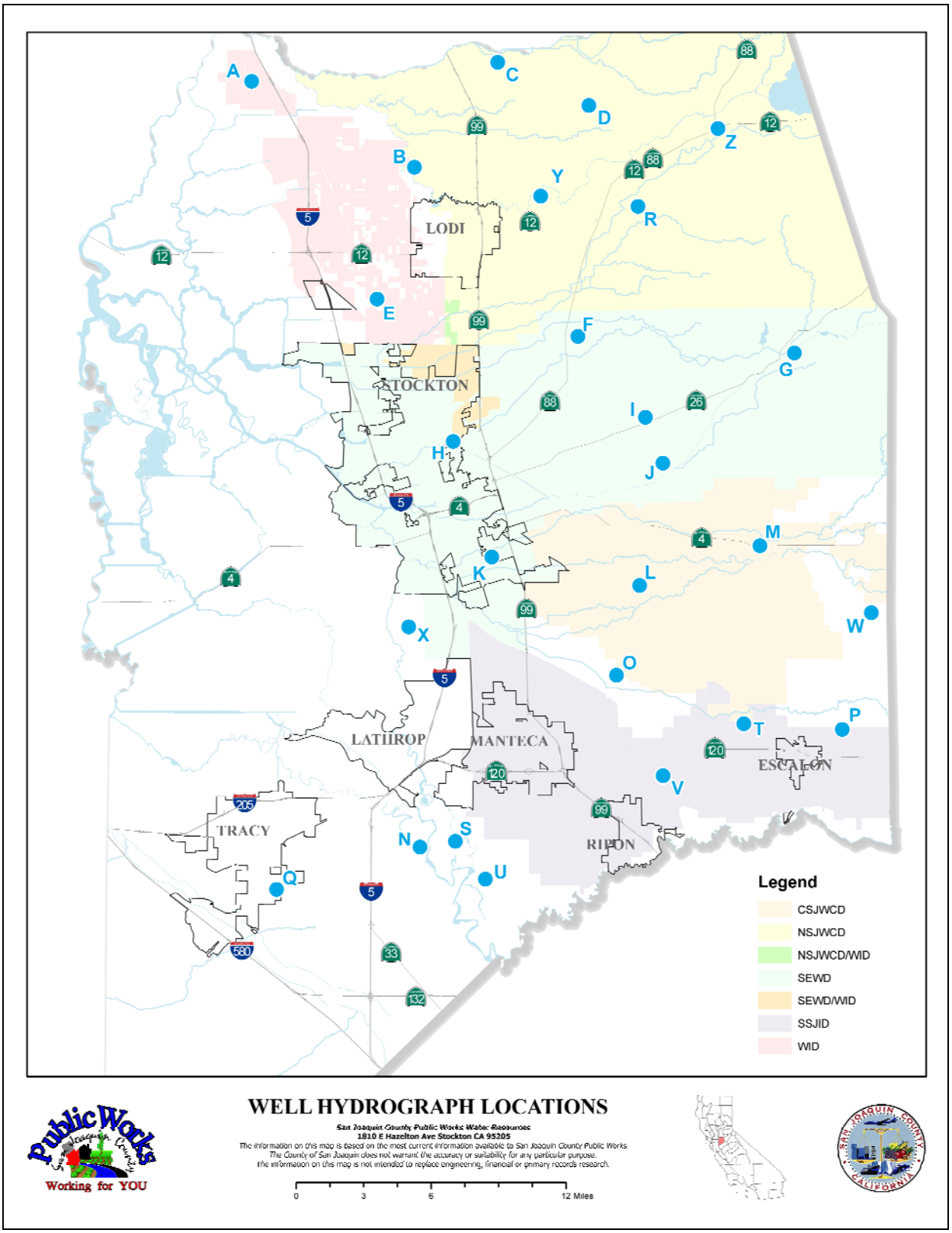

Figure 4-1: Well Hydrograph Locations

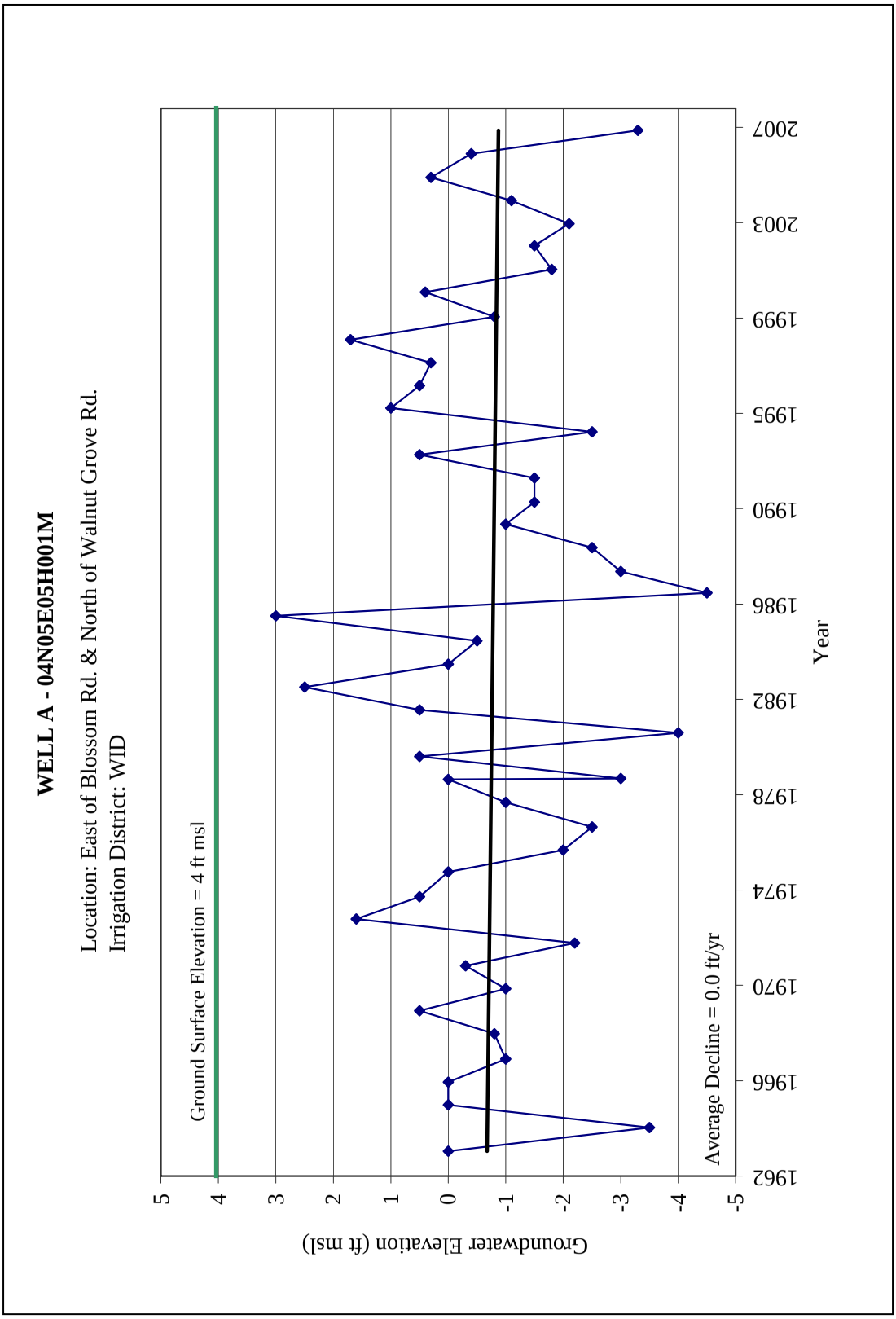

Figure 4-2: Spring Hydrograph Well

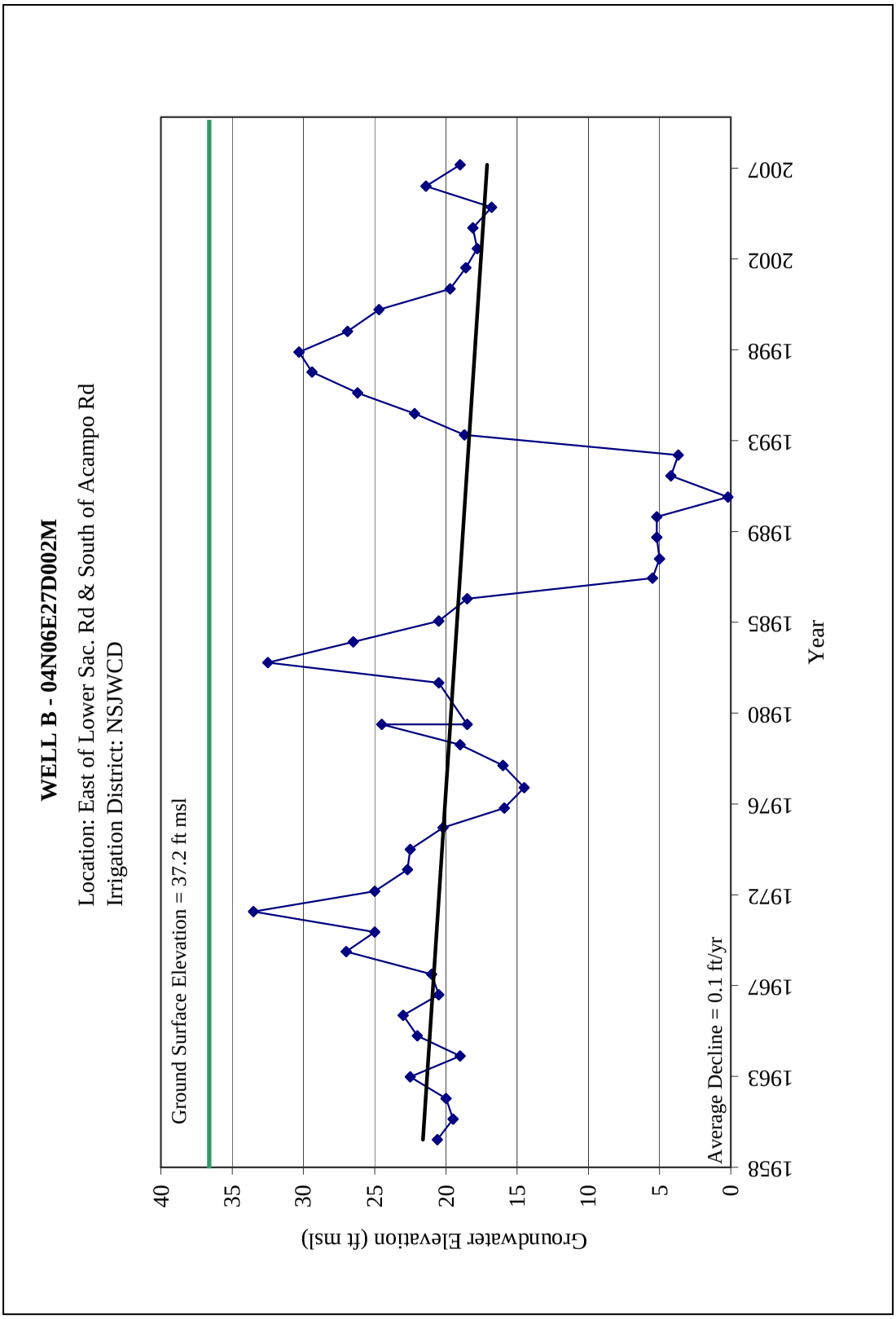

Figure 4-3: Spring Hydrograph Well

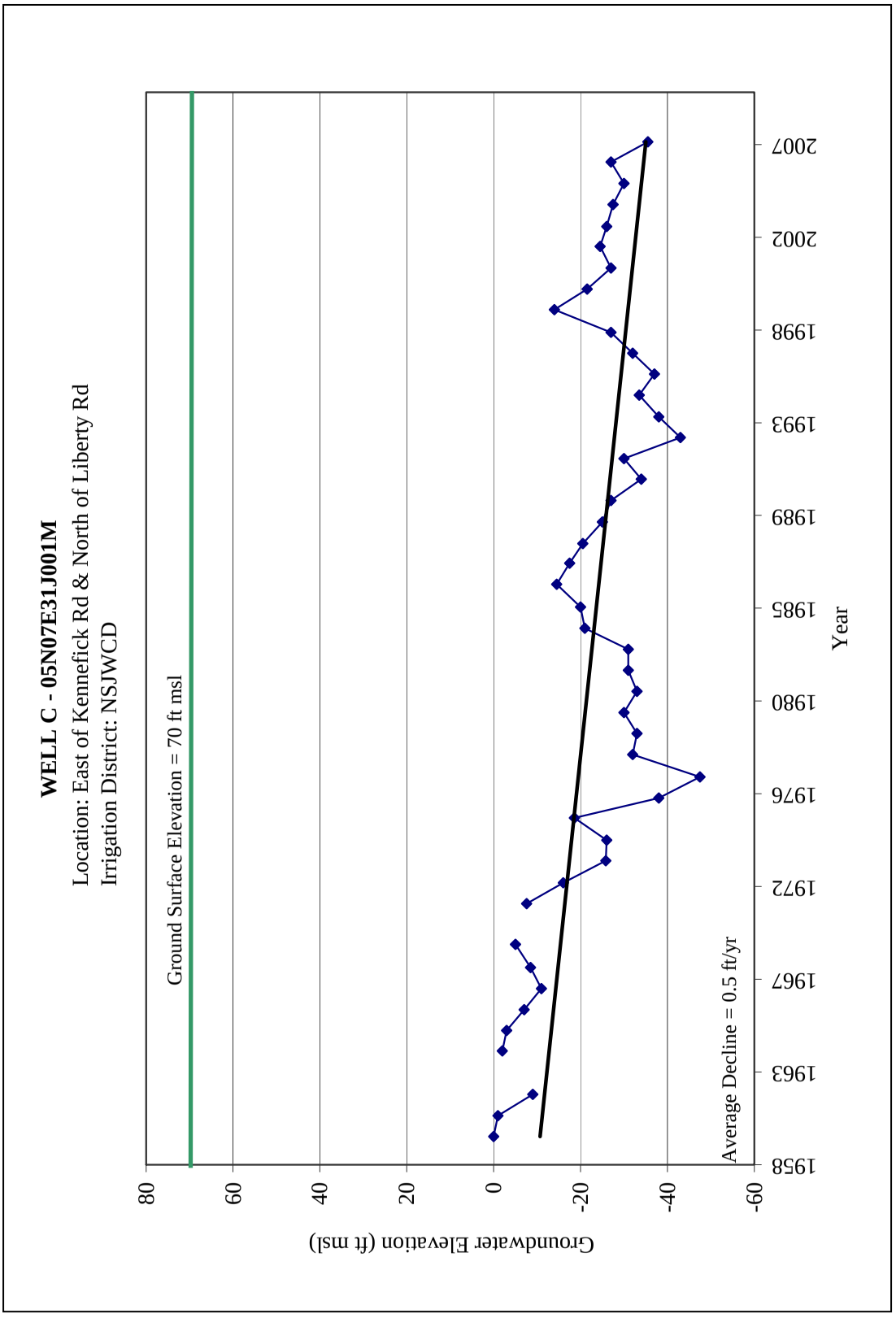

Figure 4-4: Spring Hydrograph Well C

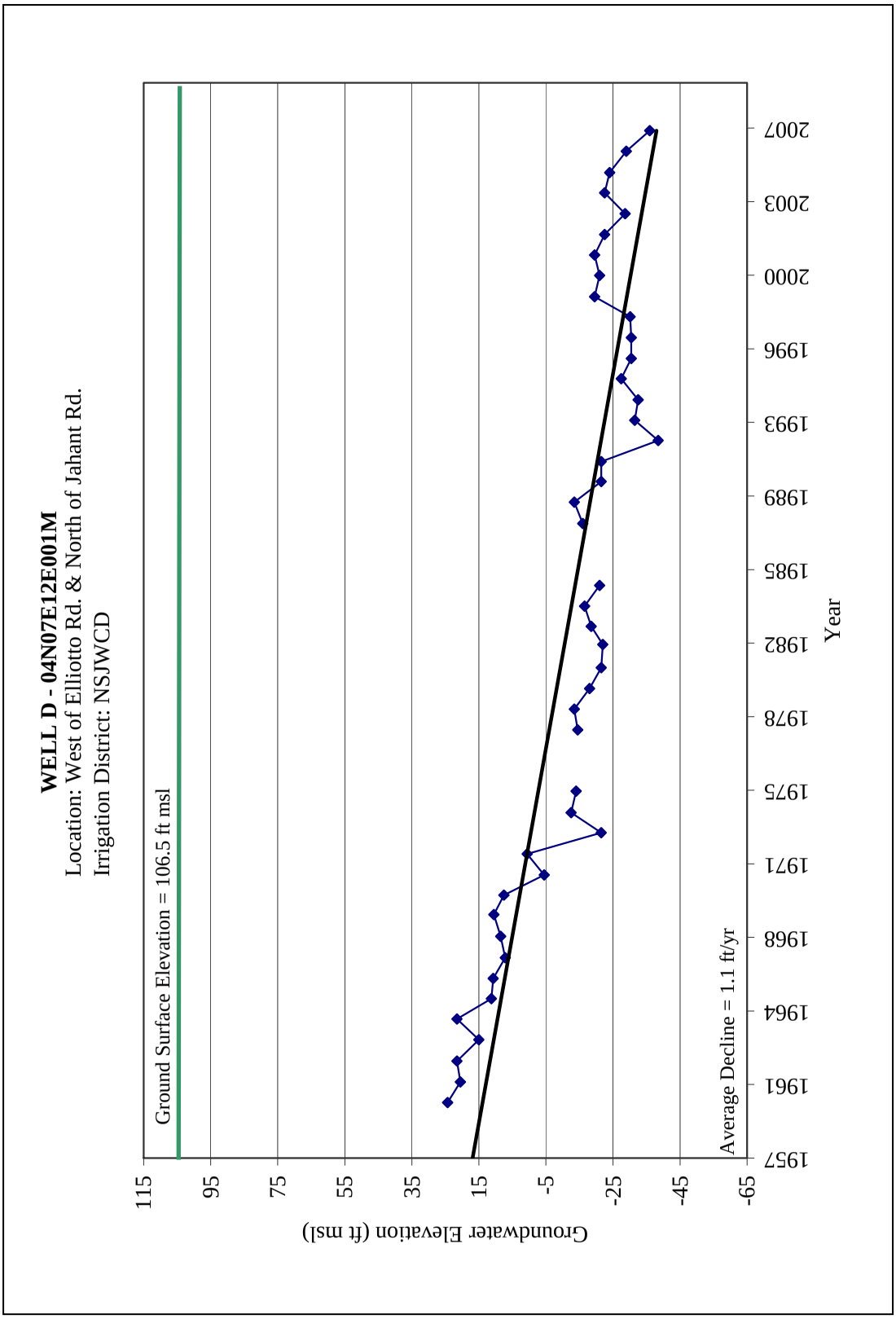

Figure 4-5: Spring Hydrograph Well

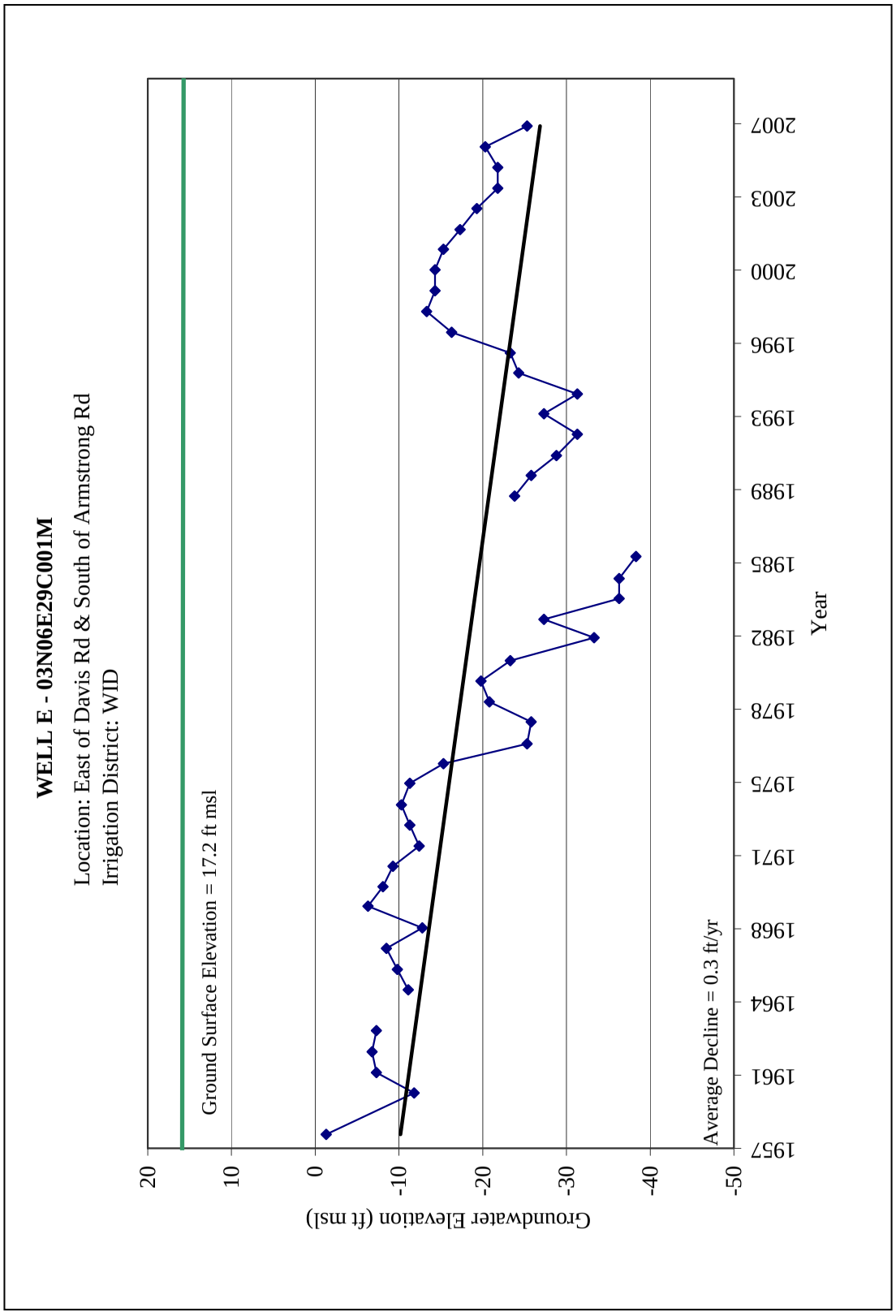

Figure 4-6: Spring Hydrograph Well E

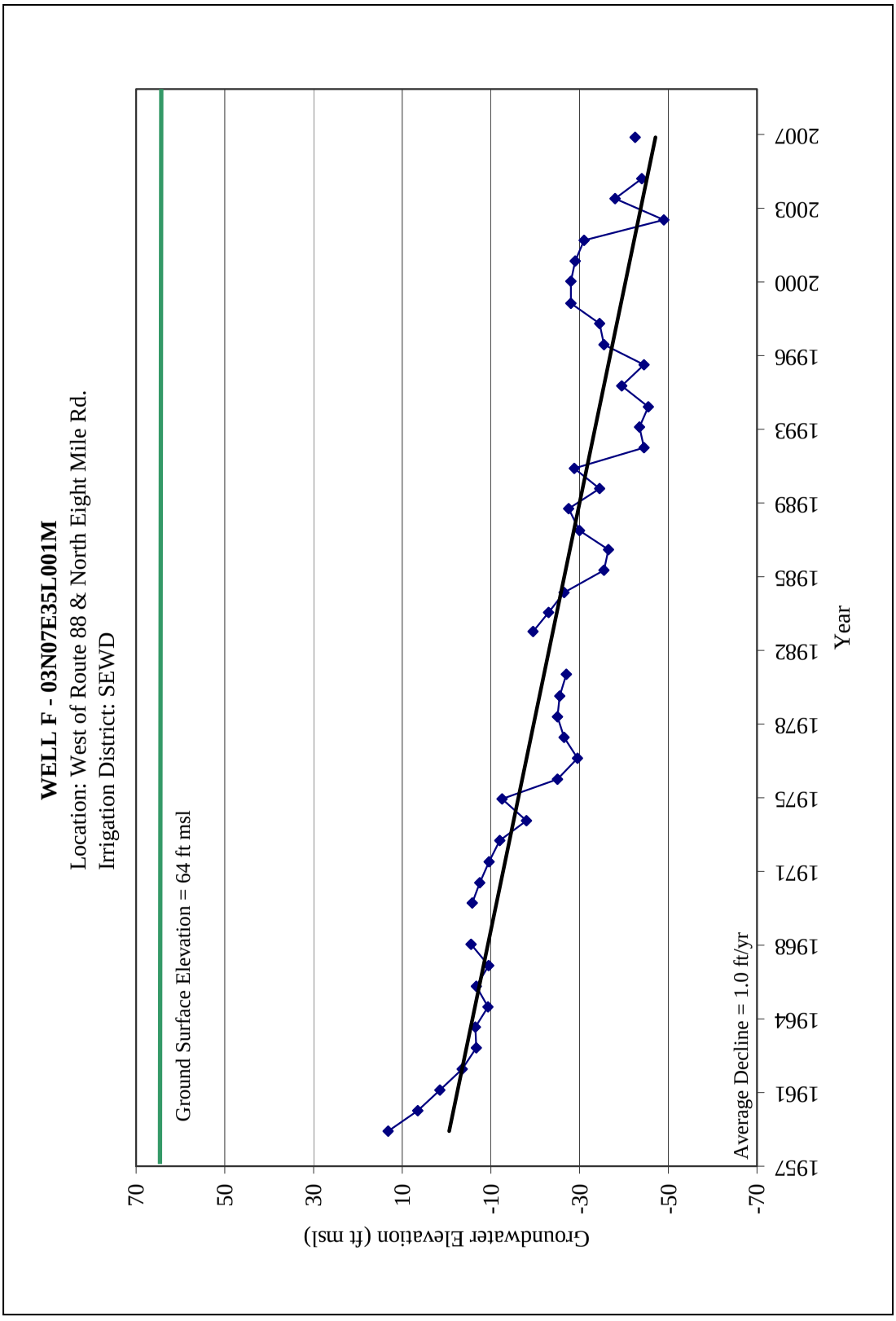

Figure 4-7: Spring Hydrograph Well F

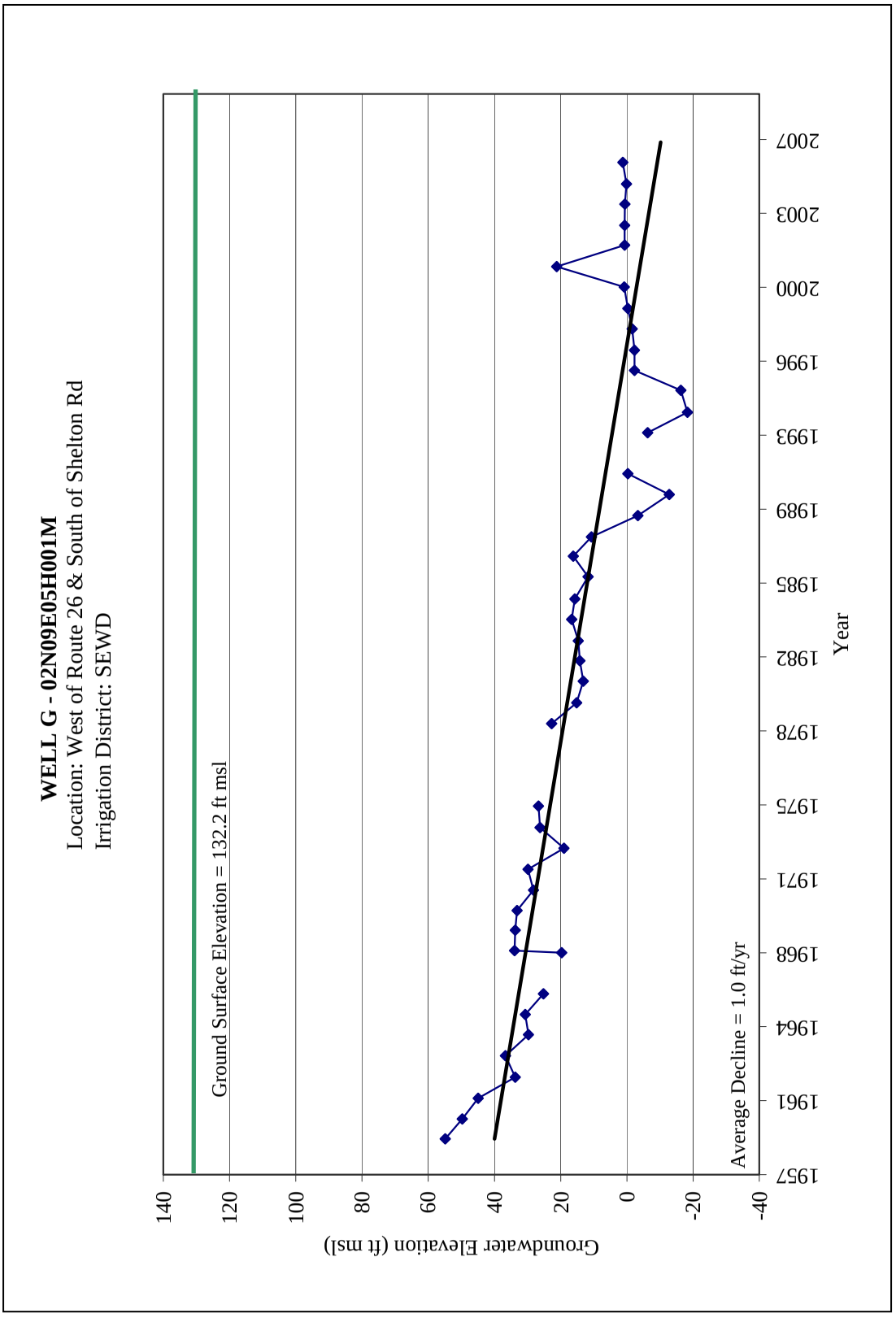

Figure 4-8: Spring Hydrograph Well G

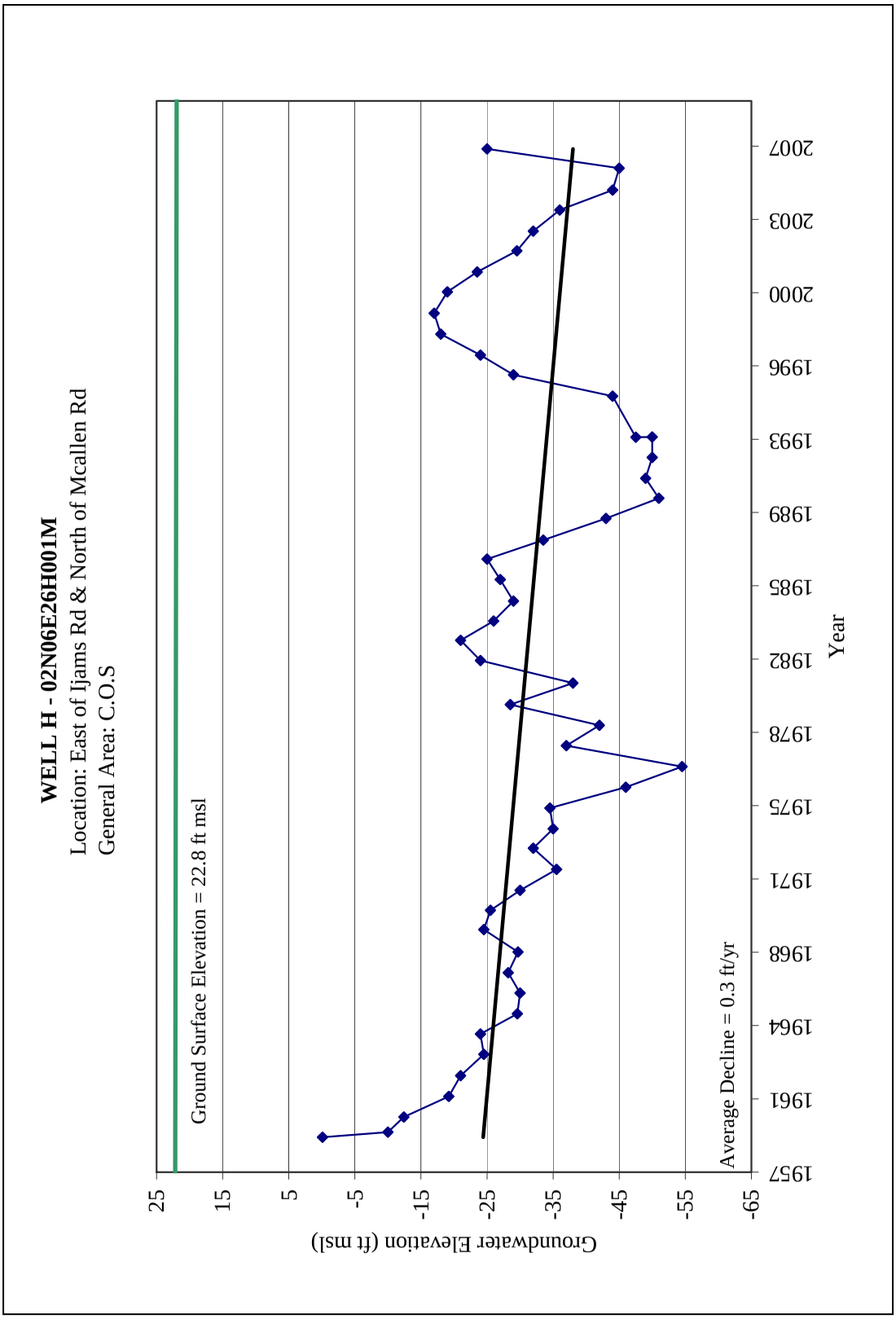

Figure 4-9: Spring Hydrograph Well

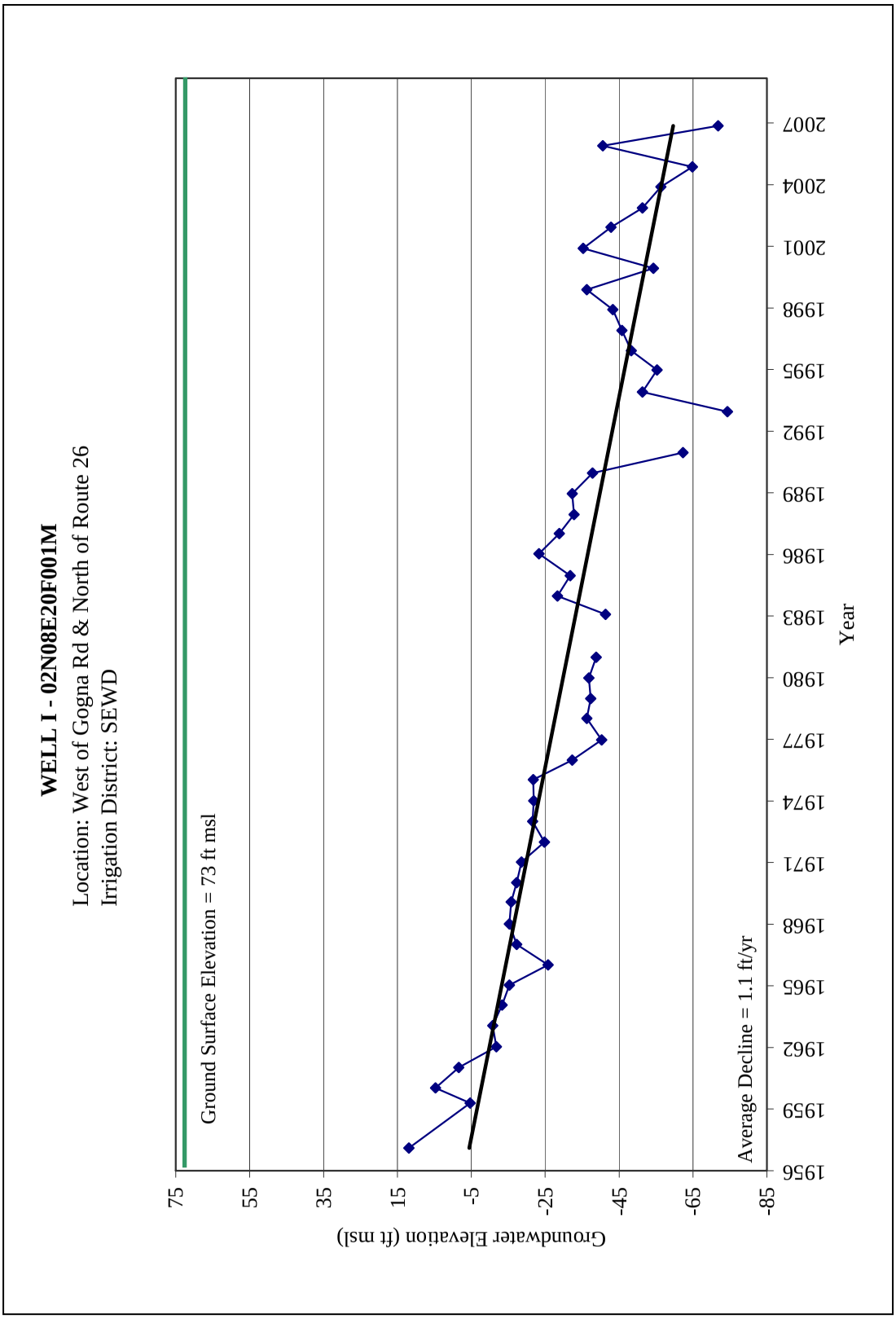

Figure 4-10: Spring Hydrograph Well

