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March 1, 2017

David Lastovka, P.E.
ODOT District 12 Transportation Engineer
Ohio Department of Transportation
5500 Transportation Boulevard
Garfield Heights, Ohio 44125-5396

E-mail to: Dave.Lastovka@dot.state.oh.us

Re: February 2 and 3, 2017 Bi-Weekly Readings
CUY-90-15.24 Slope Monitoring
PID 96504
SME Project No. 069032.00

Dear Mr. Lastovka:

Bi-weekly instrument readings for the I-90 west slope taken on February 2 and 3, 2017, are presented in this report. Bi-weekly readings currently include instruments at I/P-001-13, I/P-002-13, I/P-003-10, P-003-13, I/P-004-13, I-008-10, I/P-009-13, B-101, B-102, B-105A, B-05-02, B-05-A-03, B-05-04, B-05-A-11, P-1, P-9N, and TGR I-4. Changes reported for the individual instruments are for the previous two-week period unless noted otherwise.

Piezometer Readings

Pore pressure readings at P-001-13, P-002-13, P-003-10, P-003-13, P-004-13, P-009-13, B-105A, B-05-A-03, B-05-04, and B-05-A-11 show slight increases in total head of less than 0.5 feet for the period.

B-05-02 – Pore pressures had been dropping at the end of the last two-week period but increased again this period. Pore pressures in the shallow piezometer remain slightly below the highest pressure recorded during the last two-week period and have increased by about 5 feet since December 29, 2016. Pore pressures in the deep piezometer increased by about 0.7 feet this period. Pore pressures in both piezometers remain well below the highest pressures read during the past four years.

Inclinometer Readings

Inclinometer readings at I-001-13, I-002-13, I-003-10, I-004-13, I-008-10, I-009-13, B-101, B-105A, B-05-02, B-05-A-03, B-05-04, B-05-A-11, P-1, P-9N, and TGR I-4 showed virtually no movement this period. In some cases, the plots indicated displacement at the top of the casing. This is due to disturbance of the area around the casing that occurred during construction. Protective covers have not yet been permanently concreted in place because of the ongoing construction near these instruments.

B-102 – We were unable to access this location due to a large accumulation of plowed snow above the instrument.

This concludes our report of bi-weekly instrument readings. Please call or email with any questions.

Very truly yours,

SME

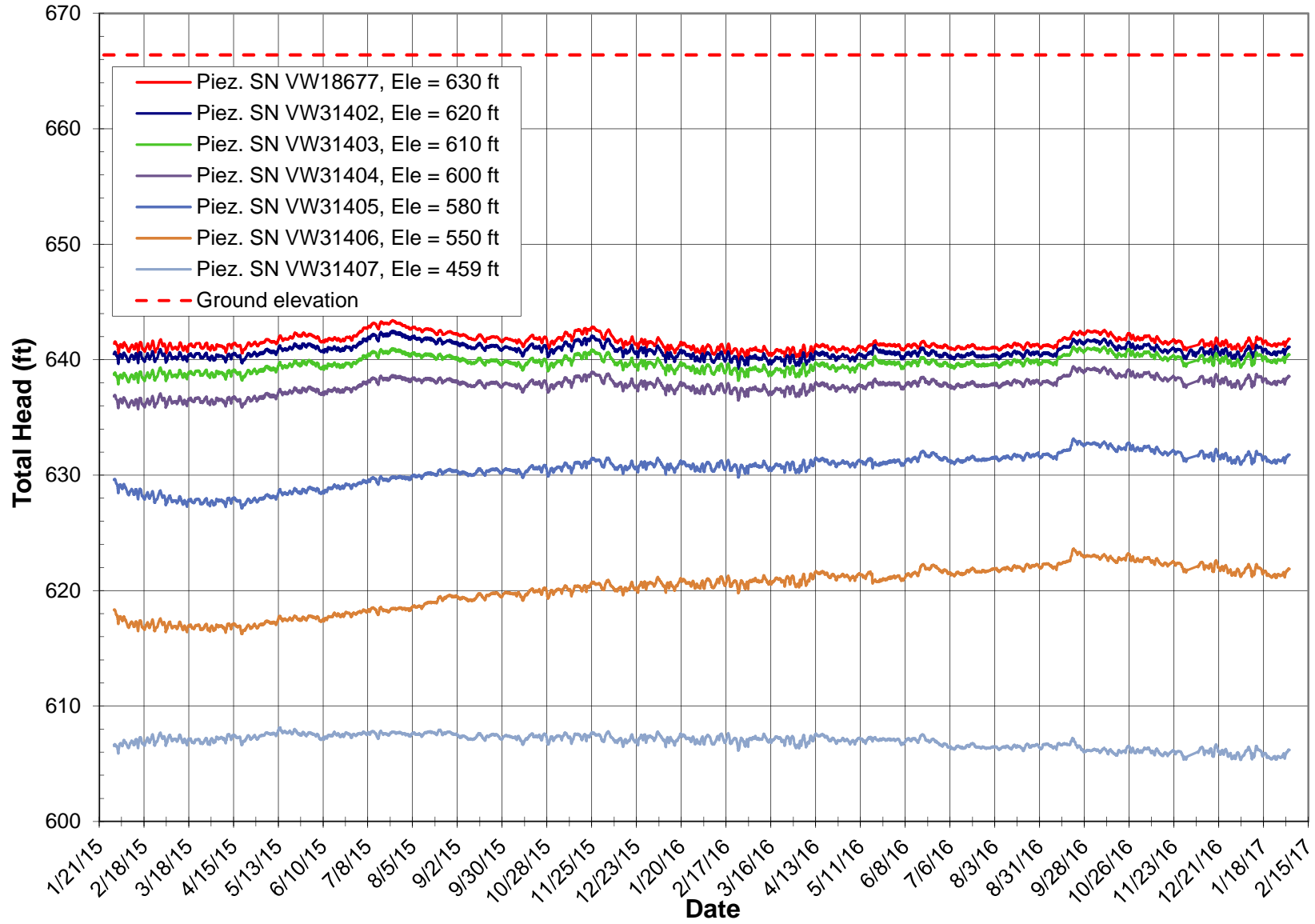
Brendan P. Lieske, P.E.
Senior Staff Engineer

Alan J. Esser, P.E., D.GE
Chief Consultant

Copies sent to distribution list.

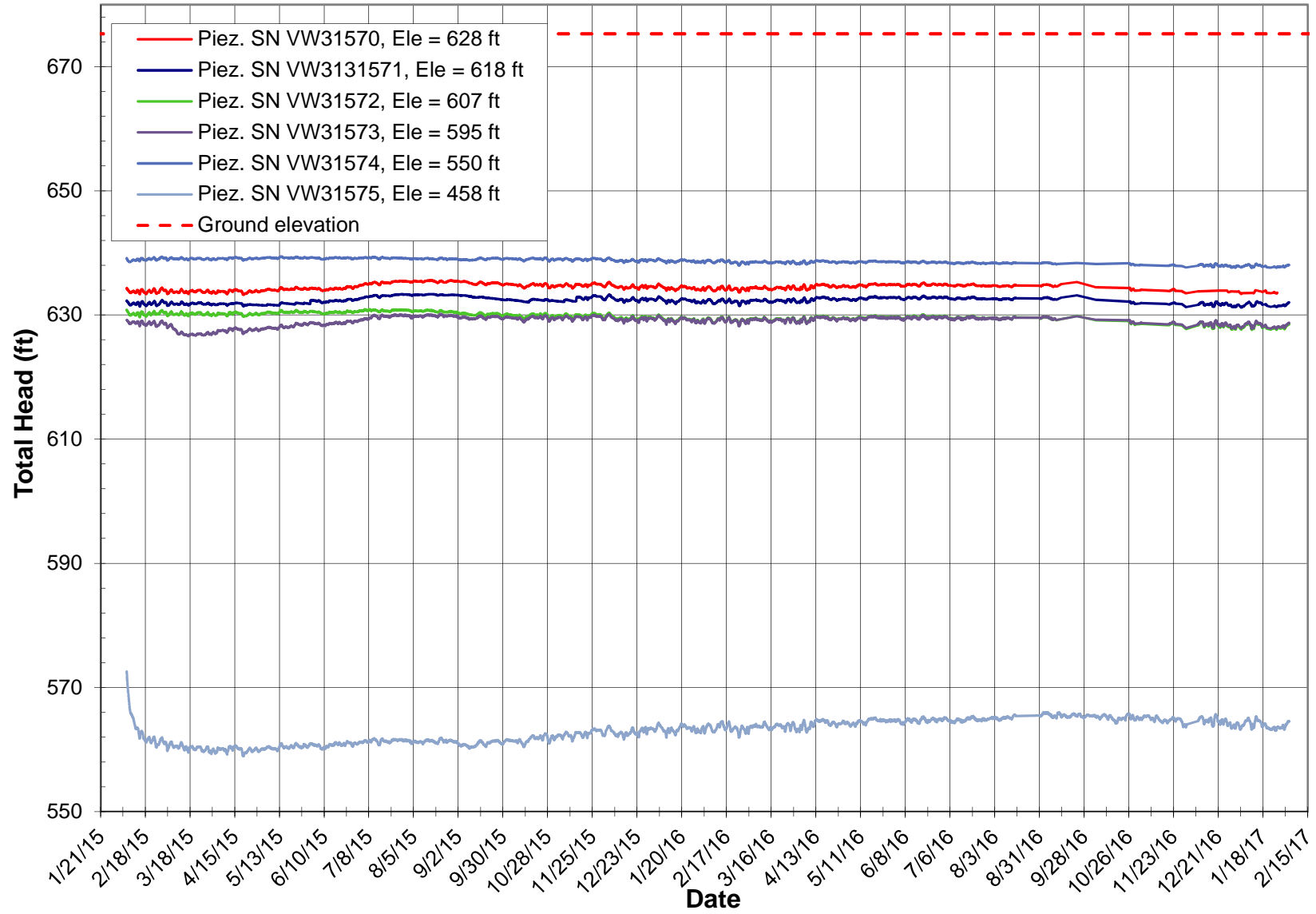
P-001-13 VW Piezometer Readings

Ground surface elevation = 666.4 ft



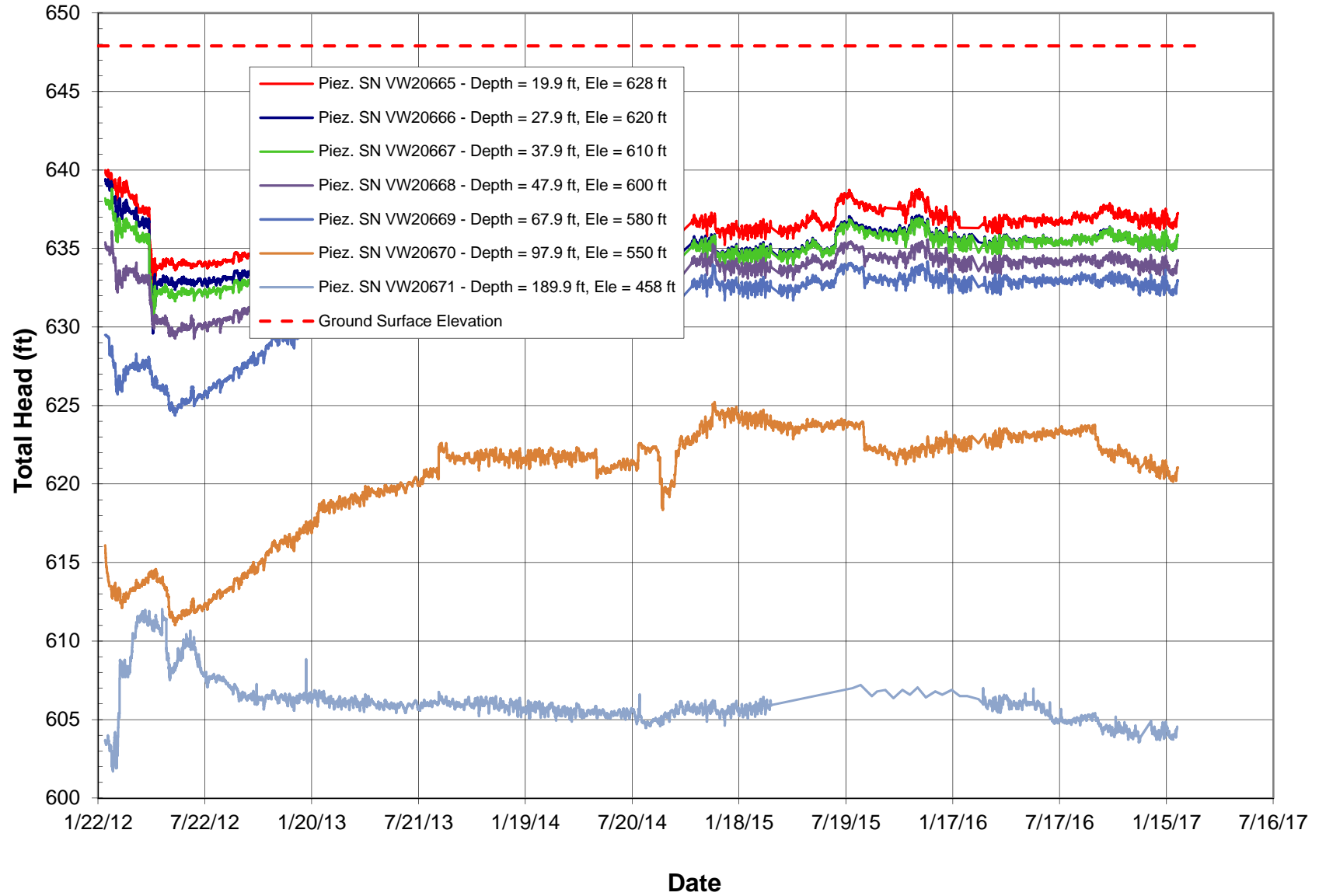
P-002-13 VW Piezometer Readings

Ground surface elevation = 675.29 ft



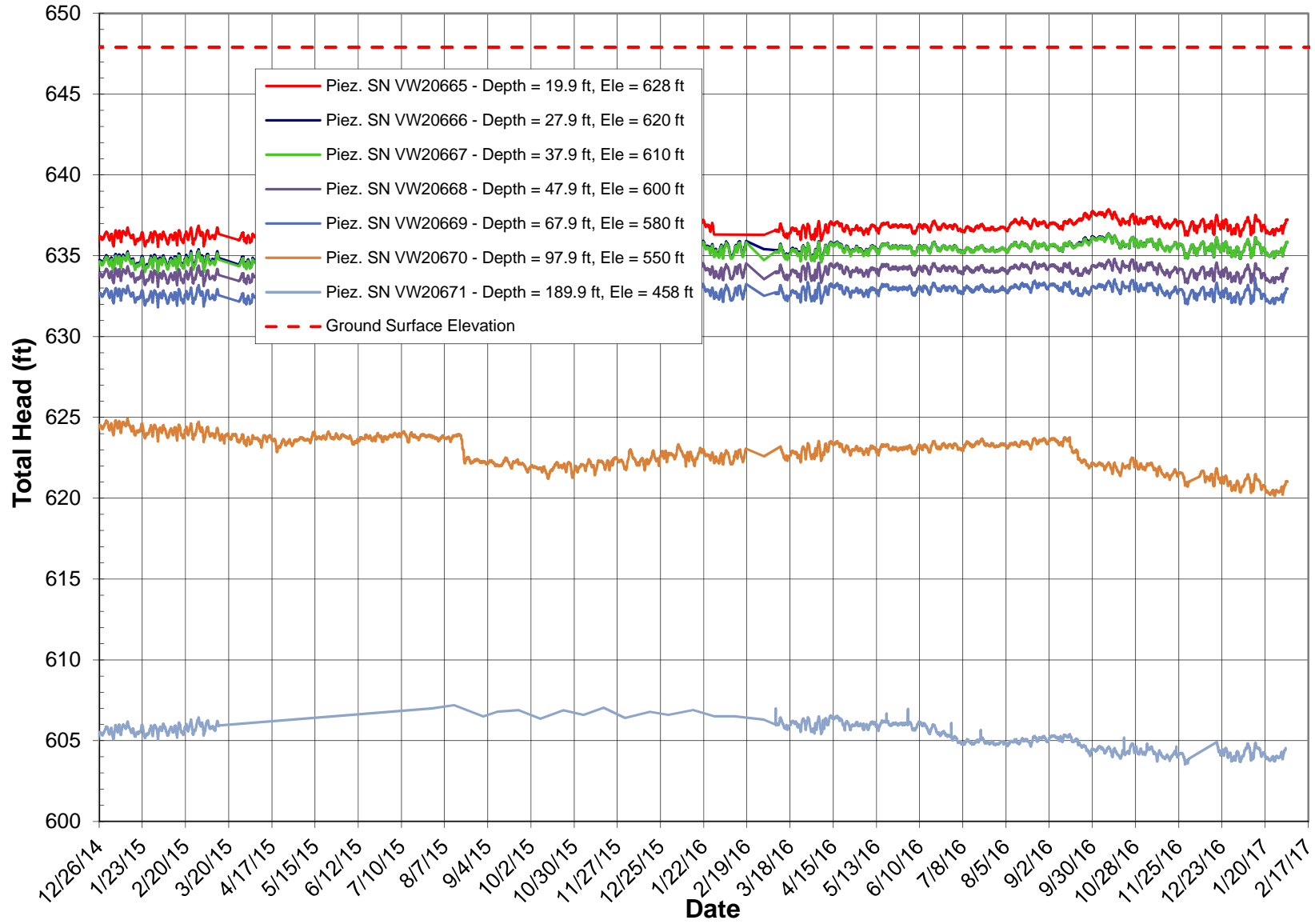
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



