

SITE CHARACTERIZATION REPORT – HYDROLOGIC CHARACTERIZATION

**HYDE PARK LANDFILL SITE
TOWN OF NIAGARA, NEW YORK**

APPENDIX B – HYDROGRAPHS AND SUMMARY SHEETS

- B1. [Hydrographs for Individual Piezometers](#) (Print, CD)**
- B2. [Hydrographs by Flow Zones](#) (Print, CD)**
- B3. [Piezometer Summary Sheets](#) (Print, CD)**
- B4. [Purge Well Summary Sheets](#) (Print, CD)**
- B5. [Generation of Synthetic Data at B2L-11, D1M-09, and D1L-11](#) (Print, CD)**

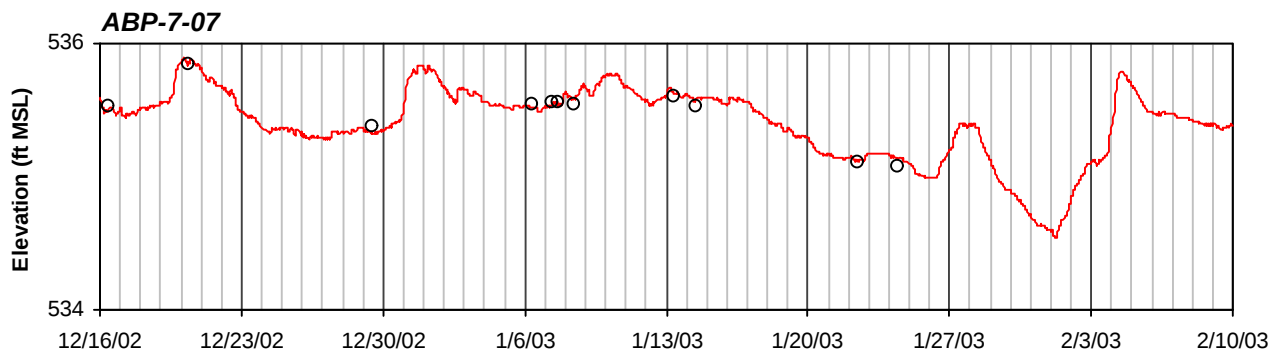
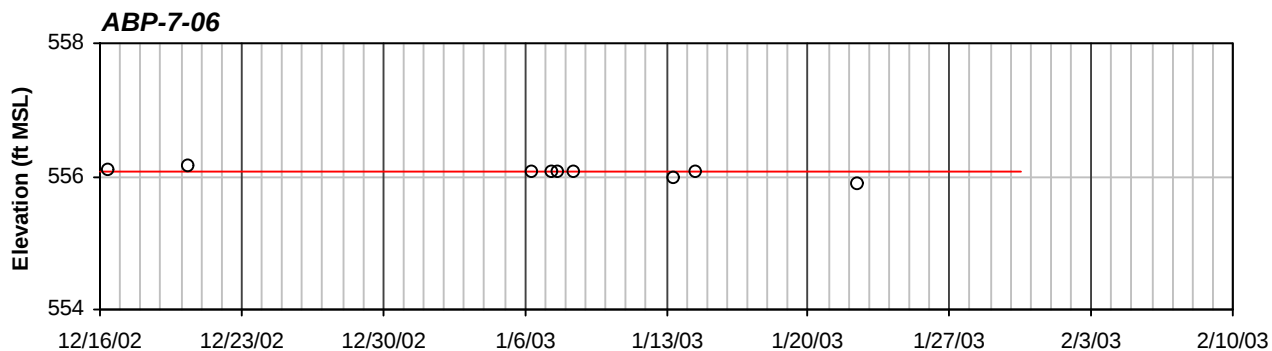
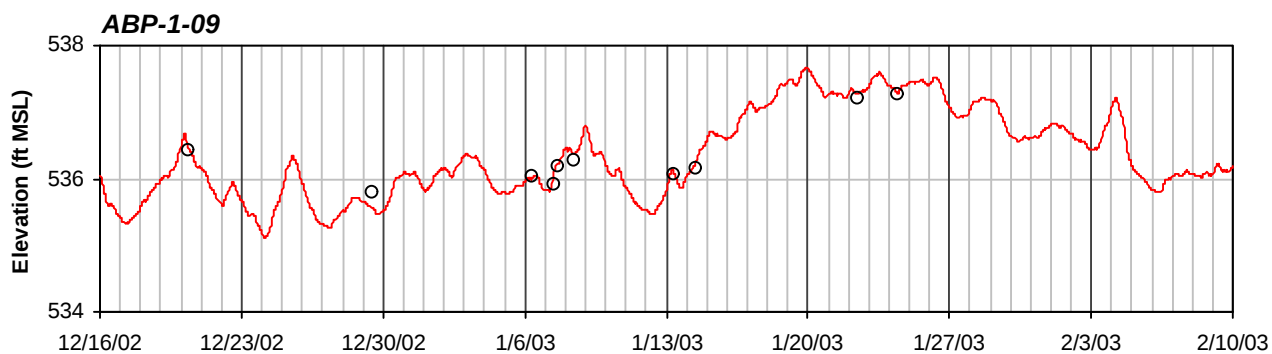
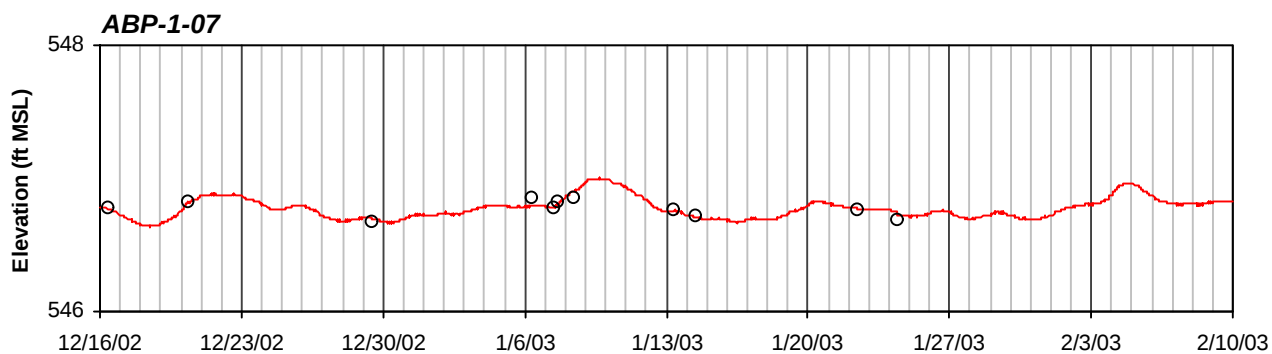
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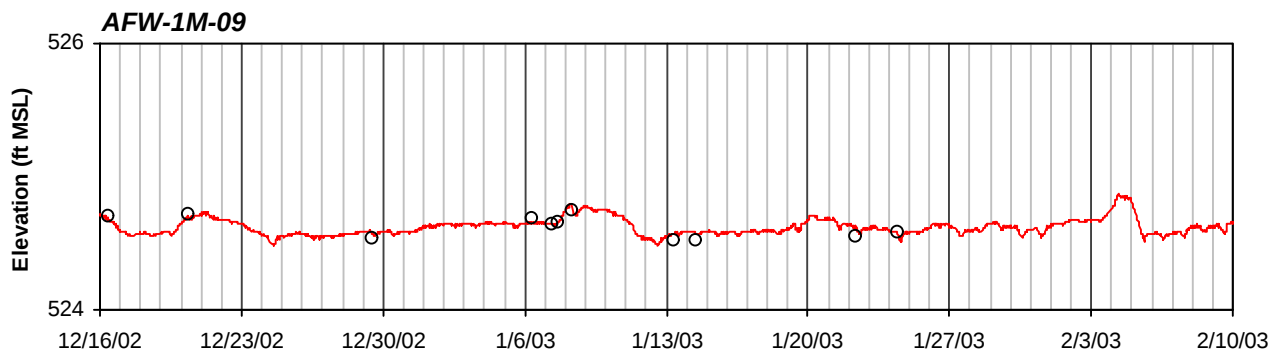
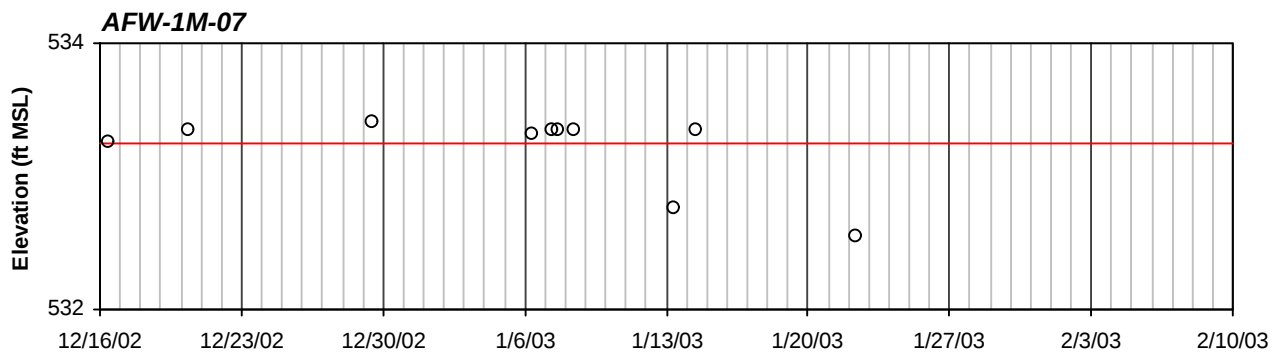
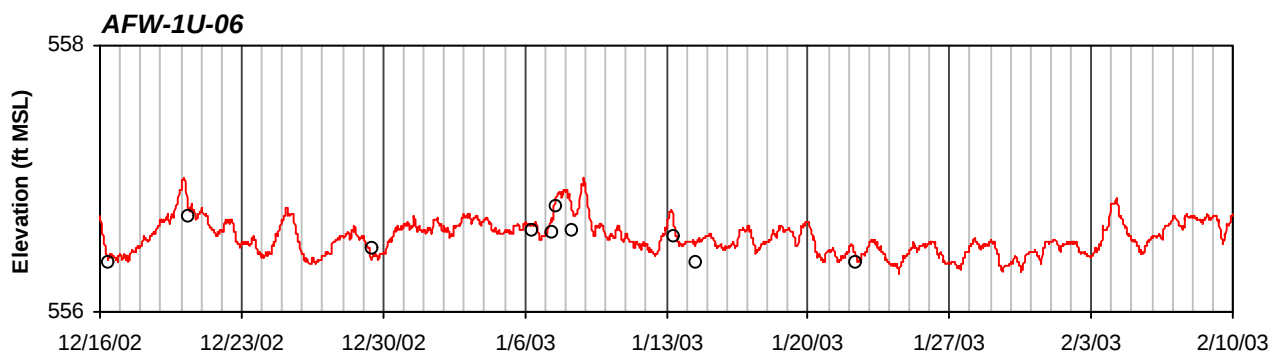
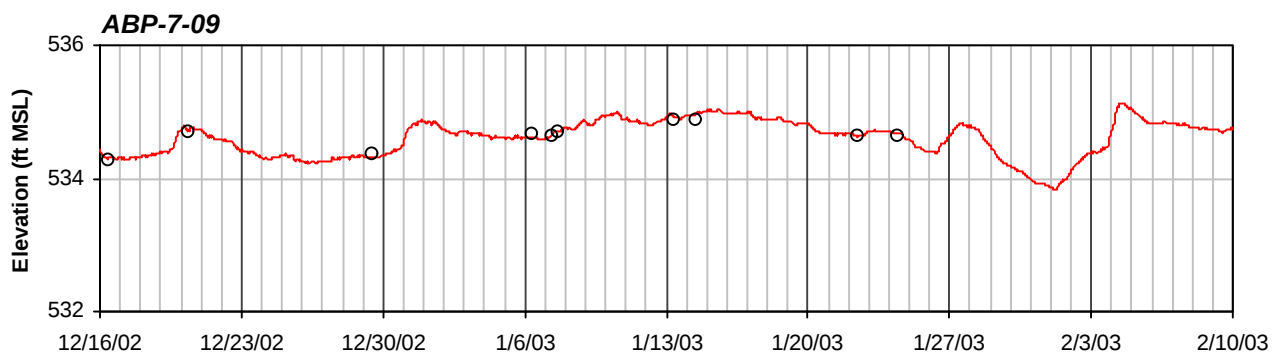
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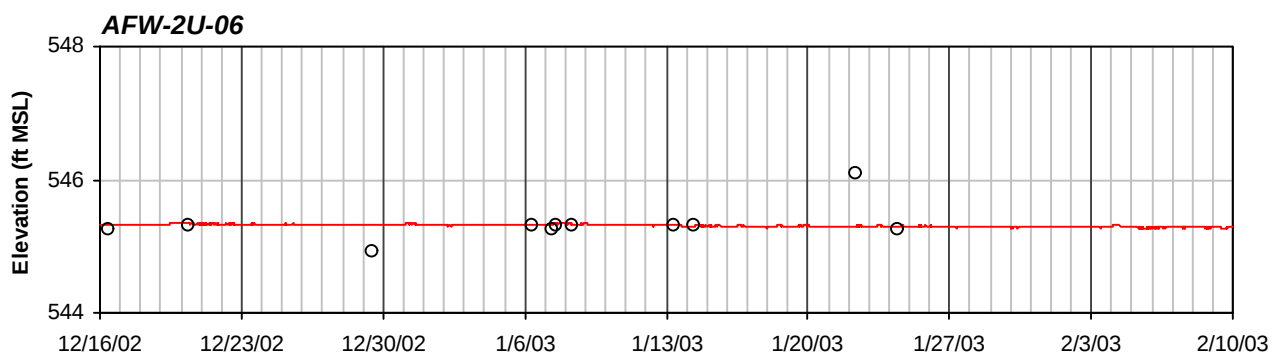
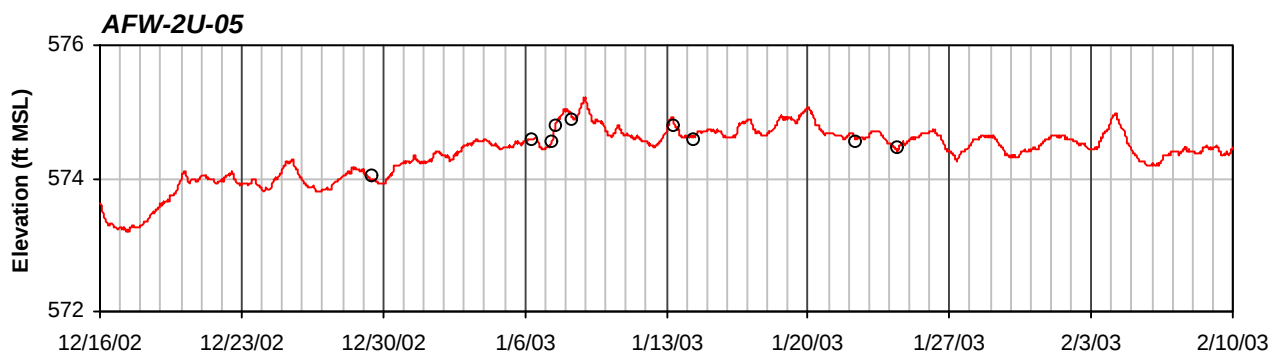
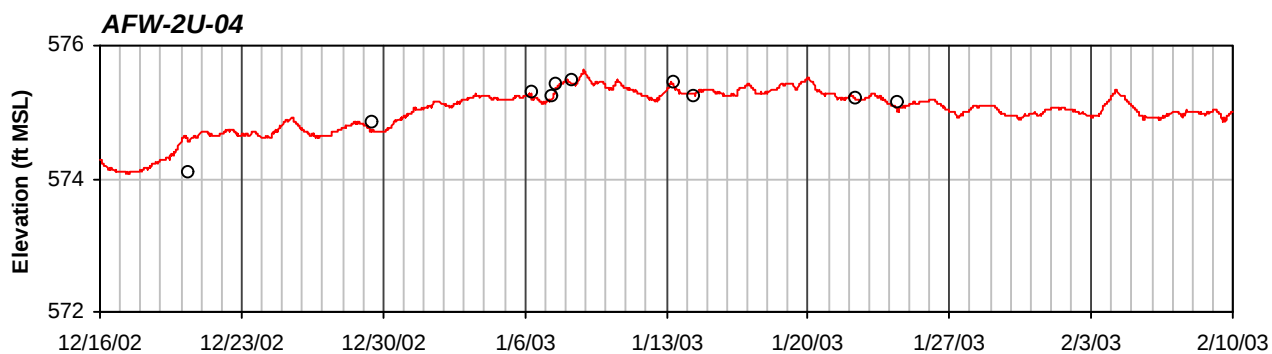
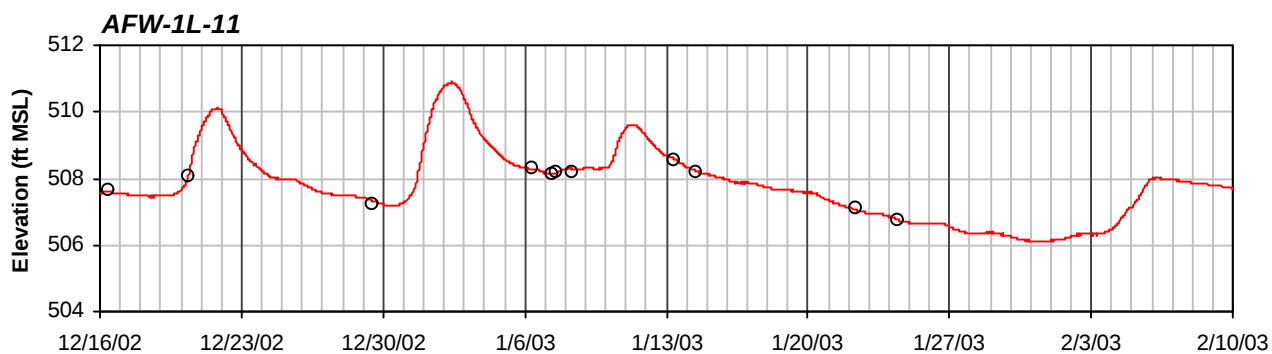
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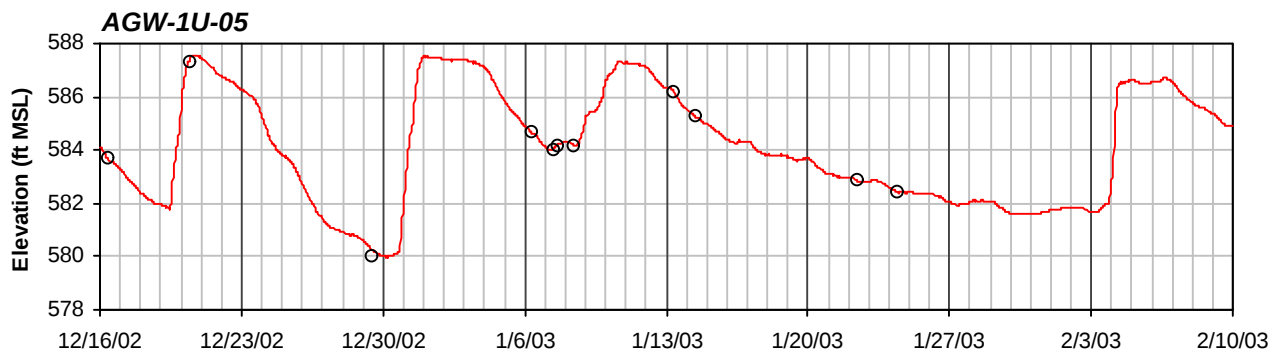
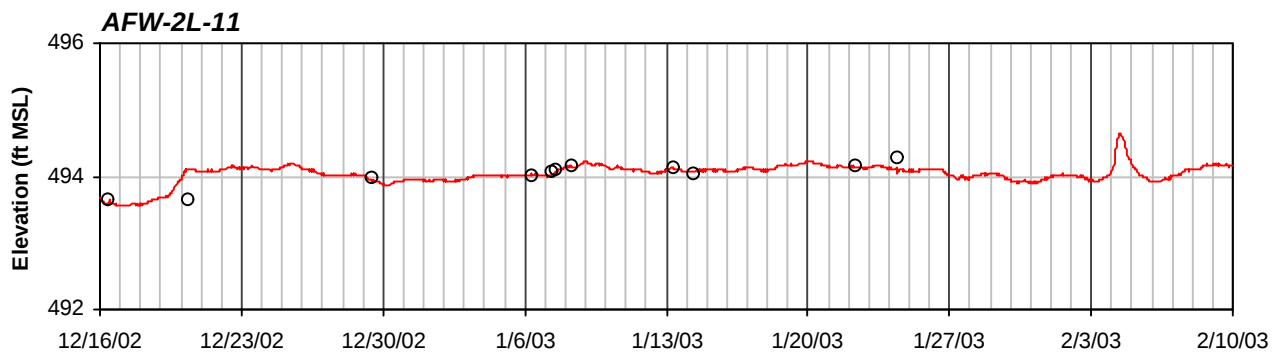
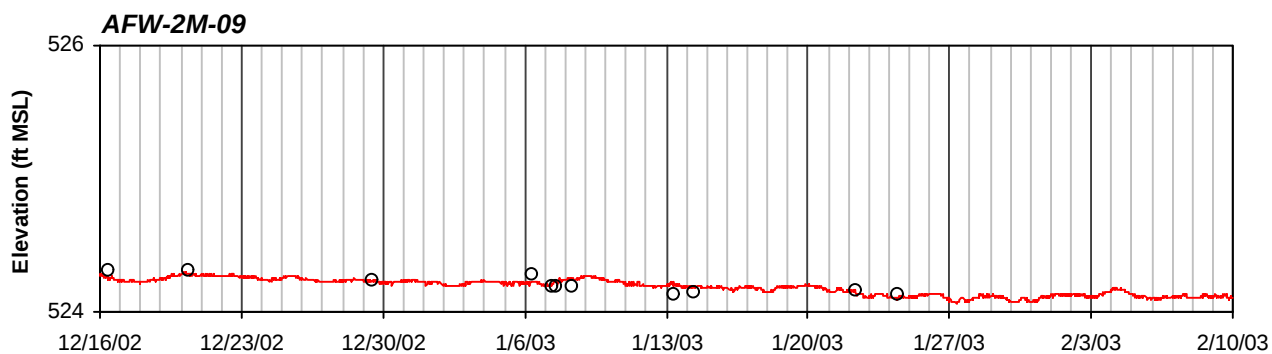
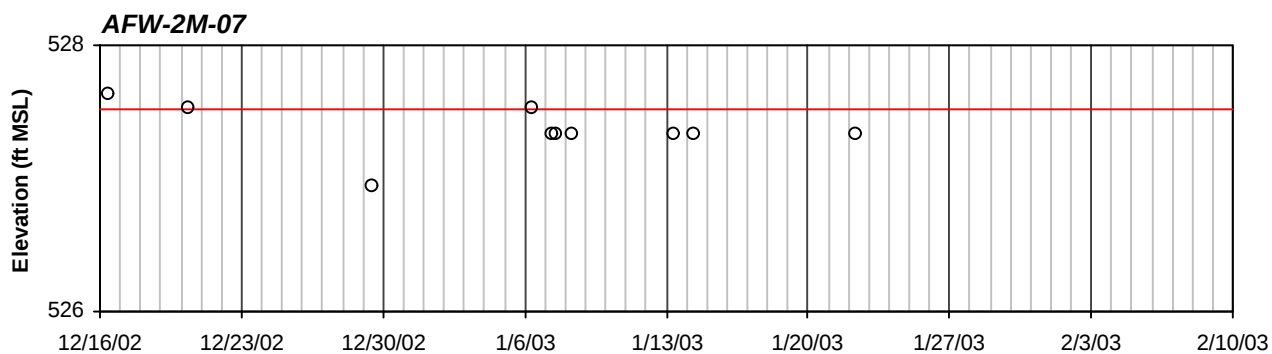
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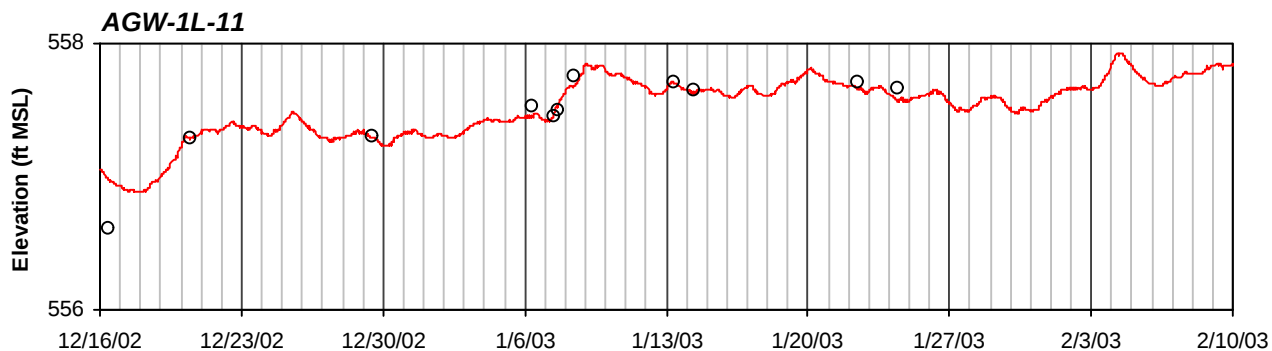
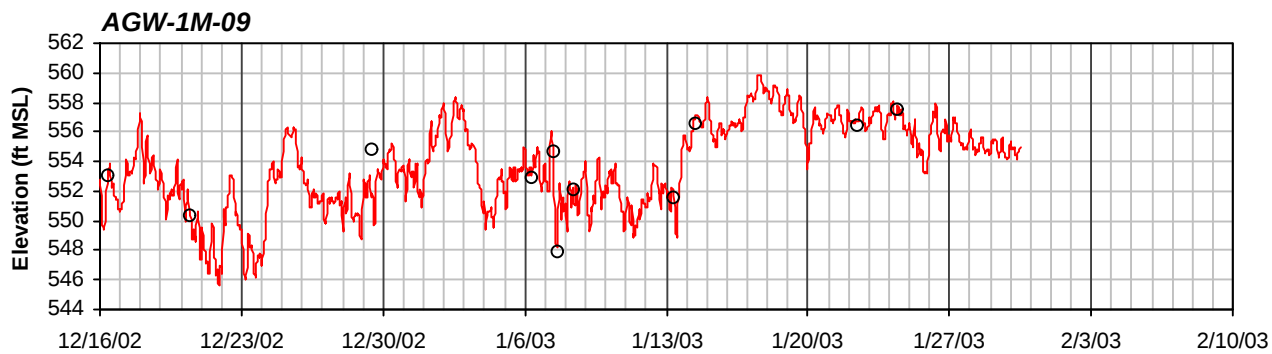
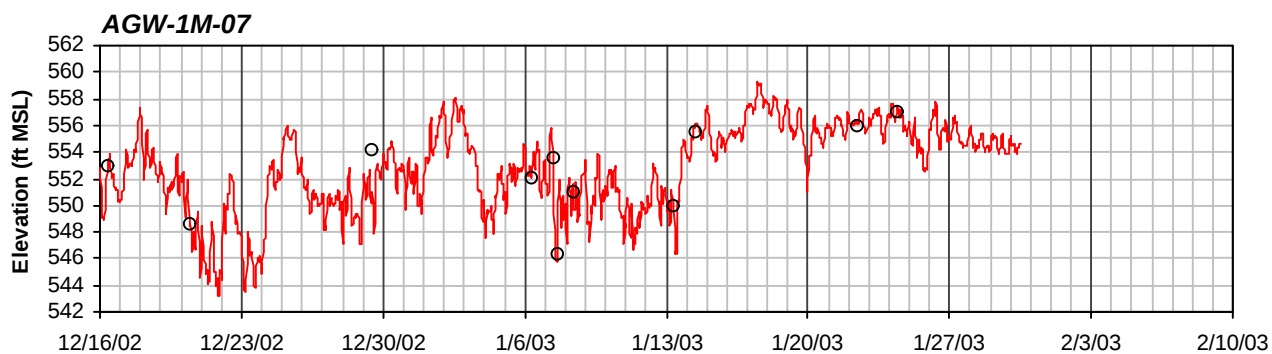
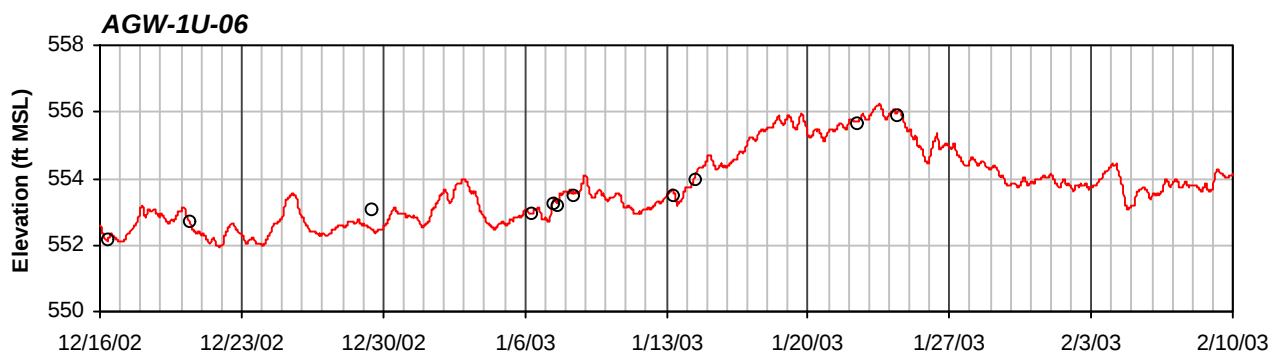
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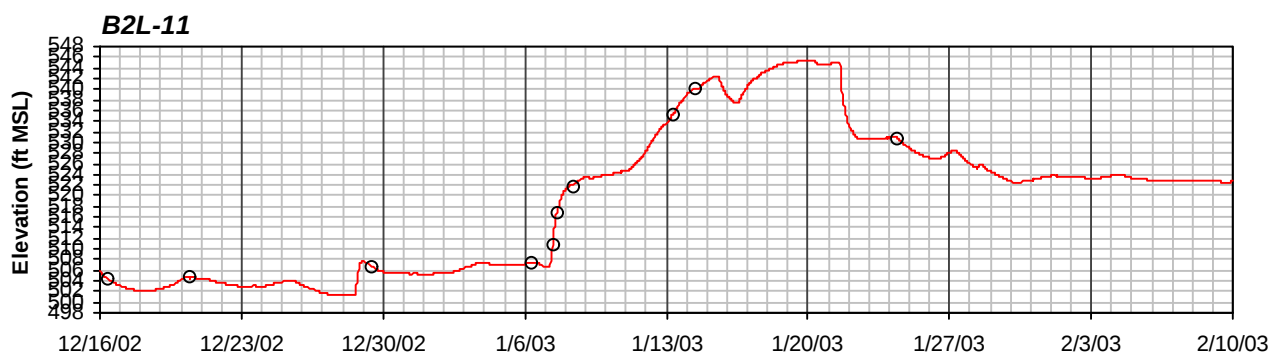
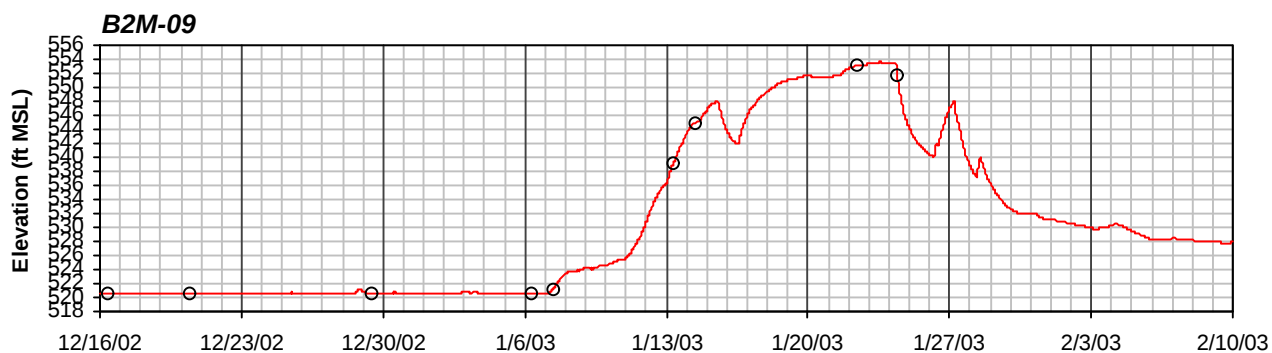
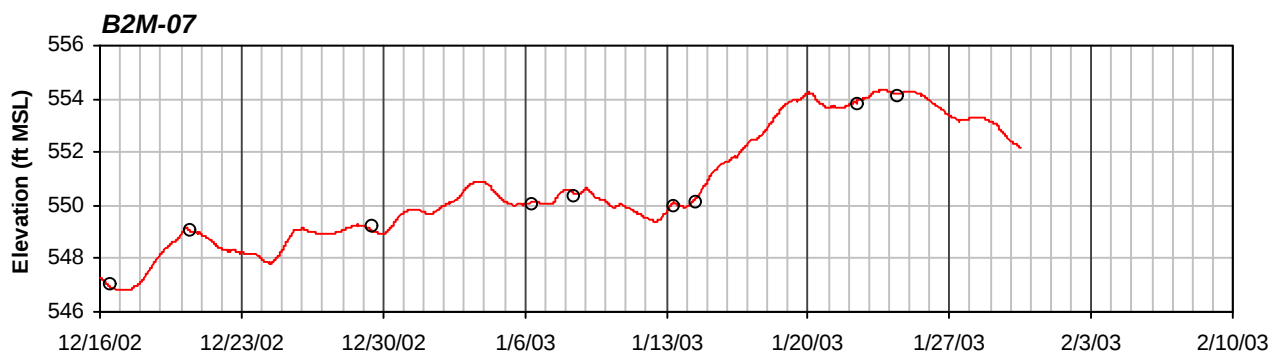
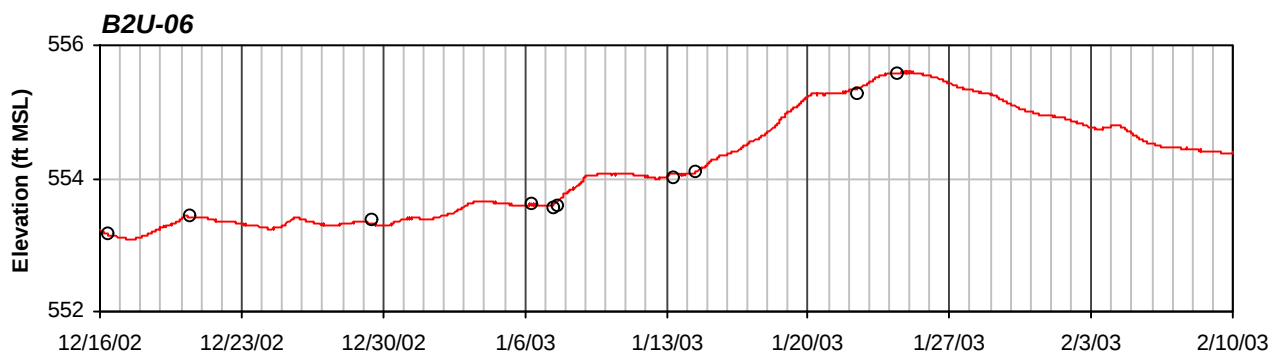


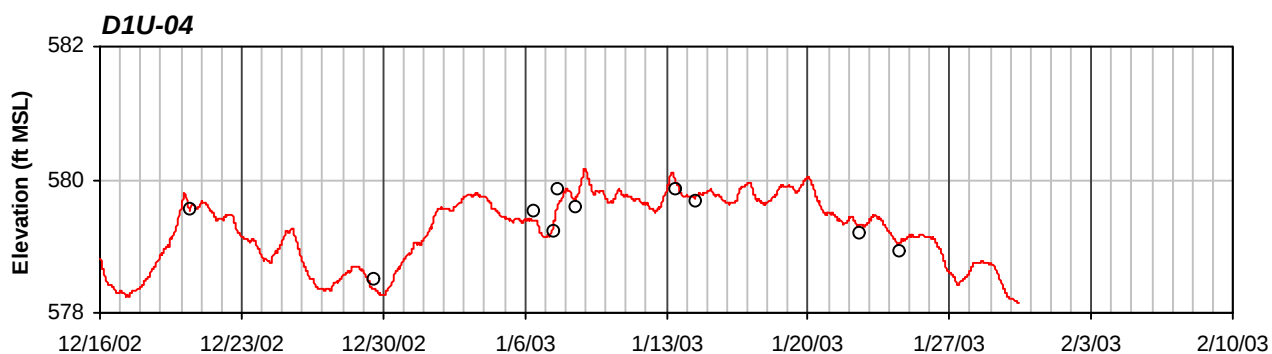
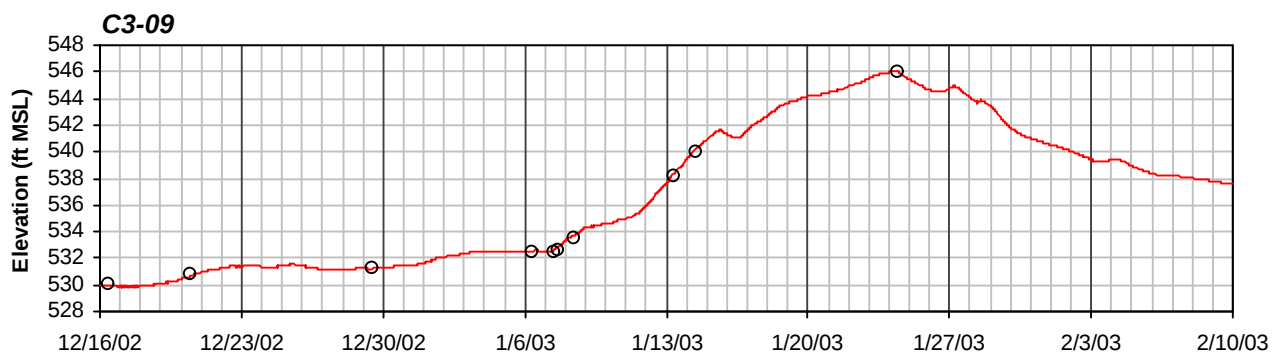
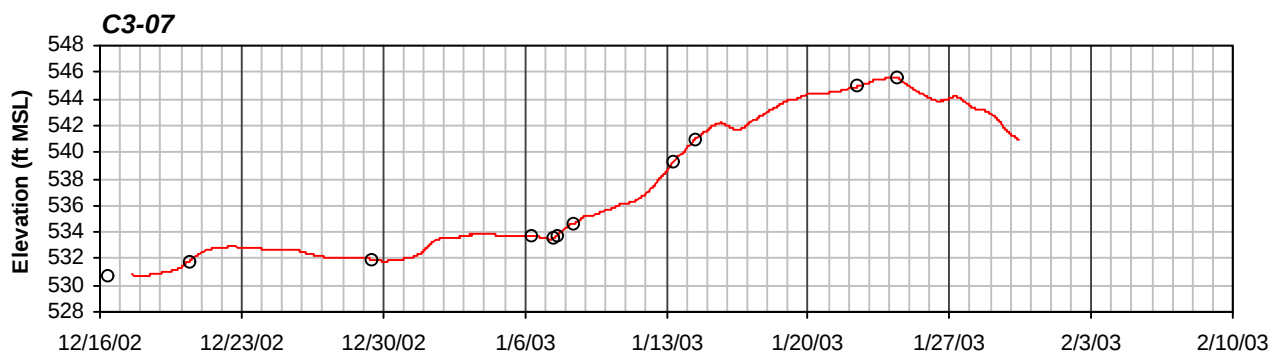
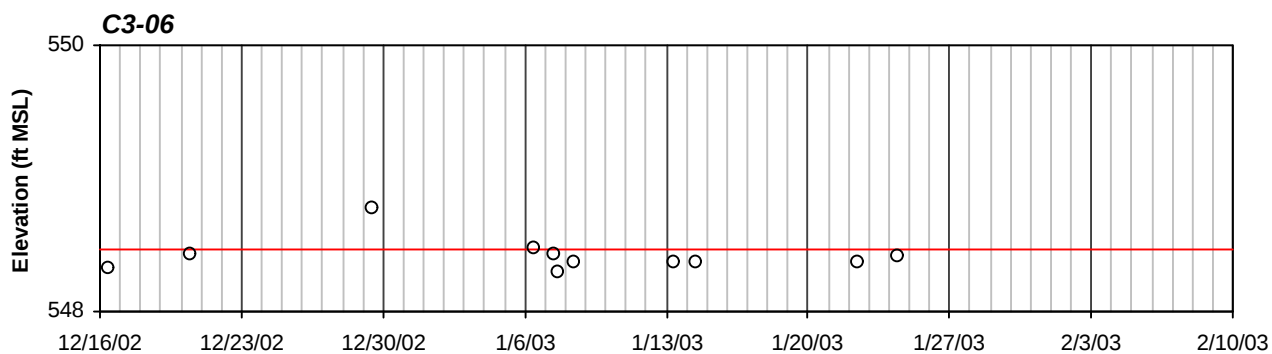


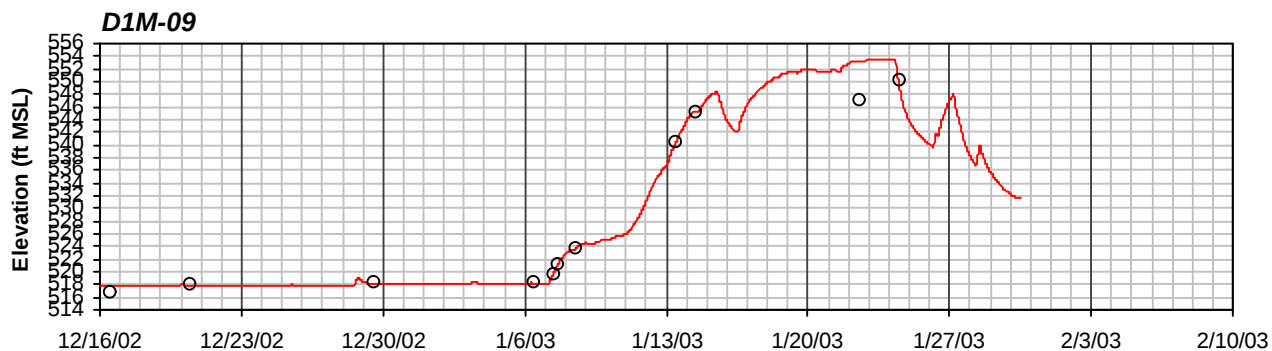
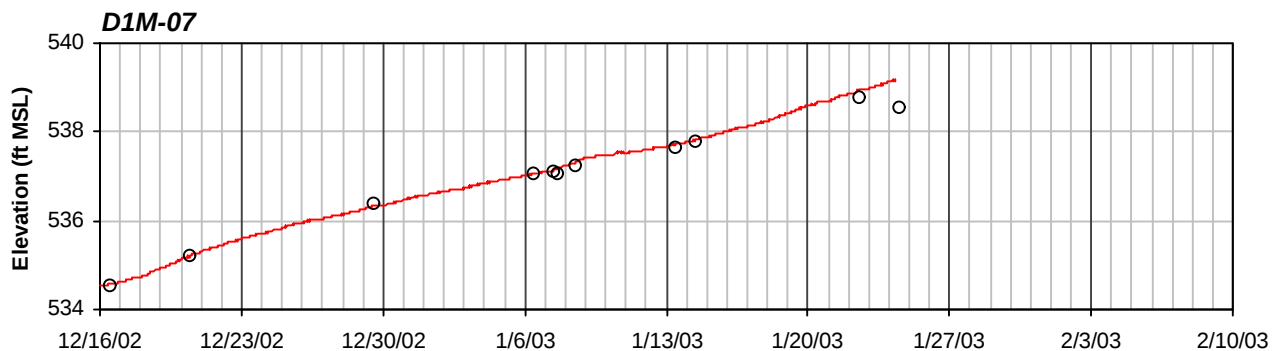
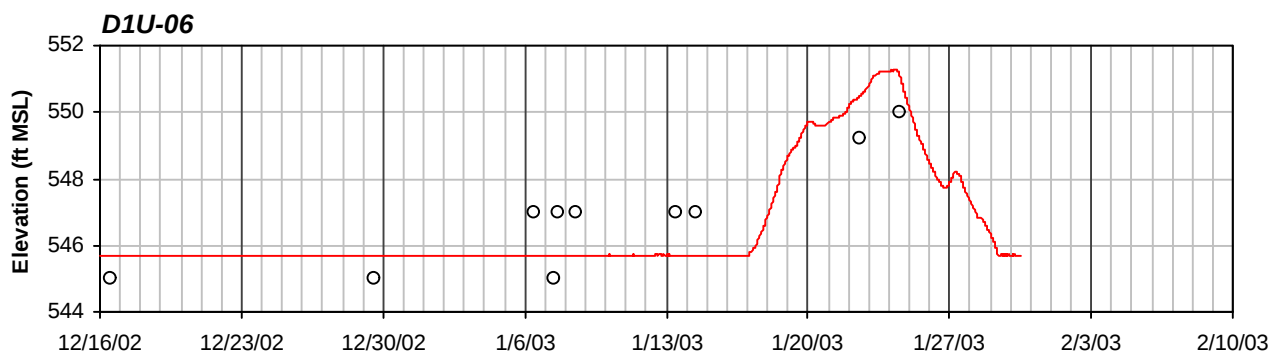
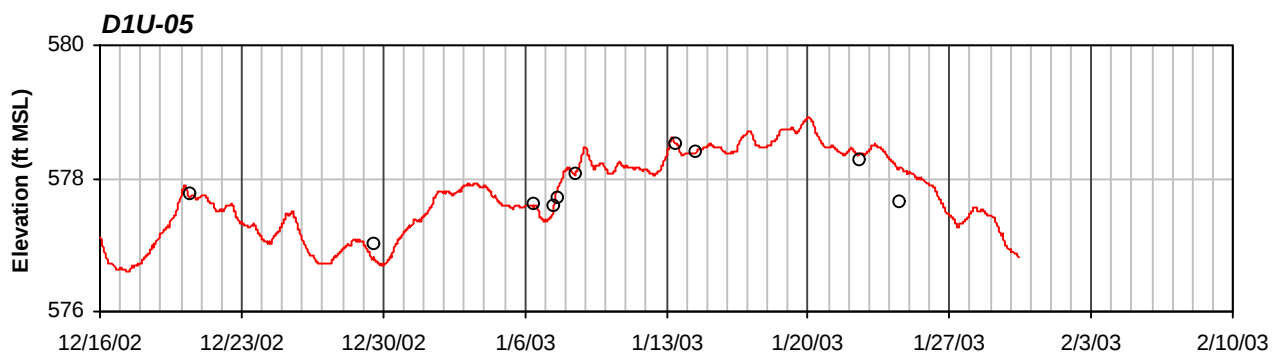


