

July 9, 2014

Mr. Rick Angrisani
Oakhurst Geologic Hazard Abatement District
6000 Heritage Trail
Clayton, CA 94517

Re: Summary of Geotechnical Monitoring and Inspection Services on June 19-20, 2014
Inclinometers/Piezometers/Wells at Kelok Way, Clayton, California
SFB Project No: 555-2

Mr. Angrisani:

In accordance with the Oakhurst Geologic Hazards Abatement District's authorization on June 12, 2014, Stevens, Ferrone & Bailey Engineering Company, Inc. (SFB) performed the initial monitoring of the selected inclinometer casings, vibrating wire and open pipe piezometers, and dewatering wells and outlet pipes located within Kelok Way and within the north facing slope located immediately to the north and below Kelok Way. This service was performed in accordance with the scope of work outlined in our proposal dated January 22, 2013. The approximate locations of these monitoring points are shown on the attached location map, Figure 1. This report summarizes the results of the monitoring, measurements, and inspections performed by SFB at the site on June 19 and 20, 2014.

1.0 MONITORING, MEASUREMENT & OBSERVATION

1.1 Inclinometer Casings

SFB performed monitoring of the inclinometer casings located at BGC SI-1, CEG SI-1, CSA SI-1, CSA SI-2, CSA SI-3, CSA SI-4, W SI-1, and W SI-5 (8 locations) using a Slope Indicator Digitilt probe. The monitoring of casing at CSA SI-4 was not completed due to passage obstruction caused by excessive casing deformation at a depth of about 52 feet below the ground surface. Our initial monitoring records and profile views of the inclinometer casing measurements in both the 'A' (downhill) and 'B' (perpendicular to 'A') direction are presented in Appendix A. These readings will be used as initial (baseline) measurements; all future readings will be compared to these initial measurements.

For reference, readings at inclinometer casing locations W SI-1 and W SI-5 taken on June 19, 2014 were compared to the original readings taken after casing installation on October 16, 2012. These reading comparisons are provided in Appendix B. The reading differences noted at W SI-5 indicate some shifting and settlement of the surrounding Caltrans Class 2 permeable material since completion of installation.

1.2 Vibrating Wire and Open Pipe Piezometers

The measurement of water pressures at vibrating wire piezometer locations was performed using a Slope Indicator VW DataRecorder. Vibrating wire piezometers allow for the measurement of water pressure at a specific location.

Free groundwater levels at open pipe piezometers were measured with a Solinst water level meter. Open pipe piezometers measure the cumulative water pressure along the entire depth of the pipe.

The results of these measurements are tabulated and presented in Appendix C. It should be noted that the piezometers at CEG SI-1, CEG SI-3, BGC SI-1, CSA SI-1, and CSA SI-2 consist of inclinometer casings with an opening at the bottom (previously created by piercing the casing bottoms) and may or may not reflect actual open pipe piezometer water levels. Historical measurement records of the piezometers provided to SFB are included in Appendix D for reference.

1.3 Dewatering Well Outlet Pipes

Discharge from the dewatering well outlet pipes in the collector box was observed on June 20, 2014, with Drains H#1, W#2, W#5, and W#6 exhibiting a stream of water, Drain W#4 exhibiting a trickle of water, the Drain W#3 showing dripping water. Drain W#1 appeared to be blocked by sands. Drain H#1 is an outlet pipe that was encountered at the approximate collector box location during the construction of the collector box in the fall of 2012; it is unclear what H#1 drains. A field photograph of these outlet pipes was taken on June 20, 2014 and is attached as Figure 2.

1.4 Kelok Way Observations

At the time of our field reconnaissance, we did not observe new cracks on the Kelok Way pavement in the area of the dewatering wells compared to cracks observed at the time of well installation in September, 2012. However, near the cul-de-sac of Kelok way, the cracks and joints on the concrete driveway apron leading to 8053 Kelok Way appear to be widening due to downward slope movement of the cul-de-sac at that location. Photographs taken on May 19,

2010 and June 19, 2014 of the driveway are presented on Figure 3 for reference. By comparing photographs taken on January 16, 2009 and June 19, 2014 of the same concrete joint at 8053 Kelok Way (as shown on Figure 4), it appears that the width of the joint has increased from about 2 inches to about 3 inches in about five and half years. Some crack widening appears to have also occurred on the Kelok Way pavement in the cul-de-sac area.

2.0 CONCLUSIONS AND OPINIONS

SFB completed our initial monitoring of selected inclinometer casings, vibrating wire and open pipe piezometers, and dewatering wells and outlet pipes on June 19 and 20, 2014. The next monitoring session will be performed around mid-December of 2014. The inclinometer casing readings of the casing monitoring described herein will be used as initial measurements and will be compared to all future readings.

2.1 Kelok Way cul-de-sac

The monitoring of casing at CSA SI-4 was not completed due to passage obstruction caused by excessive casing deformation at a depth of about 52 feet below the ground surface. This obstruction depth is in a good agreement with the existence of a landslide shear plane indicated by the previous inclinometer casing monitoring records prepared by Cal Engineering & Geology, Inc. (as provided in Appendix E for reference). The previous incremental displacement plot of CSA SI-4 indicates a rate of shearing of about 0.8 inch in about 3-1/2 years (about 1/4 inch per year) at a depth of about 56 feet below the ground surface. Using this rate, about 1-1/2 inches of shearing has taken place along this shear plane since the initial measurements of the casing was performed in November 2007 (about 6-1/2 years ago). The concrete apron joint at 8053 Kelok Way has widened by about 1 inch in about five and half years. The combined results of the CSA SI-4 monitoring and the observed cracks within the Kelok Way cul-de-sac indicate that the slope below the cul-de-sac is unstable and continues to move downhill under static conditions. Greater rates of movement (including large magnitudes of movement) will likely occur when the slope is subjected to earthquake shaking, increases in water pressures, and/or decreases in shear strength.

The past slope movement in the area of CSA SI-4 has caused movement of the Kelok Way cul-de-sac, associated infrastructure, and the home and improvements at 8053 Kelok Way. The home at 8053 Kelok Way has clearly undergone detrimental movement that affects the structural integrity of the house. Future slope movement may result in significant and detrimental damage to the public and private property and associated improvements located upslope and downslope of CSA SI-4 shown on Figure 1. The magnitude of damage and when the damage will occur cannot be accurately predicted due to numerous variables. Serious consideration should be given to stabilizing the movement and repairing the damage.

2.2 Piezometers

The results of our vibrating wire and open pipe piezometer monitoring generally showed similar results as those indicated by historical monitoring records. The discharge conditions of dewatering well outlet pipes are similar to what observed at the time of installation completion, except for Drain W#1 that appeared to be blocked by sands.

We recommend outlet pipes in the collector box shown on Figure 1 be hand cleared of any built up debris or deposits. We recommend this removal occur on a yearly basis.

2.3 Closing

Based on our monitoring contract with the Oakhurst Geologic Hazard Abatement District, we are scheduled to perform our next monitoring session in mid-December, 2014. Should you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

**Stevens, Ferrone & Bailey
Engineering Company, Inc.**






Ken Ferrone, PE, GE, CEG
*Civil/Geotechnical Engineer
Certified Engineering Geologist*



Copies: Addressee (1 by e-mail)

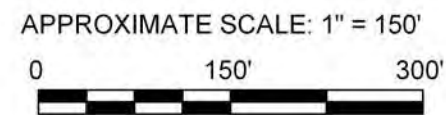
FIGURES

KEY

-  Approximate Locations of Inclinometer Casings, Vibrating Wire Piezometers, Open Pipe Piezometers & Dewatering Wells Monitored by SFB
-  Approximate Location of Dewatering Well Outlet Pipe Collector Box Monitored by SFB
-  Approximate Locations of Inclinometer Casings, Vibrating Wire Piezometers & Open Pipe Piezometers Not Monitored by SFB



NOTE: Base Map Taken From As-Built Rough Grading Plan of Northeast Valley - Tracts 7260, 7261 & 7264 Prepared by UDI-Tetrad Consulting Engineers, Inc. and Dated Oct 1996, and Google Earth Image.



DATE	July 2014
PROJECT NO.	555-2

Stevens
Serrone &
Bailey
Engineering Company, Inc

1600 Willow Pass Court
Concord, CA 94520
Tel 925.688.1001
Fax 925.688.1005
www.SFandB.com

SITE PLAN
KELOK WAY MONITORING LOCATION MAP
Clayton, California

FIGURE
1



Figure 2, Photograph of Outlet Pipes Taken on 6/20/14



Figure 3, 8053 Kelok Way



Figure 4, 8053 Kelok Way

APPENDIX A
Inclinometer Casing Readings

SITE : 555-1
 INSTALLATION : BGCSI1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 12:30:14 PM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:17:23 PM

Data Reduction for A Axis:

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	1391	-1410	1.6806	32.6292
6	1086	-1107	1.3158	30.9486
8	870	-893	1.0578	29.6328
10	577	-601	0.7068	28.5750
12	310	-334	0.3864	27.8682
14	235	-257	0.2952	27.4818
16	0	-21	0.0126	27.1866
18	-113	90	-0.1218	27.1740
20	-133	109	-0.1452	27.2958
22	11	-30	0.0246	27.4410
24	229	-256	0.2910	27.4164
26	750	-768	0.9108	27.1254
28	615	-639	0.7524	26.2146
30	473	-495	0.5808	25.4622
32	441	-465	0.5436	24.8814
34	503	-524	0.6162	24.3378
36	555	-575	0.6780	23.7216
38	407	-431	0.5028	23.0436
40	446	-468	0.5484	22.5408
42	262	-287	0.3294	21.9924
44	267	-286	0.3318	21.6630
46	255	-275	0.3180	21.3312
48	255	-277	0.3192	21.0132
50	269	-290	0.3354	20.6940
52	383	-408	0.4746	20.3586
54	760	-781	0.9246	19.8840
56	830	-853	1.0098	18.9594
58	422	-446	0.5208	17.9496
60	438	-458	0.5376	17.4288
62	561	-584	0.6870	16.8912
64	606	-634	0.7440	16.2042
66	603	-622	0.7350	15.4602
68	500	-523	0.6138	14.7252
70	516	-537	0.6318	14.1114
72	570	-593	0.6978	13.4796
74	691	-715	0.8436	12.7818
76	738	-755	0.8958	11.9382
78	730	-753	0.8898	11.0424
80	689	-709	0.8388	10.1526
82	638	-660	0.7788	9.3138
84	618	-642	0.7560	8.5350
86	555	-574	0.6774	7.7790
88	511	-534	0.6270	7.1016

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	438	-460	0.5388	6.4746
92	373	-395	0.4608	5.9358
94	317	-343	0.3960	5.4750
96	275	-295	0.3420	5.0790
98	245	-268	0.3078	4.7370
100	218	-239	0.2742	4.4292
102	219	-242	0.2766	4.1550
104	259	-285	0.3264	3.8784
106	274	-295	0.3414	3.5520
108	283	-307	0.3540	3.2106
110	308	-330	0.3828	2.8566
112	347	-374	0.4326	2.4738
114	507	-533	0.6240	2.0412
116	535	-553	0.6528	1.4172
118	625	-649	0.7644	0.7644
120	0	0	0.0000	0.0000

SITE : 555-1
 INSTALLATION : BGCSI1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 12:30:14 PM
 Probe Serial No : 29059