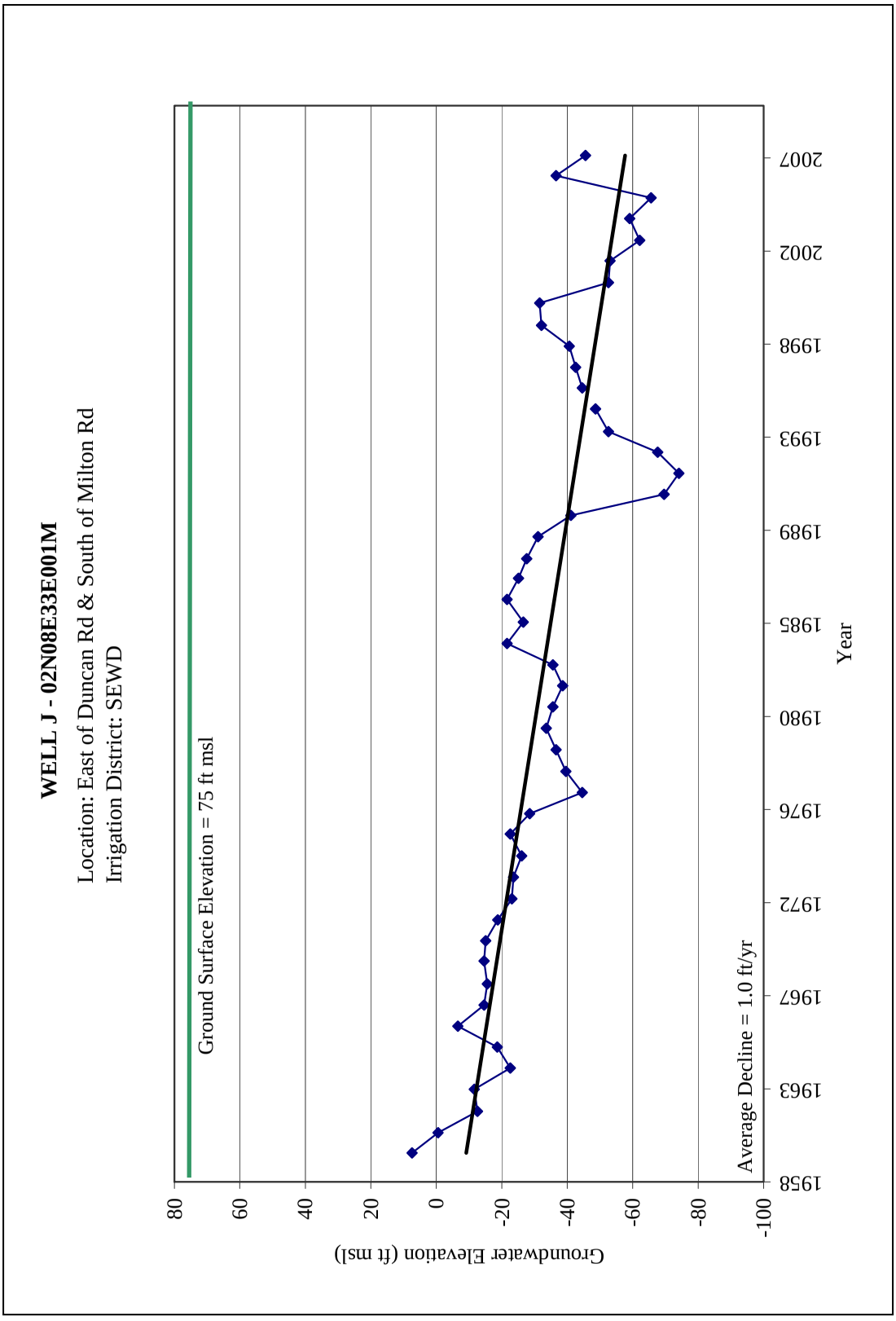

Figure 4-11: Spring Hydrograph Well J

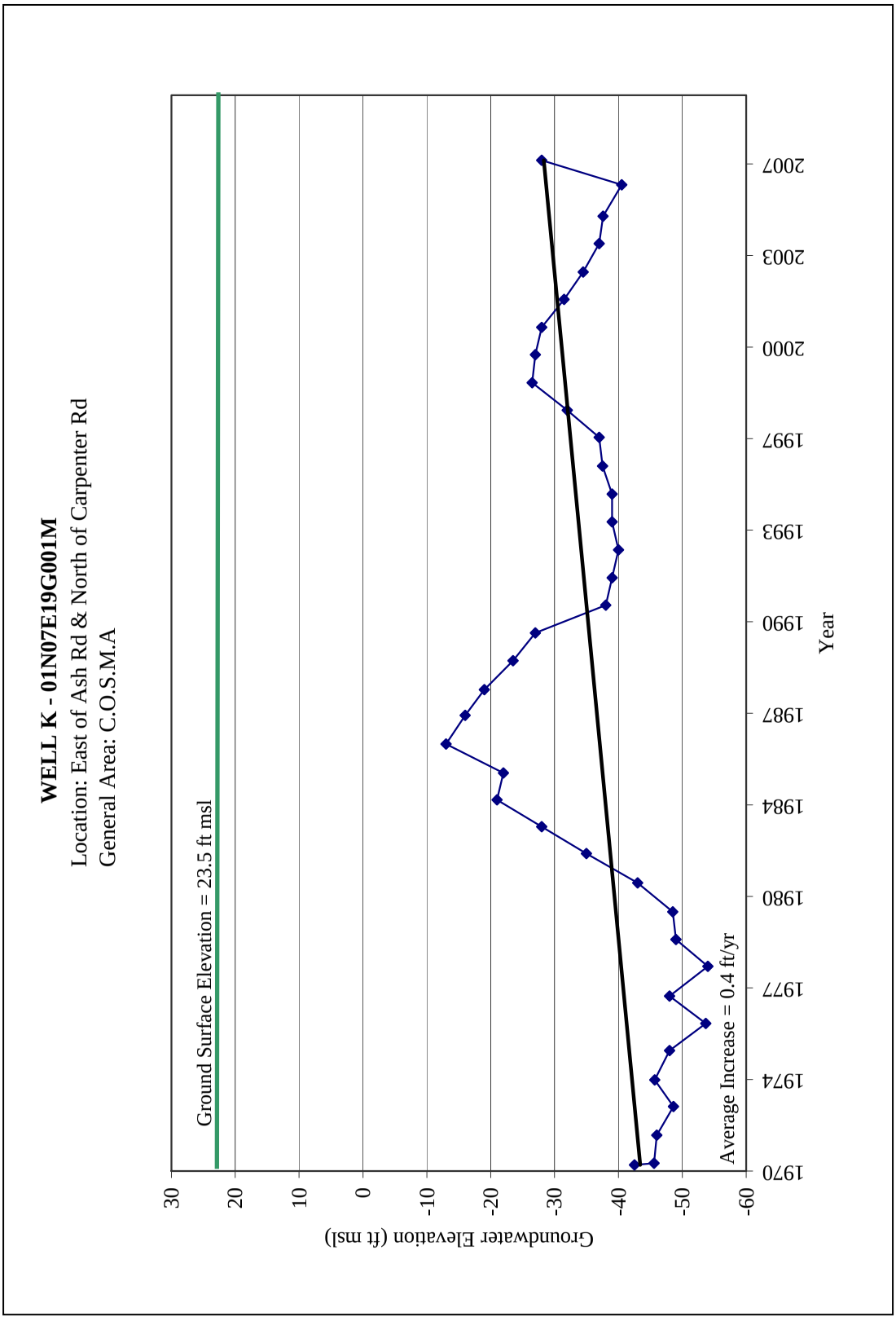

Figure 4-12: Spring Hydrograph Well K

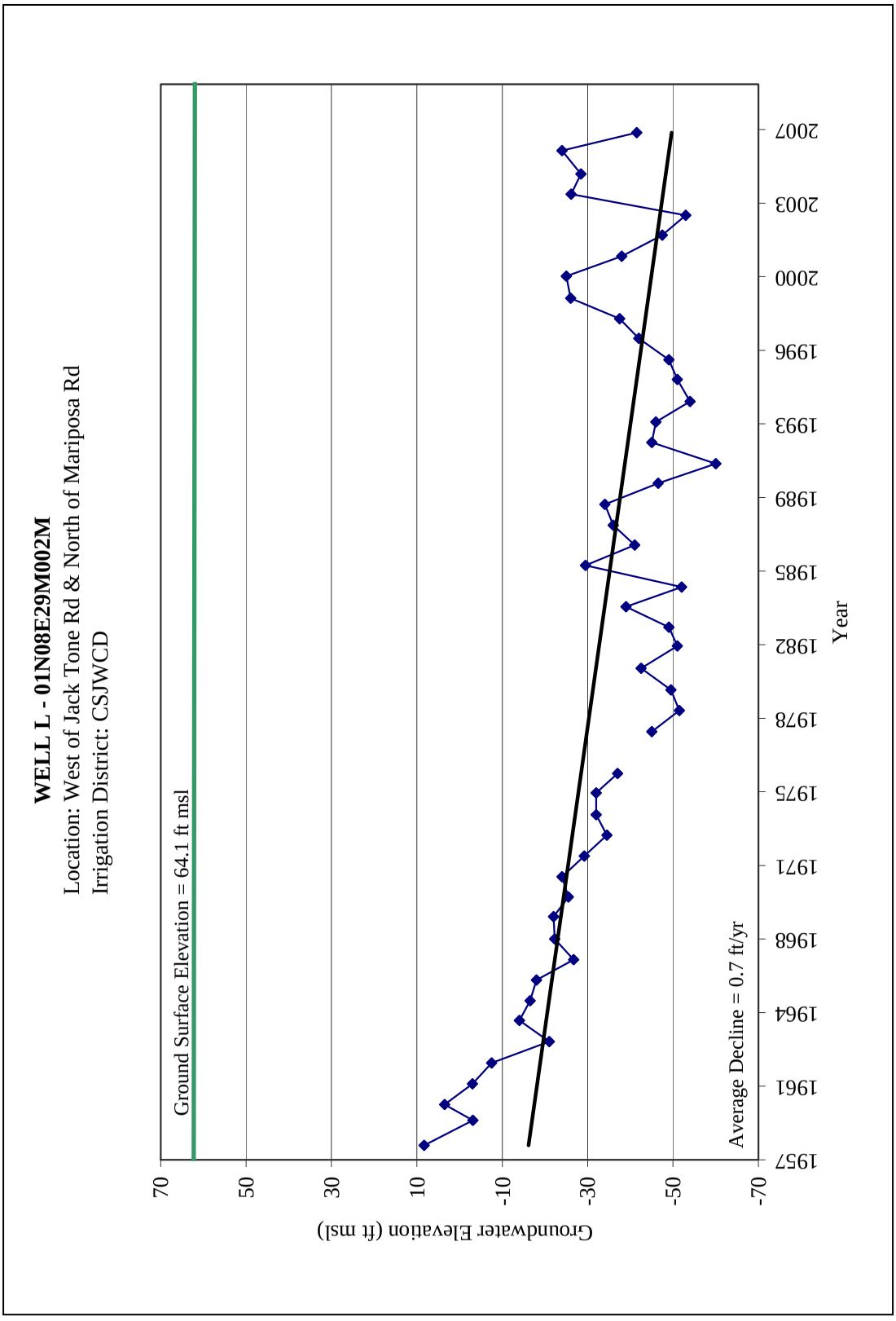

Figure 4-13: Spring Hydrograph Well L

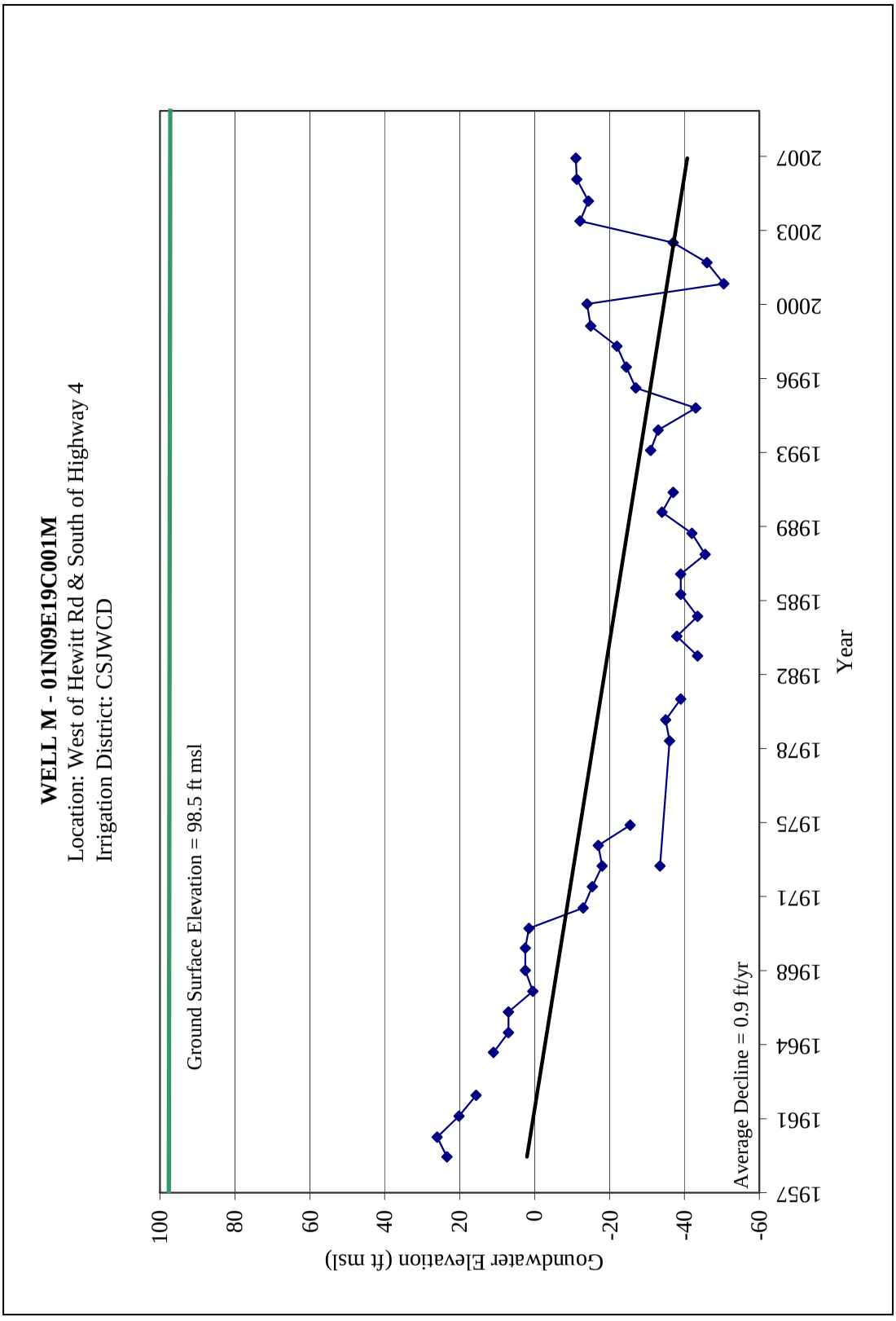

Figure 4-14: Spring Hydrograph Well M

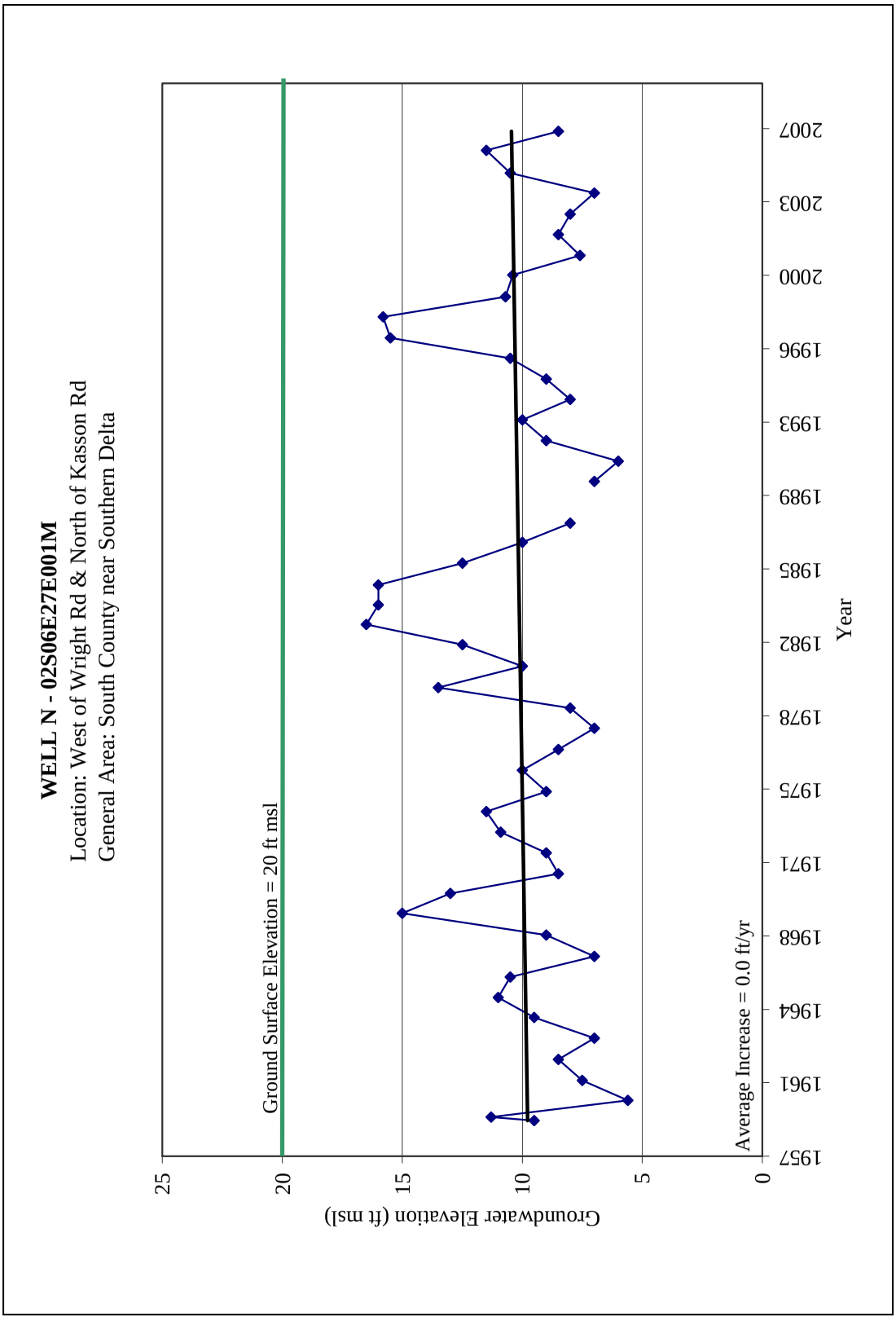

Figure 4-15: Spring Hydrograph Well N

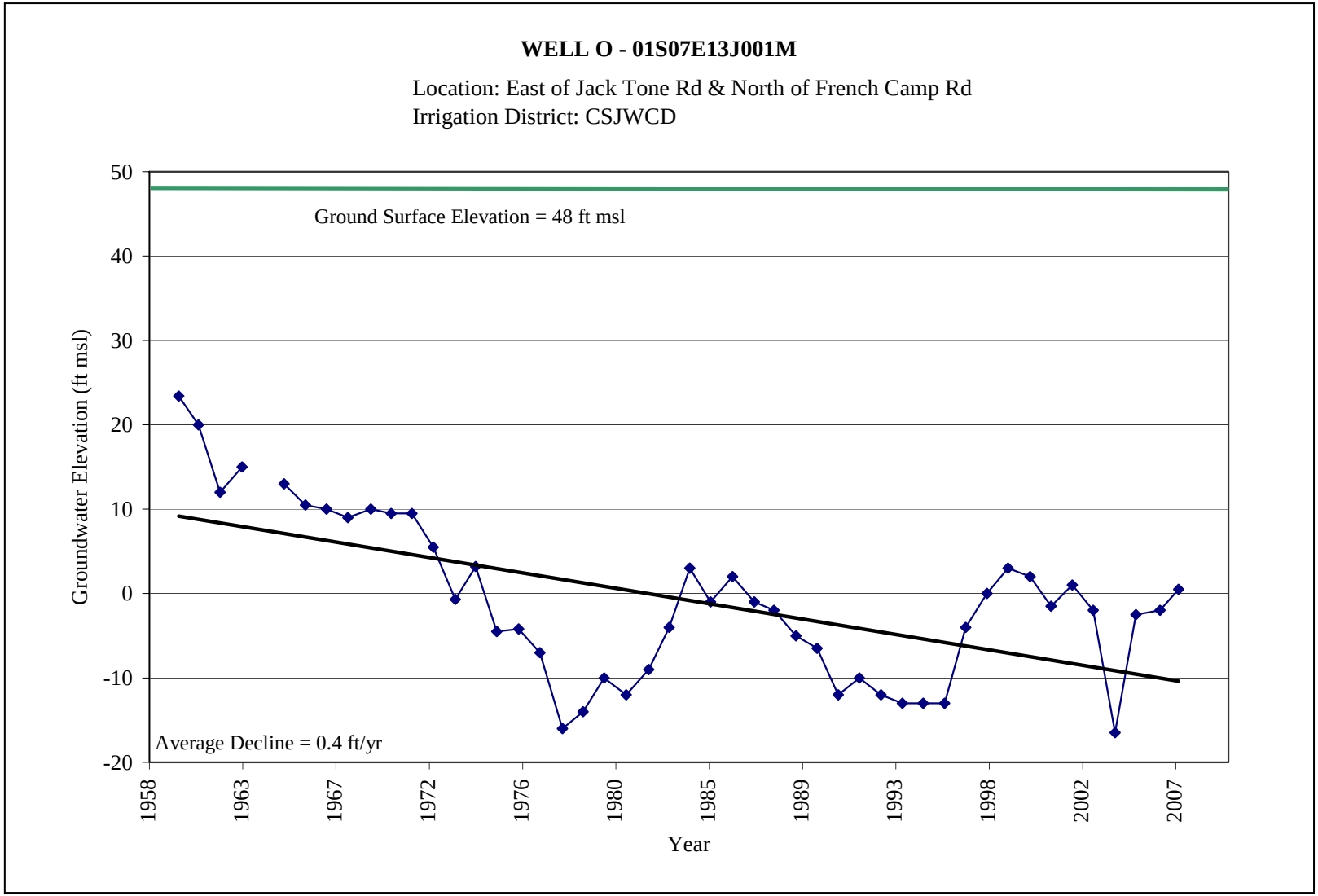

Figure 4-16: Spring Hydrograph Well O

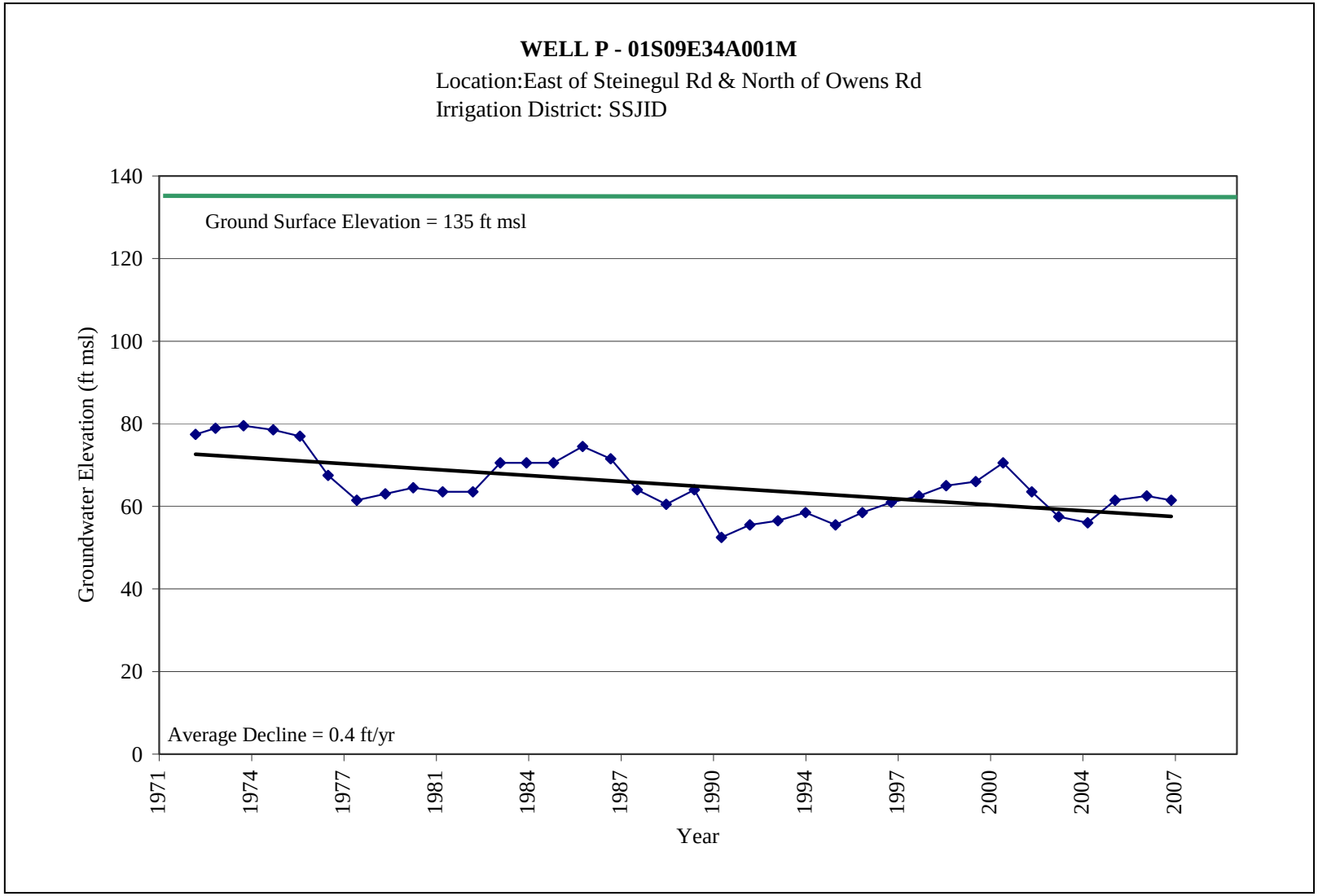

Figure 4-17: Spring Hydrograph Well P

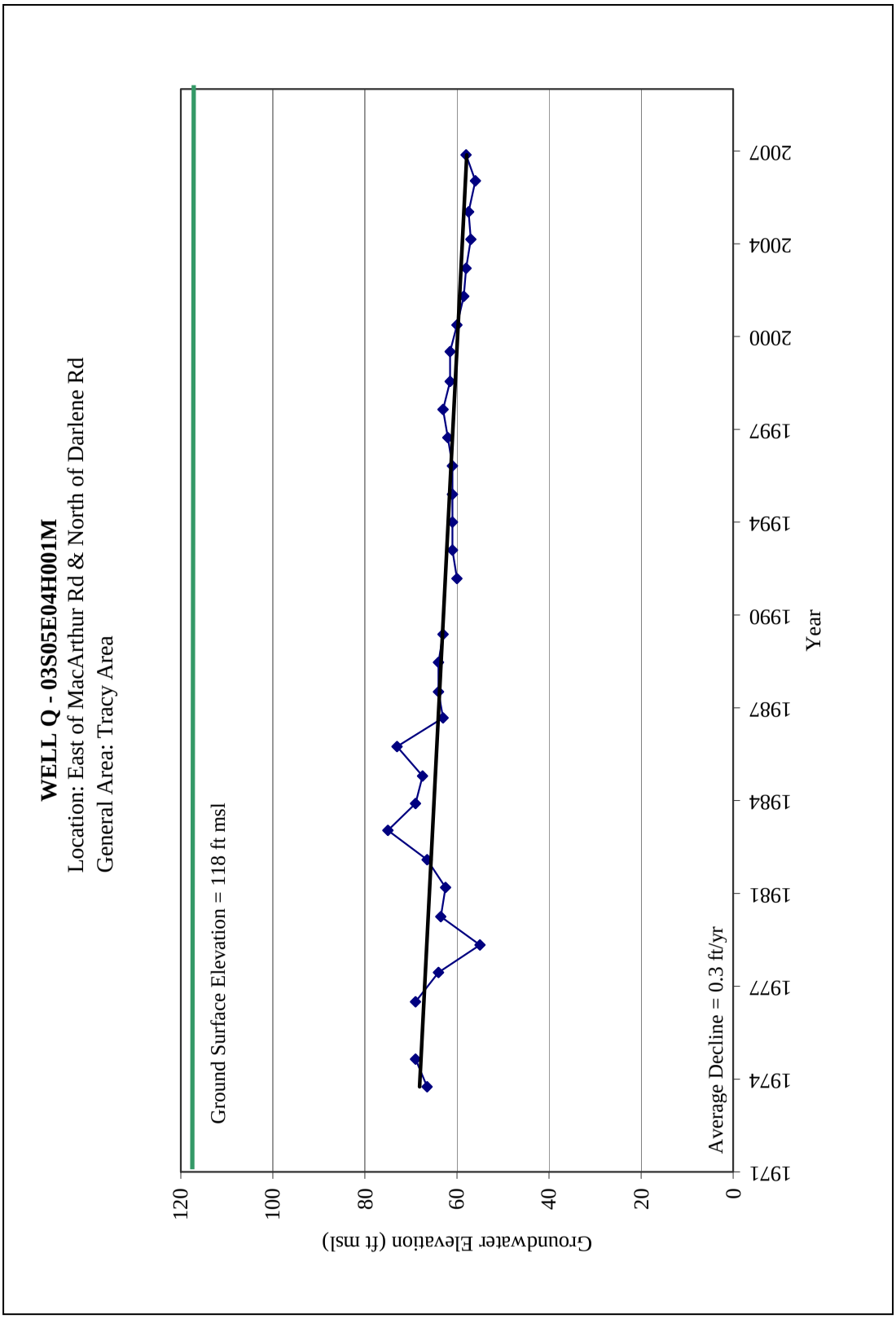

Figure 4-18: Spring Hydrograph Well Q

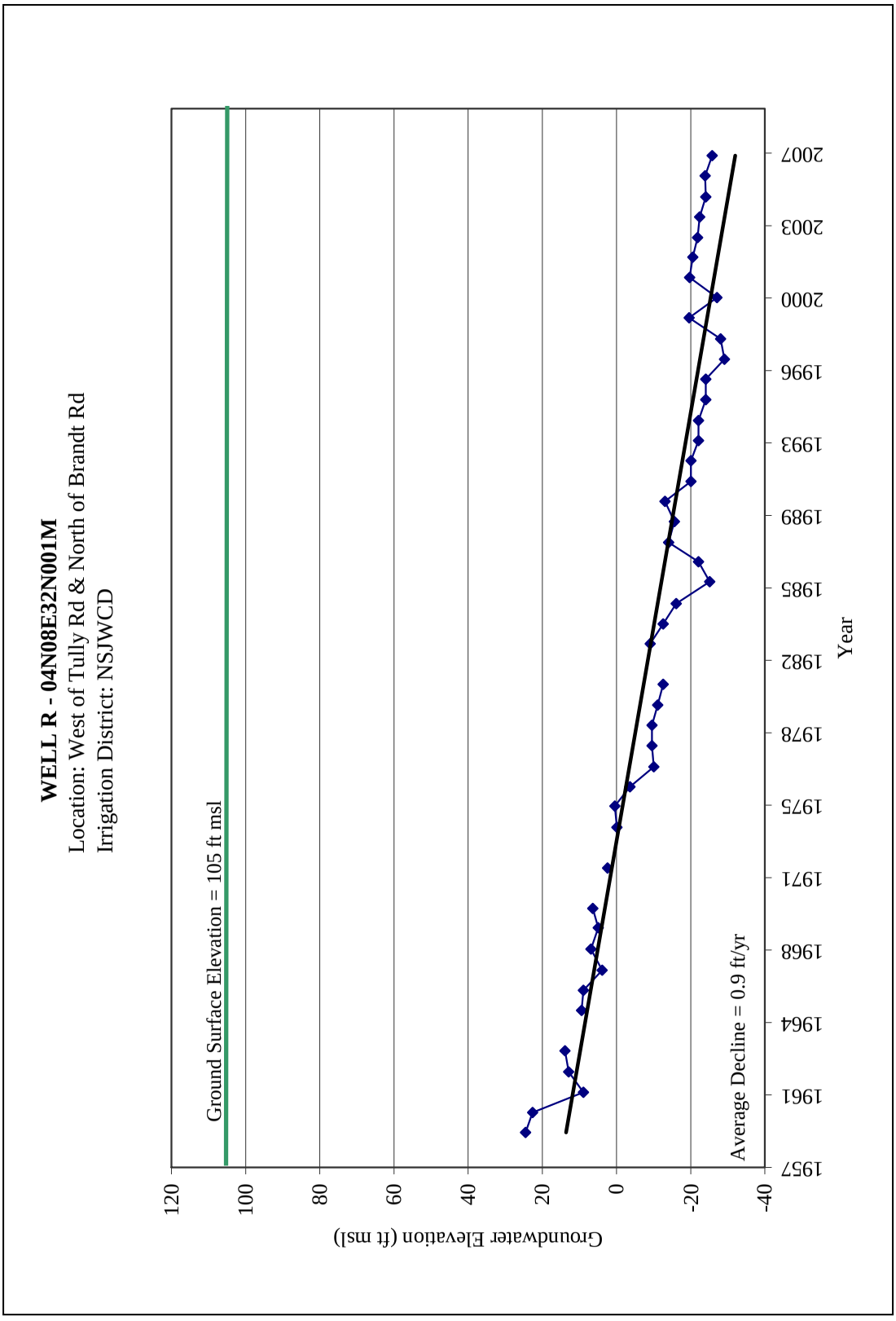

Figure 4-19: Spring Hydrograph Well R

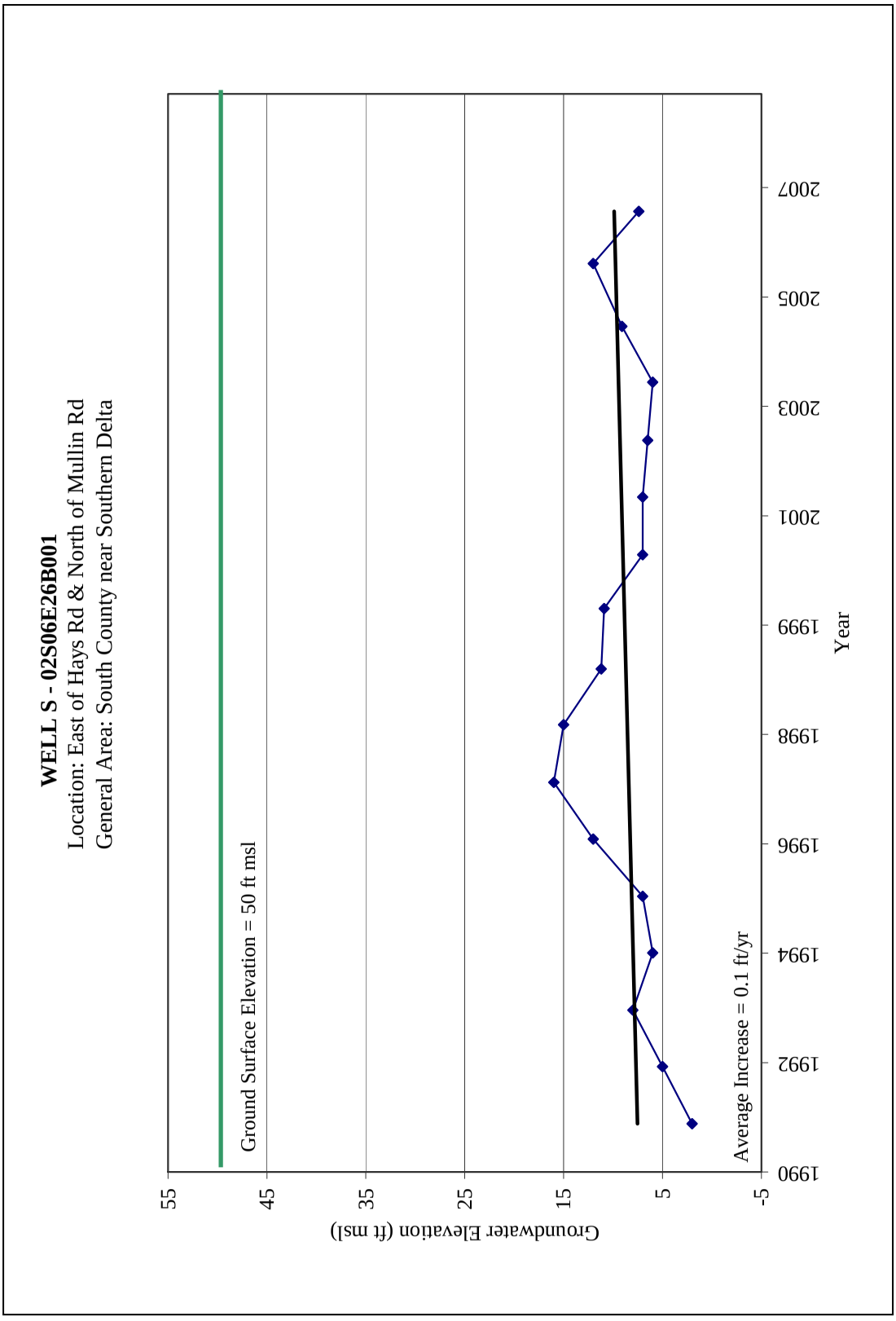