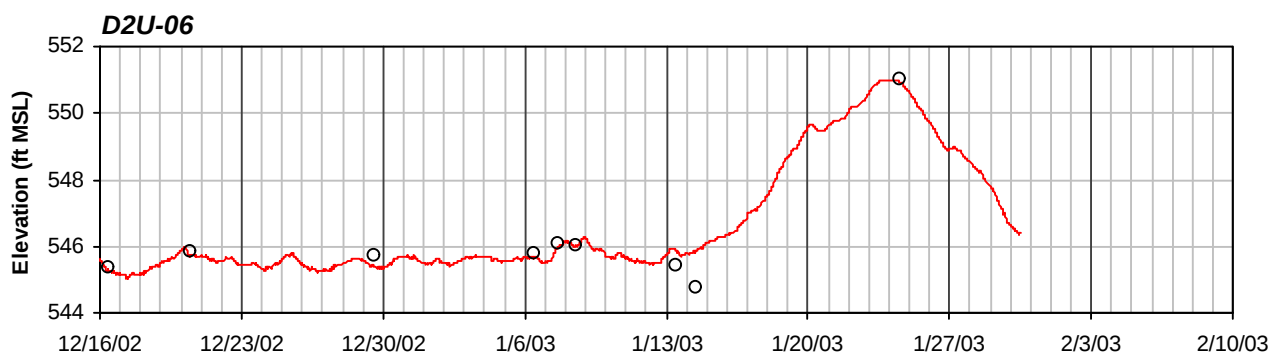
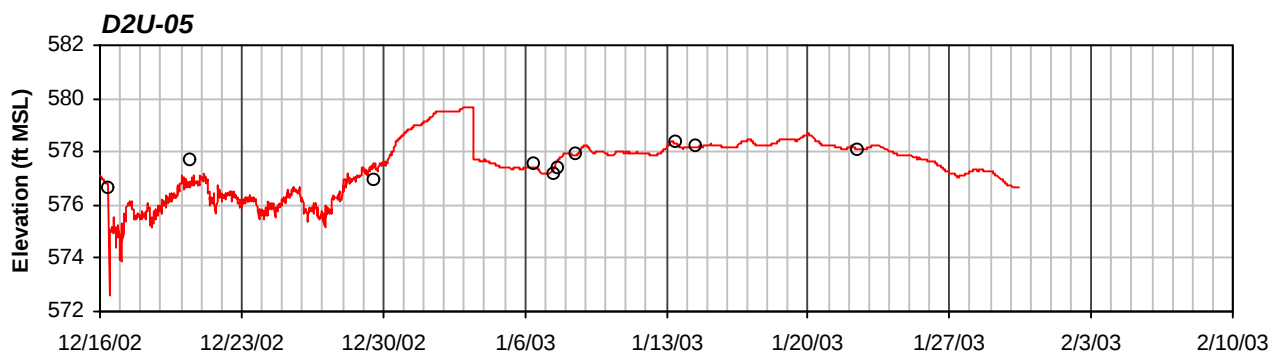
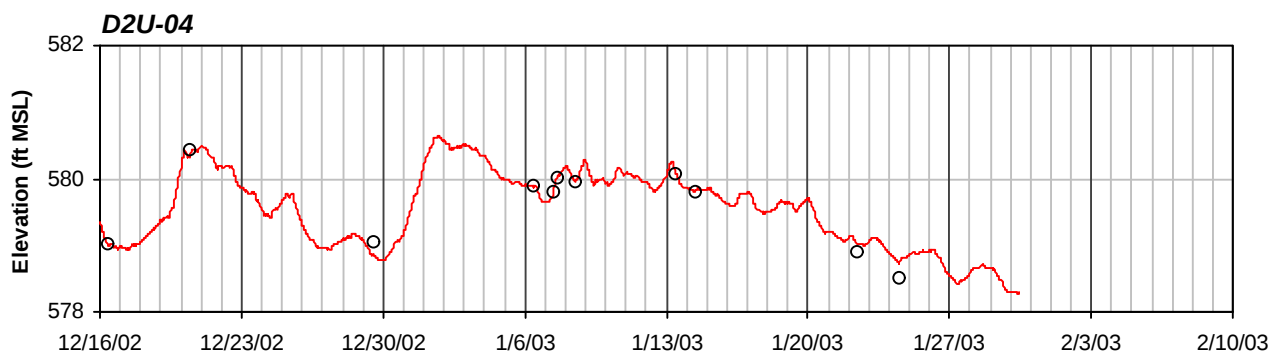
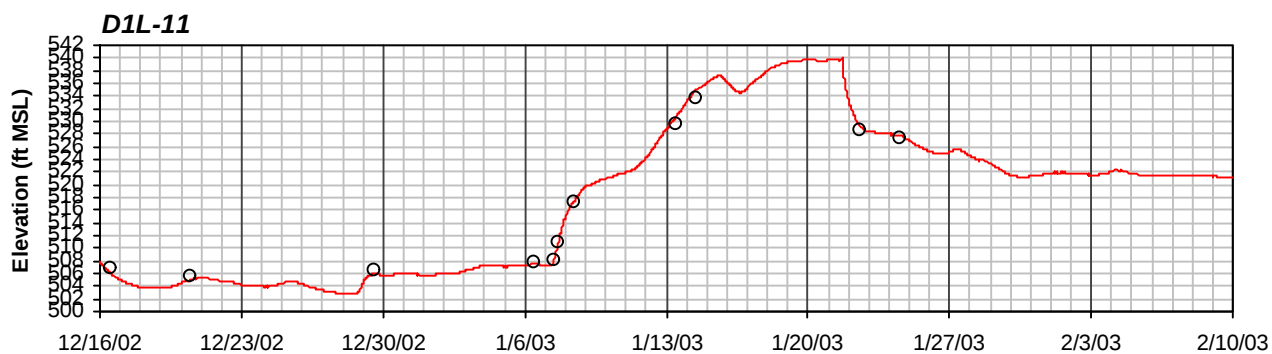


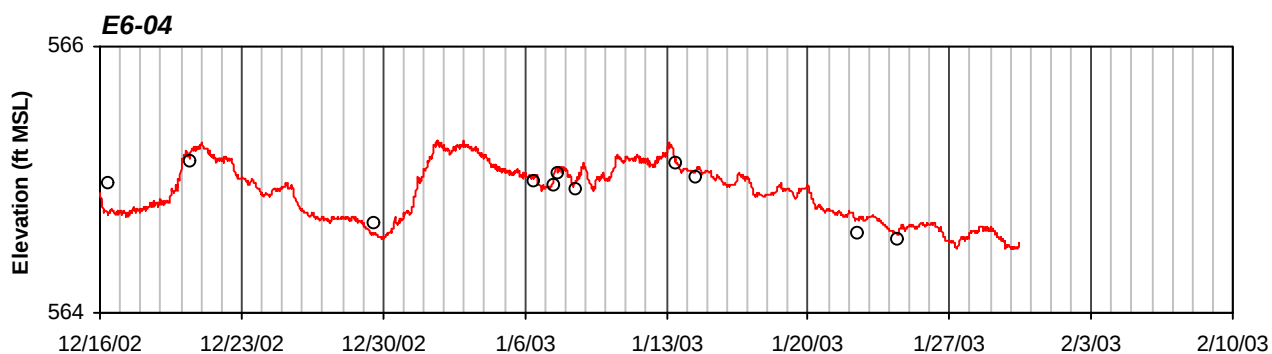
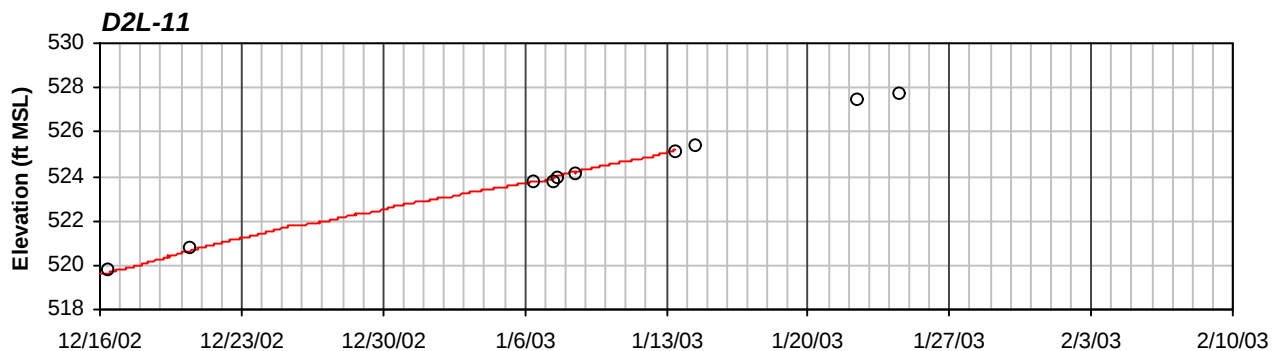
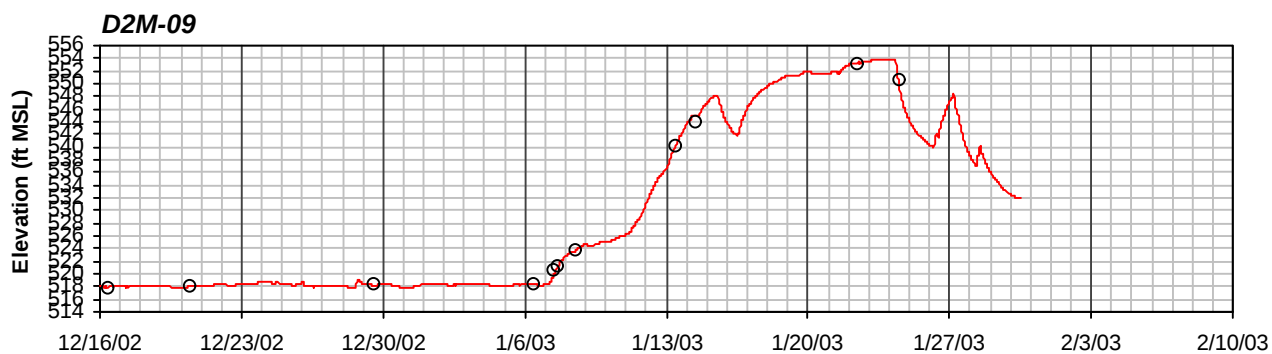
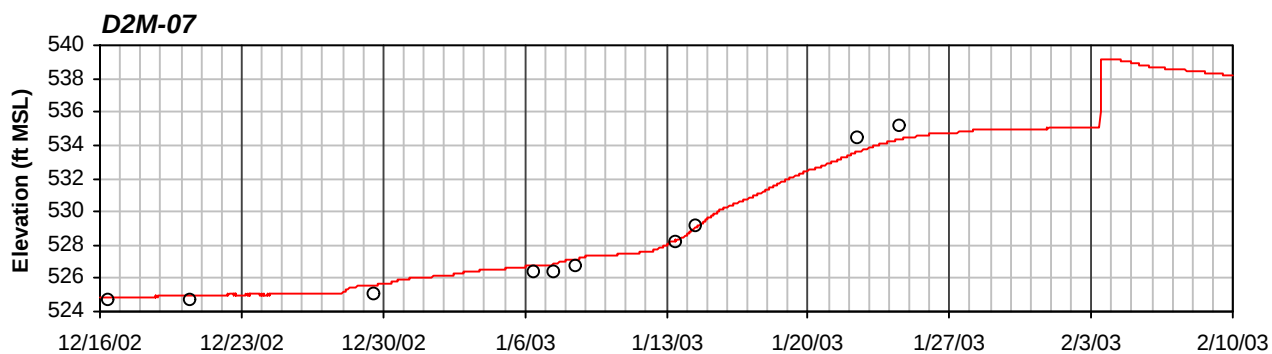


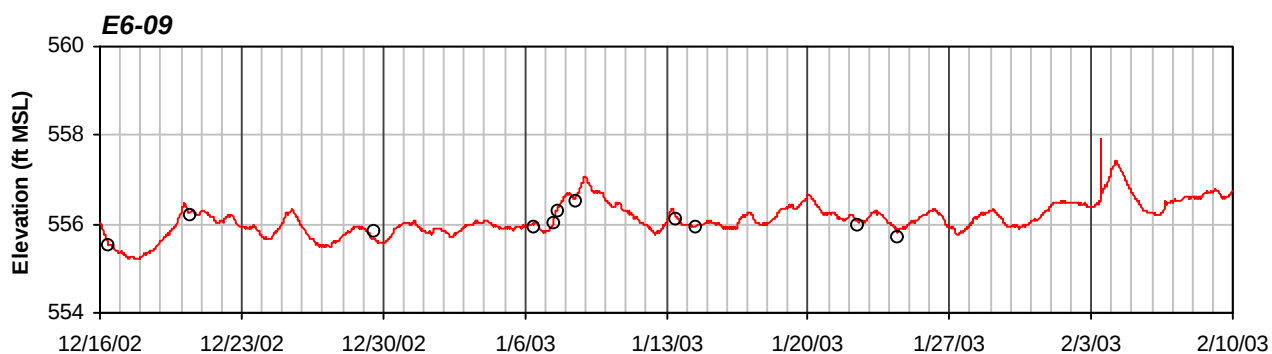
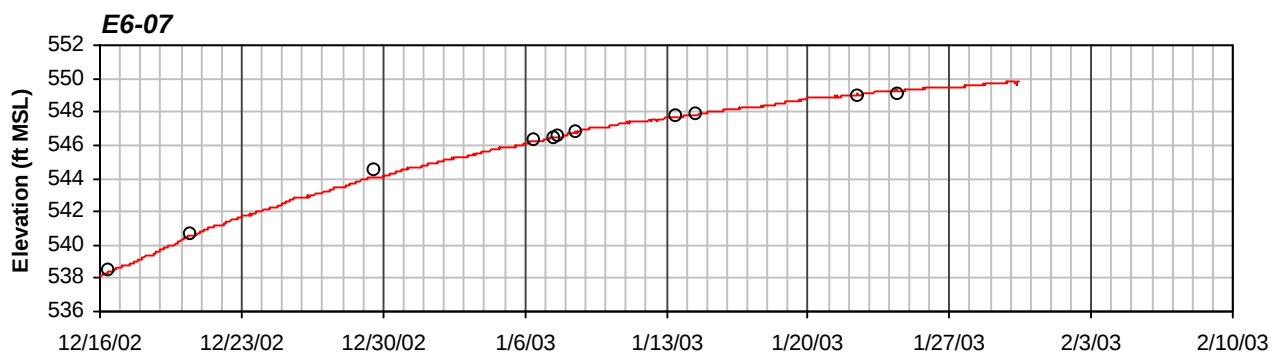
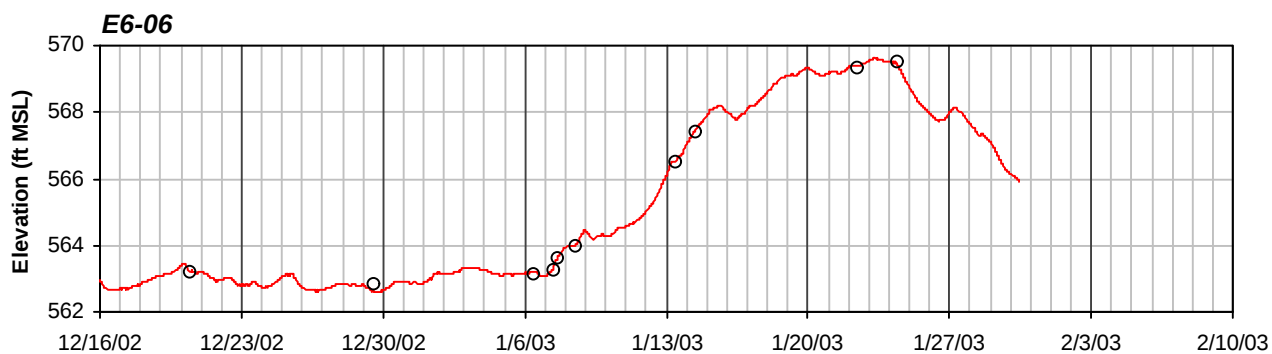
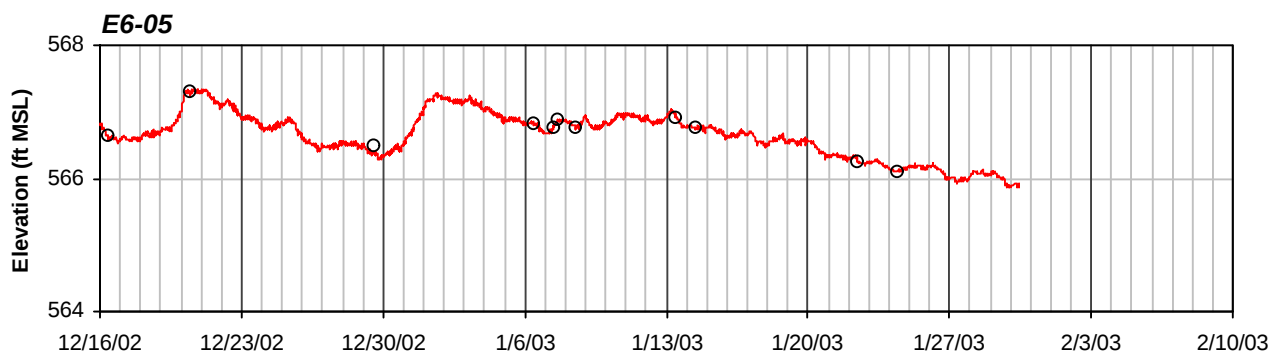


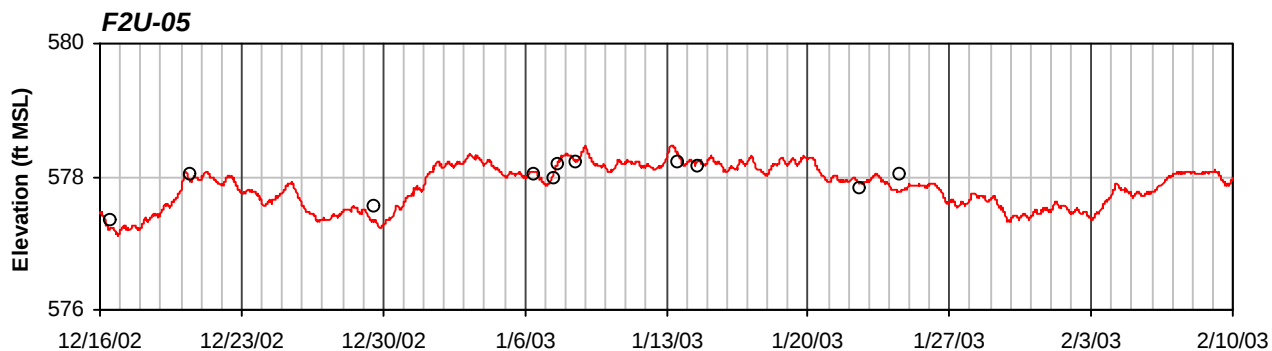
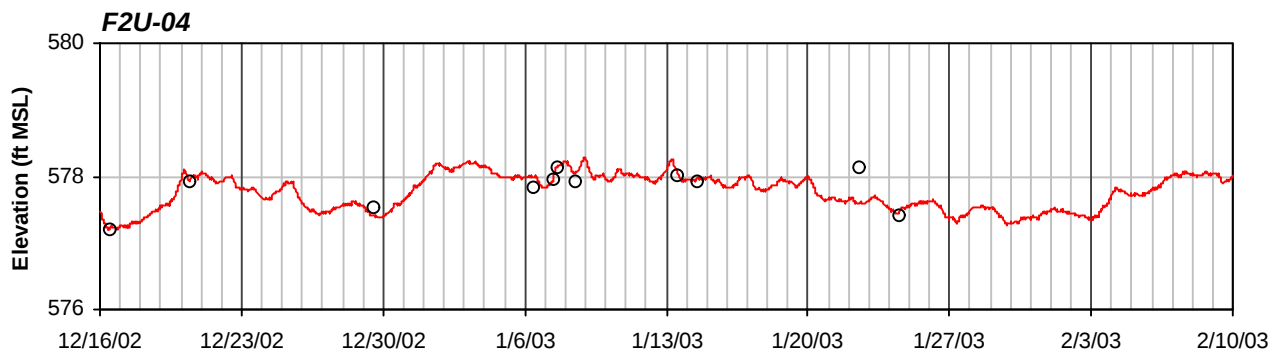
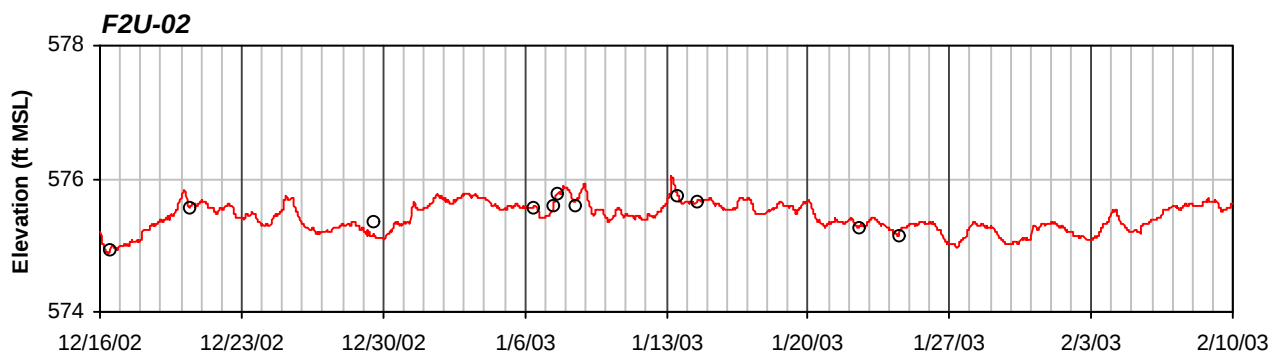
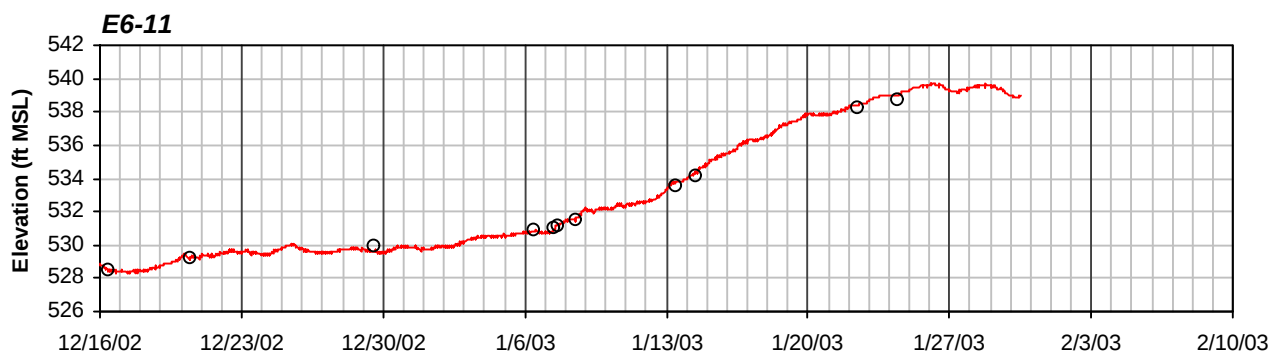


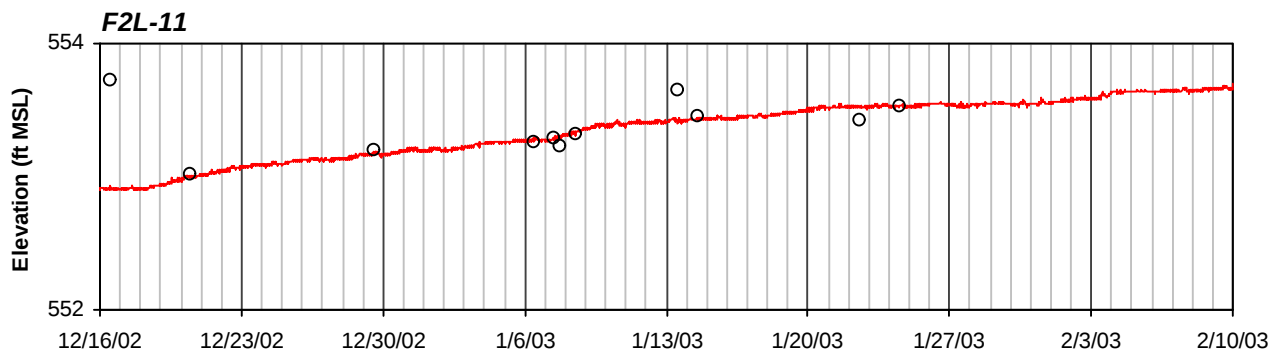
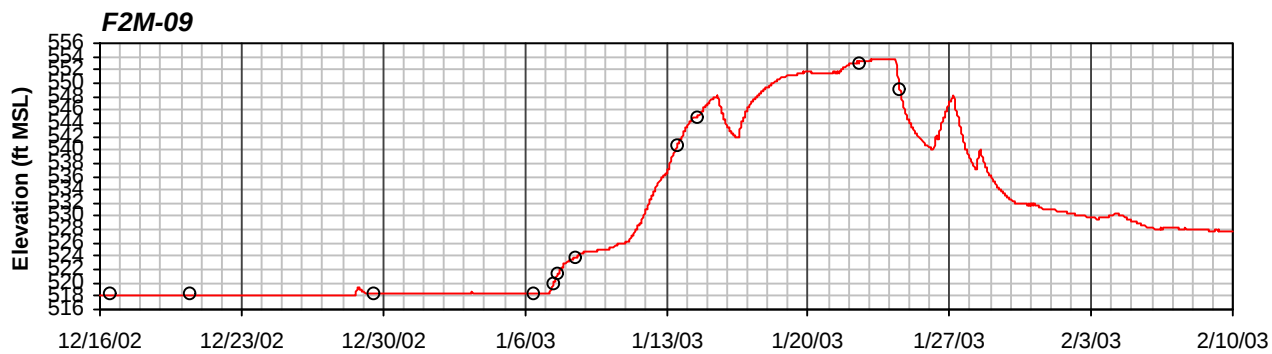
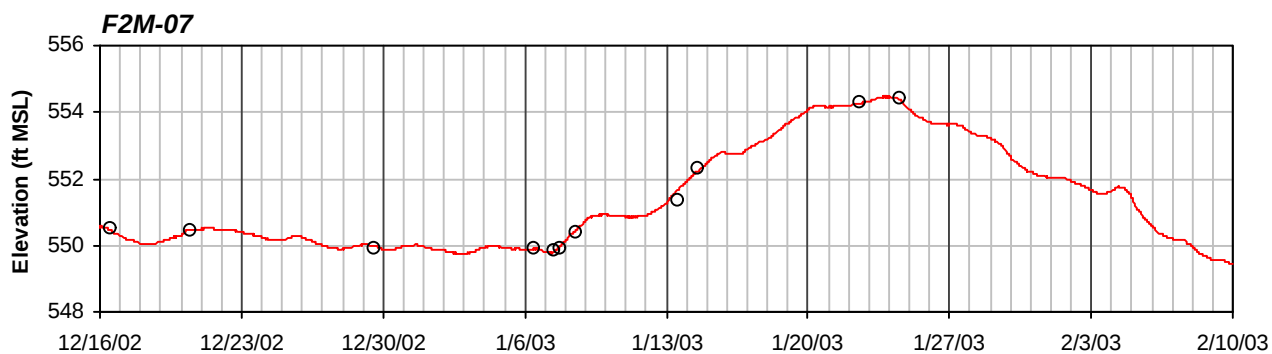
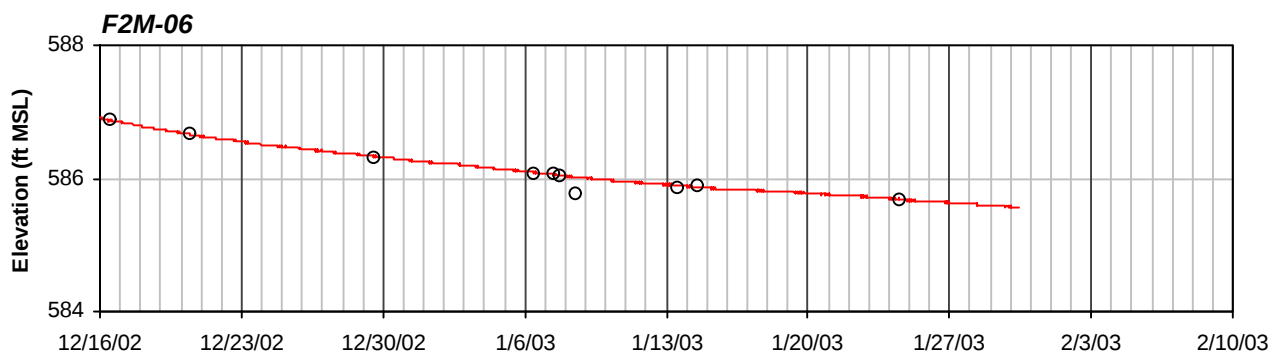


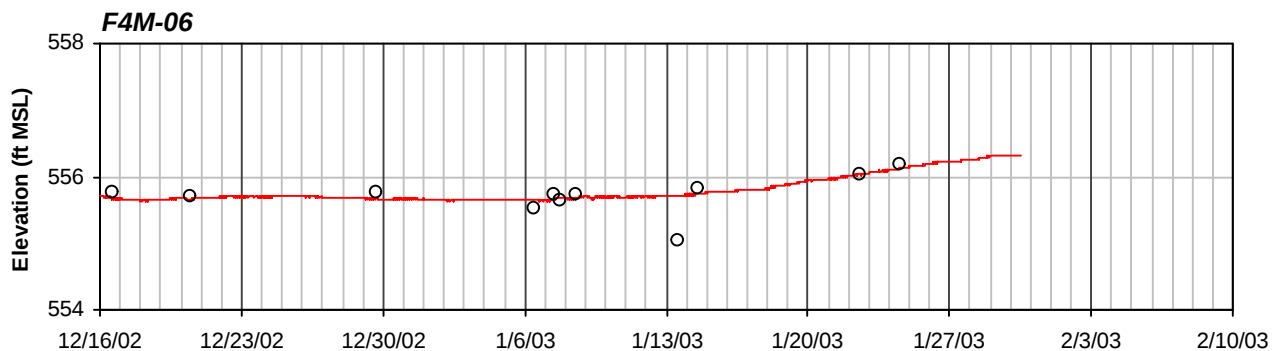
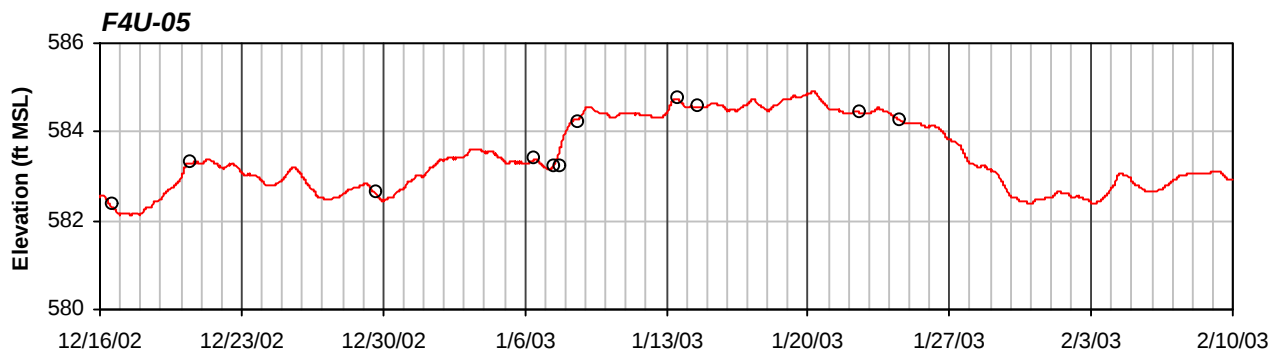
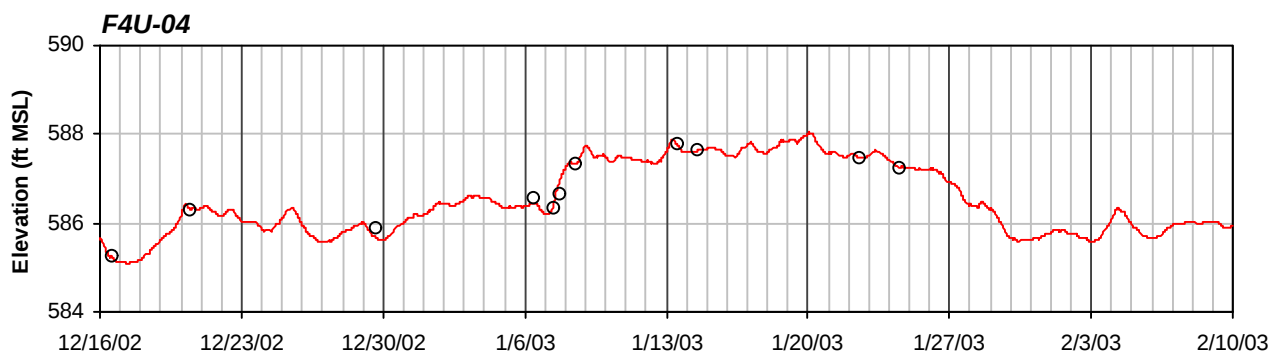
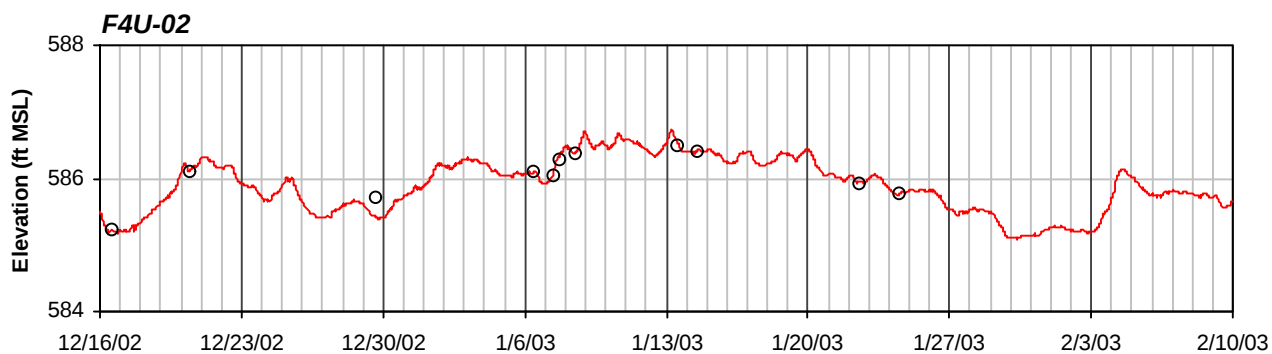


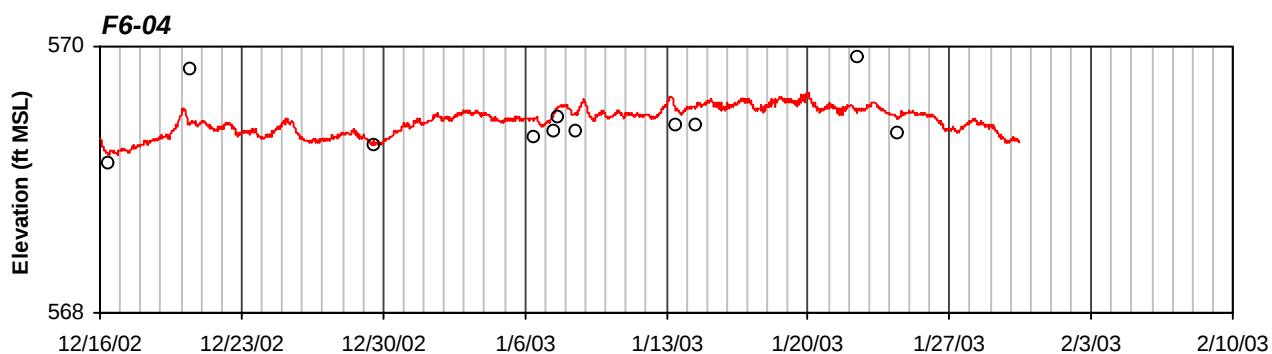
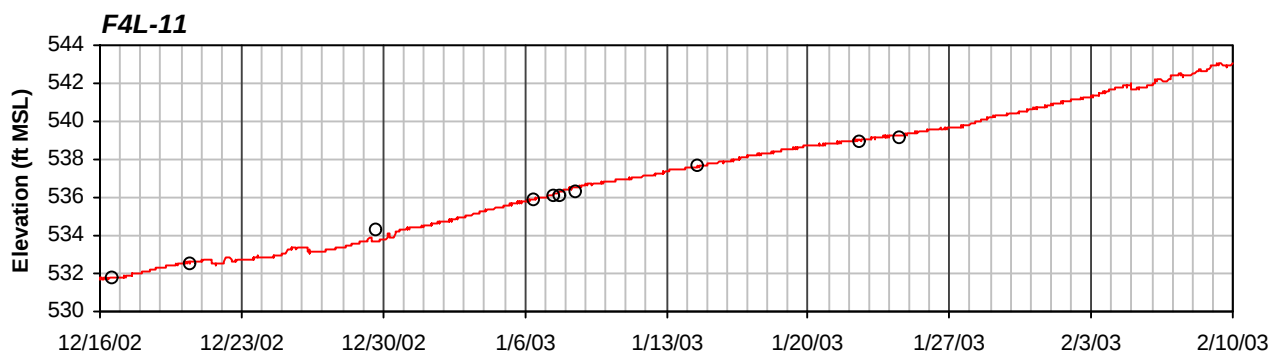
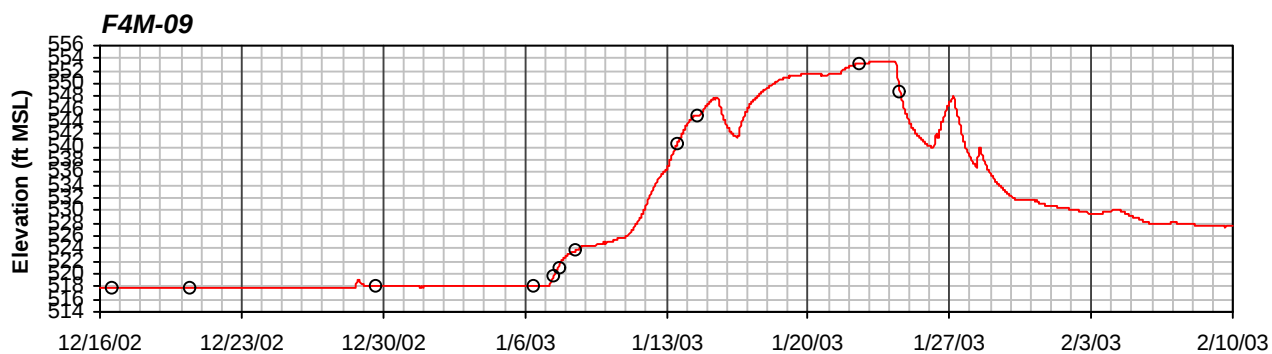
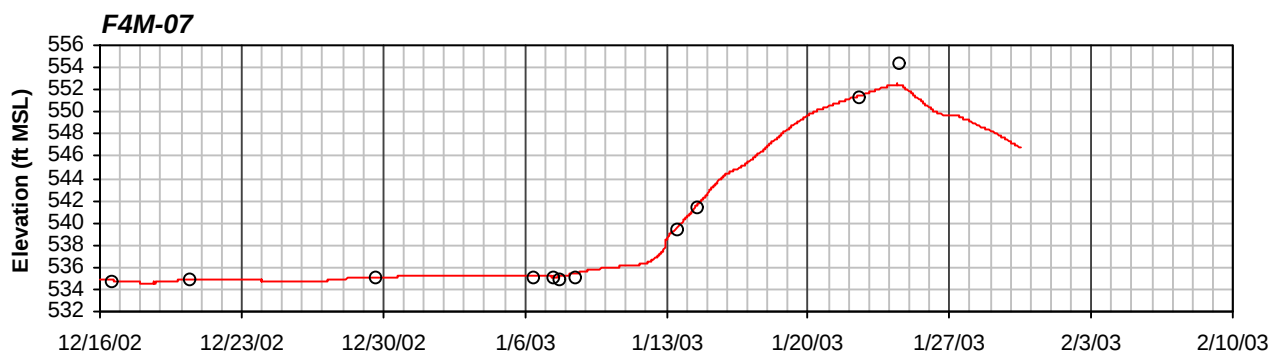