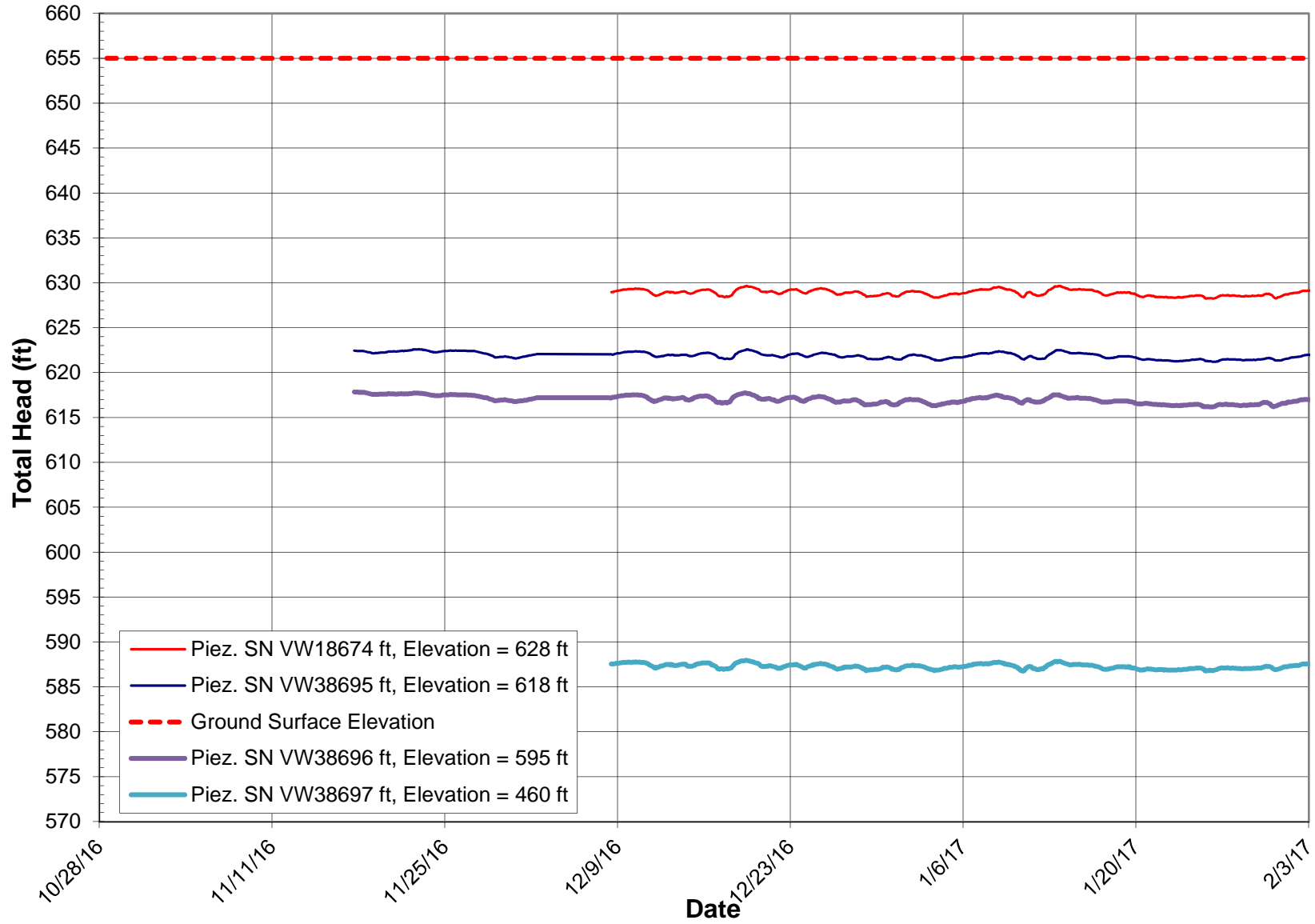
P-003-10 VW Piezometer Readings

Ground surface elevation = 647.9 ft



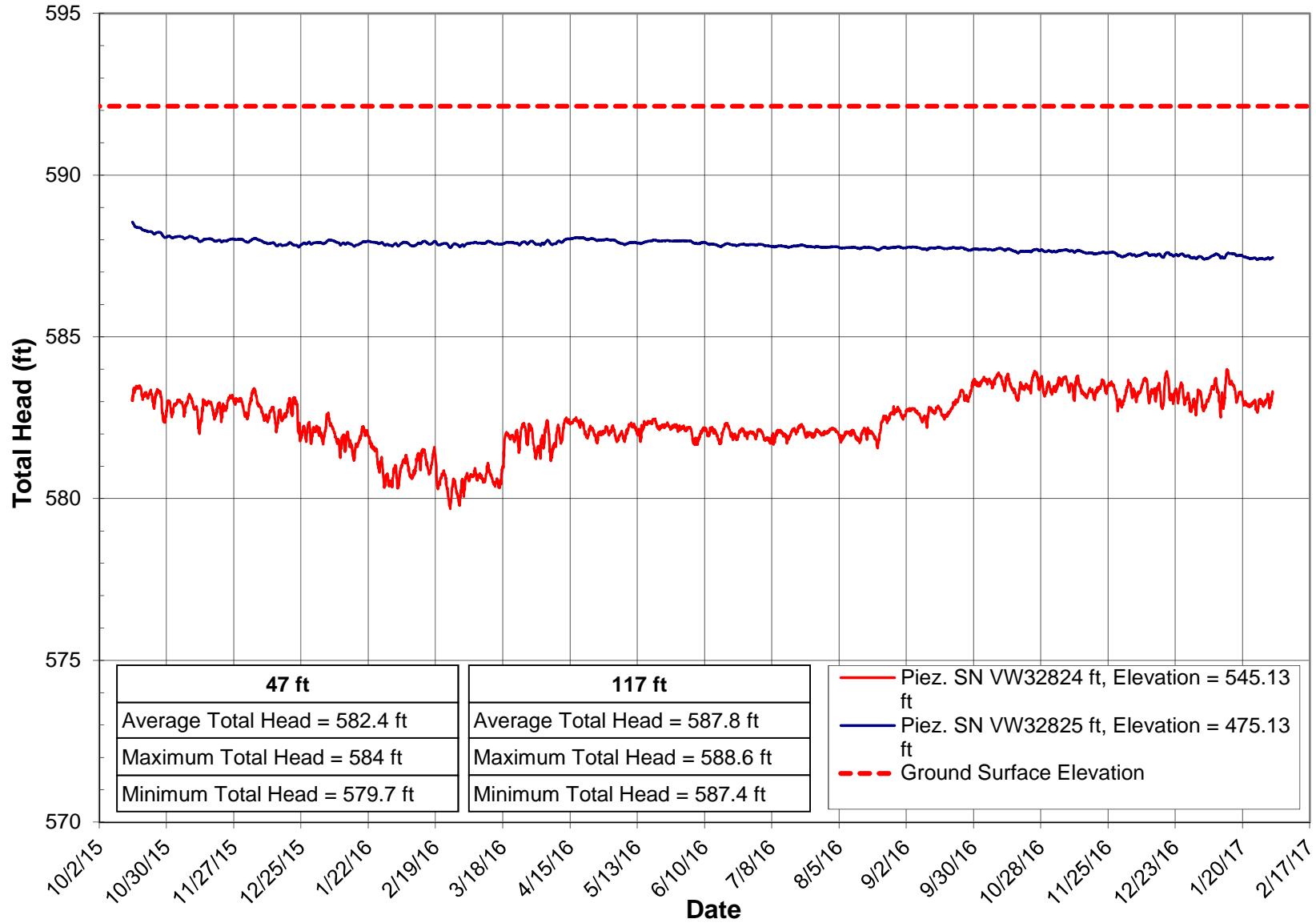
P-003-13 VW Piezometer Readings

Ground surface elevation = 655 ft



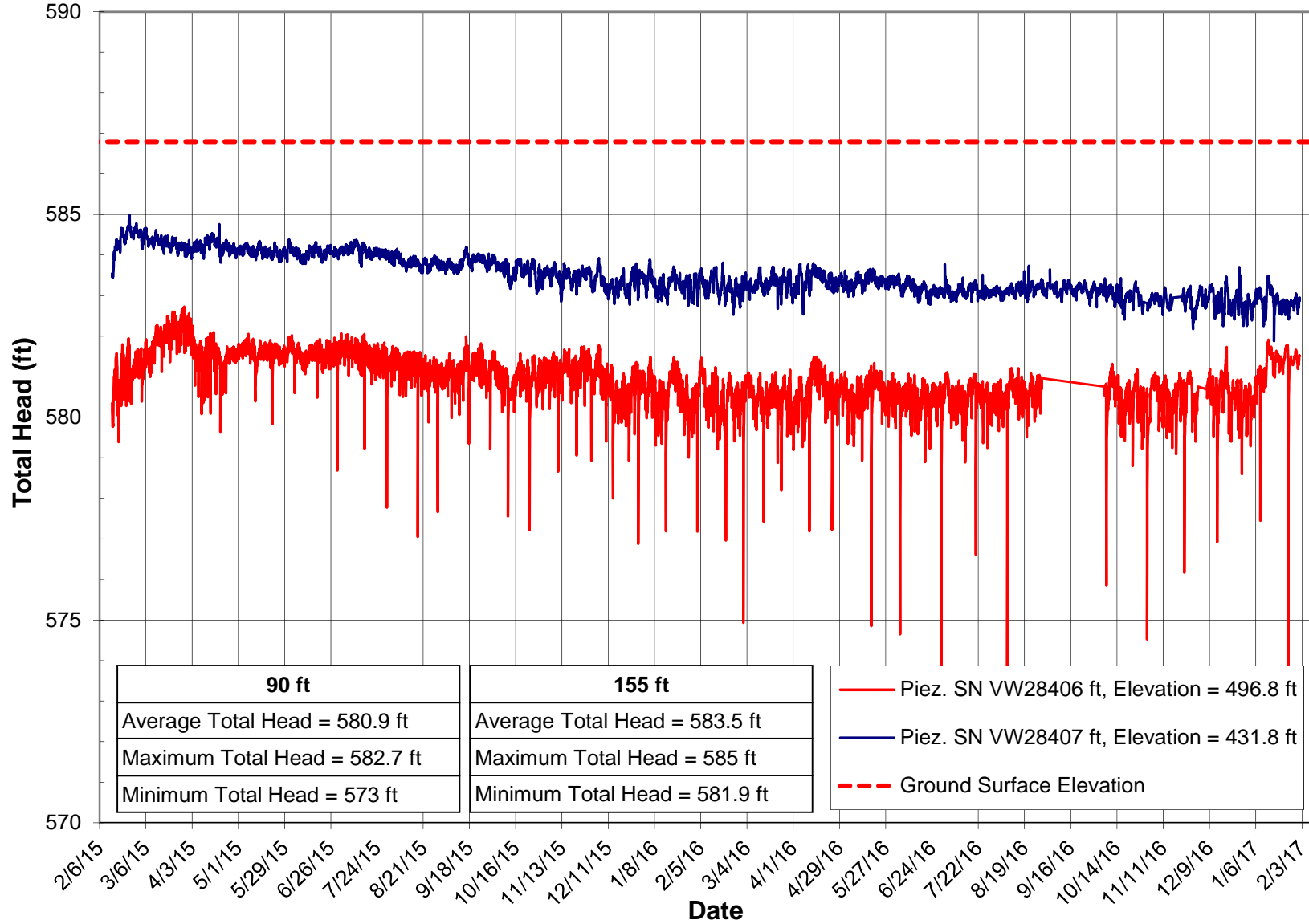
P-004-13 VW Piezometer Readings

Ground surface elevation = 592.13 ft



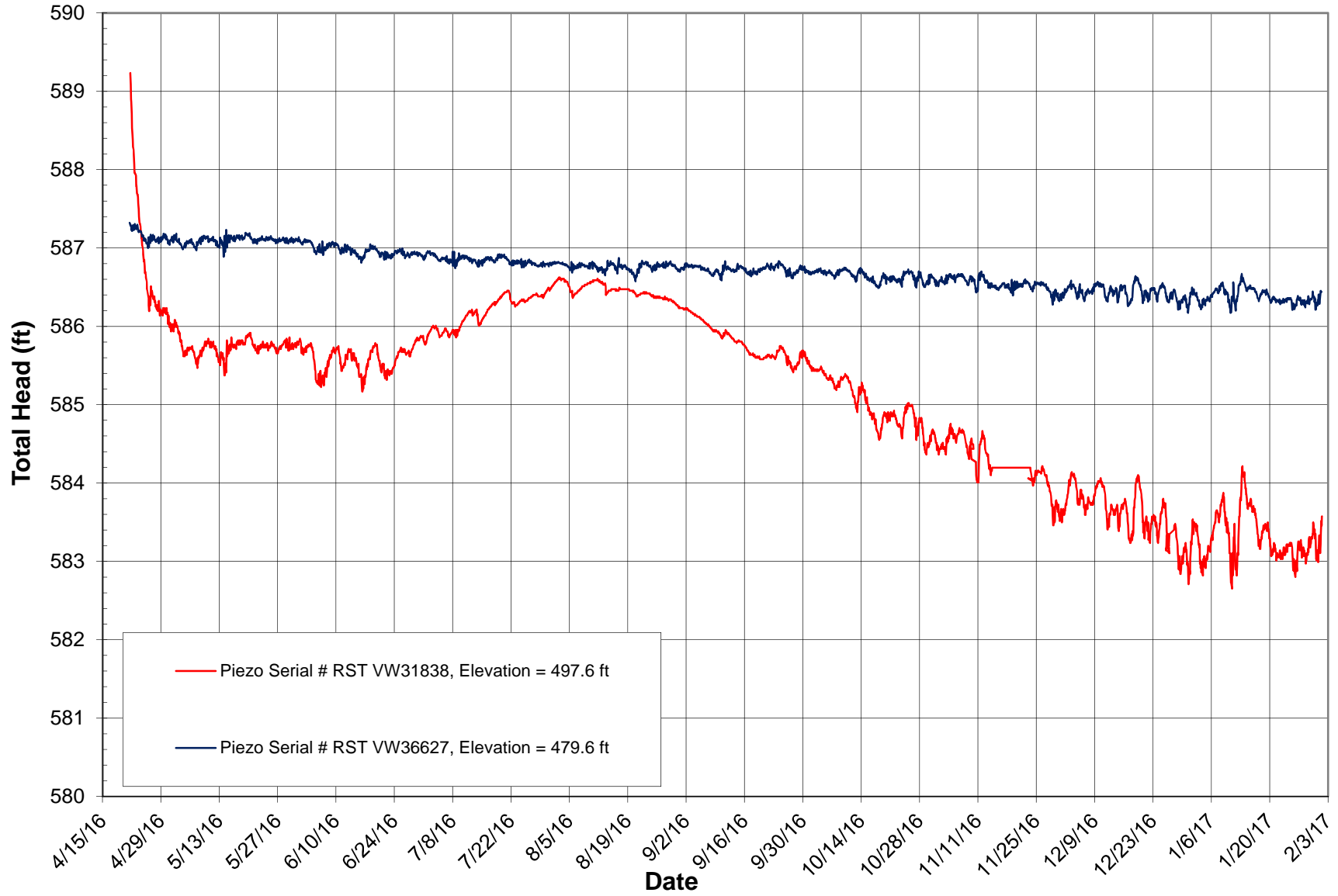
P-009-13 VW Piezometer Readings

Ground surface elevation = 586.6 ft



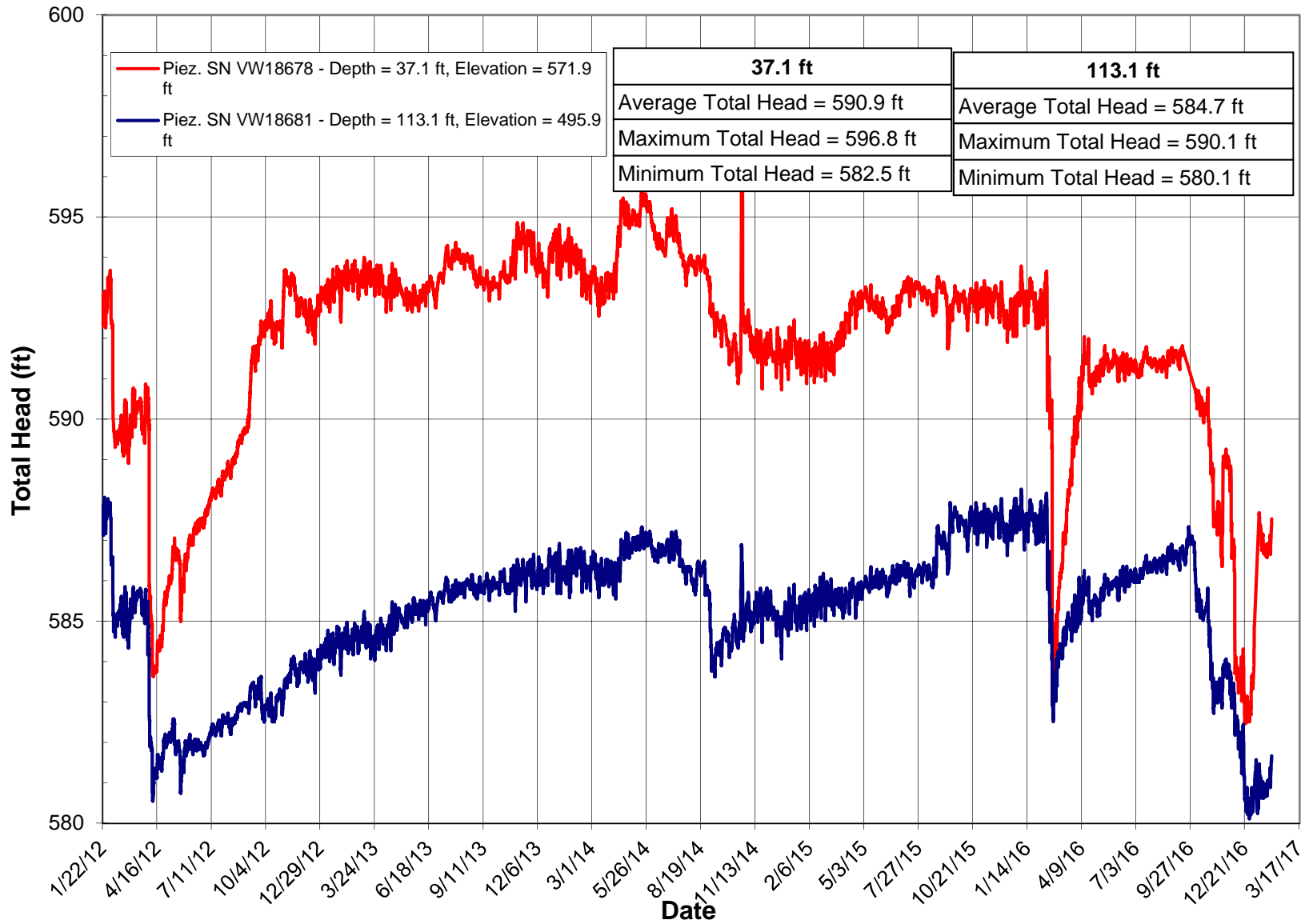
B-105A VW Piezometer Readings

Ground surface elevation = 585.6 ft



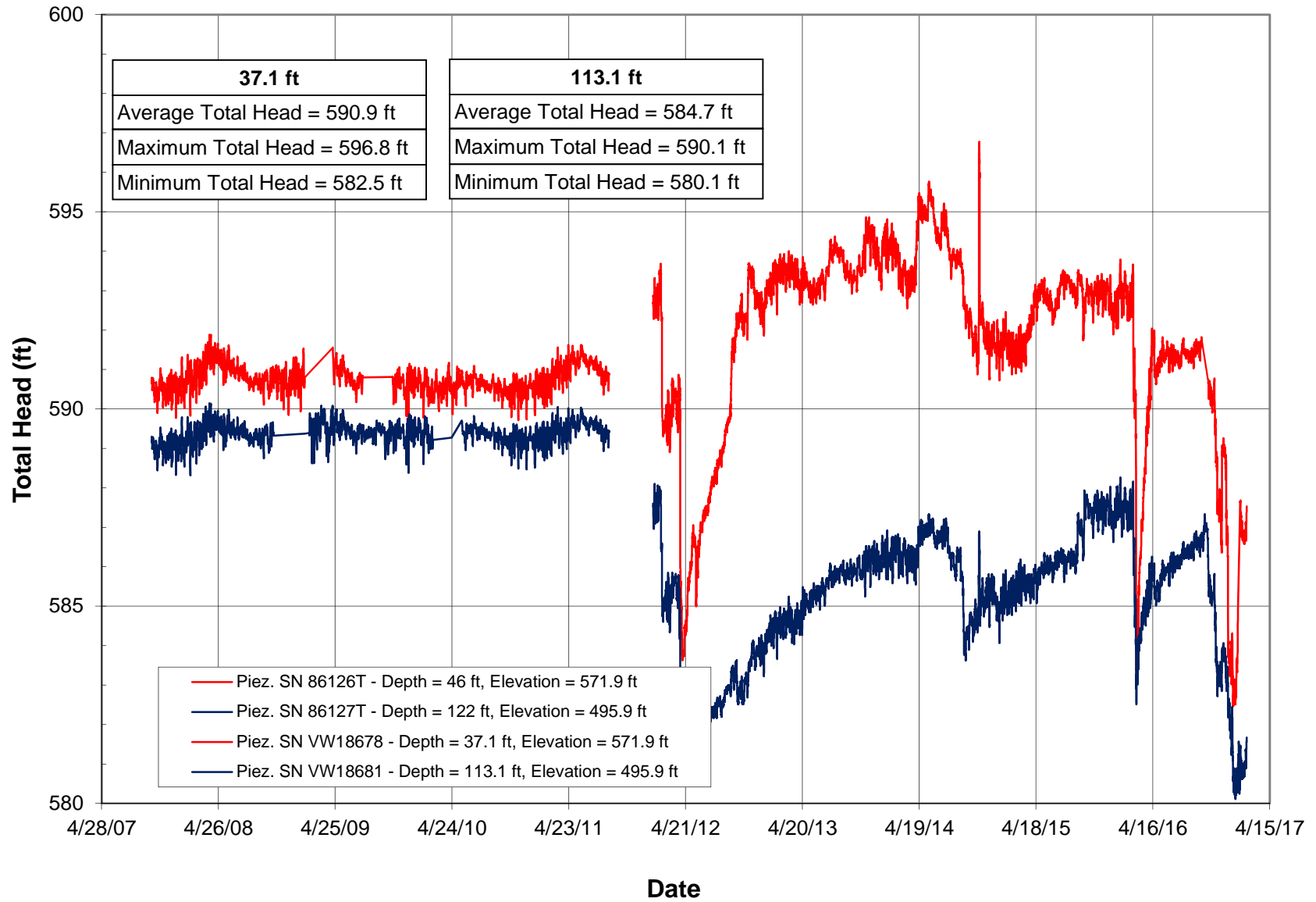
B-05-02 VW Piezometer Readings

Ground surface elevation = approx 609.0 ft



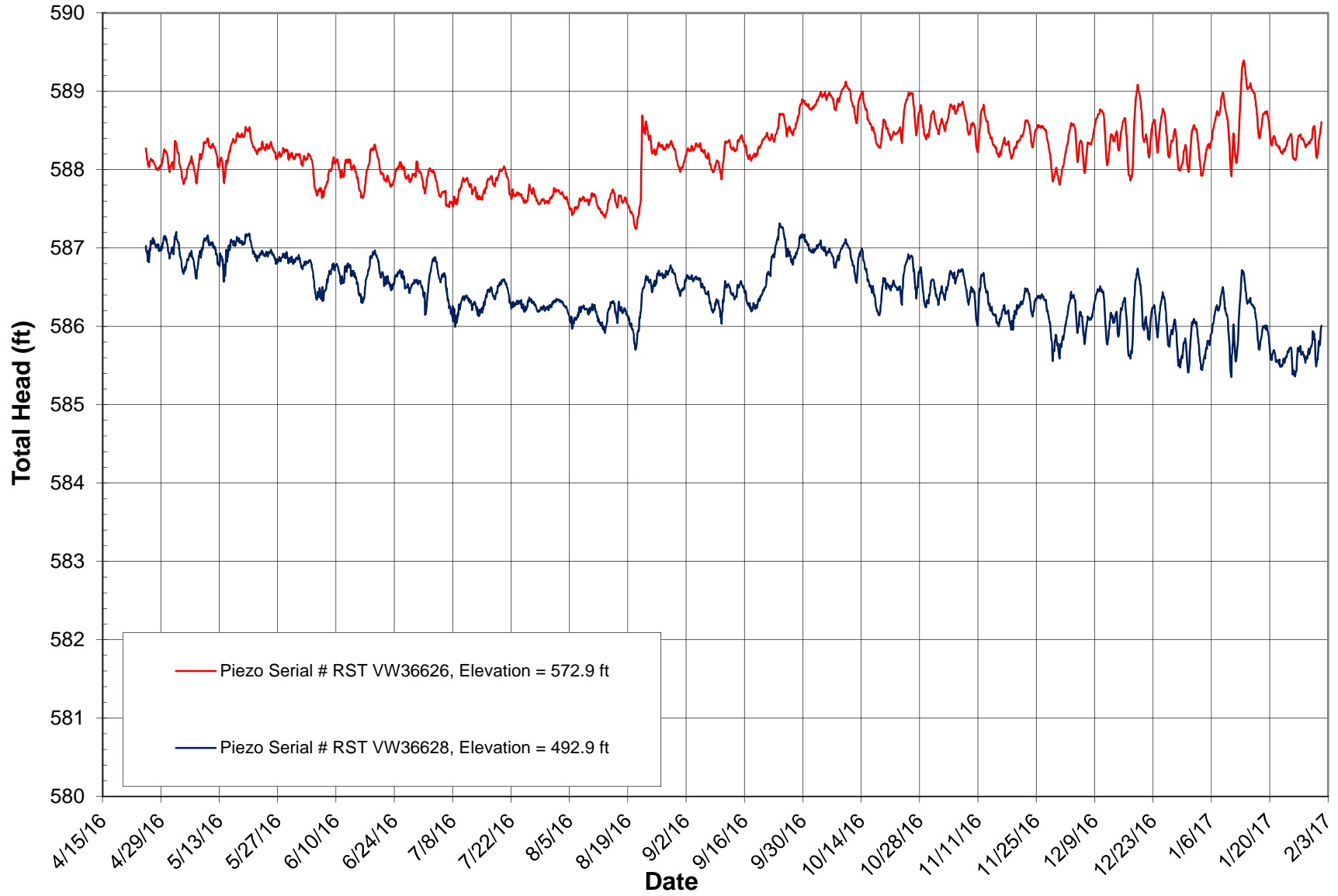
B-05-02 VW Piezometer Readings