Figure 4-20: Spring Hydrograph Well S

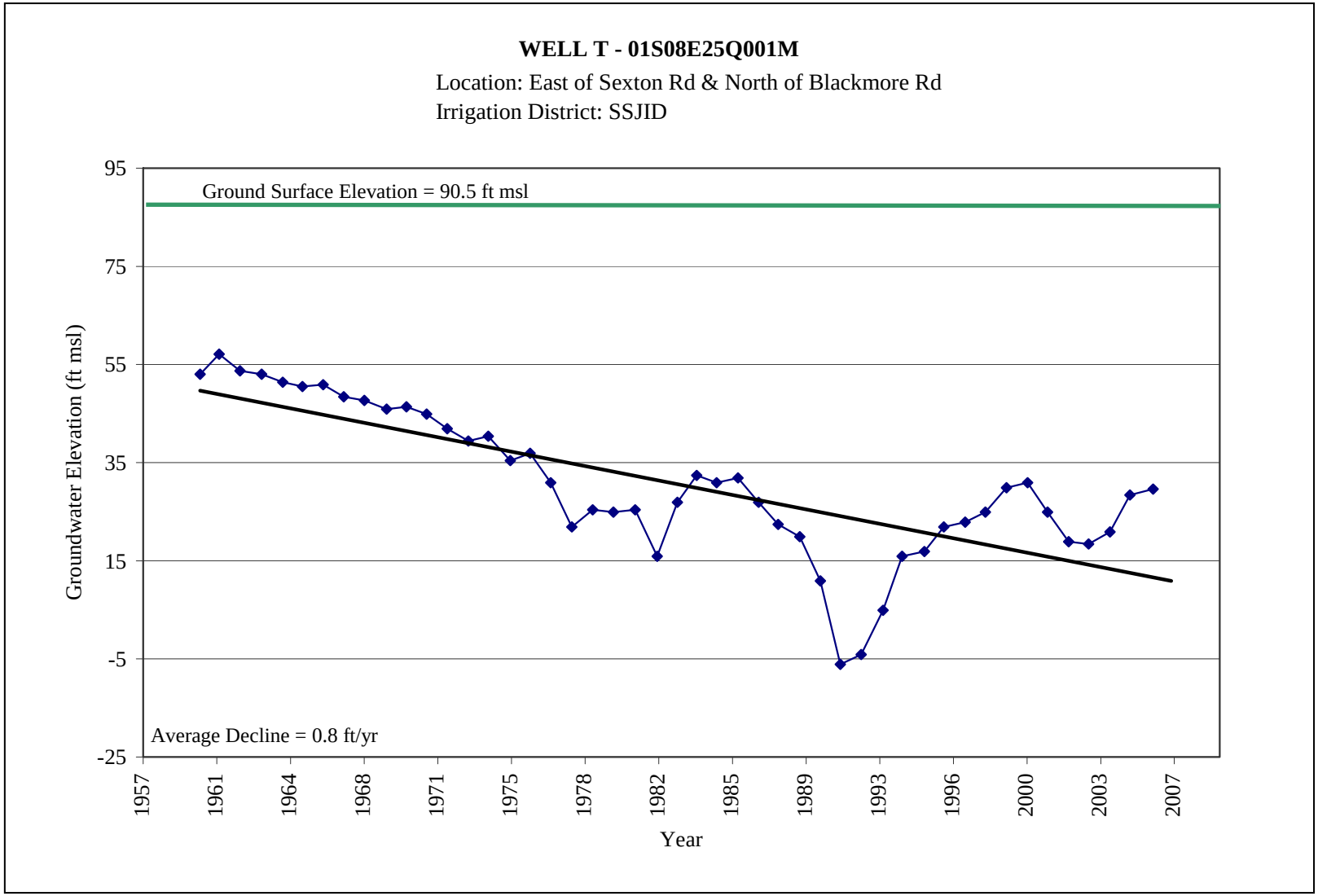

Figure 4-21: Spring Hydrograph Well T

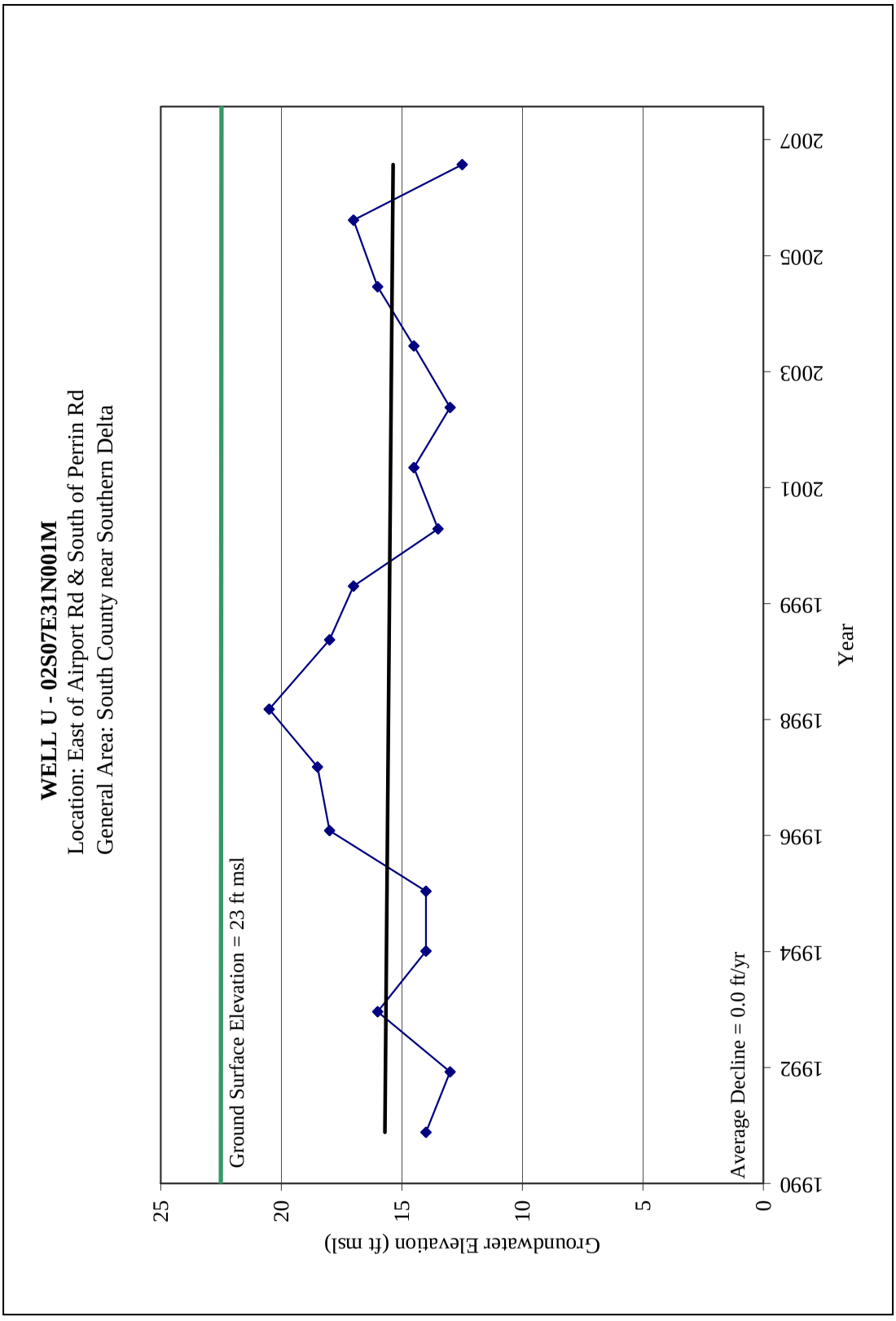

Figure 4-22: Spring Hydrograph Well U

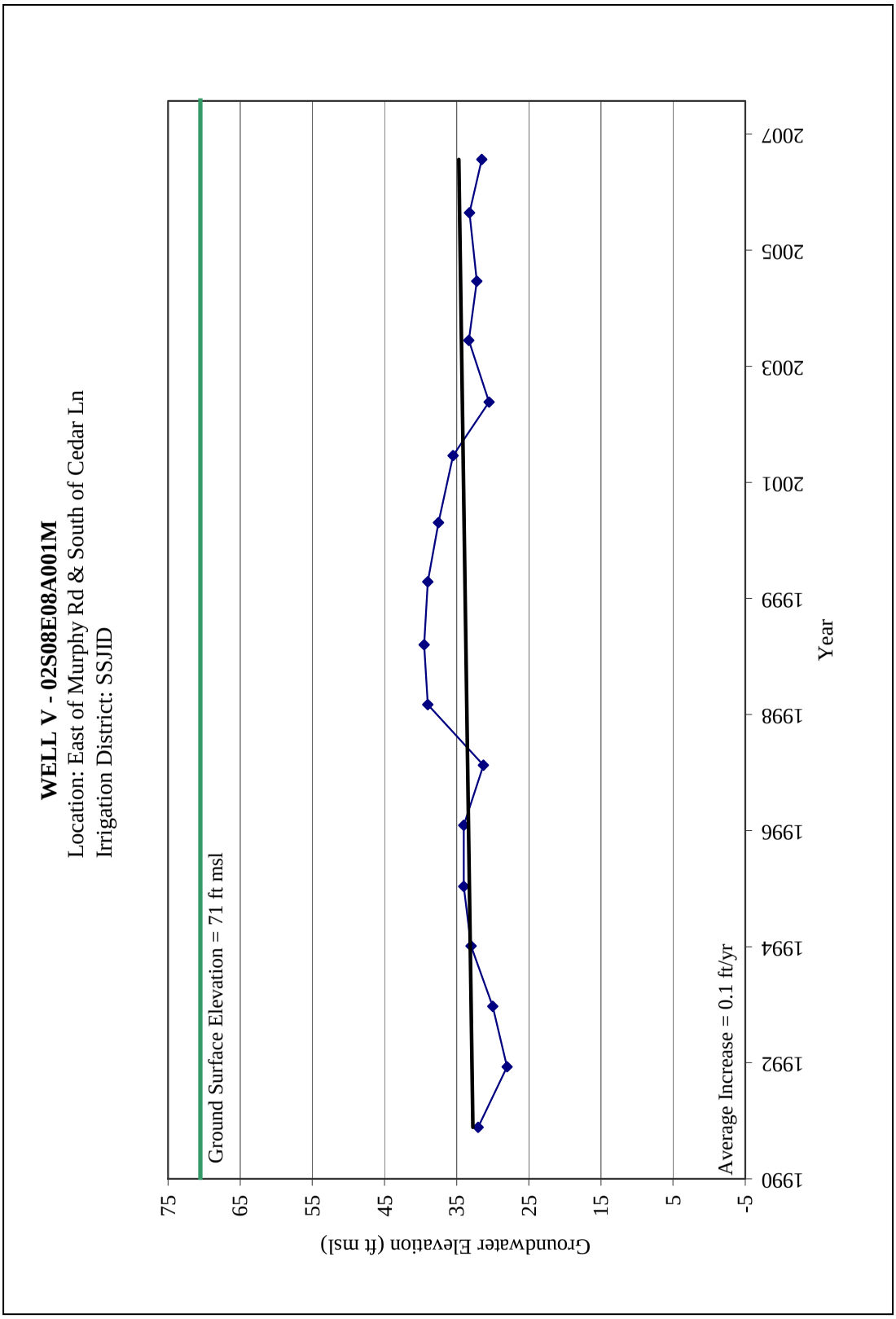

Figure 4-23: Spring Hydrograph Well V

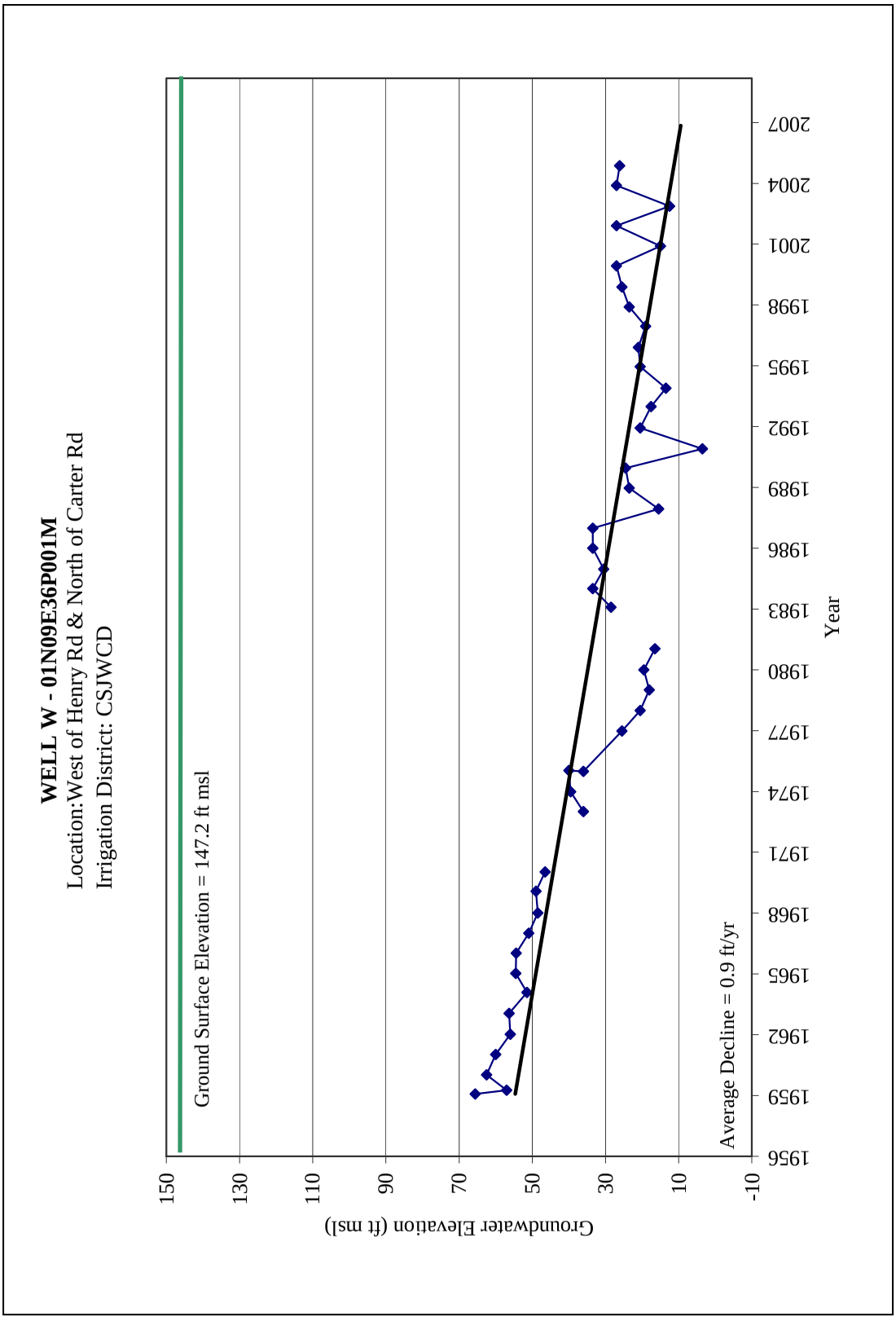

Figure 4-24: Spring Hydrograph Well W

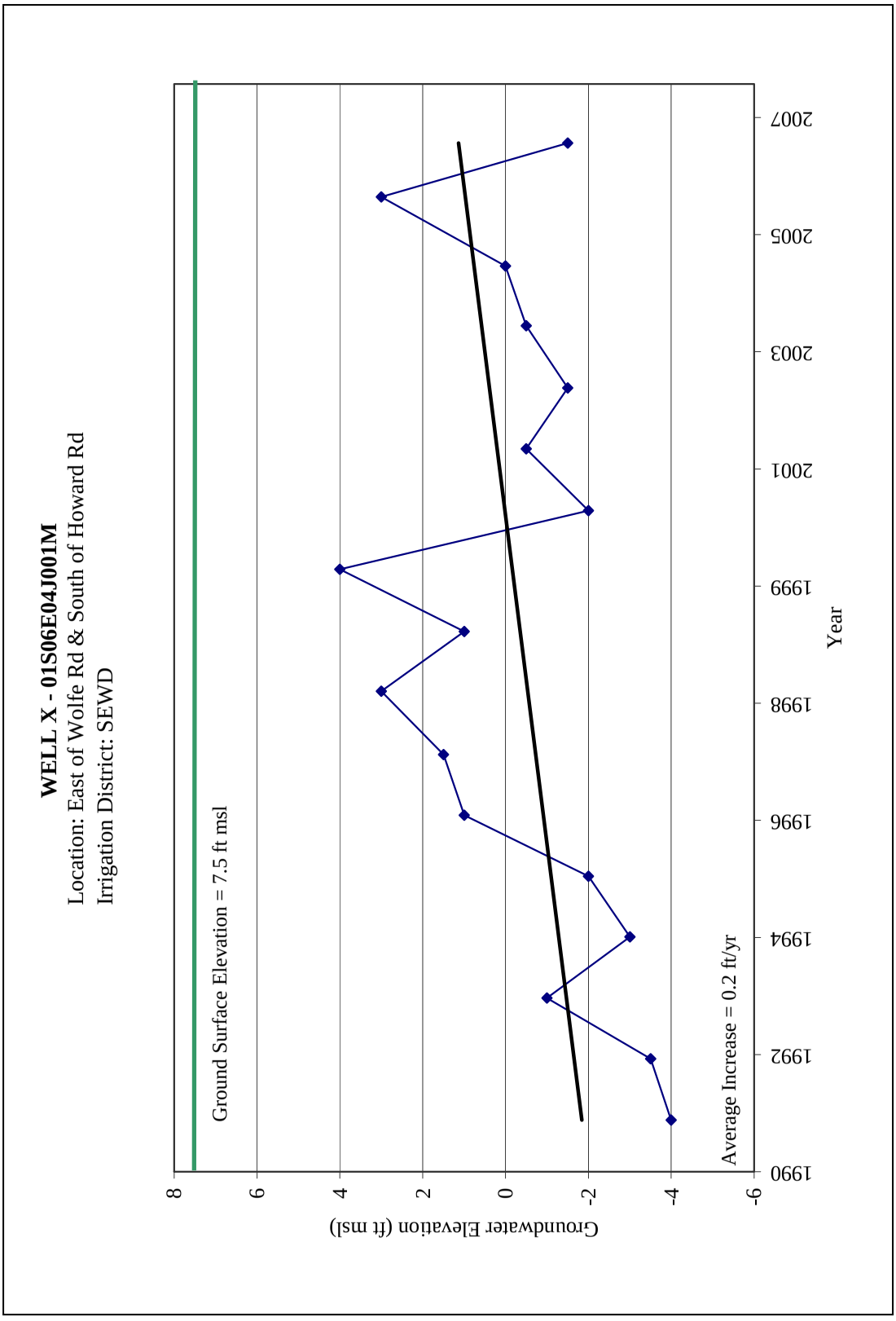

Figure 4-25: Spring Hydrograph Well X

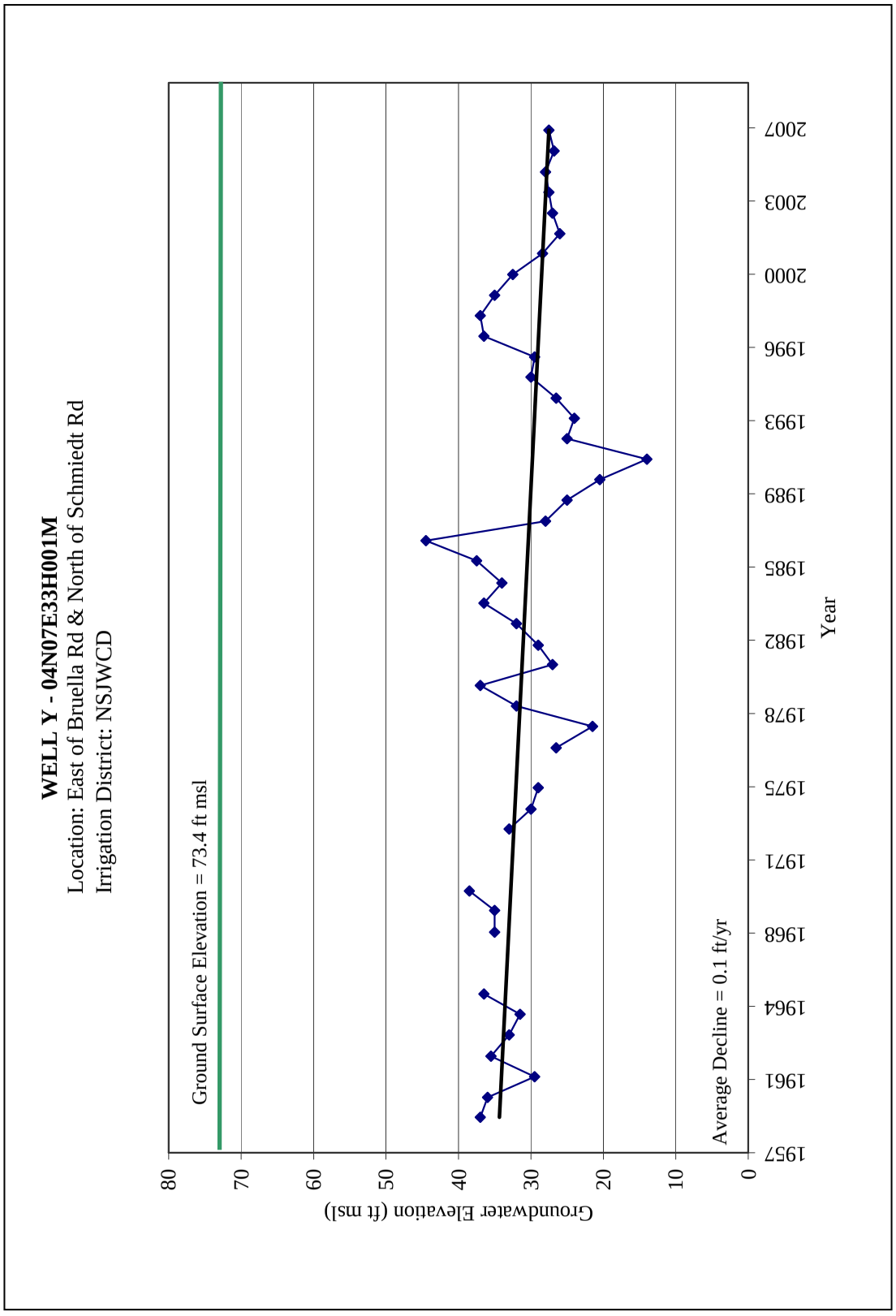

Figure 4-26: Spring Hydrograph Well Y

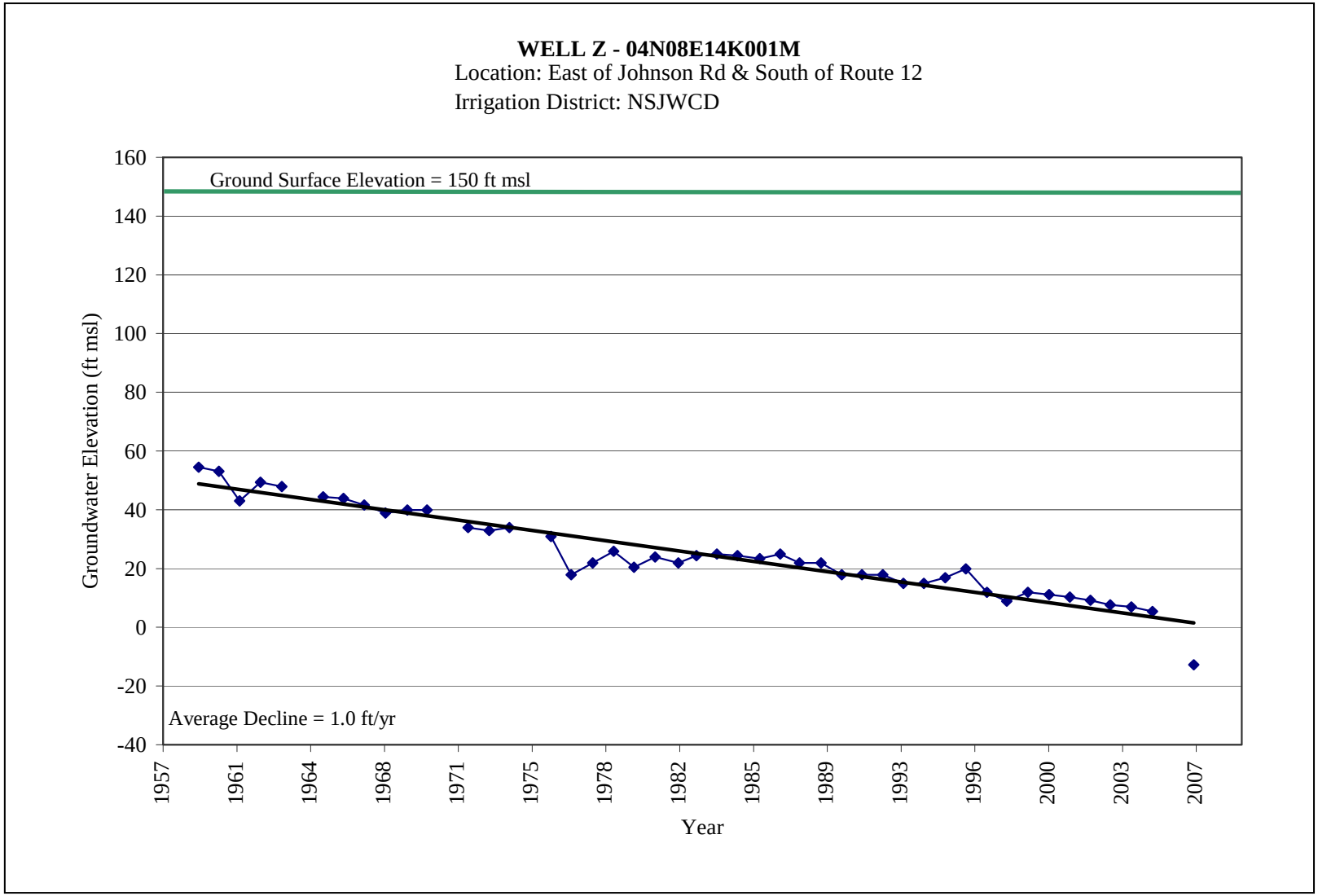

Figure 4-27: Spring Hydrograph Well Z

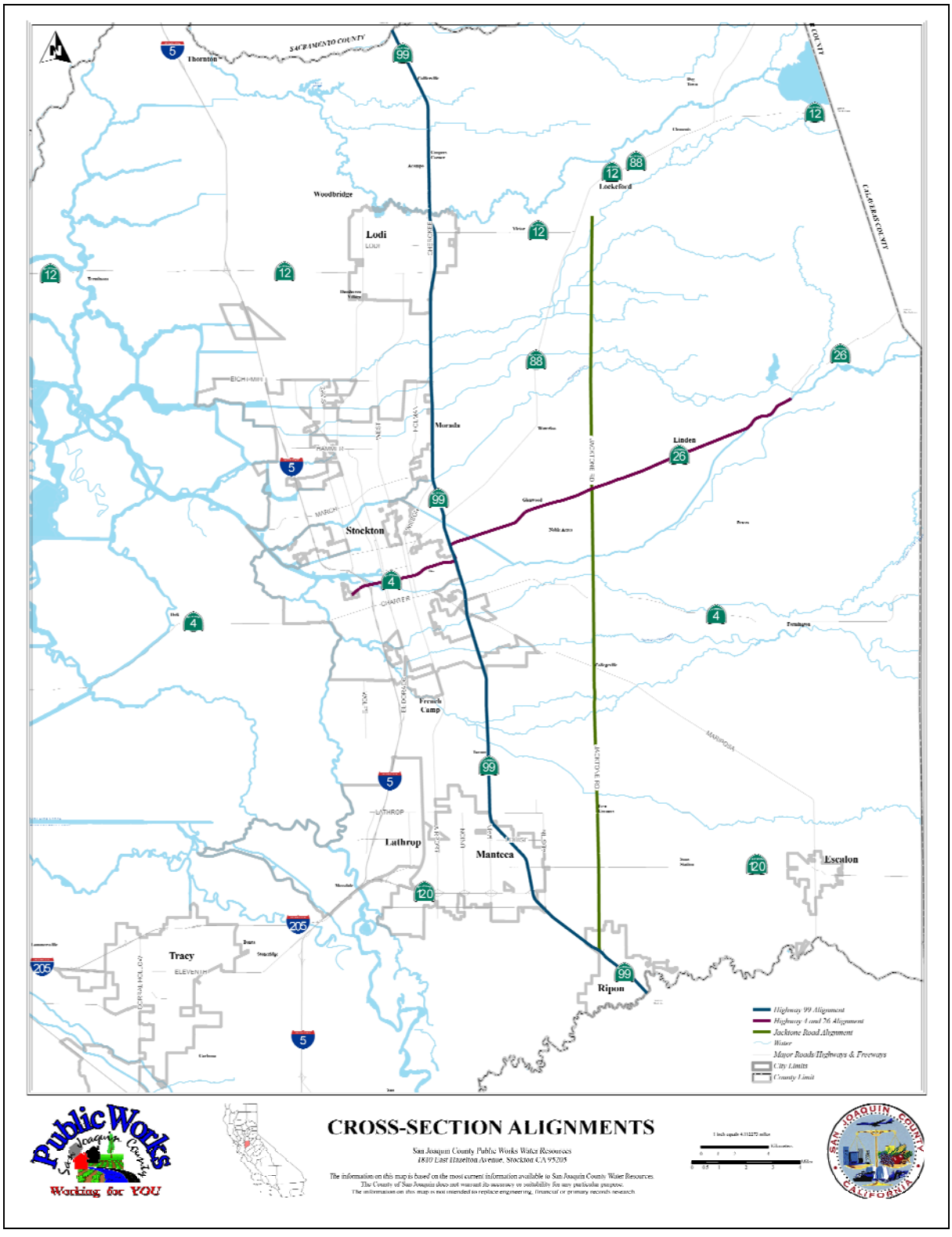

Figure 4-28: Cross Section Alignments

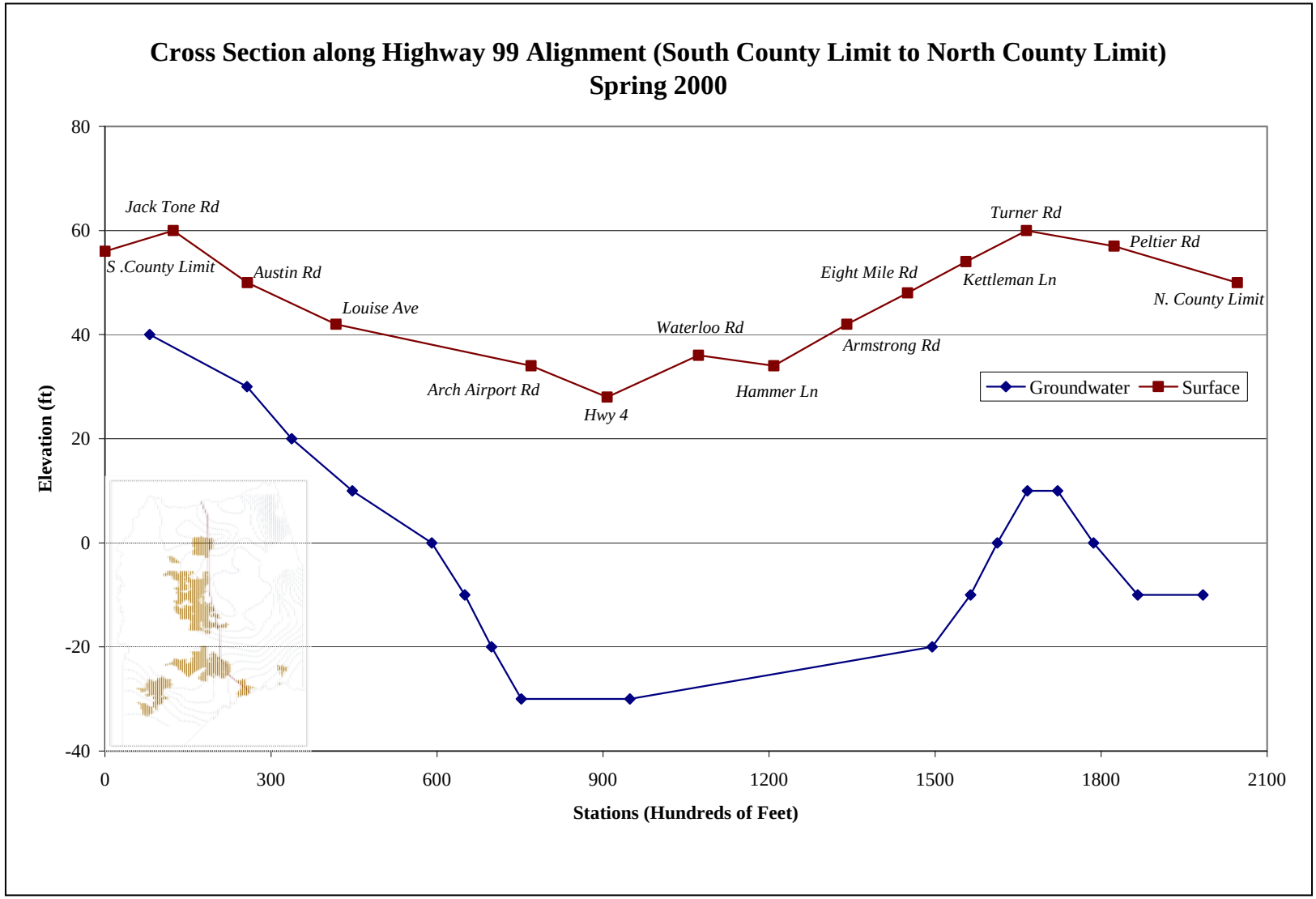

Figure 4-29: Highway 99 Cross Section Spring 2000