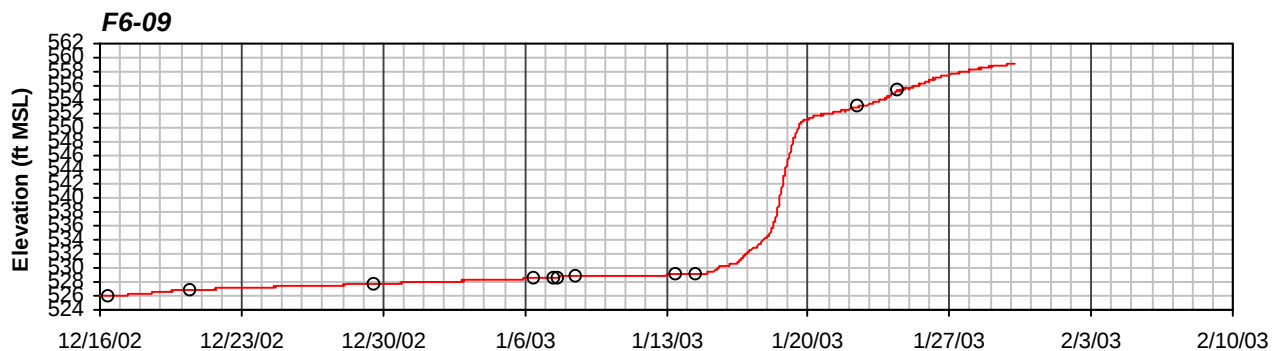
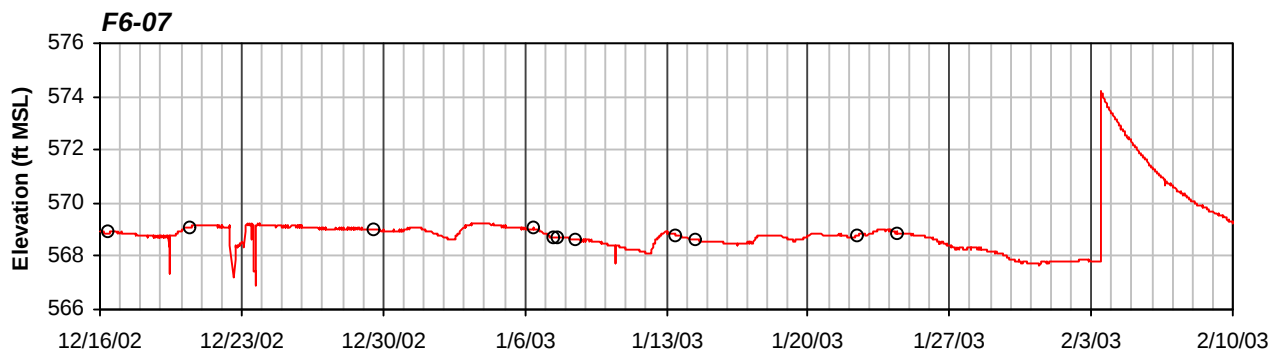
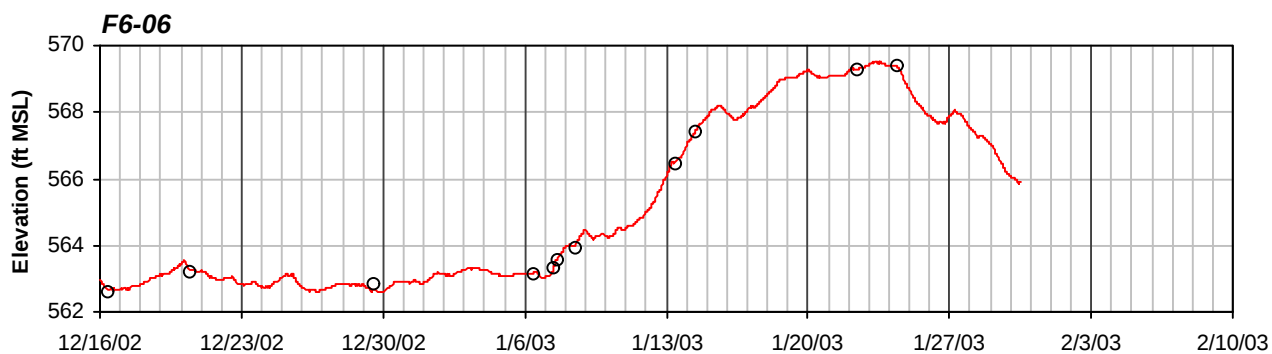
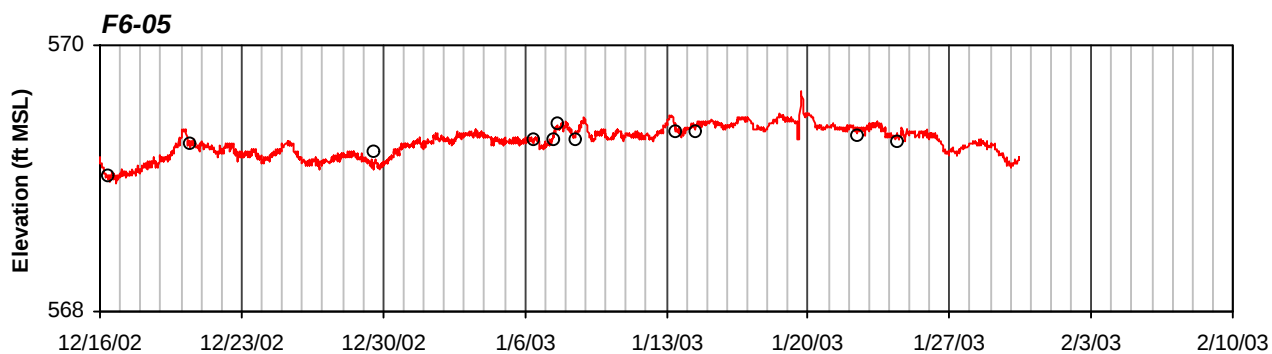


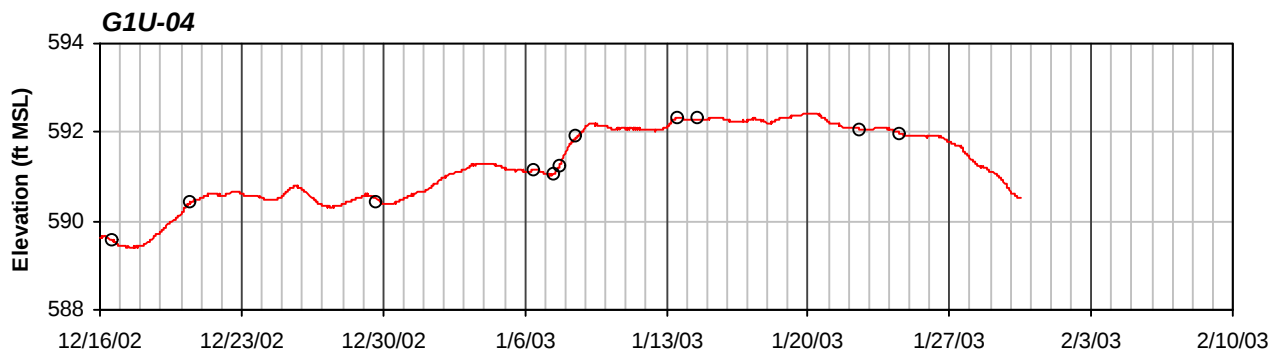
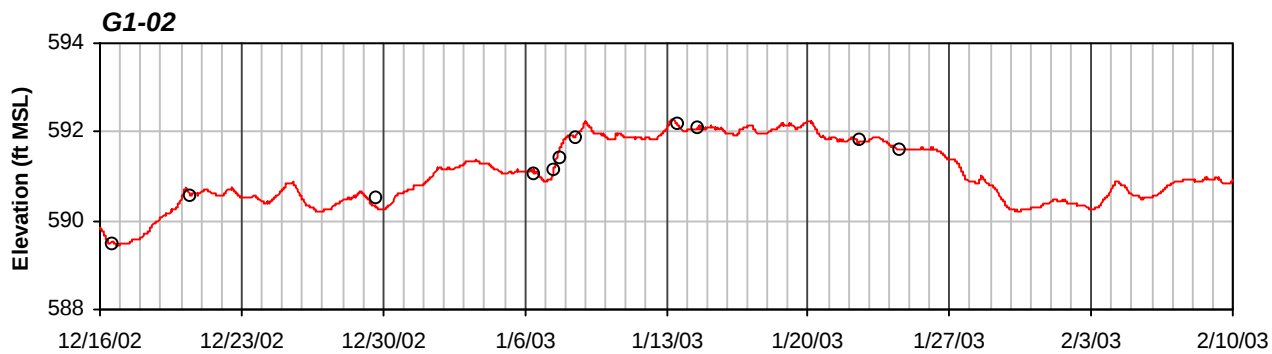
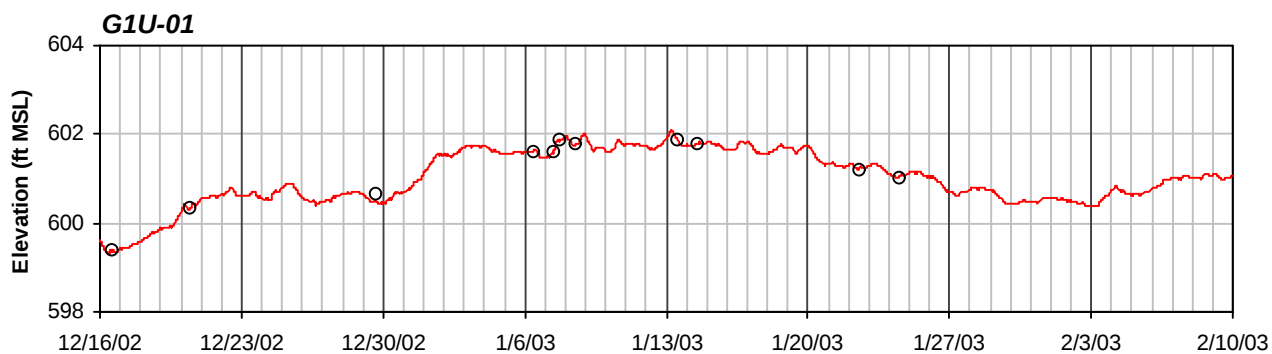
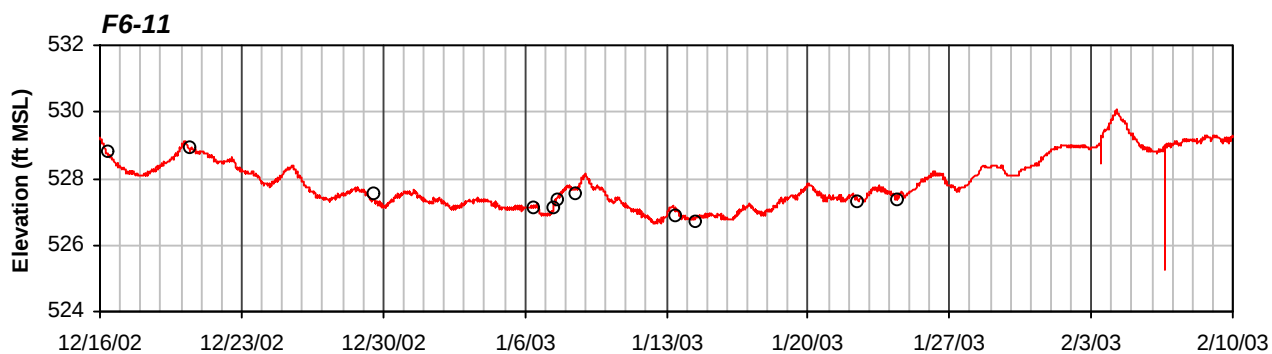


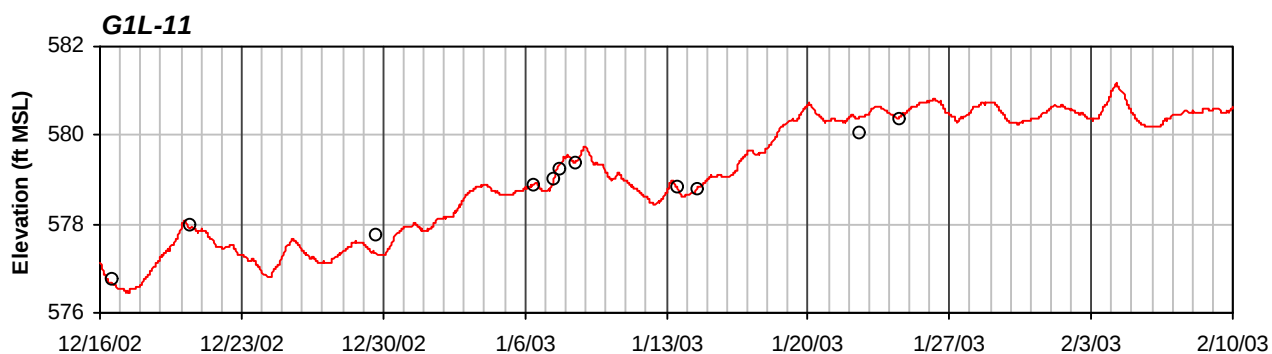
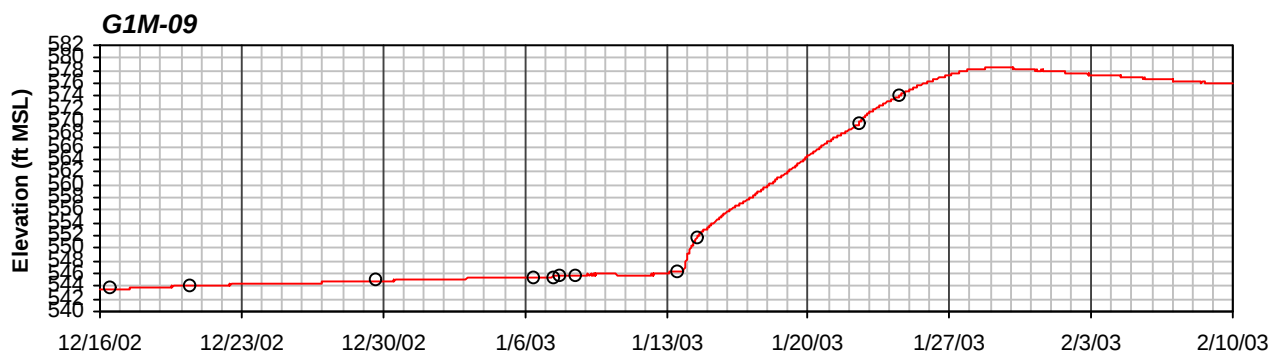
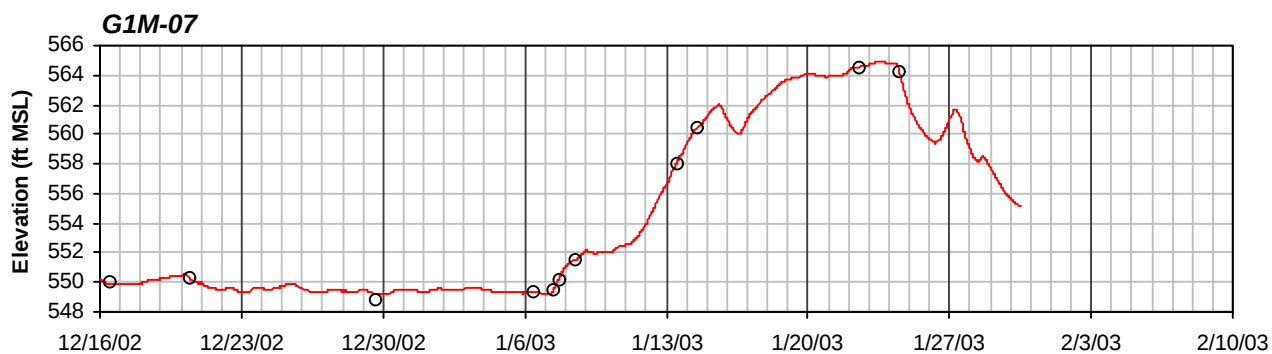
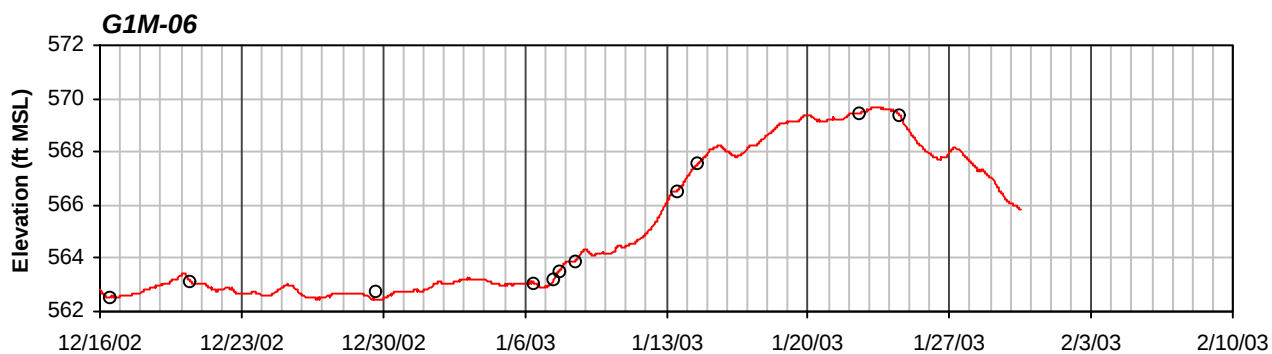


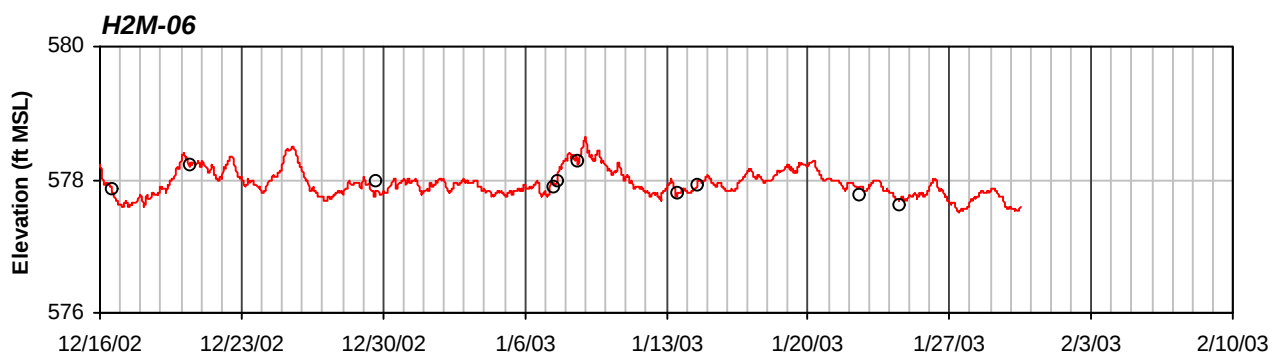
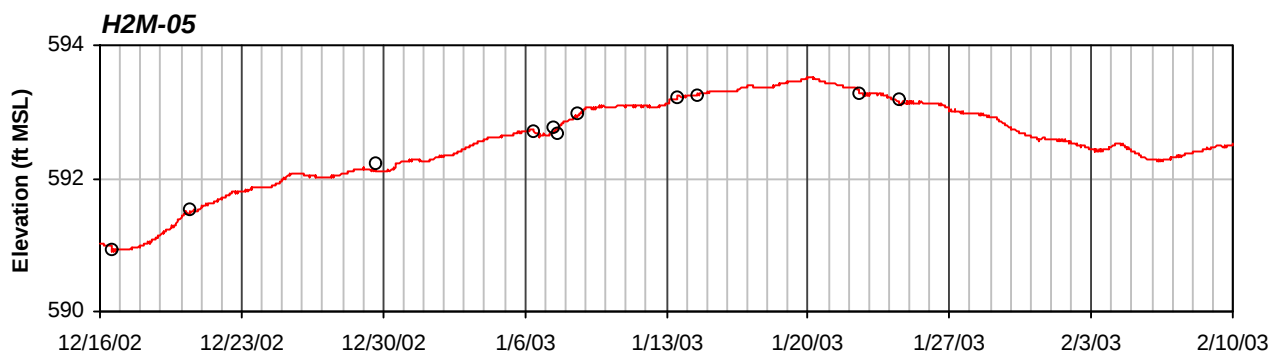
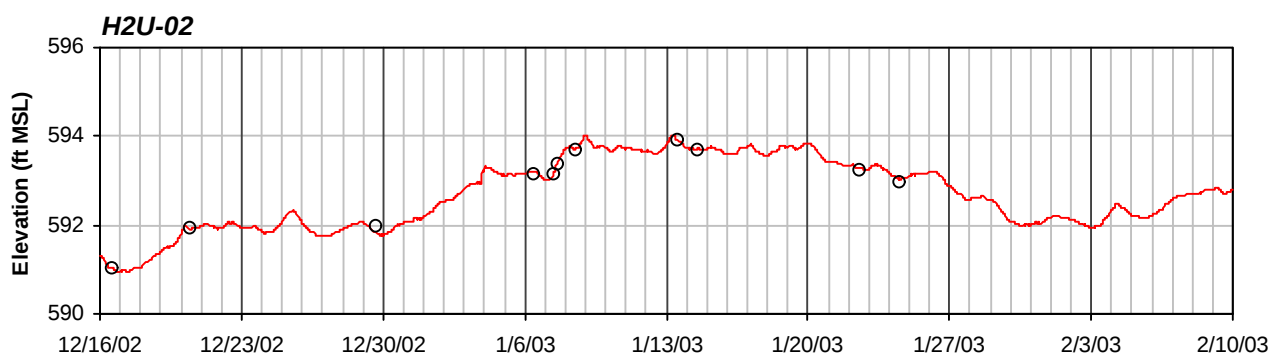
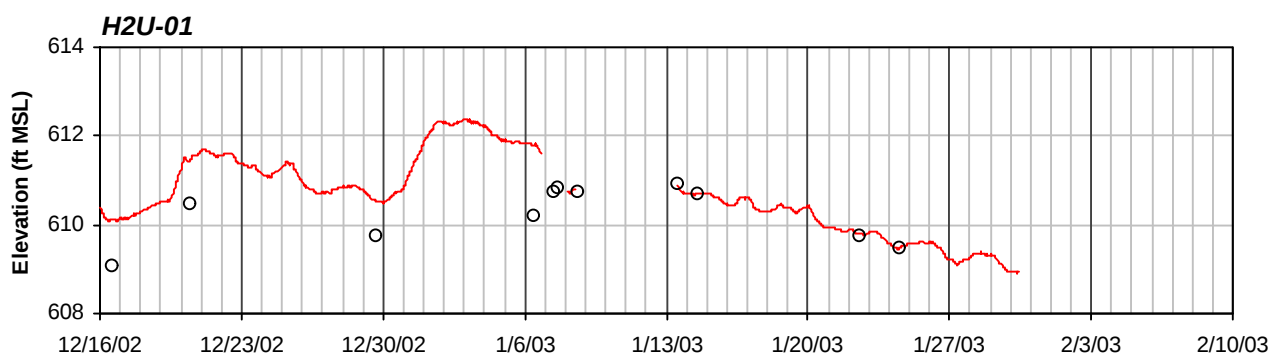


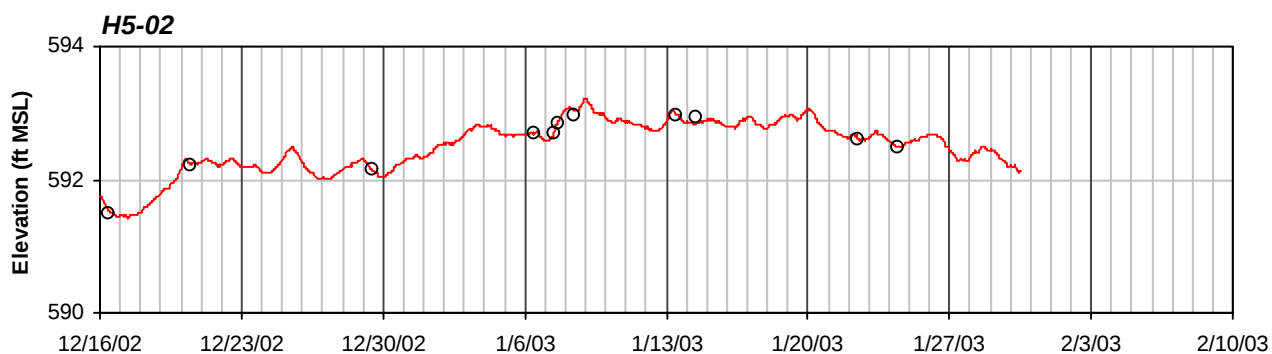
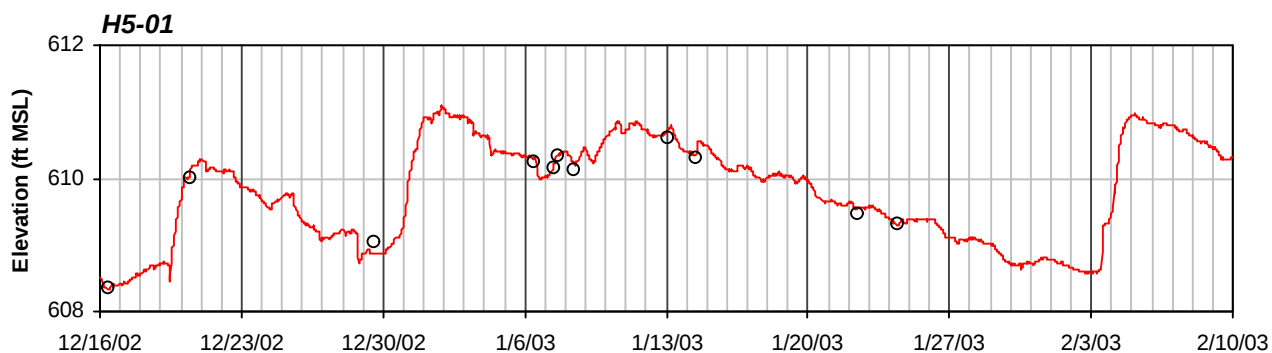
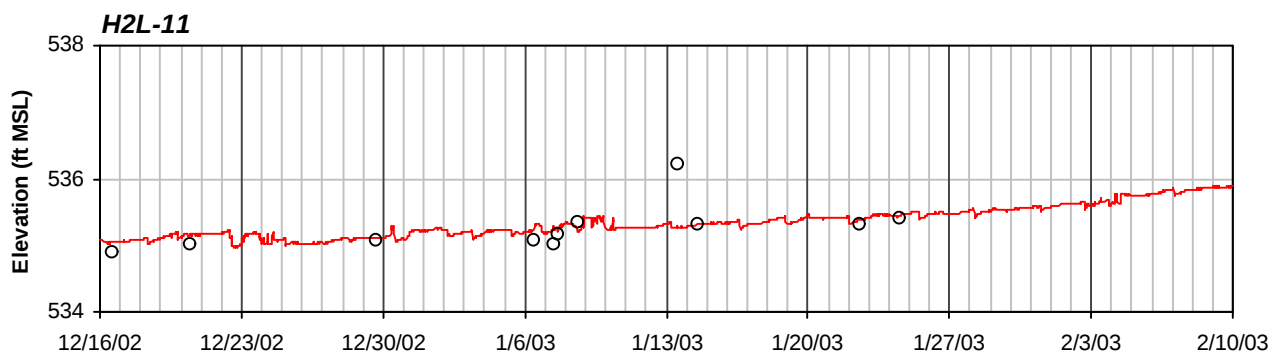
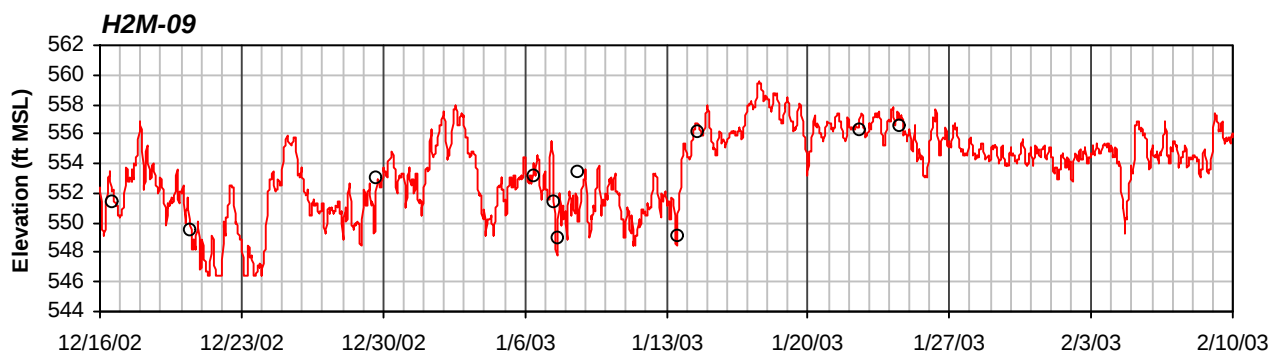


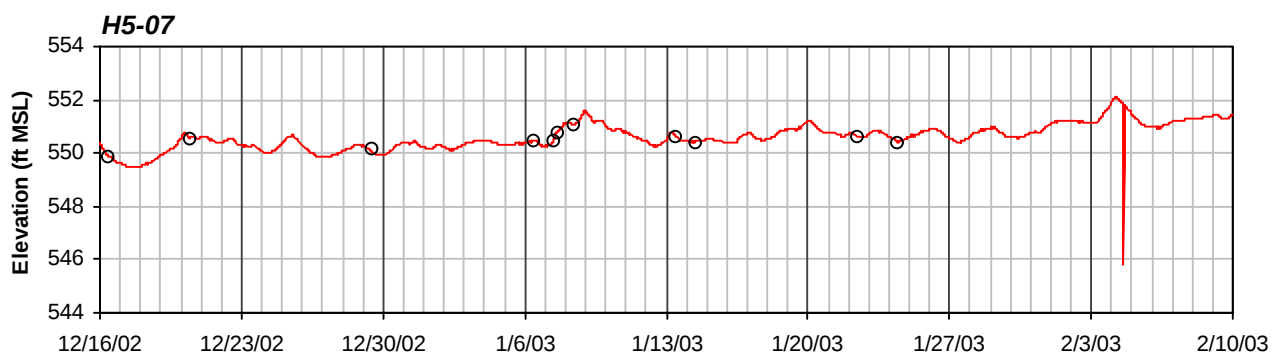
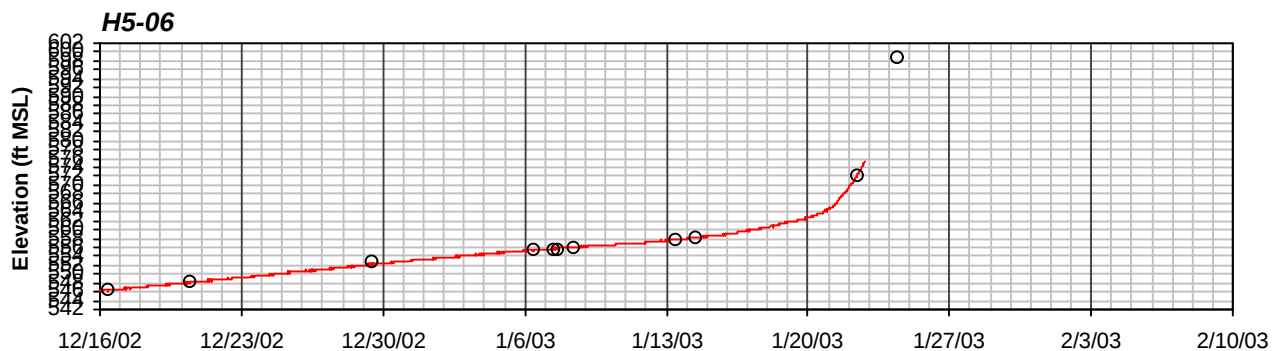
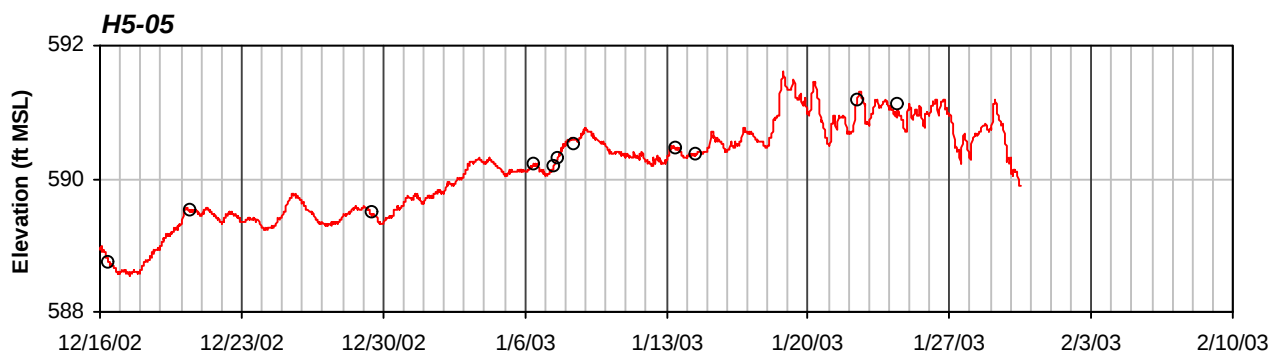
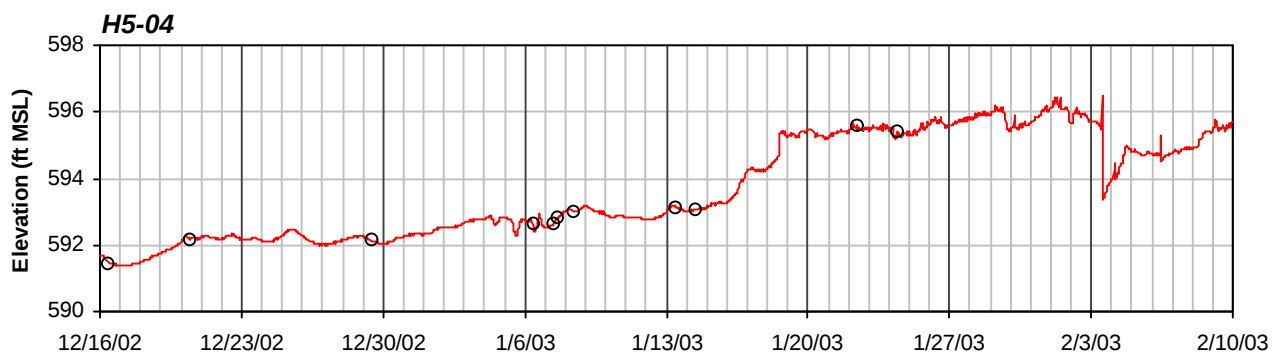


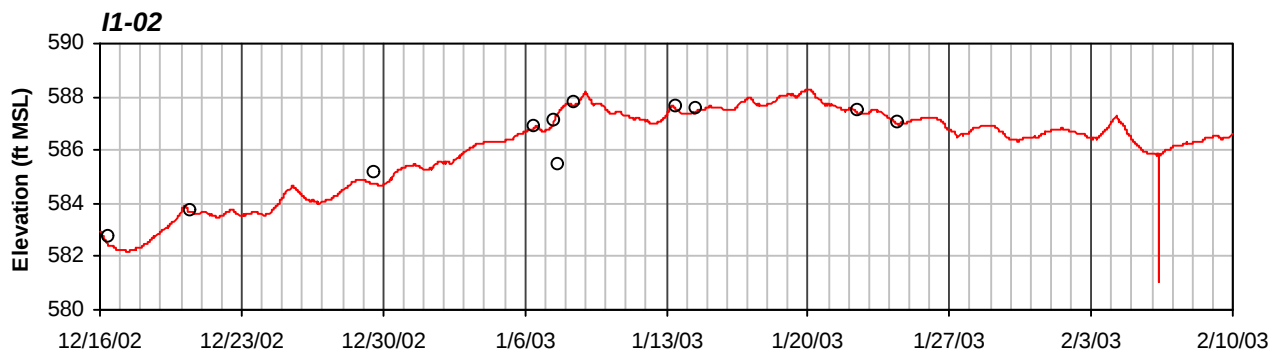
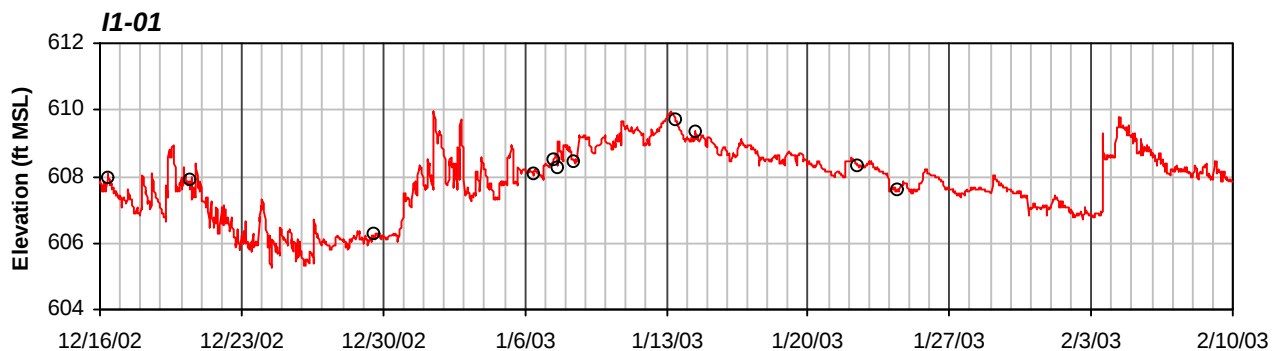
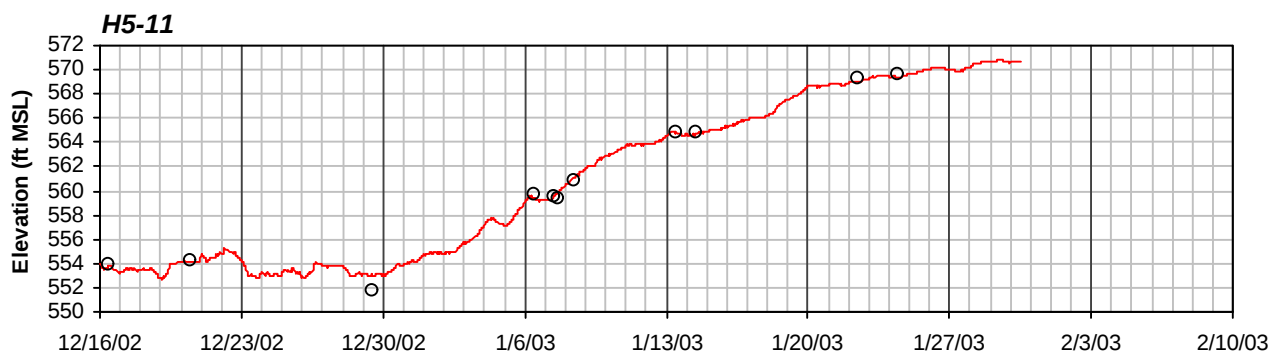
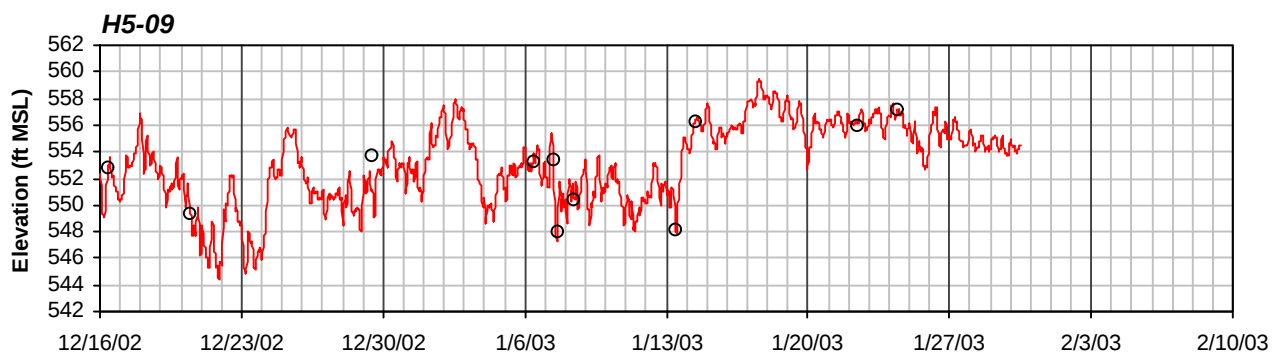






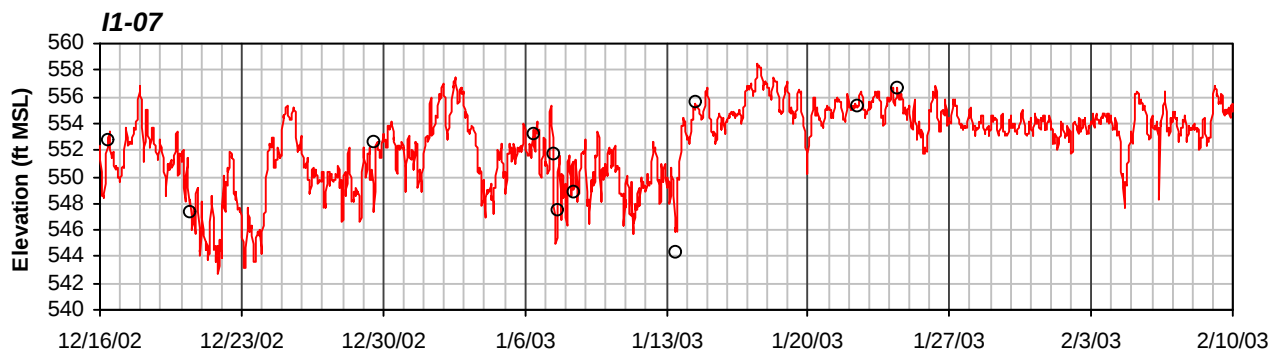
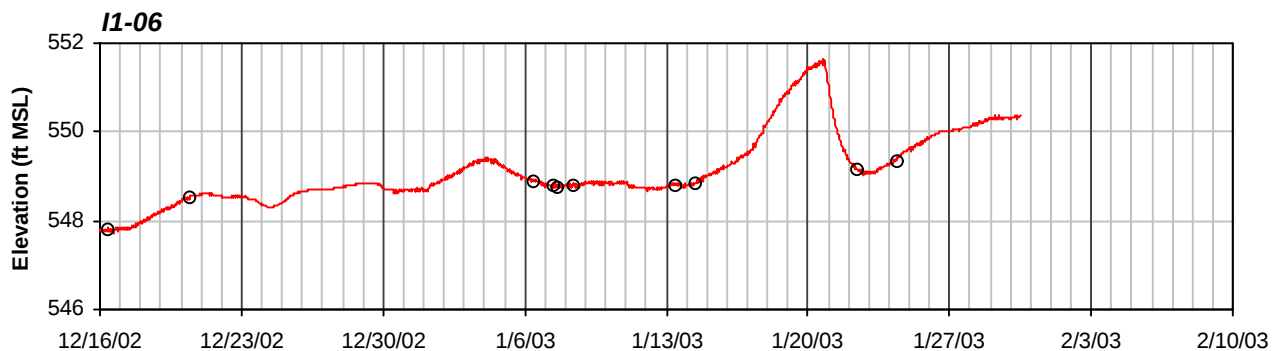
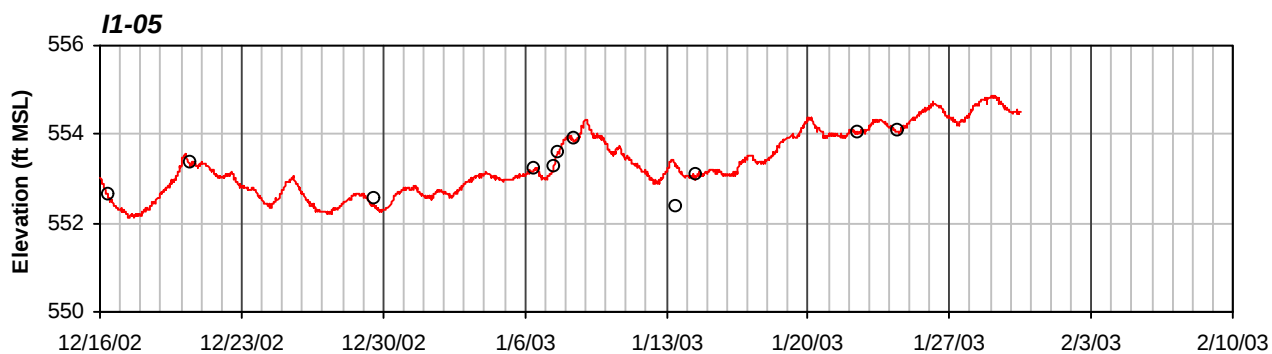
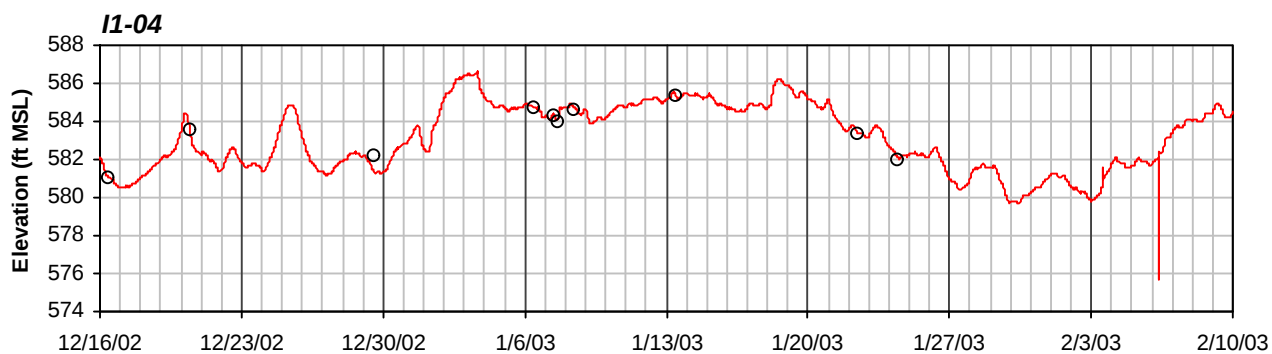