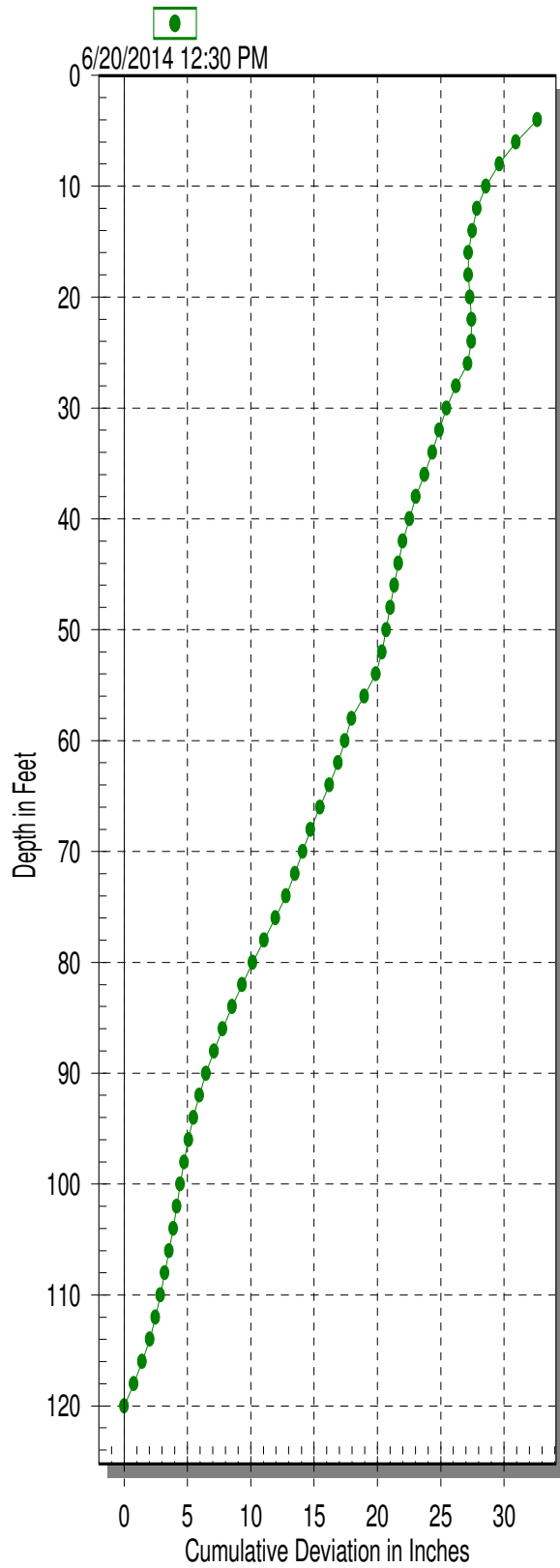
DATE PRINTED : 7/7/2014 4:17:23 PM

Data Reduction for B Axis:

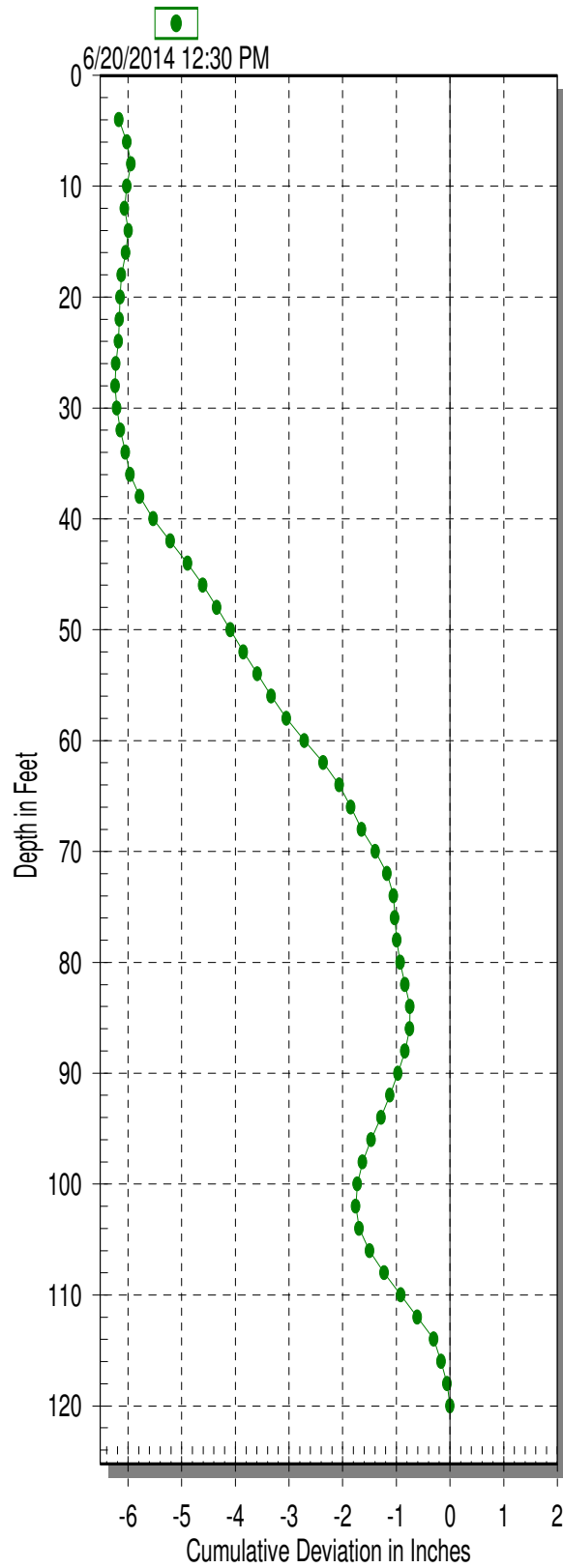
Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	-113	133	-0.1476	-6.1698
6	-67	59	-0.0756	-6.0222
8	66	-61	0.0762	-5.9466
10	39	-32	0.0426	-6.0228
12	-61	58	-0.0714	-6.0654
14	42	-38	0.0480	-5.9940
16	65	-74	0.0834	-6.0420
18	18	-19	0.0222	-6.1254
20	11	-14	0.0150	-6.1476
22	9	-18	0.0162	-6.1626
24	42	-37	0.0474	-6.1788
26	9	-16	0.0150	-6.2262
28	-30	22	-0.0312	-6.2412
30	-60	50	-0.0660	-6.2100
32	-83	75	-0.0948	-6.1440
34	-70	78	-0.0888	-6.0492
36	-145	150	-0.1770	-5.9604
38	-213	206	-0.2514	-5.7834
40	-265	263	-0.3168	-5.5320
42	-275	266	-0.3246	-5.2152
44	-231	245	-0.2856	-4.8906
46	-217	215	-0.2592	-4.6050
48	-211	208	-0.2514	-4.3458
50	-205	203	-0.2448	-4.0944
52	-220	214	-0.2604	-3.8496
54	-207	220	-0.2562	-3.5892
56	-240	234	-0.2844	-3.3330
58	-281	280	-0.3366	-3.0486
60	-293	290	-0.3498	-2.7120
62	-247	250	-0.2982	-2.3622
64	-185	172	-0.2142	-2.0640
66	-175	165	-0.2040	-1.8498
68	-219	208	-0.2562	-1.6458
70	-182	180	-0.2172	-1.3896
72	-99	102	-0.1206	-1.1724
74	-23	13	-0.0216	-1.0518
76	-32	32	-0.0384	-1.0302
78	-57	51	-0.0648	-0.9918
80	-78	70	-0.0888	-0.9270
82	-73	78	-0.0906	-0.8382
84	1	-4	0.0030	-0.7476
86	77	-71	0.0888	-0.7506
88	105	-111	0.1296	-0.8394

Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	125	-126	0.1506	-0.9690
92	136	-138	0.1644	-1.1196
94	151	-157	0.1848	-1.2840
96	127	-138	0.1590	-1.4688
98	79	-85	0.0984	-1.6278
100	22	-30	0.0312	-1.7262
102	-55	53	-0.0648	-1.7574
104	-164	158	-0.1932	-1.6926
106	-231	224	-0.2730	-1.4994
108	-259	258	-0.3102	-1.2264
110	-262	253	-0.3090	-0.9162
112	-258	251	-0.3054	-0.6072
114	-119	107	-0.1356	-0.3018
116	-98	92	-0.1140	-0.1662
118	-48	39	-0.0522	-0.0522
120	0	0	0.0000	0.0000

555-1:BGCSI1 - A Axis



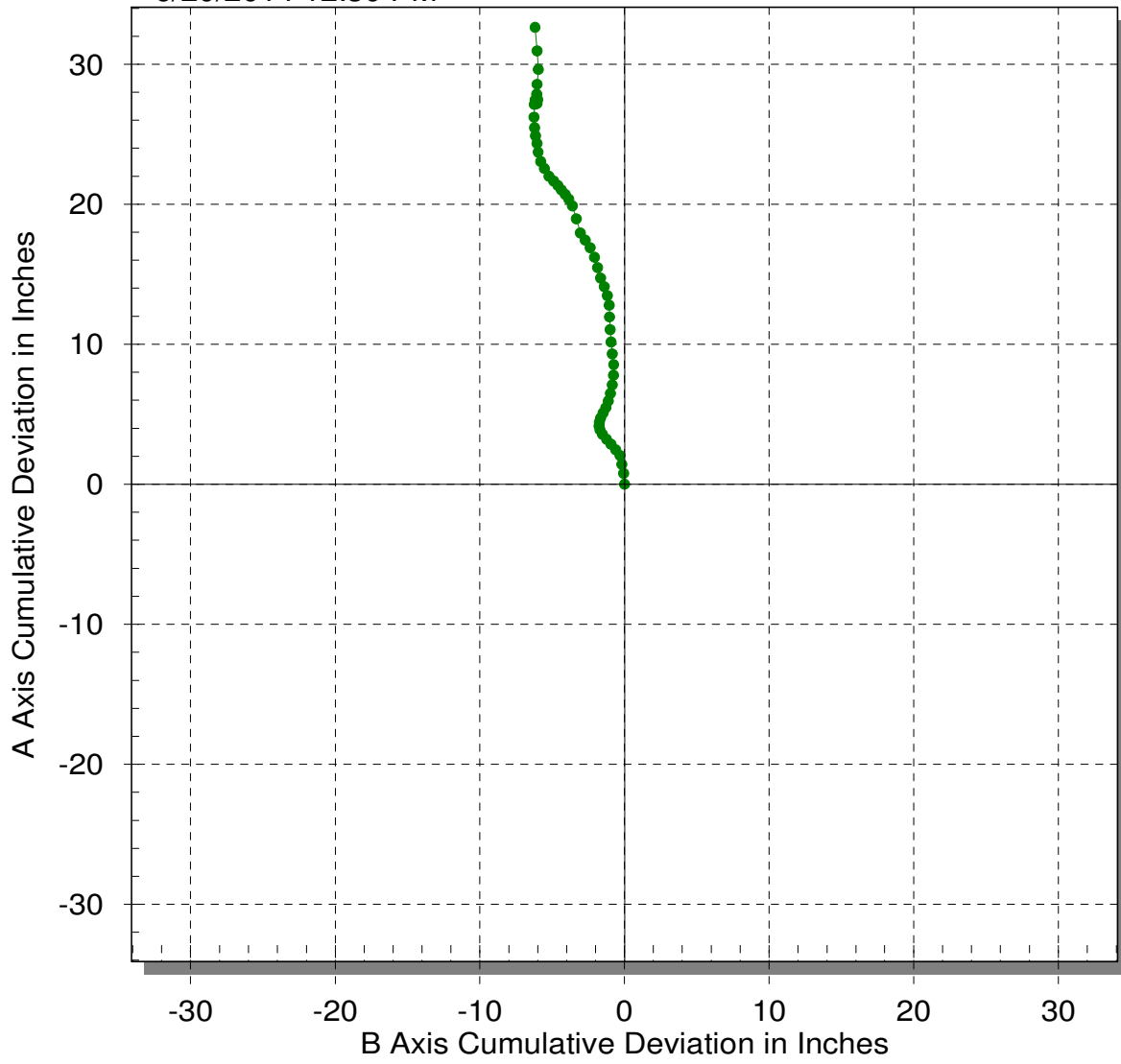
555-1:BGCSI1 - B Axis



555-1:BGCSI1 - A Axis vs B Axis



6/20/2014 12:30 PM



SITE : 555-1
 INSTALLATION : CEGSI1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/19/2014 11:35:35 AM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:18:14 PM

Data Reduction for A Axis:

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	38	-63	0.0606	-11.4900
6	-23	2	-0.0150	-11.5506
8	-105	82	-0.1122	-11.5356
10	-140	119	-0.1554	-11.4234
12	-109	85	-0.1164	-11.2680
14	-13	-7	-0.0036	-11.1516
16	95	-120	0.1290	-11.1480
18	201	-221	0.2532	-11.2770
20	369	-389	0.4548	-11.5302
22	480	-503	0.5898	-11.9850
24	587	-607	0.7164	-12.5748
26	669	-691	0.8160	-13.2912
28	721	-741	0.8772	-14.1072
30	745	-765	0.9060	-14.9844
32	673	-695	0.8208	-15.8904
34	678	-699	0.8262	-16.7112
36	630	-653	0.7698	-17.5374
38	536	-561	0.6582	-18.3072
40	437	-456	0.5358	-18.9654
42	207	-228	0.2610	-19.5012
44	109	-126	0.1410	-19.7622
46	23	-42	0.0390	-19.9032
48	-81	65	-0.0876	-19.9422
50	-187	167	-0.2124	-19.8546
52	-340	319	-0.3954	-19.6422
54	-353	331	-0.4104	-19.2468
56	-359	338	-0.4182	-18.8364
58	-338	315	-0.3918	-18.4182
60	-316	295	-0.3666	-18.0264
62	-350	327	-0.4062	-17.6598
64	-300	279	-0.3474	-17.2536
66	-272	251	-0.3138	-16.9062
68	-202	179	-0.2286	-16.5924
70	-112	93	-0.1230	-16.3638
72	-109	83	-0.1152	-16.2408
74	-40	18	-0.0348	-16.1256
76	51	-74	0.0750	-16.0908
78	220	-239	0.2754	-16.1658
80	359	-379	0.4428	-16.4412
82	449	-467	0.5496	-16.8840
84	578	-599	0.7062	-17.4336
86	662	-682	0.8064	-18.1398
88	753	-773	0.9156	-18.9462