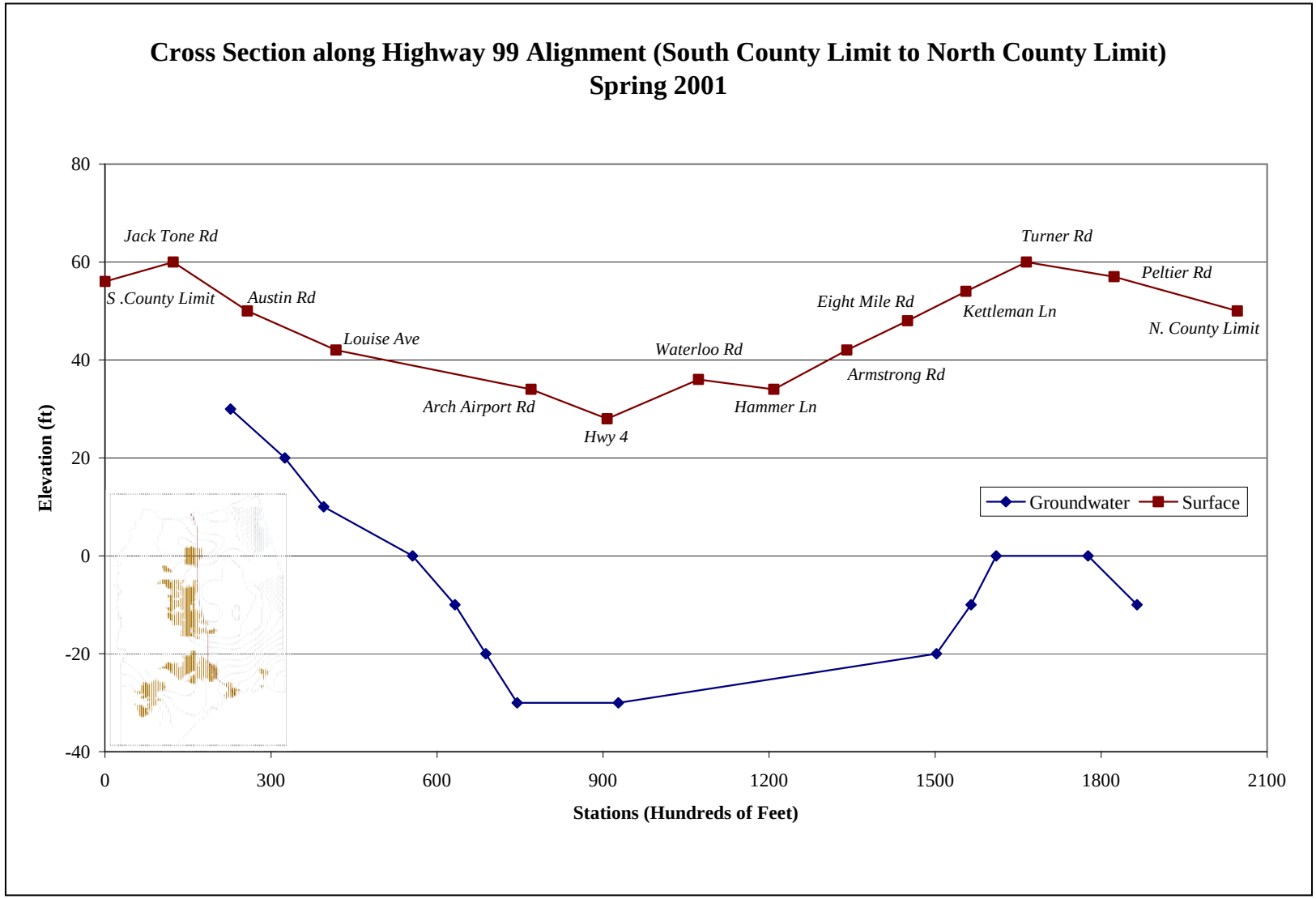

Figure 4-30: Highway 99 Cross Section Spring 2001

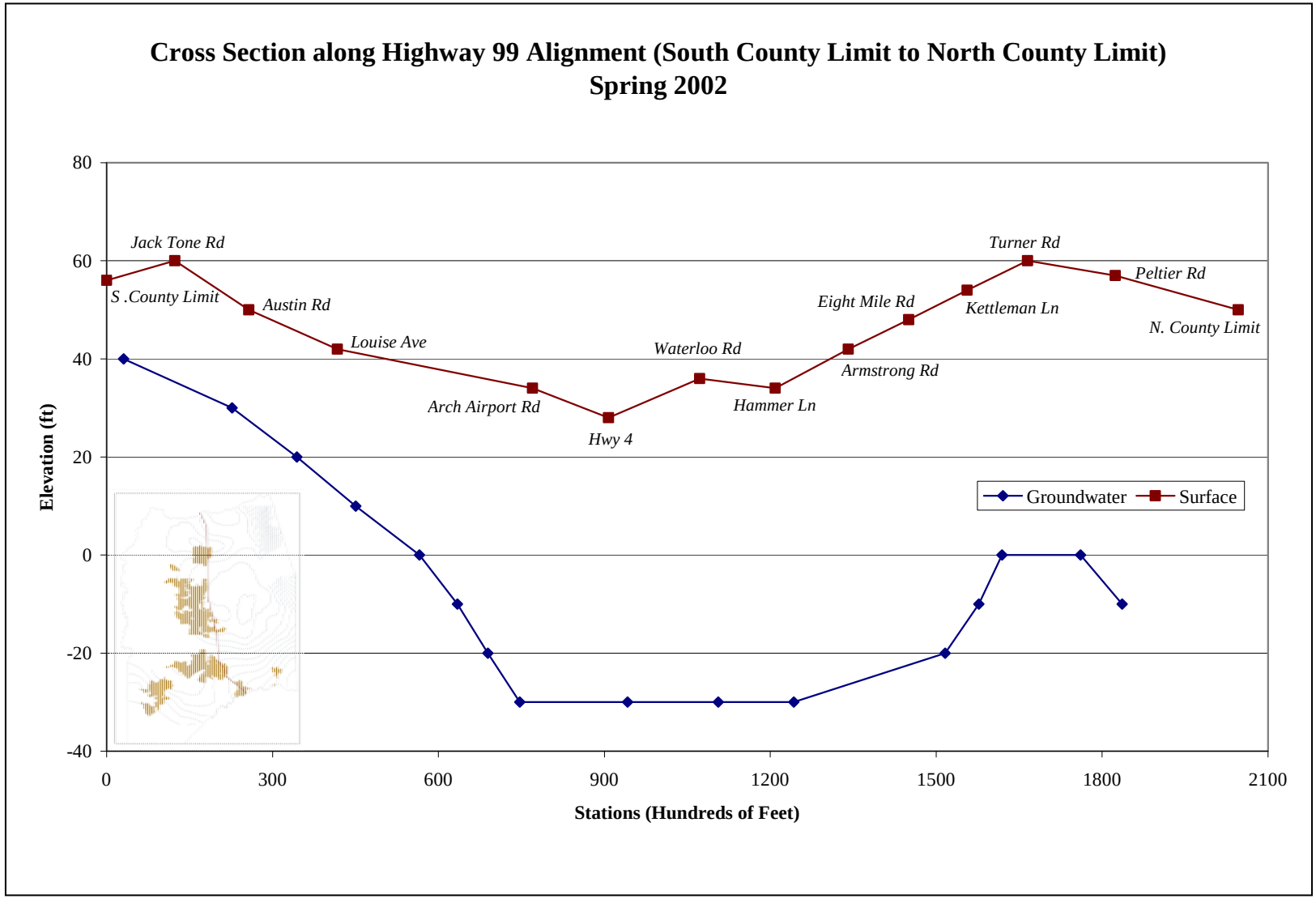

Figure 4-31: Highway 99 Cross Section Spring 2002

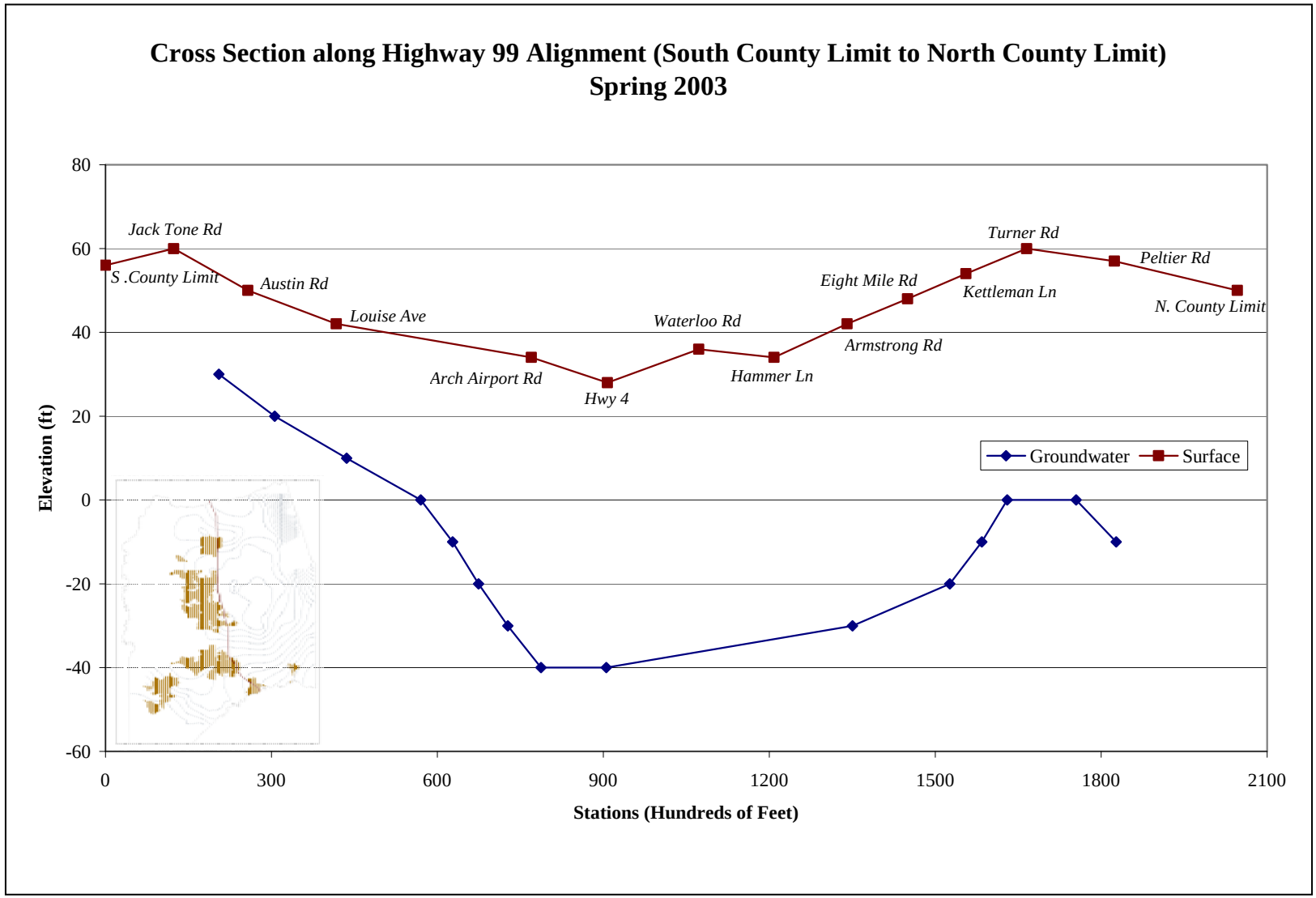

Figure 4-32: Highway 99 Cross Section Spring 2003

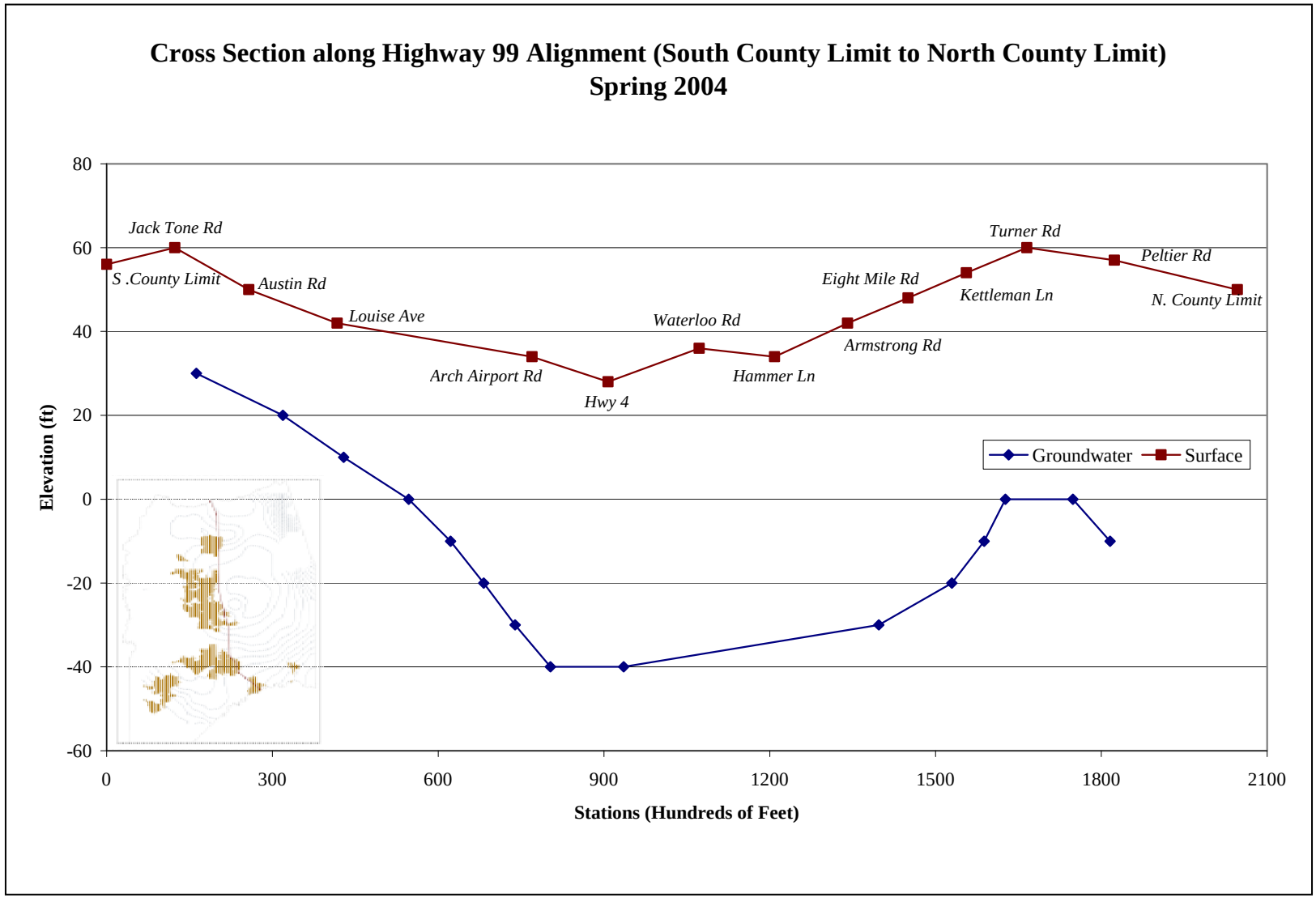

Figure 4-33: Highway 99 Cross Section Spring 2004

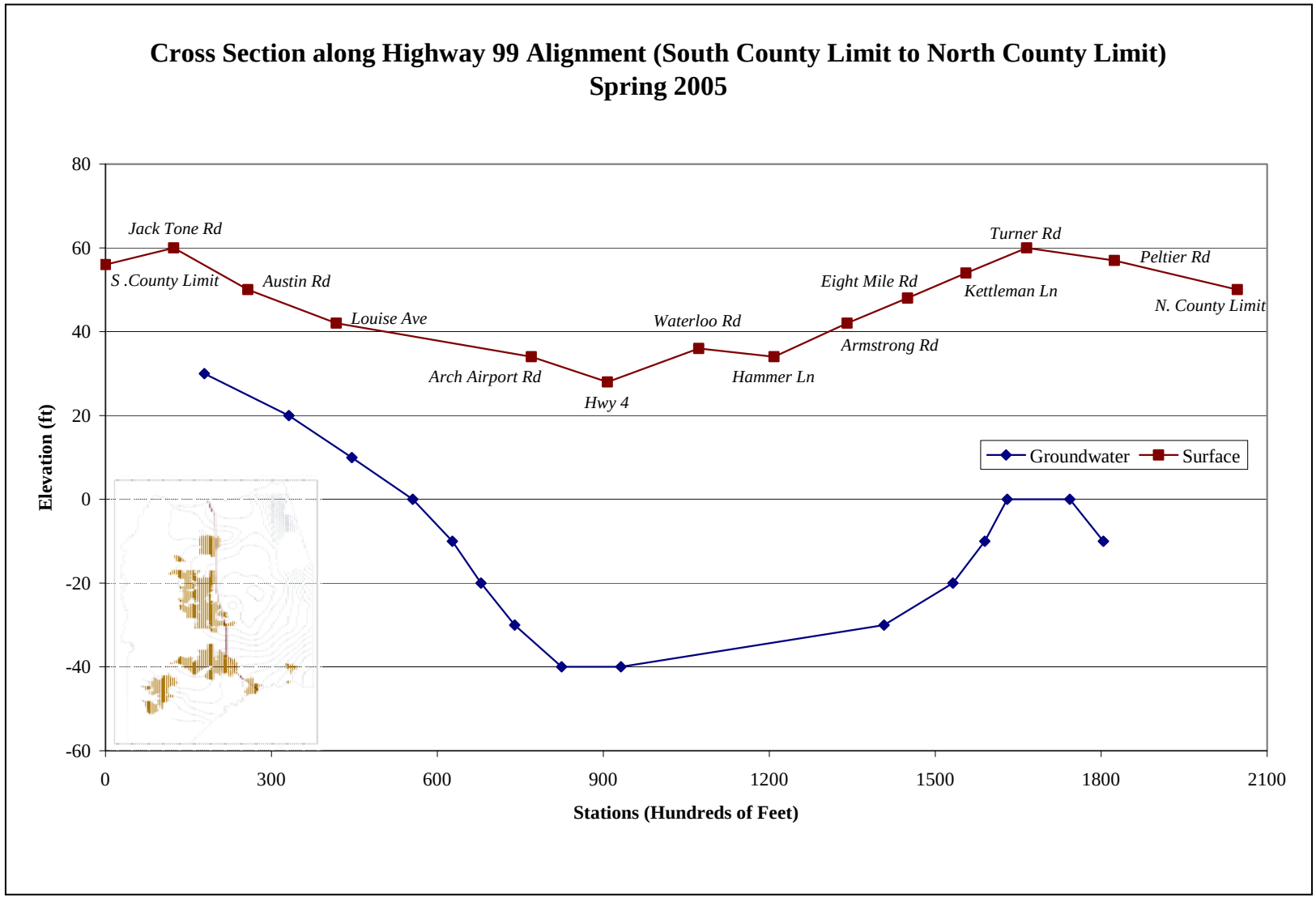

Figure 4-34: Highway 99 Cross Section Spring 2005

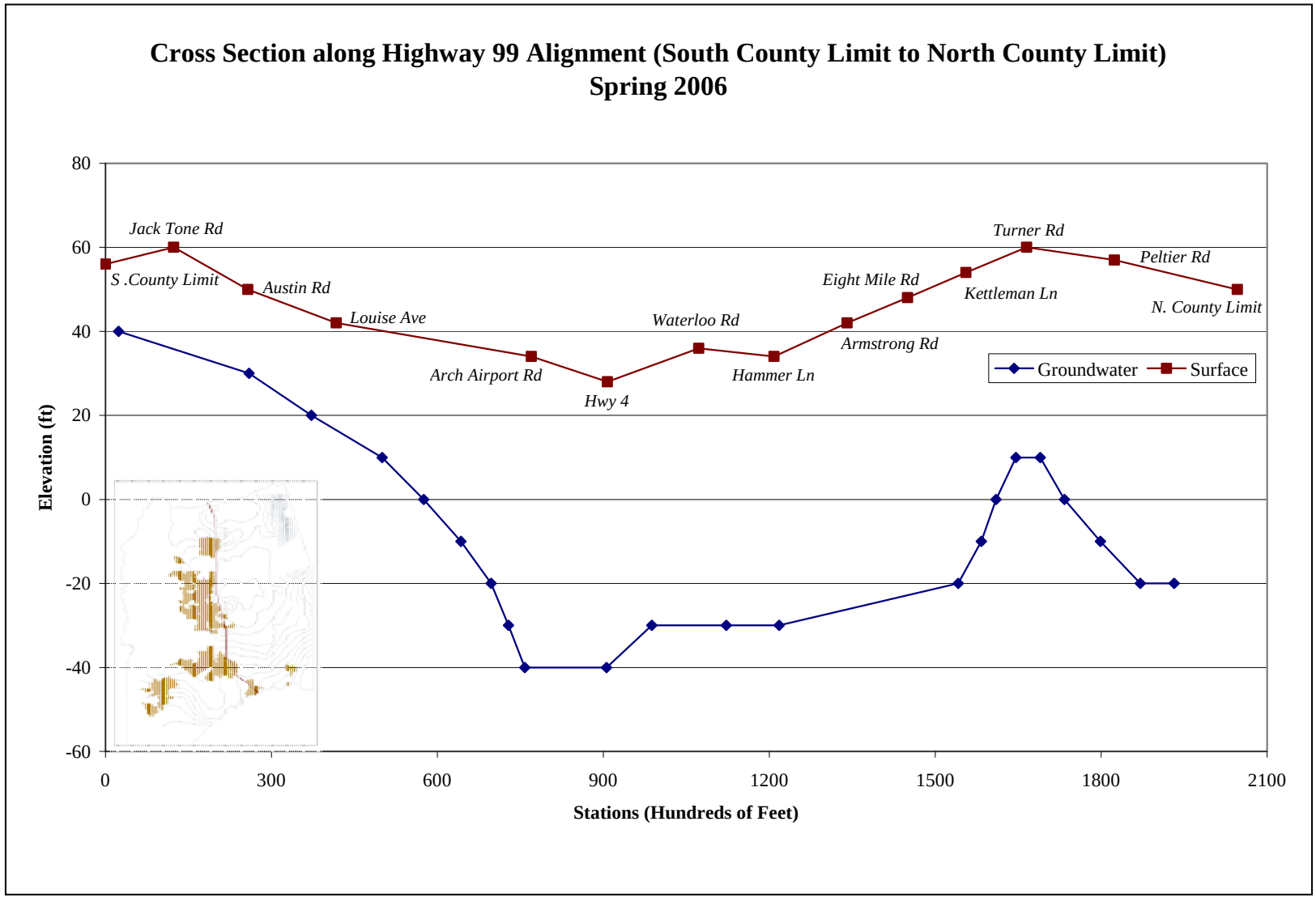

Figure 4-35: Highway 99 Cross Section Spring 2006

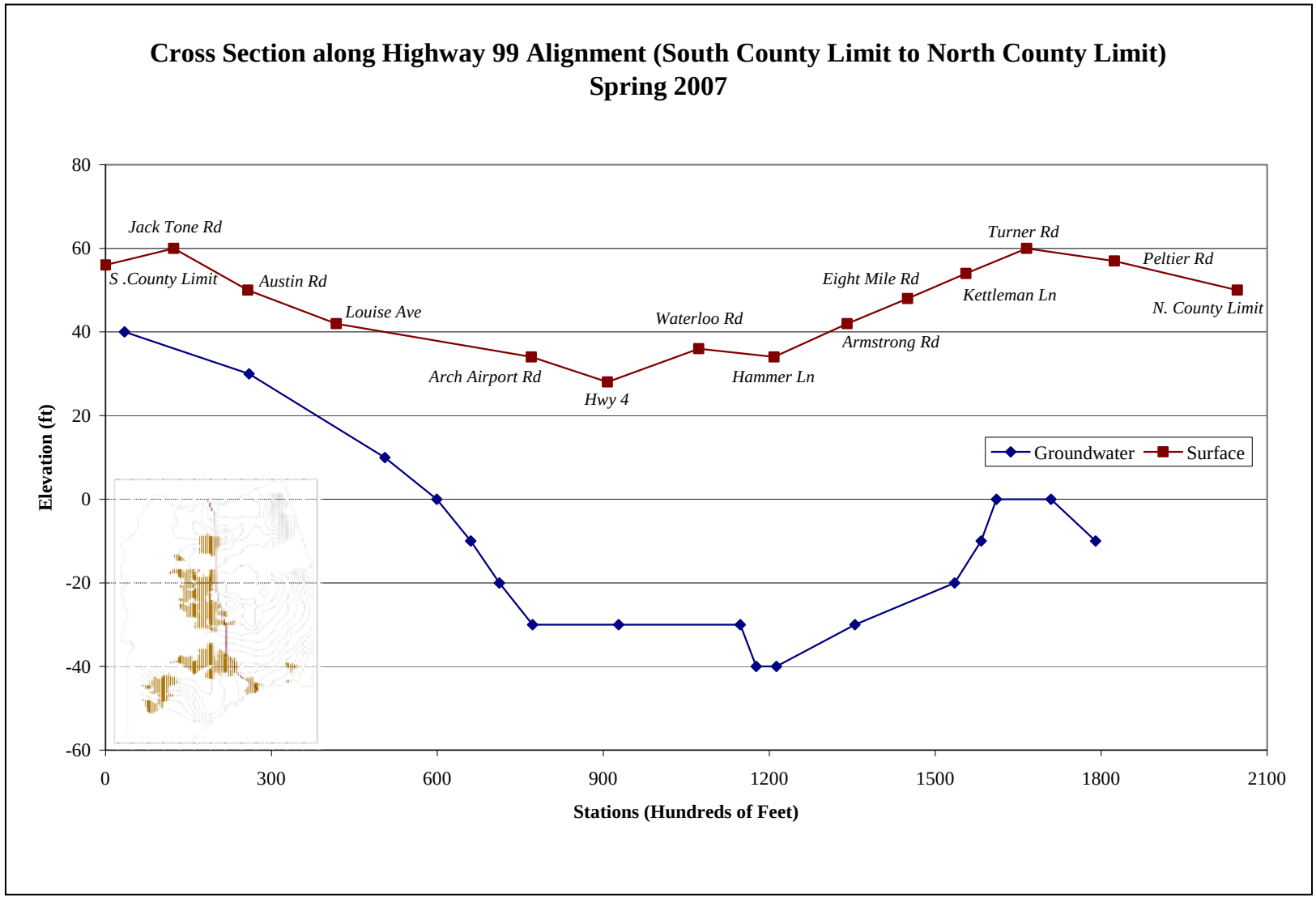

Figure 4-36: Highway 99 Cross Section Spring 2007

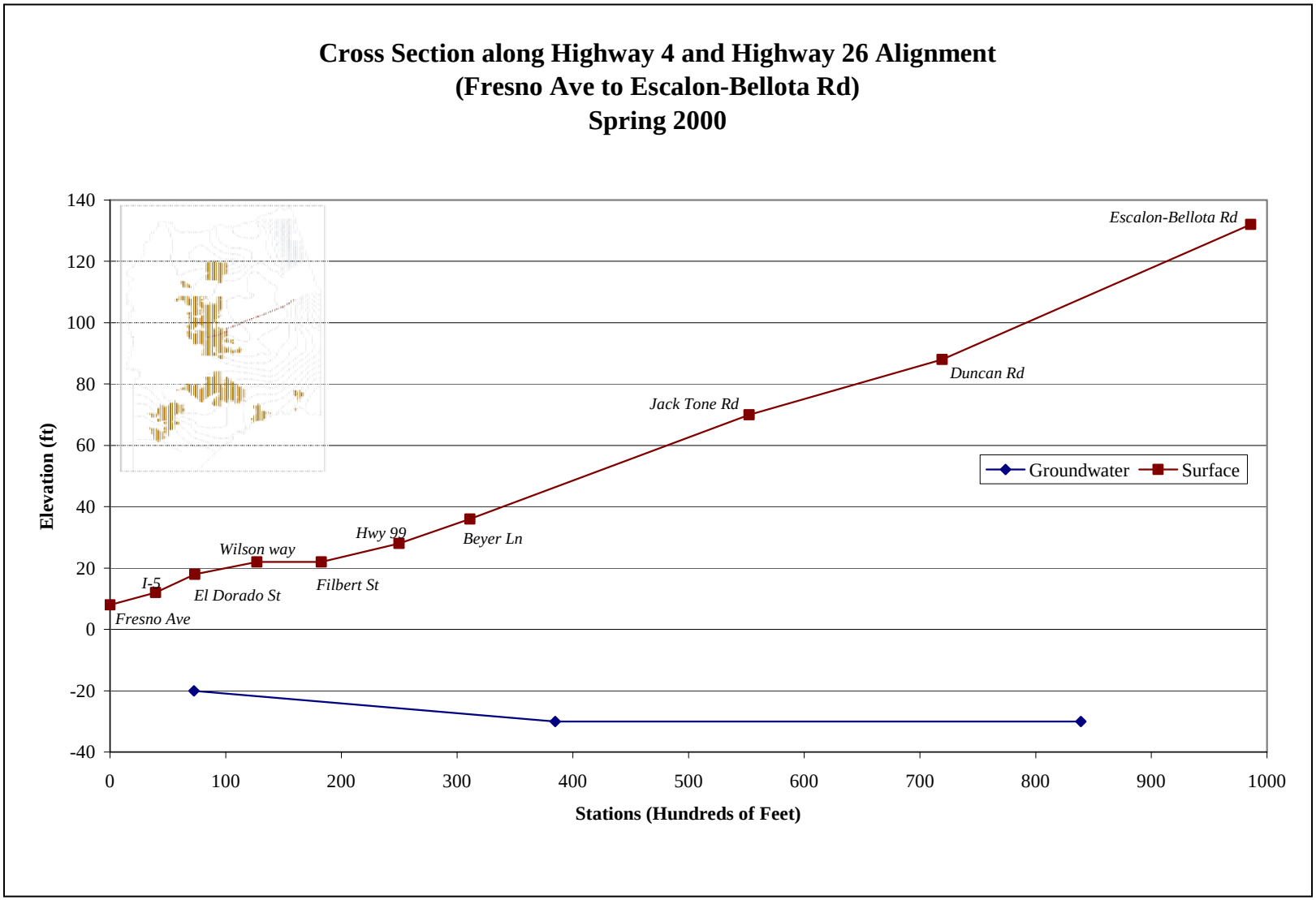

Figure 4-37: Highway 4 & Highway 26 Cross Section Spring 2000

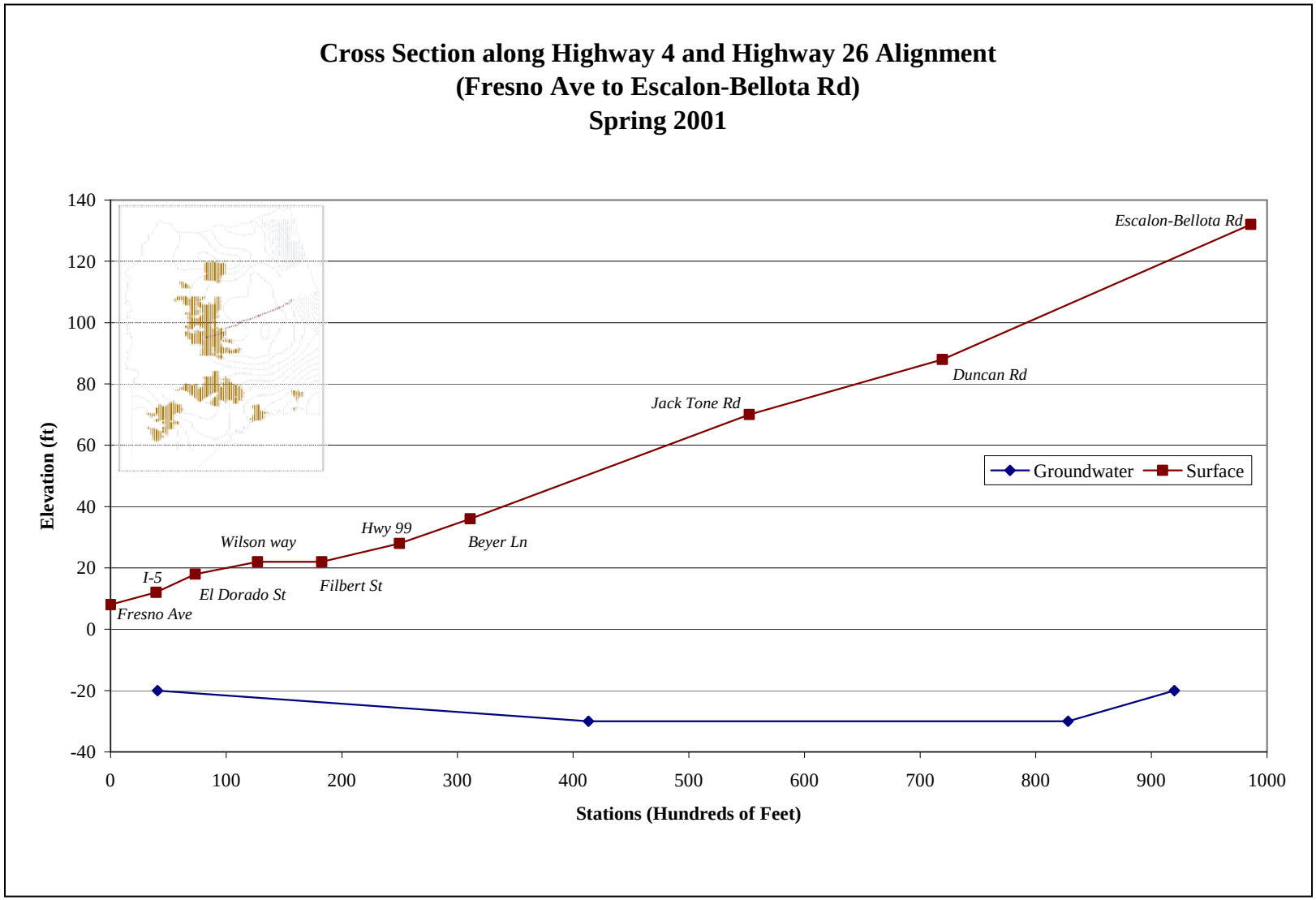