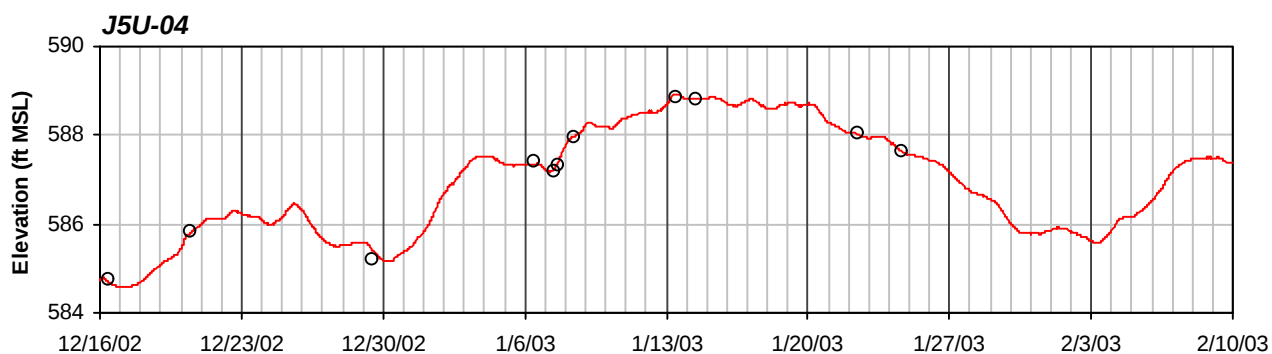
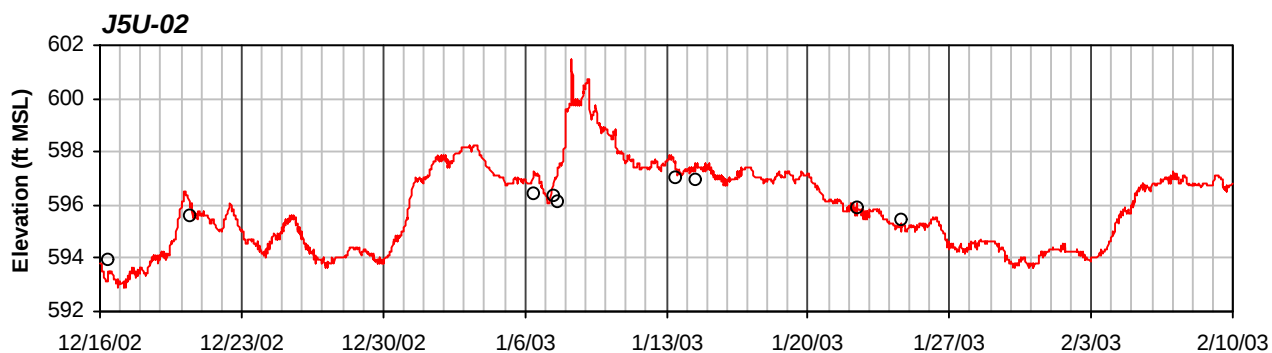
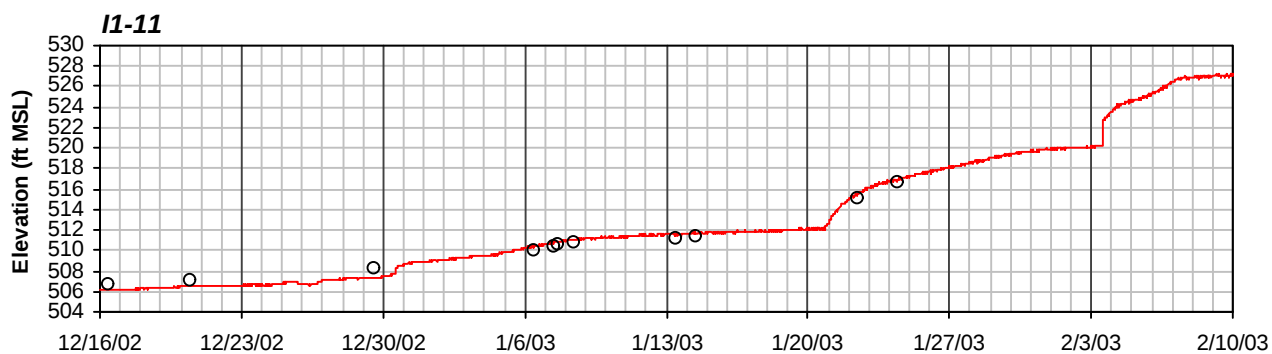
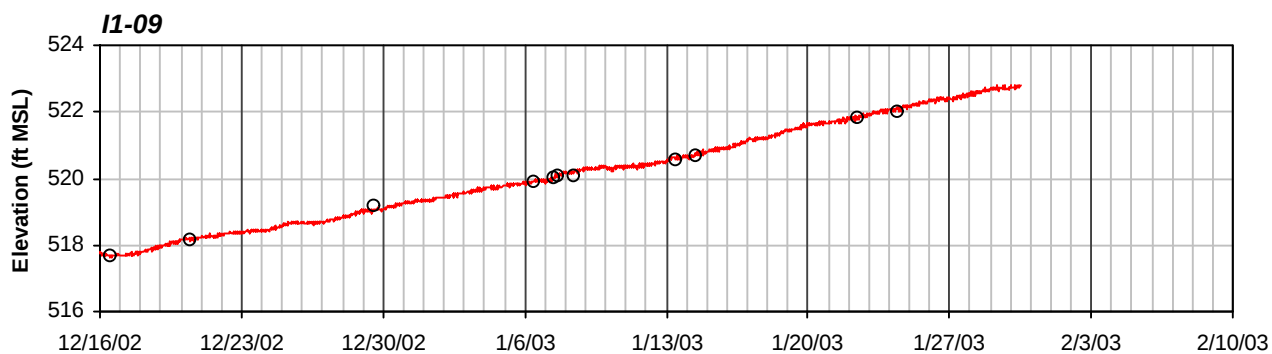


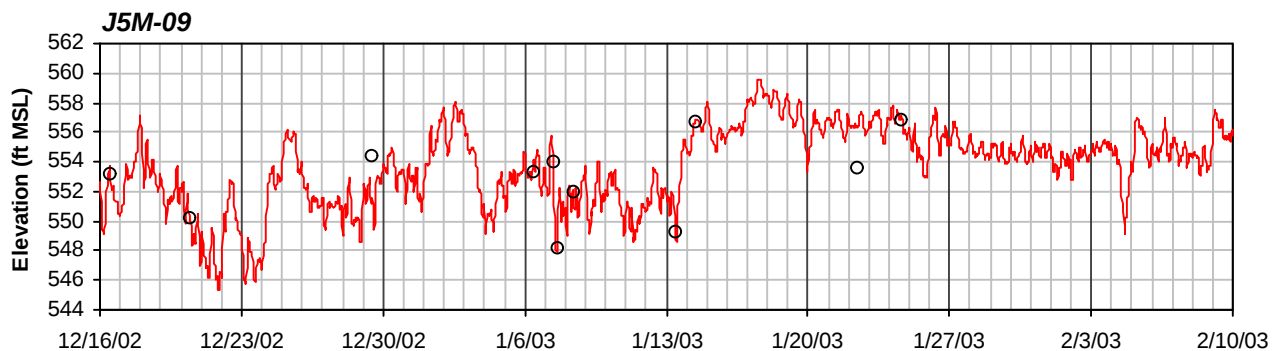
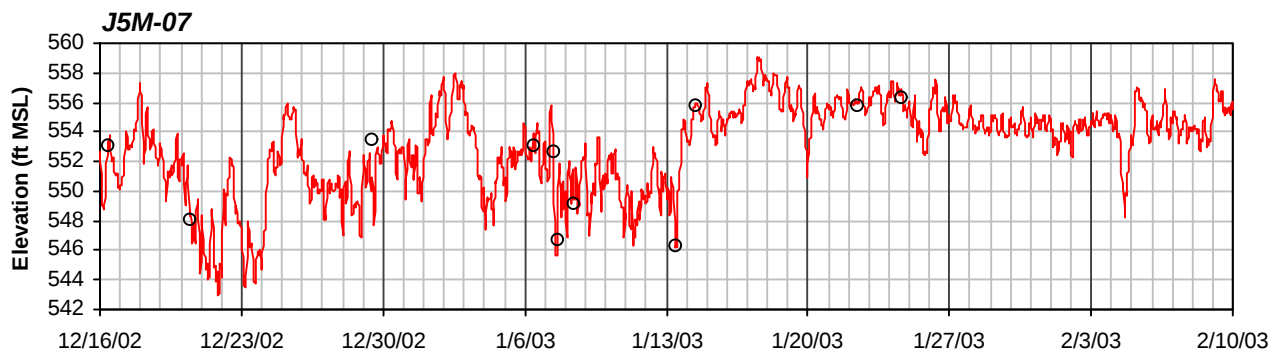
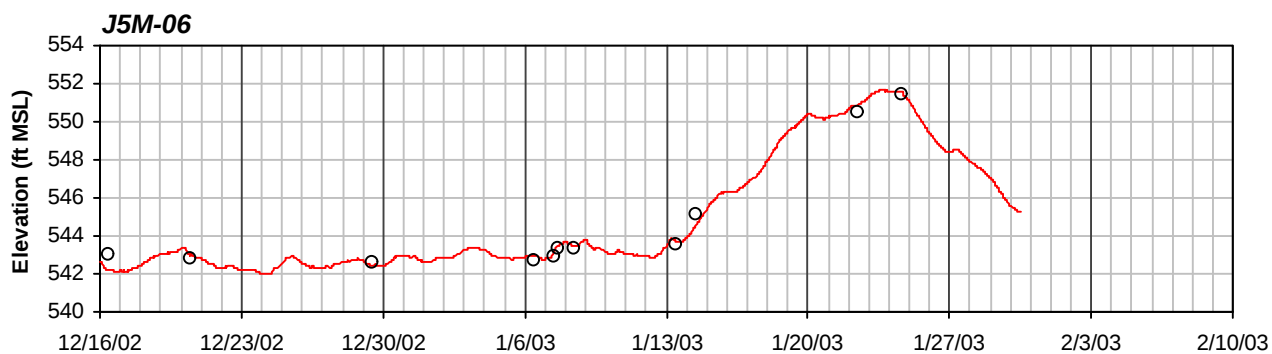
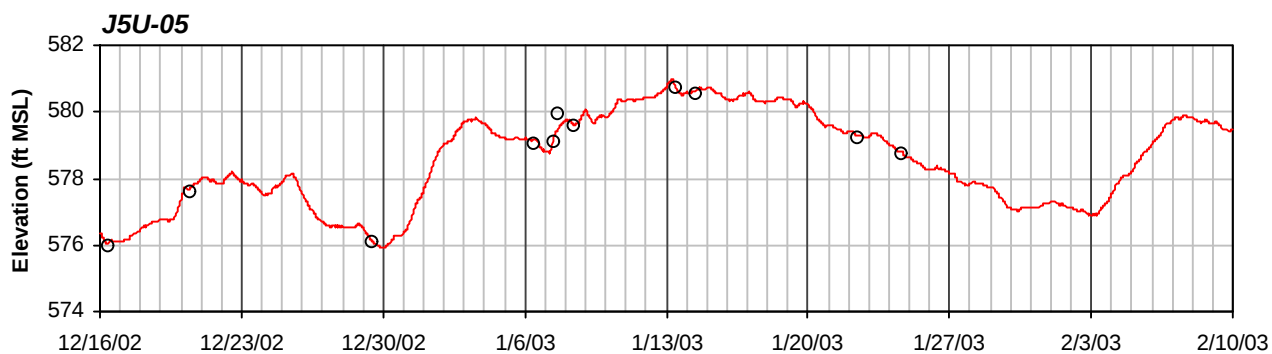


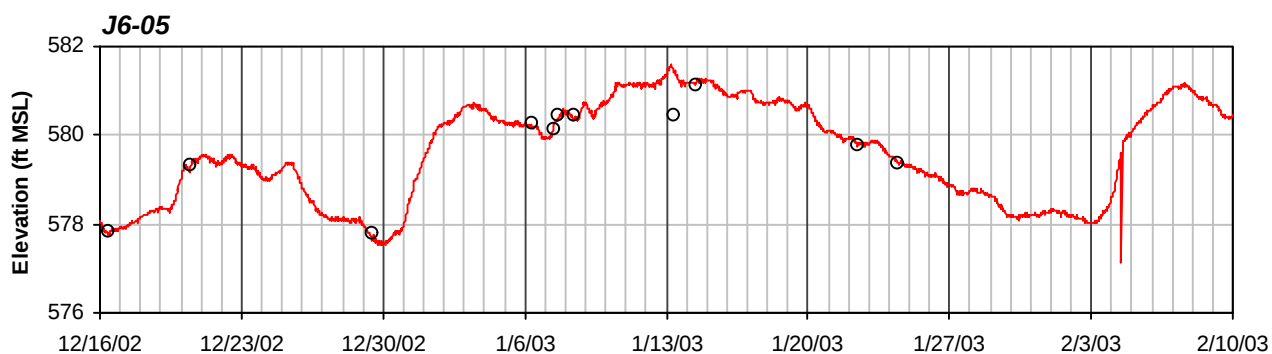
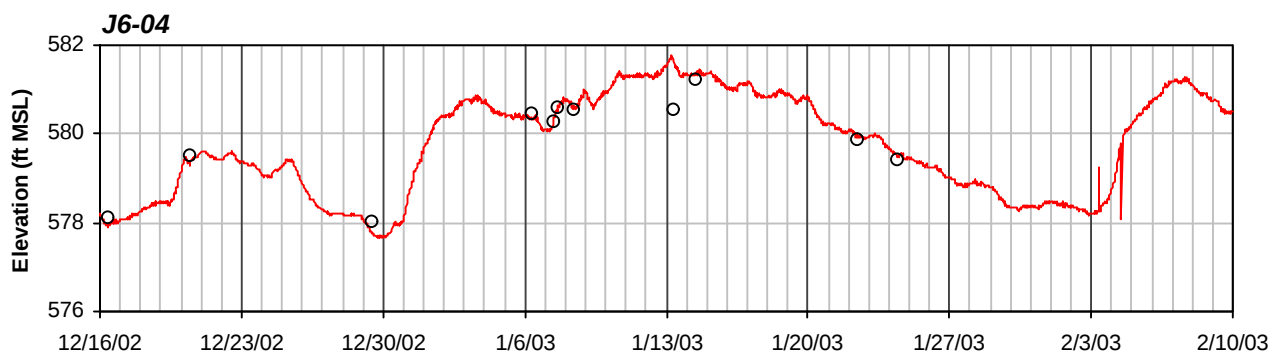
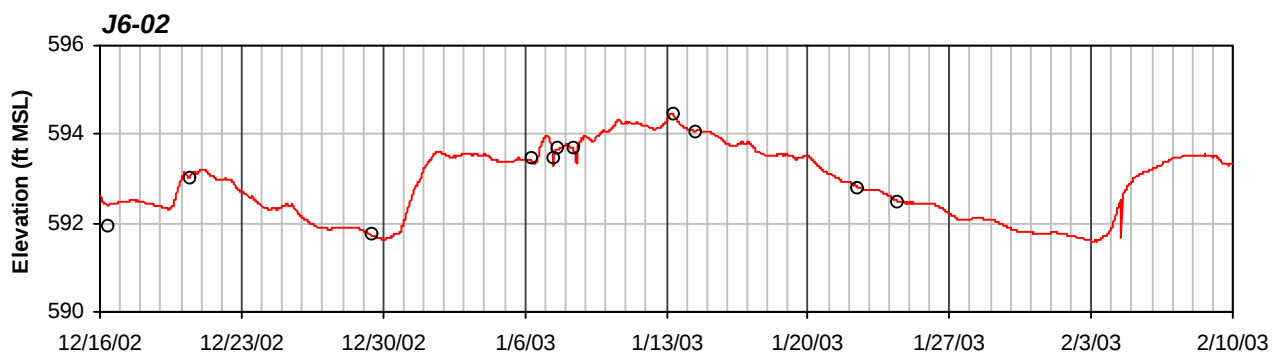
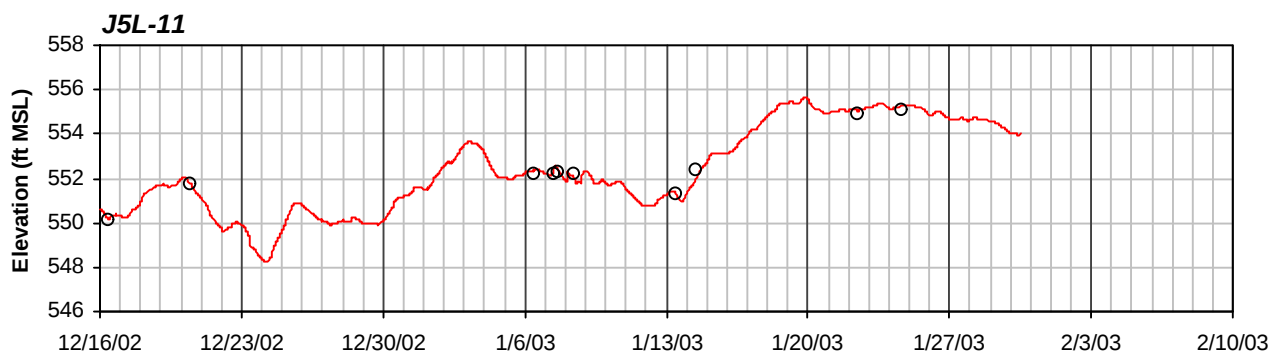
PIEZOMETER HYDROGRAPHS
HYDE PARK LANDFILL
Town of Niagara, New York

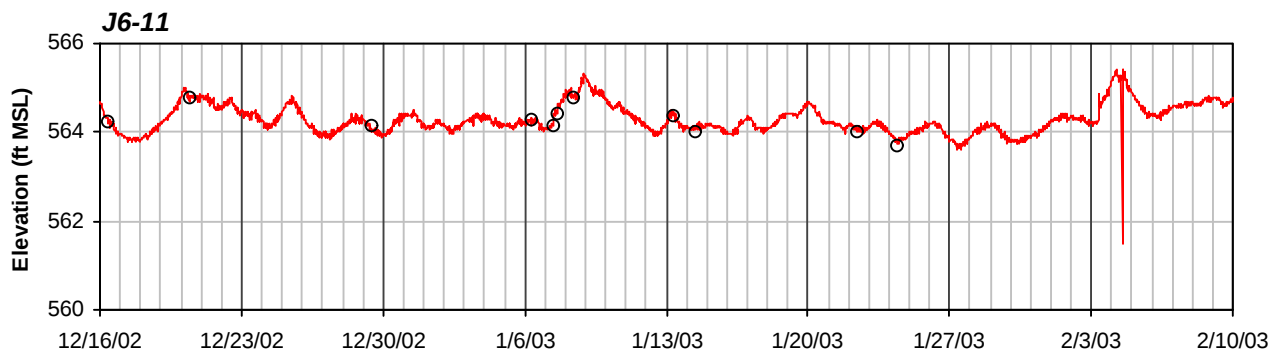
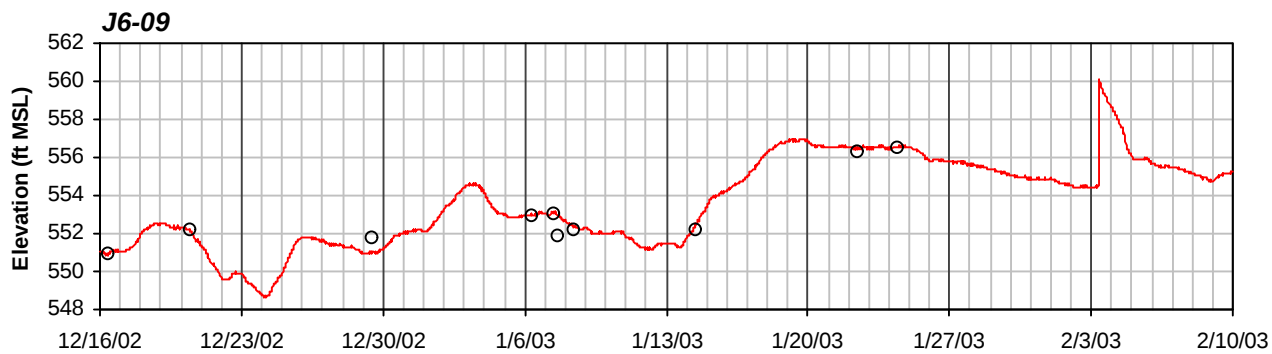
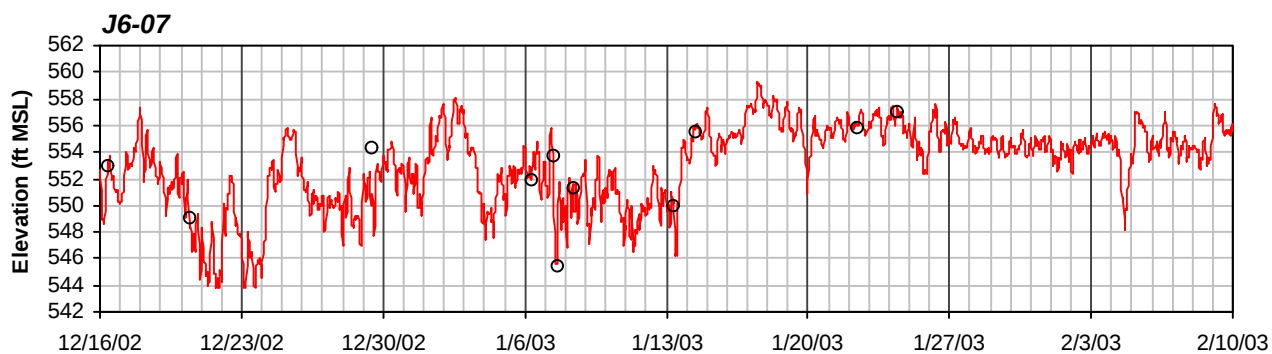
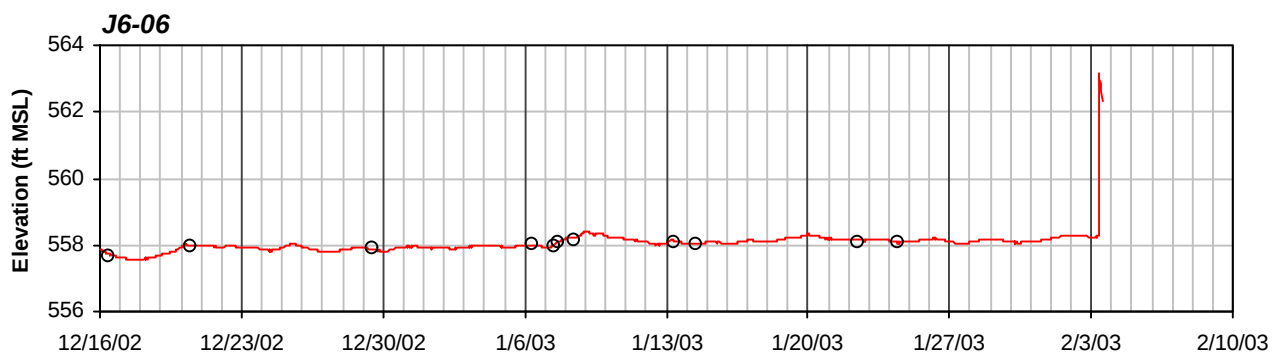
28-Feb-03

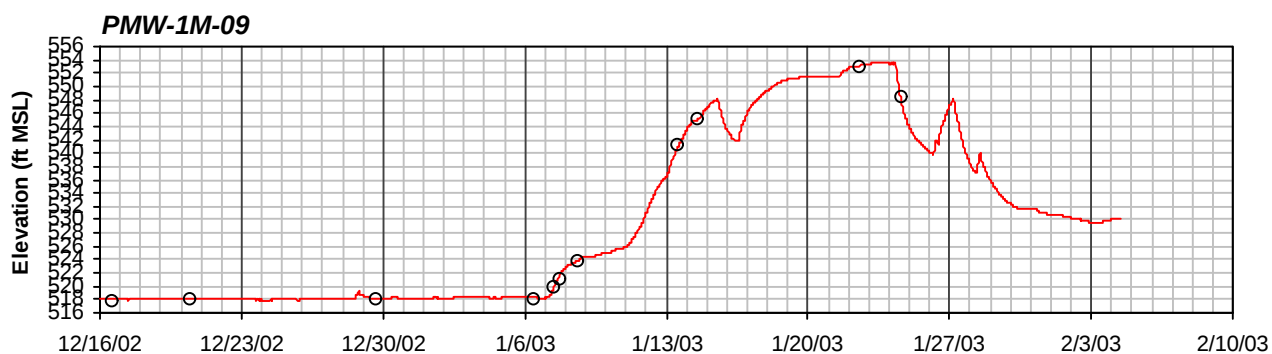
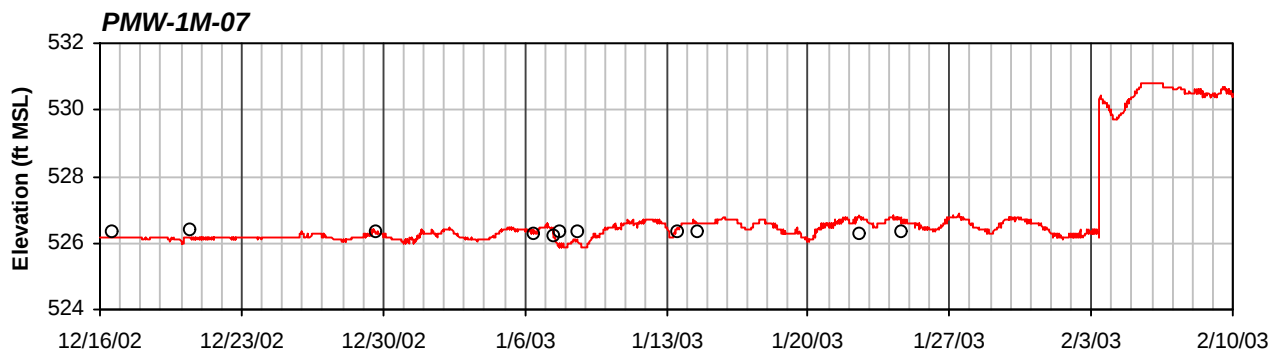
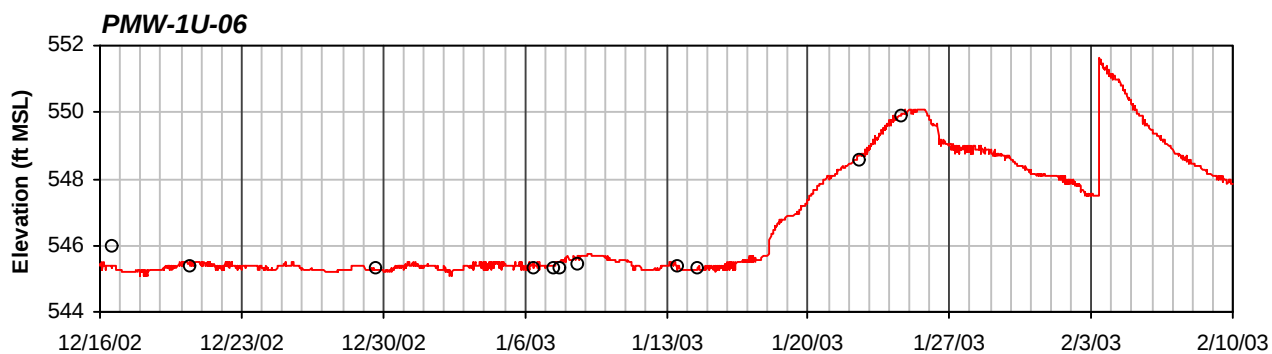
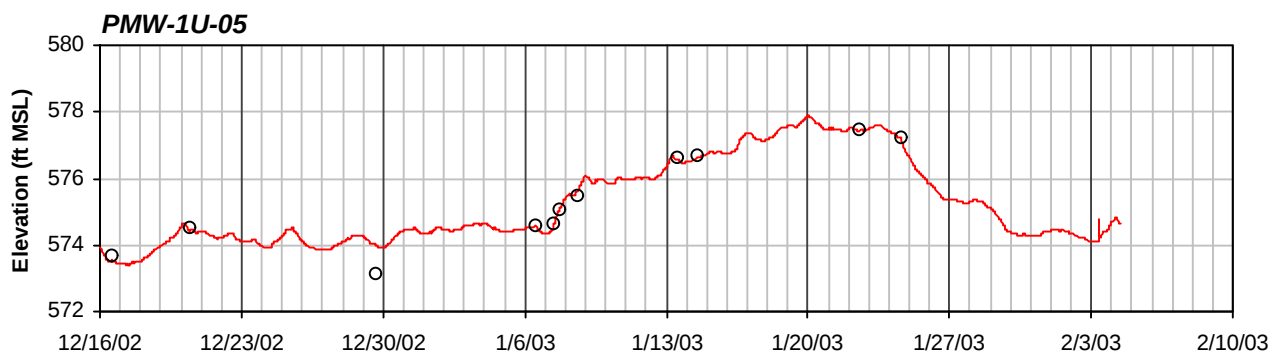


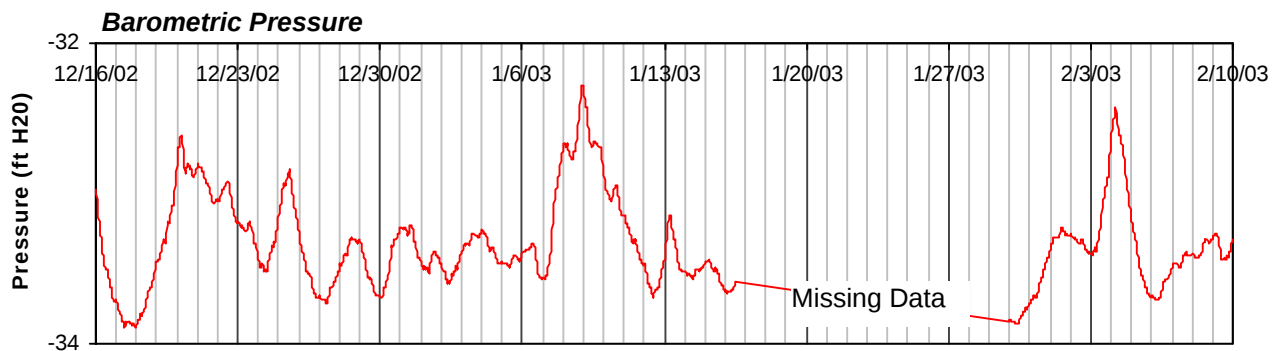
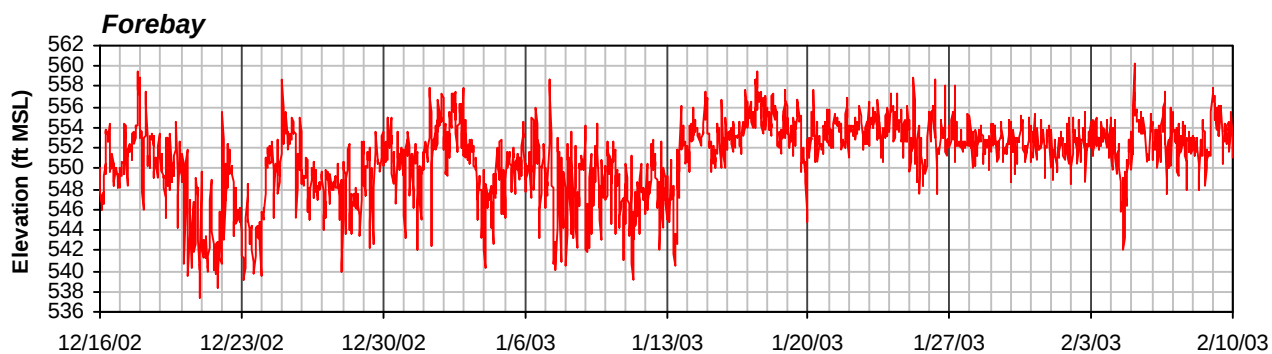
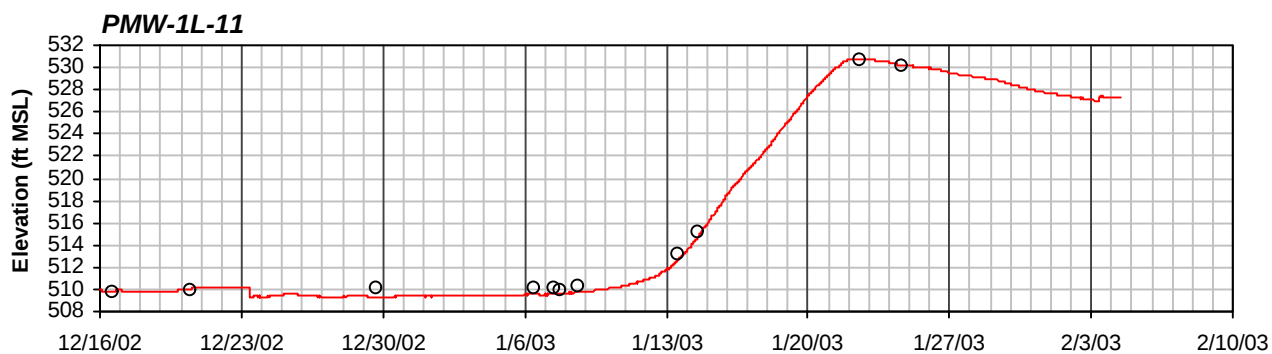