Ground surface elevation = approx 609.0 ft



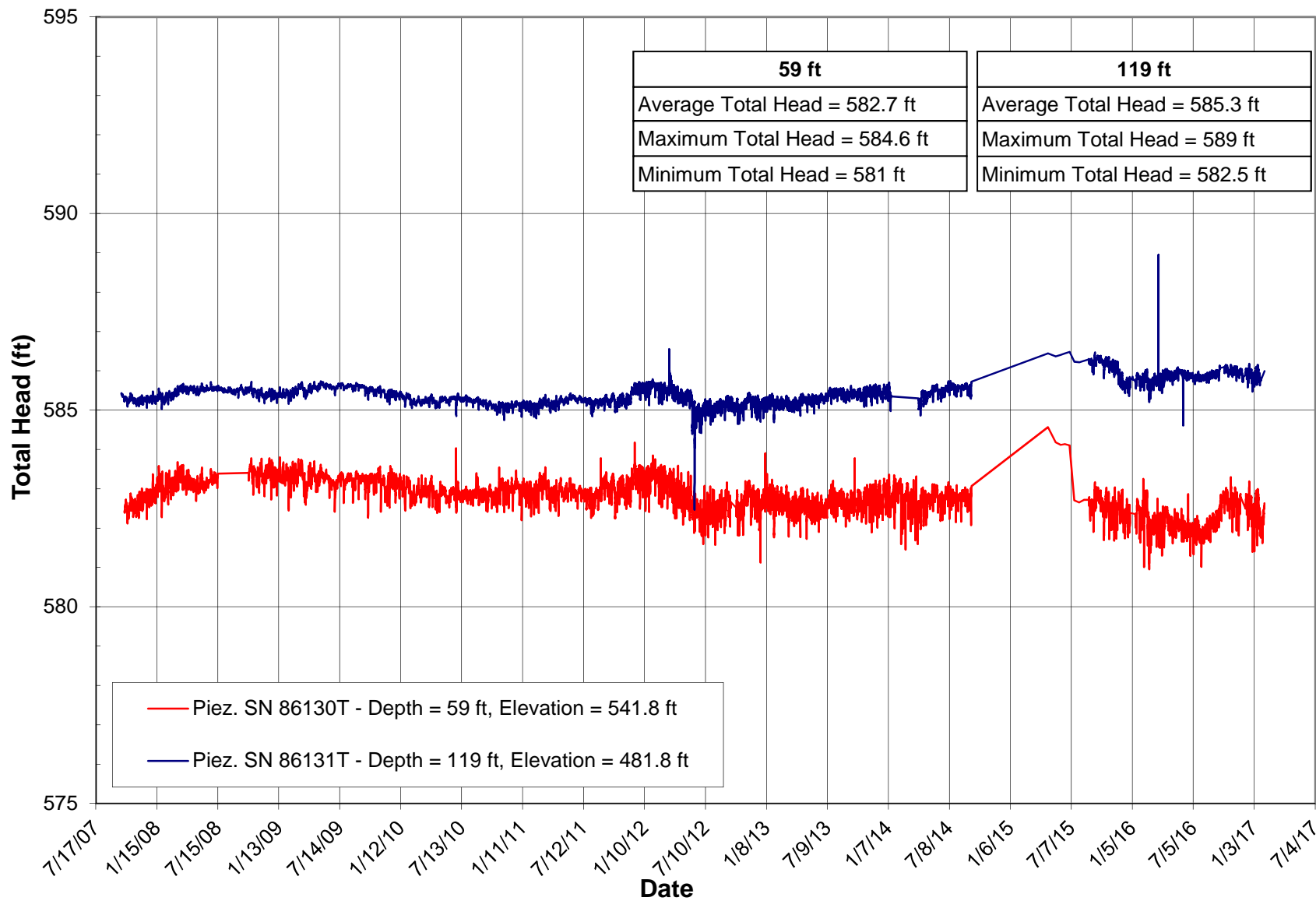
B-05-A-03 VW Piezometer Readings

Ground surface elevation = 599.9 ft



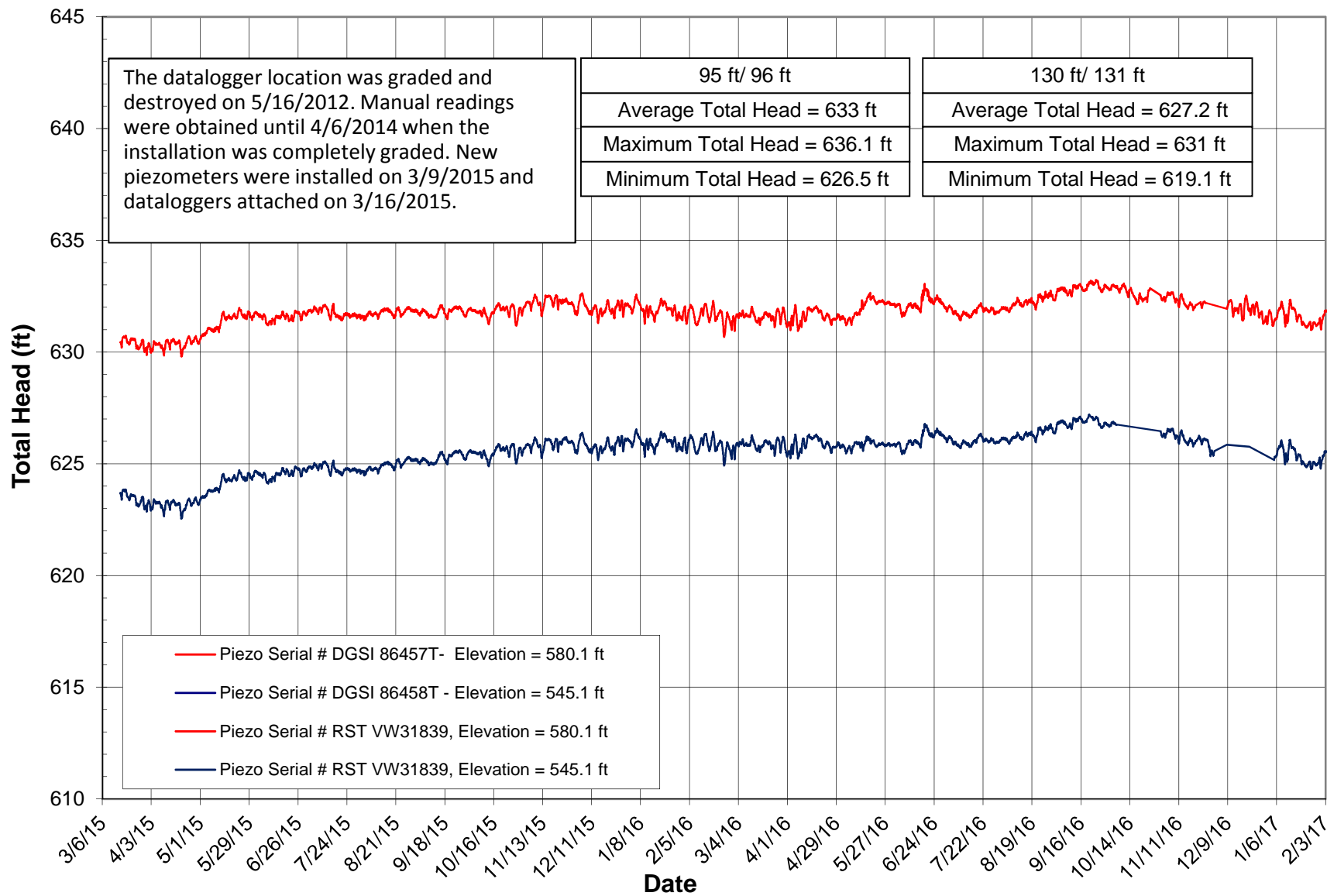
B-05-04 VW Piezometer Readings

Ground surface elevation = 600.8 ft



B-05-11/B-05-A-11 VW Piezometer Readings

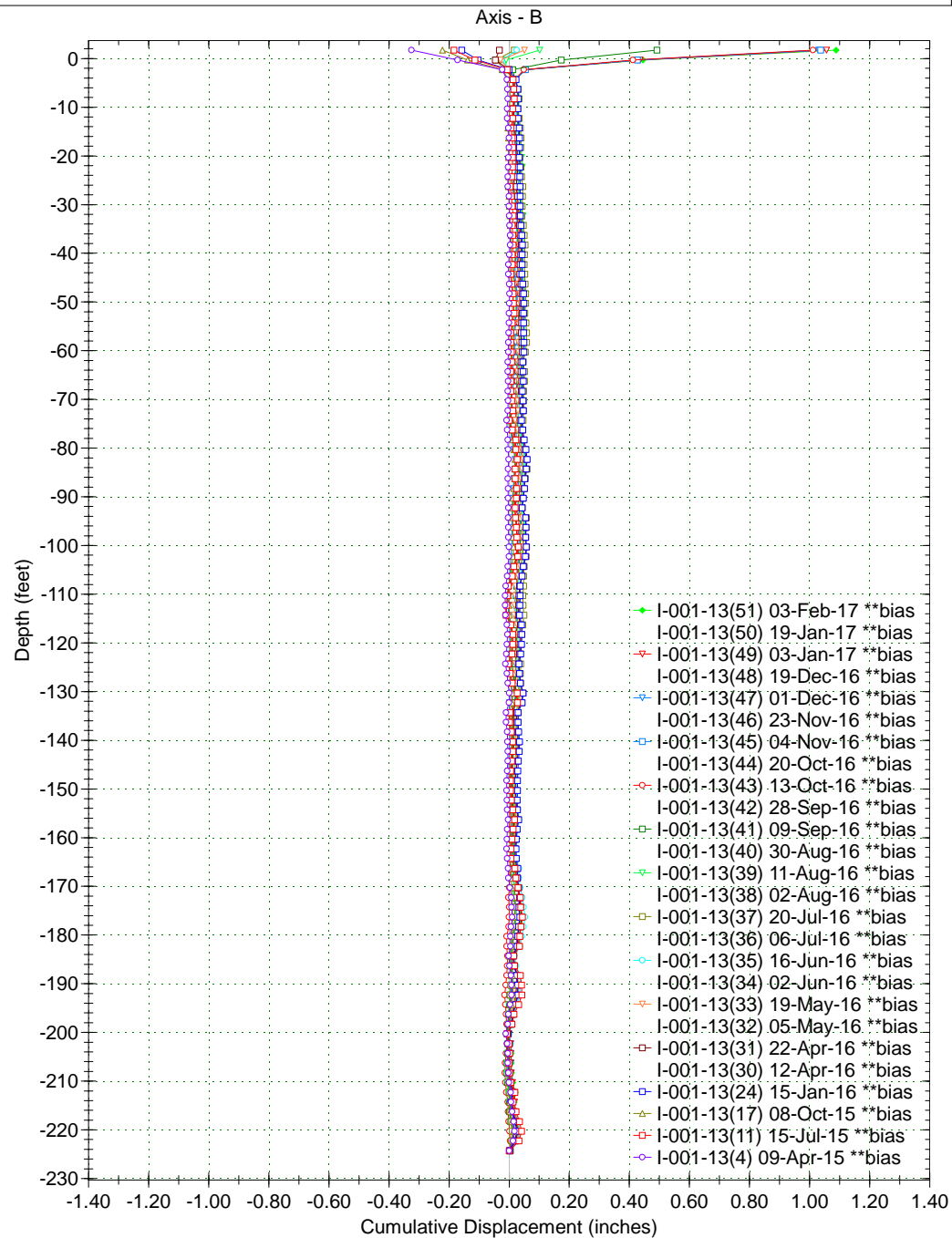
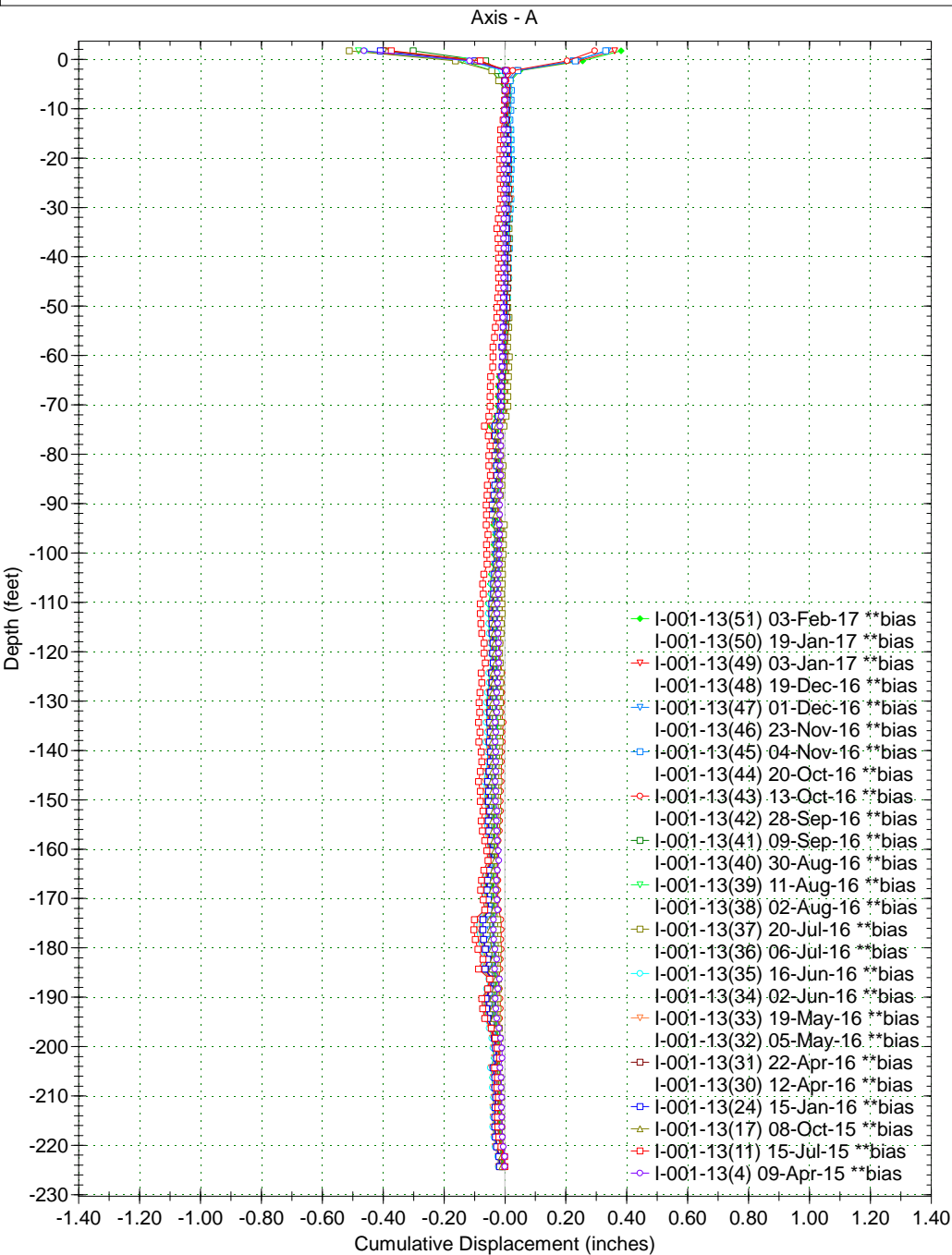
Ground surface elevation = 675.1 ft (B-05-11) / 676.1 ft (B-05-A-11)



Borehole : I-001-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



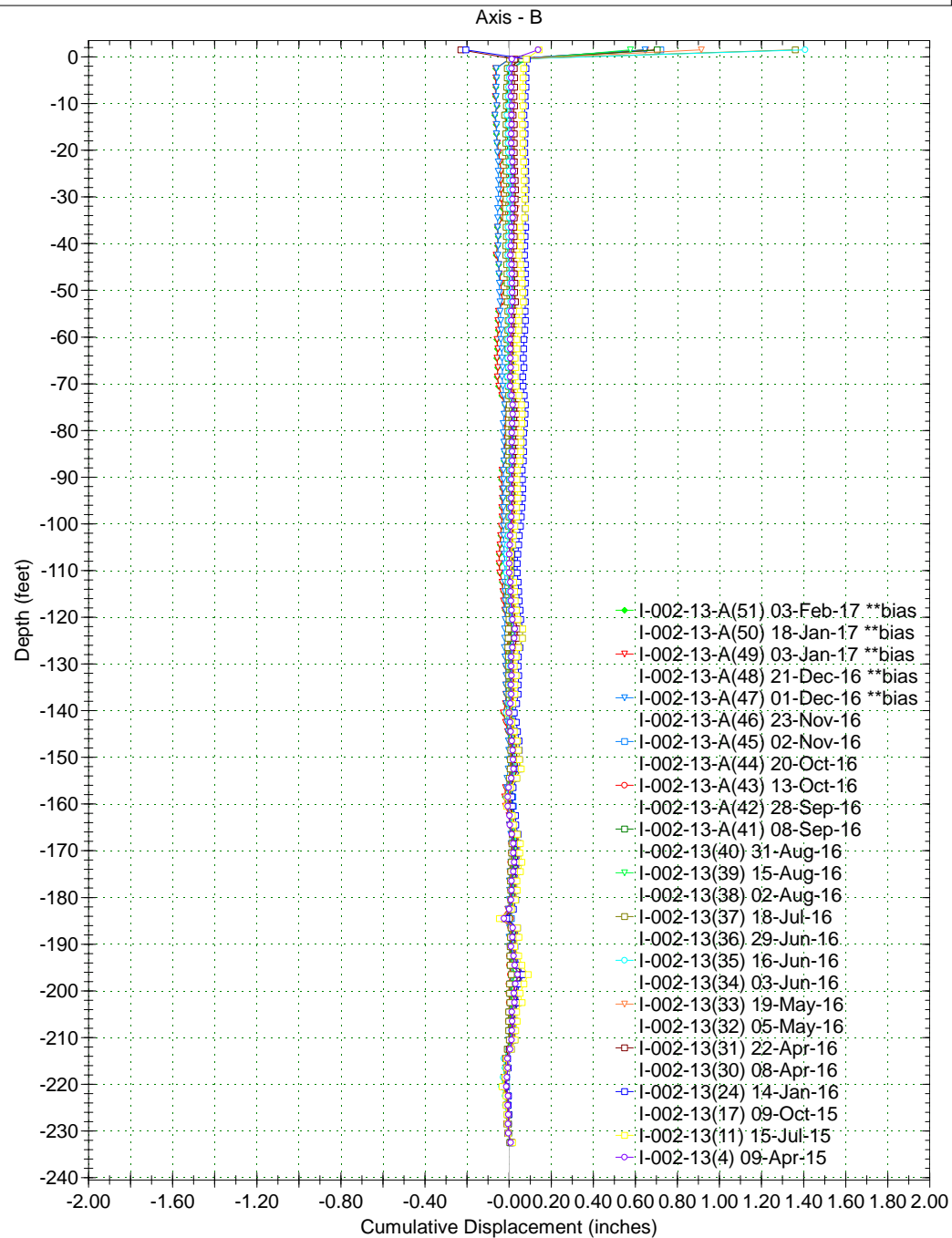
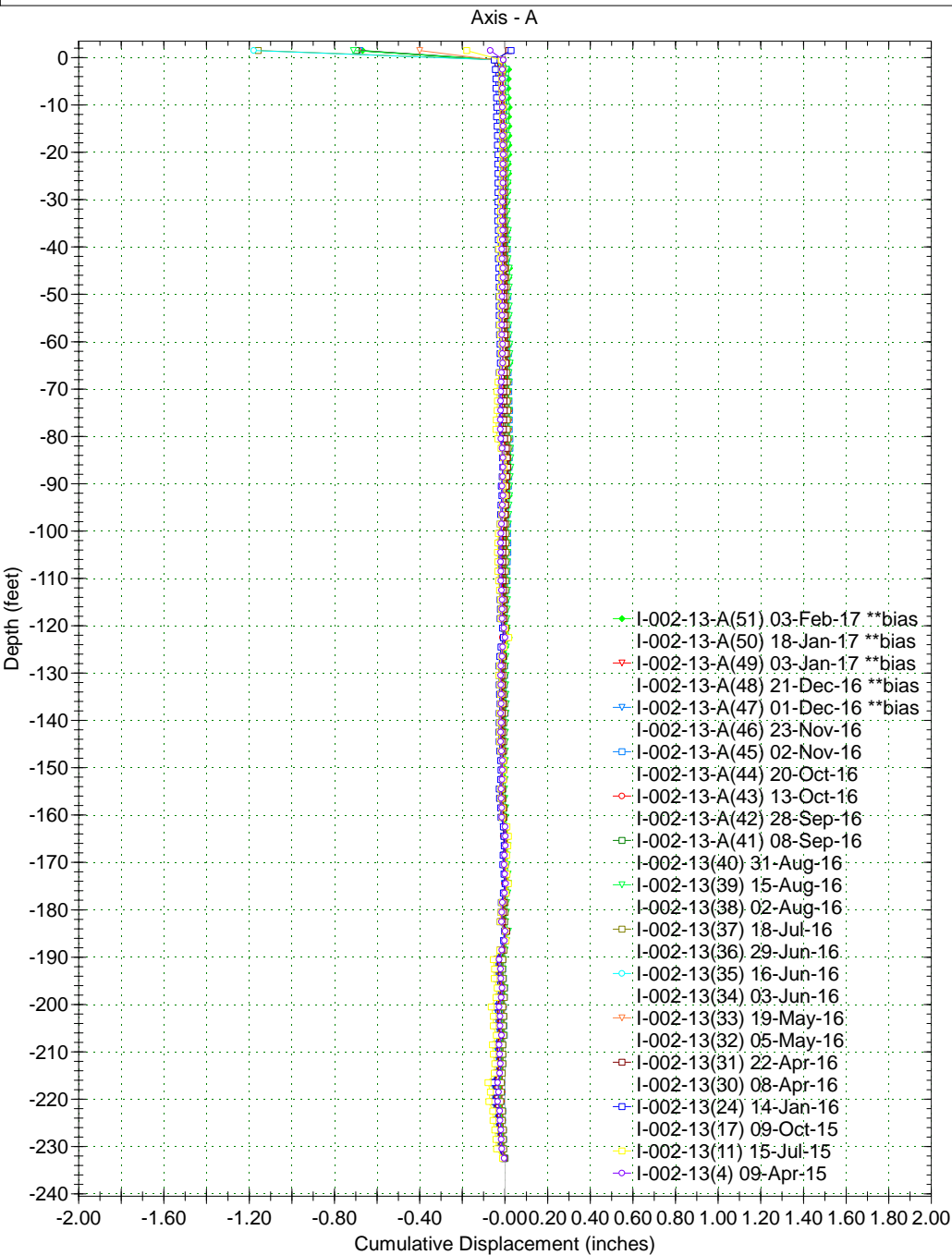
Spiral Correction : N/A
Collar Elevation : 3.7 feet
Borehole Total Depth : 228.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 11:14
Applied Azimuth : 0.0 degrees