Figure 4-38: Highway 4 & Highway 26 Cross Section Spring 2001

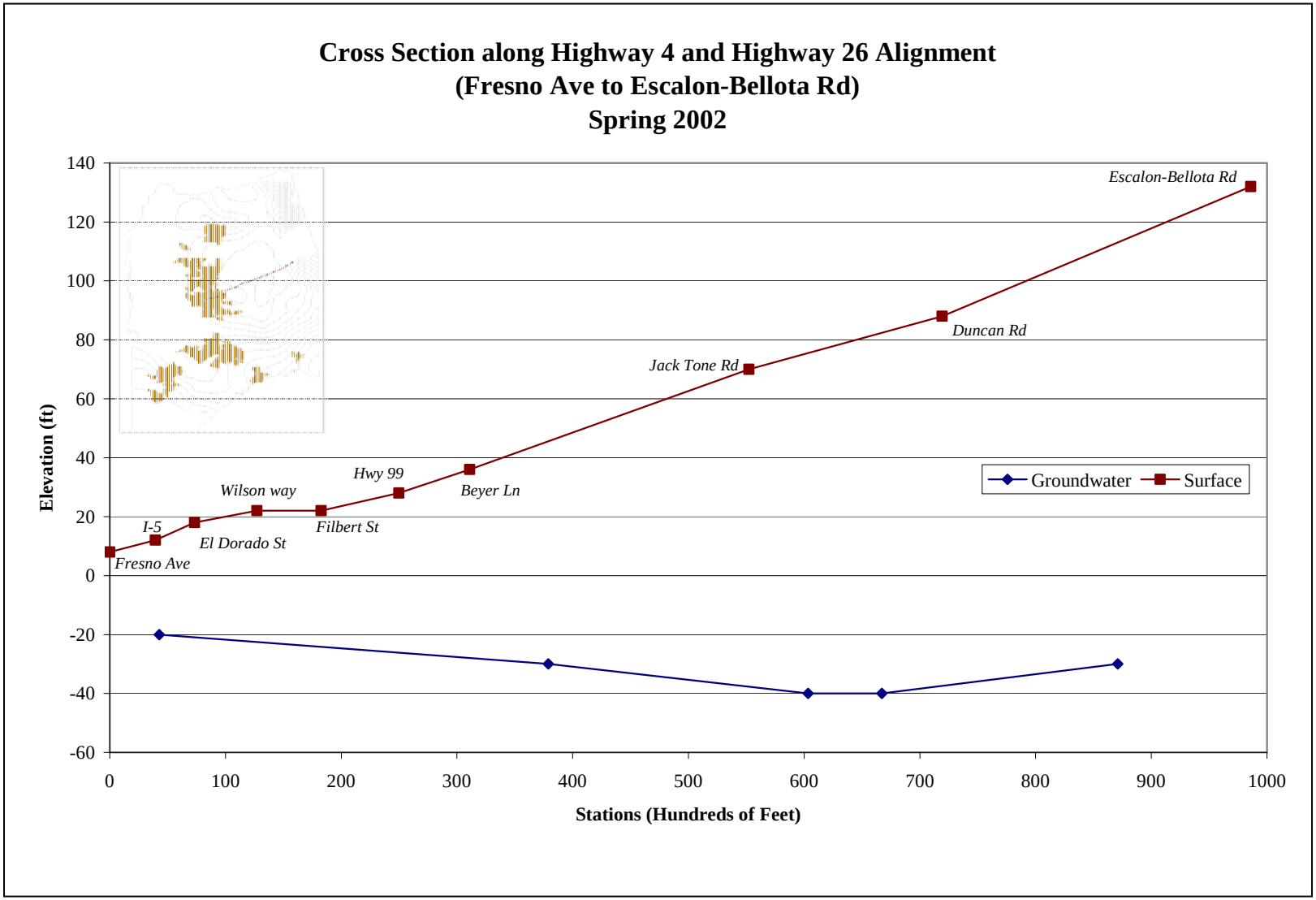

Figure 4-39: Highway 4 & Highway 26 Cross Section Spring 2002

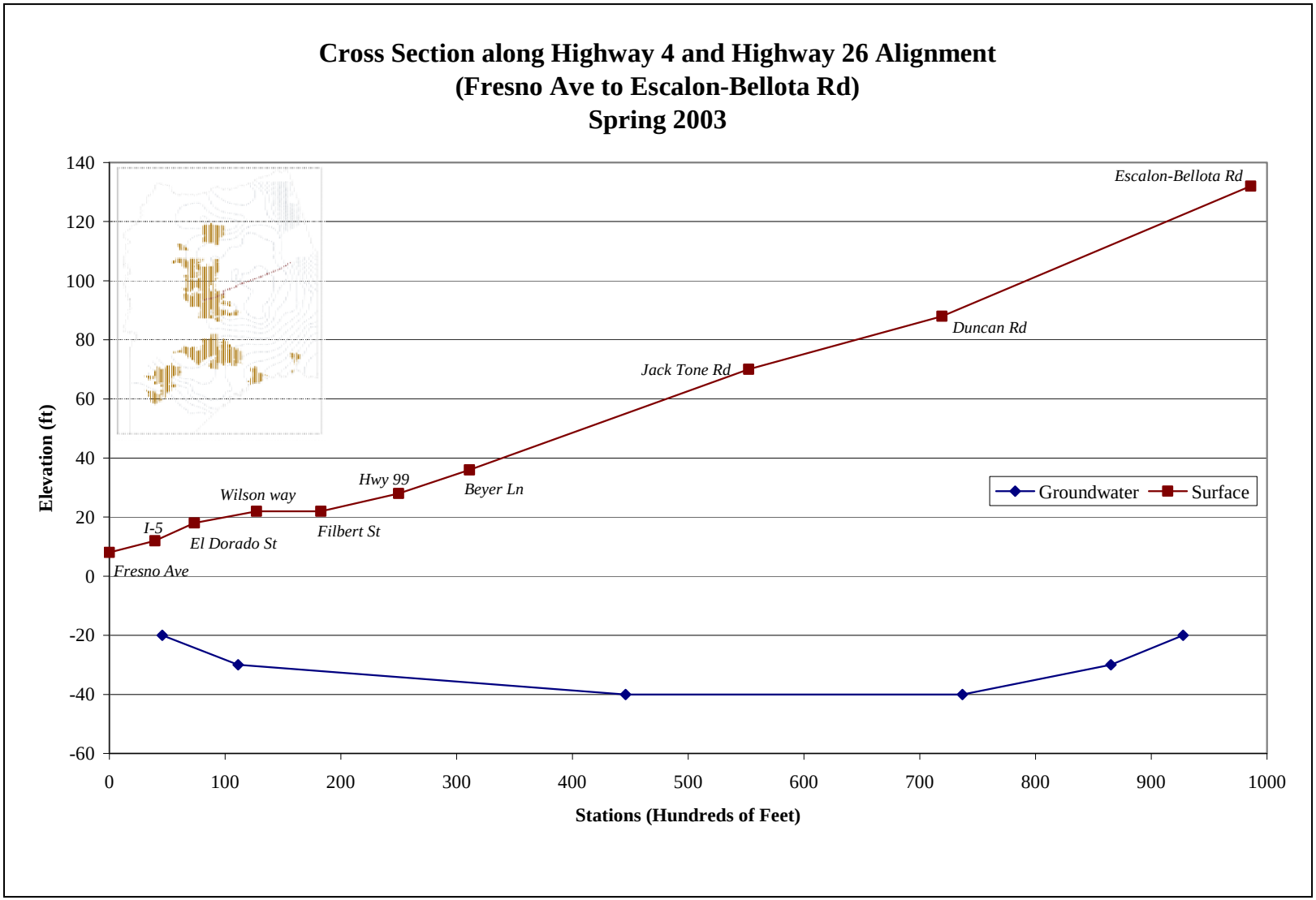

Figure 4-40: Highway 4 & Highway 26 Cross Section Spring 2003

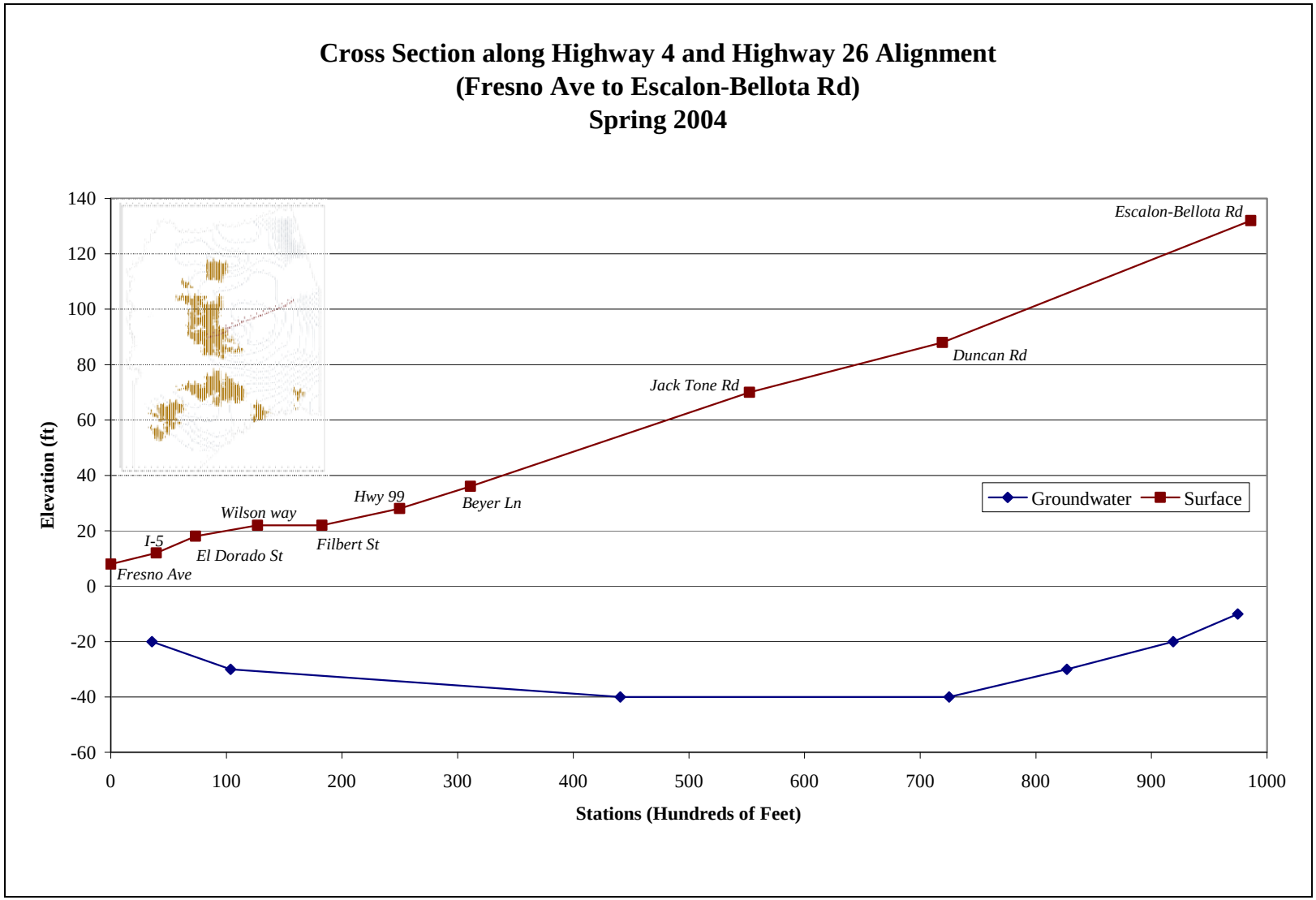

Figure 4-41: Highway 4 & Highway 26 Cross Section Spring 2004

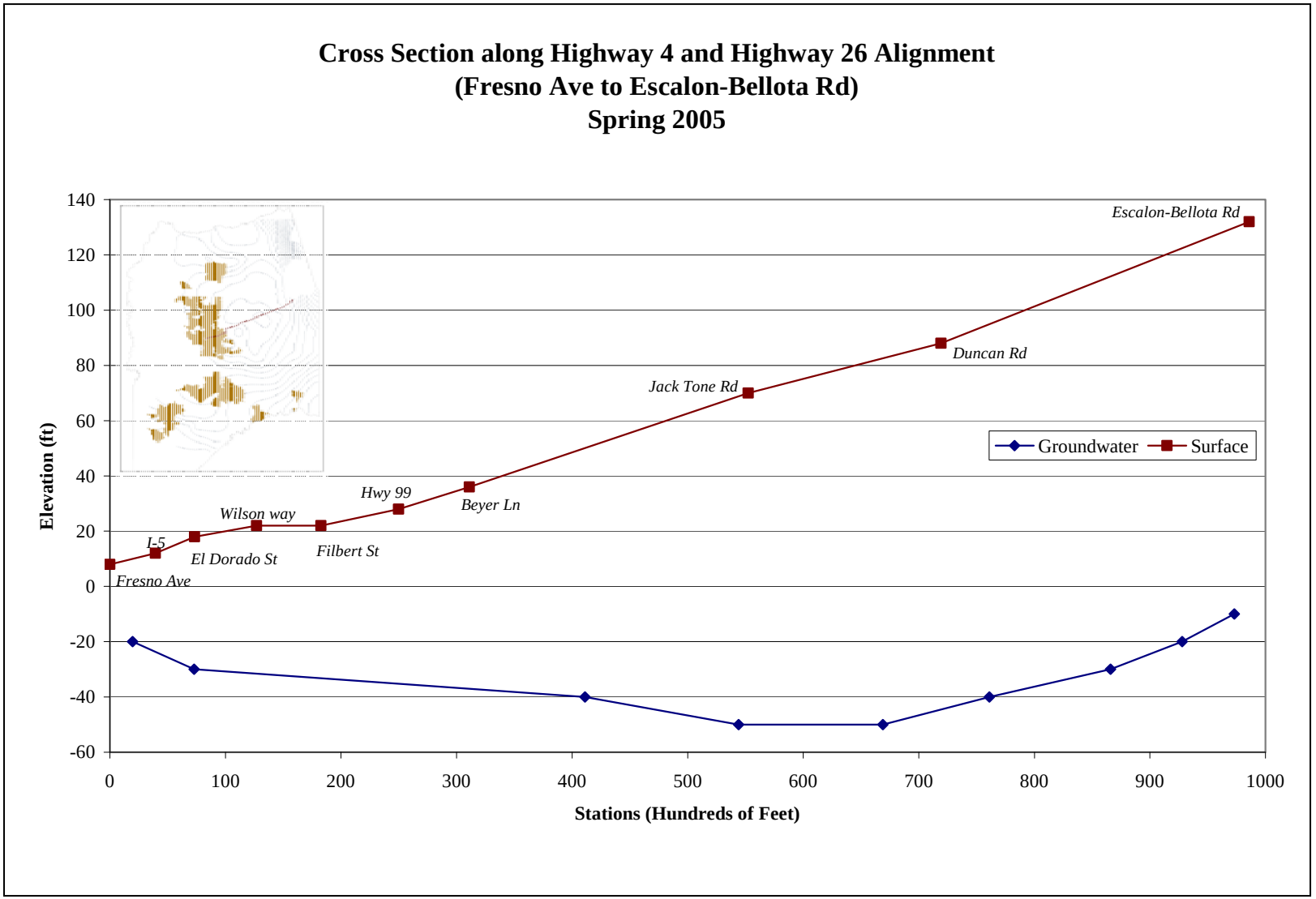

Figure 4-42: Highway 4 & Highway 26 Cross Section Spring 2005

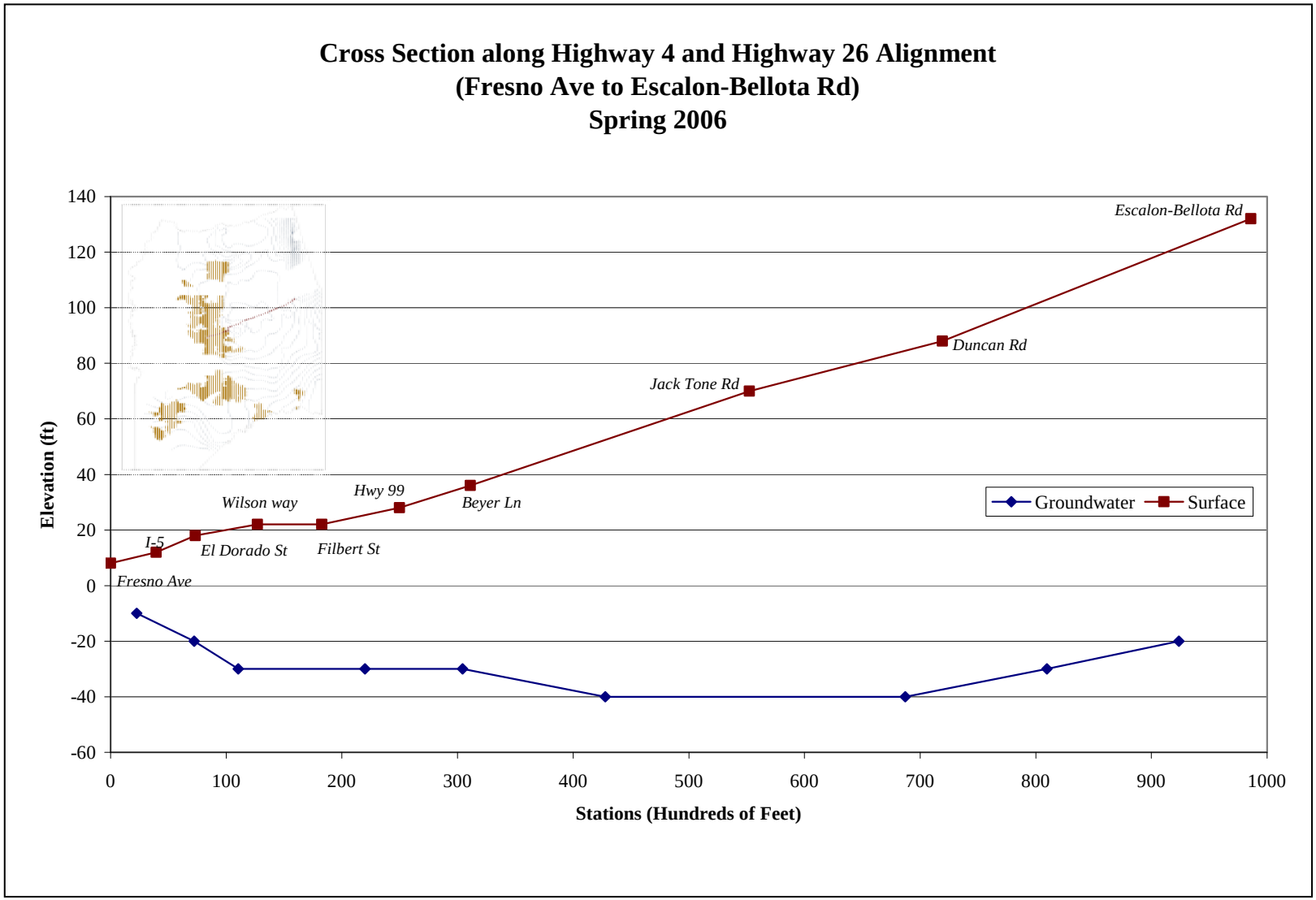

Figure 4-43: Highway 4 & Highway 26 Cross Section Spring 2006

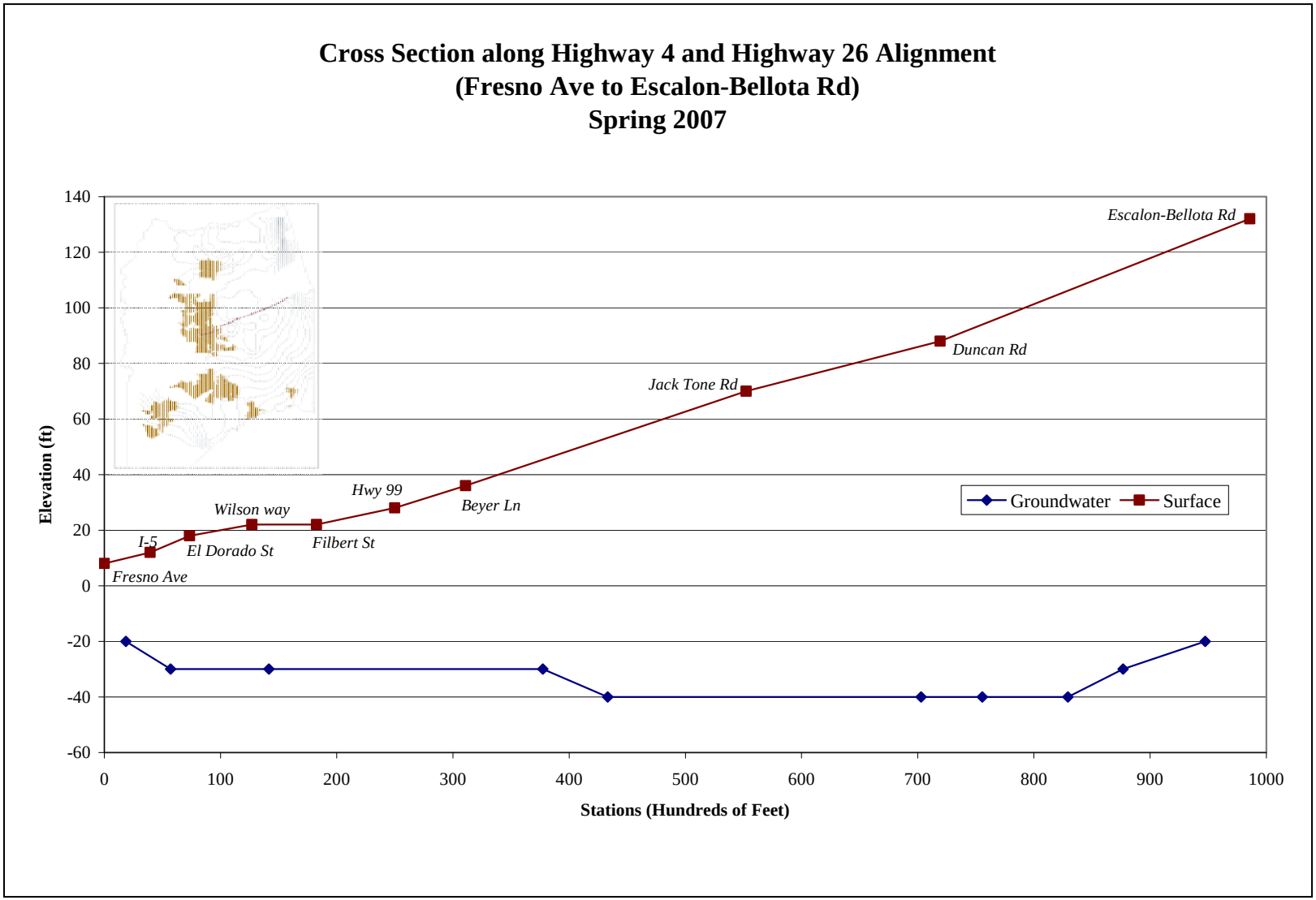

Figure 4-44: Highway 4 & Highway 26 Cross Section Spring 2007

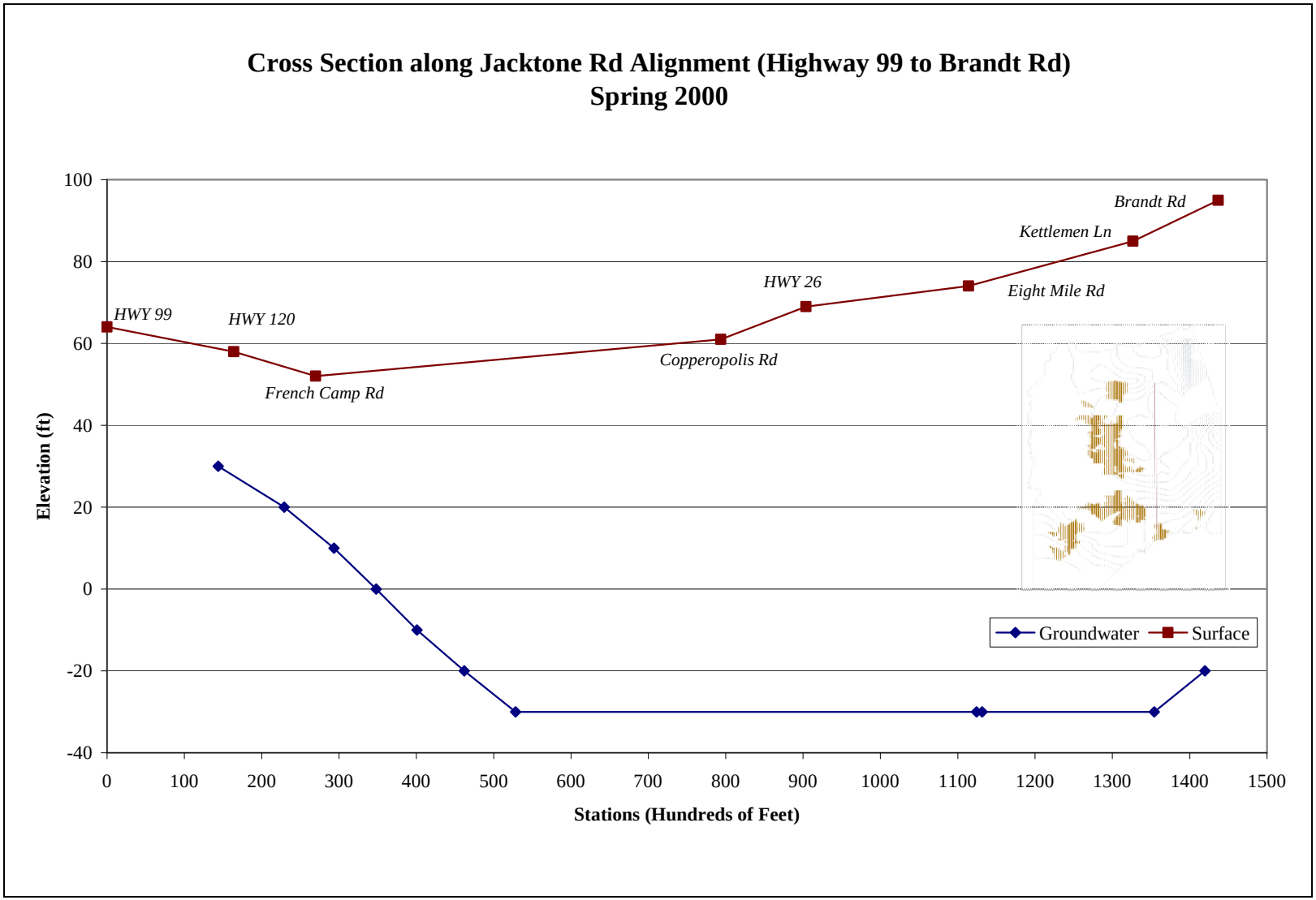