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	1171	-1189	1.4160	-19.8618
92	665	-692	0.8142	-21.2778
94	549	-566	0.6690	-22.0920
96	498	-523	0.6126	-22.7610
98	426	-446	0.5232	-23.3736
100	357	-375	0.4392	-23.8968
102	155	-174	0.1974	-24.3360
104	53	-78	0.0786	-24.5334
106	-61	35	-0.0576	-24.6120
108	-177	154	-0.1986	-24.5544
110	-285	262	-0.3282	-24.3558
112	-493	474	-0.5802	-24.0276
114	-607	582	-0.7134	-23.4474
116	-713	690	-0.8418	-22.7340
118	-777	759	-0.9216	-21.8922
120	-878	861	-1.0434	-20.9706
122	-1061	1038	-1.2594	-19.9272
124	-1154	1135	-1.3734	-18.6678
126	-1237	1217	-1.4724	-17.2944
128	-1283	1266	-1.5294	-15.8220
130	-1279	1254	-1.5198	-14.2926
132	-1277	1258	-1.5210	-12.7728
134	-1229	1208	-1.4622	-11.2518
136	-1198	1179	-1.4262	-9.7896
138	-1185	1164	-1.4094	-8.3634
140	-1175	1160	-1.4010	-6.9540
142	-1216	1193	-1.4454	-5.5530
144	-1145	1122	-1.3602	-4.1076
146	-1132	1110	-1.3452	-2.7474
148	-1179	1158	-1.4022	-1.4022
150	0	0	0.0000	0.0000

SITE : 555-1
 INSTALLATION : CEGSI1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/19/2014 11:35:35 AM
 Probe Serial No : 29059

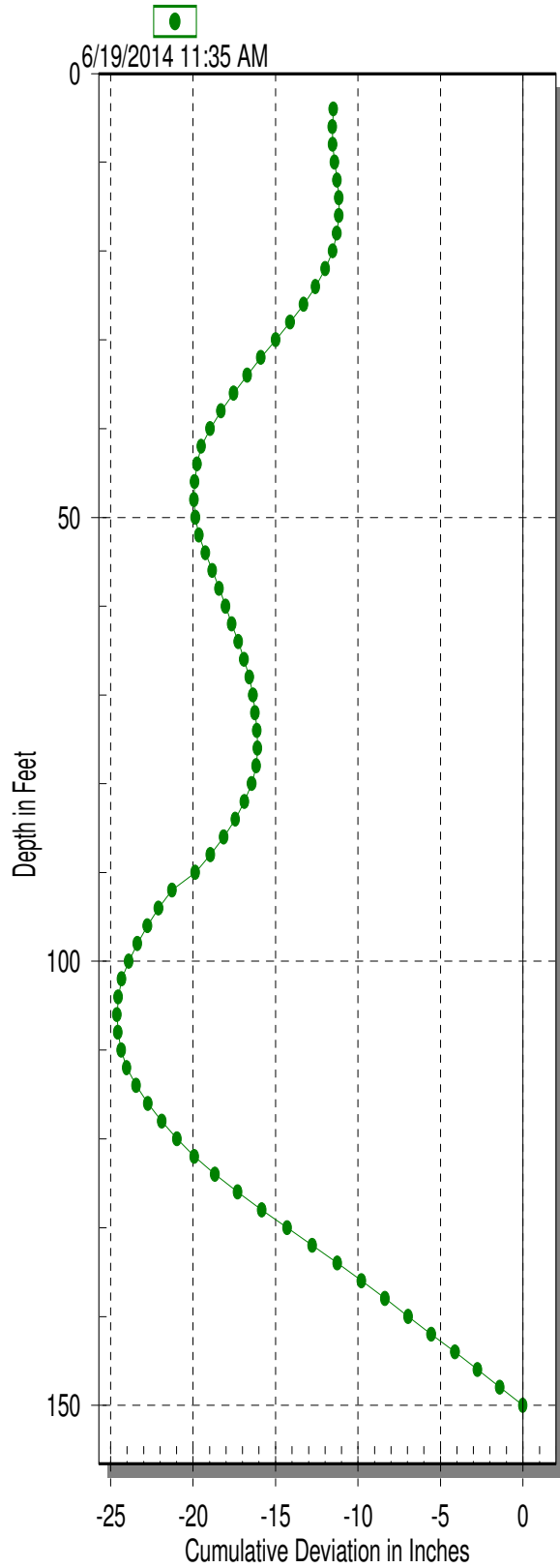
DATE PRINTED : 7/7/2014 4:18:14 PM

Data Reduction for B Axis:

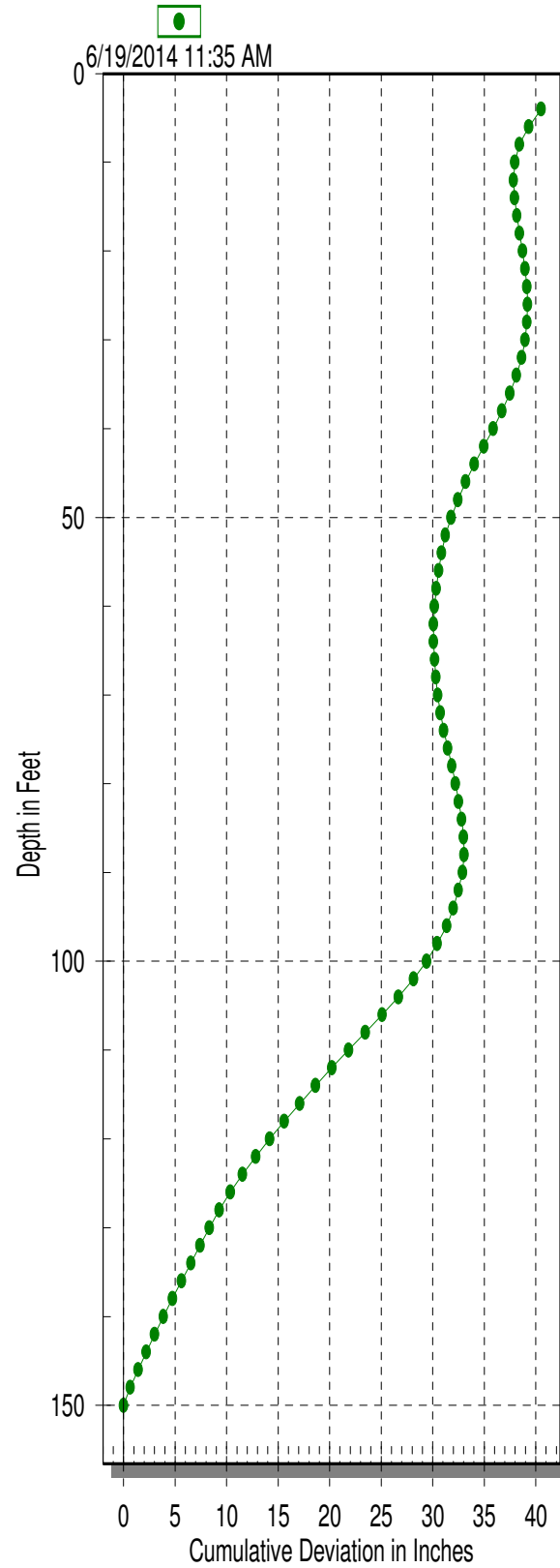
Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	1006	-1007	1.2078	40.5378
6	761	-766	0.9162	39.3300
8	365	-369	0.4404	38.4138
10	114	-122	0.1416	37.9734
12	-97	102	-0.1194	37.8318
14	-189	181	-0.2220	37.9512
16	-221	215	-0.2616	38.1732
18	-238	229	-0.2802	38.4348
20	-210	206	-0.2496	38.7150
22	-151	149	-0.1800	38.9646
24	-43	43	-0.0516	39.1446
26	45	-53	0.0588	39.1962
28	143	-142	0.1710	39.1374
30	270	-270	0.3240	38.9664
32	422	-421	0.5058	38.6424
34	535	-545	0.6480	38.1366
36	628	-649	0.7662	37.4886
38	703	-718	0.8526	36.7224
40	766	-765	0.9186	35.8698
42	758	-761	0.9114	34.9512
44	694	-704	0.8388	34.0398
46	625	-639	0.7584	33.2010
48	538	-553	0.6546	32.4426
50	461	-463	0.5544	31.7880
52	313	-311	0.3744	31.2336
54	234	-243	0.2862	30.8592
56	180	-198	0.2268	30.5730
58	134	-149	0.1698	30.3462
60	76	-82	0.0948	30.1764
62	-2	7	-0.0054	30.0816
64	-85	74	-0.0954	30.0870
66	-113	96	-0.1254	30.1824
68	-155	141	-0.1776	30.3078
70	-207	200	-0.2442	30.4854
72	-283	283	-0.3396	30.7296
74	-321	321	-0.3852	31.0692
76	-345	330	-0.4050	31.4544
78	-293	285	-0.3468	31.8594
80	-259	248	-0.3042	32.2062
82	-245	254	-0.2994	32.5104
84	-156	153	-0.1854	32.8098
86	-46	43	-0.0534	32.9952
88	130	-140	0.1620	33.0486

Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	331	-334	0.3990	32.8866
92	407	-395	0.4812	32.4876
94	527	-529	0.6336	32.0064
96	773	-782	0.9330	31.3728
98	851	-849	1.0200	30.4398
100	1067	-1063	1.2780	29.4198
102	1227	-1226	1.4718	28.1418
104	1306	-1313	1.5714	26.6700
106	1350	-1355	1.6230	25.0986
108	1364	-1376	1.6440	23.4756
110	1349	-1354	1.6218	21.8316
112	1307	-1303	1.5660	20.2098
114	1274	-1281	1.5330	18.6438
116	1249	-1262	1.5066	17.1108
118	1177	-1189	1.4196	15.6042
120	1122	-1129	1.3506	14.1846
122	1063	-1063	1.2756	12.8340
124	997	-997	1.1964	11.5584
126	894	-896	1.0740	10.3620
128	797	-804	0.9606	9.2880
130	755	-753	0.9048	8.3274
132	740	-731	0.8826	7.4226
134	746	-755	0.9006	6.5400
136	741	-747	0.8928	5.6394
138	729	-742	0.8826	4.7466
140	702	-700	0.8412	3.8640
142	678	-675	0.8118	3.0228
144	649	-661	0.7860	2.2110
146	639	-647	0.7716	1.4250
148	542	-547	0.6534	0.6534
150	0	0	0.0000	0.0000