B2. Hydrographs by Flow Zones

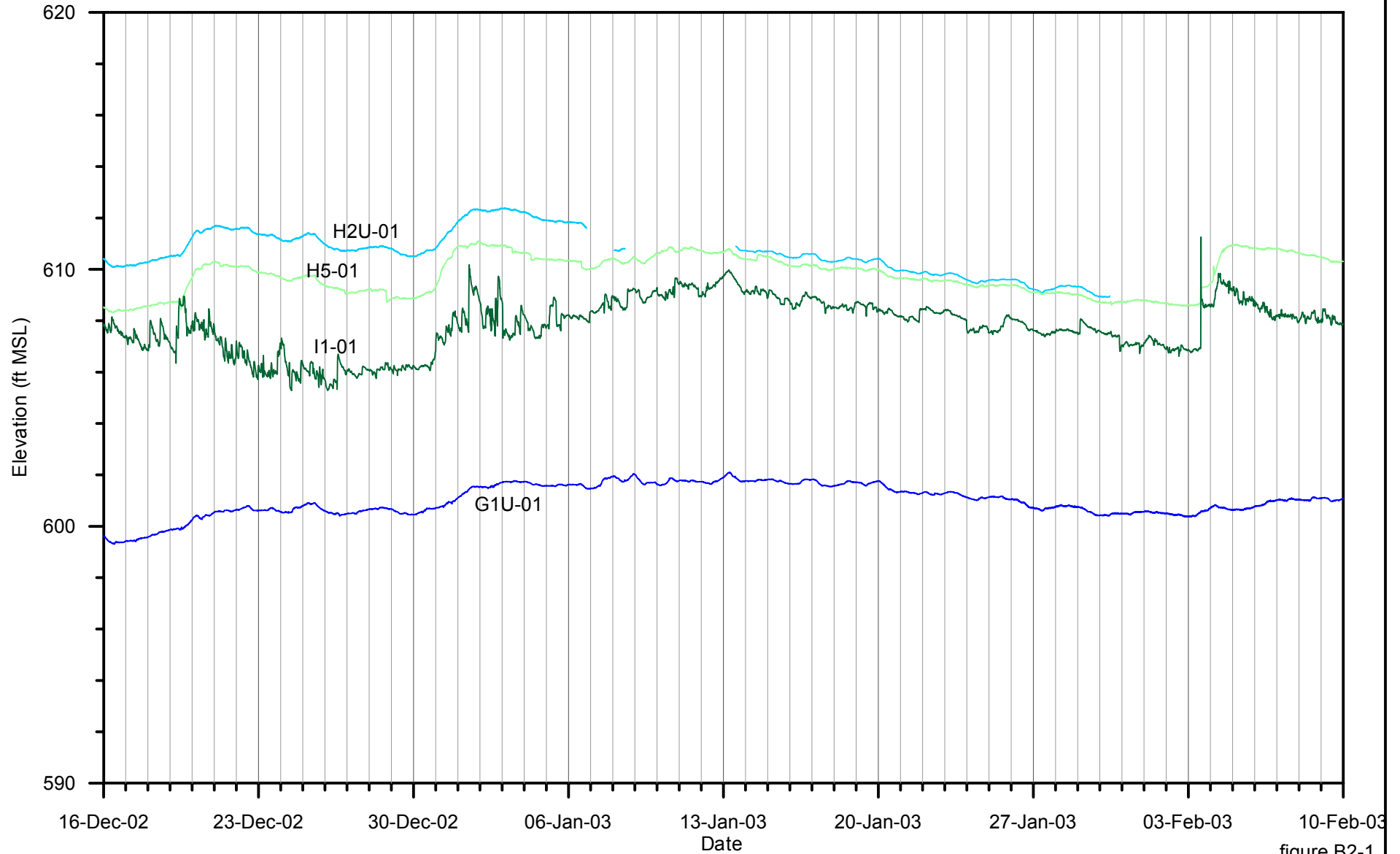


figure B2-1

FLOW ZONE 1 HYDROGRAPHS
SITE CHARACTERIZATION REPORT
HYDE PARK LANDFILL SITE
Town of Niagara, New York

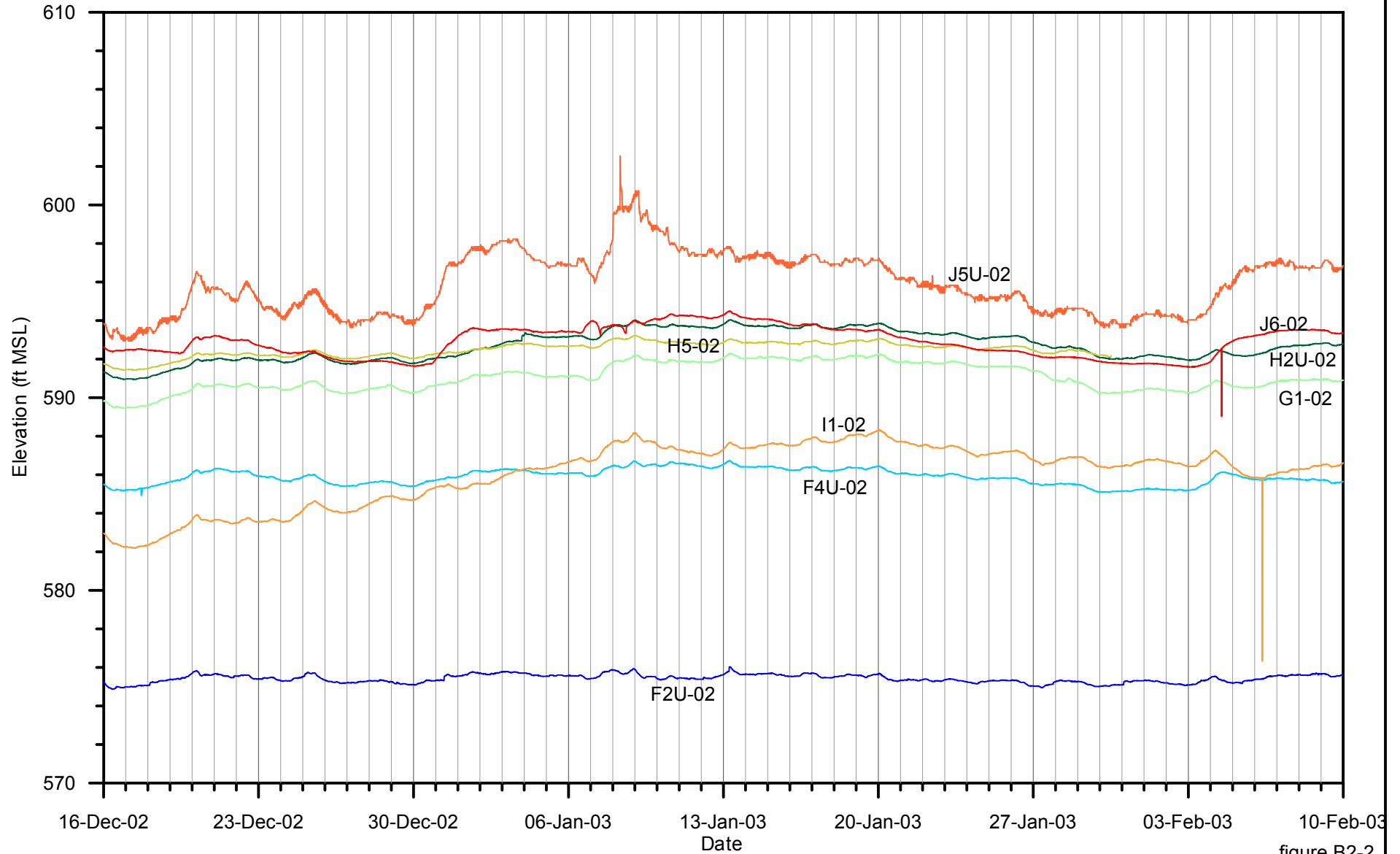


figure B2-2

FLOW ZONE 2 HYDROGRAPHS
 SITE CHARACTERIZATION REPORT
 HYDE PARK LANDFILL SITE
 Town of Niagara, New York

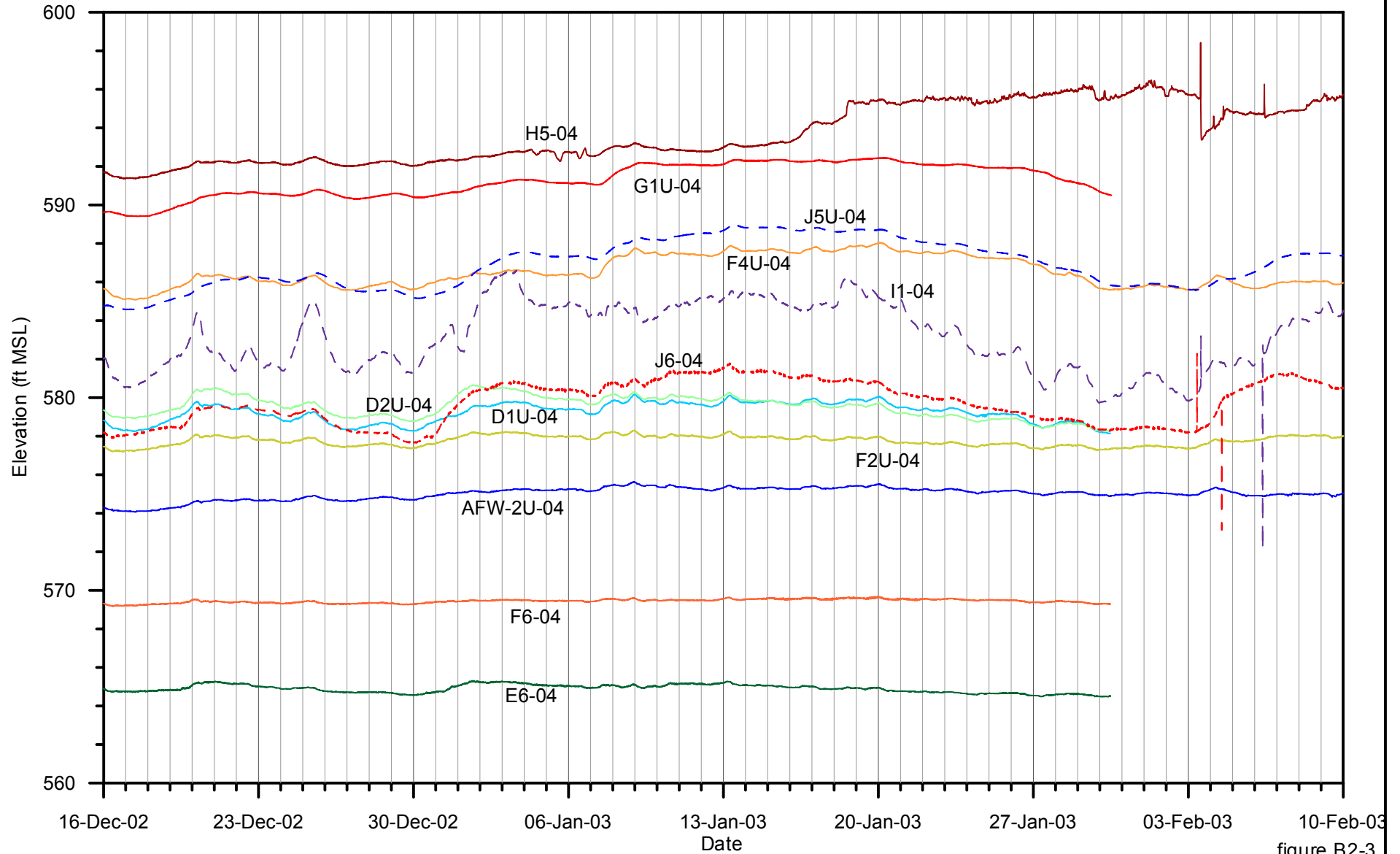


figure B2-3

FLOW ZONE 4 HYDROGRAPHS
 SITE CHARACTERIZATION REPORT
 HYDE PARK LANDFILL SITE
 Town of Niagara, New York

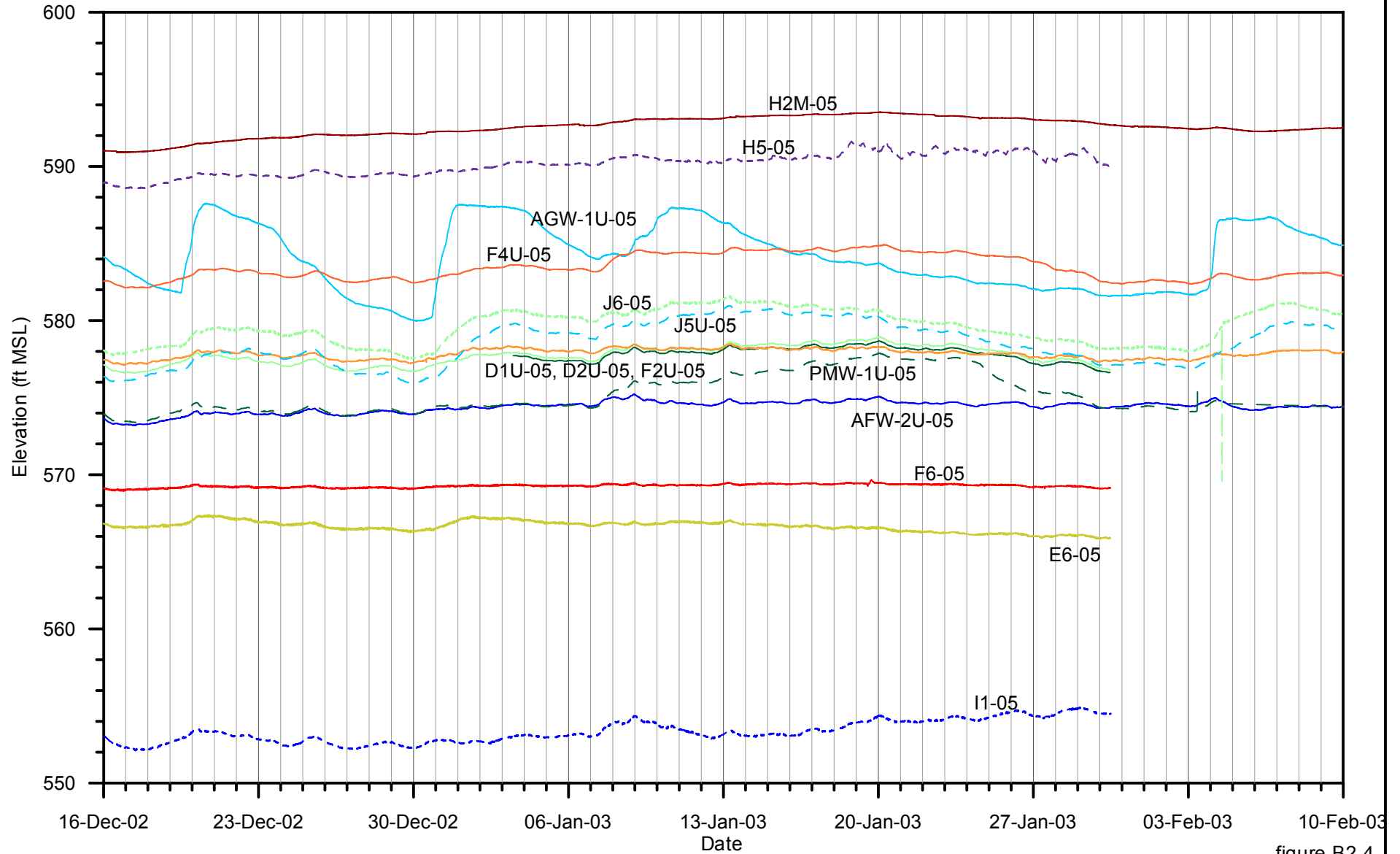
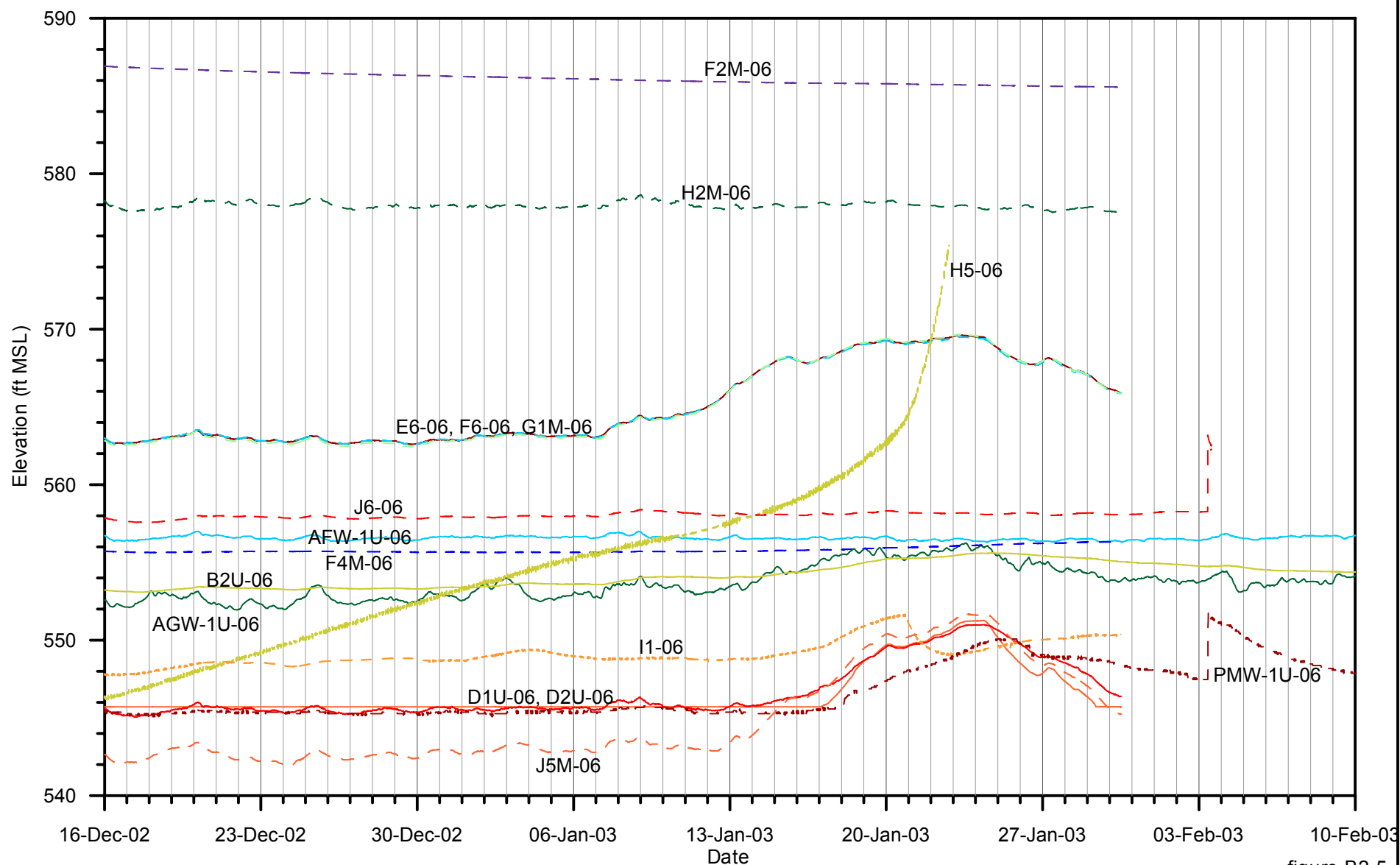


figure B2-4

FLOW ZONE 5 HYDROGRAPHS
 SITE CHARACTERIZATION REPORT
 HYDE PARK LANDFILL SITE
 Town of Niagara, New York



ABP-7-06, AFW-2U-06, C3-06 are dry for duration of period.

figure B2-5

FLOW ZONE 6 HYDROGRAPHS
SITE CHARACTERIZATION REPORT
HYDE PARK LANDFILL SITE
Town of Niagara, New York



Miller Springs Remediation Management, Inc.

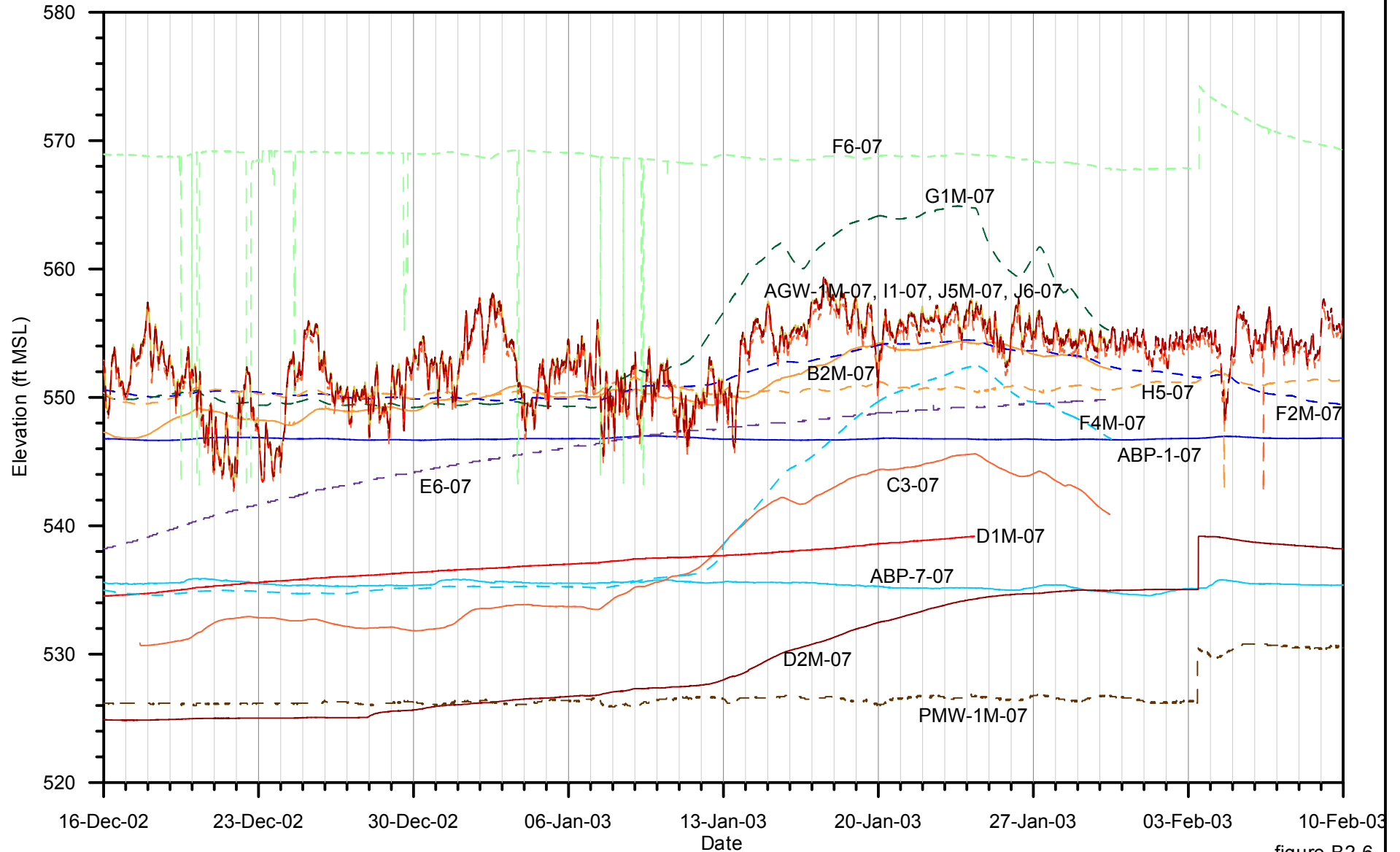


figure B2-6

FLOW ZONE 7 HYDROGRAPHS
 SITE CHARACTERIZATION REPORT
 HYDE PARK LANDFILL SITE
 Town of Niagara, New York

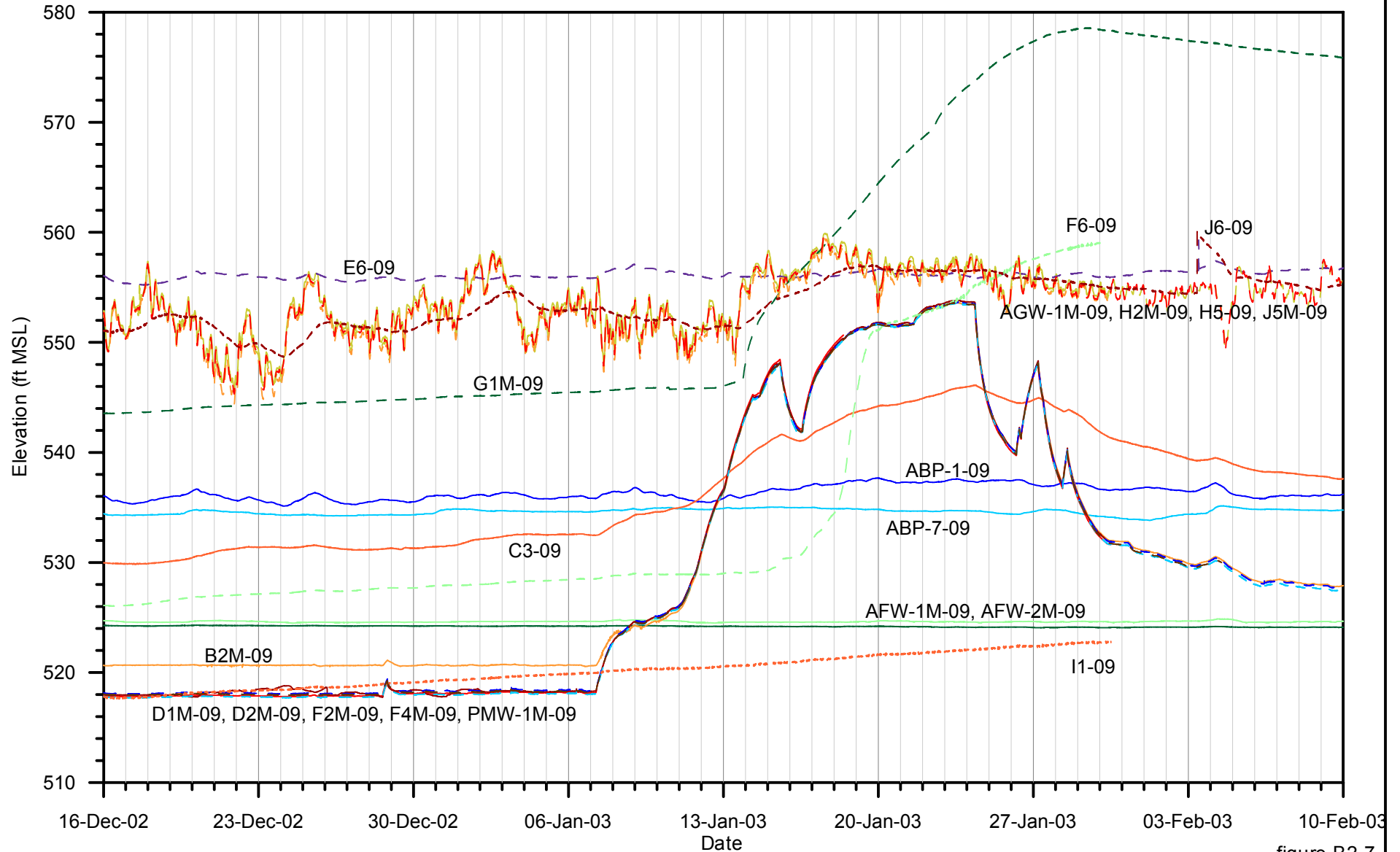


figure B2-7

FLOW ZONE 9 HYDROGRAPHS
 SITE CHARACTERIZATION REPORT
 HYDE PARK LANDFILL SITE
 Town of Niagara, New York



Miller Springs Remediation Management, Inc.

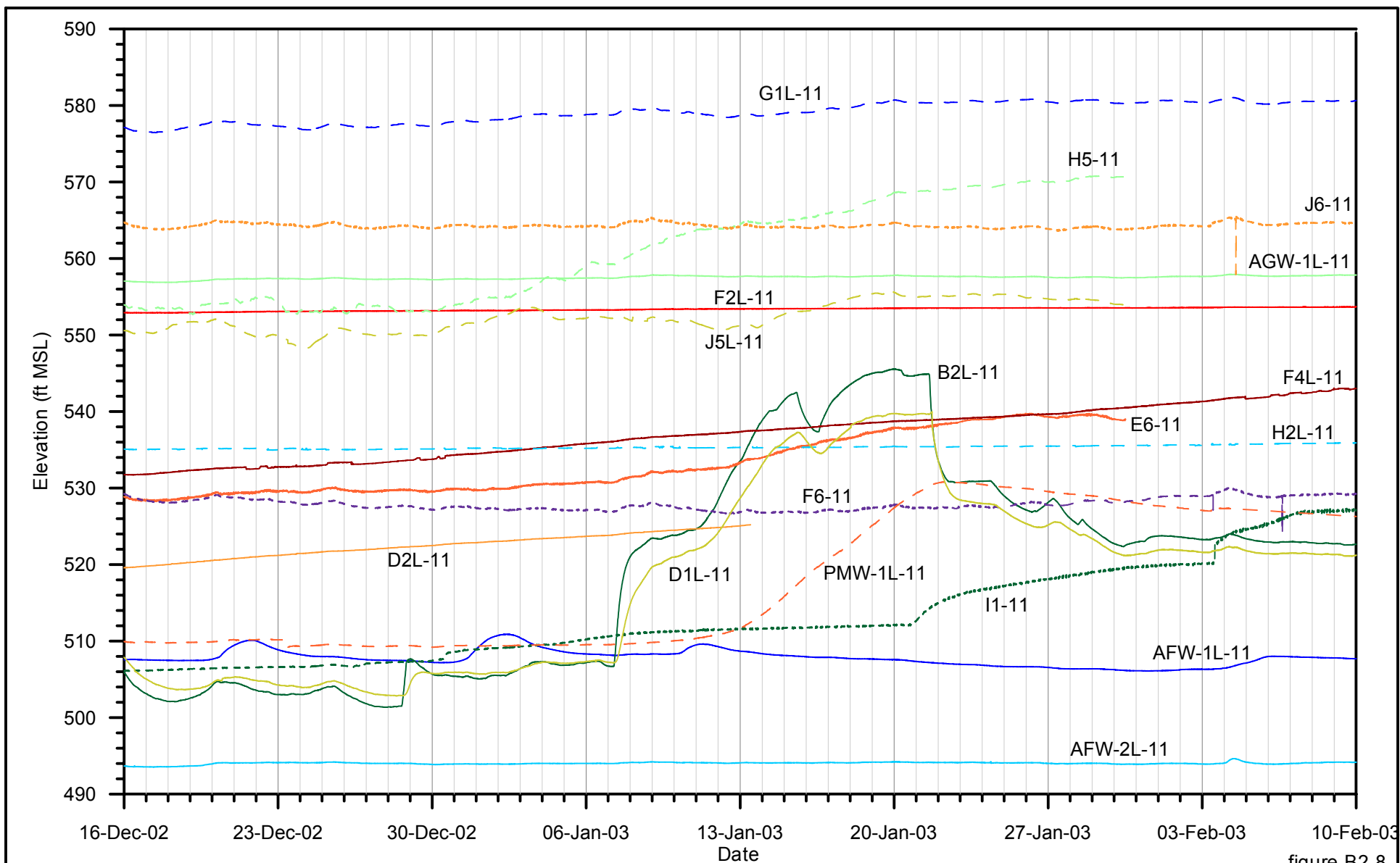
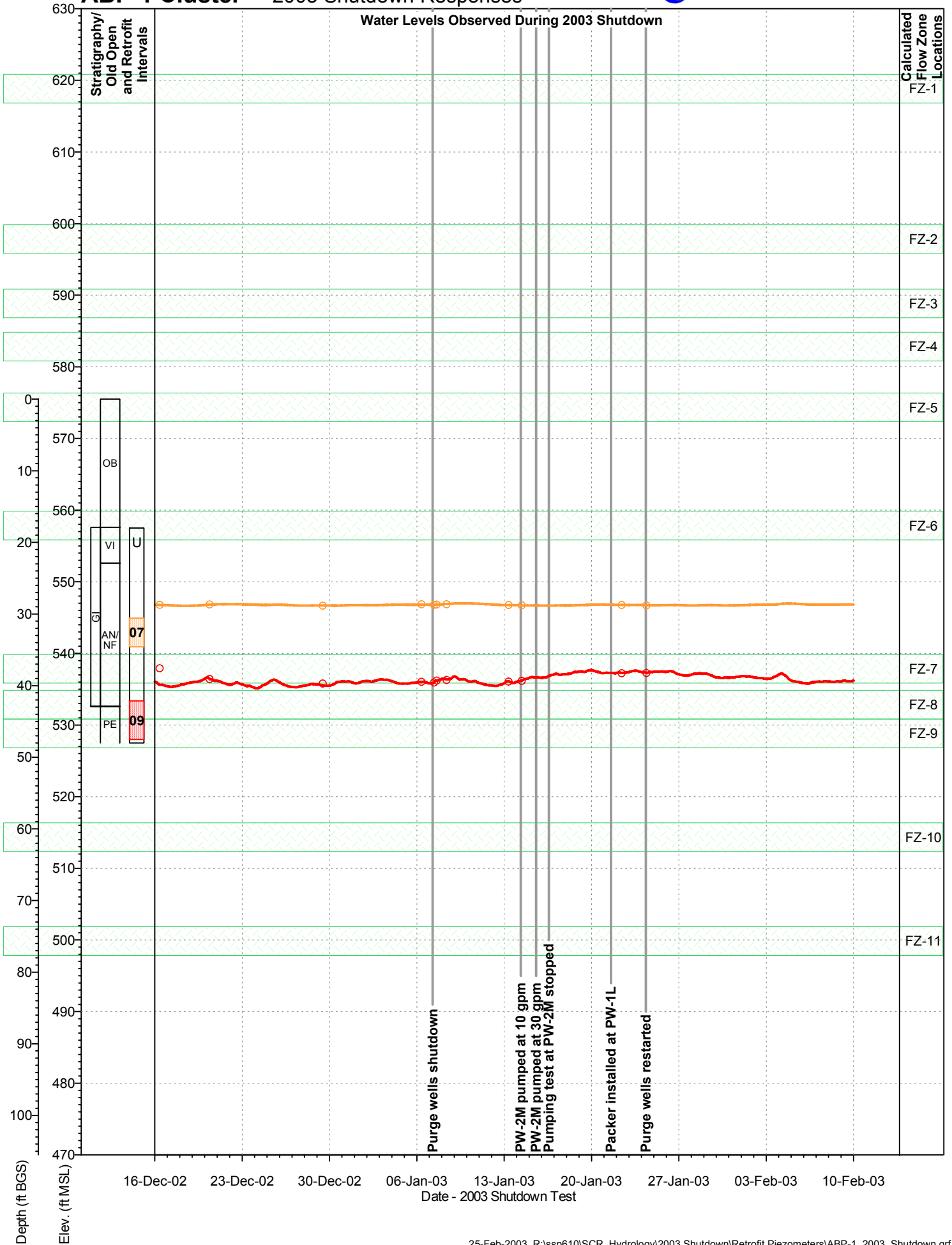


figure B2-8

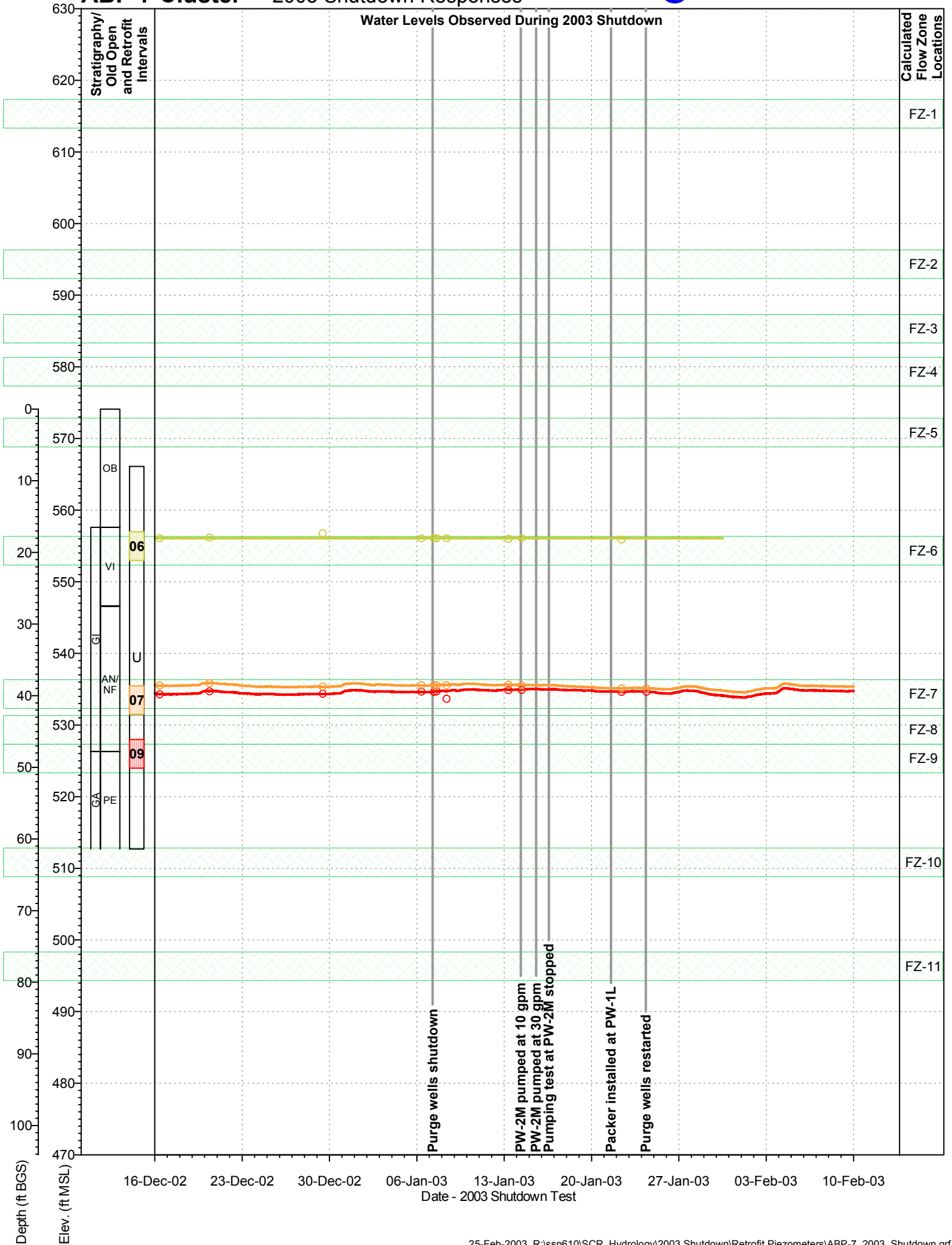
FLOW ZONE 11 HYDROGRAPHS
 SITE CHARACTERIZATION REPORT
 HYDE PARK LANDFILL SITE
 Town of Niagara, New York