Figure 4-45: Jacktone Rd Cross Section Spring 2000

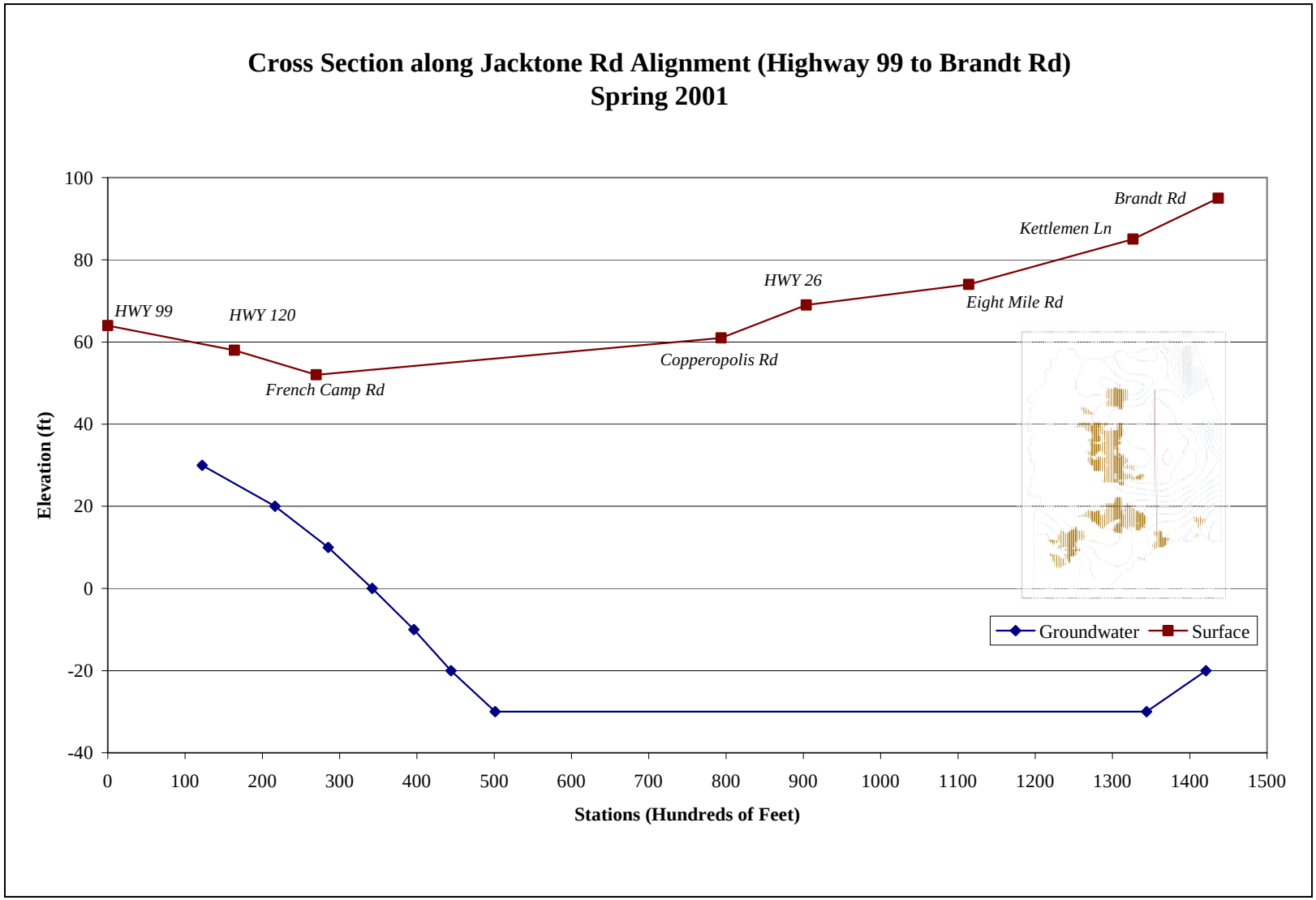

Figure 4-46: Jacktone Rd Cross Section Spring 2001

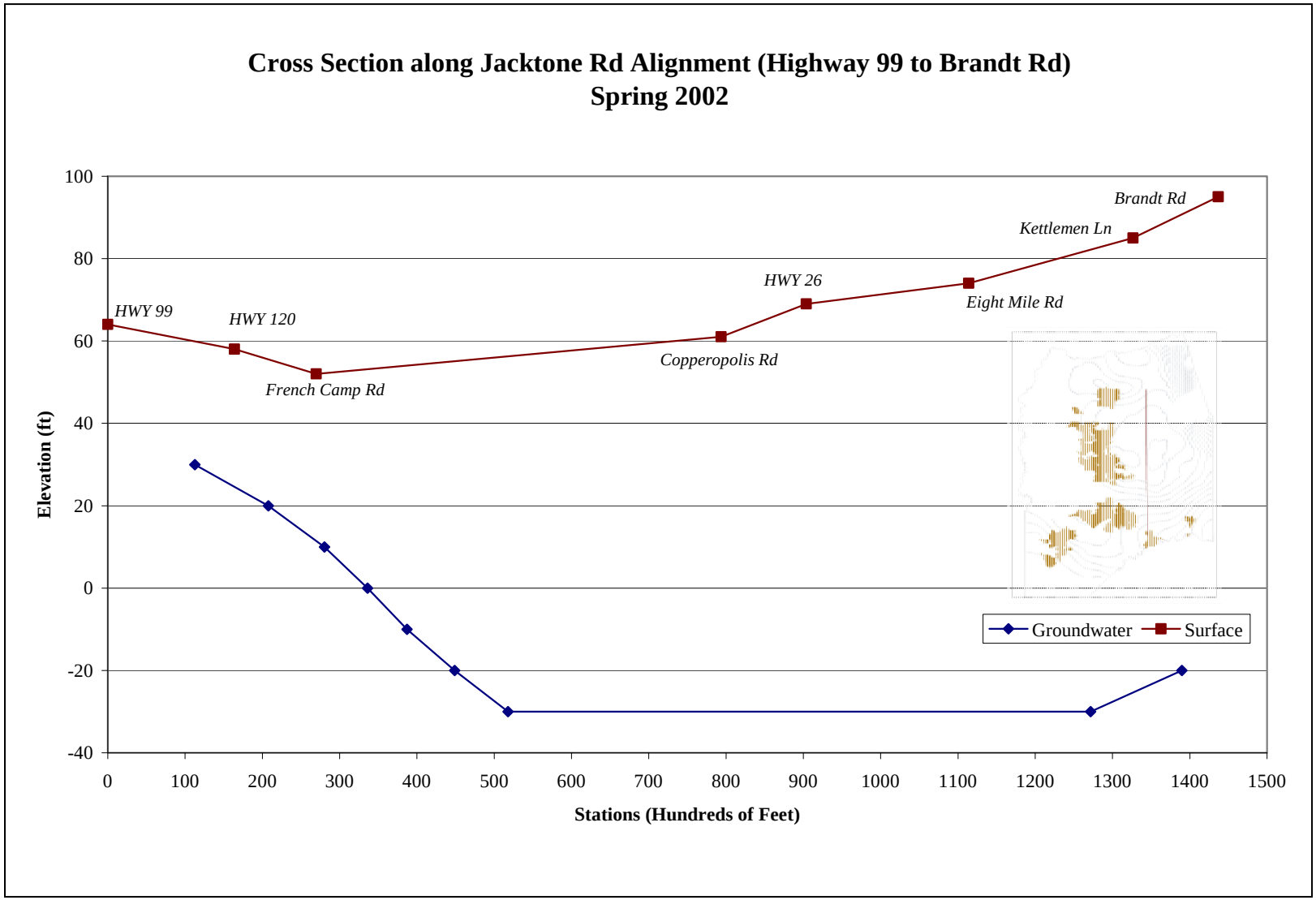

Figure 4-47: Jacktone Rd Cross Section Spring 2002

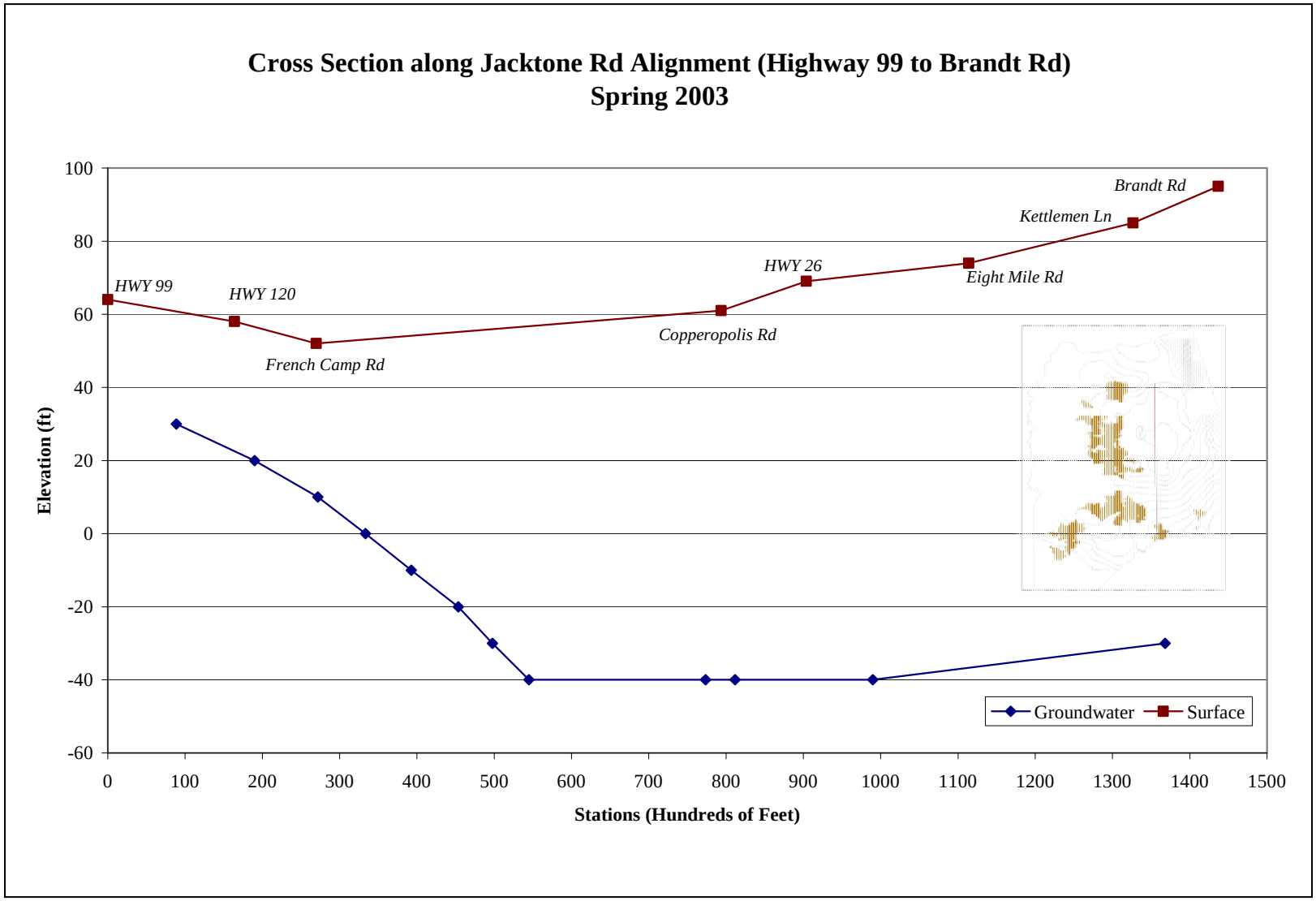

Figure 4-48: Jacktone Rd Cross Section Spring 2003

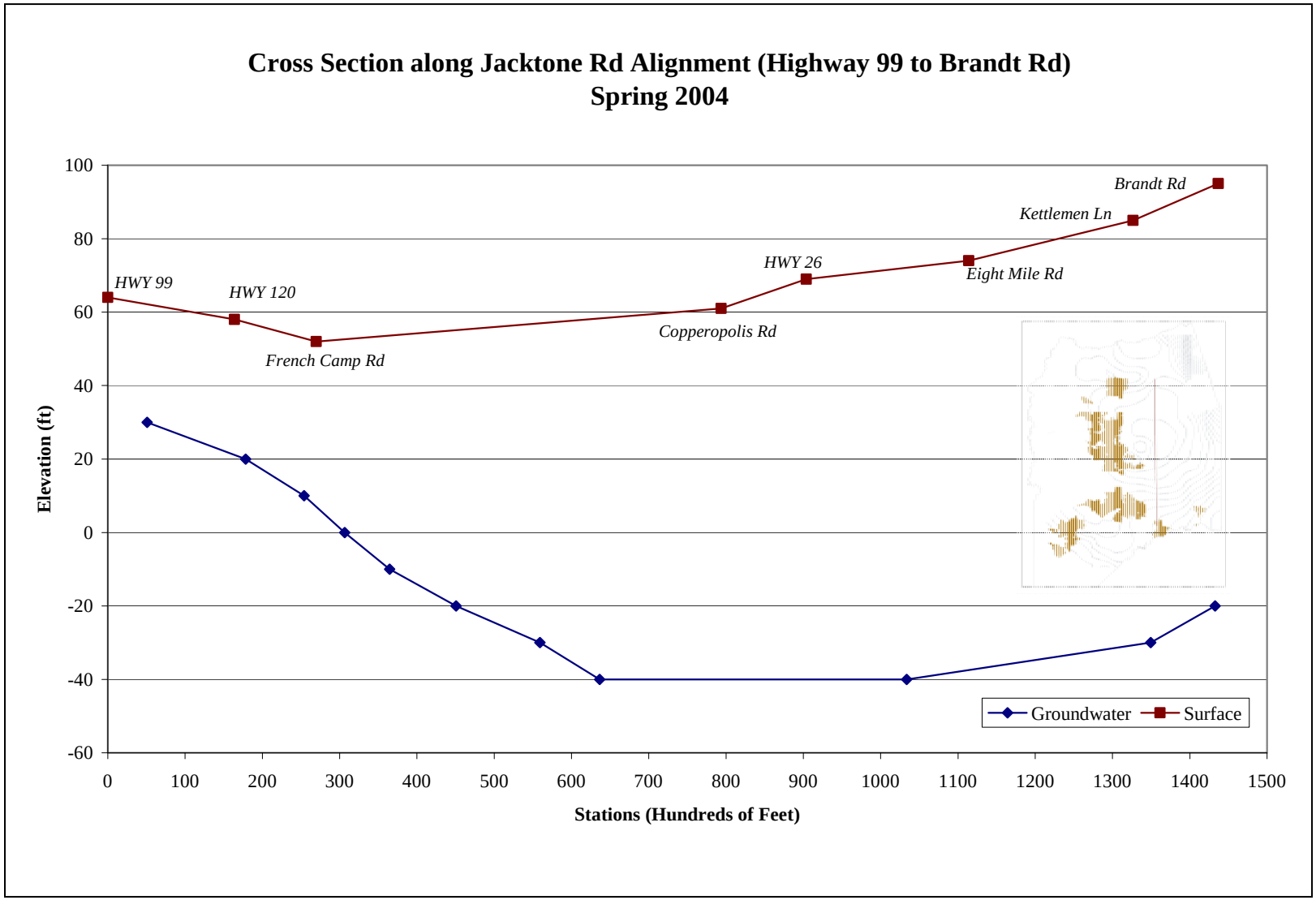

Figure 4-49: Jacktone Rd Cross Section Spring 2004

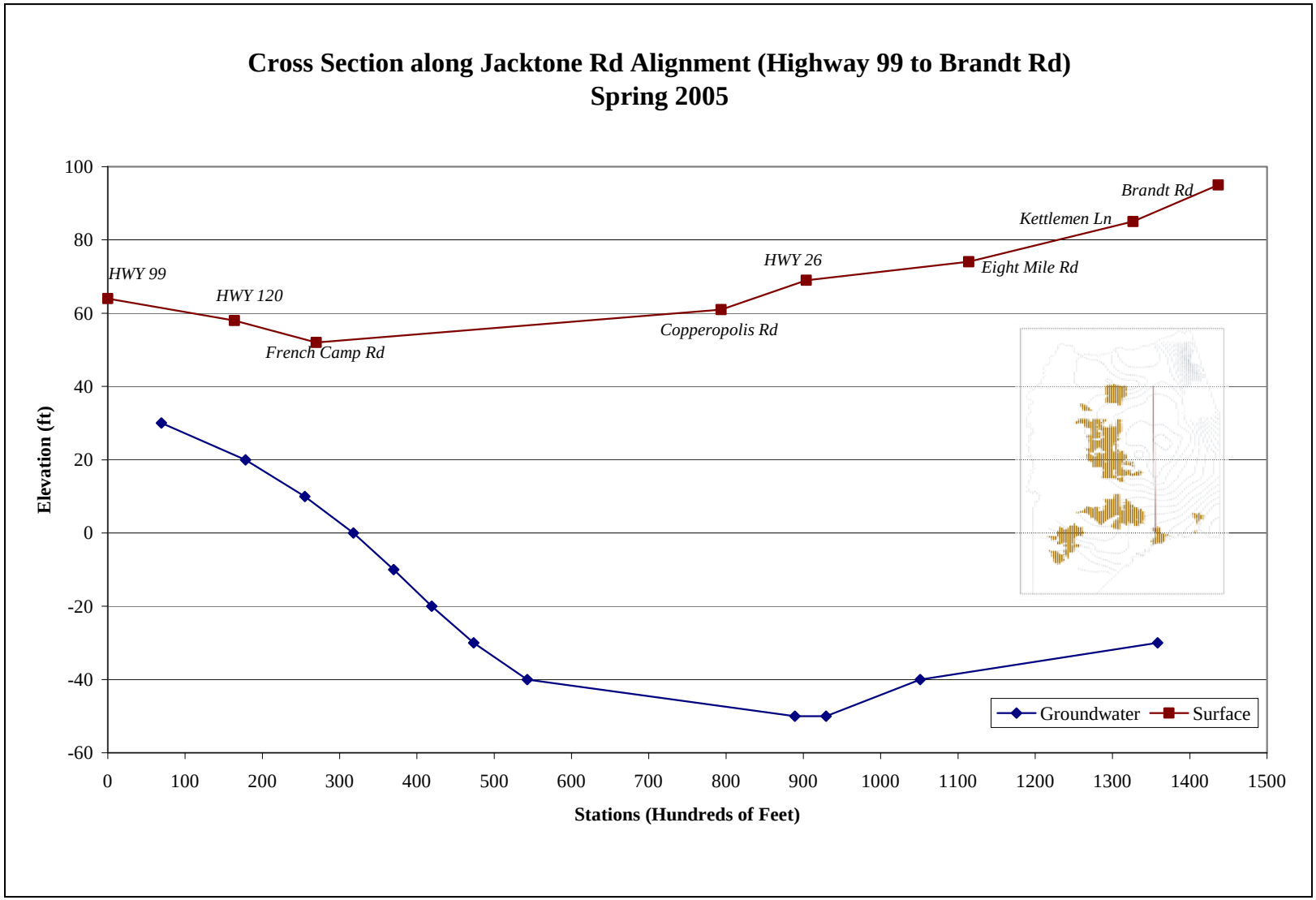

Figure 4-50: Jacktone Rd Cross Section Spring 2005

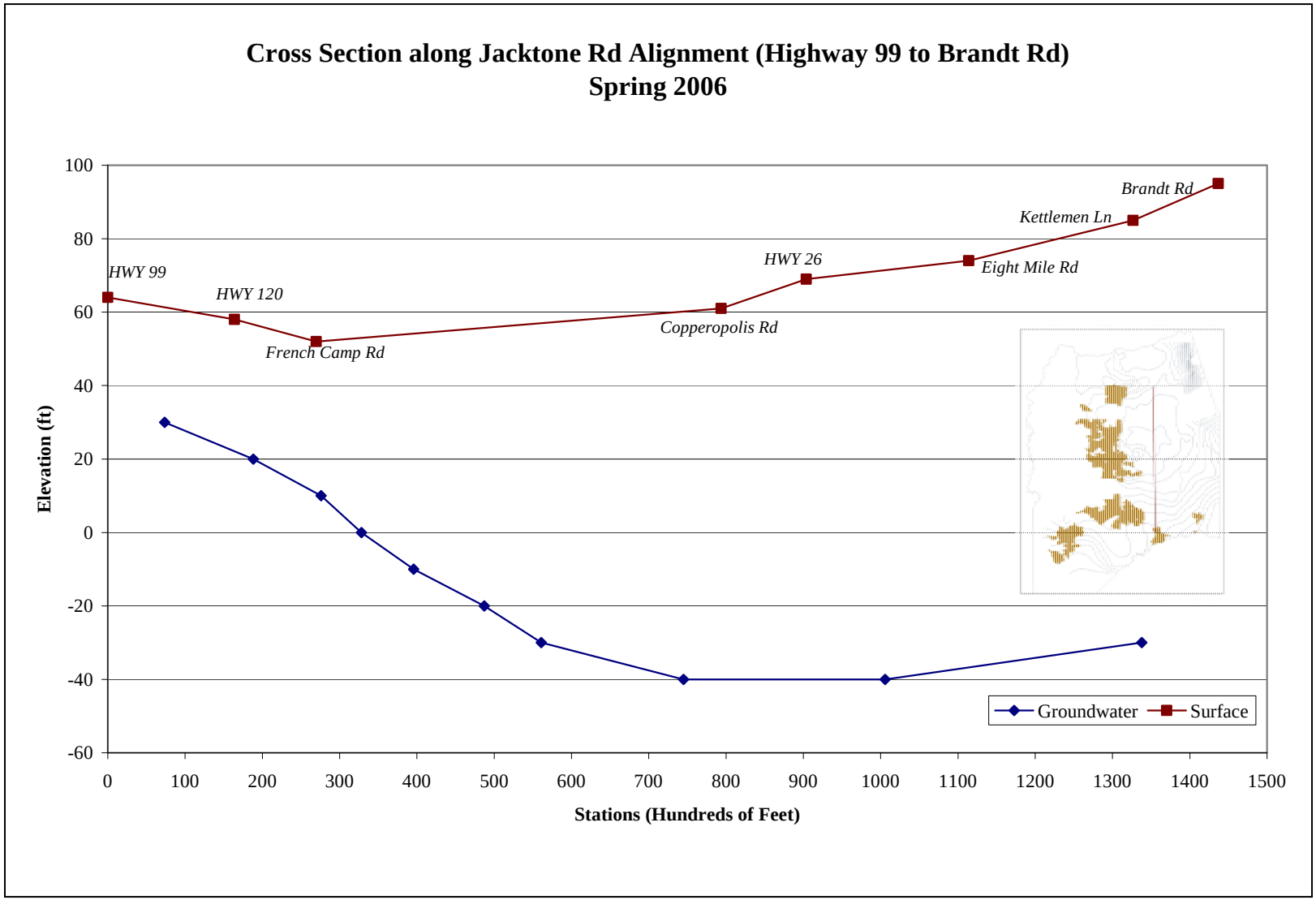

Figure 4-51: Jacktone Rd Cross Section Spring 2006

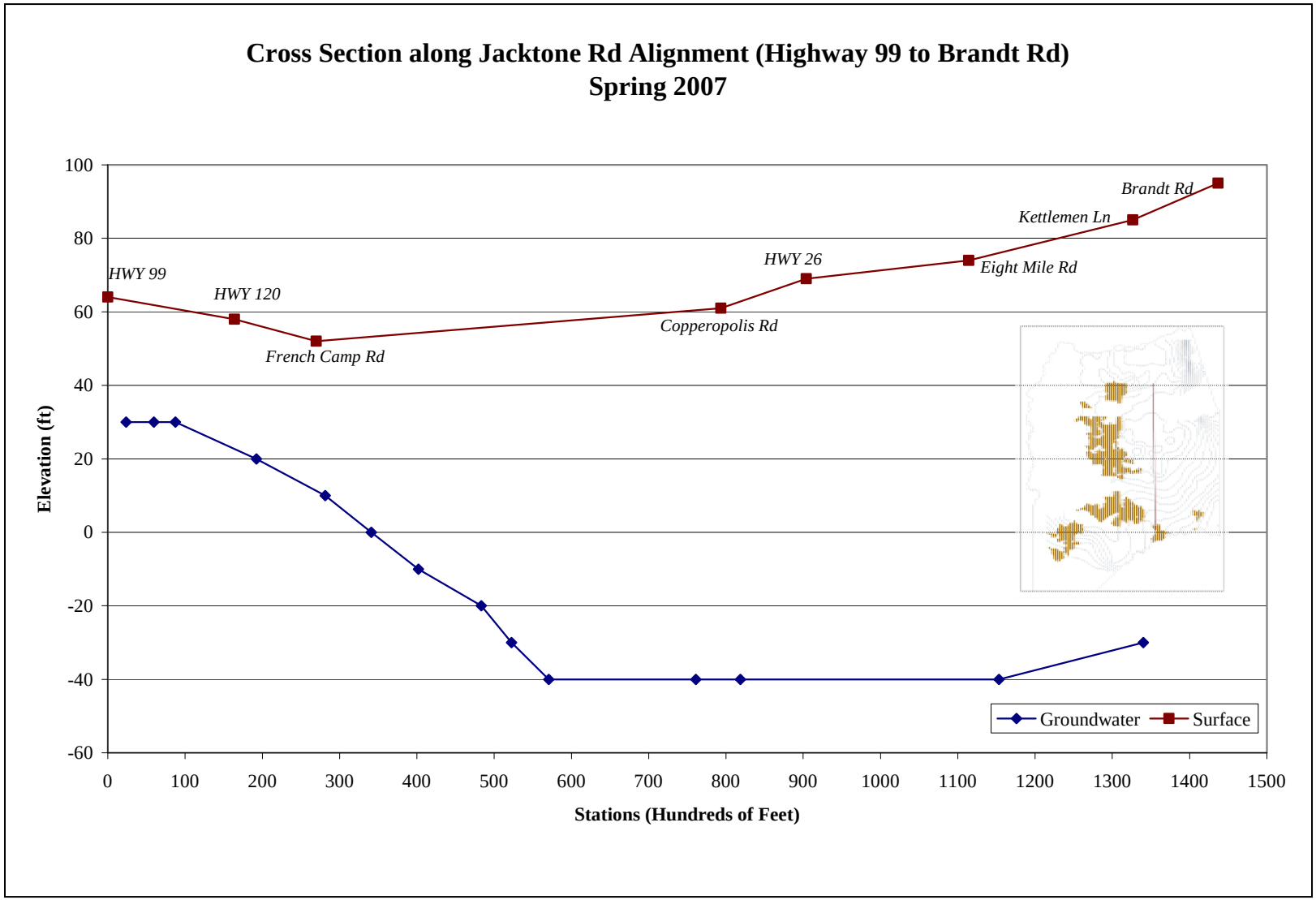

Figure 4-52: Jacktone Rd Cross Section Spring 2007

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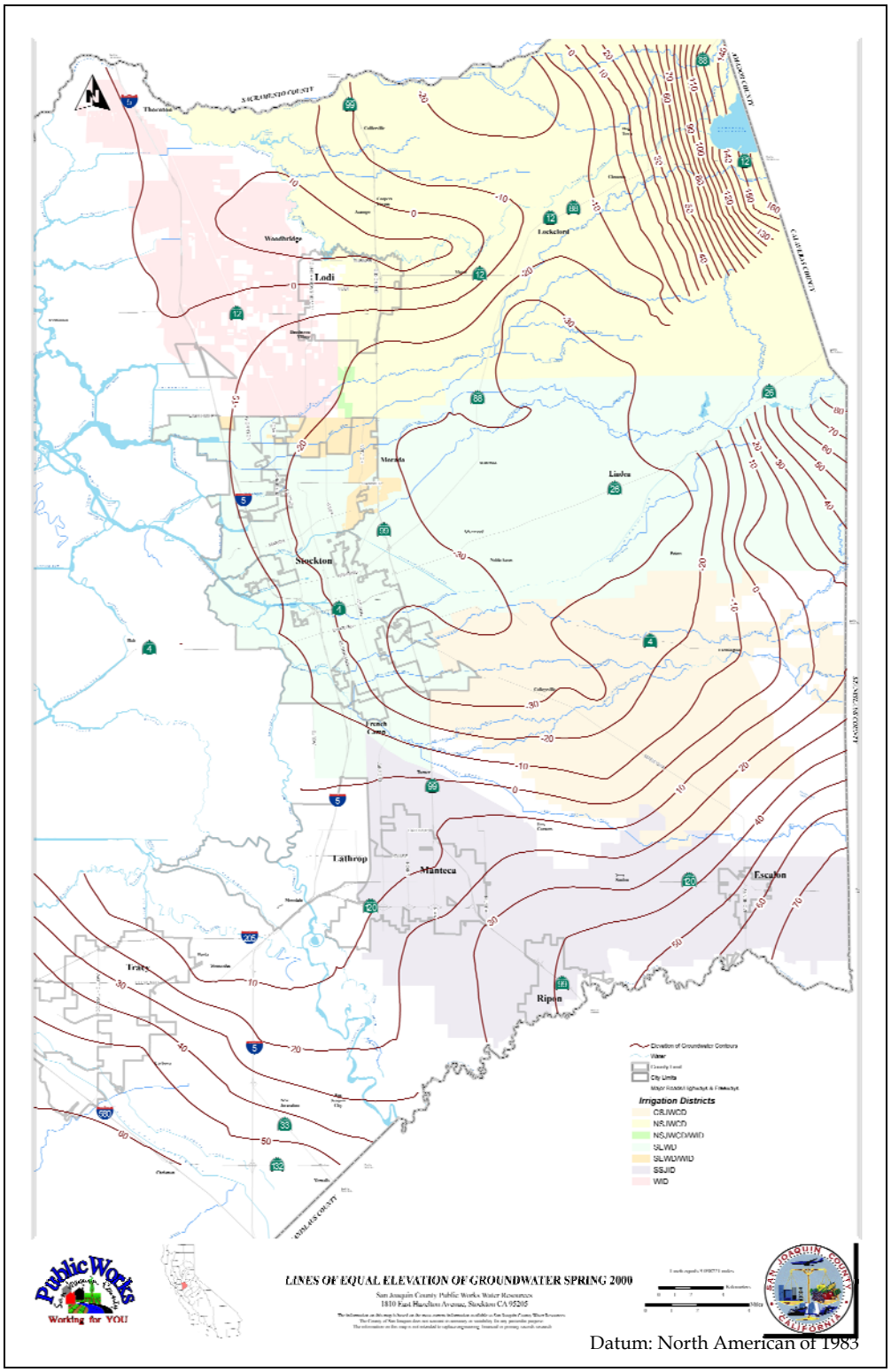