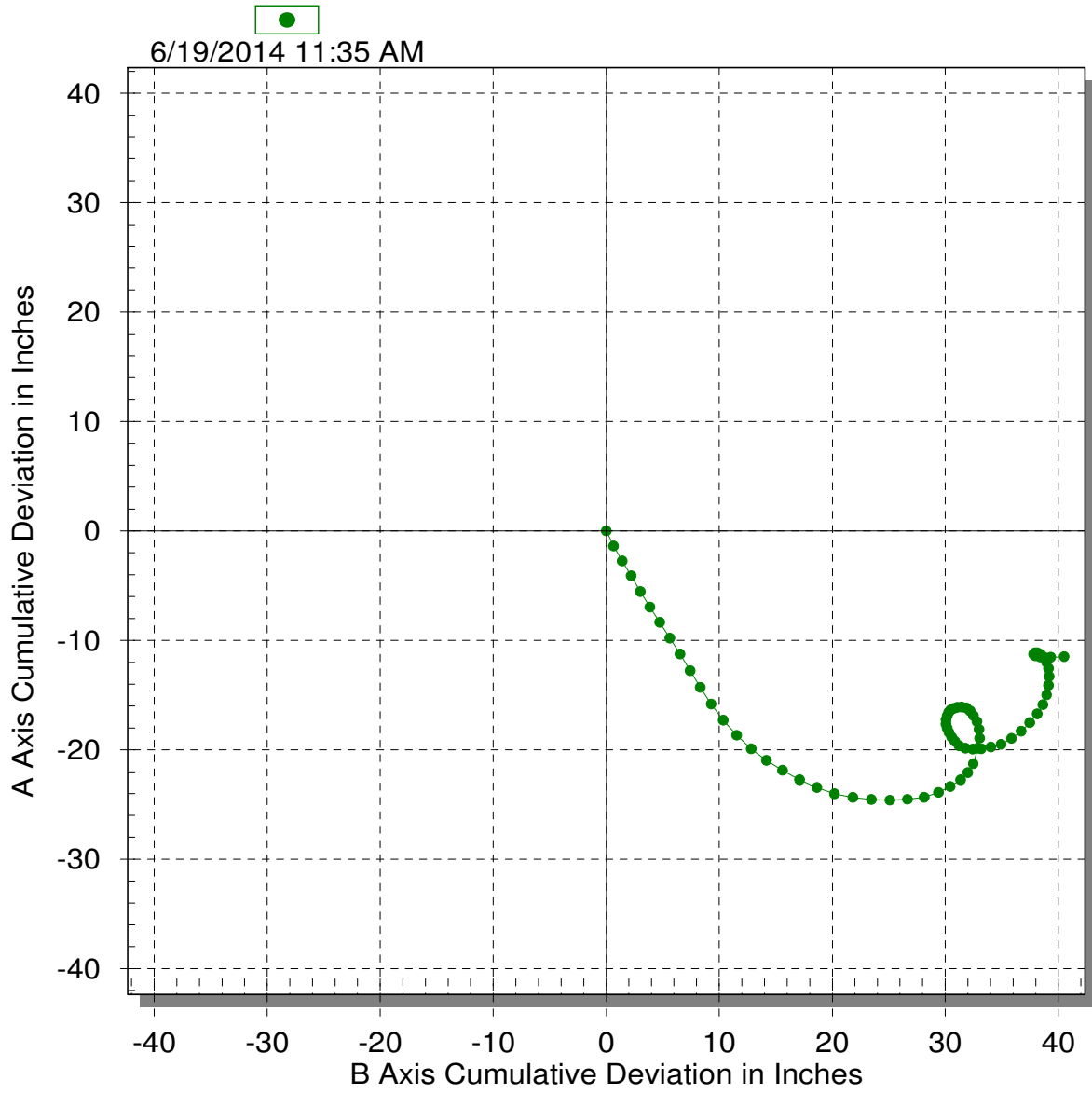
555-1:CEGS11 - A Axis



555-1:CEGS11 - B Axis



555-1:CEGSI1 - A Axis vs B Axis



SITE : 555-1
 INSTALLATION : CSASI1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 10:38:05 AM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:18:54 PM

Data Reduction for A Axis:

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	723	-749	0.8832	14.0868
6	631	-658	0.7734	13.2036
8	311	-335	0.3876	12.4302
10	325	-345	0.4020	12.0426
12	463	-484	0.5682	11.6406
14	478	-507	0.5910	11.0724
16	487	-504	0.5946	10.4814
18	490	-513	0.6018	9.8868
20	510	-527	0.6222	9.2850
22	449	-475	0.5544	8.6628
24	369	-391	0.4560	8.1084
26	379	-399	0.4668	7.6524
28	359	-382	0.4446	7.1856
30	357	-381	0.4428	6.7410
32	353	-375	0.4368	6.2982
34	407	-433	0.5040	5.8614
36	381	-402	0.4698	5.3574
38	268	-288	0.3336	4.8876
40	278	-301	0.3474	4.5540
42	181	-199	0.2280	4.2066
44	133	-154	0.1722	3.9786
46	126	-145	0.1626	3.8064
48	297	-329	0.3756	3.6438
50	163	-181	0.2064	3.2682
52	129	-149	0.1668	3.0618
54	145	-165	0.1860	2.8950
56	133	-149	0.1692	2.7090
58	142	-162	0.1824	2.5398
60	154	-177	0.1986	2.3574
62	113	-134	0.1482	2.1588
64	61	-82	0.0858	2.0106
66	42	-63	0.0630	1.9248
68	-18	-3	-0.0090	1.8618
70	-42	22	-0.0384	1.8708
72	-15	-4	-0.0066	1.9092
74	-27	3	-0.0180	1.9158
76	-71	53	-0.0744	1.9338
78	-34	13	-0.0282	2.0082
80	-15	-5	-0.0060	2.0364
82	-107	86	-0.1158	2.0424
84	-109	85	-0.1164	2.1582
86	-78	59	-0.0822	2.2746
88	-56	34	-0.0540	2.3568

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	-34	13	-0.0282	2.4108
92	-78	56	-0.0804	2.4390
94	-96	71	-0.1002	2.5194
96	-85	65	-0.0900	2.6196
98	-94	71	-0.0990	2.7096
100	-91	70	-0.0966	2.8086
102	-75	55	-0.0780	2.9052
104	-48	23	-0.0426	2.9832
106	-15	-6	-0.0054	3.0258
108	12	-35	0.0282	3.0312
110	53	-73	0.0756	3.0030
112	127	-147	0.1644	2.9274
114	193	-216	0.2454	2.7630
116	236	-255	0.2946	2.5176
118	254	-275	0.3174	2.2230
120	258	-278	0.3216	1.9056
122	207	-229	0.2616	1.5840
124	206	-230	0.2616	1.3224
126	233	-253	0.2916	1.0608
128	272	-294	0.3396	0.7692
130	347	-369	0.4296	0.4296
132	0	0	0.0000	0.0000

SITE : 555-1
 INSTALLATION : CSASI1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 10:38:05 AM
 Probe Serial No : 29059

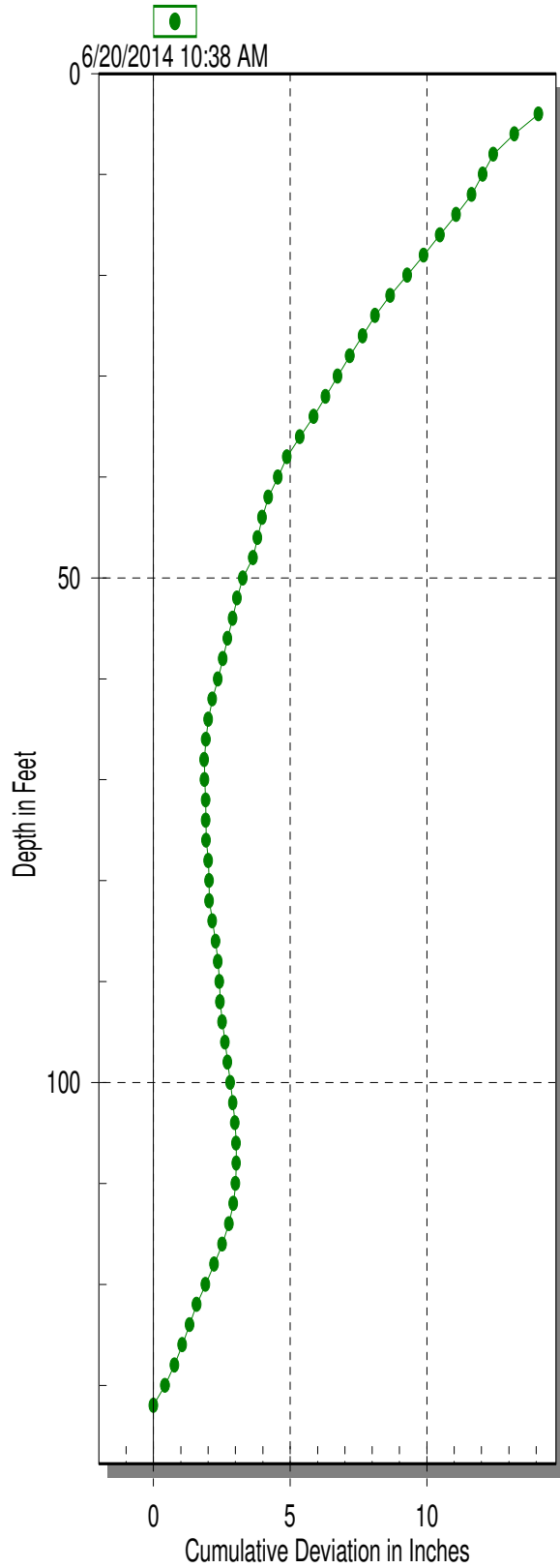
DATE PRINTED : 7/7/2014 4:18:54 PM

Data Reduction for B Axis:

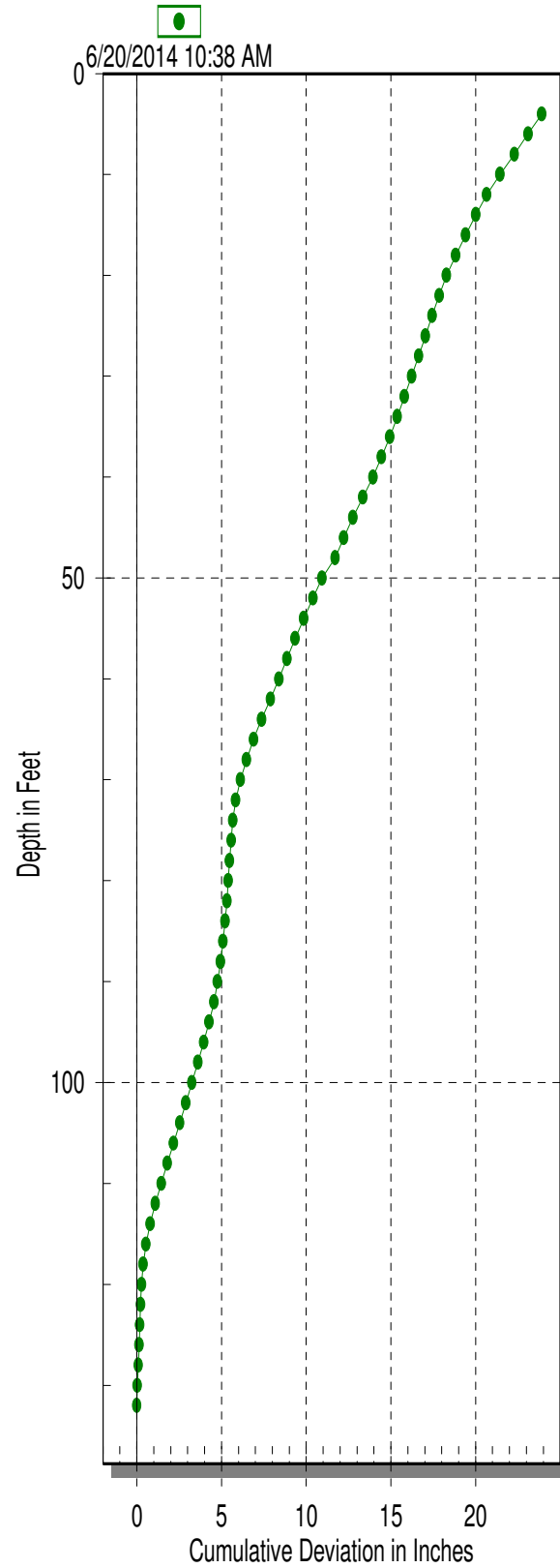
Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	682	-672	0.8124	23.9118
6	673	-675	0.8088	23.0994
8	702	-711	0.8478	22.2906
10	653	-659	0.7872	21.4428
12	536	-528	0.6384	20.6556
14	501	-497	0.5988	20.0172
16	487	-496	0.5898	19.4184
18	453	-452	0.5430	18.8286
20	357	-363	0.4320	18.2856
22	354	-347	0.4206	17.8536
24	329	-321	0.3900	17.4330
26	334	-332	0.3996	17.0430
28	347	-345	0.4152	16.6434
30	356	-355	0.4266	16.2282
32	350	-345	0.4170	15.8016
34	366	-371	0.4422	15.3846
36	414	-413	0.4962	14.9424
38	417	-421	0.5028	14.4462
40	494	-500	0.5964	13.9434
42	489	-490	0.5874	13.3470
44	444	-457	0.5406	12.7596
46	425	-420	0.5070	12.2190
48	653	-644	0.7782	11.7120
50	441	-446	0.5322	10.9338
52	454	-452	0.5436	10.4016
54	425	-424	0.5094	9.8580
56	405	-410	0.4890	9.3486
58	393	-395	0.4728	8.8596
60	414	-415	0.4974	8.3868
62	433	-432	0.5190	7.8894
64	390	-399	0.4734	7.3704
66	342	-355	0.4182	6.8970
68	293	-306	0.3594	6.4788
70	226	-234	0.2760	6.1194
72	148	-142	0.1740	5.8434
74	81	-74	0.0930	5.6694
76	82	-83	0.0990	5.5764
78	71	-73	0.0864	5.4774
80	55	-58	0.0678	5.3910
82	97	-85	0.1092	5.3232
84	103	-103	0.1236	5.2140
86	127	-126	0.1518	5.0904
88	143	-147	0.1740	4.9386

Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	170	-173	0.2058	4.7646
92	242	-238	0.2880	4.5588
94	266	-268	0.3204	4.2708
96	281	-285	0.3396	3.9504
98	298	-298	0.3576	3.6108
100	299	-301	0.3600	3.2532
102	303	-291	0.3564	2.8932
104	305	-303	0.3648	2.5368
106	307	-307	0.3684	2.1720
108	301	-301	0.3612	1.8036
110	286	-294	0.3480	1.4424
112	252	-254	0.3036	1.0944
114	198	-212	0.2460	0.7908
116	133	-143	0.1656	0.5448
118	82	-90	0.1032	0.3792
120	42	-48	0.0540	0.2760
122	36	-30	0.0396	0.2220
124	39	-37	0.0456	0.1824
126	42	-41	0.0498	0.1368
128	41	-45	0.0516	0.0870
130	27	-32	0.0354	0.0354
132	0	0	0.0000	0.0000

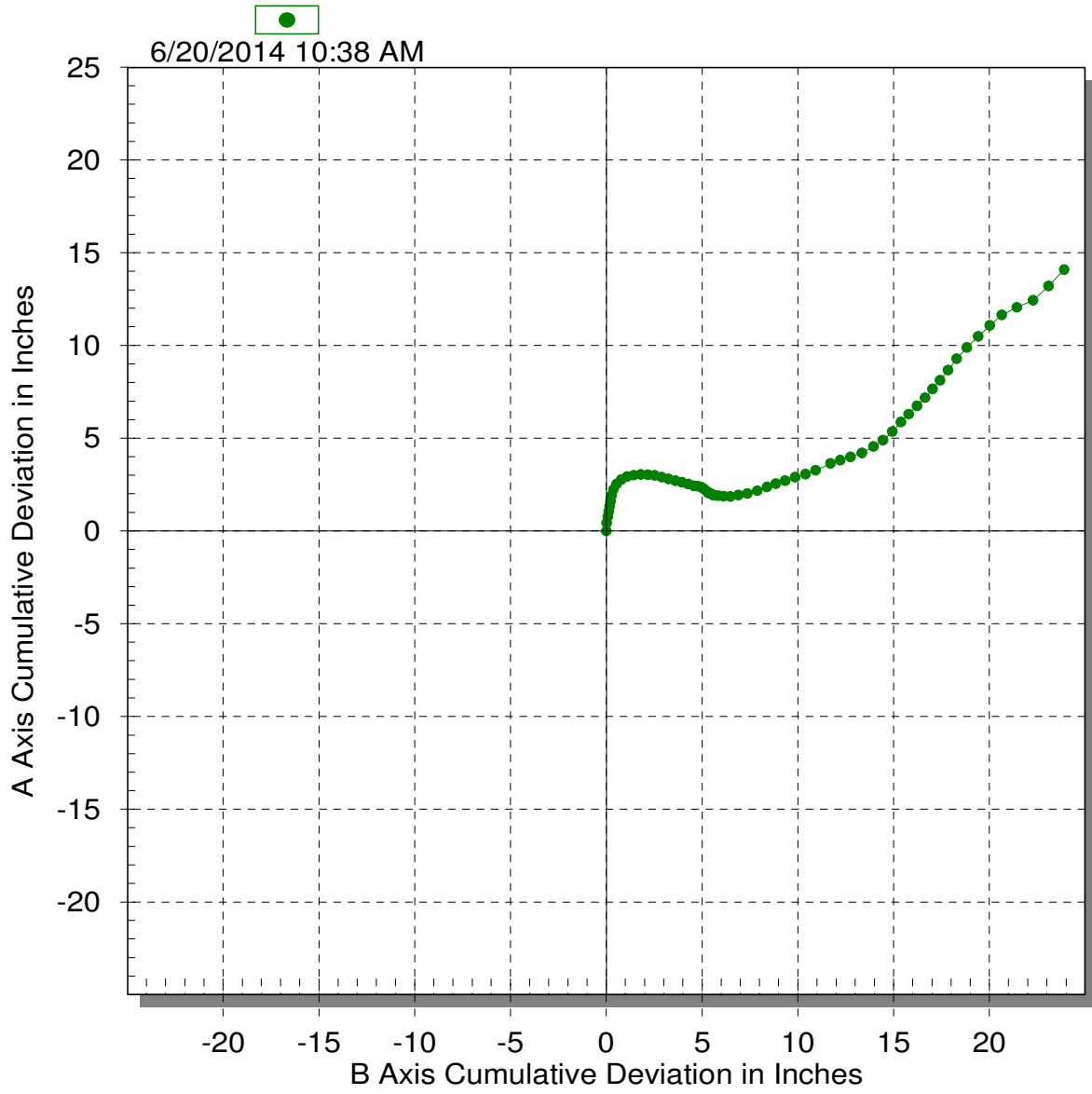
555-1:CSASI1 - A Axis



555-1:CSASI1 - B Axis



555-1:CSASI1 - A Axis vs B Axis



SITE : 555-1
 INSTALLATION : CSASI2
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 9:29:45 AM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:19:41 PM

Data Reduction for A Axis:

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	241	-266	0.3042	30.7638
6	227	-247	0.2844	30.4596
8	171	-192	0.2178	30.1752
10	135	-157	0.1752	29.9574
12	157	-179	0.2016	29.7822
14	166	-191	0.2142	29.5806
16	143	-163	0.1836	29.3664
18	141	-163	0.1824	29.1828
20	135	-156	0.1746	29.0004
22	196	-218	0.2484	28.8258
24	213	-238	0.2706	28.5774
26	214	-236	0.2700	28.3068
28	214	-238	0.2712	28.0368
30	220	-243	0.2778	27.7656
32	237	-257	0.2964	27.4878
34	243	-269	0.3072	27.1914
36	234	-255	0.2934	26.8842
38	235	-258	0.2958	26.5908
40	230	-253	0.2898	26.2950
42	272	-290	0.3372	26.0052
44	275	-301	0.3456	25.6680
46	274	-294	0.3408	25.3224
48	278	-300	0.3468	24.9816
50	272	-293	0.3390	24.6348
52	307	-327	0.3804	24.2958
54	319	-338	0.3942	23.9154
56	349	-366	0.4290	23.5212
58	354	-372	0.4356	23.0922
60	374	-391	0.4590	22.6566
62	408	-425	0.4998	22.1976
64	417	-439	0.5136	21.6978
66	415	-433	0.5088	21.1842
68	424	-441	0.5190	20.6754
70	453	-474	0.5562	20.1564
72	523	-542	0.6390	19.6002
74	527	-549	0.6456	18.9612
76	523	-535	0.6348	18.3156
78	466	-482	0.5688	17.6808
80	470	-487	0.5742	17.1120
82	482	-497	0.5874	16.5378
84	420	-442	0.5172	15.9504
86	398	-414	0.4872	15.4332
88	397	-415	0.4872	14.9460

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	391	-410	0.4806	14.4588
92	441	-459	0.5400	13.9782
94	406	-426	0.4992	13.4382
96	451	-467	0.5508	12.9390
98	413	-437	0.5100	12.3882
100	413	-427	0.5040	11.8782
102	447	-465	0.5472	11.3742
104	451	-471	0.5532	10.8270
106	433	-445	0.5268	10.2738
108	461	-479	0.5640	9.7470
110	446	-471	0.5502	9.1830
112	565	-586	0.6906	8.6328
114	593	-615	0.7248	7.9422
116	421	-437	0.5148	7.2174
118	414	-431	0.5070	6.7026
120	370	-388	0.4548	6.1956
122	371	-390	0.4566	5.7408
124	353	-375	0.4368	5.2842
126	341	-358	0.4194	4.8474
128	339	-360	0.4194	4.4280
130	315	-331	0.3876	4.0086
132	379	-403	0.4692	3.6210
134	453	-473	0.5556	3.1518
136	426	-445	0.5226	2.5962
138	345	-368	0.4278	2.0736
140	338	-360	0.4188	1.6458
142	366	-385	0.4506	1.2270
144	317	-340	0.3942	0.7764
146	310	-327	0.3822	0.3822
148	0	0	0.0000	0.0000

SITE : 555-1
 INSTALLATION : CSASI2
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 9:29:45 AM
 Probe Serial No : 29059

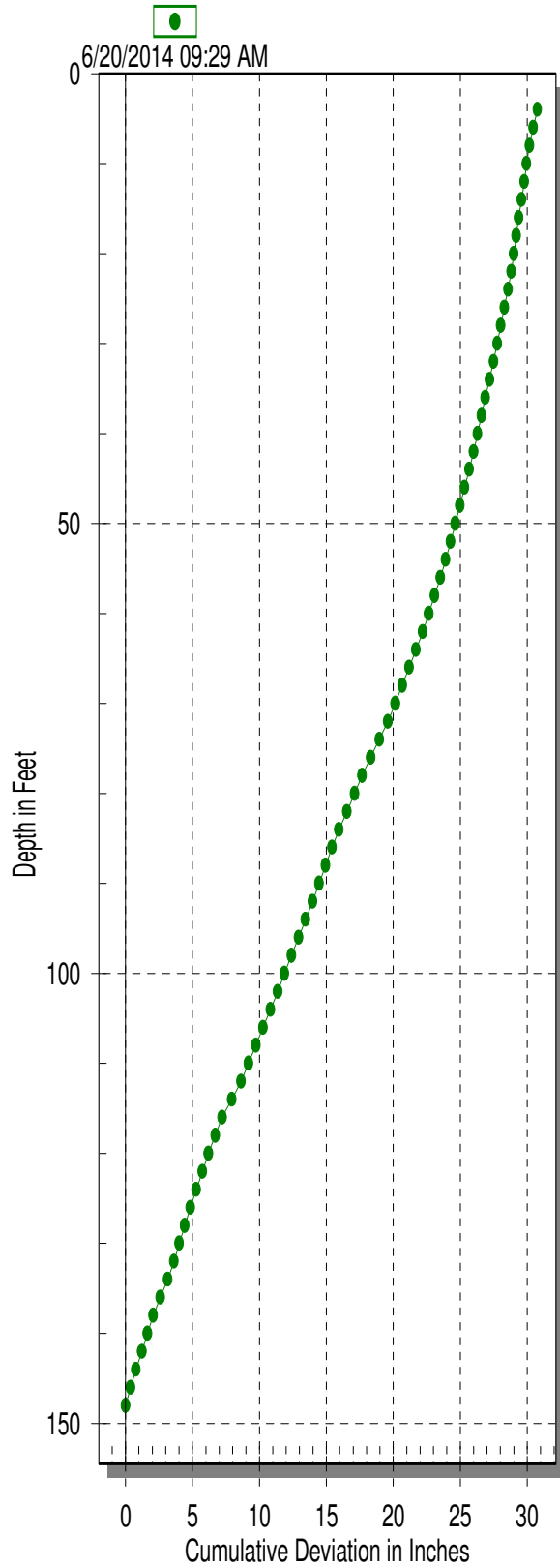
DATE PRINTED : 7/7/2014 4:19:41 PM

Data Reduction for B Axis:

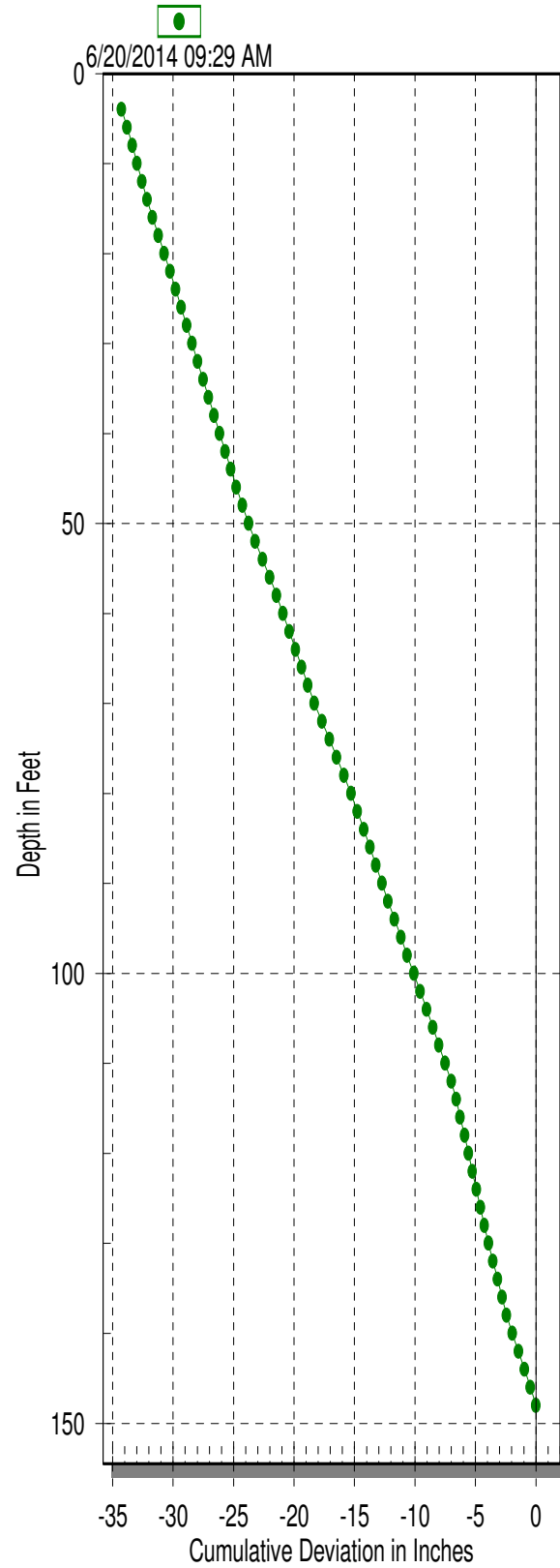
Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	-378	378	-0.4536	-34.2600
6	-371	361	-0.4392	-33.8064
8	-323	325	-0.3888	-33.3672
10	-339	335	-0.4044	-32.9784
12	-349	352	-0.4206	-32.5740
14	-378	379	-0.4542	-32.1534
16	-399	401	-0.4800	-31.6992
18	-405	405	-0.4860	-31.2192
20	-399	396	-0.4770	-30.7332
22	-393	399	-0.4752	-30.2562
24	-374	377	-0.4506	-29.7810
26	-374	377	-0.4506	-29.3304
28	-376	375	-0.4506	-28.8798
30	-381	378	-0.4554	-28.4292
32	-375	389	-0.4584	-27.9738
34	-372	375	-0.4482	-27.5154
36	-380	382	-0.4572	-27.0672
38	-383	383	-0.4596	-26.6100
40	-387	383	-0.4620	-26.1504
42	-377	385	-0.4572	-25.6884
44	-386	381	-0.4602	-25.2312
46	-414	412	-0.4956	-24.7710
48	-437	430	-0.5202	-24.2754
50	-463	454	-0.5502	-23.7552
52	-501	508	-0.6054	-23.2050
54	-492	495	-0.5922	-22.5996
56	-461	466	-0.5562	-22.0074
58	-445	447	-0.5352	-21.4512
60	-438	434	-0.5232	-20.9160
62	-424	438	-0.5172	-20.3928
64	-419	429	-0.5088	-19.8756
66	-428	431	-0.5154	-19.3668
68	-451	441	-0.5352	-18.8514
70	-520	516	-0.6216	-18.3162
72	-517	524	-0.6246	-17.6946
74	-498	506	-0.6024	-17.0700
76	-497	495	-0.5952	-16.4676
78	-489	481	-0.5820	-15.8724
80	-442	441	-0.5298	-15.2904
82	-444	448	-0.5352	-14.7606
84	-412	420	-0.4992	-14.2254
86	-415	419	-0.5004	-13.7262
88	-409	415	-0.4944	-13.2258

Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	-426	420	-0.5076	-12.7314
92	-438	450	-0.5328	-12.2238
94	-444	446	-0.5340	-11.6910
96	-425	416	-0.5046	-11.1570
98	-475	469	-0.5664	-10.6524
100	-428	432	-0.5160	-10.0860
102	-451	454	-0.5430	-9.5700
104	-419	423	-0.5052	-9.0270
106	-413	413	-0.4956	-8.5218
108	-433	425	-0.5148	-8.0262
110	-427	422	-0.5094	-7.5114
112	-348	335	-0.4098	-7.0020
114	-270	276	-0.3276	-6.5922
116	-312	304	-0.3696	-6.2646
118	-270	275	-0.3270	-5.8950
120	-263	259	-0.3132	-5.5680
122	-274	283	-0.3342	-5.2548
124	-275	285	-0.3360	-4.9206
126	-272	266	-0.3228	-4.5846
128	-296	283	-0.3474	-4.2618
130	-301	309	-0.3660	-3.9144
132	-315	319	-0.3804	-3.5484
134	-318	304	-0.3732	-3.1680
136	-302	313	-0.3690	-2.7948
138	-402	391	-0.4758	-2.4258
140	-433	426	-0.5154	-1.9500
142	-415	419	-0.5004	-1.4346
144	-398	395	-0.4758	-0.9342
146	-386	378	-0.4584	-0.4584
148	0	0	0.0000	0.0000

555-1:CSASI2 - A Axis



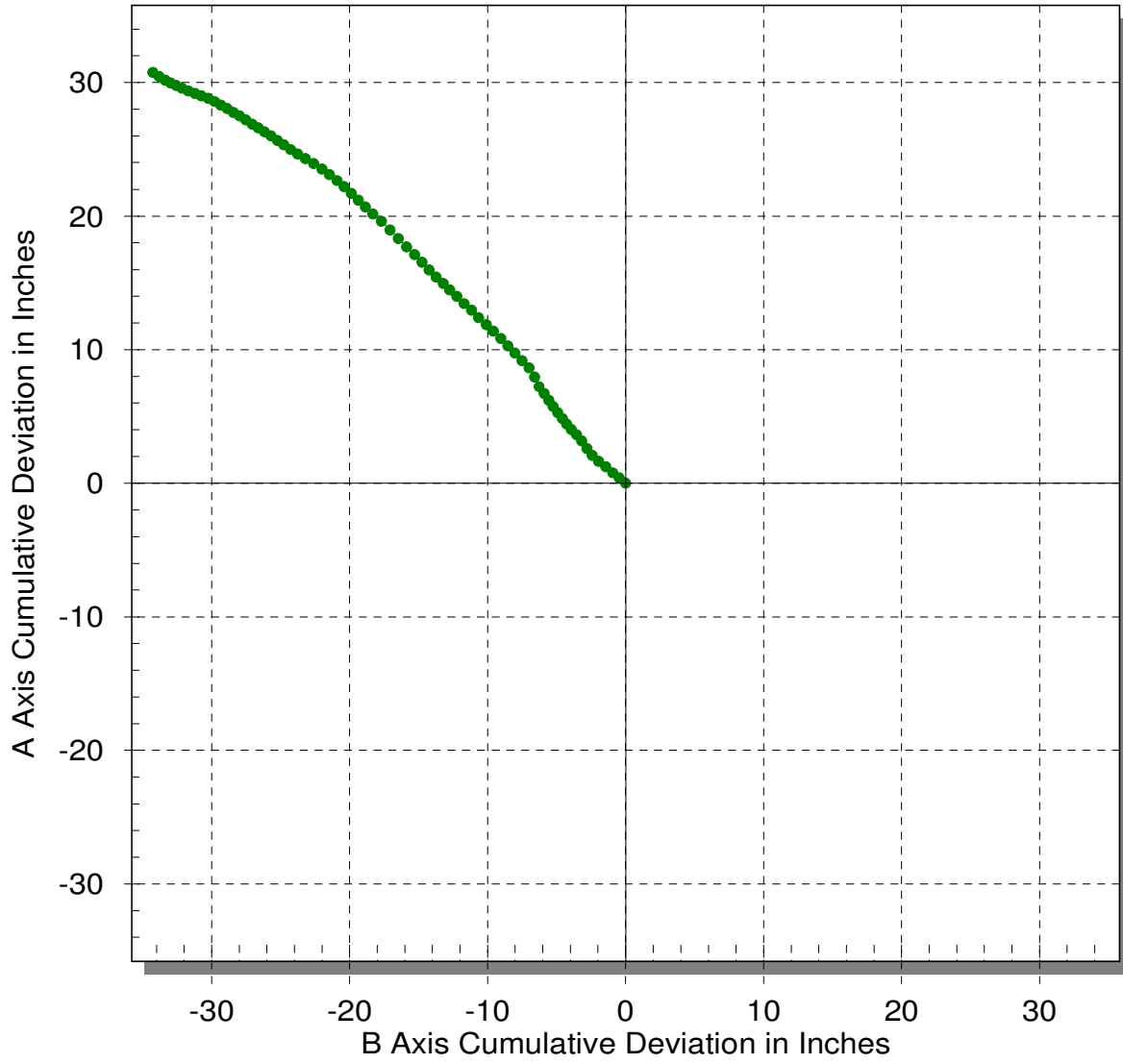
555-1:CSASI2 - B Axis



555-1:CSASI2 - A Axis vs B Axis



6/20/2014 09:29 AM



SITE : 555-1
 INSTALLATION : CSASI3
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 8:12:51 AM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:20:06 PM

Data Reduction for A Axis:

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	523	-546	0.6414	-15.3828
6	545	-557	0.6612	-16.0242
8	477	-497	0.5844	-16.6854
10	417	-435	0.5112	-17.2698
12	393	-411	0.4824	-17.7810
14	306	-333	0.3834	-18.2634
16	341	-360	0.4206	-18.6468
18	397	-415	0.4872	-19.0674
20	454	-468	0.5532	-19.5546
22	465	-477	0.5652	-20.1078
24	422	-433	0.5130	-20.6730
26	461	-477	0.5628	-21.1860
28	482	-498	0.5880	-21.7488
30	465	-479	0.5664	-22.3368
32	468	-486	0.5724	-22.9032
34	392	-411	0.4818	-23.4756
36	379	-388	0.4602	-23.9574
38	370	-384	0.4524	-24.4176
40	347	-358	0.4230	-24.8700
42	323	-341	0.3984	-25.2930
44	193	-212	0.2430	-25.6914
46	153	-167	0.1920	-25.9344
48	119	-129	0.1488	-26.1264
50	116	-127	0.1458	-26.2752
52	135	-143	0.1668	-26.4210
54	97	-106	0.1218	-26.5878
56	108	-122	0.1380	-26.7096
58	13	-29	0.0252	-26.8476
60	30	-38	0.0408	-26.8728
62	4	-26	0.0180	-26.9136
64	-91	87	-0.1068	-26.9316
66	-105	91	-0.1176	-26.8248
68	-205	189	-0.2364	-26.7072
70	-153	142	-0.1770	-26.4708
72	-155	128	-0.1698	-26.2938
74	-341	341	-0.4092	-26.1240
76	-403	391	-0.4764	-25.7148
78	-429	417	-0.5076	-25.2384
80	-421	407	-0.4968	-24.7308
82	-473	449	-0.5532	-24.2340
84	-470	457	-0.5562	-23.6808
86	-471	462	-0.5598	-23.1246
88	-460	447	-0.5442	-22.5648

Depth (ft)	Current A0	Current A180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	-477	462	-0.5634	-22.0206
92	-470	451	-0.5526	-21.4572
94	-547	545	-0.6552	-20.9046
96	-586	579	-0.6990	-20.2494
98	-565	549	-0.6684	-19.5504
100	-517	507	-0.6144	-18.8820
102	-549	523	-0.6432	-18.2676
104	-587	581	-0.7008	-17.6244
106	-564	557	-0.6726	-16.9236
108	-562	552	-0.6684	-16.2510
110	-557	545	-0.6612	-15.5826
112	-592	576	-0.7008	-14.9214
114	-633	627	-0.7560	-14.2206
116	-607	594	-0.7206	-13.4646
118	-595	583	-0.7068	-12.7440
120	-621	609	-0.7380	-12.0372
122	-652	635	-0.7722	-11.2992
124	-687	680	-0.8202	-10.5270
126	-685	670	-0.8130	-9.7068
128	-715	703	-0.8508	-8.8938
130	-705	694	-0.8394	-8.0430
132	-674	662	-0.8016	-7.2036
134	-705	700	-0.8430	-6.4020
136	-727	714	-0.8646	-5.5590
138	-745	735	-0.8880	-4.6944
140	-781	769	-0.9300	-3.8064
142	-798	783	-0.9486	-2.8764
144	-839	835	-1.0044	-1.9278
146	-774	765	-0.9234	-0.9234
148	0	0	0.0000	0.0000