B3. Piezometer Summary Sheets

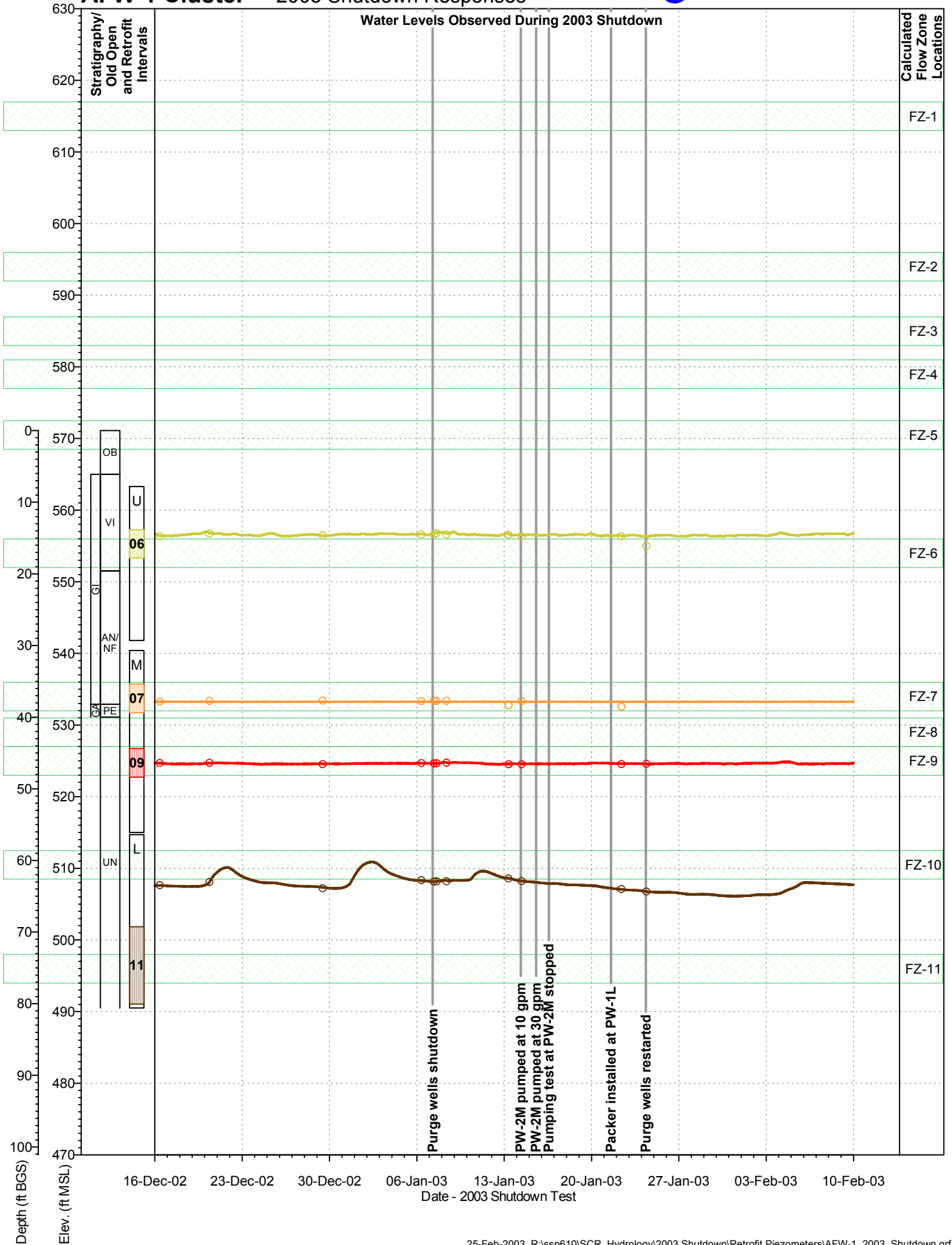
ABP-1 Cluster 2003 Shutdown Responses



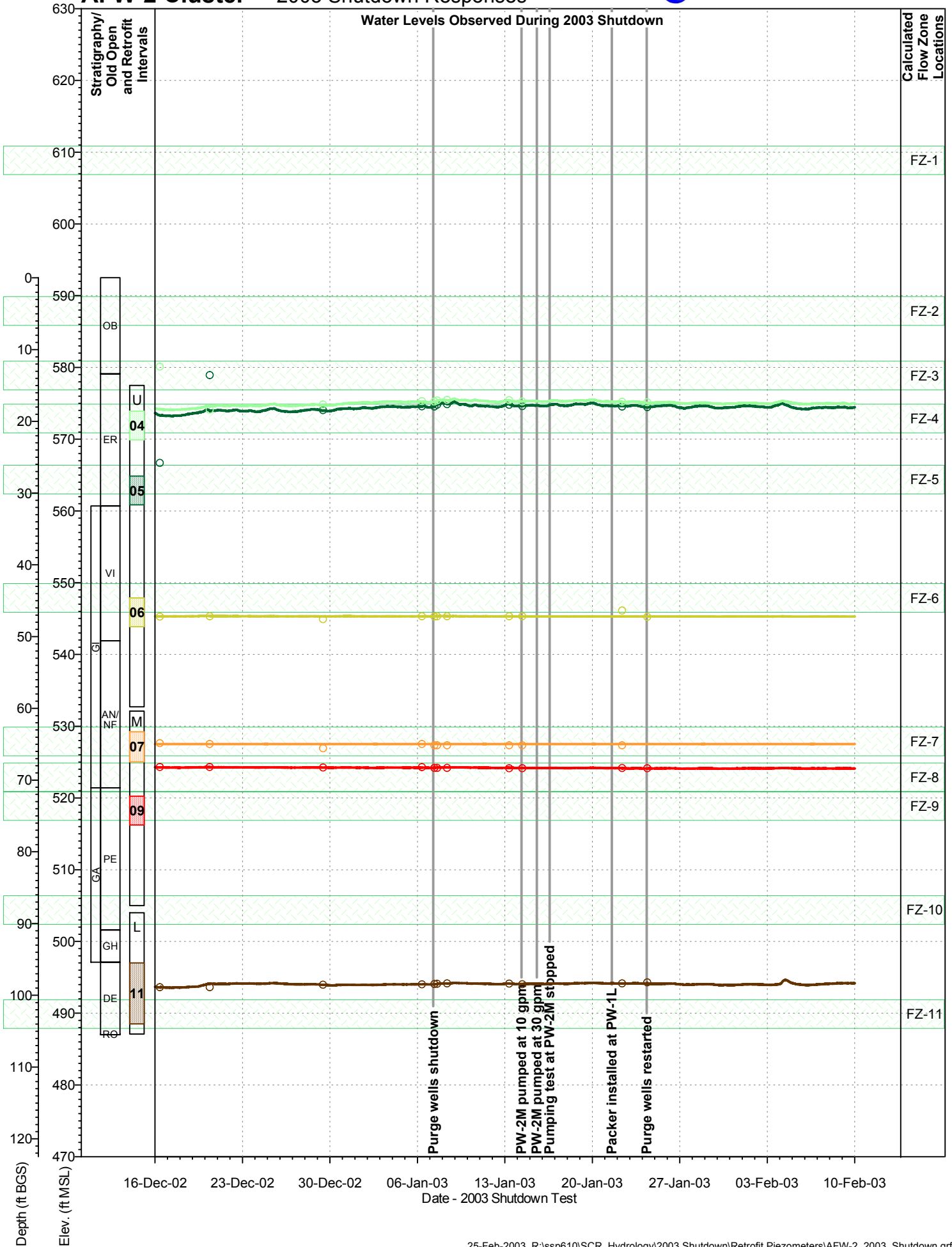
ABP-7 Cluster 2003 Shutdown Responses



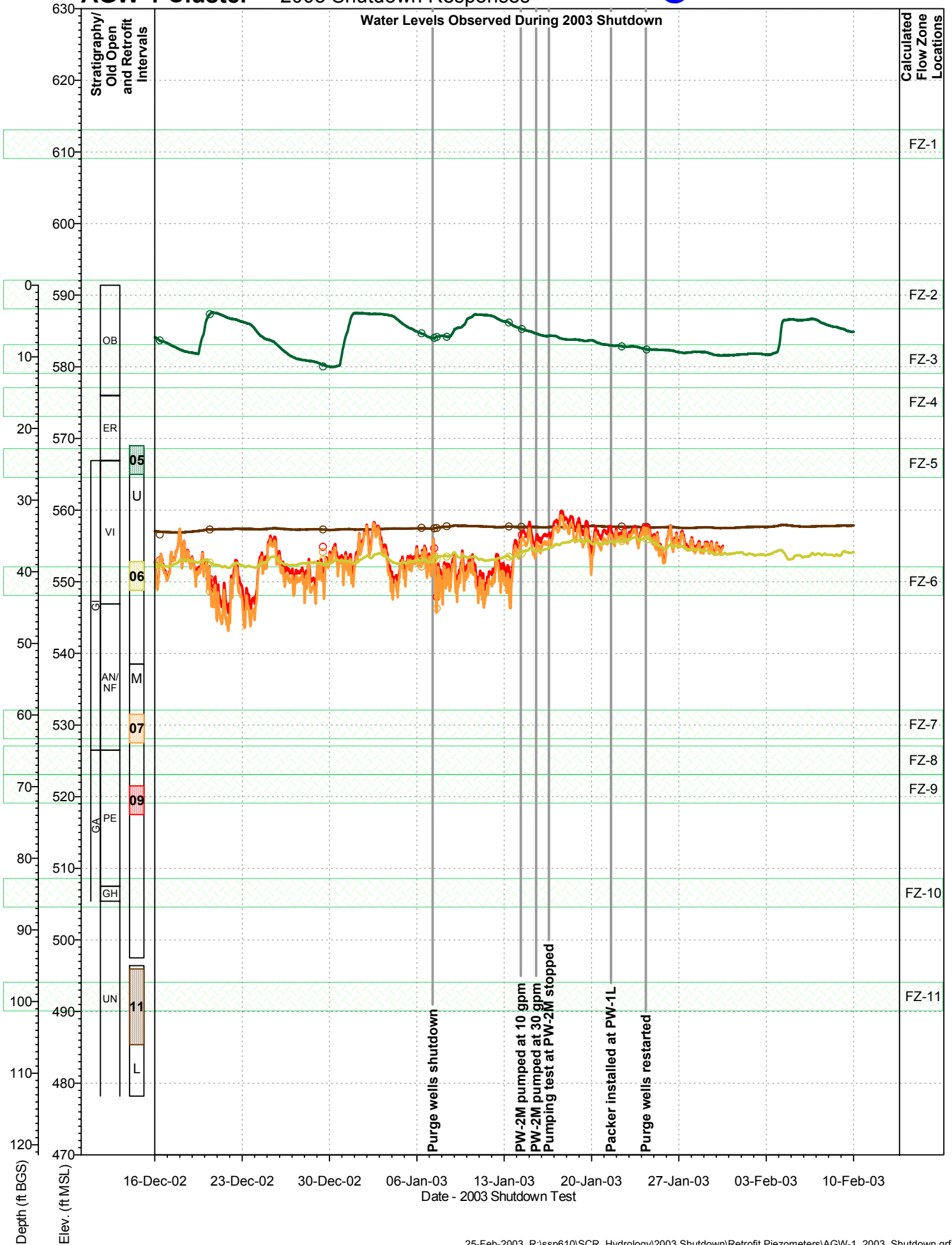
AFW-1 Cluster 2003 Shutdown Responses



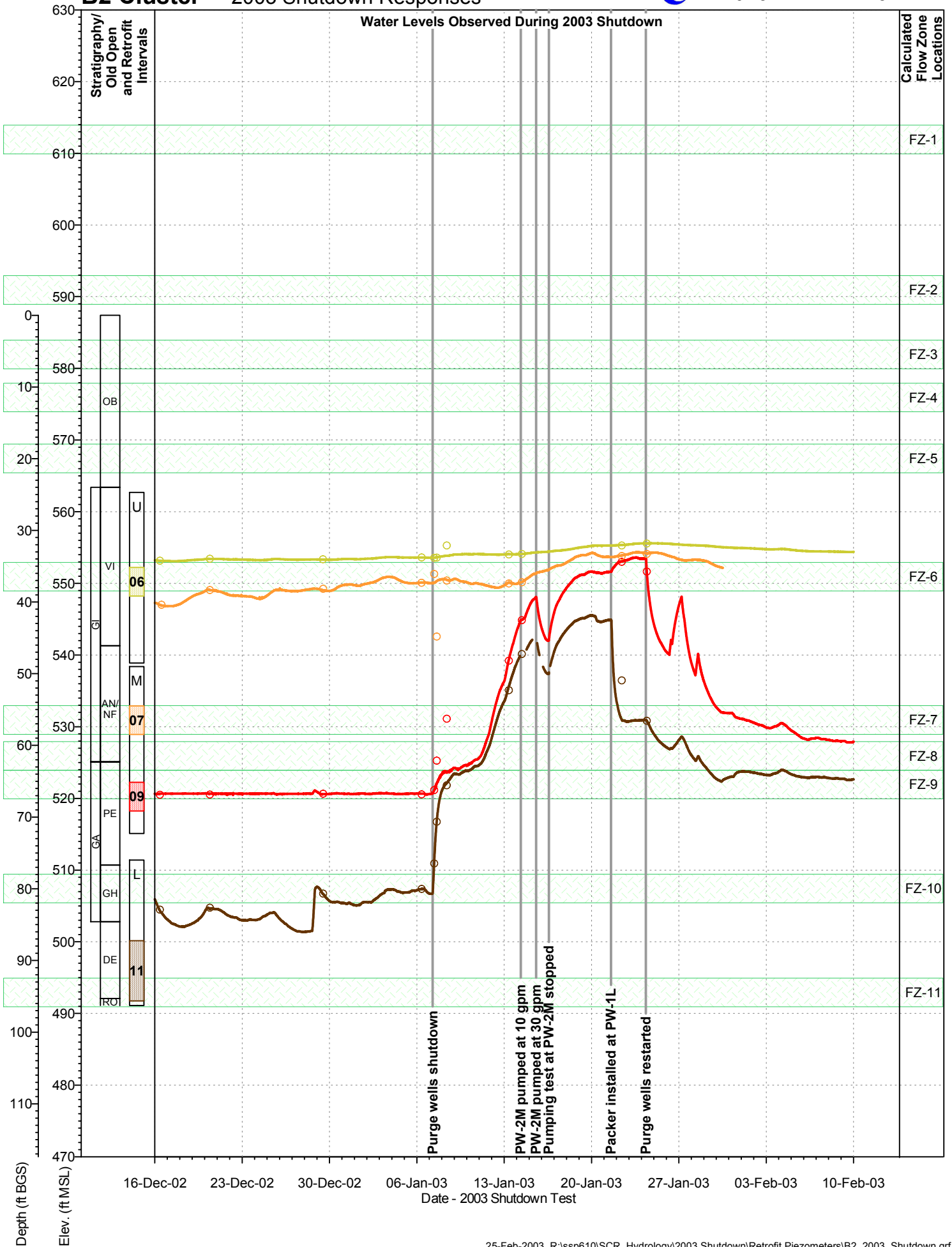
AFW-2 Cluster 2003 Shutdown Responses



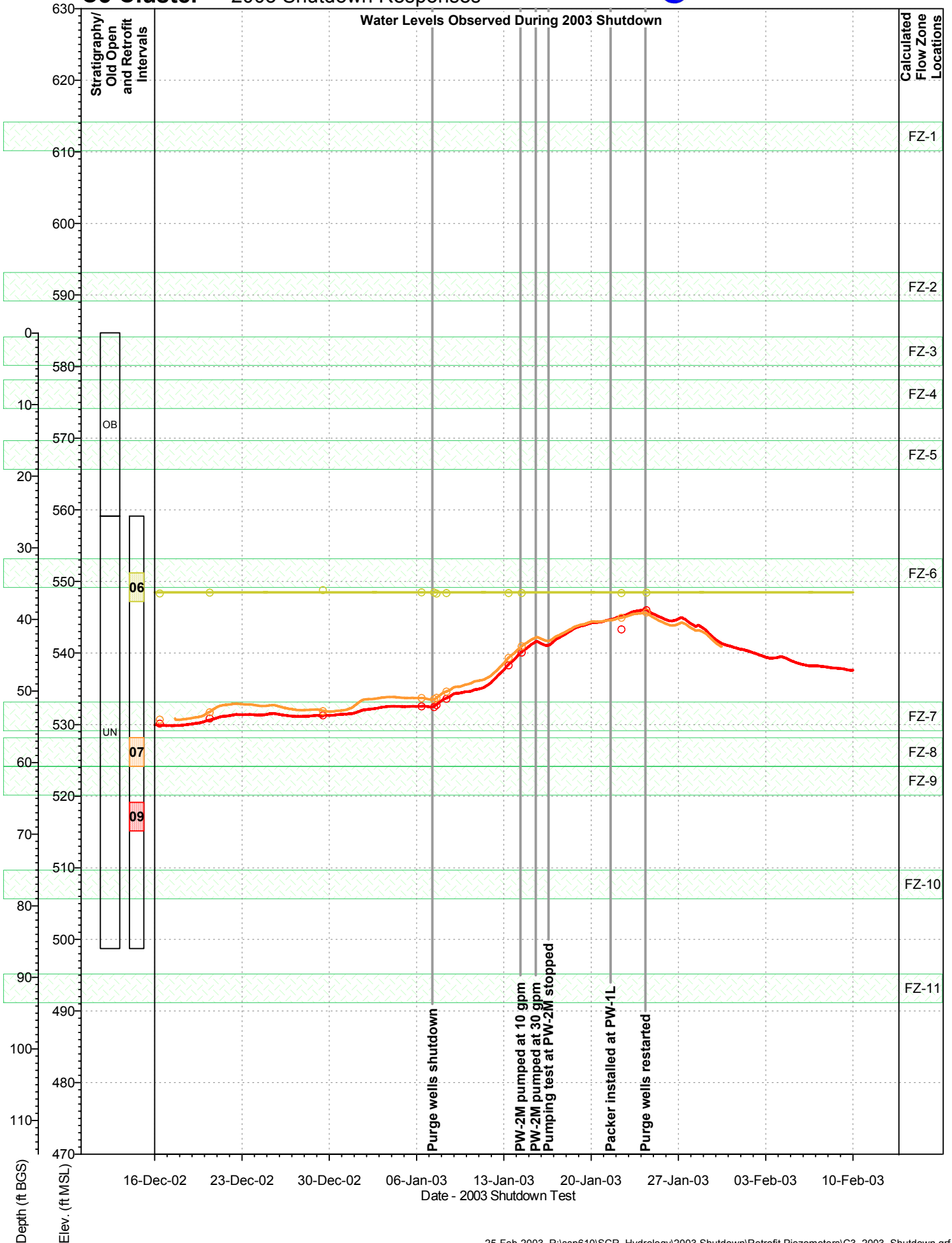
AGW-1 Cluster 2003 Shutdown Responses



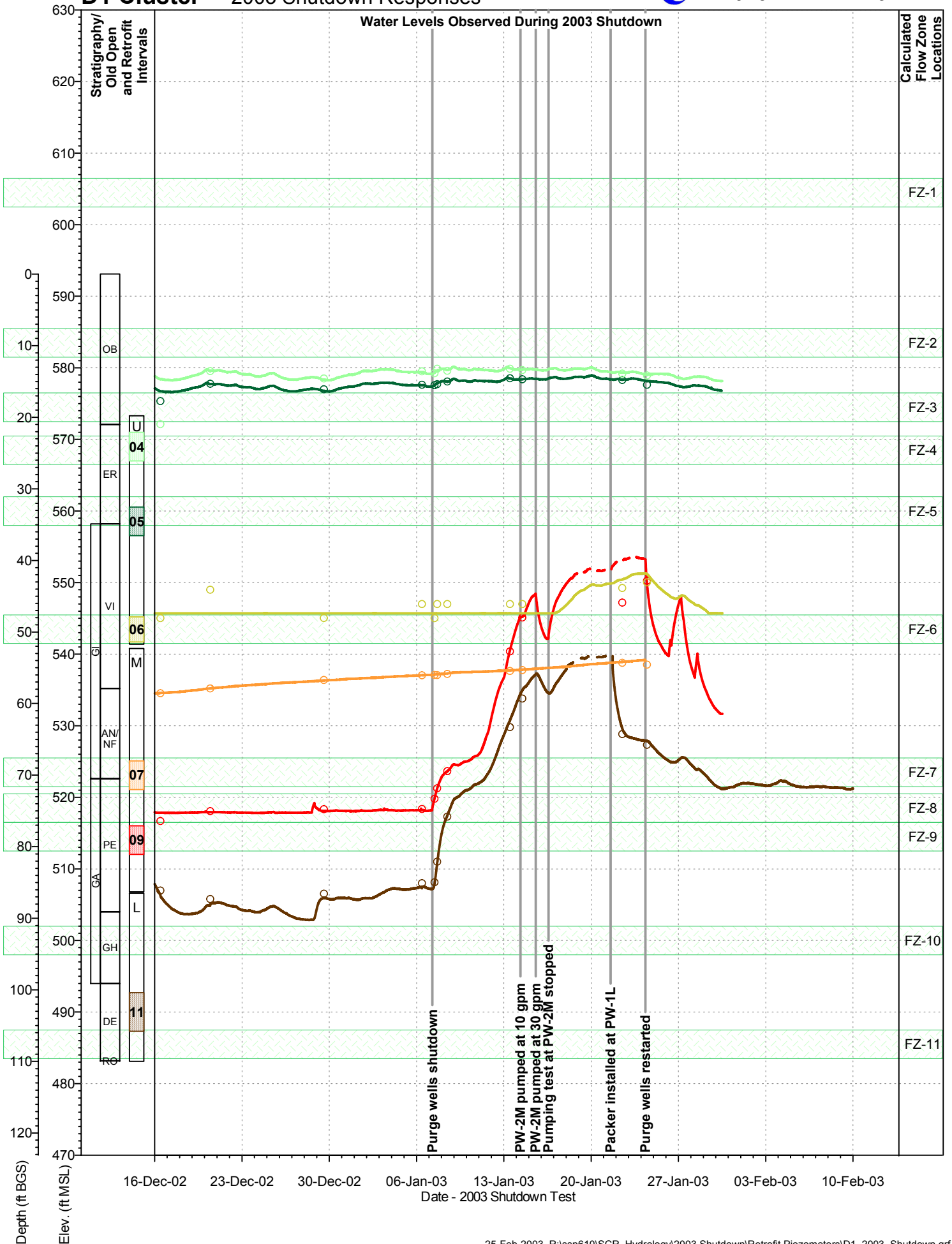
B2 Cluster 2003 Shutdown Responses



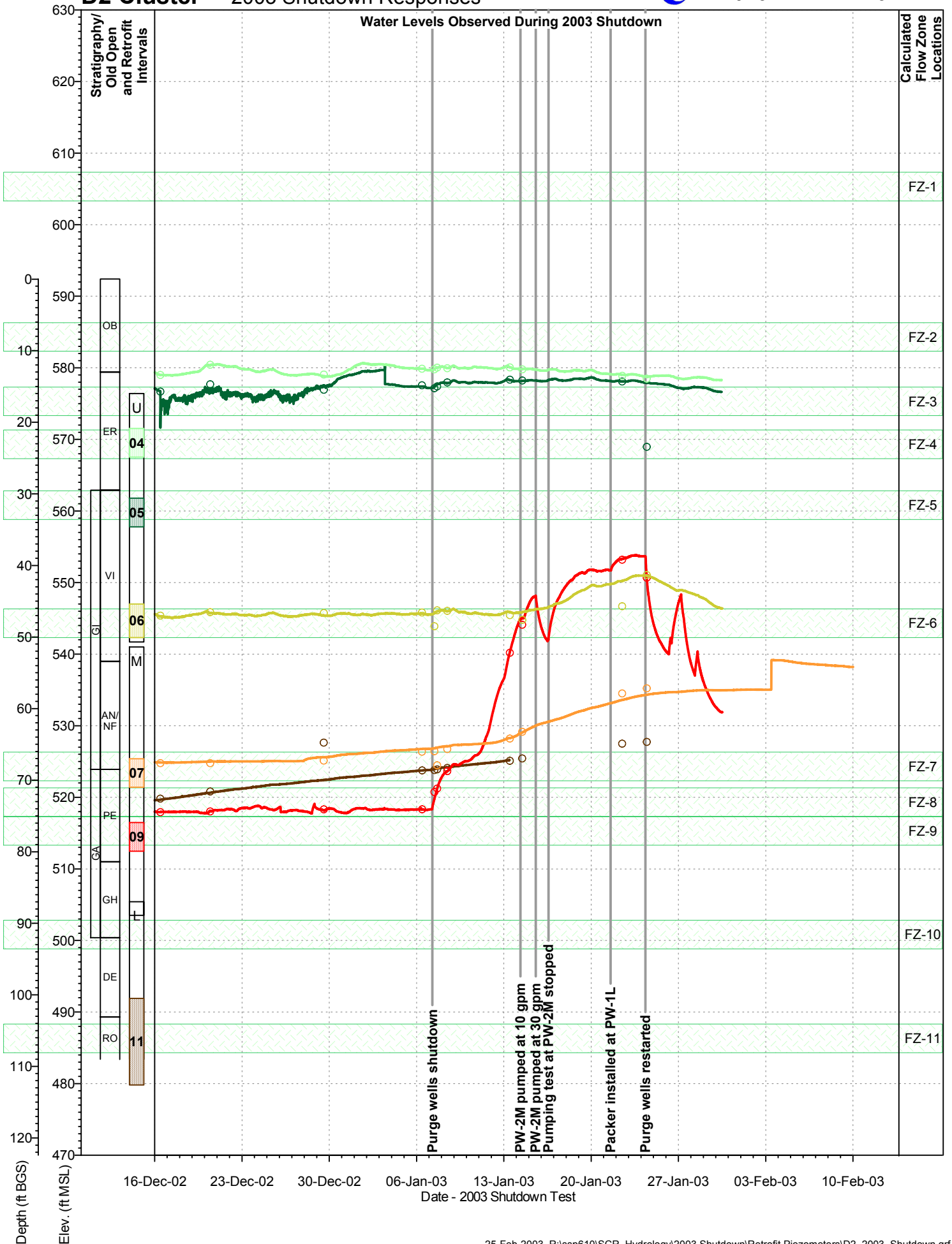
C3 Cluster 2003 Shutdown Responses



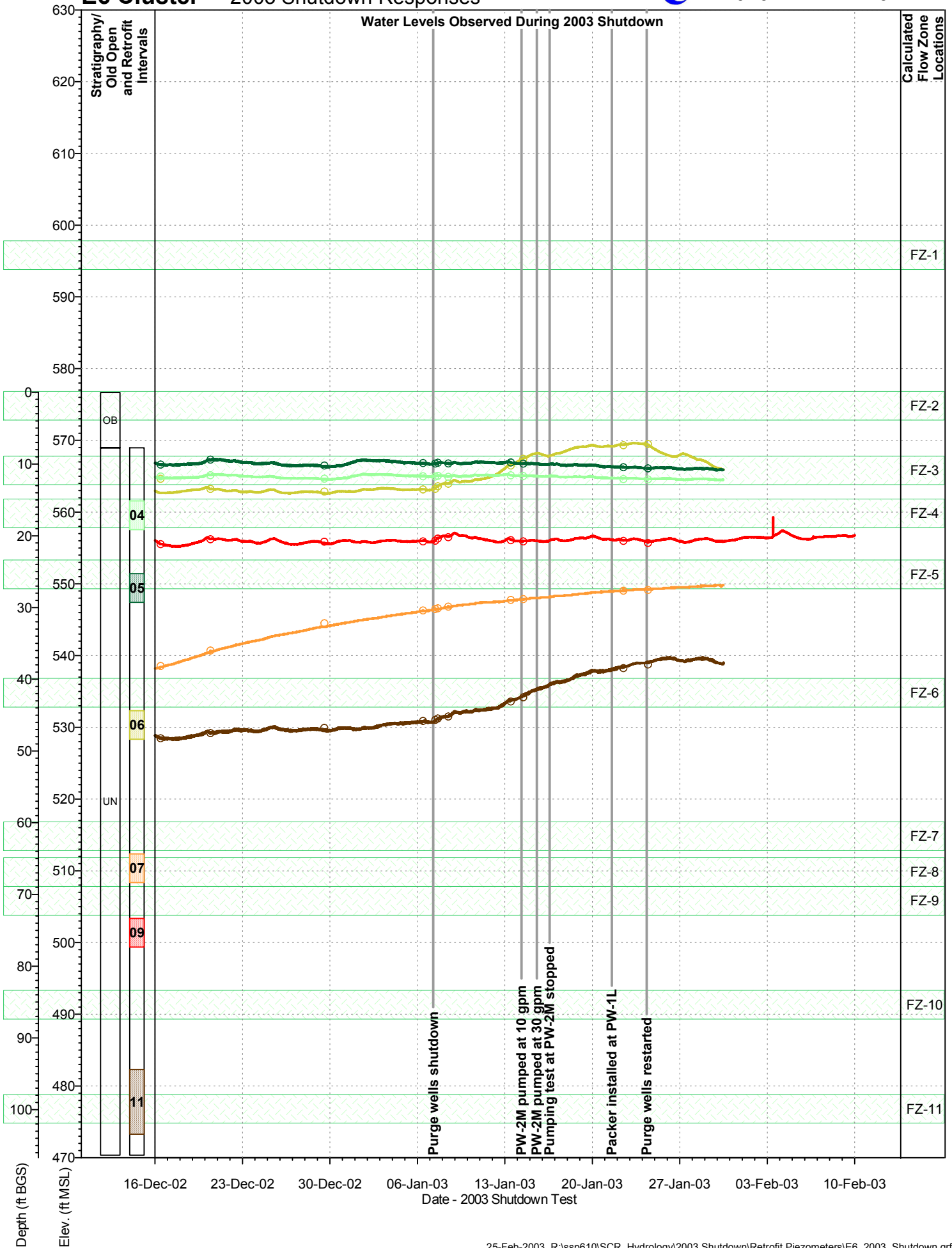
D1 Cluster 2003 Shutdown Responses



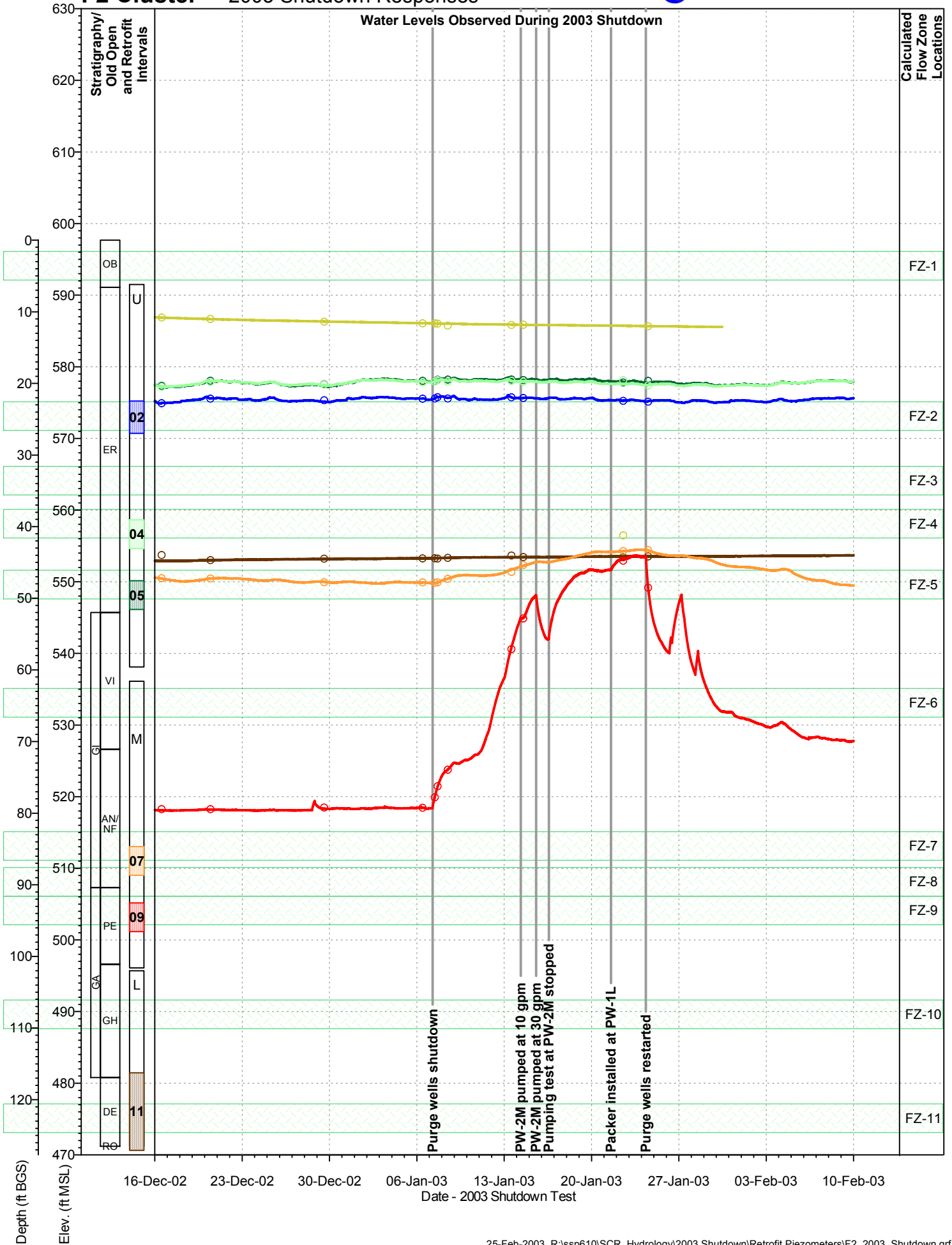
D2 Cluster 2003 Shutdown Responses



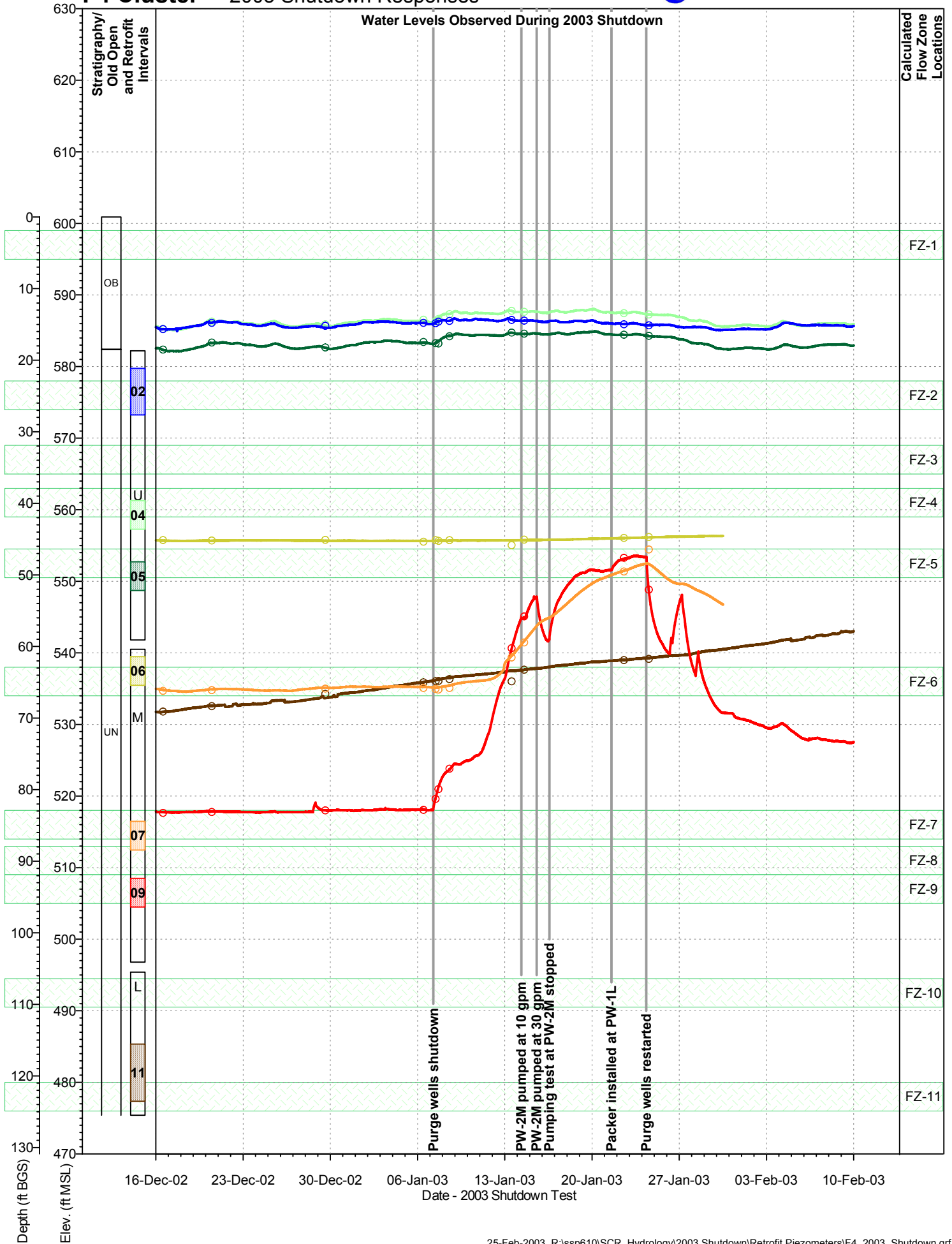
E6 Cluster 2003 Shutdown Responses



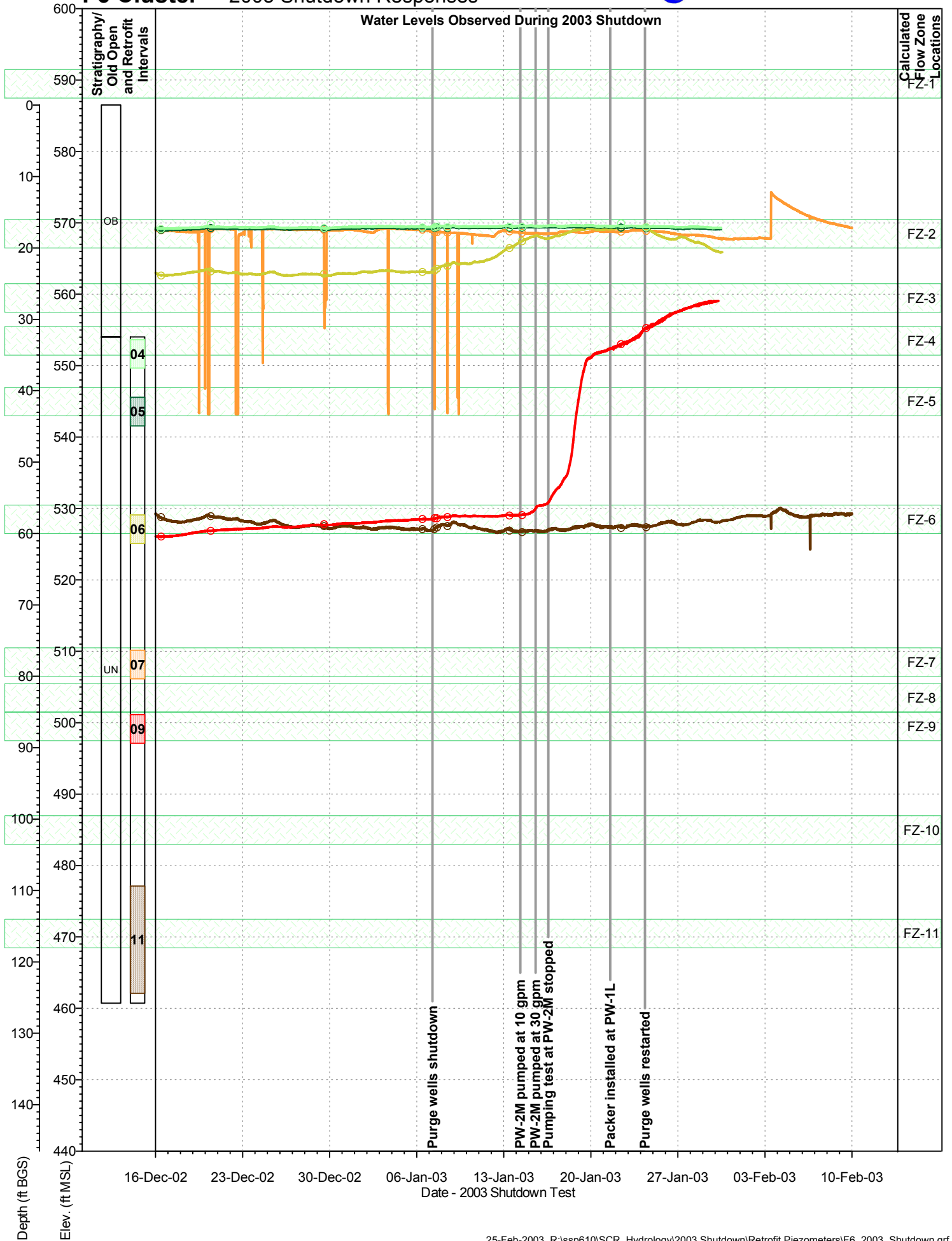
F2 Cluster 2003 Shutdown Responses



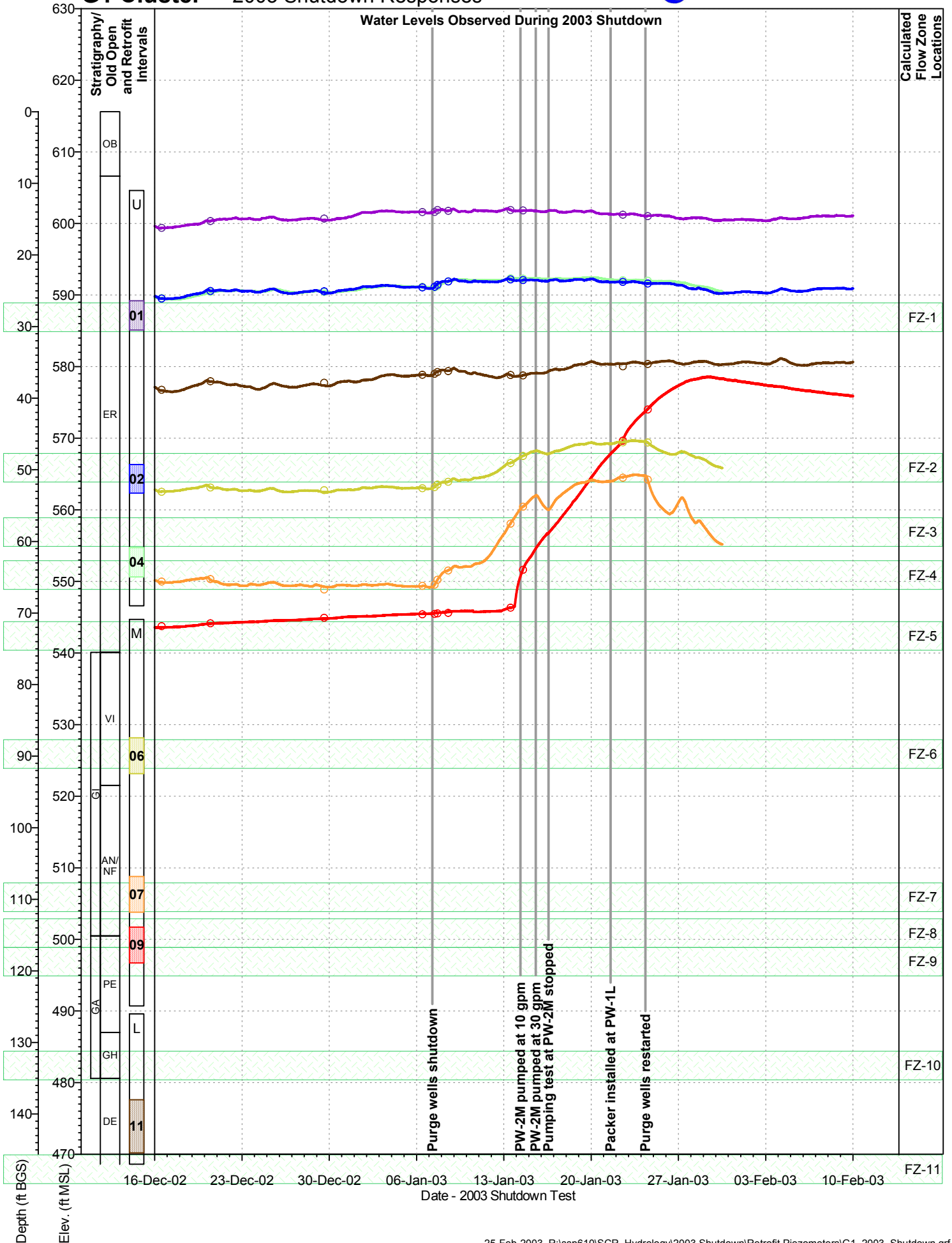
F4 Cluster 2003 Shutdown Responses



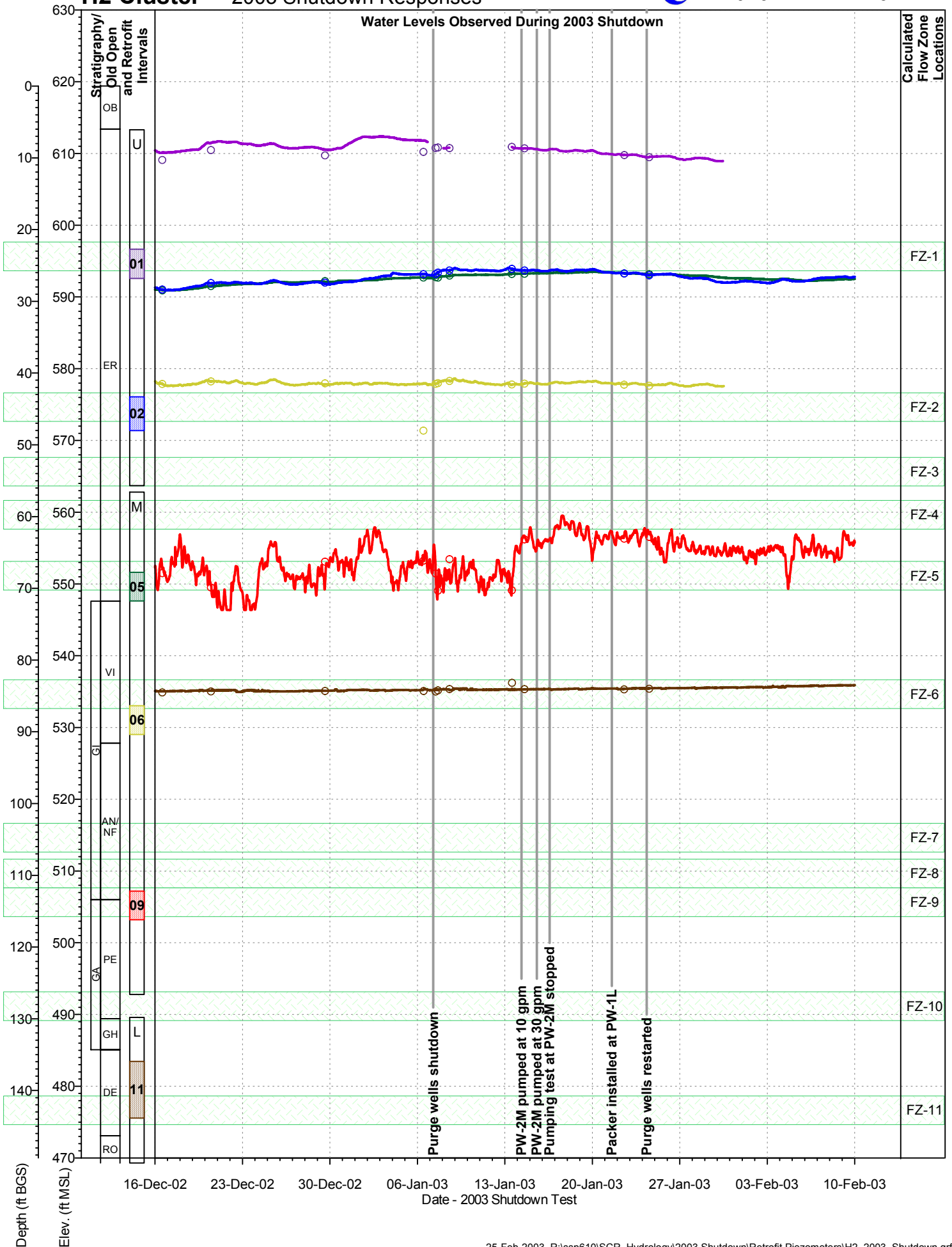
F6 Cluster 2003 Shutdown Responses



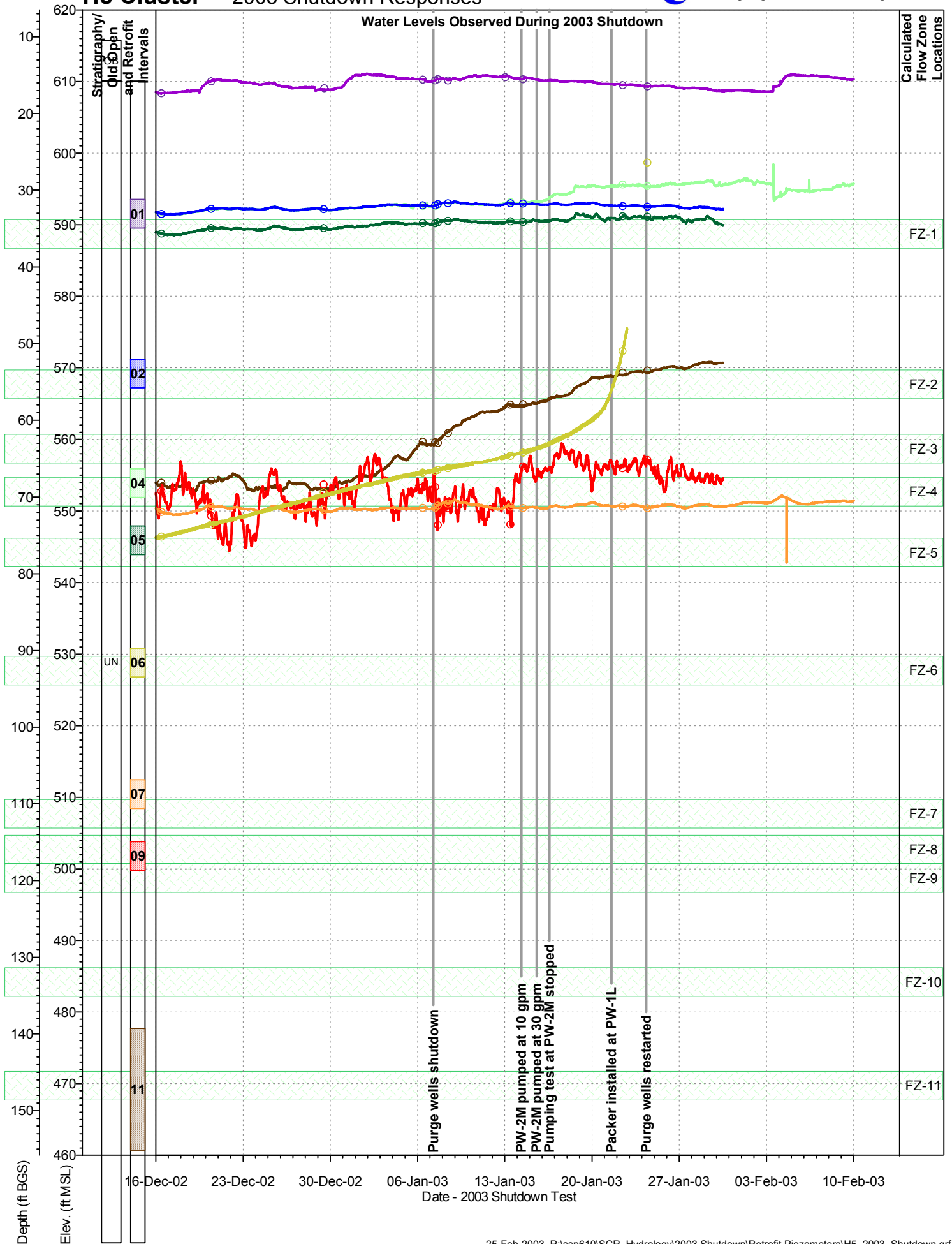
G1 Cluster 2003 Shutdown Responses



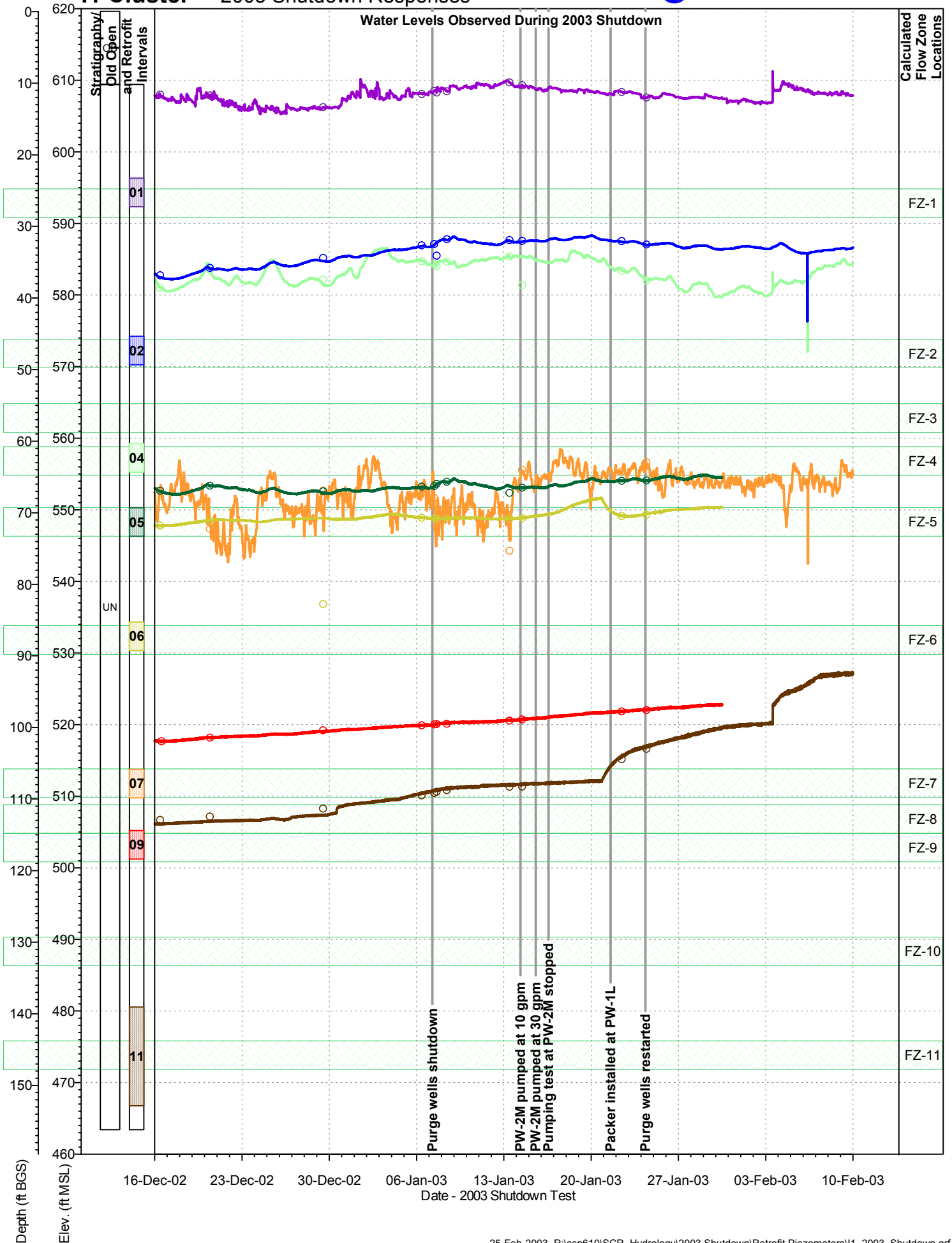