Borehole : I-002-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



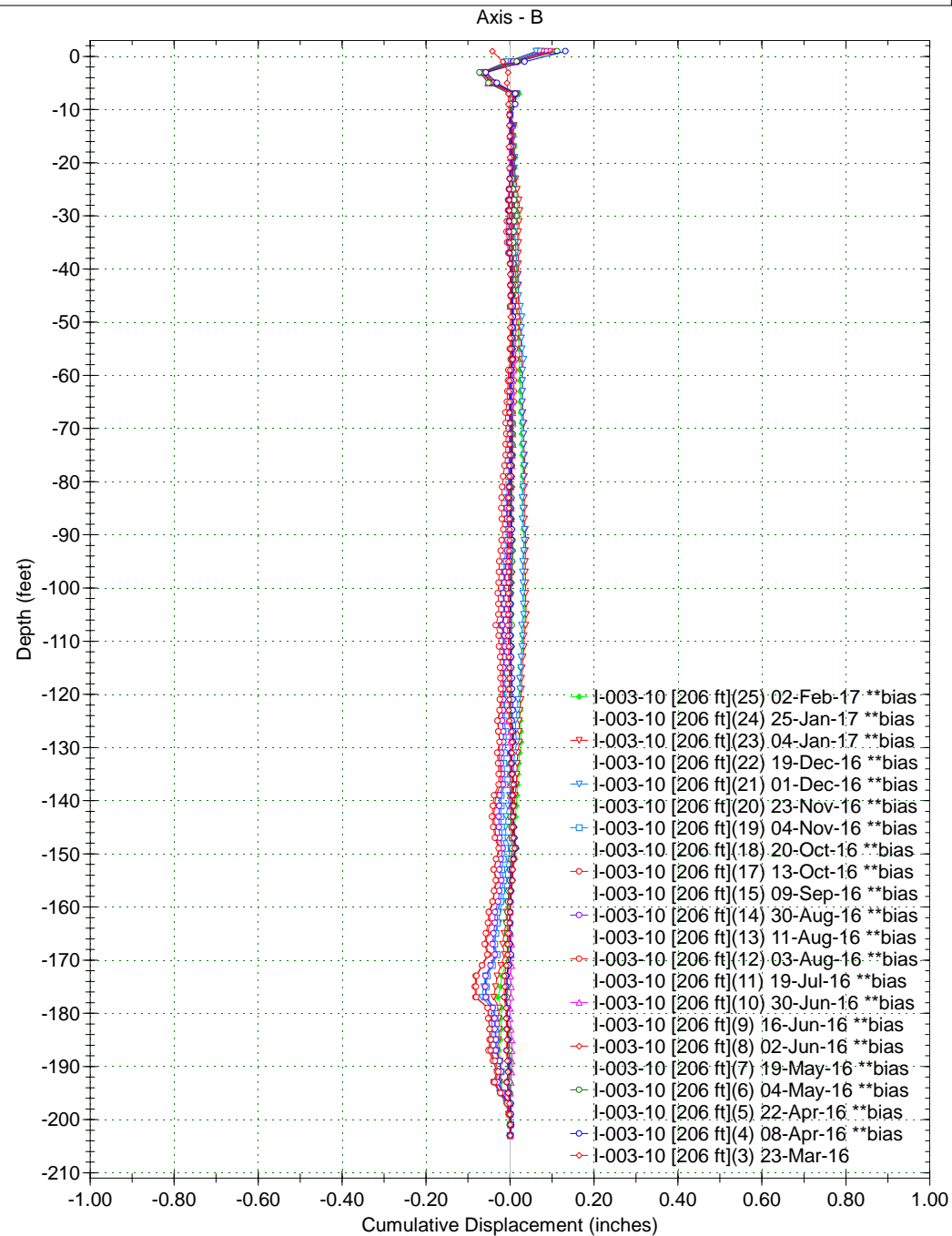
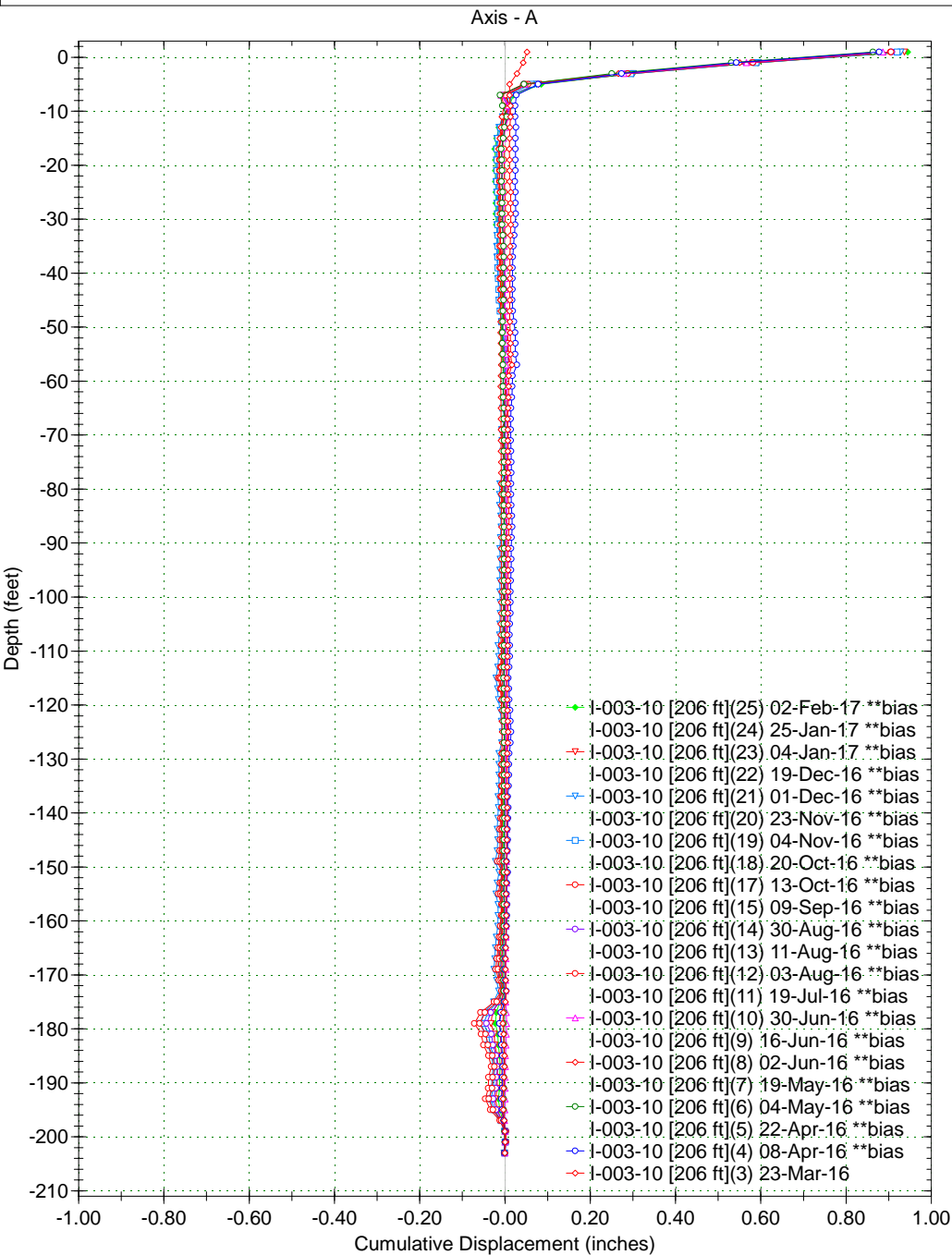
Spiral Correction : N/A
Collar Elevation : 3.5 feet
Borehole Total Depth : 236.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 03 10:04
Applied Azimuth : 0.0 degrees



Borehole : I-003-10 [206 ft]
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



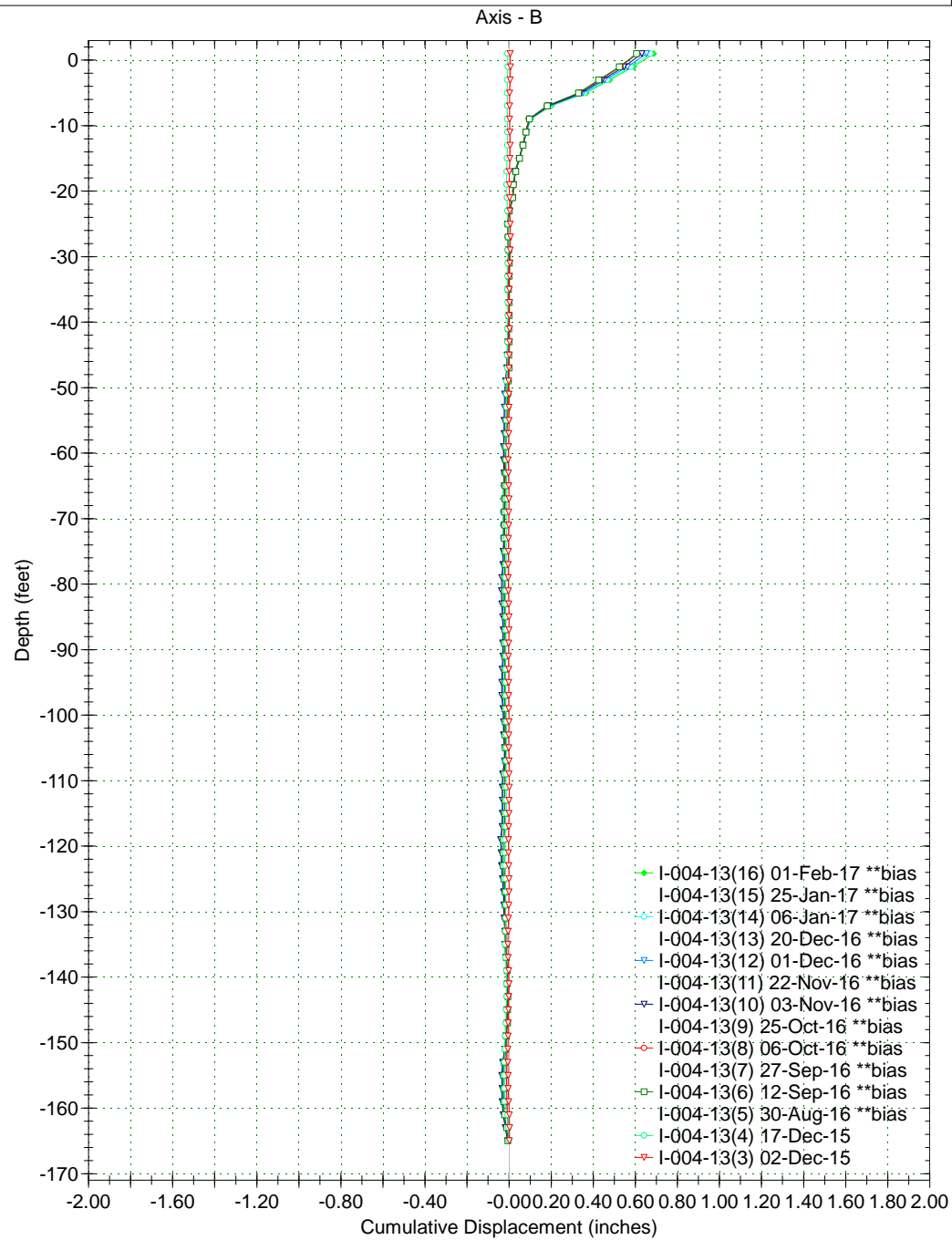
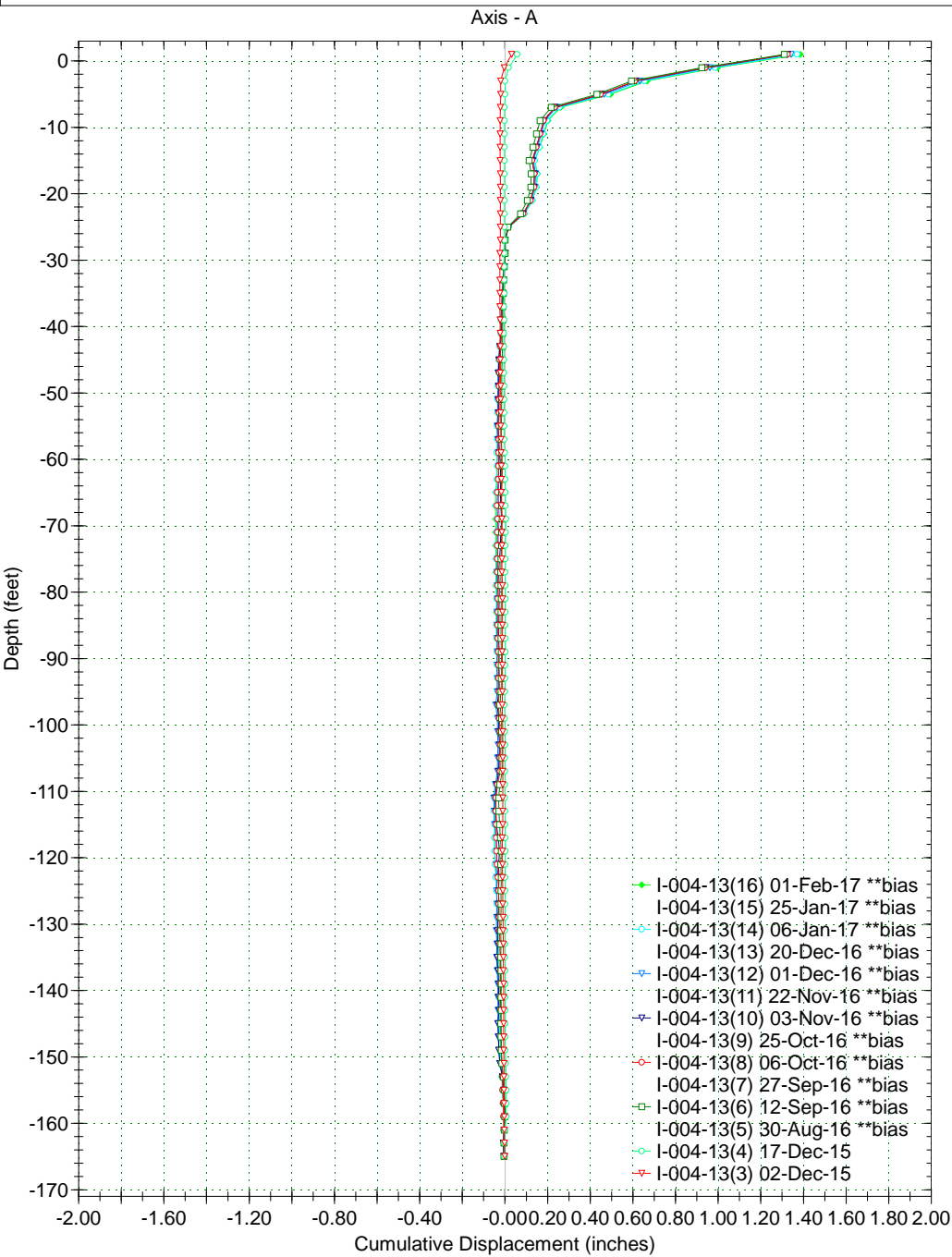
Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 206.0 feet
A+ Groove Azimuth :
Base Reading : 2016 Mar 08 15:42
Applied Azimuth : 0.0 degrees



Borehole : I-004-13
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



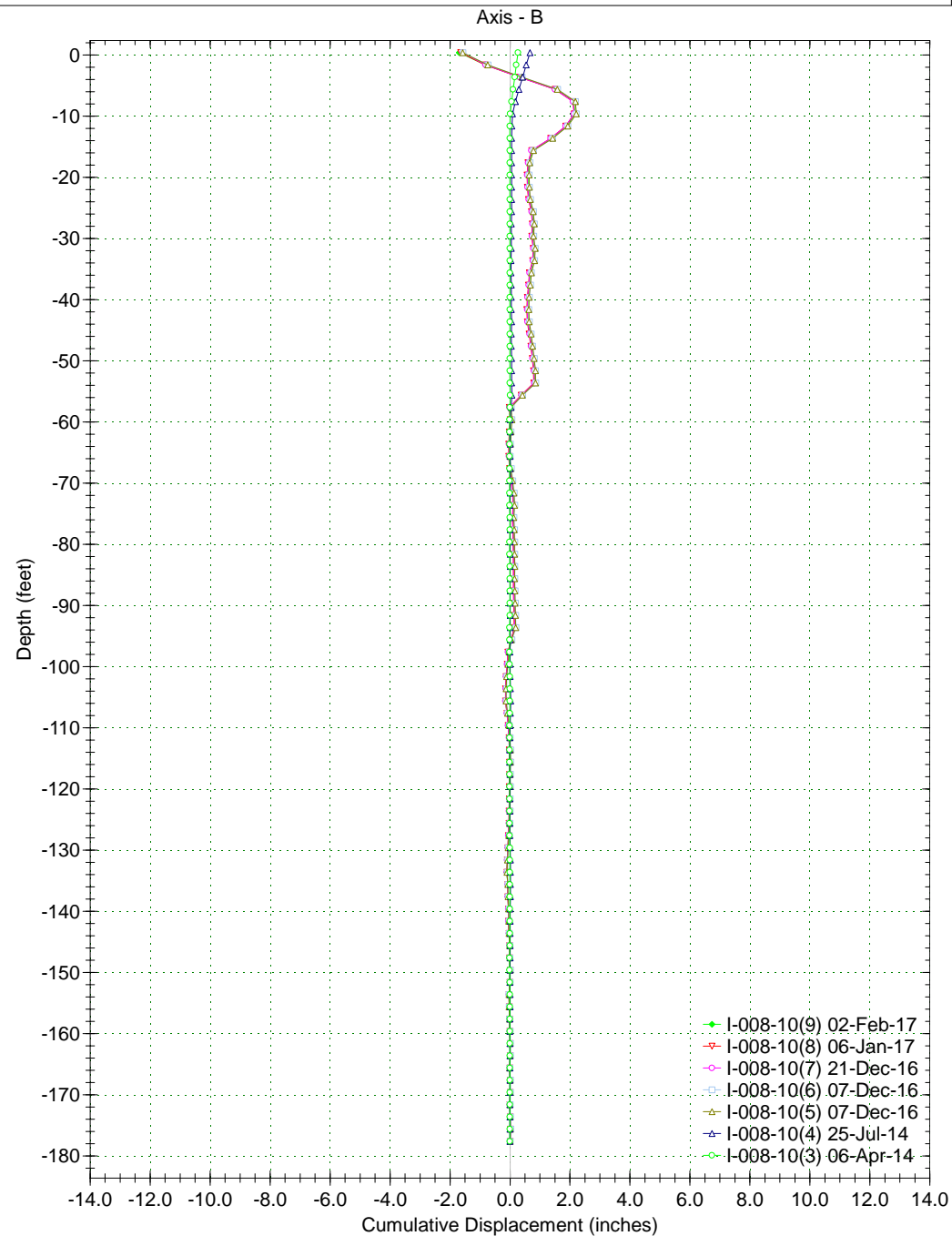
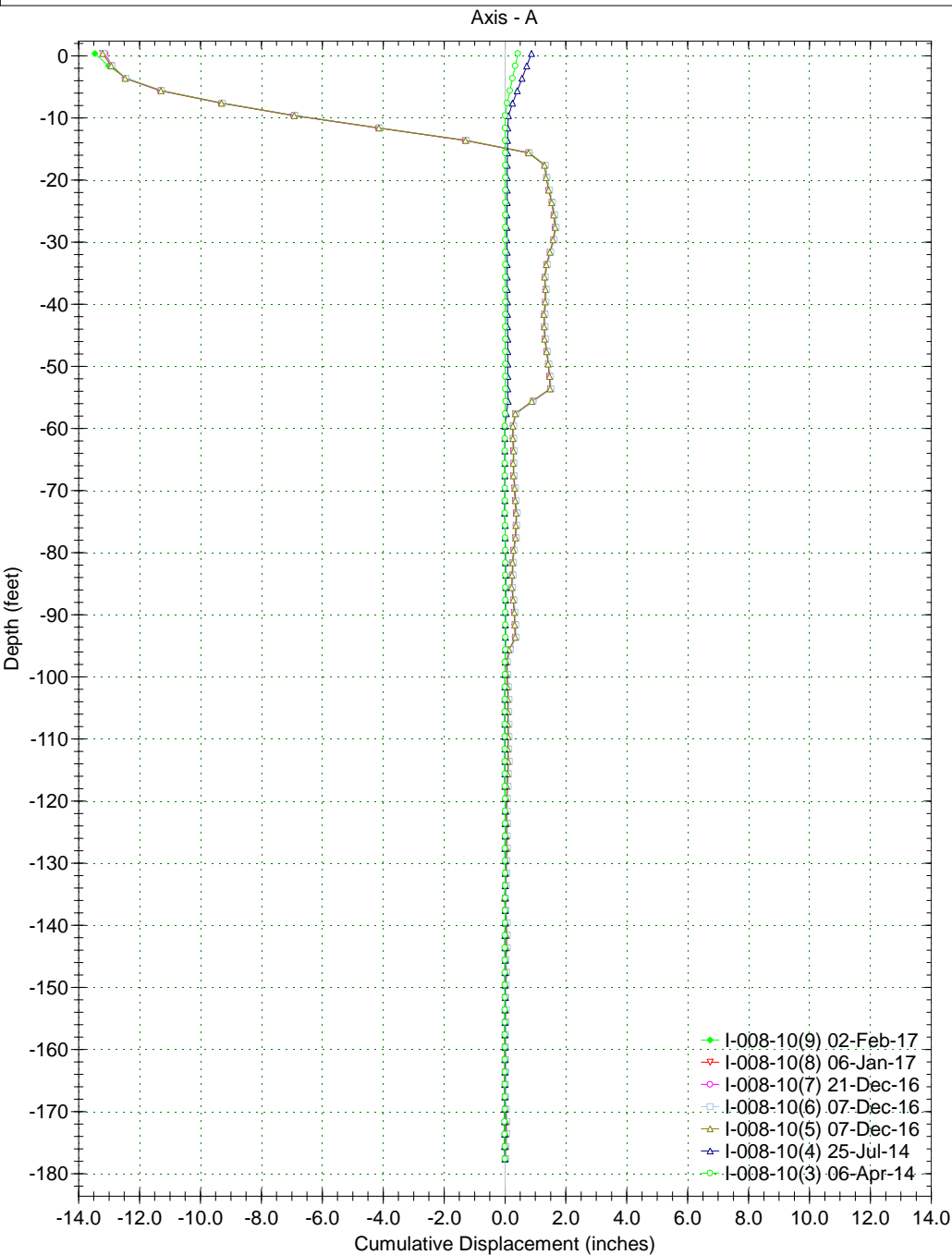
Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 168.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Nov 20 09:09
Applied Azimuth : 0.0 degrees