SITE : 555-1
 INSTALLATION : CSASI3
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/20/2014 8:12:51 AM
 Probe Serial No : 29059

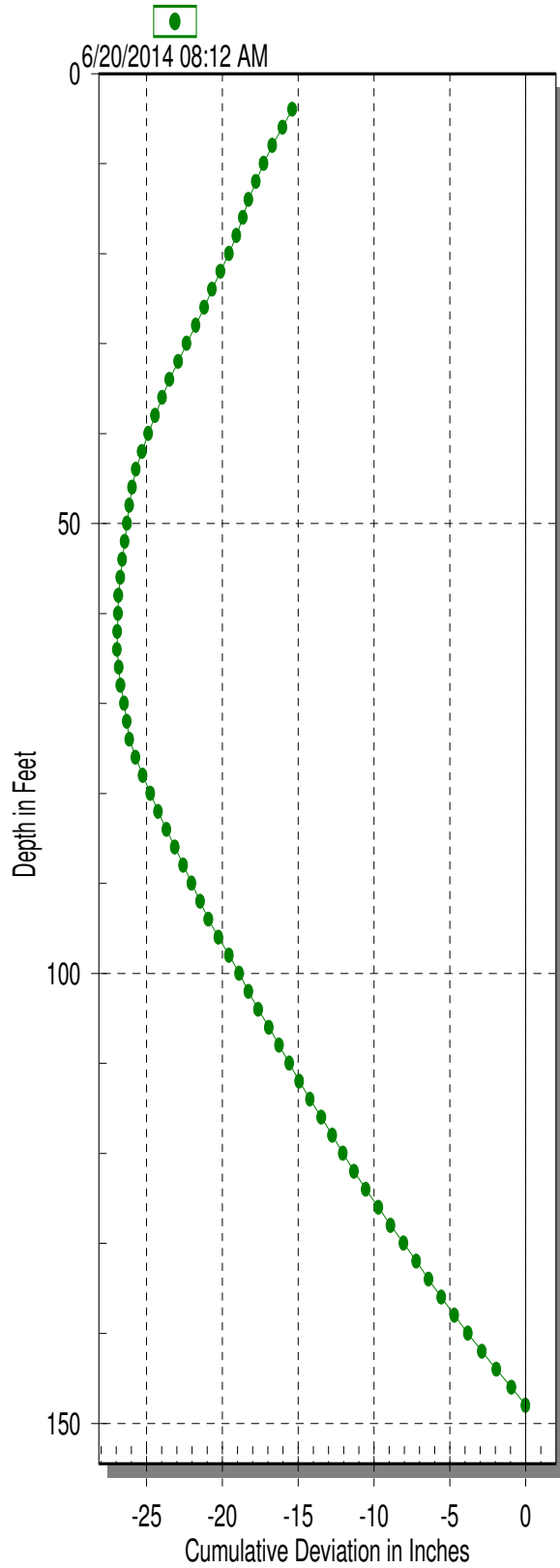
DATE PRINTED : 7/7/2014 4:20:06 PM

Data Reduction for B Axis:

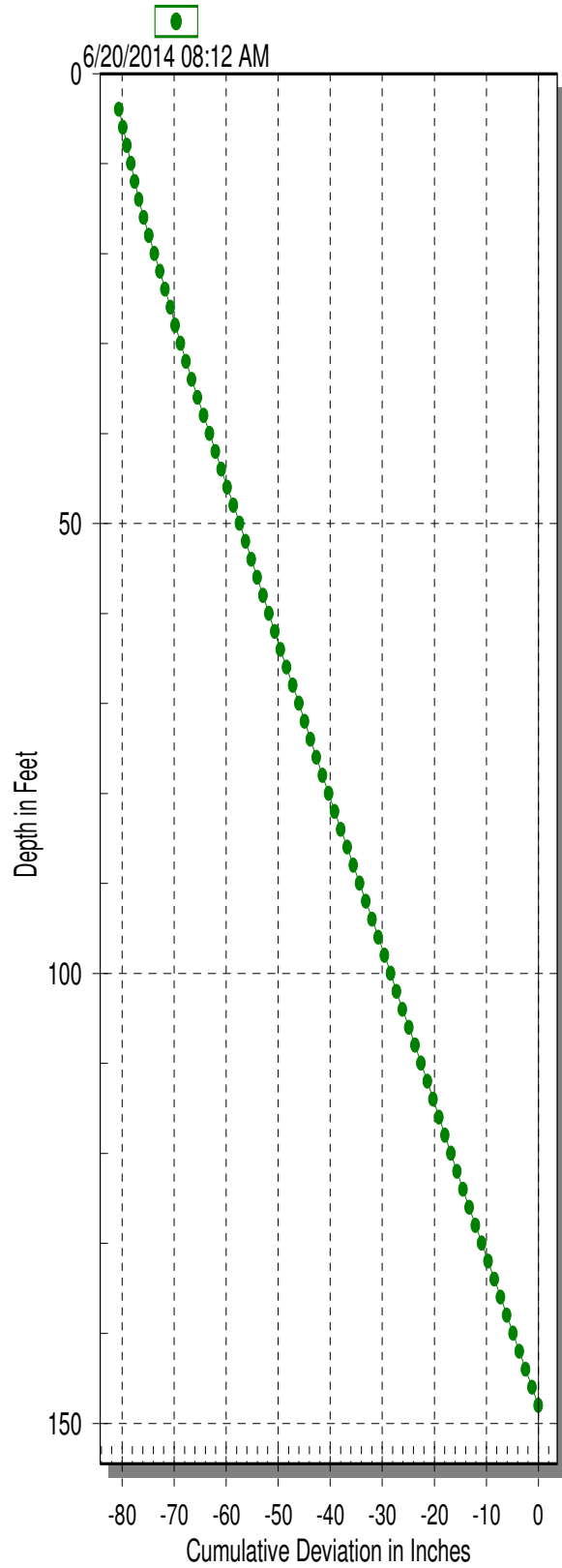
Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
4	-646	652	-0.7788	-80.6022
6	-644	645	-0.7734	-79.8234
8	-618	619	-0.7422	-79.0500
10	-627	619	-0.7476	-78.3078
12	-659	663	-0.7932	-77.5602
14	-759	771	-0.9180	-76.7670
16	-836	837	-1.0038	-75.8490
18	-873	875	-1.0488	-74.8452
20	-890	882	-1.0632	-73.7964
22	-846	846	-1.0152	-72.7332
24	-838	845	-1.0098	-71.7180
26	-783	779	-0.9372	-70.7082
28	-848	847	-1.0170	-69.7710
30	-878	877	-1.0530	-68.7540
32	-905	898	-1.0818	-67.7010
34	-949	961	-1.1460	-66.6192
36	-963	974	-1.1622	-65.4732
38	-961	959	-1.1520	-64.3110
40	-935	935	-1.1220	-63.1590
42	-924	925	-1.1094	-62.0370
44	-955	967	-1.1532	-60.9276
46	-982	987	-1.1814	-59.7744
48	-982	981	-1.1778	-58.5930
50	-969	965	-1.1604	-57.4152
52	-943	939	-1.1292	-56.2548
54	-911	926	-1.1022	-55.1256
56	-918	919	-1.1022	-54.0234
58	-957	957	-1.1484	-52.9212
60	-950	957	-1.1442	-51.7728
62	-874	871	-1.0470	-50.6286
64	-998	1004	-1.2012	-49.5816
66	-1002	998	-1.2000	-48.3804
68	-973	973	-1.1676	-47.1804
70	-910	915	-1.0950	-46.0128
72	-931	915	-1.1076	-44.9178
74	-964	969	-1.1598	-43.8102
76	-981	982	-1.1778	-42.6504
78	-972	971	-1.1658	-41.4726
80	-978	971	-1.1694	-40.3068
82	-983	971	-1.1724	-39.1374
84	-1029	1029	-1.2348	-37.9650
86	-995	985	-1.1880	-36.7302
88	-1003	1002	-1.2030	-35.5422

Depth (ft)	Current B0	Current B180	Current Incr. Dev. (in)	Cum. Dev. (in)
90	-1000	1005	-1.2030	-34.3392
92	-1005	999	-1.2024	-33.1362
94	-992	999	-1.1946	-31.9338
96	-998	994	-1.1952	-30.7392
98	-972	965	-1.1622	-29.5440
100	-934	929	-1.1178	-28.3818
102	-977	977	-1.1724	-27.2640
104	-1029	1034	-1.2378	-26.0916
106	-965	953	-1.1508	-24.8538
108	-978	965	-1.1658	-23.7030
110	-1012	998	-1.2060	-22.5372
112	-935	931	-1.1196	-21.3312
114	-930	945	-1.1250	-20.2116
116	-942	946	-1.1328	-19.0866
118	-959	955	-1.1484	-17.9538
120	-984	975	-1.1754	-16.8054
122	-969	963	-1.1592	-15.6300
124	-991	993	-1.1904	-14.4708
126	-988	990	-1.1868	-13.2804
128	-1014	1013	-1.2162	-12.0936
130	-1025	1017	-1.2252	-10.8774
132	-1014	1002	-1.2096	-9.6522
134	-1000	1002	-1.2012	-8.4426
136	-986	981	-1.1802	-7.2414
138	-1000	993	-1.1958	-6.0612
140	-1005	1004	-1.2054	-4.8654
142	-1018	1005	-1.2138	-3.6600
144	-1017	1014	-1.2186	-2.4462
146	-1033	1013	-1.2276	-1.2276
148	0	0	0.0000	0.0000

555-1:CSASI3 - A Axis



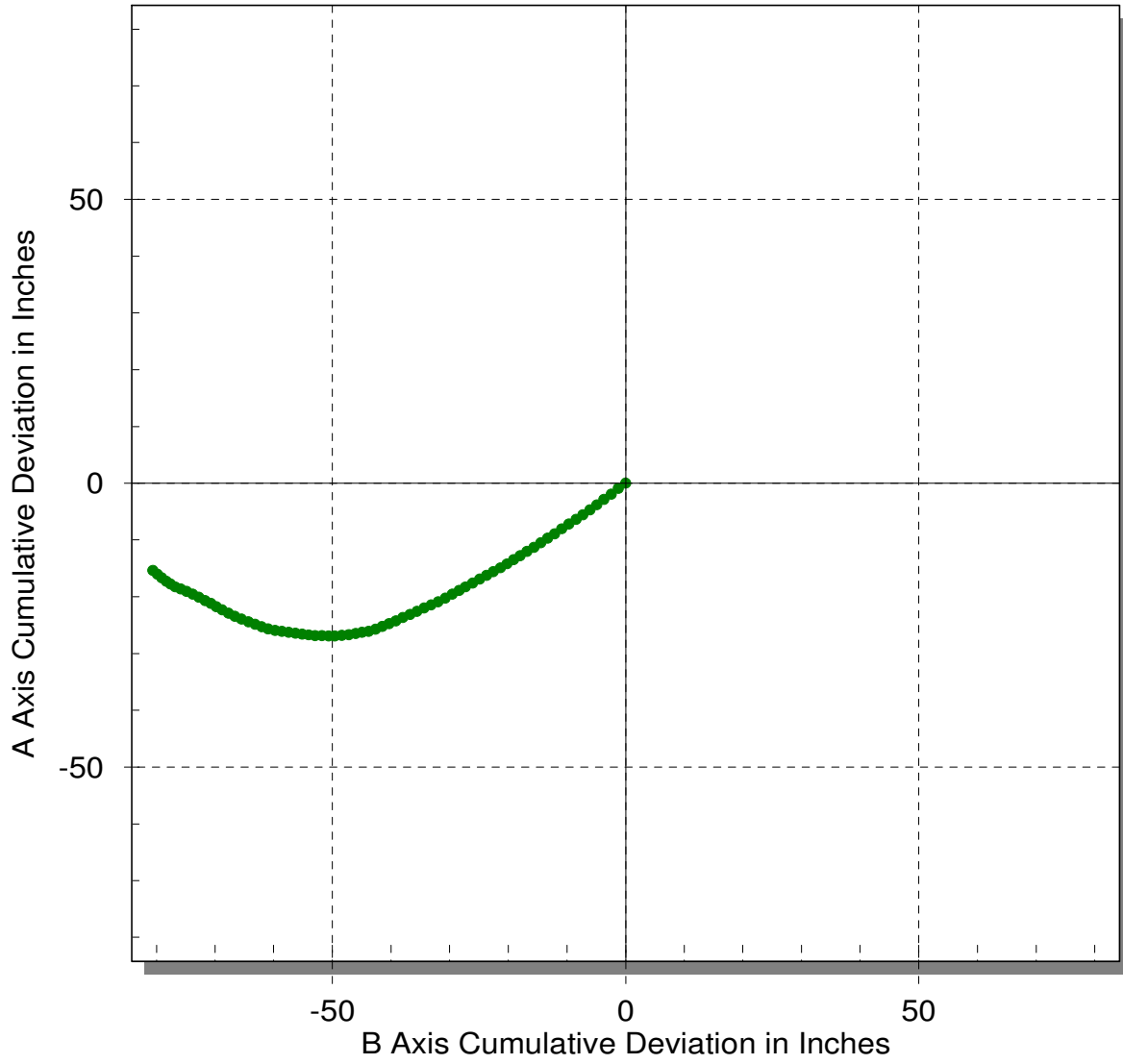
555-1:CSASI3 - B Axis



555-1:CSASI3 - A Axis vs B Axis



6/20/2014 08:12 AM



SITE : 555-1
 INSTALLATION : W-1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/19/2014 8:49:51 AM
 Probe Serial No : 29059