H2 Cluster 2003 Shutdown Responses



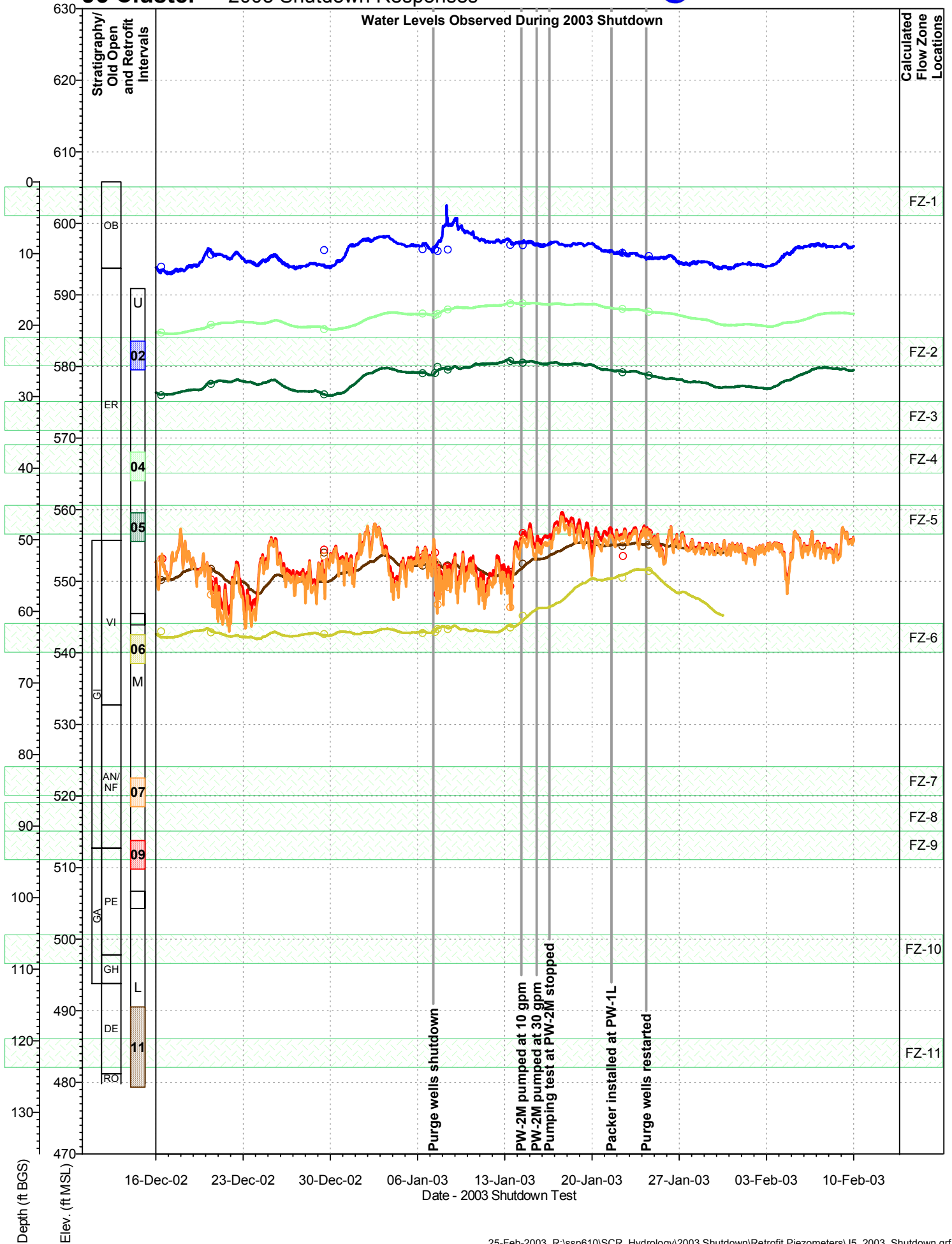
H5 Cluster 2003 Shutdown Responses



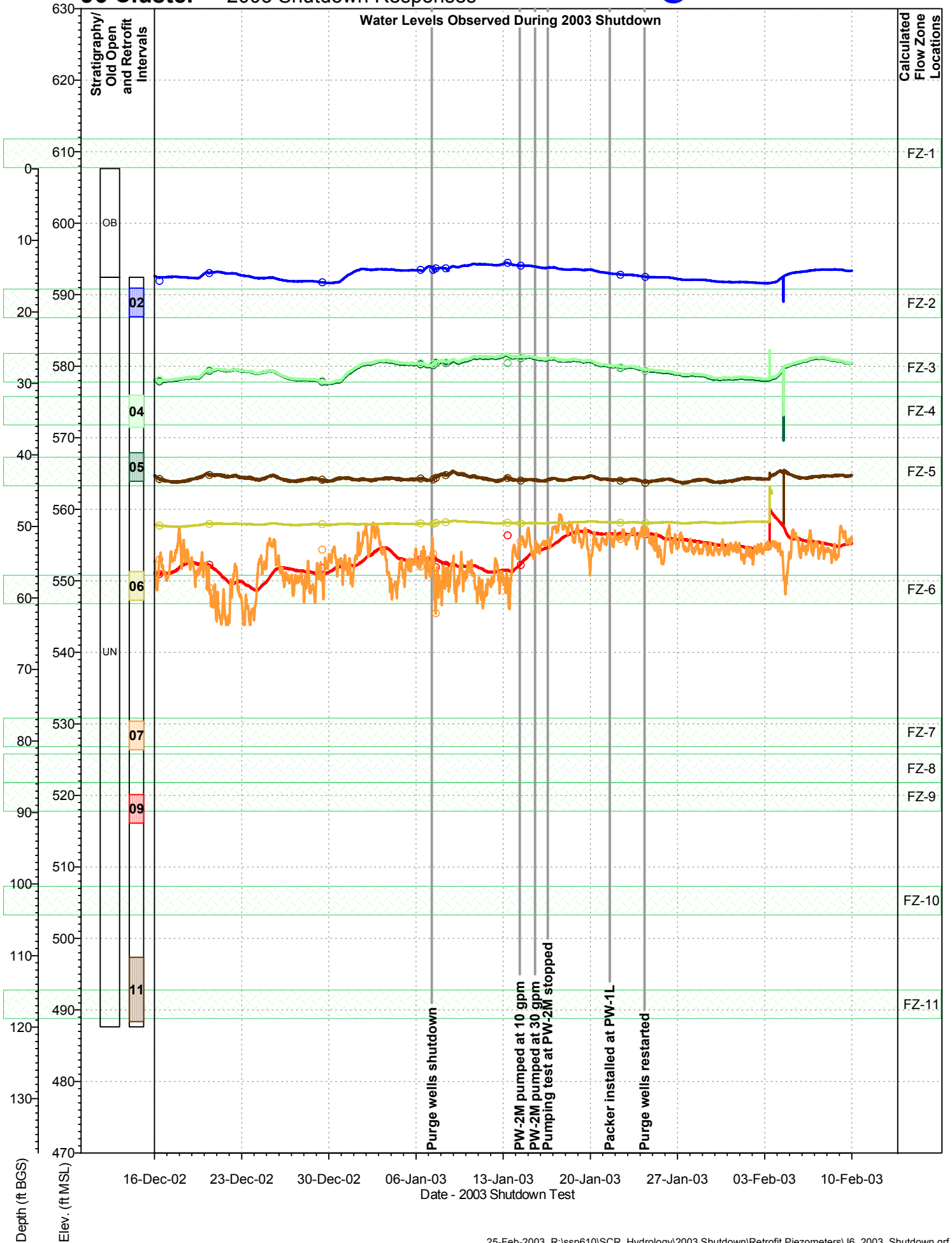
I1 Cluster 2003 Shutdown Responses



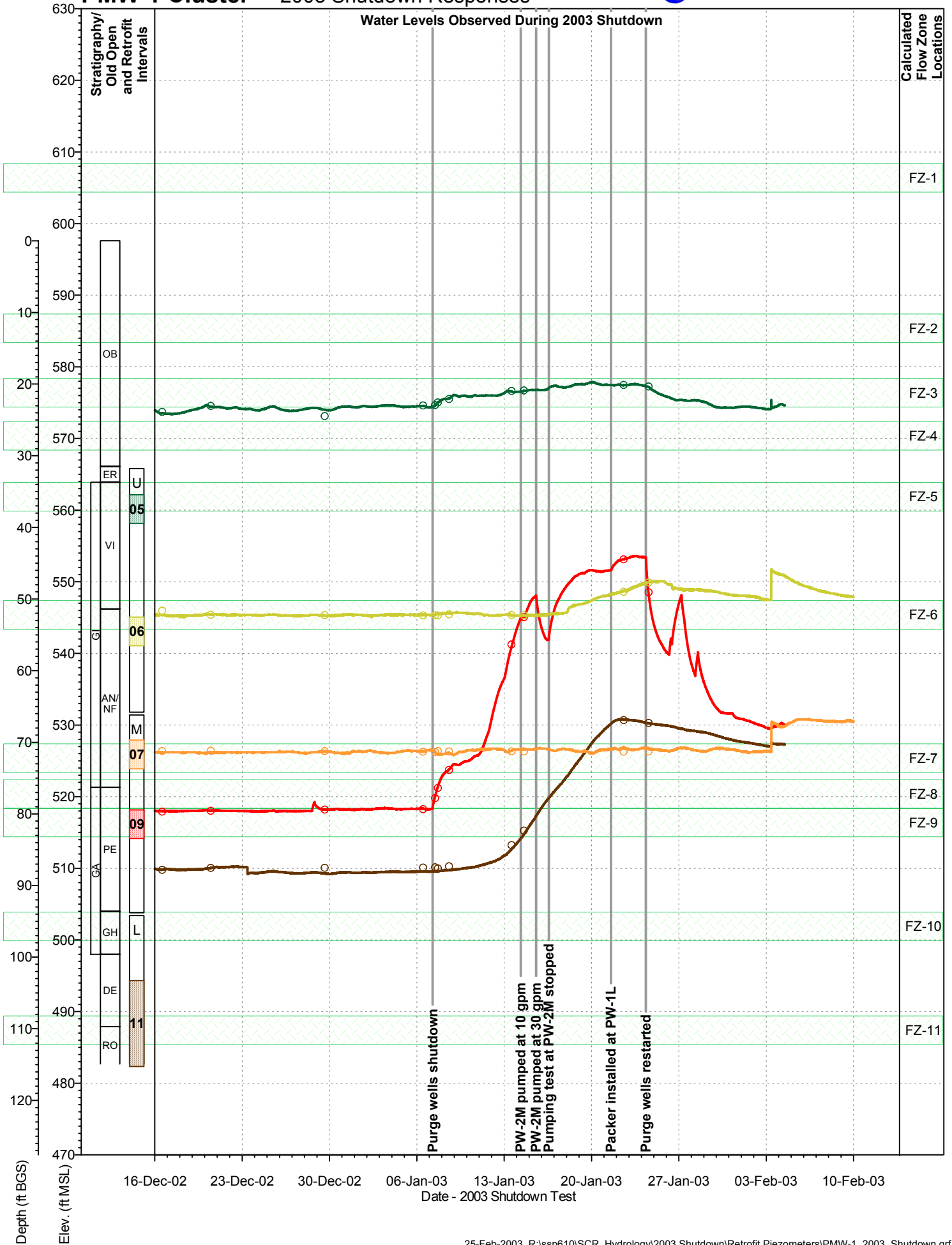
J5 Cluster 2003 Shutdown Responses



J6 Cluster 2003 Shutdown Responses



PMW-1 Cluster 2003 Shutdown Responses

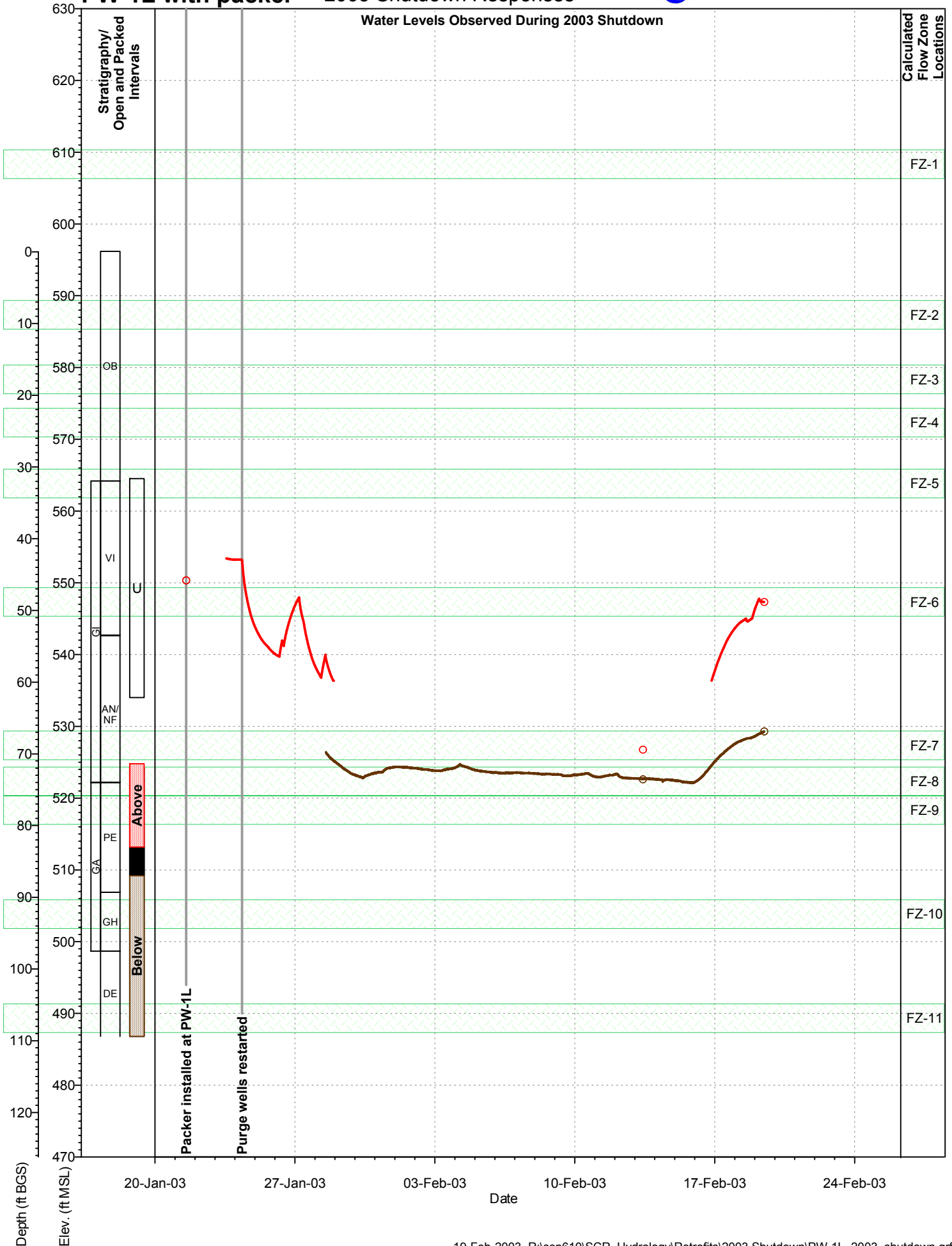


PW-1L with packer

2003 Shutdown Responses

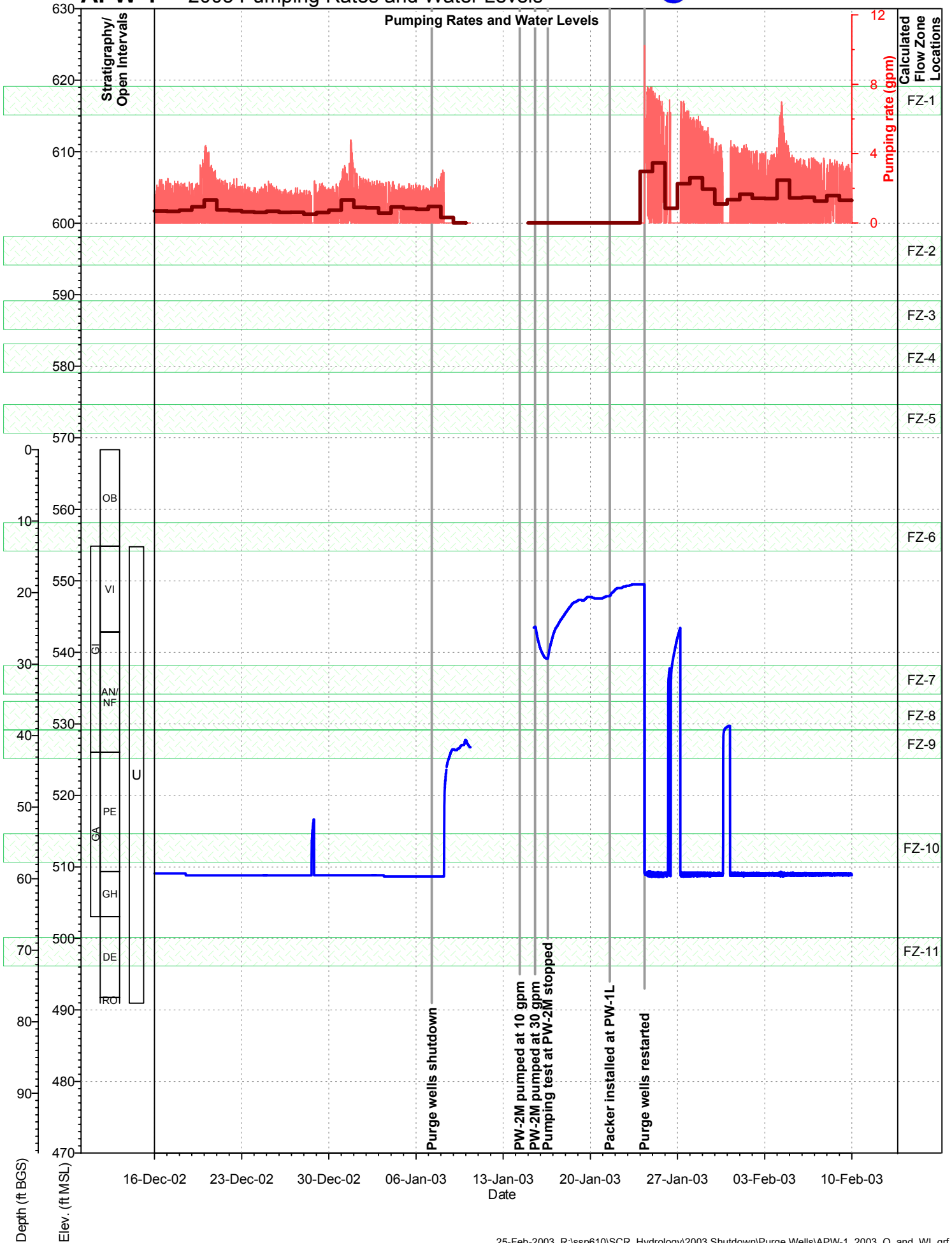


Miller Springs Remediation Management, Inc.

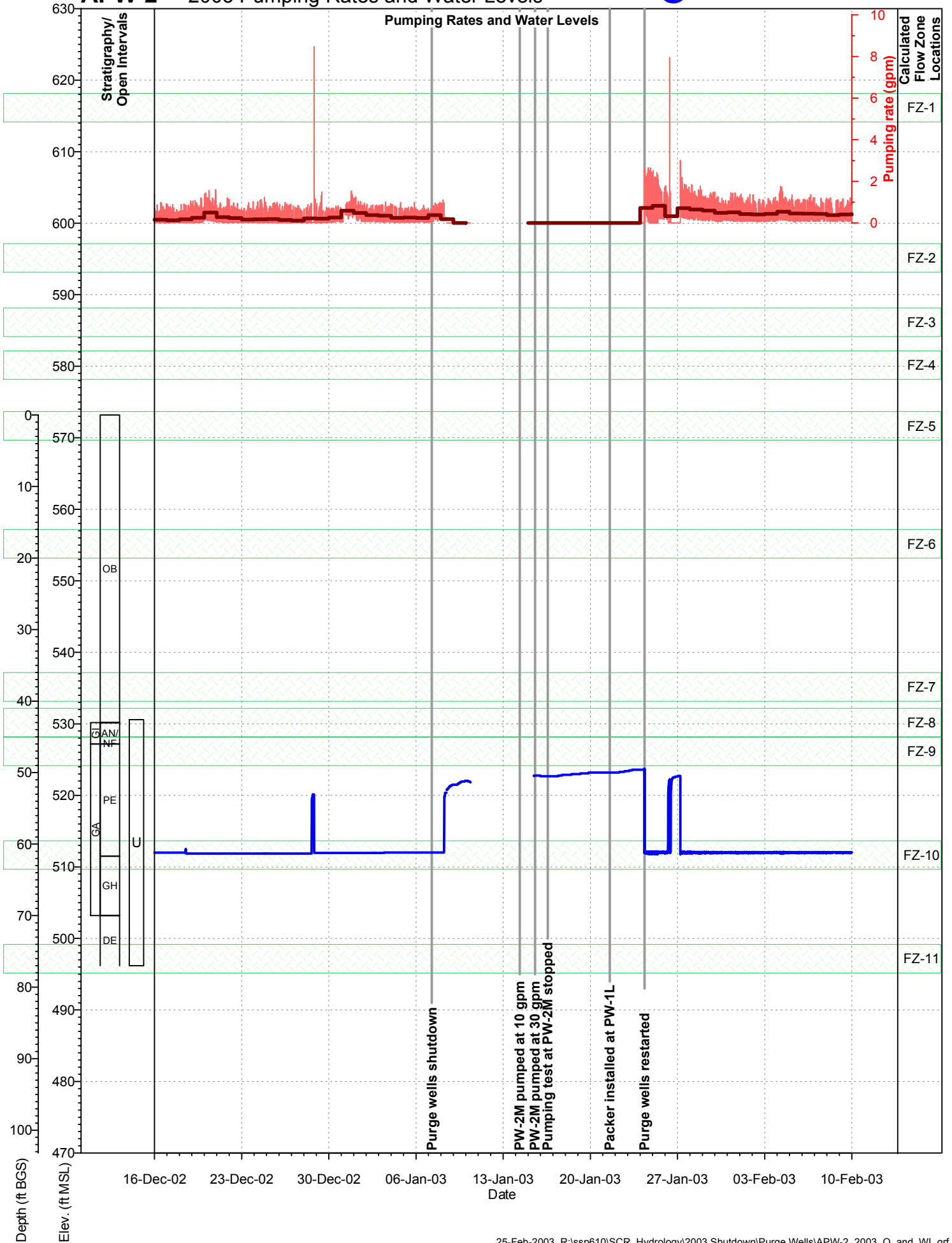


B4. Purge Well Summary Sheets

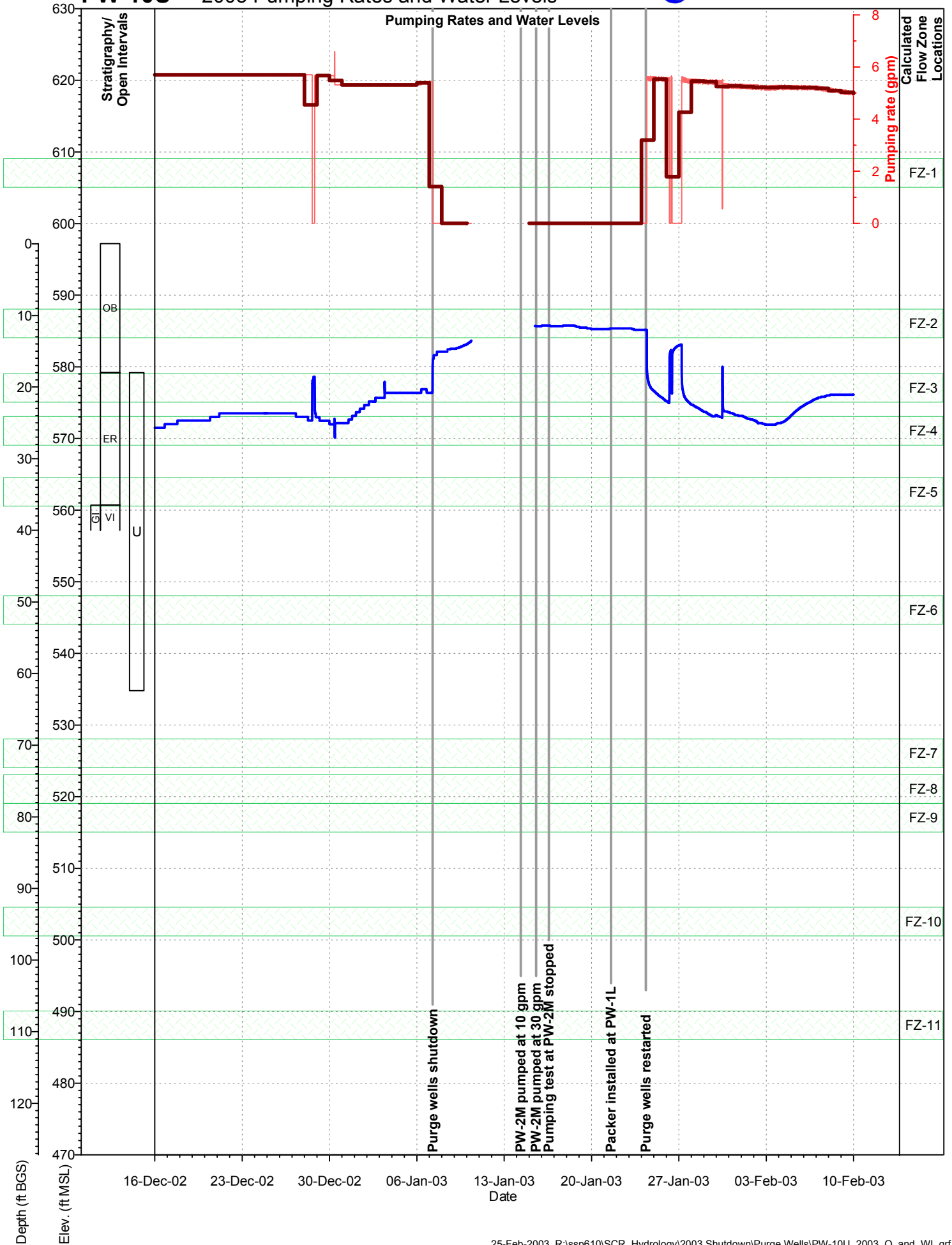
APW-1 2003 Pumping Rates and Water Levels



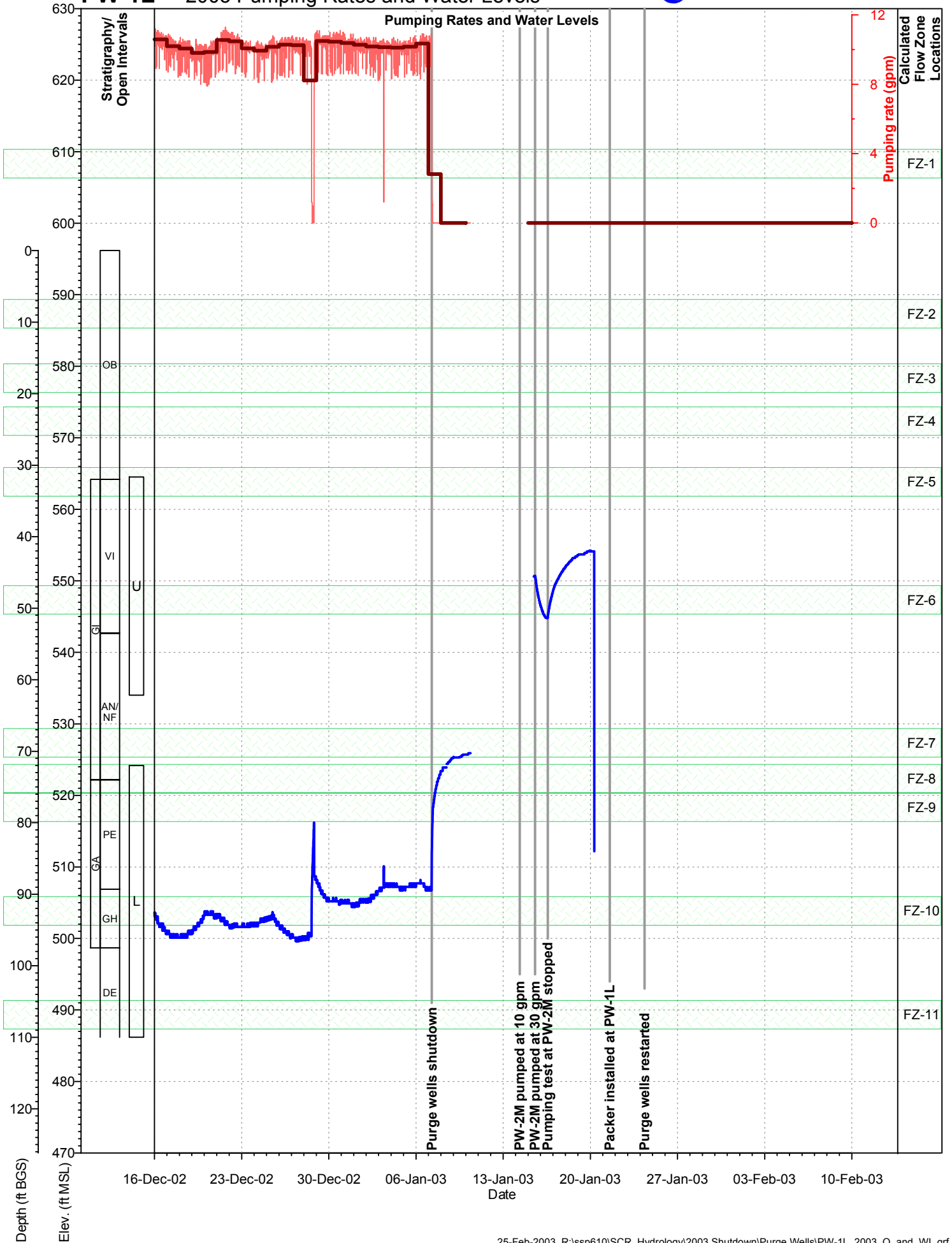
APW-2 2003 Pumping Rates and Water Levels



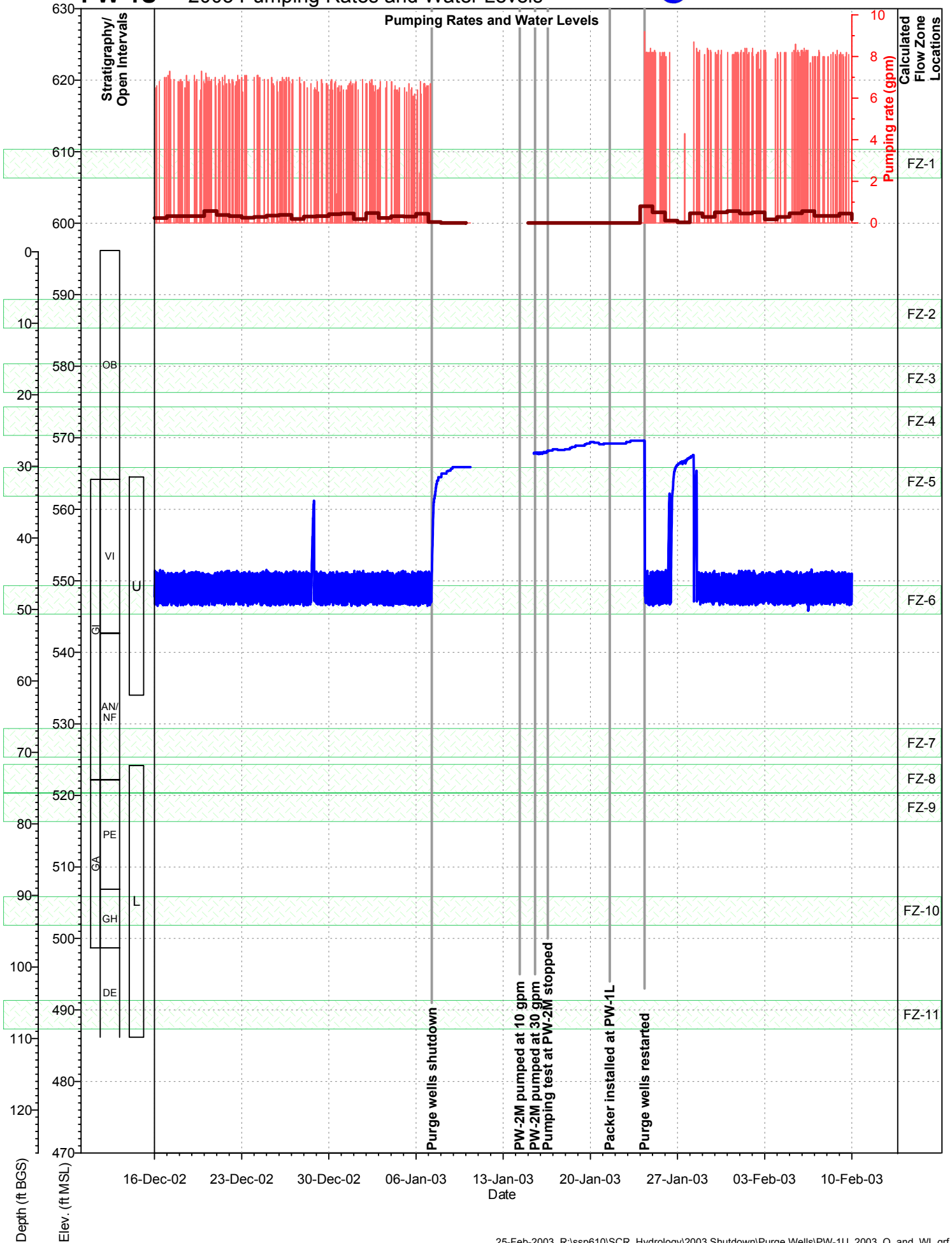
PW-10U 2003 Pumping Rates and Water Levels



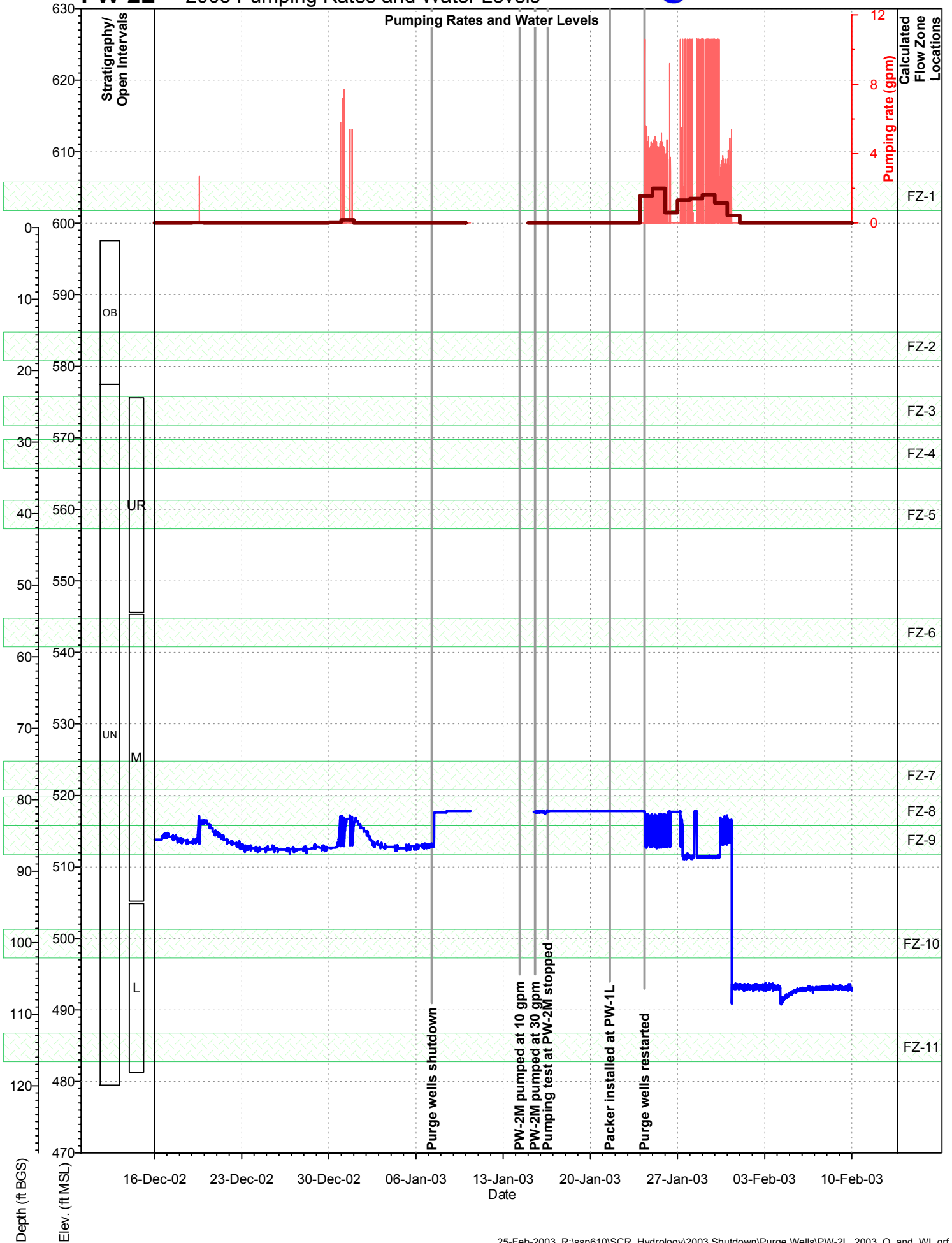
PW-1L 2003 Pumping Rates and Water Levels



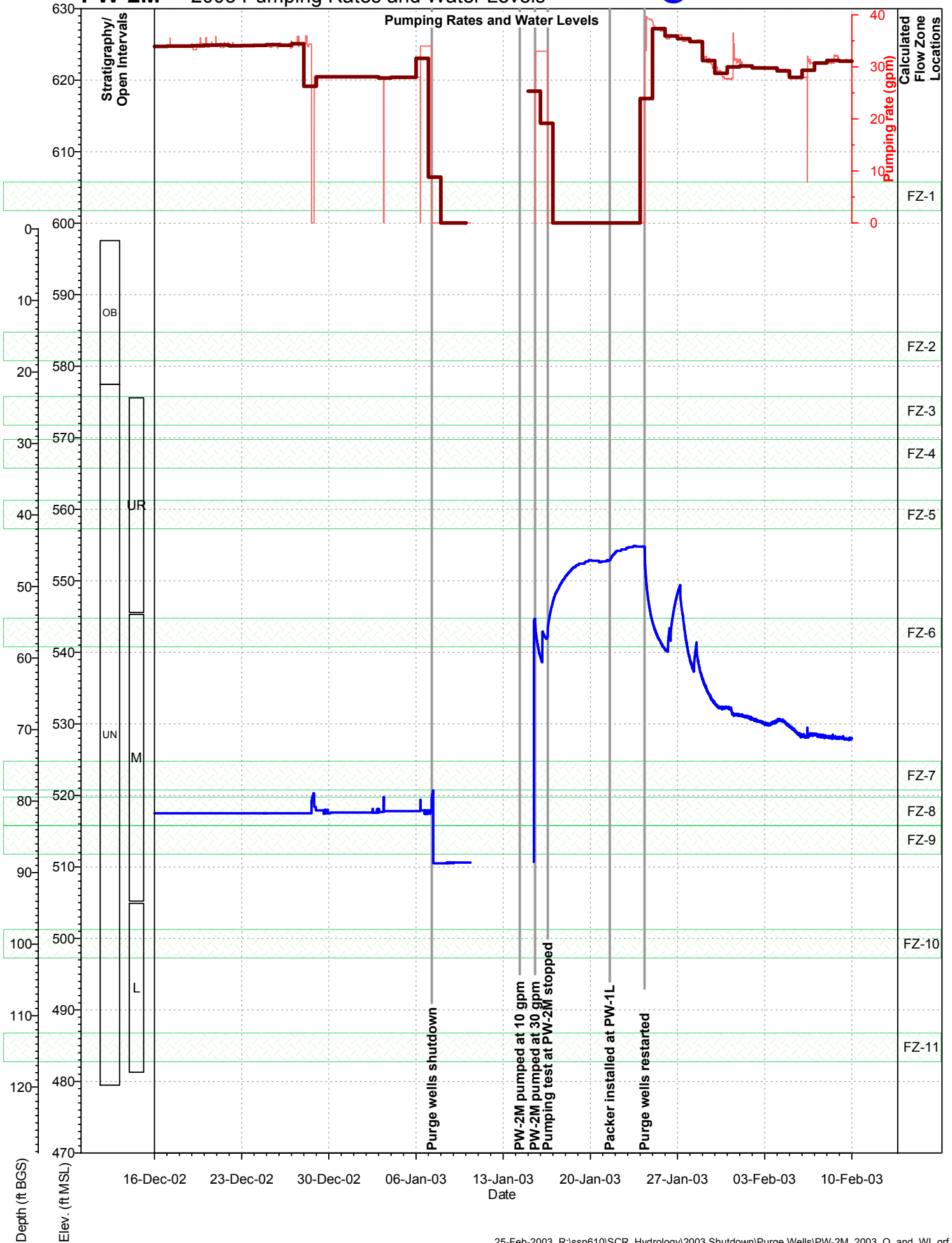
PW-1U 2003 Pumping Rates and Water Levels



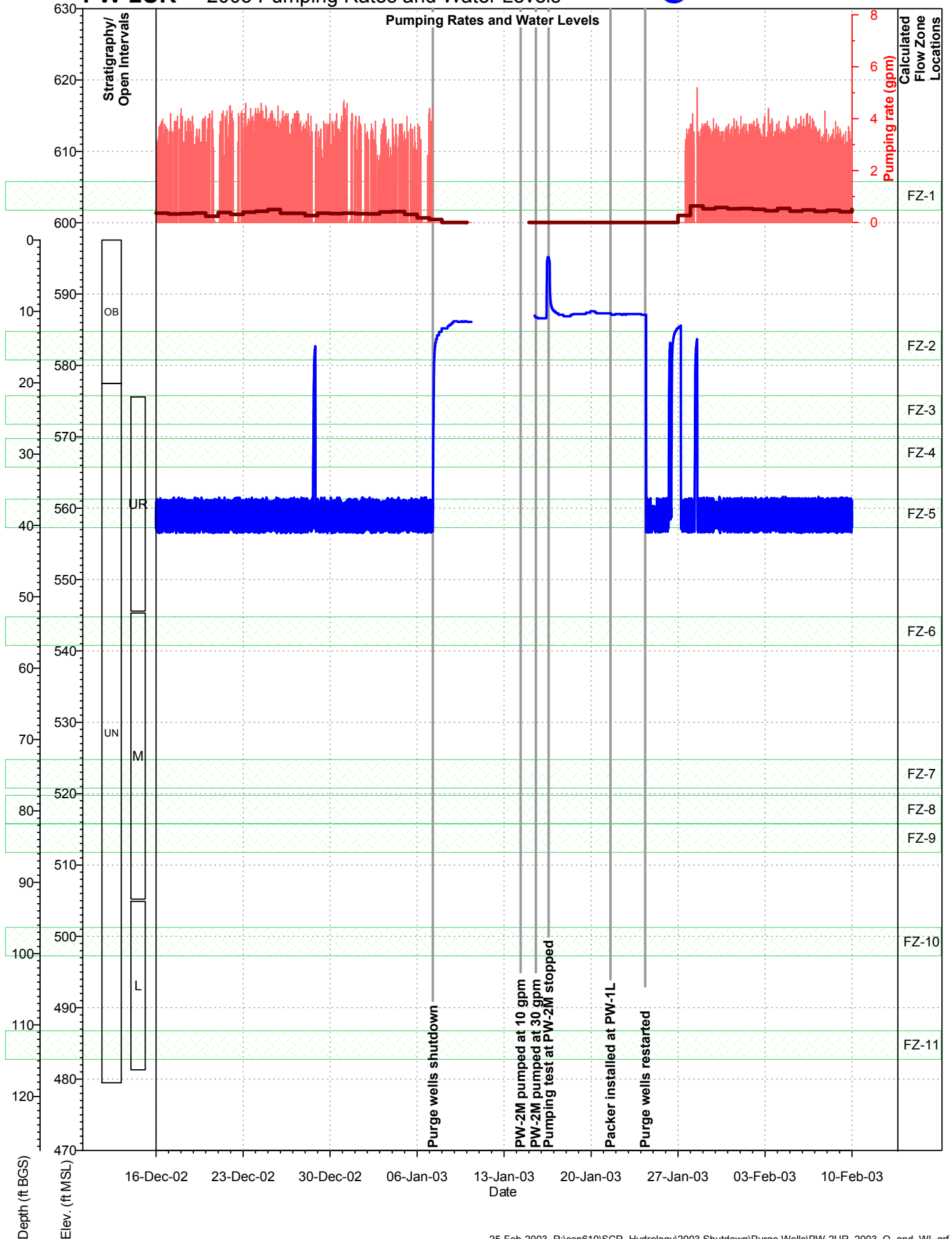
PW-2L 2003 Pumping Rates and Water Levels



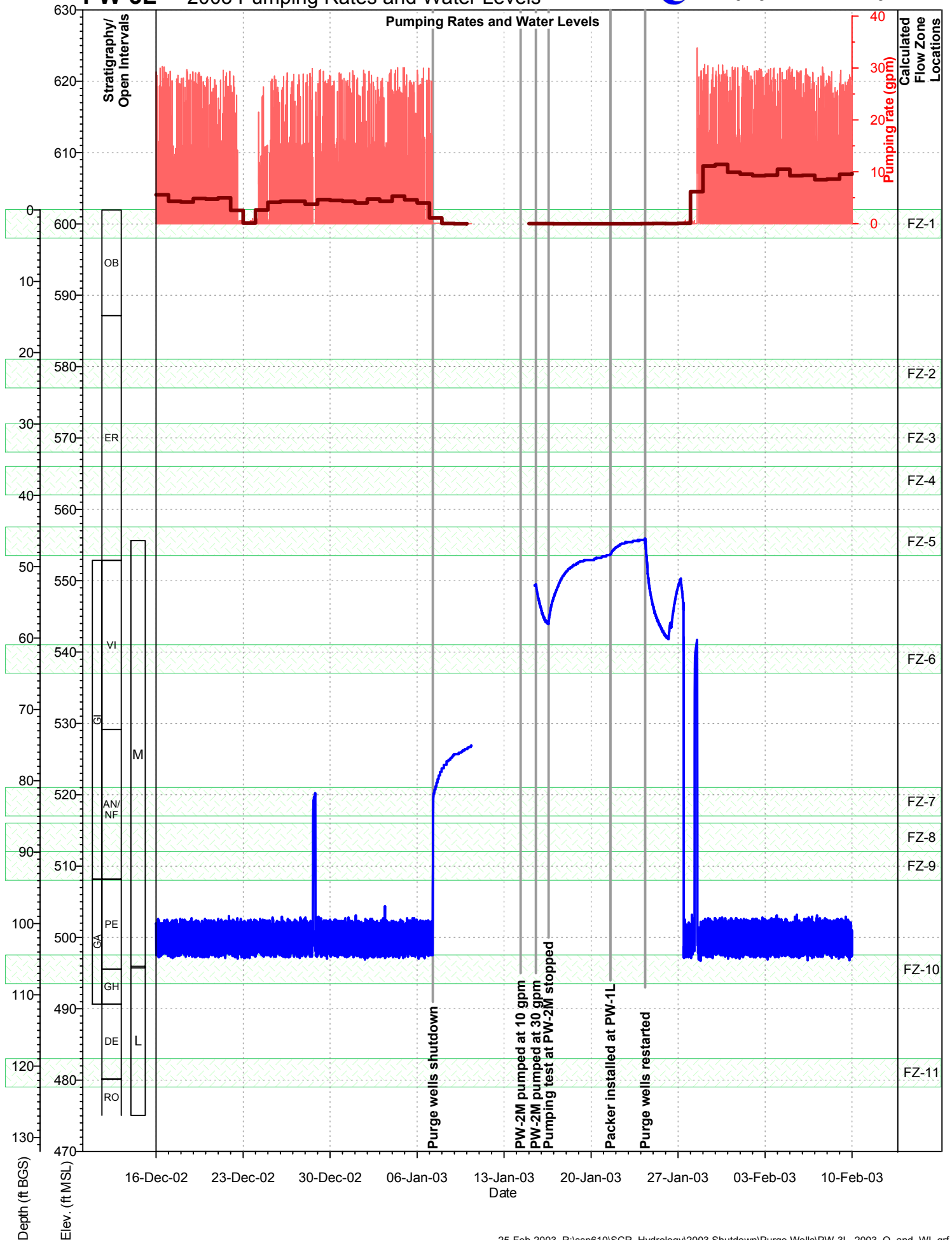
PW-2M 2003 Pumping Rates and Water Levels