Borehole : I-008-10
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



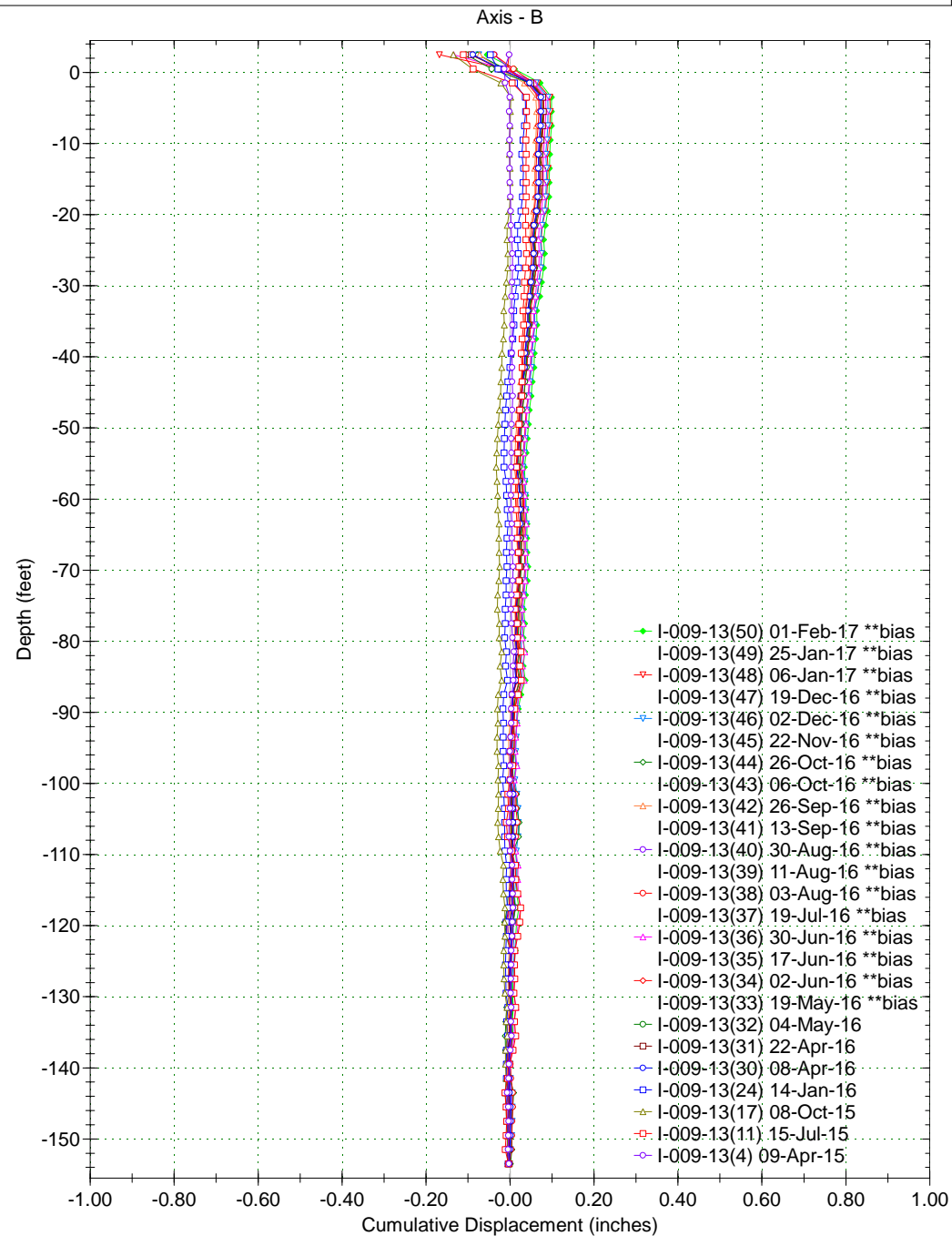
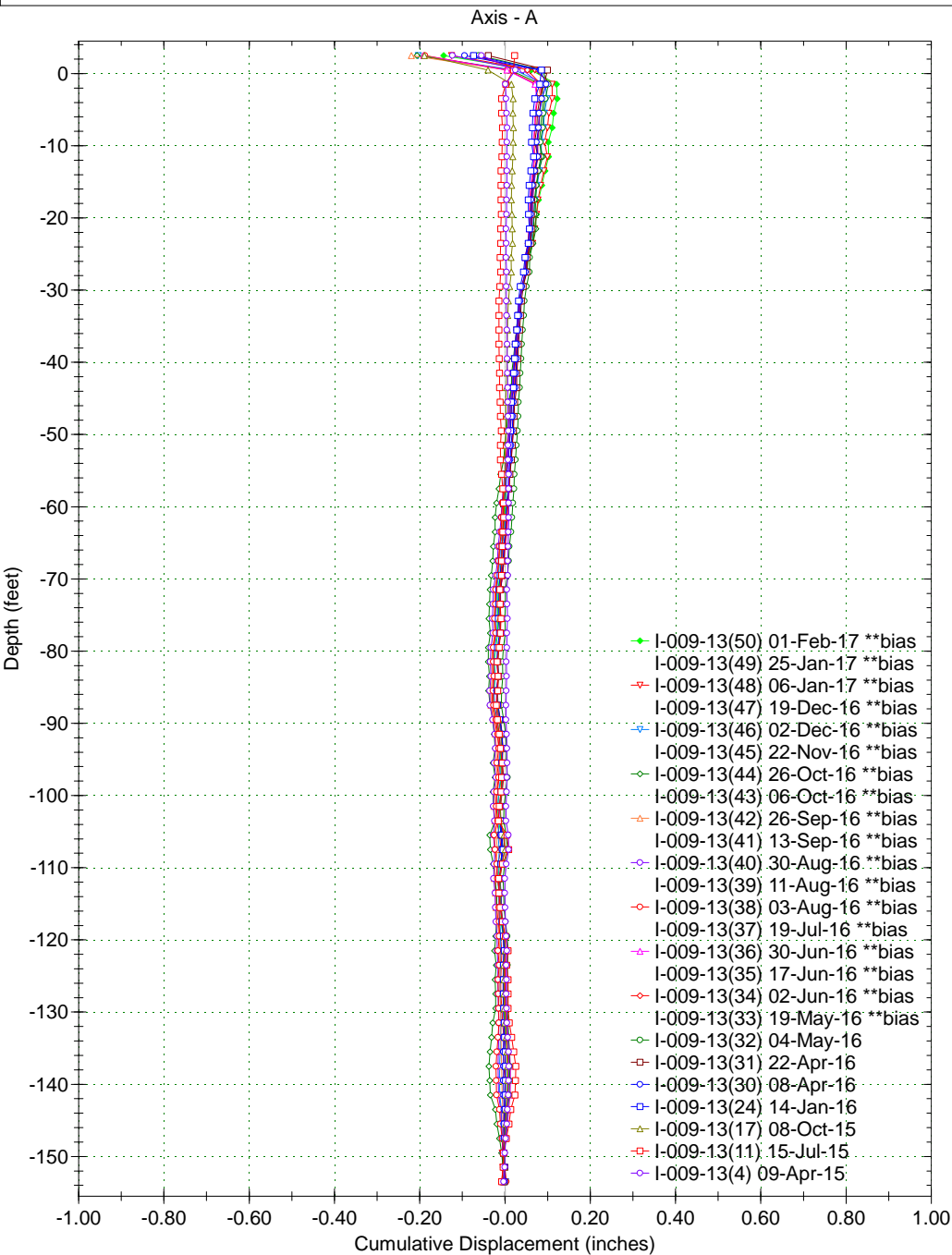
Spiral Correction : N/A
Collar Elevation : 2.4 feet
Borehole Total Depth : 180.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 14 07:26
Applied Azimuth : 0.0 degrees



Borehole : I-009-13
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



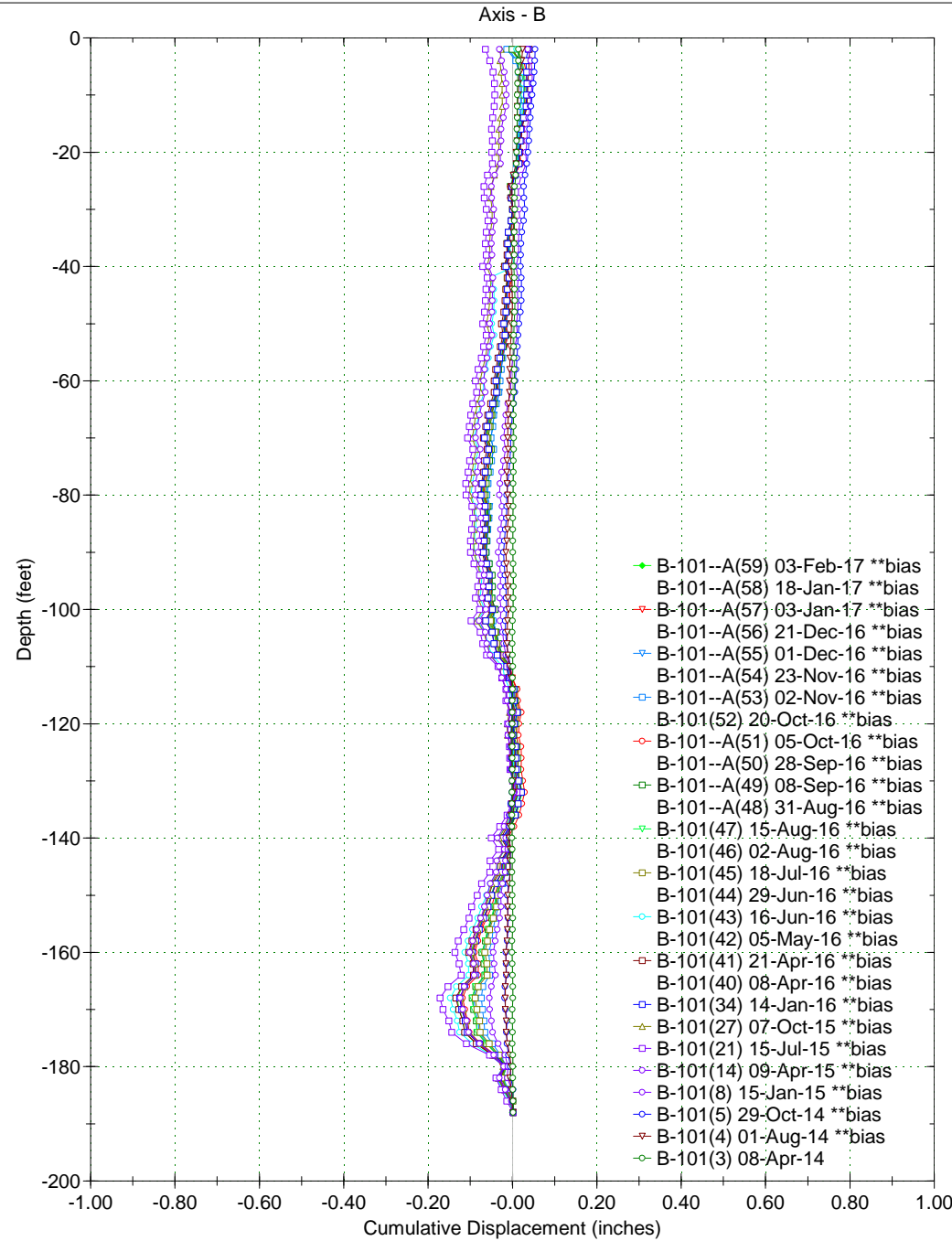
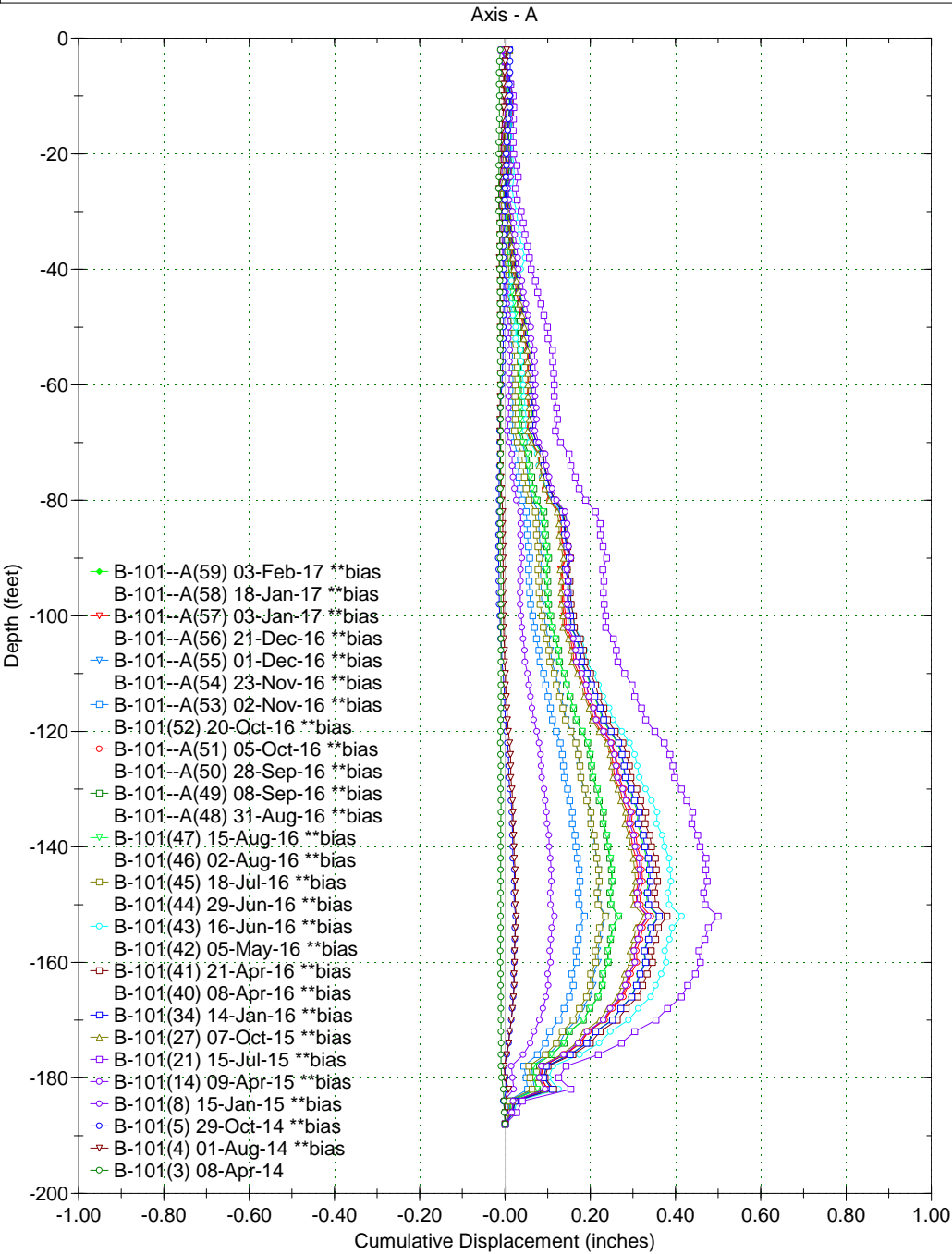
Spiral Correction : N/A
Collar Elevation : 4.5 feet
Borehole Total Depth : 158.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Mar 18 15:56
Applied Azimuth : 0.0 degrees



Borehole : B-101
 Project : CUY-90-15-24
 Location : Cleveland, Ohio
 Northing : Sta. 15+06.50
 Easting : 120.7' Rt of CL
 Collar :



Spiral Correction : N/A
 Collar Elevation : 0.0 feet
 Borehole Total Depth : 188.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 22 09:01
 Applied Azimuth : 0.0 degrees



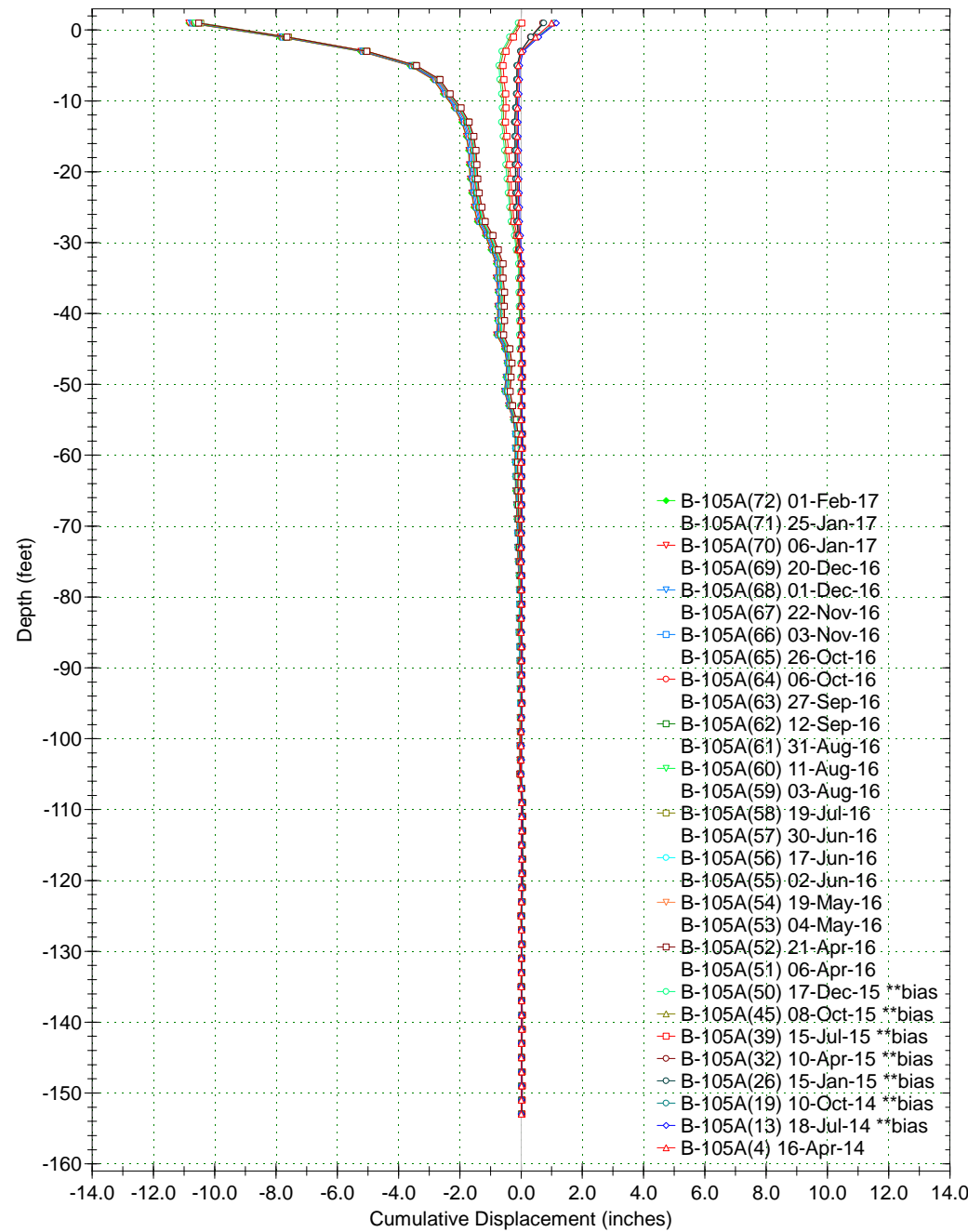
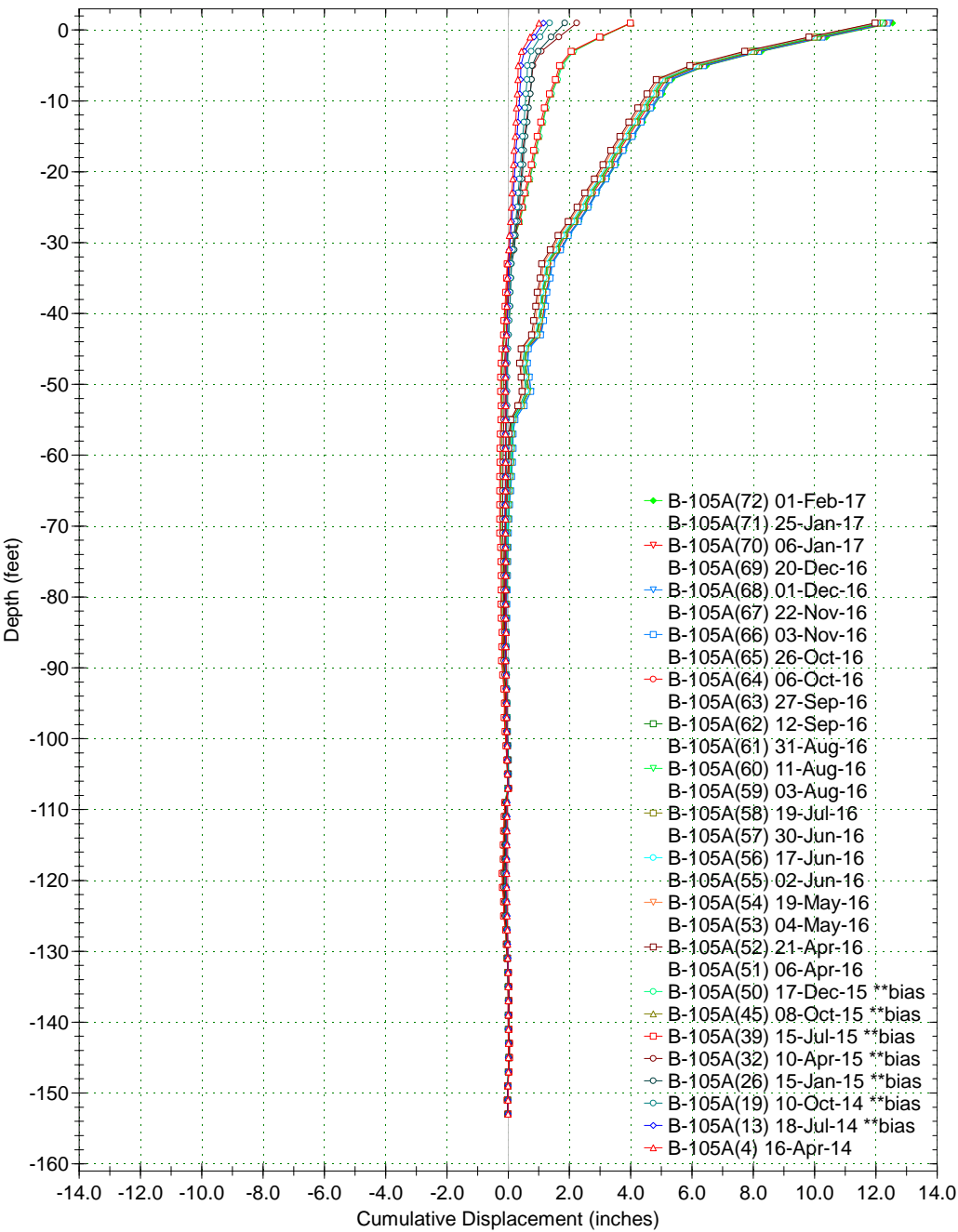
Borehole : B-105A
 Project : CUY-90-15-24
 Location : Cleveland, Ohio
 Northing : Sta. 19+11.38
 Easting : 90.9' Rt of CL
 Collar :