Figure 4-53: Lines of Equal Elevation of Groundwater Spring 2000

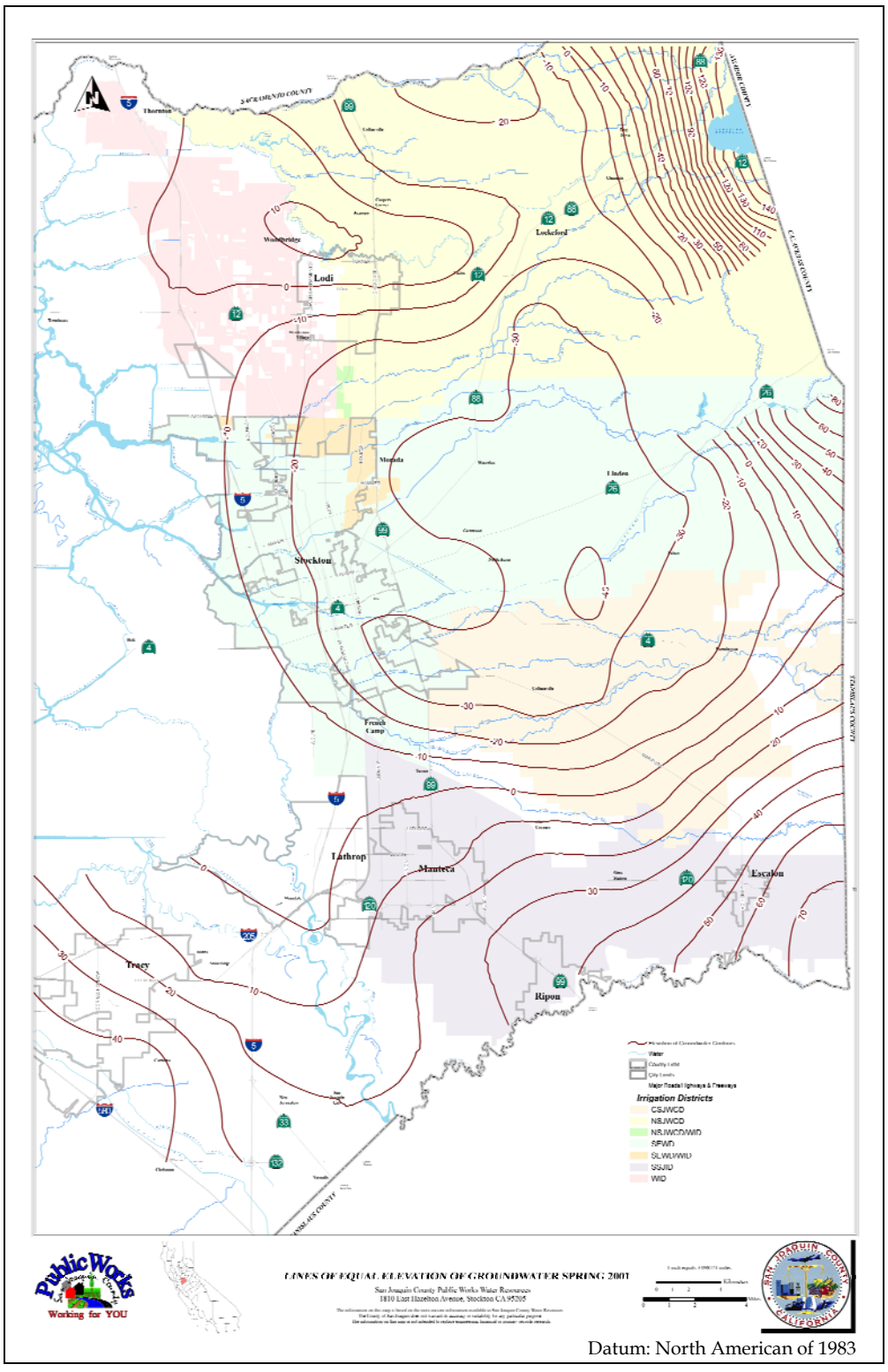

Figure 4-54: Lines of Equal Elevation of Groundwater Spring 2001

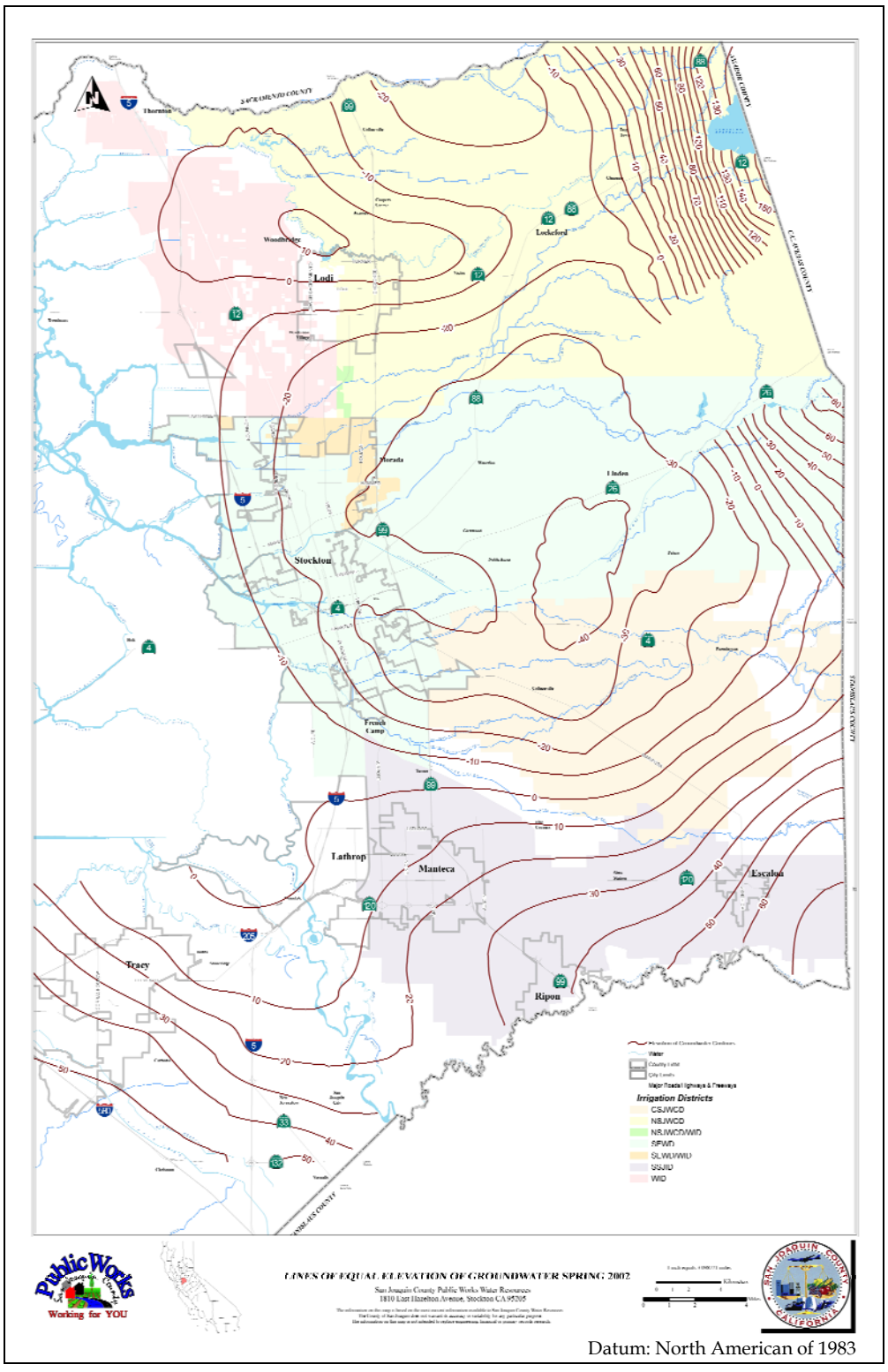

Figure 4-55: Lines of Equal Elevation of Groundwater Spring 2002

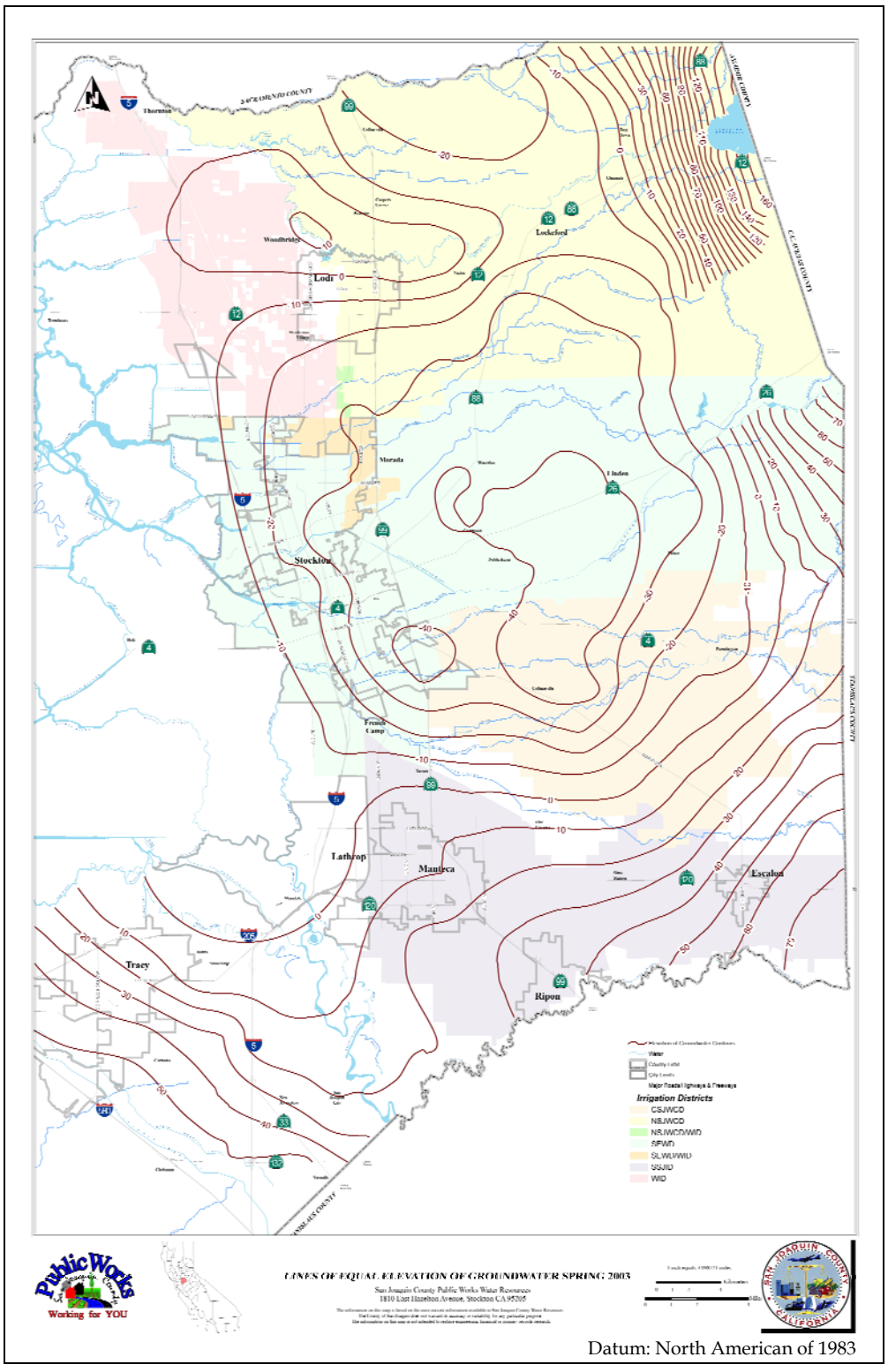

Figure 4-56: Lines of Equal Elevation of Groundwater Spring 2003

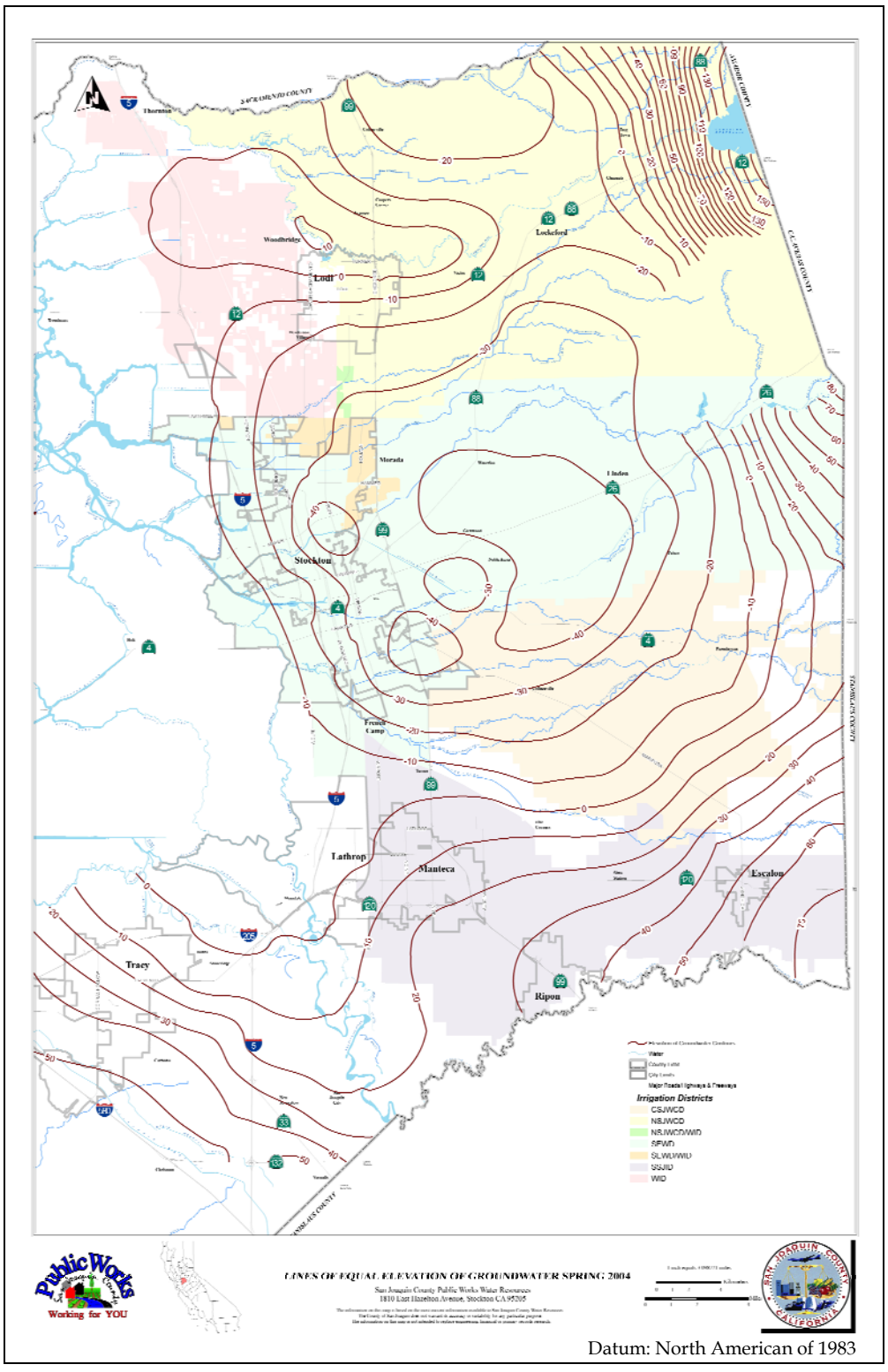

Figure 4-57: Lines of Equal Elevation of Groundwater Spring 2004

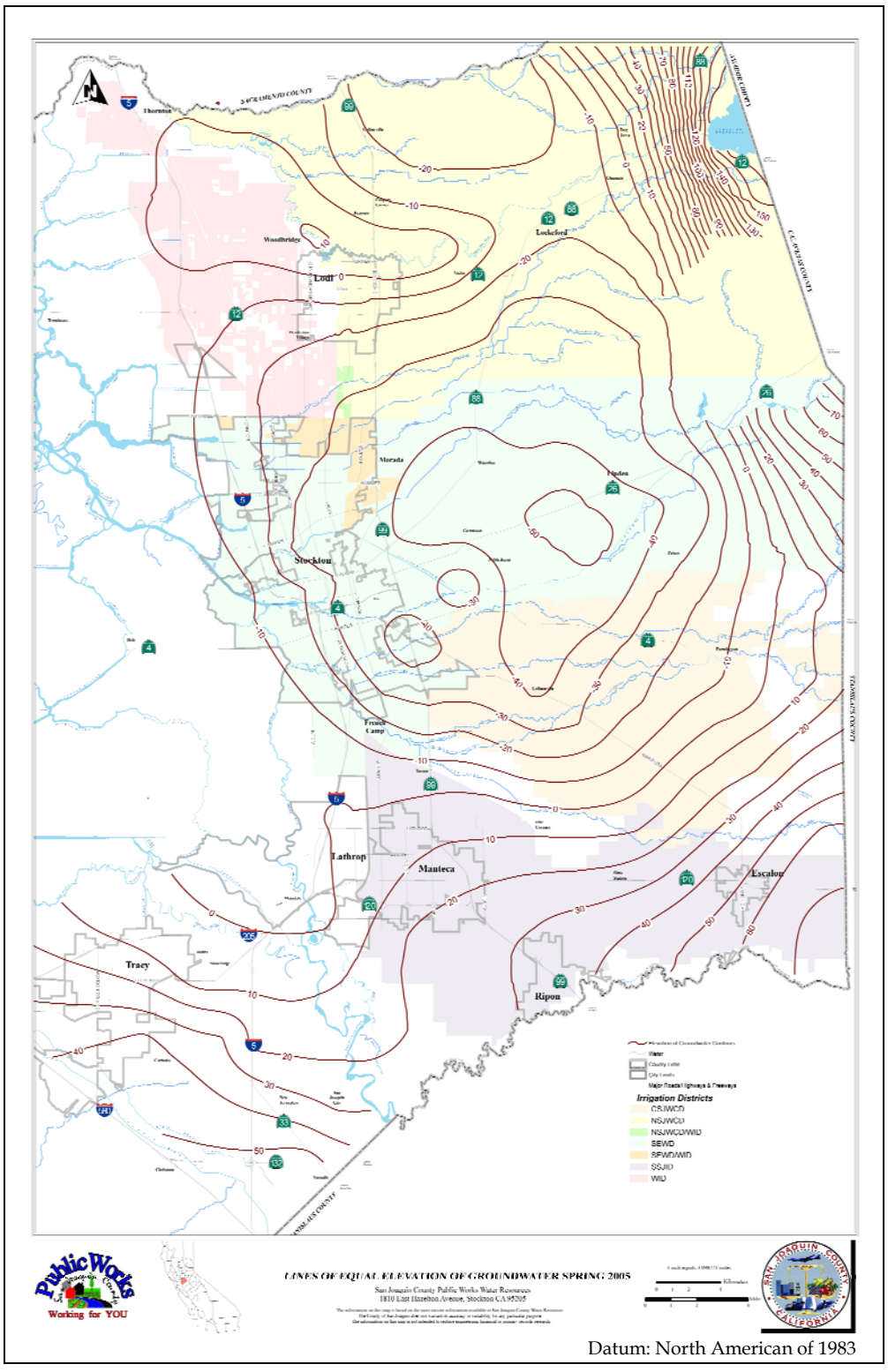

Figure 4-58: Lines of Equal Elevation of Groundwater Spring 2005

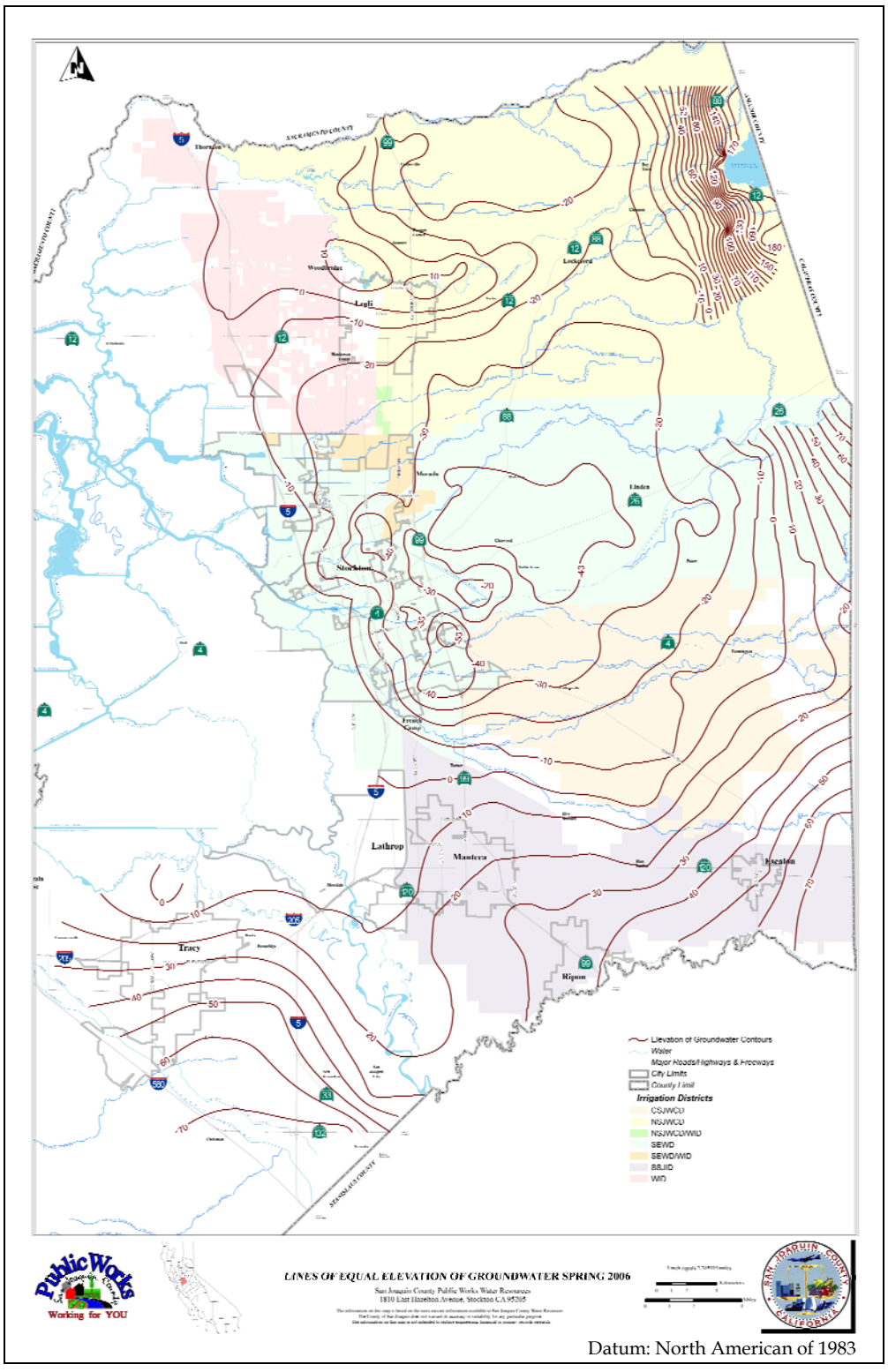

Figure 4-59: Lines of Equal Elevation of Groundwater Spring 2006

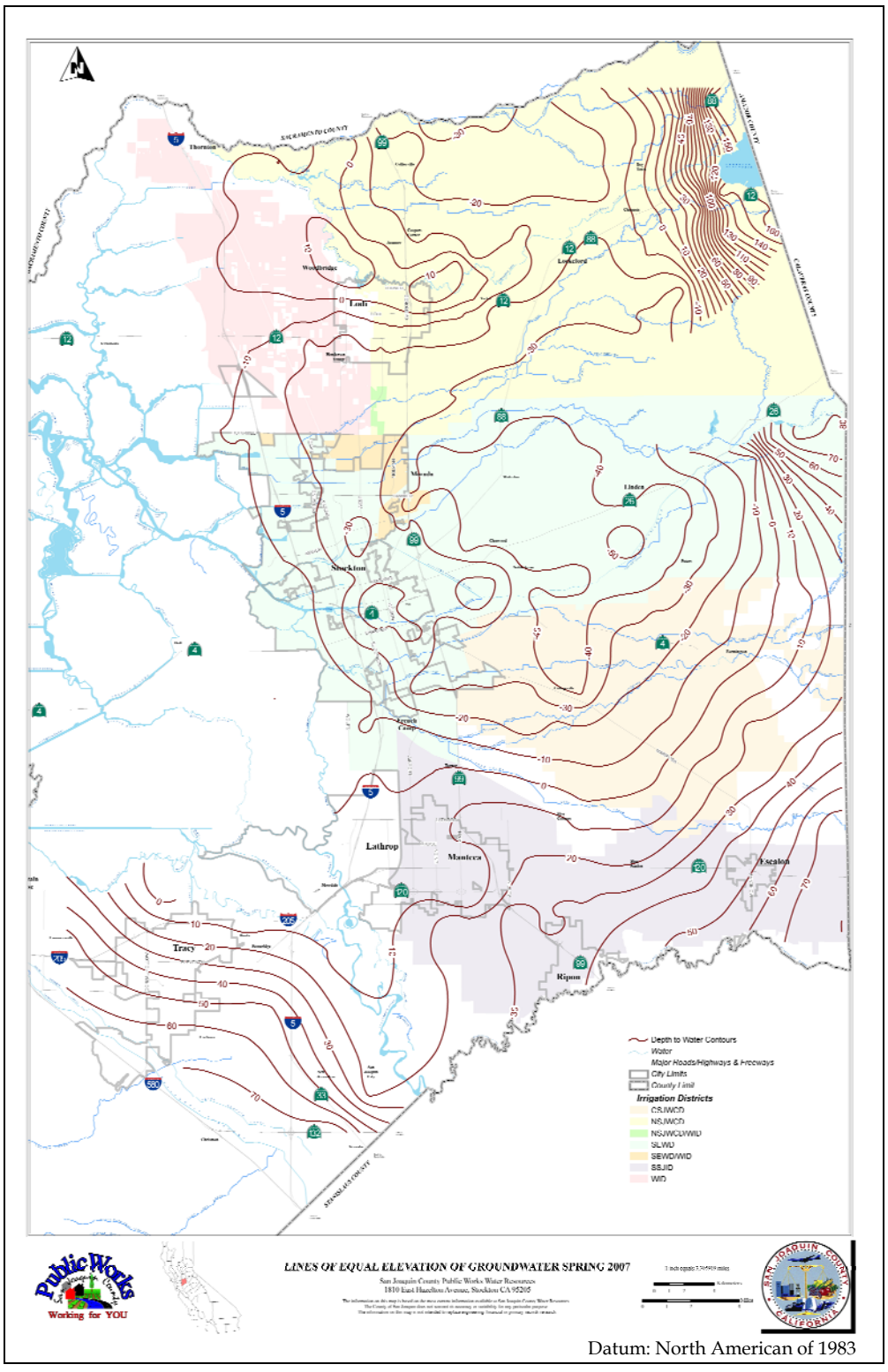

Figure 4-60: Lines of Equal Elevation of Groundwater Spring 2007