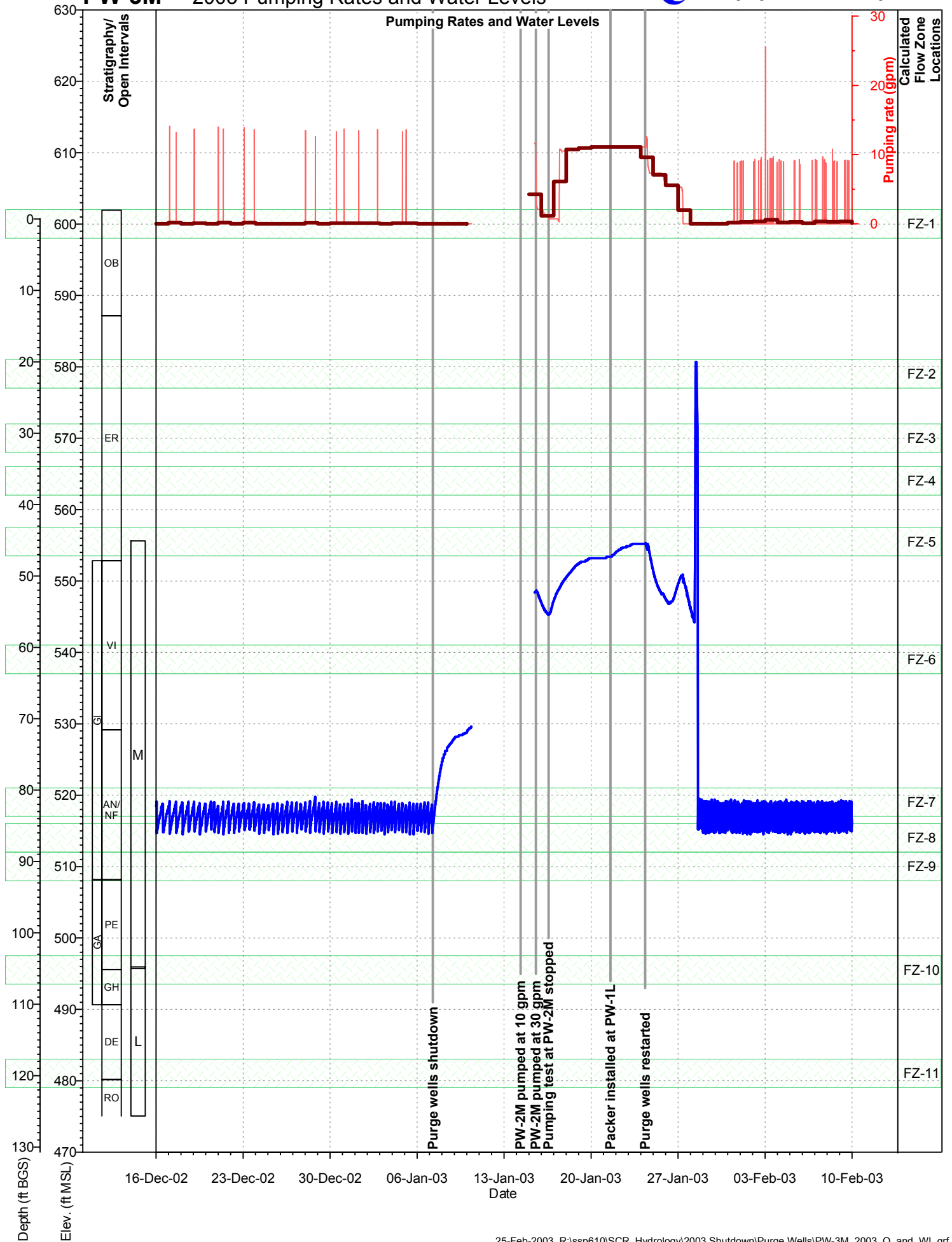
PW-2UR 2003 Pumping Rates and Water Levels



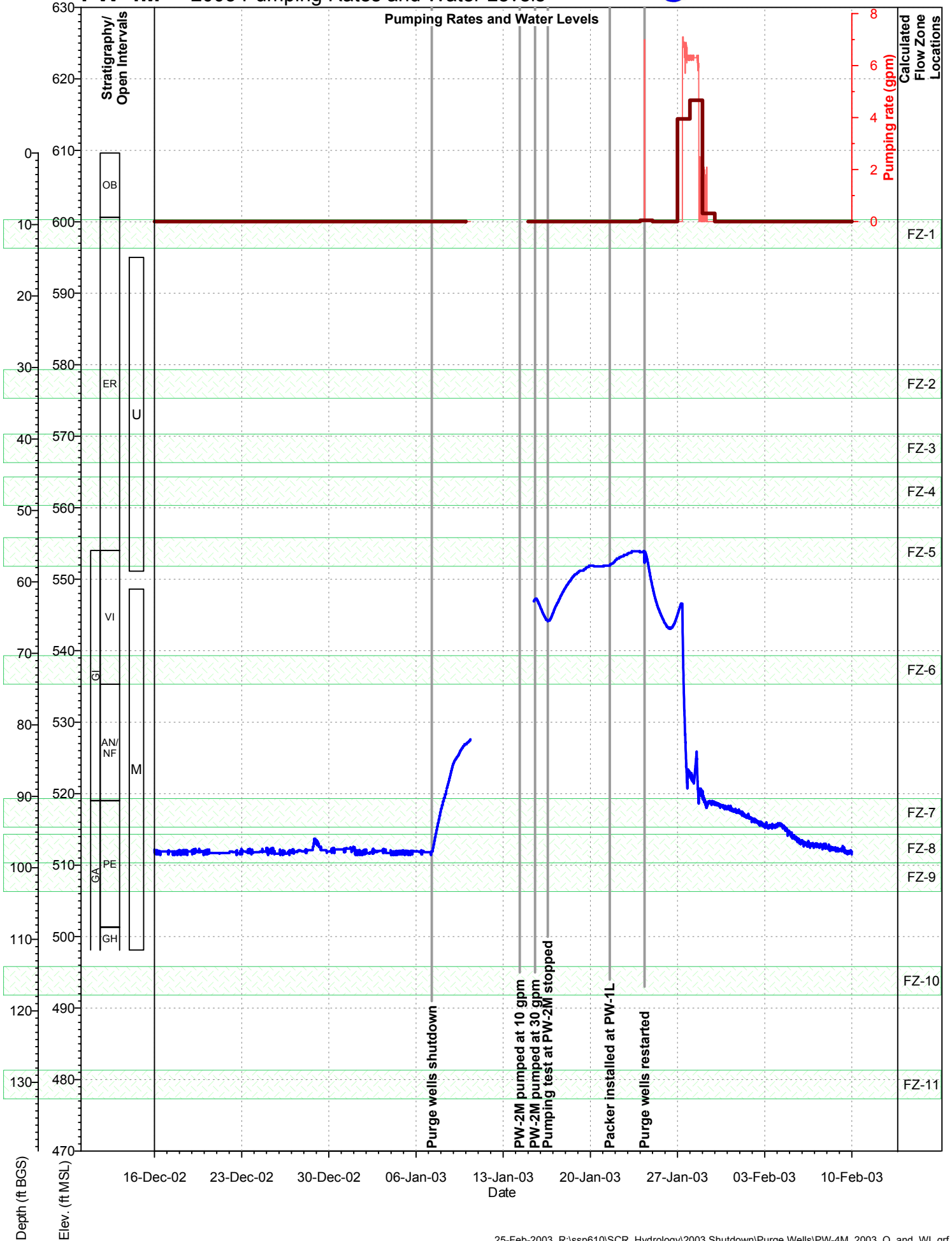
PW-3L 2003 Pumping Rates and Water Levels



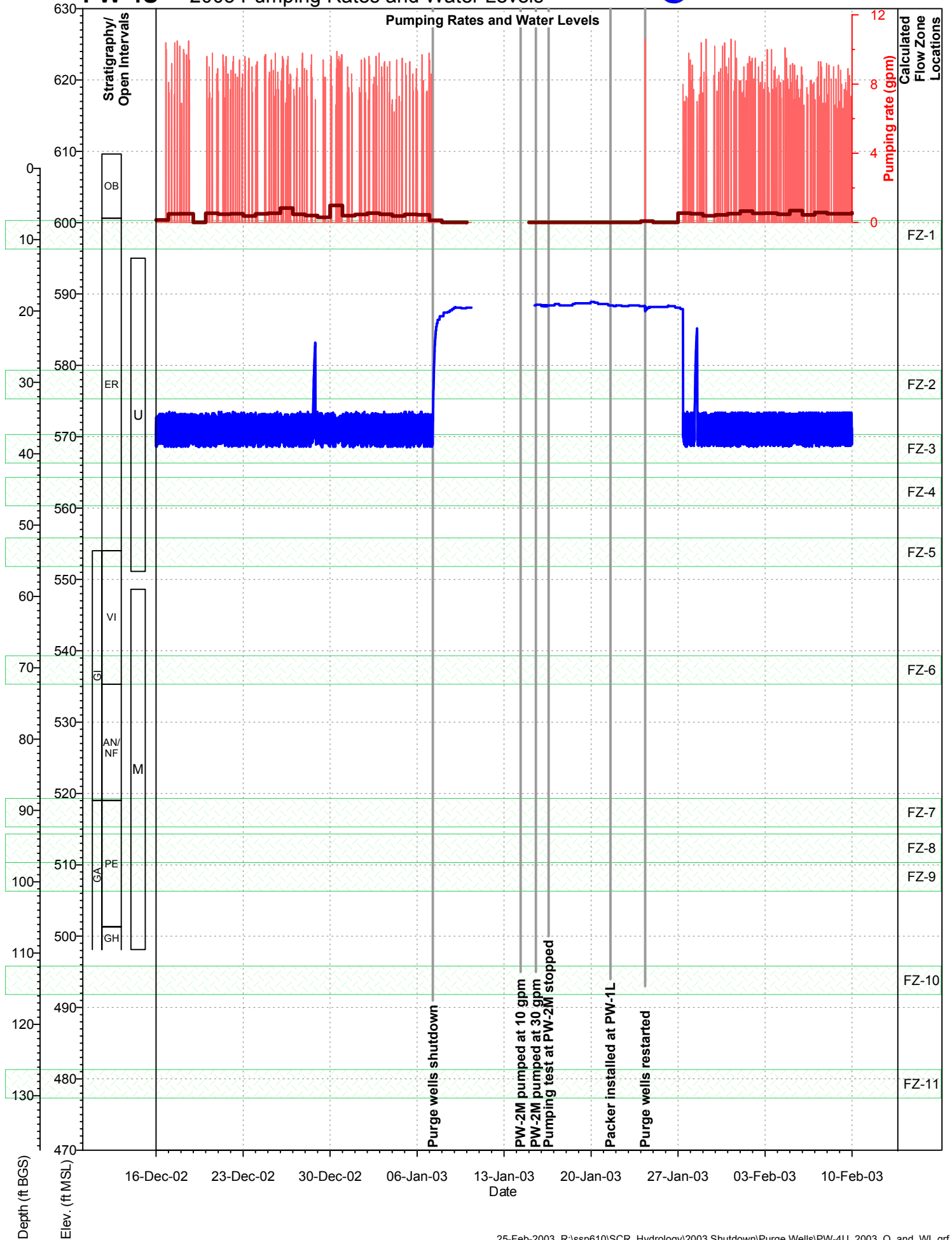
PW-3M 2003 Pumping Rates and Water Levels



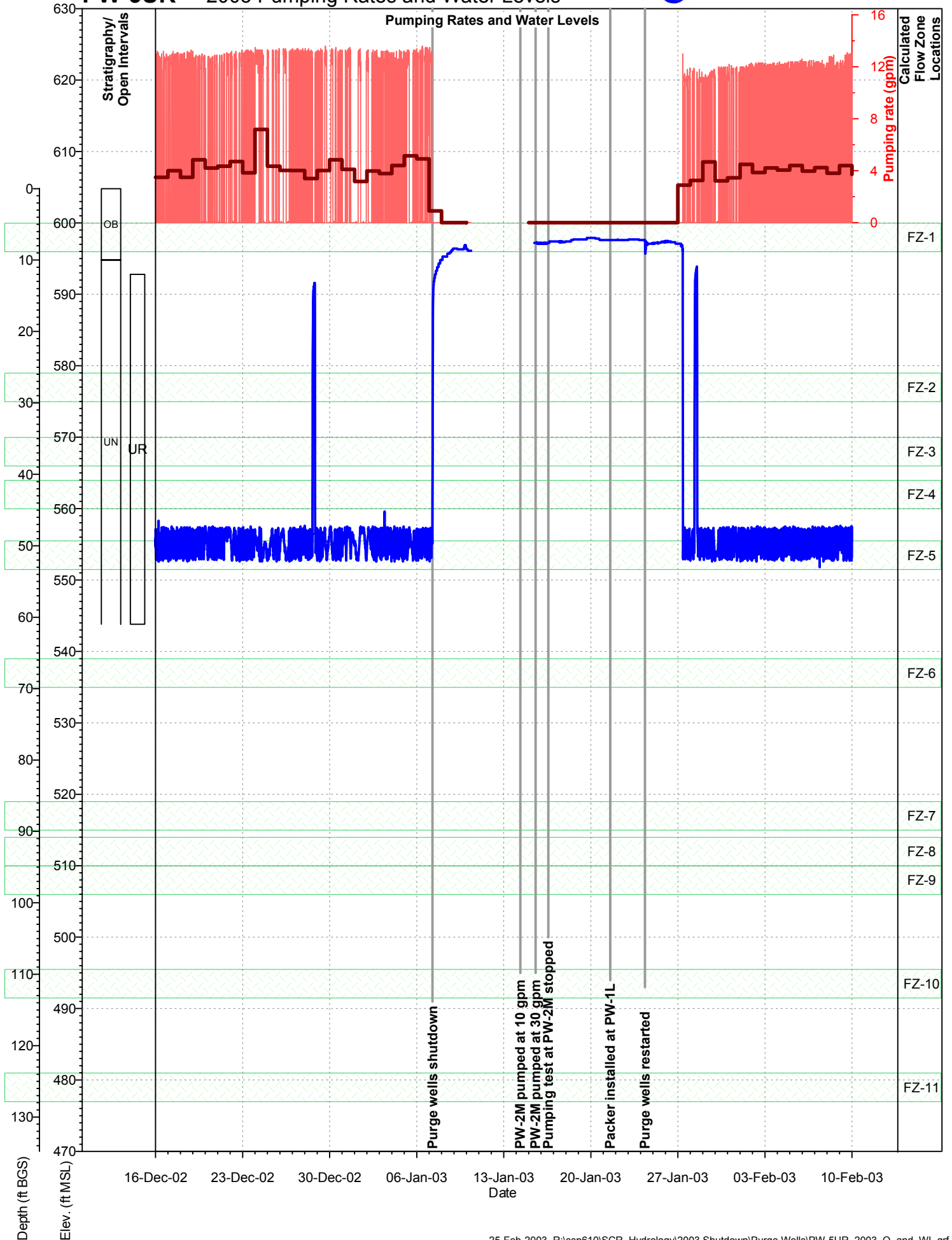
PW-4M 2003 Pumping Rates and Water Levels



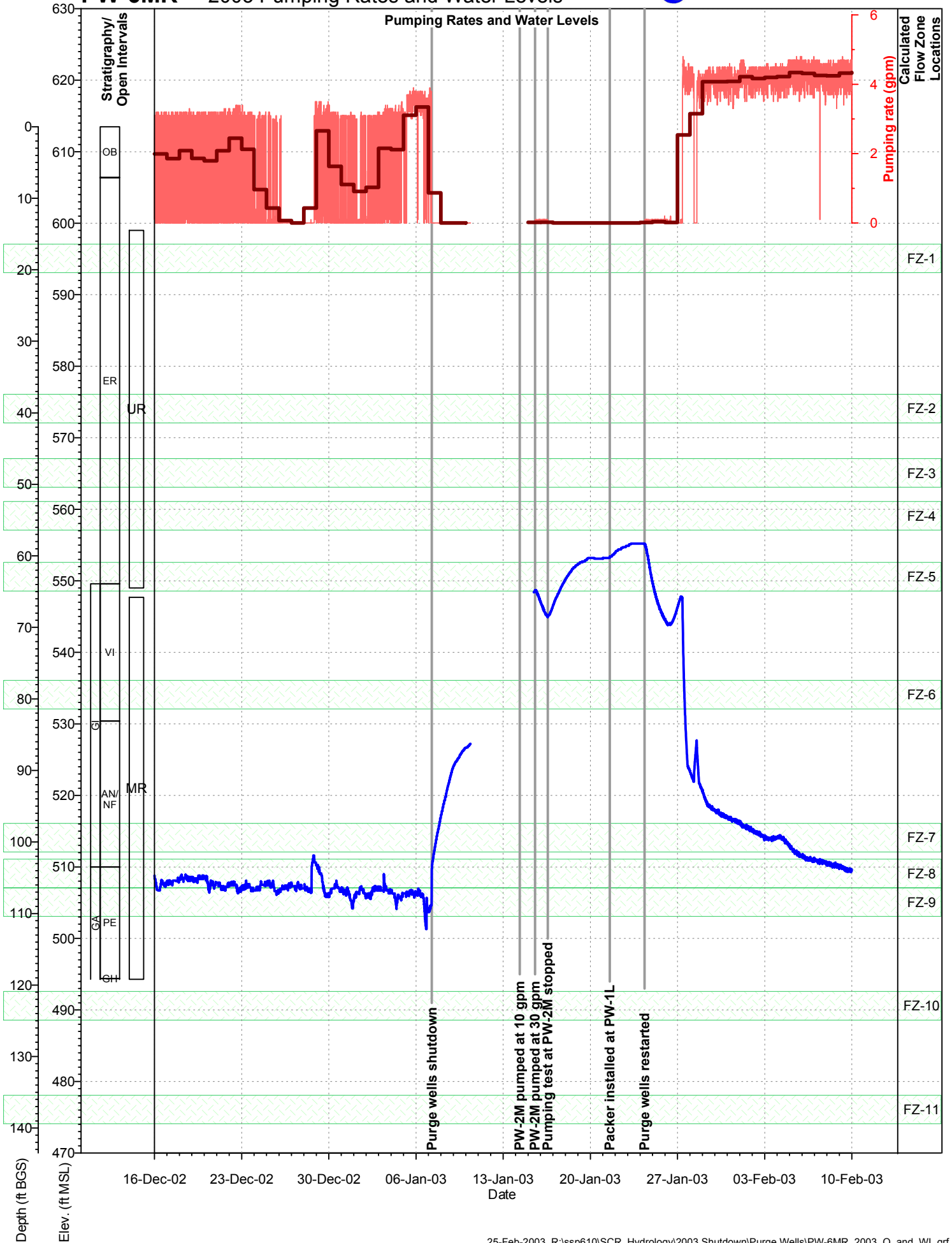
PW-4U 2003 Pumping Rates and Water Levels



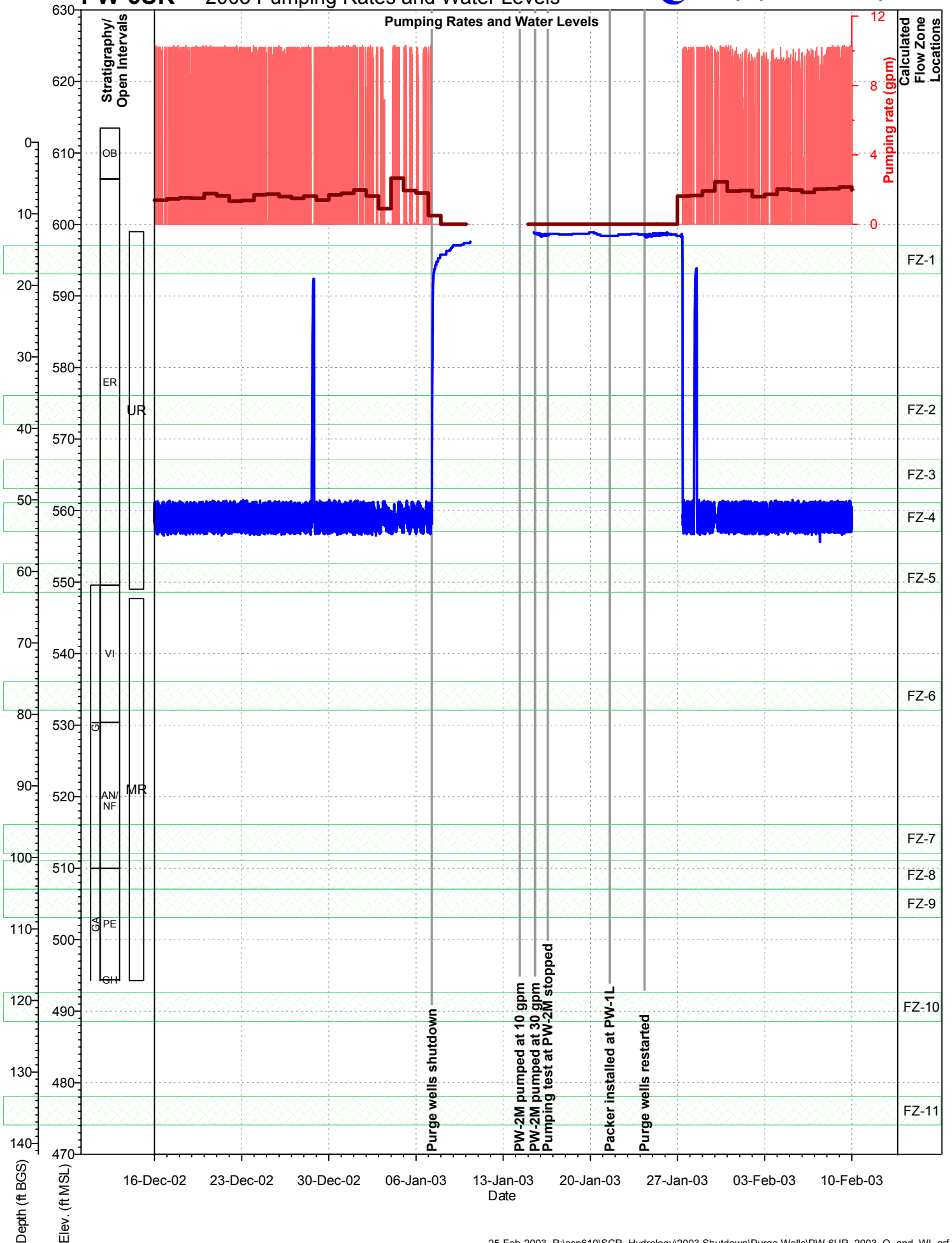
PW-5UR 2003 Pumping Rates and Water Levels



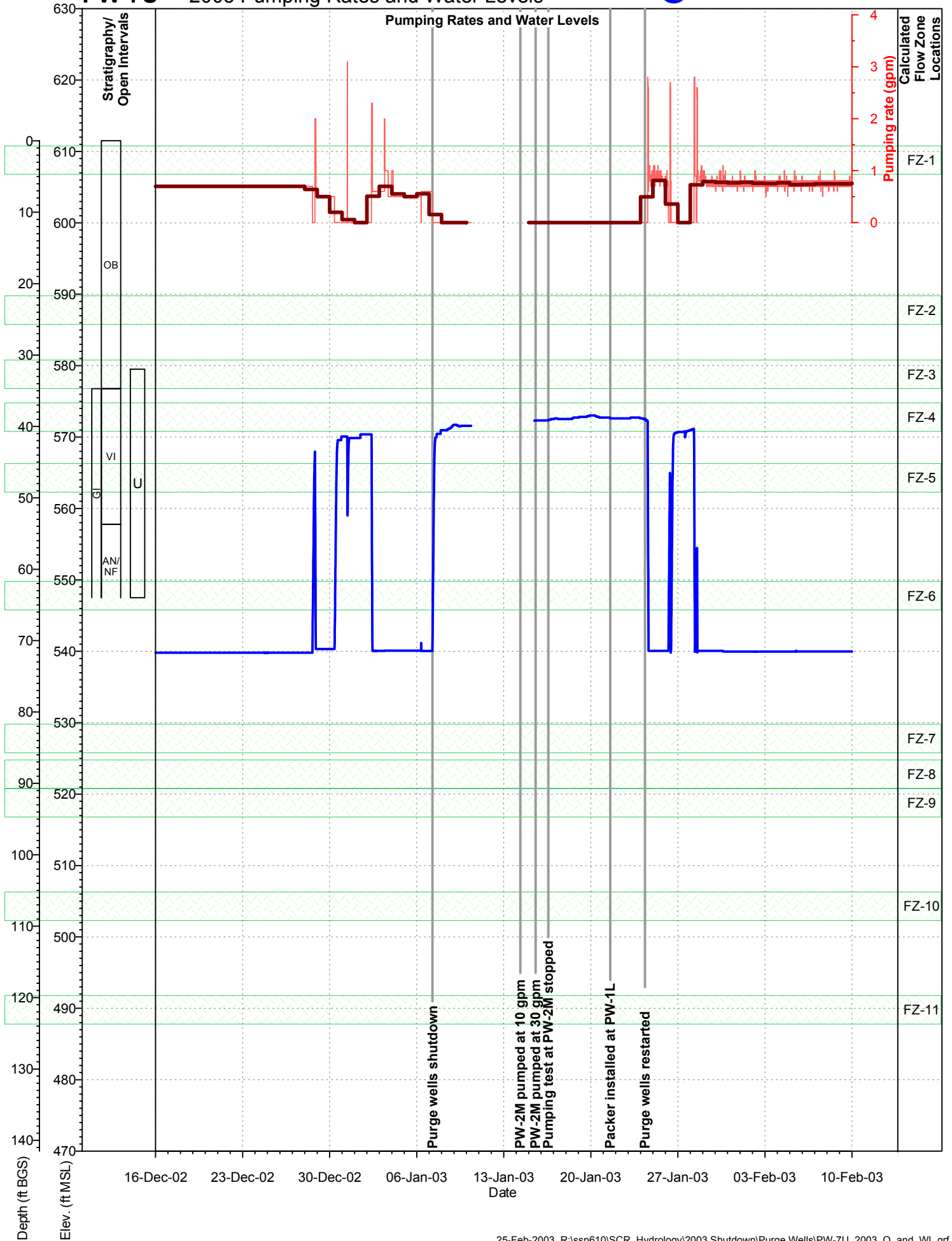
PW-6MR 2003 Pumping Rates and Water Levels



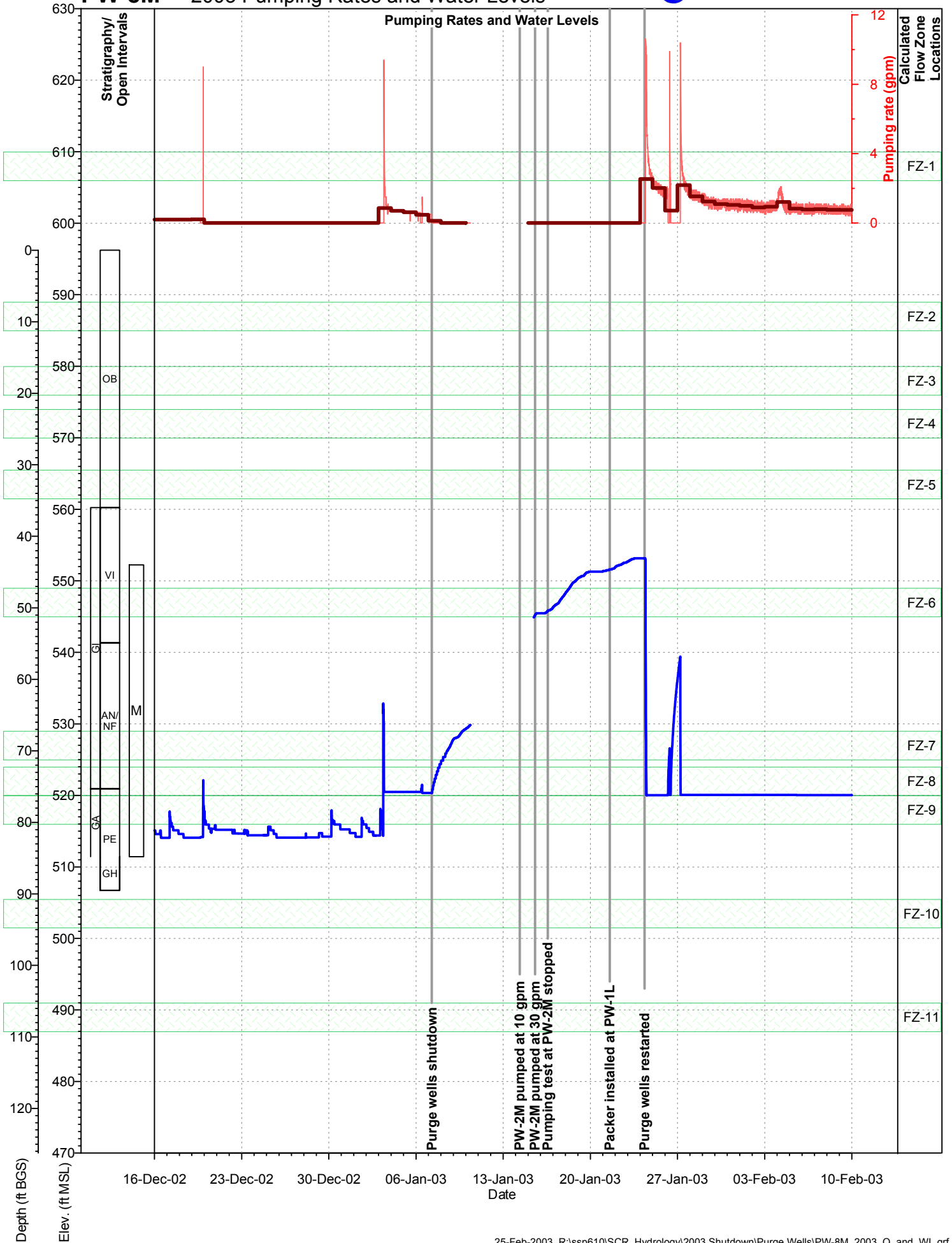
PW-6UR 2003 Pumping Rates and Water Levels



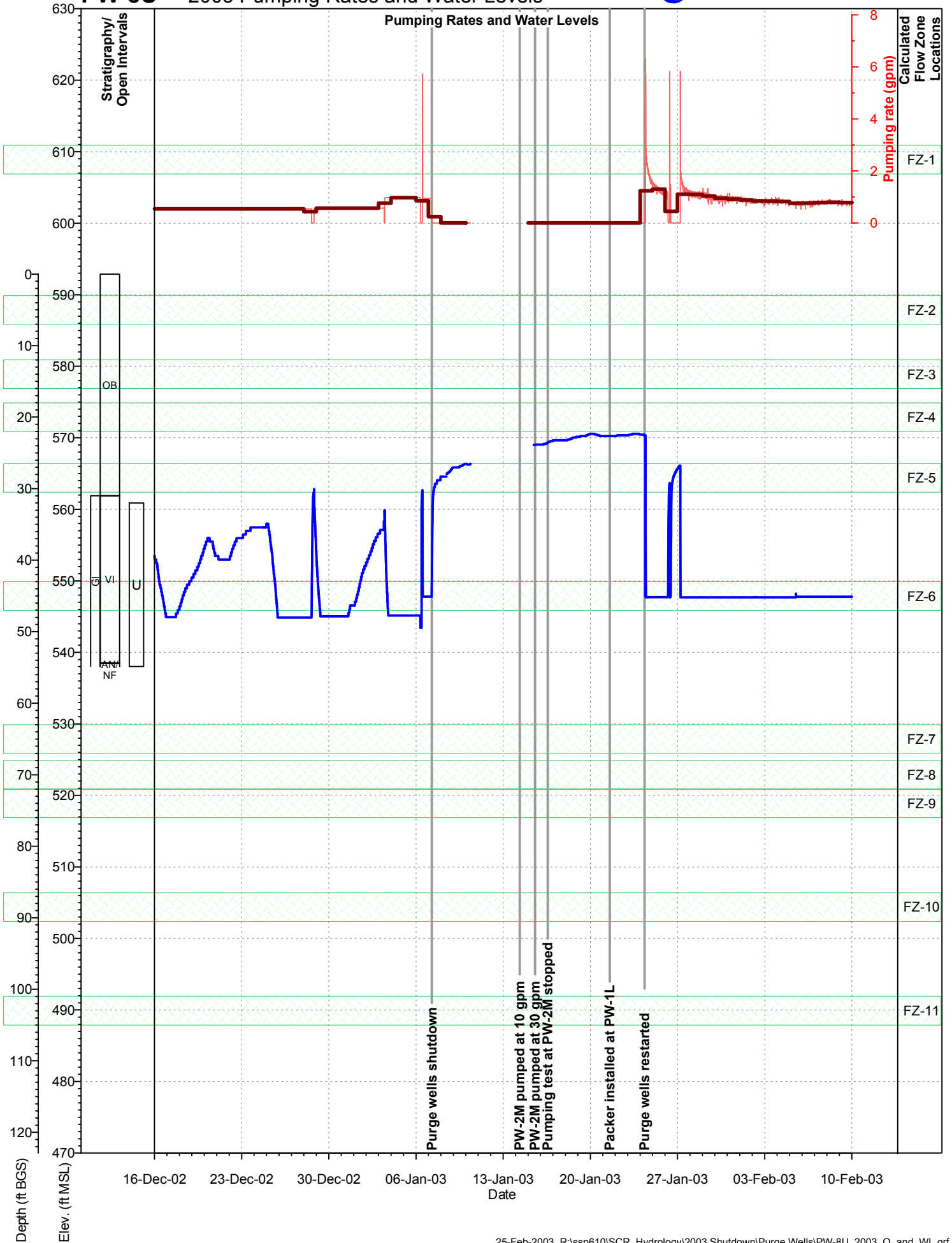
PW-7U 2003 Pumping Rates and Water Levels



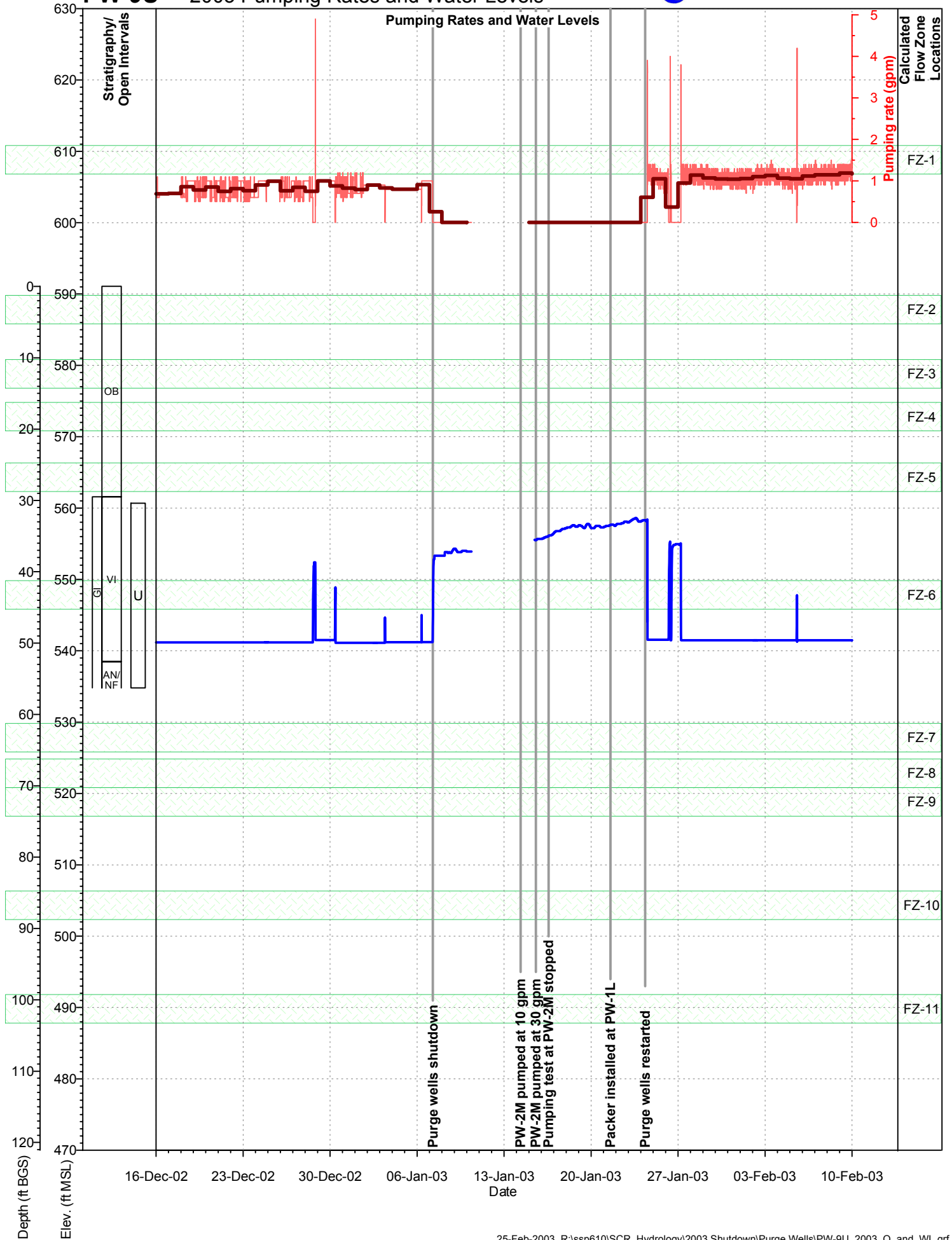
PW-8M 2003 Pumping Rates and Water Levels



PW-8U 2003 Pumping Rates and Water Levels



PW-9U 2003 Pumping Rates and Water Levels



B5. Generation of Synthetic Data at B2L-11, D1M-09, and D1L-11

Memorandum

Date: February 20, 2003

From: Hyde Park Technical Team

To: File

SSPA Project: 610

Subject: Generation of Synthetic Data at B2L-11, D1M-09, and D1L-11
R:\ssp610\SCR_Hydrology\Report\Appendix B\Memo_synthesis of water levels.doc

Introduction

The water level records at B2L-11, D1M-09, and D1L-11 are incomplete due to brief exceedances of the maximum transducer submergence during water level recovery. The missing water levels are synthesized in order to supplement the water level database.

The synthetic water levels are generated by comparing the water level responses to a nearby piezometer exhibiting a similar water level response. The periods during which water level data are synthesized, and the location used for the basis in generating the synthetic data are given in the following table:

Synthesis Location	Start of Period	End of Period	Basis Location
B2L-11	13-Jan-2003 21:20	16-Jan-2003 16:20	B2M-09
D1M-09	18-Jan-2003 10:00	24-Jan-2003 08:20	D2M-09
D1L-11	18-Jan-2003 00:50	21-Jan-2003 17:30	D2M-09

Methodology

A linear relationship is assumed between the water levels at the synthesis locations and the basis locations. Excel Solver is used to estimate the coefficients of best-fit by minimizing the sum of squared residuals between the observed and estimated water levels. Two linear approximations are used to synthesize data at B2L-11 and D1M-09 in order to ensure a match to the recorded water levels at both the beginning and end of the synthetic record. The synthesized water levels are then estimated using a weighted linear interpolation of the two fits.

The equations used to synthesize the water levels are :

$$WL_{B2L-11} = (0.809 \times WL_{B2M-09} + 99.487) WF + (0.822 \times WL_{B2M-09} + 91.651)(1 - WF)$$

$$WL_{D1M-09} = (1.012 \times WL_{D2M-09} - 6.217) WF + (0.997 \times WL_{D2M-09} + 1.062)(1 - WF)$$

$$WL_{D1L-11} = (0.710 \times WL_{D2M-09} + 147.971)$$

where

WL is the water level (piezometer location is indicated by subscript text); and
WF is the weighting factor, which varies linearly from zero to one over the period of estimation.

The transducer records and synthesized water levels are presented on Figure 1.

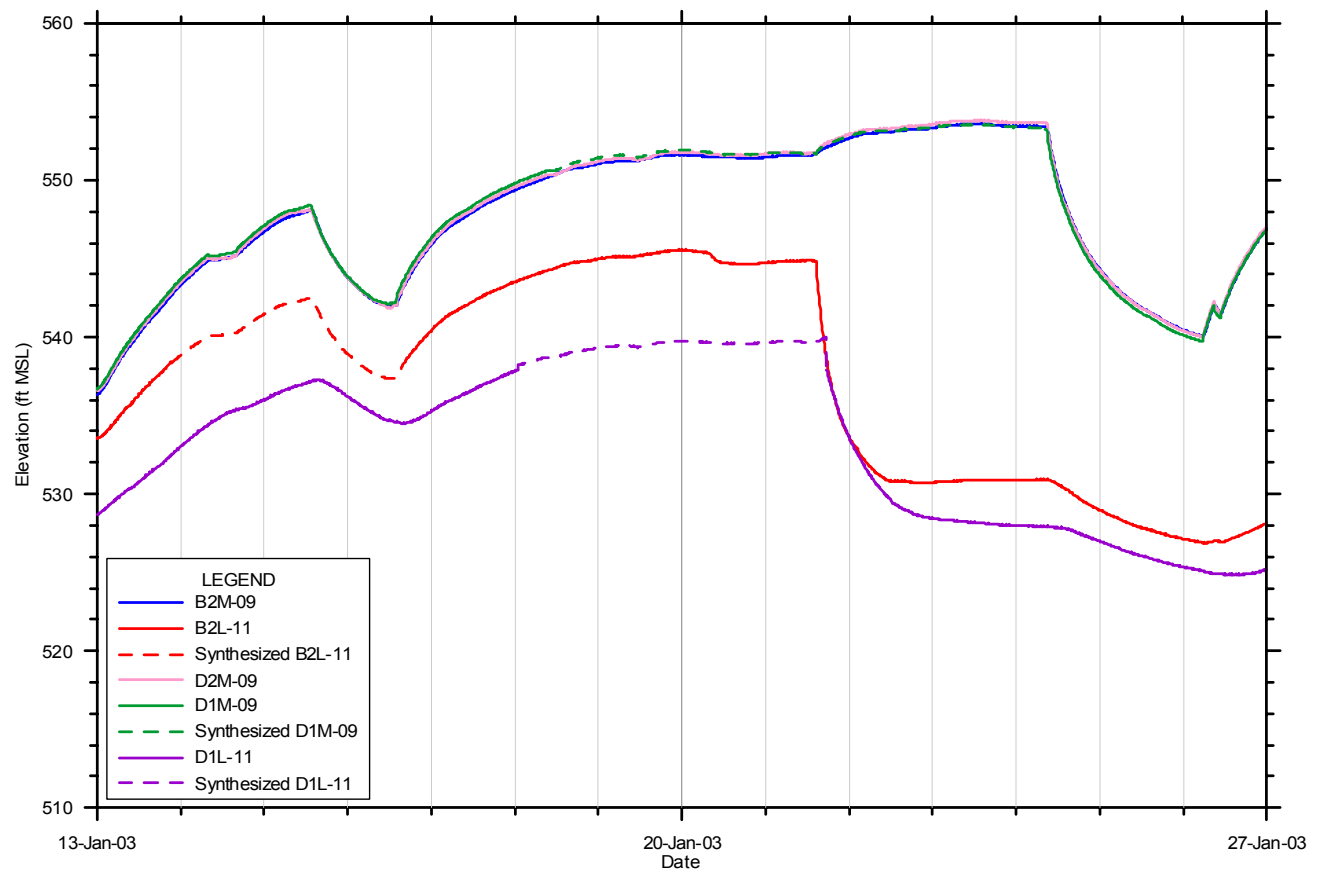


Figure 1 Observed and synthesized water levels