Spiral Correction : N/A
 Collar Elevation : 3.0 feet
 Borehole Total Depth : 156.0 feet
 A+ Groove Azimuth :
 Base Reading : 2014 Jan 15 09:19
 Applied Azimuth : 0.0 degrees

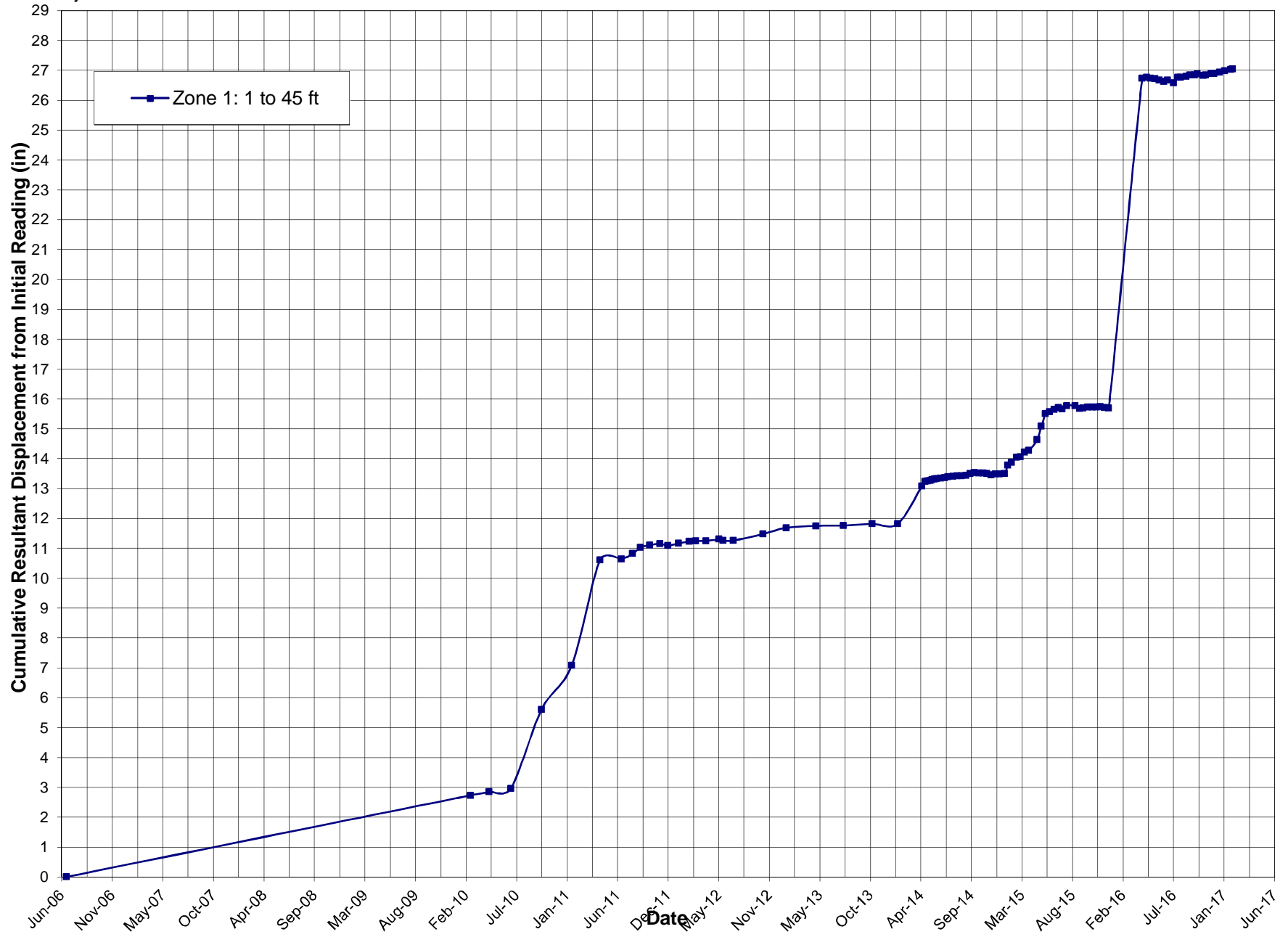
Axis - A

Axis - B



CUY-90-15.24
PID 96504
SME Project#: 069032.00

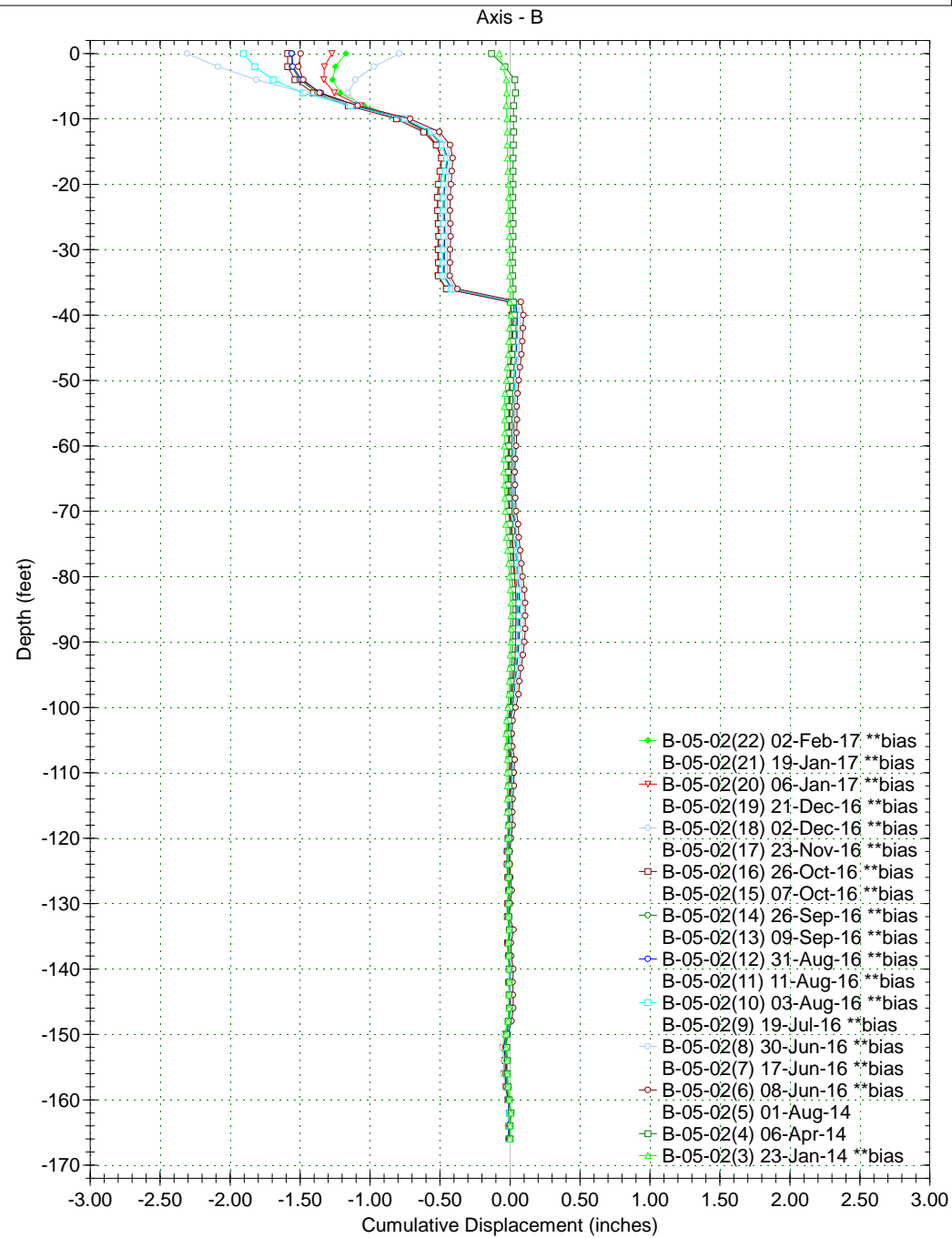
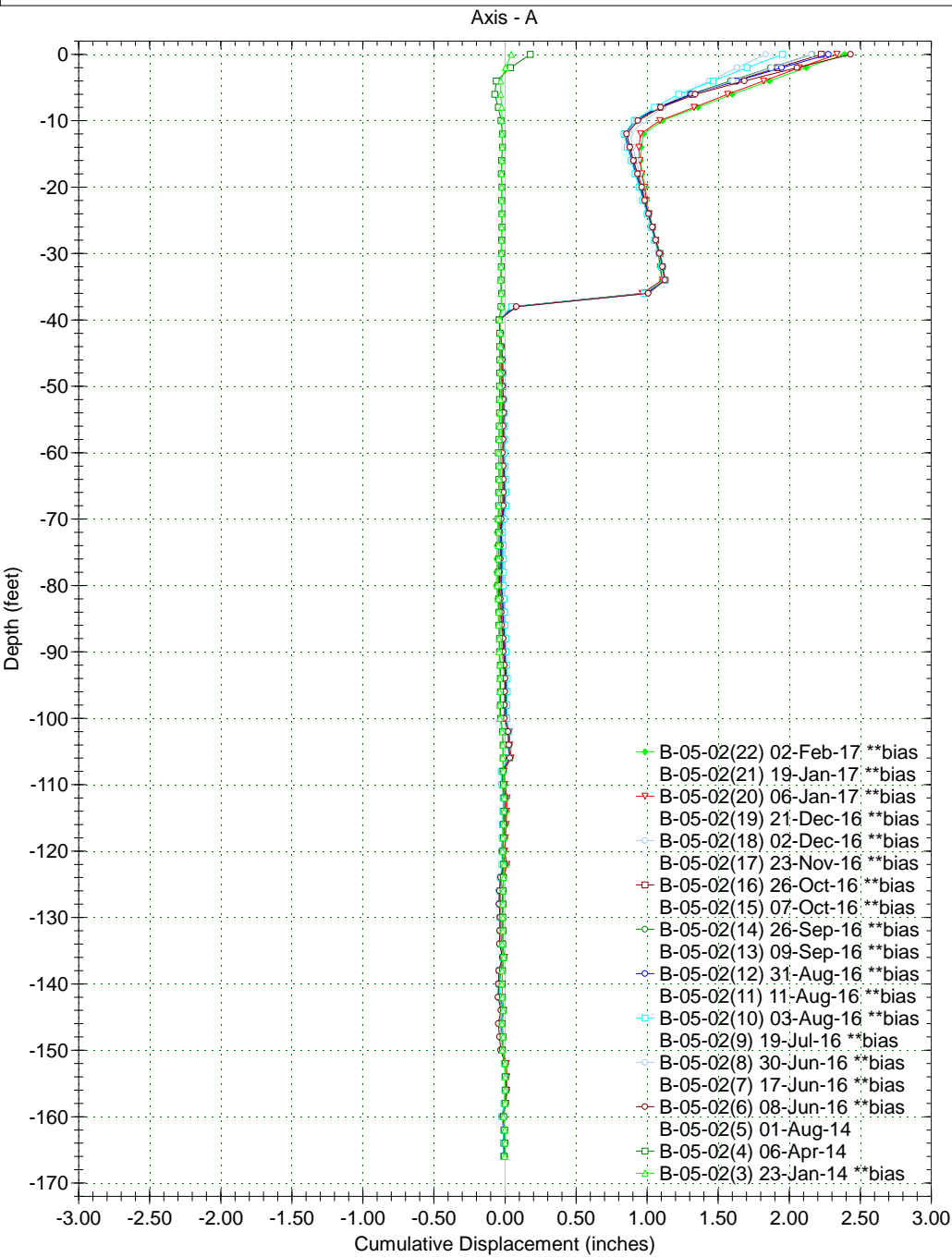
B-105A



Borehole : B-05-02
 Project : CUY-90-15-24
 Location : Cleveland, Ohio
 Northing : 663737.939
 Easting : 2190289.081
 Collar :

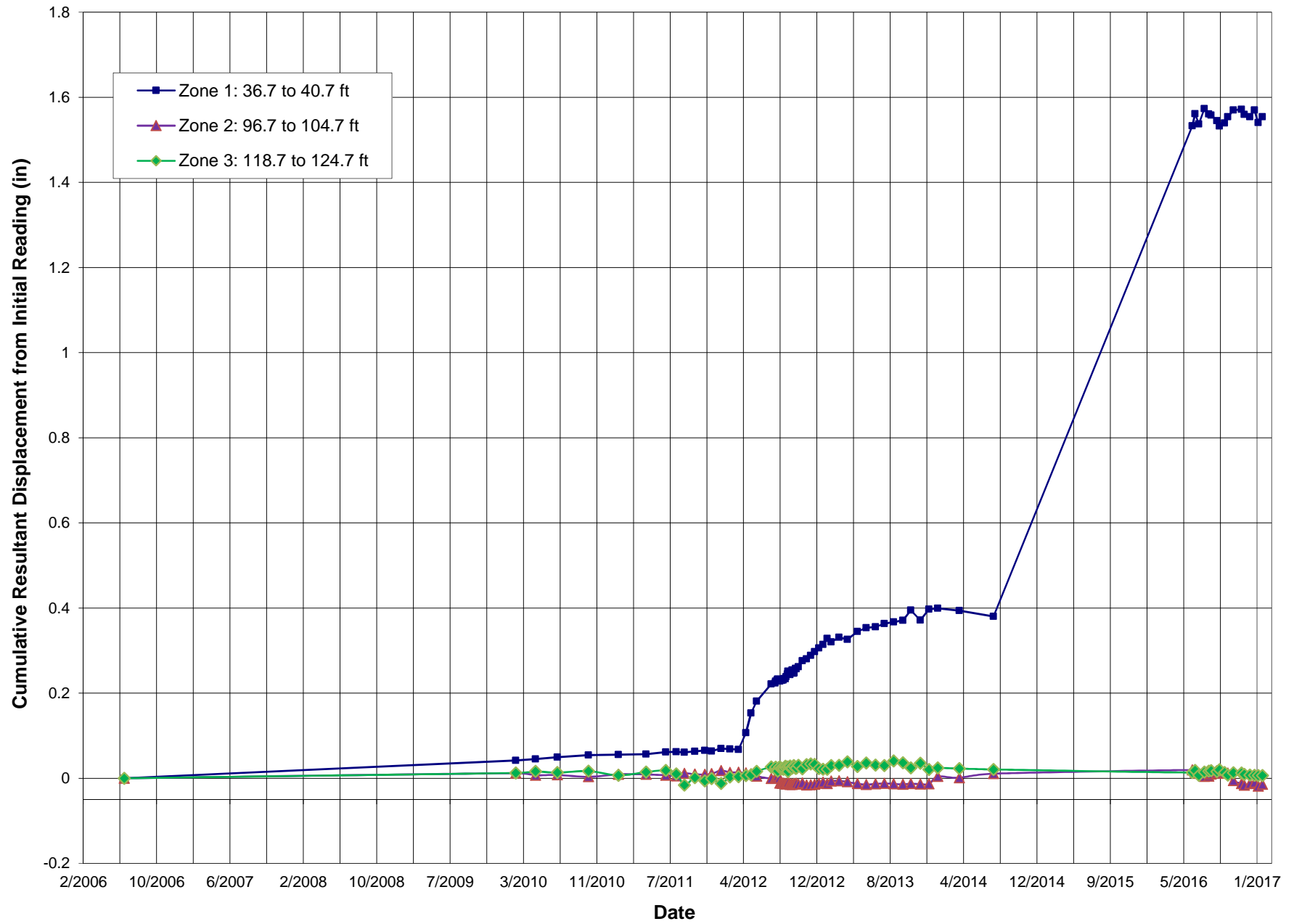


Spiral Correction : N/A
 Collar Elevation : 2.0 feet
 Borehole Total Depth : 168.0 feet
 A+ Groove Azimuth :
 Base Reading : 2013 Dec 24 11:12
 Applied Azimuth : 0.0 degrees



CUY-90-15.24
PID 63504
SME Project#: 069032.00

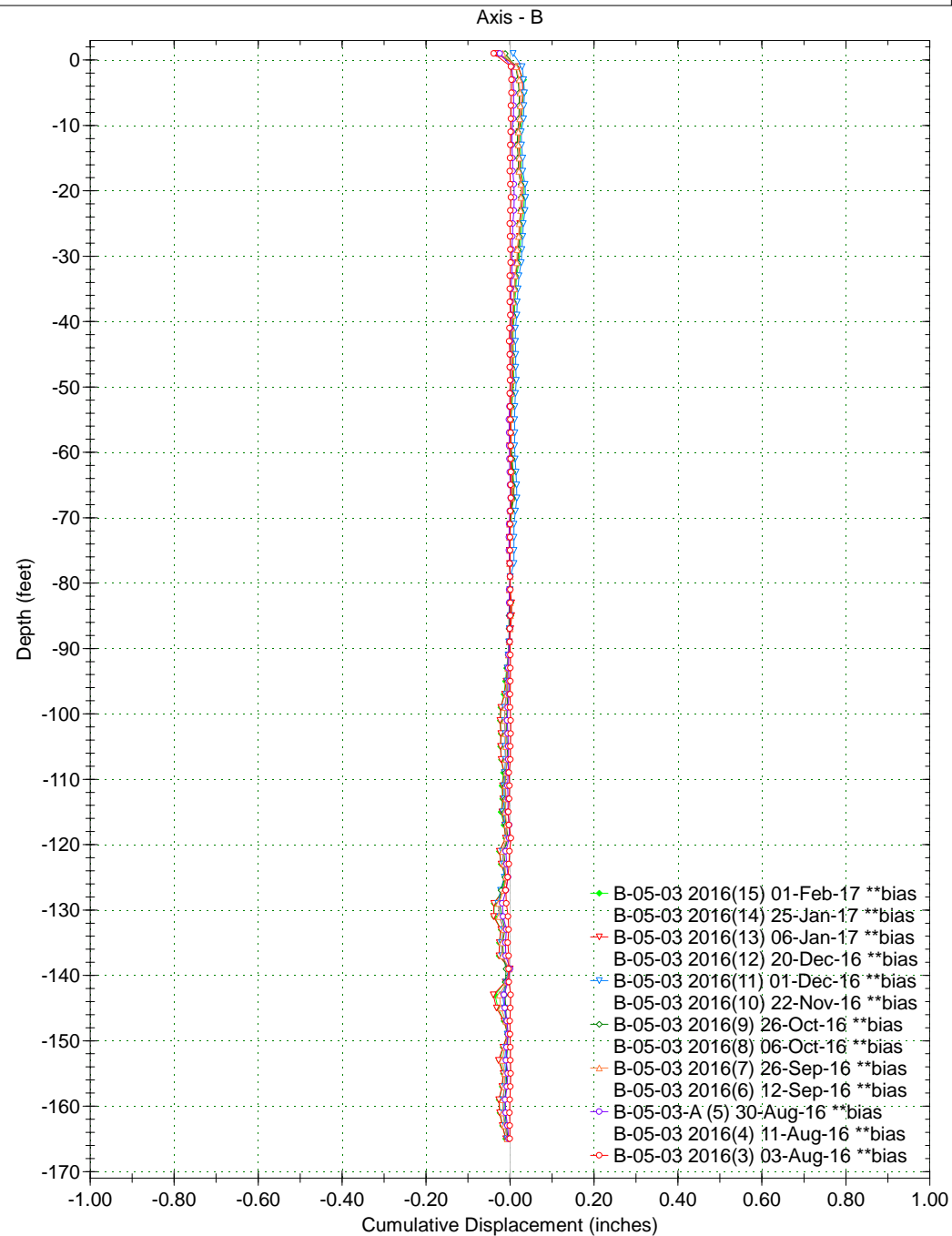
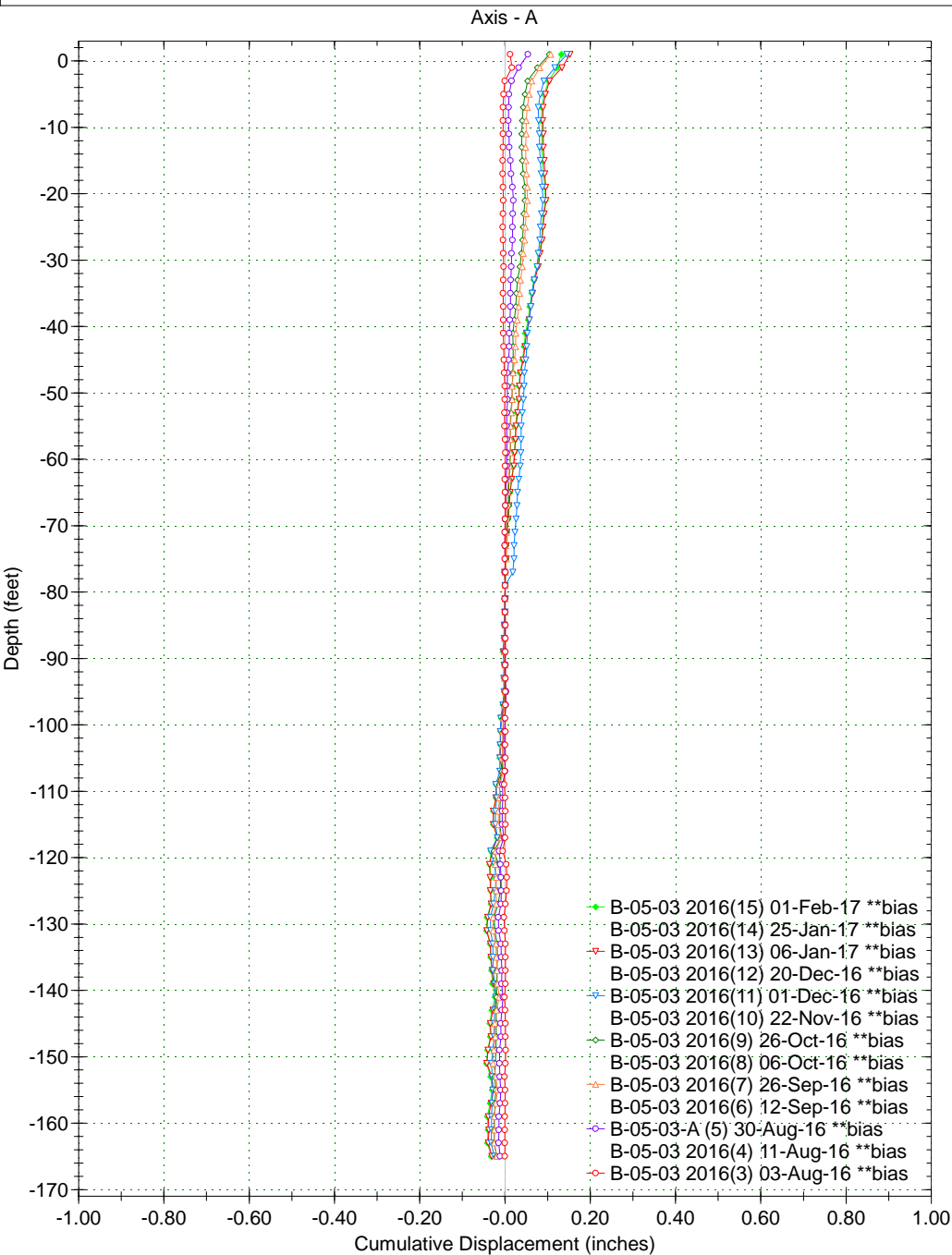
B-05-02