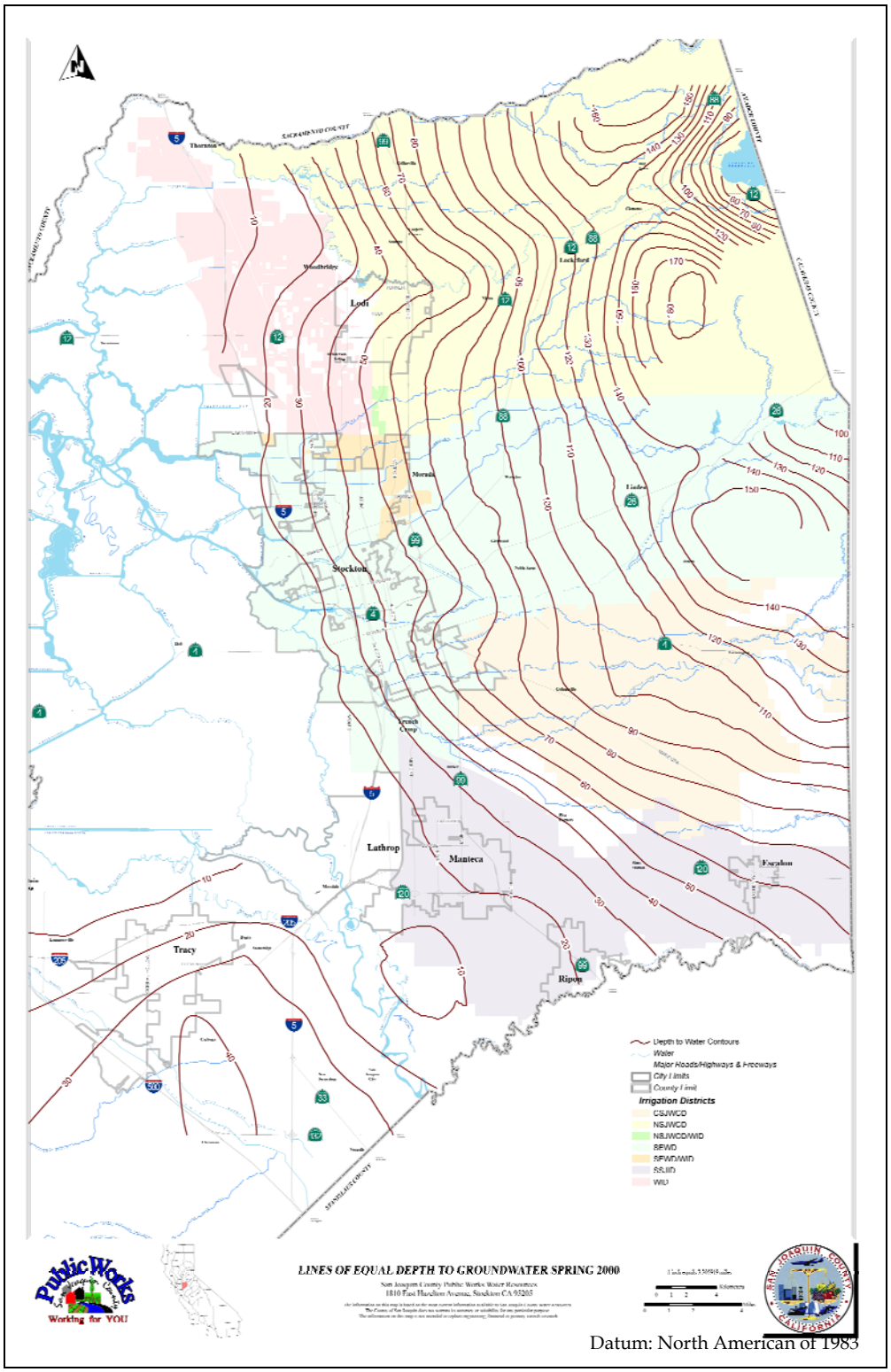

Figure 4-61: Lines of Equal Depth to Groundwater Spring 2000

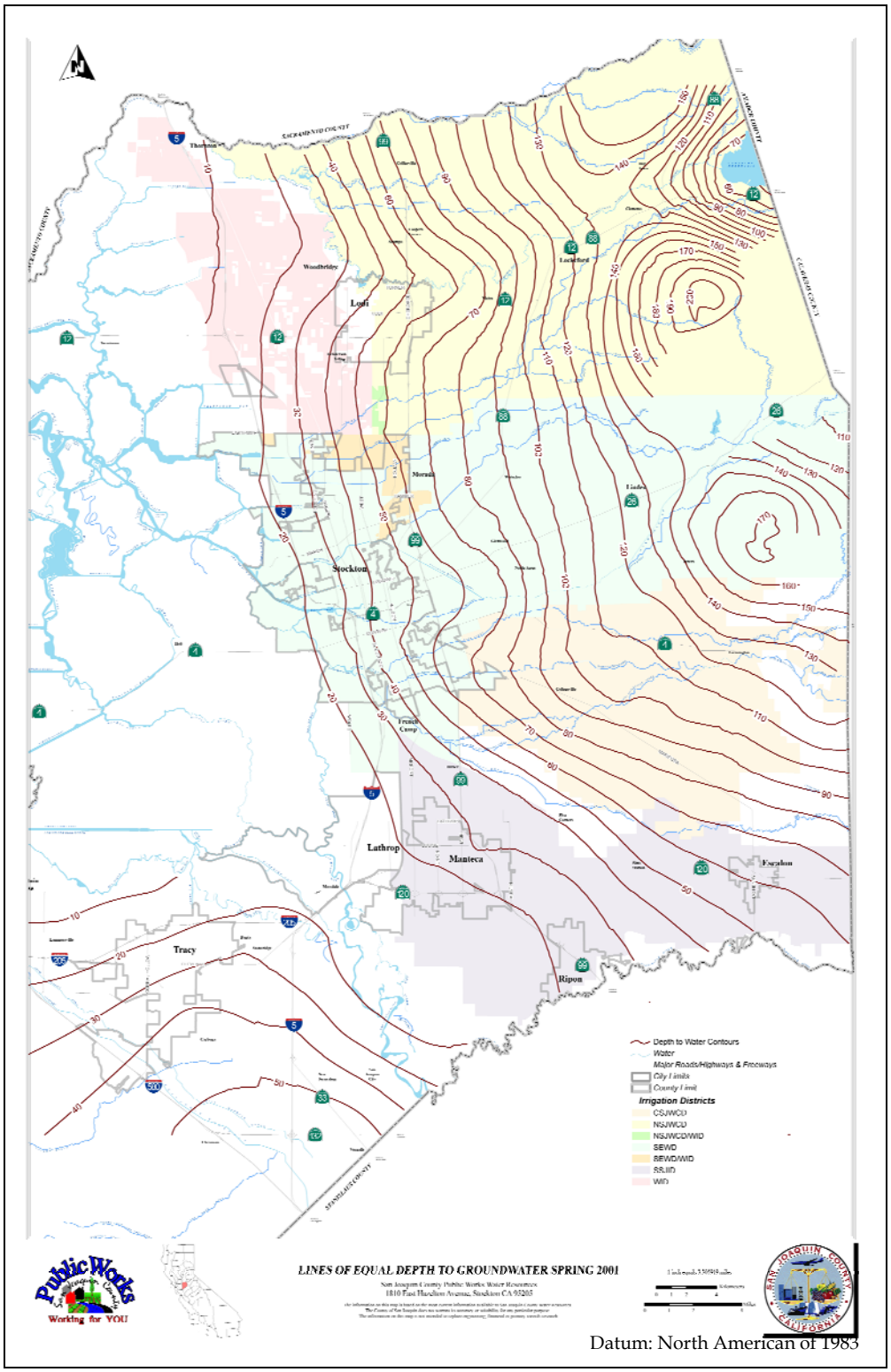

Figure 4-62: Lines of Equal Depth to Groundwater Spring 2001

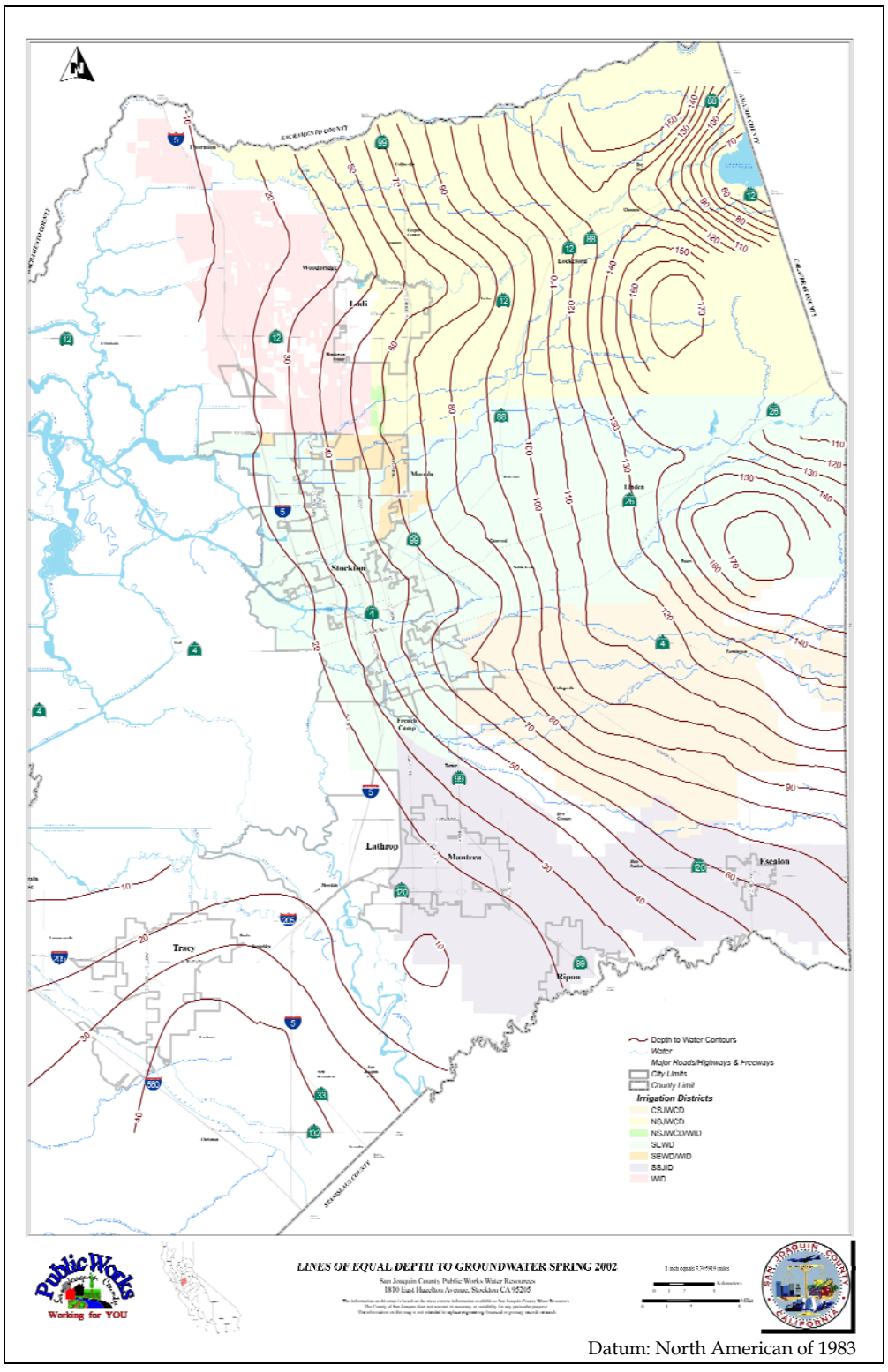

Figure 4-63: Lines of Equal Depth to Groundwater Spring 2002

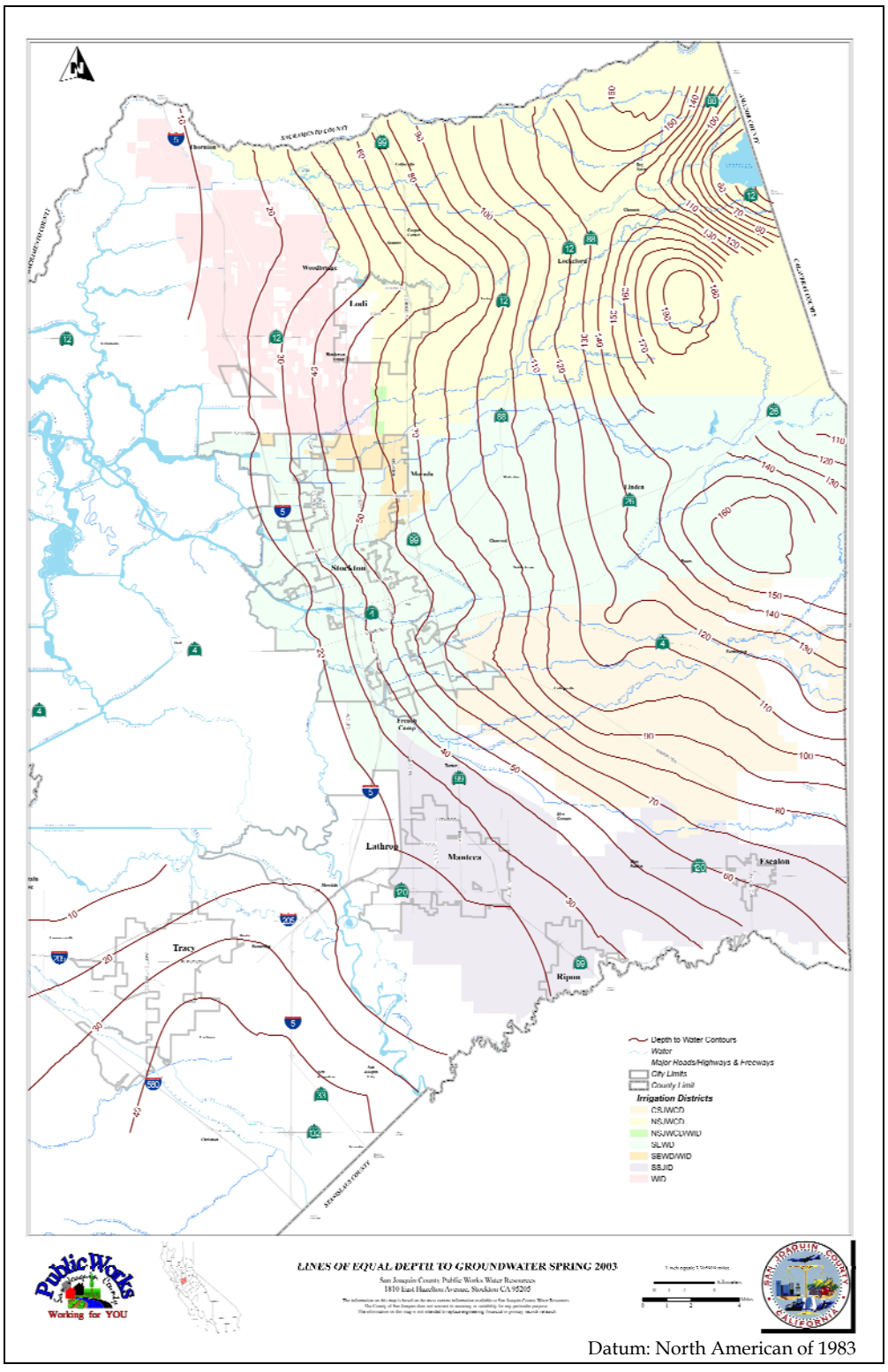

Figure 4-64: Lines of Equal Depth to Groundwater Spring 2003

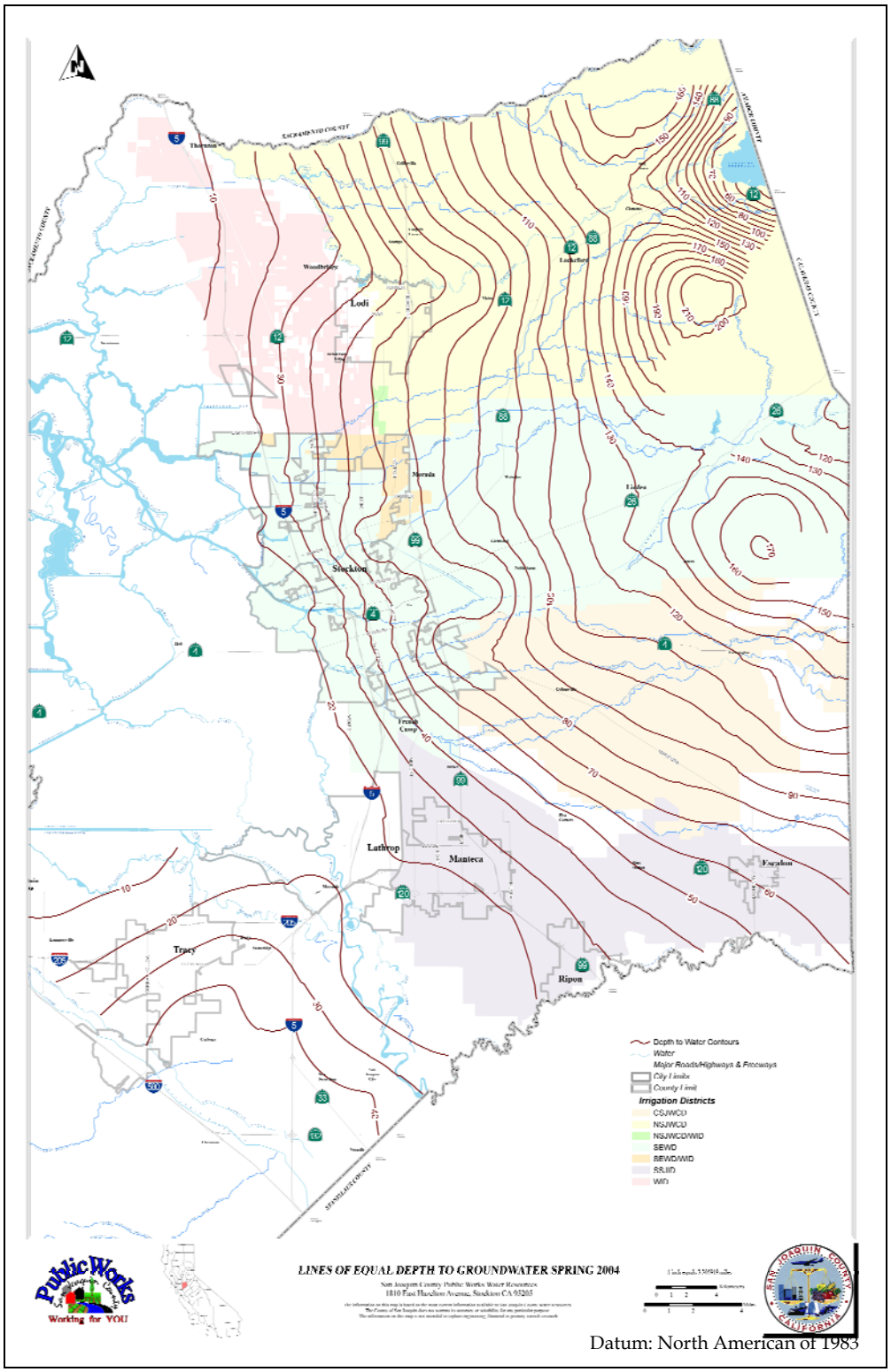

Figure 4-65: Lines of Equal Depth to Groundwater Spring 2004

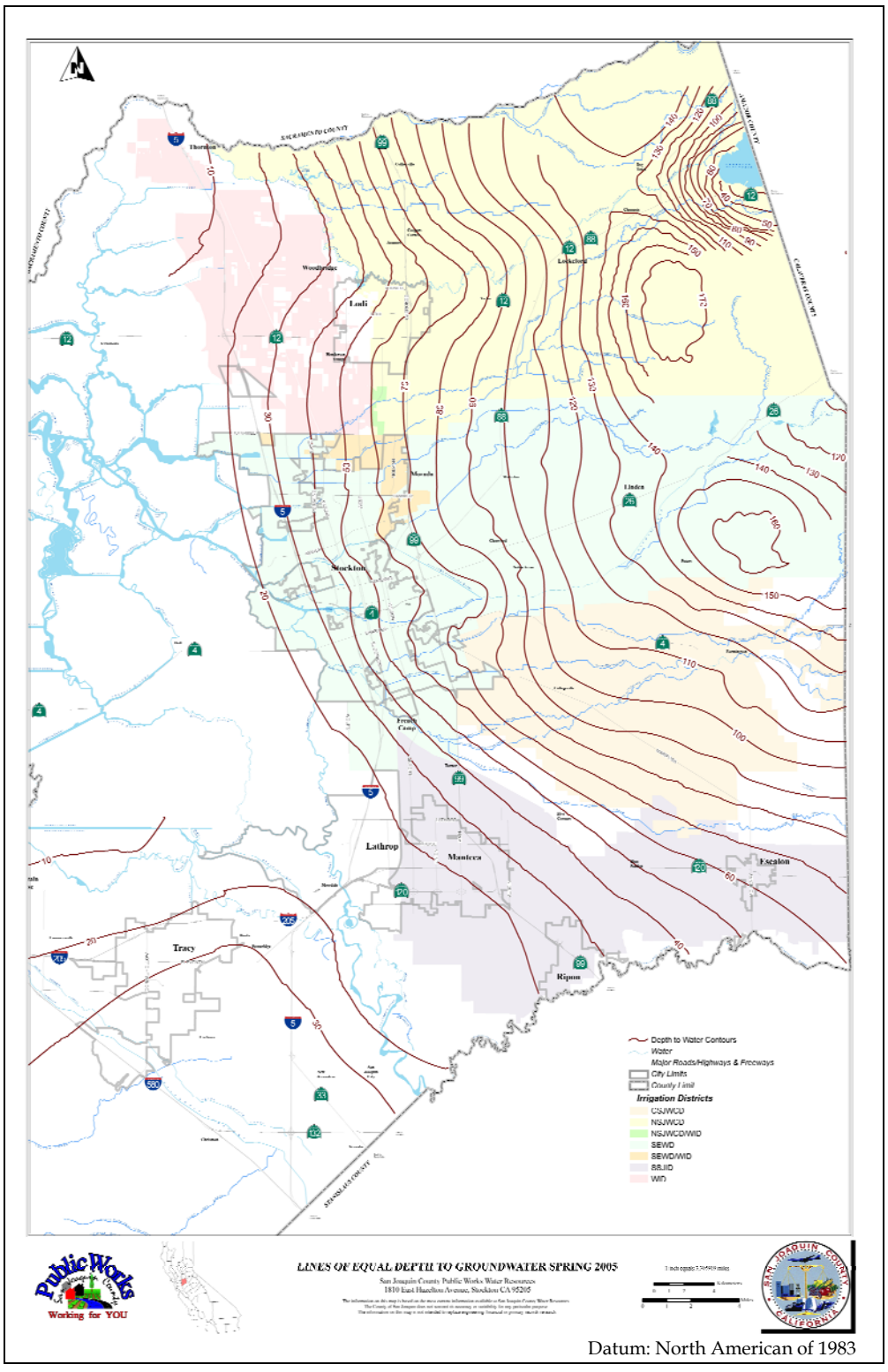

Figure 4-66: Lines of Equal Depth to Groundwater Spring 2005

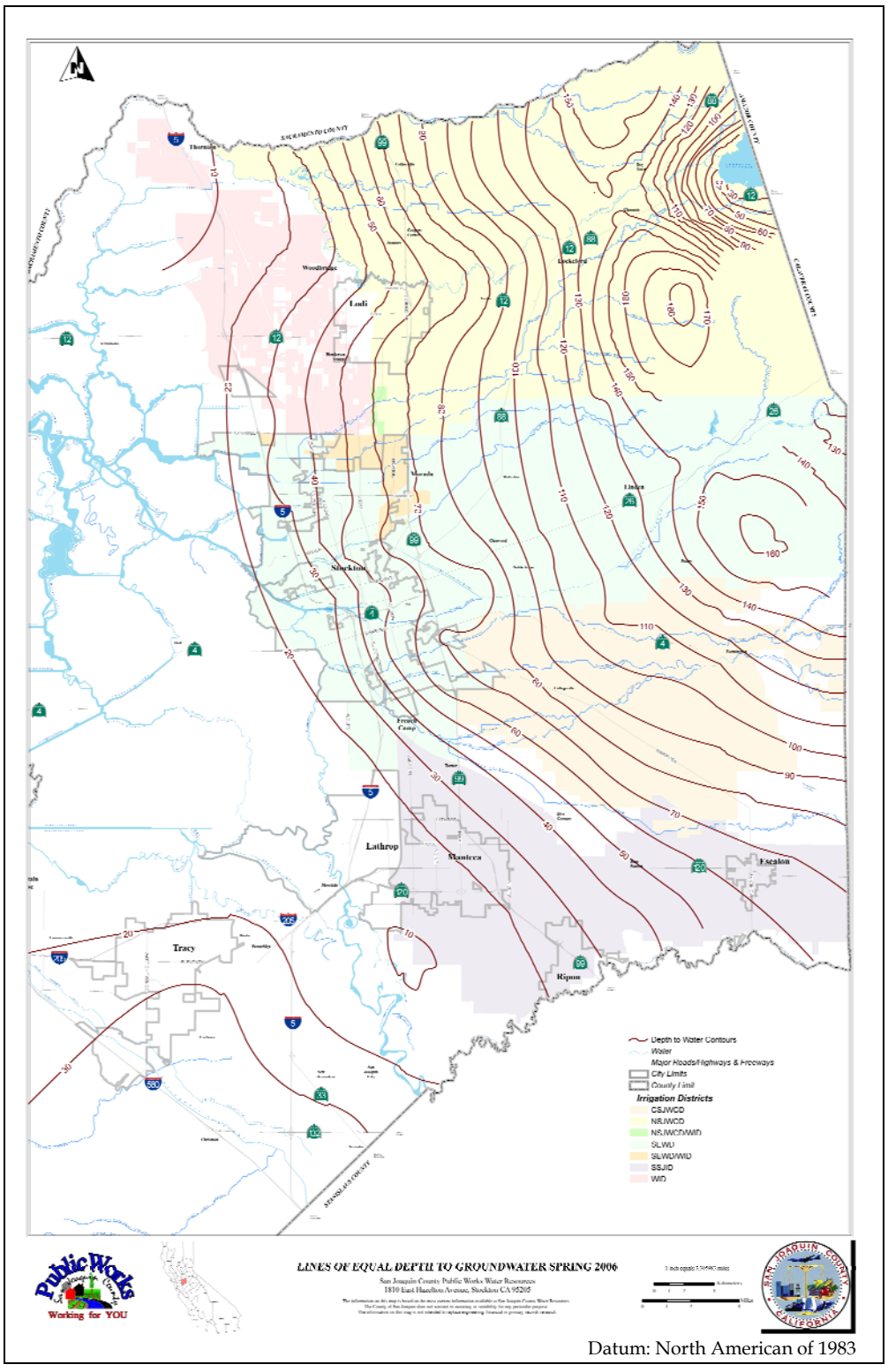

Figure 4-67: Lines of Equal Depth to Groundwater Spring 2006

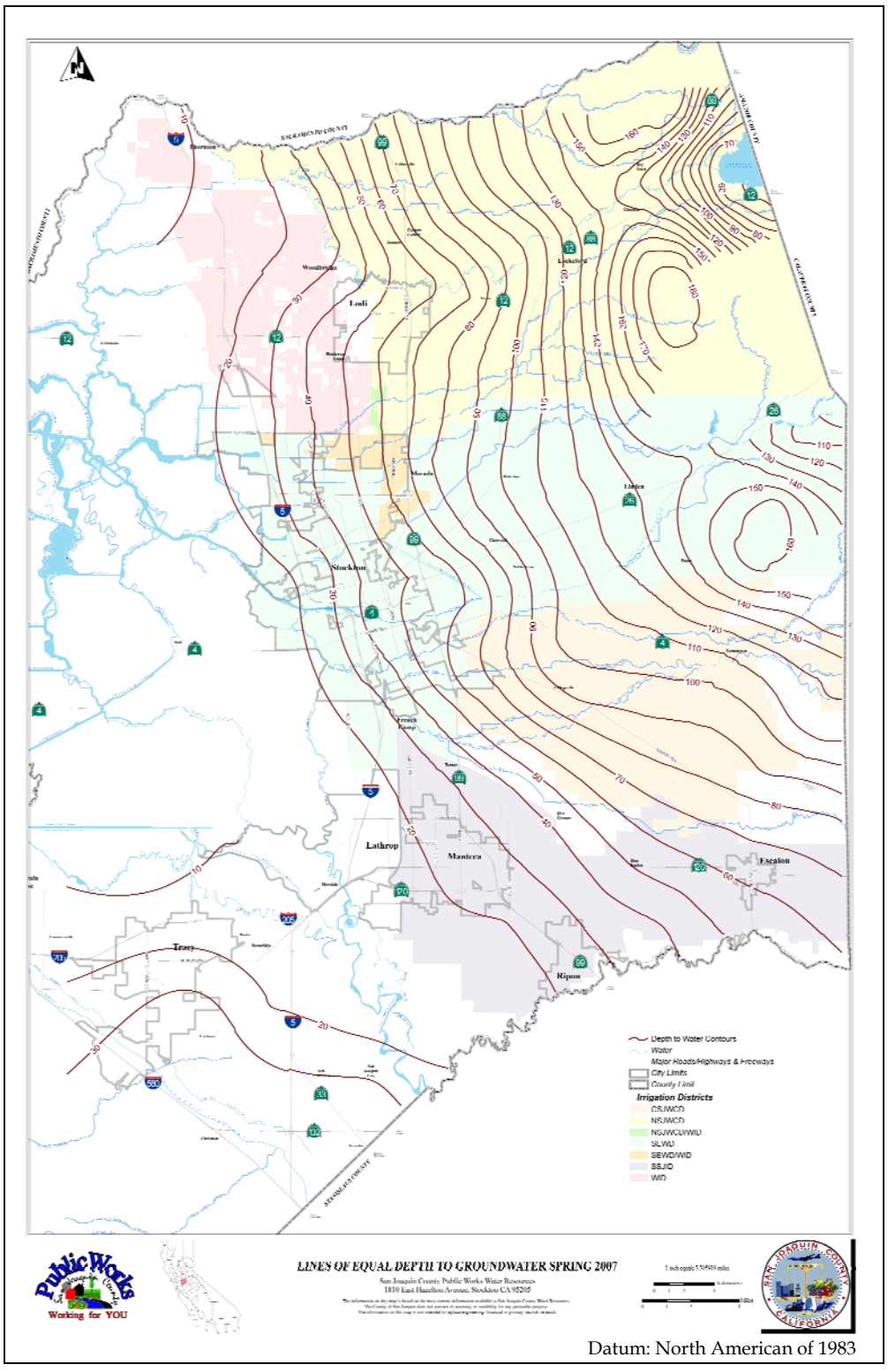

Figure 4-68: Lines of Equal Depth to Groundwater Spring 2007