Borehole : B-05-03-A
 Project : CUY-90-15-24
 Location :
 Northing :
 Easting :
 Collar :



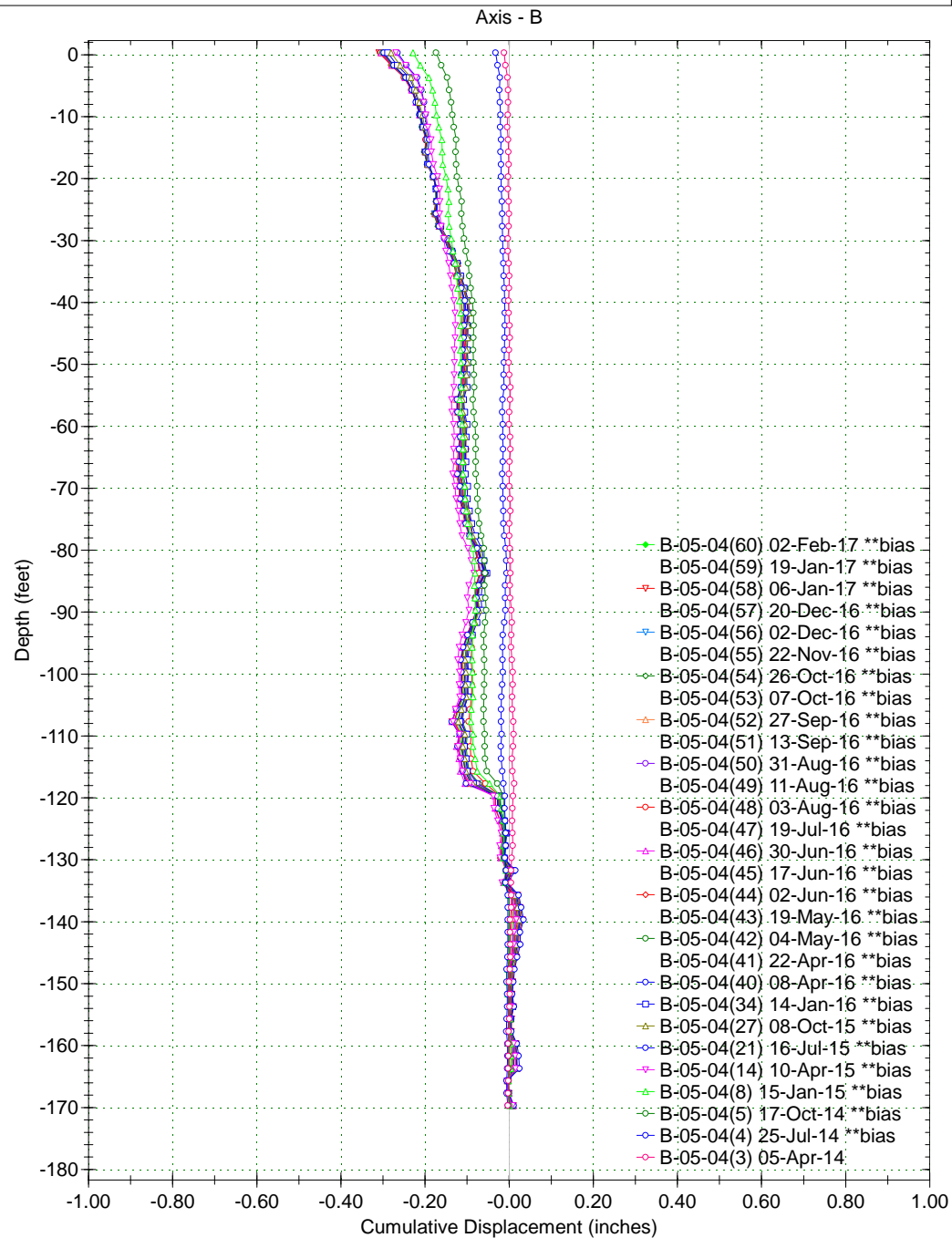
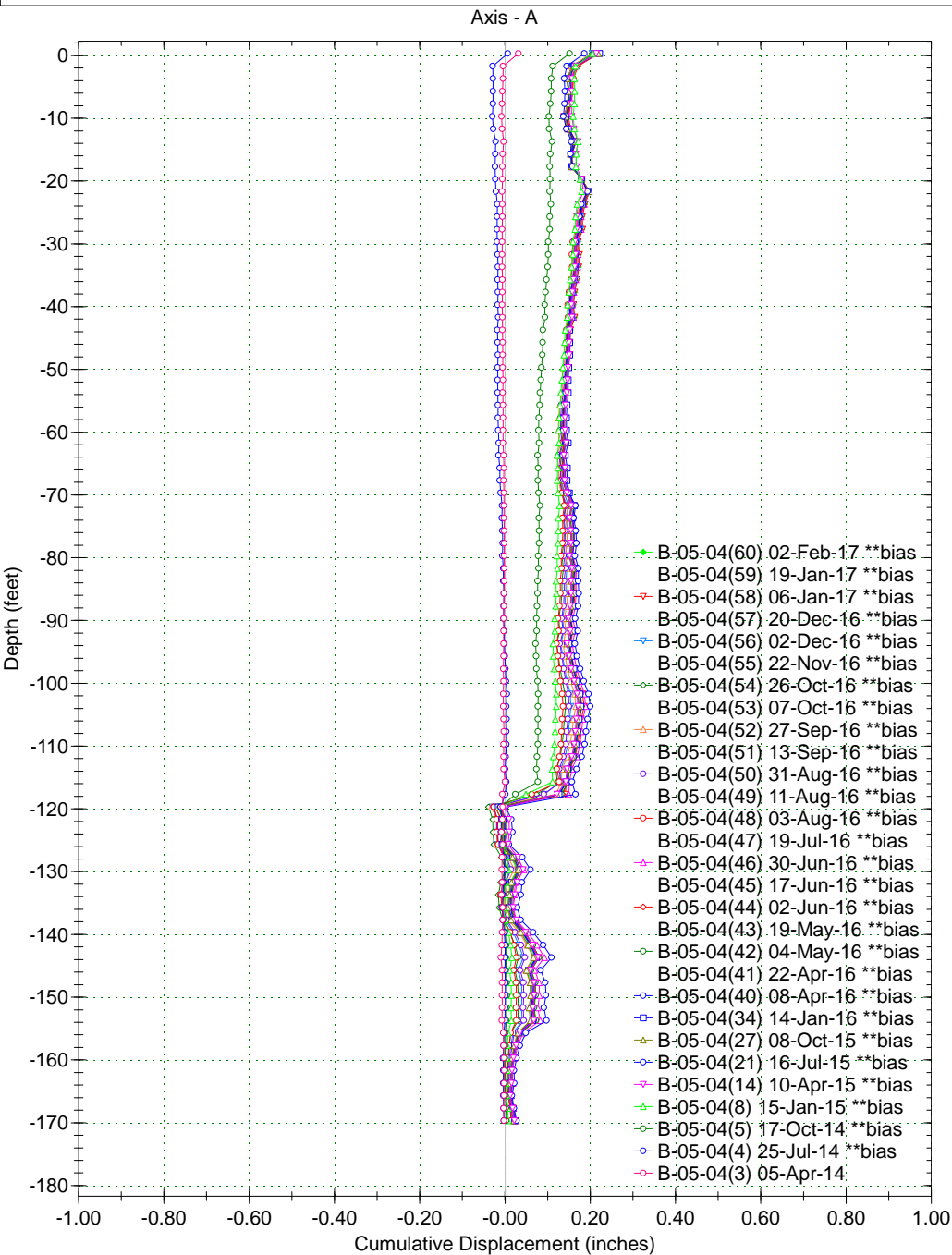
Spiral Correction : N/A
 Collar Elevation : 3.0 feet
 Borehole Total Depth : 168.0 feet
 A+ Groove Azimuth :
 Base Reading : 2016 Jul 19 09:08
 Applied Azimuth : 0.0 degrees



Borehole : B-05-04
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing : Sta. 133+51.67
Easting : 242.09' Rt of CL
Collar :

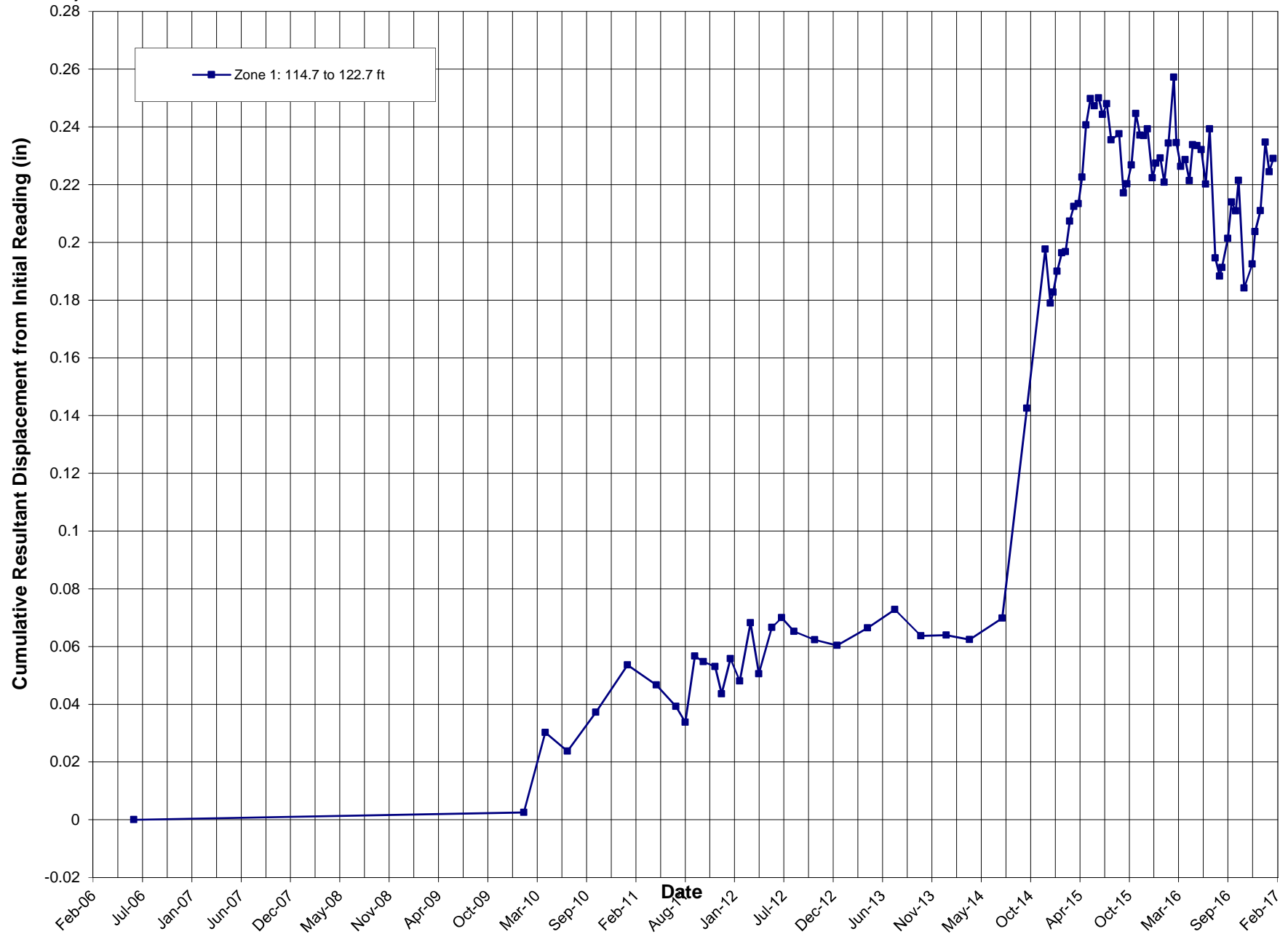


Spiral Correction : N/A
Collar Elevation : 2.3 feet
Borehole Total Depth : 172.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 12:30
Applied Azimuth : 0.0 degrees



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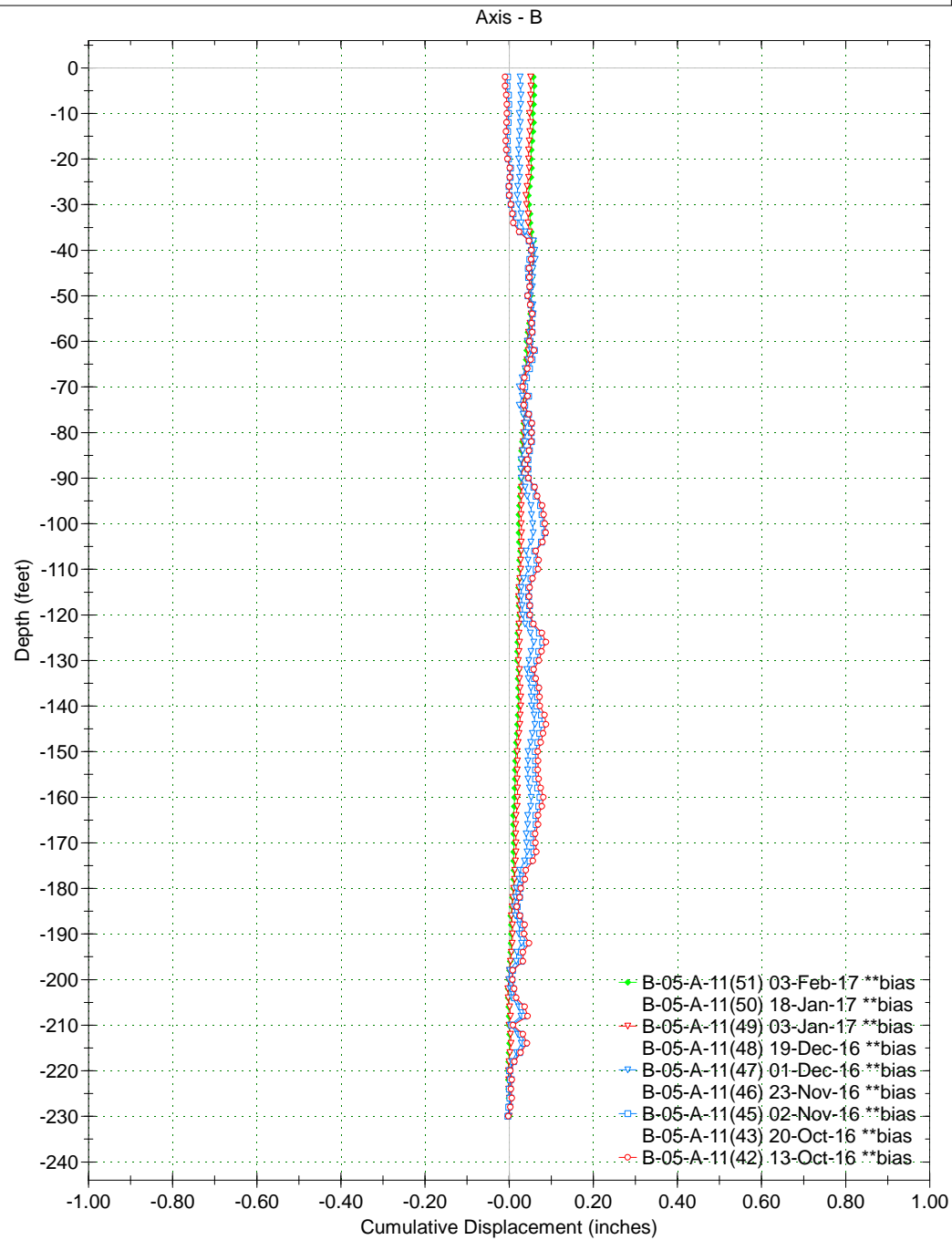
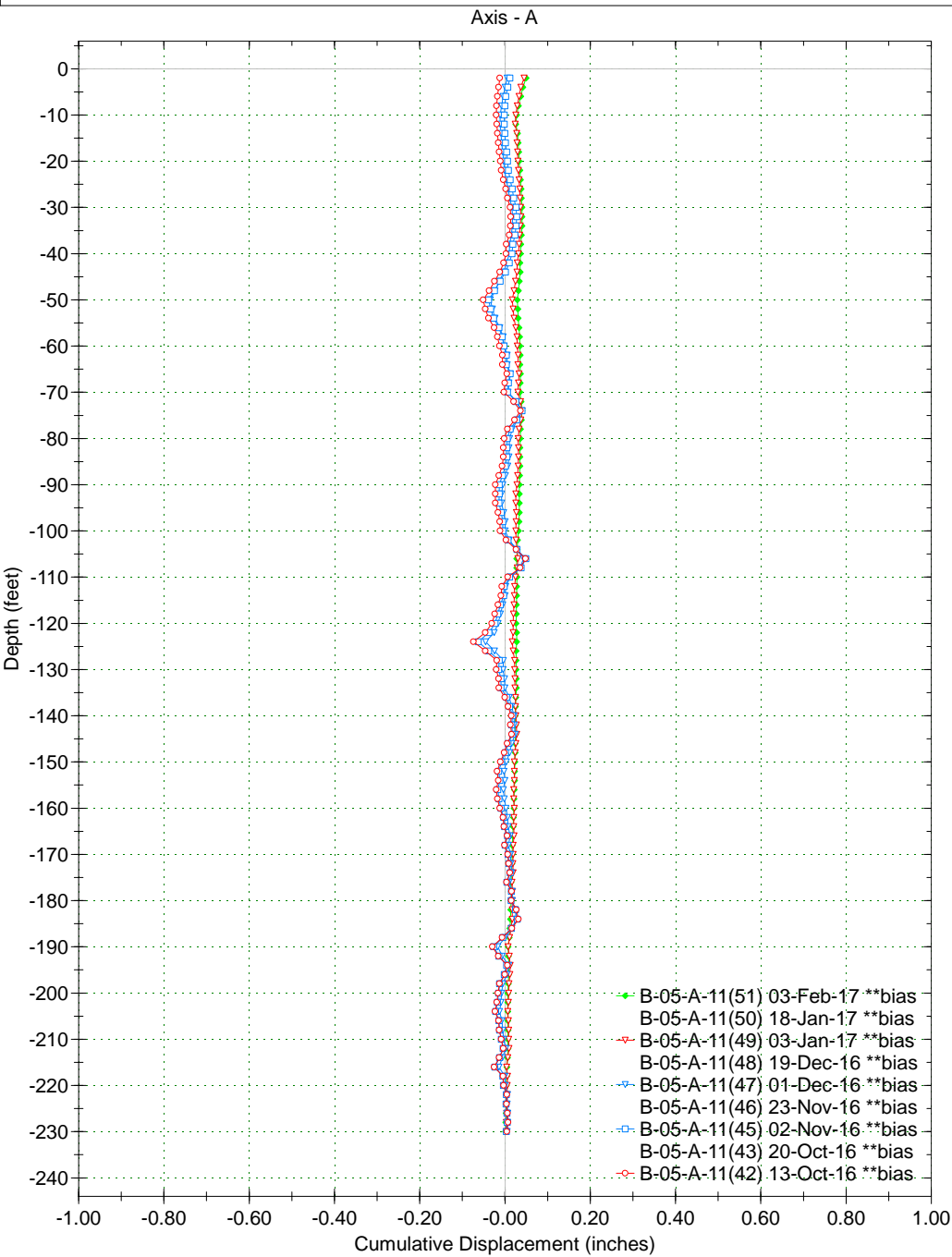
B-05-04



Borehole : B-05-A-11 230 ft
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



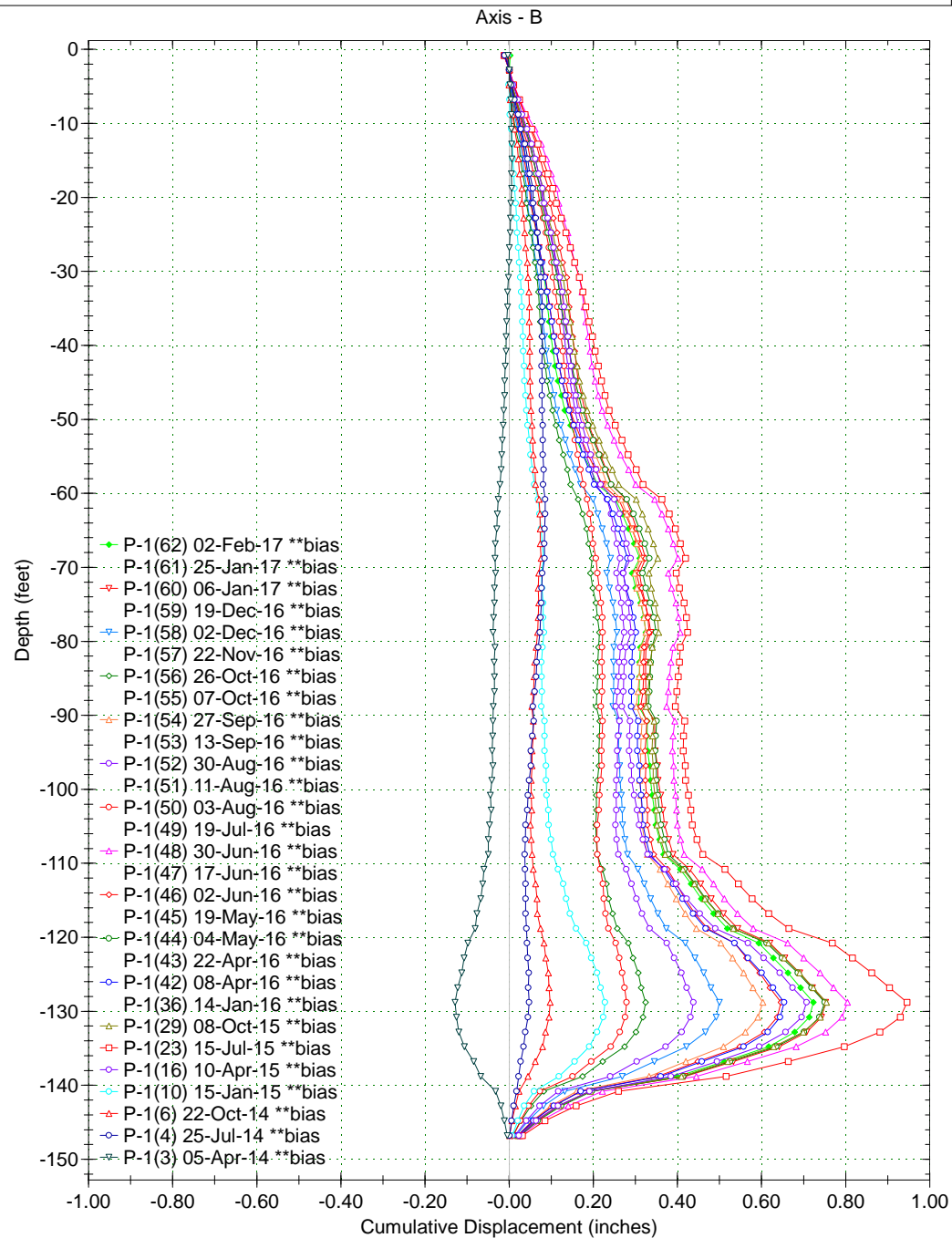
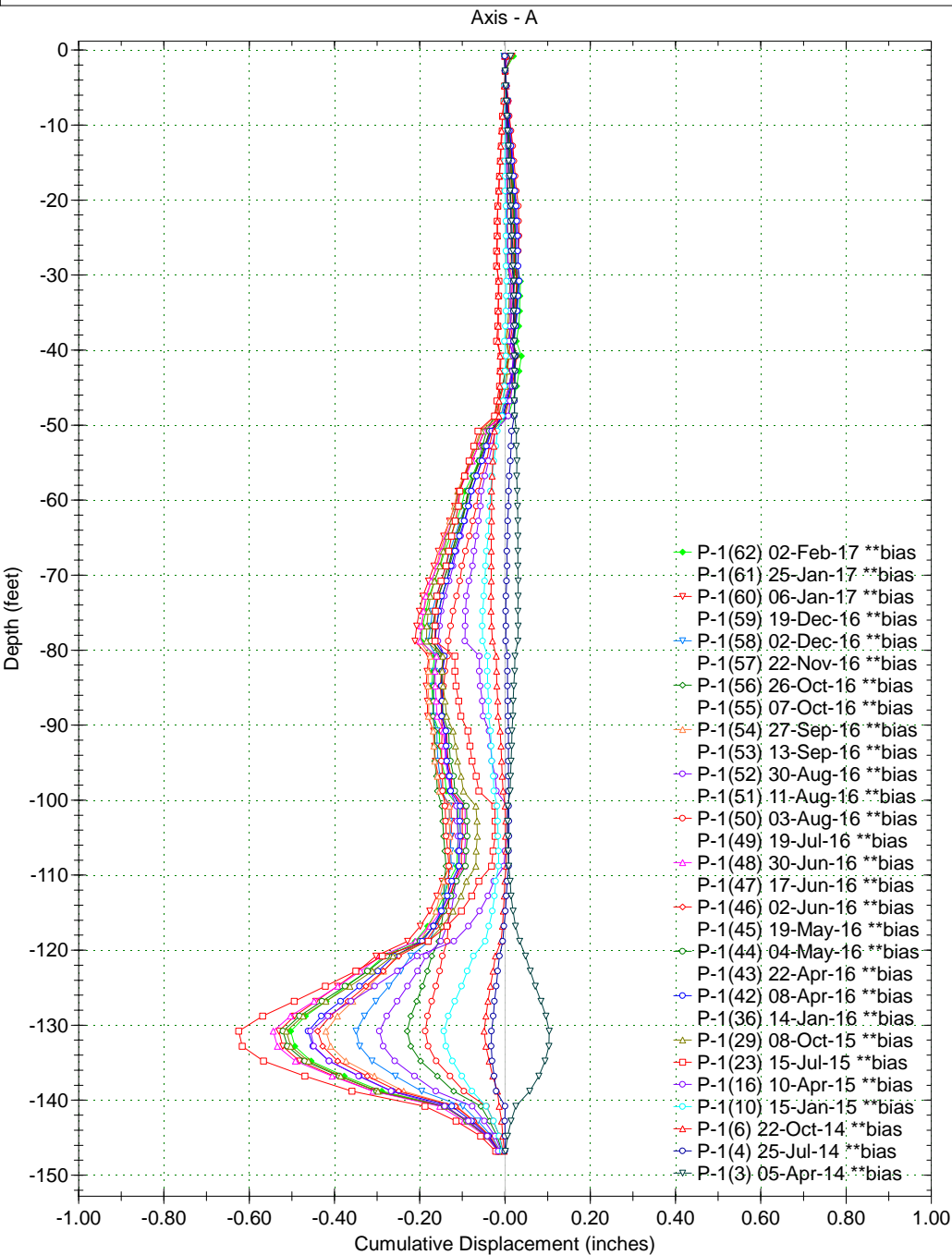
Spiral Correction : N/A
Collar Elevation : 0.0 feet
Borehole Total Depth : 230.0 feet
A+ Groove Azimuth :
Base Reading : 2016 Sep 28 08:37
Applied Azimuth : 0.0 degrees



Borehole : P-1
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :

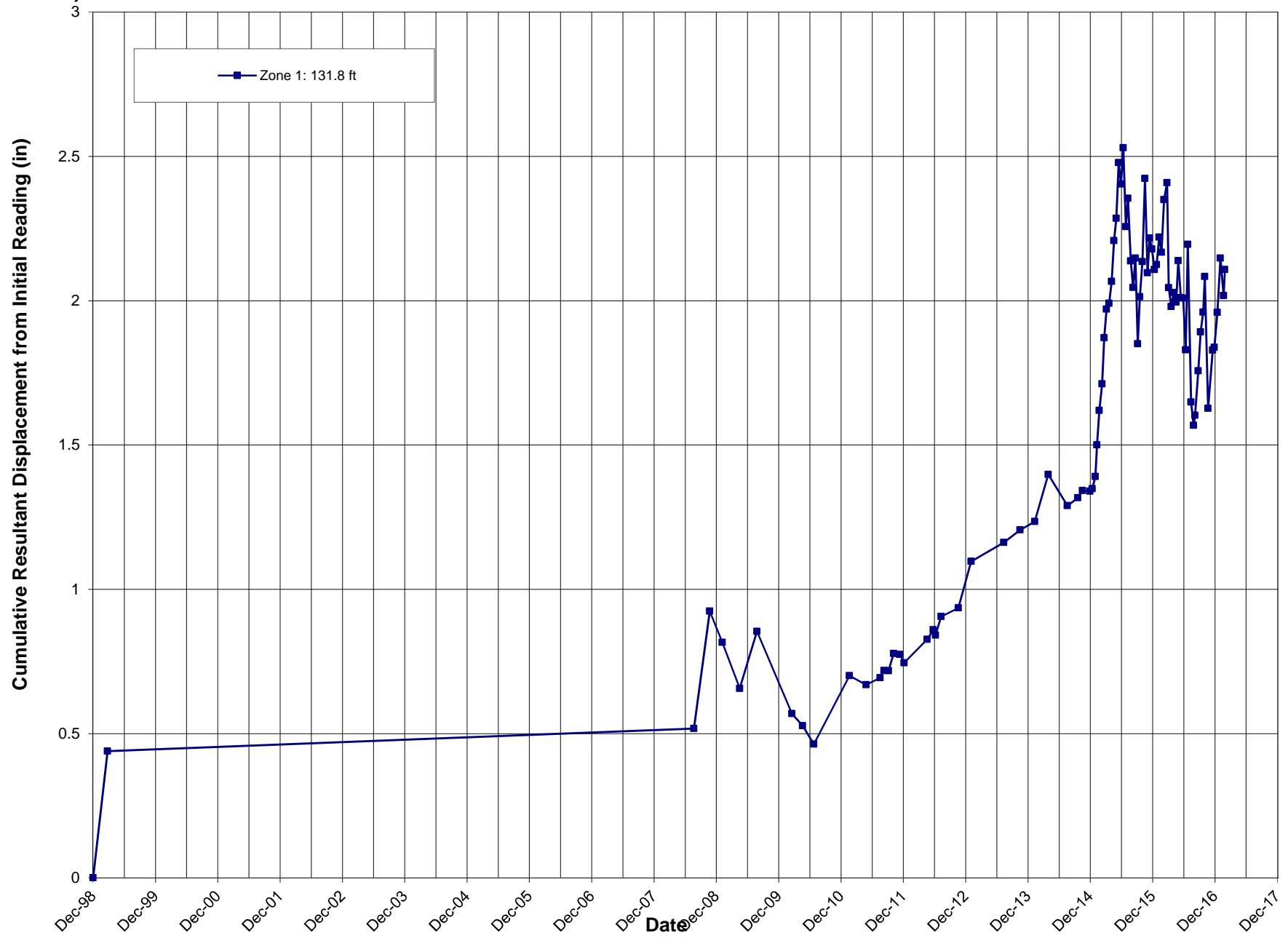


Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 148.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 22 10:47
Applied Azimuth : 0.0 degrees



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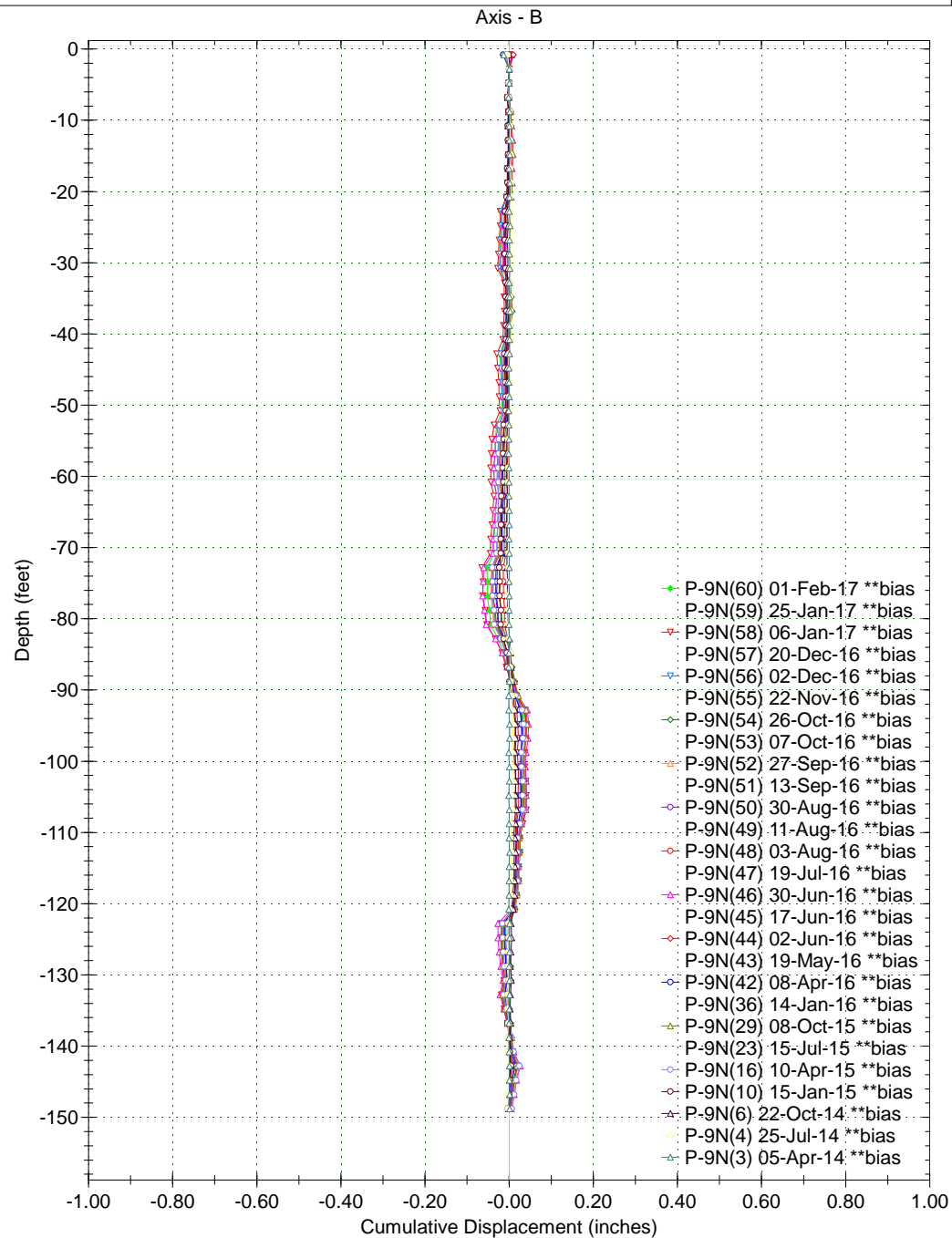
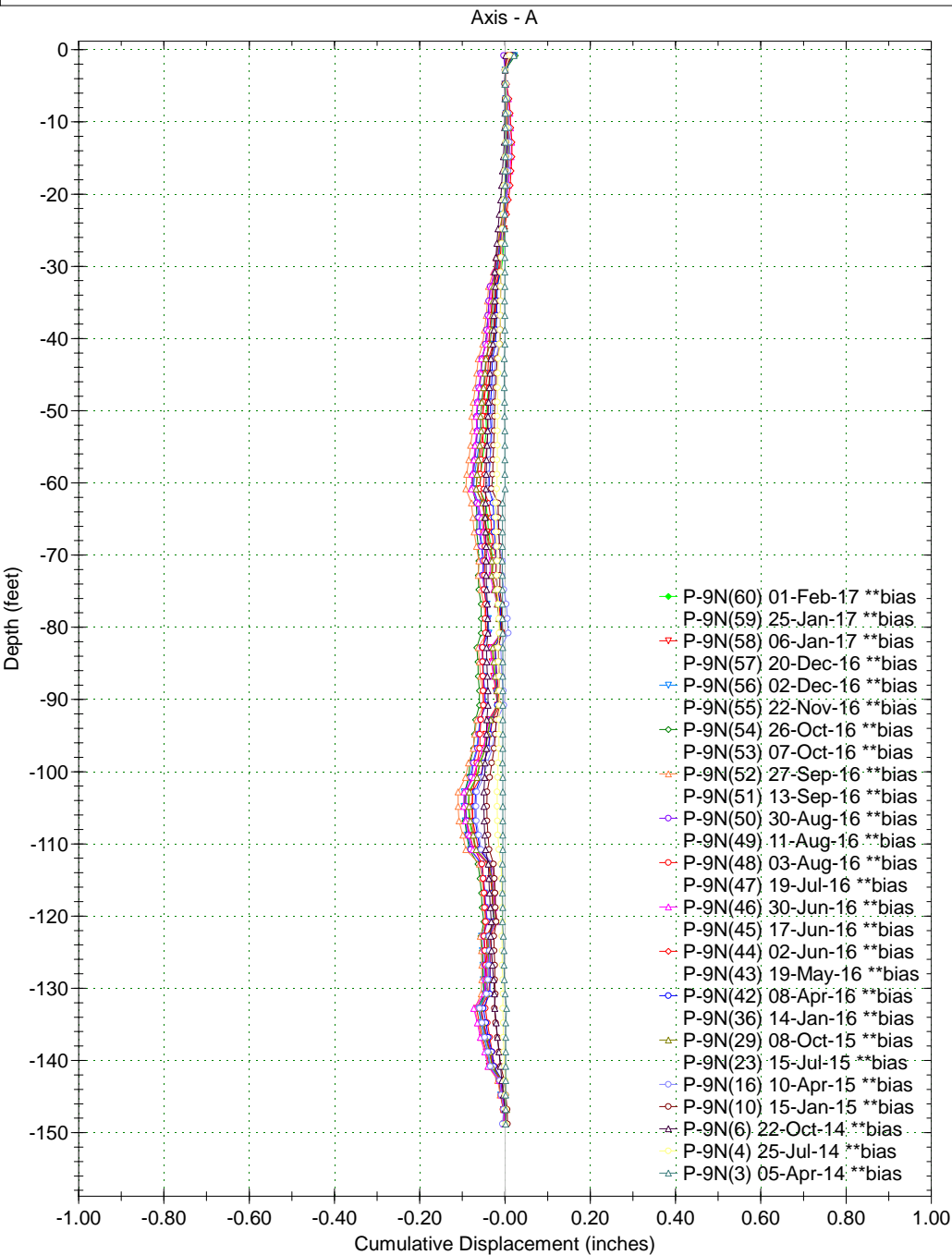
P-1



Borehole : P-9N
Project : CUY-90-15-24
Location : Cleveland, Ohio
Northing :
Easting :
Collar :



Spiral Correction : N/A
Collar Elevation : 1.2 feet
Borehole Total Depth : 150.0 feet
A+ Groove Azimuth :
Base Reading : 2014 Jan 16 09:28
Applied Azimuth : 0.0 degrees

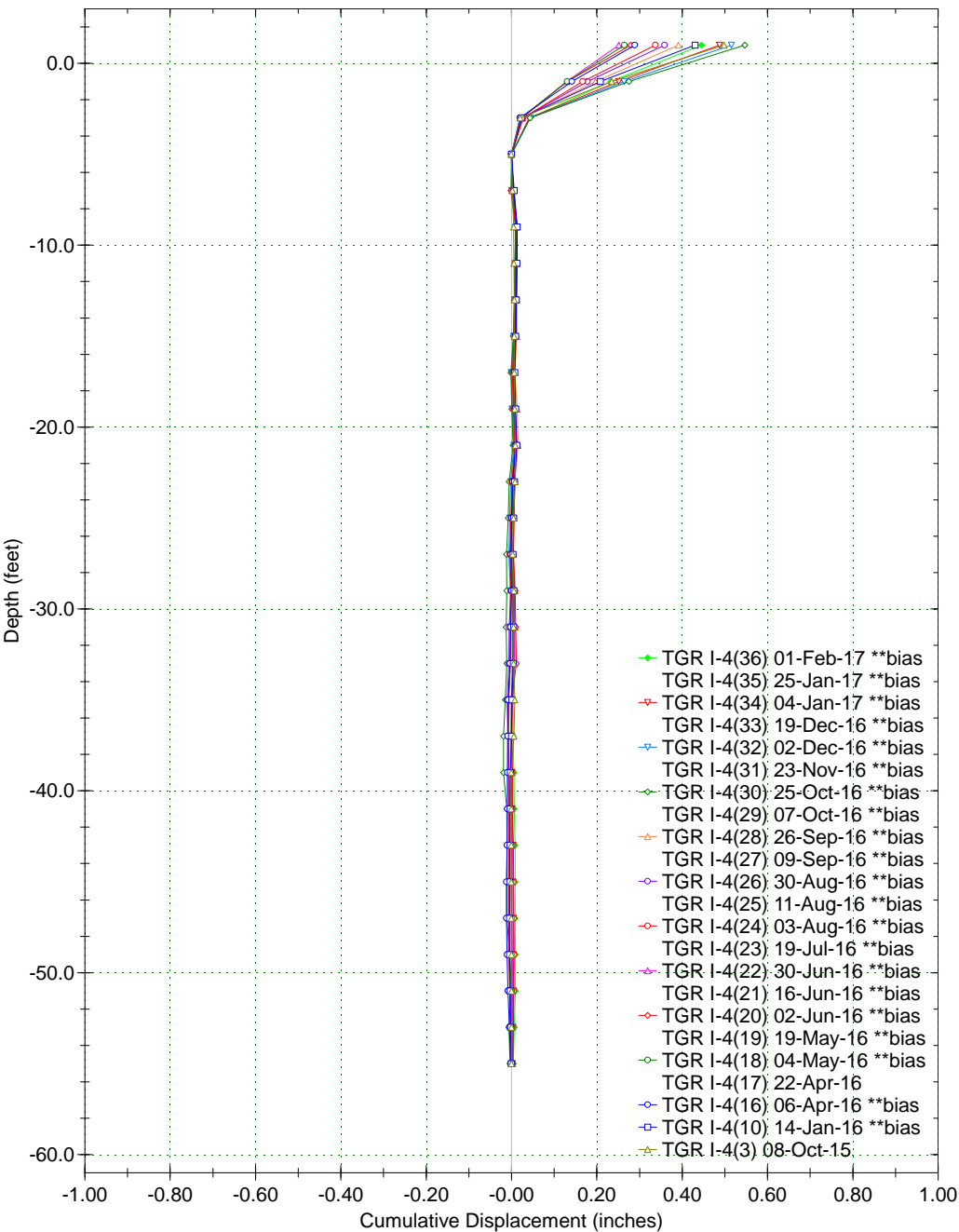


Borehole : TGR I-4
Project : CUY-90-15-24
Location :
Northing :
Easting :
Collar :



Spiral Correction : N/A
Collar Elevation : 3.0 feet
Borehole Total Depth : 58.0 feet
A+ Groove Azimuth :
Base Reading : 2015 Sep 23 10:39
Applied Azimuth : 0.0 degrees

Axis - A



Axis - B