INITIAL SURVEY : 10/16/2012 12:05:34 PM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:20:34 PM

Data Reduction for A Axis:

Depth (ft)	Initial A0	Initial A180	Initial Incr. Dev. (in)	Current A0	Current A180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
4	238	-261	0.2994	242	-263	0.3030	0.0036	0.0870
6	150	-173	0.1938	155	-177	0.1992	0.0054	0.0834
8	72	-95	0.1002	78	-99	0.1062	0.0060	0.0780
10	33	-56	0.0534	37	-58	0.0570	0.0036	0.0720
12	-160	137	-0.1782	-156	136	-0.1752	0.0030	0.0684
14	-297	274	-0.3426	-318	297	-0.3690	-0.0264	0.0654
16	-125	99	-0.1344	-83	56	-0.0834	0.0510	0.0918
18	-31	11	-0.0252	-22	4	-0.0156	0.0096	0.0408
20	69	-91	0.0960	45	-65	0.0660	-0.0300	0.0312
22	103	-125	0.1368	98	-119	0.1302	-0.0066	0.0612
24	61	-85	0.0876	63	-86	0.0894	0.0018	0.0678
26	-101	78	-0.1074	-93	72	-0.0990	0.0084	0.0660
28	-59	37	-0.0576	-78	55	-0.0798	-0.0222	0.0576
30	-29	8	-0.0222	-21	1	-0.0132	0.0090	0.0798
32	-196	173	-0.2214	-194	173	-0.2202	0.0012	0.0708
34	-134	109	-0.1458	-131	110	-0.1446	0.0012	0.0696
36	-126	105	-0.1386	-130	111	-0.1446	-0.0060	0.0684
38	-257	232	-0.2934	-249	226	-0.2850	0.0084	0.0744
40	-349	330	-0.4074	-342	324	-0.3996	0.0078	0.0660
42	-381	358	-0.4434	-372	353	-0.4350	0.0084	0.0582
44	-422	398	-0.4920	-423	399	-0.4932	-0.0012	0.0498
46	-410	387	-0.4782	-400	380	-0.4680	0.0102	0.0510
48	-337	307	-0.3864	-333	307	-0.3840	0.0024	0.0408
50	-366	346	-0.4272	-400	383	-0.4698	-0.0426	0.0384
52	-657	634	-0.7746	-650	633	-0.7698	0.0048	0.0810
54	-666	646	-0.7872	-666	647	-0.7878	-0.0006	0.0762
56	-805	786	-0.9546	-800	786	-0.9516	0.0030	0.0768
58	-752	726	-0.8868	-748	723	-0.8826	0.0042	0.0738
60	-738	717	-0.8730	-714	698	-0.8472	0.0258	0.0696
62	-707	689	-0.8376	-695	678	-0.8238	0.0138	0.0438
64	-415	395	-0.4860	-425	407	-0.4992	-0.0132	0.0300
66	-171	145	-0.1896	-196	174	-0.2220	-0.0324	0.0432
68	-635	619	-0.7524	-613	599	-0.7272	0.0252	0.0756
70	-853	834	-1.0122	-841	823	-0.9984	0.0138	0.0504
72	-676	650	-0.7956	-664	641	-0.7830	0.0126	0.0366
74	-489	474	-0.5778	-497	482	-0.5874	-0.0096	0.0240
76	-606	588	-0.7164	-590	574	-0.6984	0.0180	0.0336
78	-504	475	-0.5874	-494	469	-0.5778	0.0096	0.0156
80	-389	373	-0.4572	-404	388	-0.4752	-0.0180	0.0060
82	-405	385	-0.4740	-422	409	-0.4986	-0.0246	0.0240
84	-275	263	-0.3228	-321	307	-0.3768	-0.0540	0.0486

Depth (ft)	Initial A0	Initial A180	Initial Incr. Dev. (in)	Current A0	Current A180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
86	-348	325	-0.4038	-326	306	-0.3792	0.0246	0.1026
88	-138	123	-0.1566	-103	89	-0.1152	0.0414	0.0780
90	63	-73	0.0816	62	-72	0.0804	-0.0012	0.0366
92	123	-145	0.1608	126	-146	0.1632	0.0024	0.0378
94	384	-397	0.4686	403	-418	0.4926	0.0240	0.0354
96	266	-288	0.3324	283	-301	0.3504	0.0180	0.0114
98	48	-64	0.0672	59	-73	0.0792	0.0120	-0.0066
100	-96	79	-0.1050	-93	79	-0.1032	0.0018	-0.0186
102	-141	121	-0.1572	-126	109	-0.1410	0.0162	-0.0204
104	-213	191	-0.2424	-226	208	-0.2604	-0.0180	-0.0366
106	-277	256	-0.3198	-291	273	-0.3384	-0.0186	-0.0186
108	0	0	0.0000	0	0	0.0000	0.0000	0.0000

SITE : 555-1
 INSTALLATION : W-1
 DESCRIPTION : From DataMate

CURRENT SURVEY : 6/19/2014 8:49:51 AM
 Probe Serial No : 29059

INITIAL SURVEY : 10/16/2012 12:05:34 PM
 Probe Serial No : 29059

DATE PRINTED : 7/7/2014 4:20:34 PM

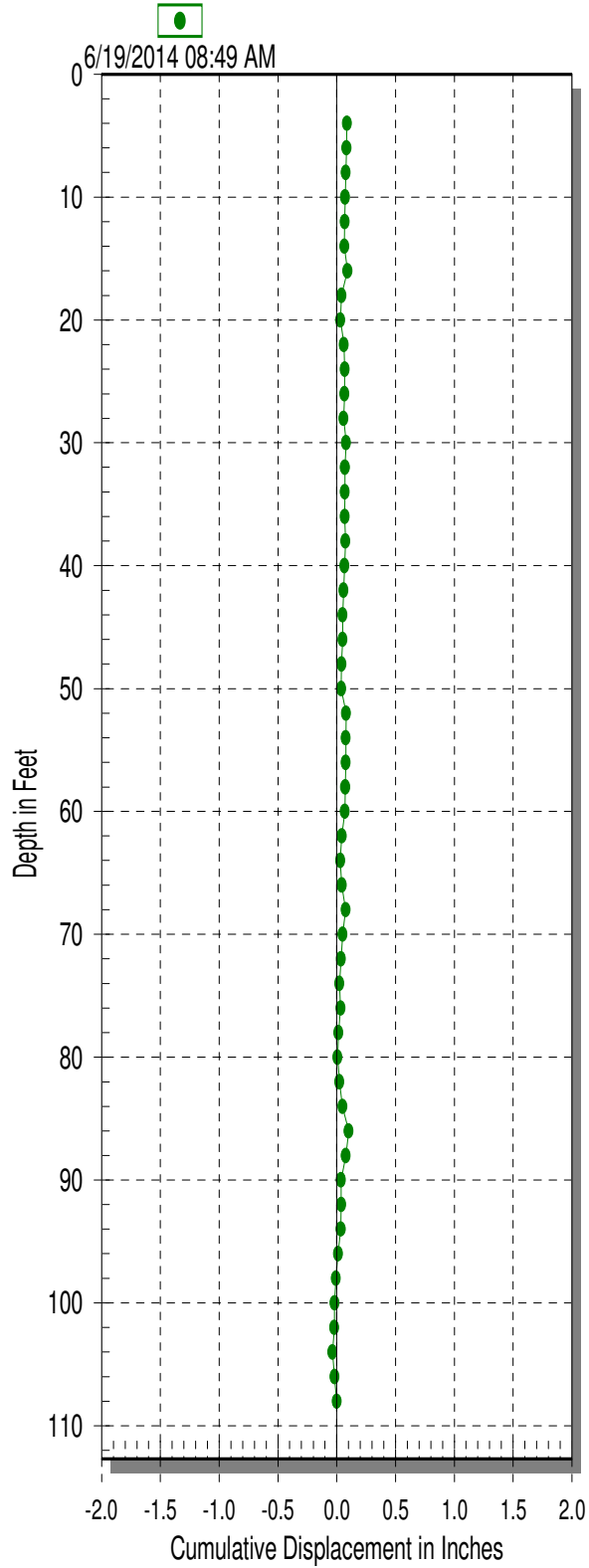
Data Reduction for B Axis:

Depth (ft)	Initial B0	Initial B180	Initial Incr. Dev. (in)	Current B0	Current B180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
4	-96	92	-0.1128	-95	92	-0.1122	0.0006	-0.0066
6	-117	113	-0.1380	-116	114	-0.1380	0.0000	-0.0072
8	-30	42	-0.0432	-28	41	-0.0414	0.0018	-0.0072
10	158	-146	0.1824	159	-148	0.1842	0.0018	-0.0090
12	229	-250	0.2874	233	-255	0.2928	0.0054	-0.0108
14	131	-147	0.1668	186	-202	0.2328	0.0660	-0.0162
16	-109	104	-0.1278	-148	142	-0.1740	-0.0462	-0.0822
18	-247	250	-0.2982	-256	261	-0.3102	-0.0120	-0.0360
20	-218	214	-0.2592	-198	202	-0.2400	0.0192	-0.0240
22	-114	103	-0.1302	-115	98	-0.1278	0.0024	-0.0432
24	-191	183	-0.2244	-201	191	-0.2352	-0.0108	-0.0456
26	-296	288	-0.3504	-308	300	-0.3648	-0.0144	-0.0348
28	-134	155	-0.1734	-125	149	-0.1644	0.0090	-0.0204
30	11	-26	0.0222	-8	-11	0.0018	-0.0204	-0.0294
32	-81	70	-0.0906	-79	73	-0.0912	-0.0006	-0.0090
34	-193	186	-0.2274	-198	187	-0.2310	-0.0036	-0.0084
36	-200	178	-0.2268	-186	166	-0.2112	0.0156	-0.0048
38	-195	195	-0.2340	-206	207	-0.2478	-0.0138	-0.0204
40	-235	228	-0.2778	-245	237	-0.2892	-0.0114	-0.0066
42	-270	256	-0.3156	-272	258	-0.3180	-0.0024	0.0048
44	-395	390	-0.4710	-393	391	-0.4704	0.0006	0.0072
46	-205	206	-0.2466	-222	214	-0.2616	-0.0150	0.0066
48	-395	400	-0.4770	-390	393	-0.4698	0.0072	0.0216
50	-420	413	-0.4998	-437	423	-0.5160	-0.0162	0.0144
52	-481	474	-0.5730	-442	434	-0.5256	0.0474	0.0306
54	-438	427	-0.5190	-449	438	-0.5322	-0.0132	-0.0168
56	-315	312	-0.3762	-331	325	-0.3936	-0.0174	-0.0036
58	-367	377	-0.4464	-355	363	-0.4308	0.0156	0.0138
60	-403	395	-0.4788	-426	422	-0.5088	-0.0300	-0.0018
62	-439	430	-0.5214	-443	430	-0.5238	-0.0024	0.0282
64	-491	473	-0.5784	-497	480	-0.5862	-0.0078	0.0306
66	-675	666	-0.8046	-666	653	-0.7914	0.0132	0.0384
68	-513	518	-0.6186	-529	535	-0.6384	-0.0198	0.0252
70	-441	420	-0.5166	-450	429	-0.5274	-0.0108	0.0450
72	-601	606	-0.7242	-595	597	-0.7152	0.0090	0.0558
74	-628	618	-0.7476	-641	631	-0.7632	-0.0156	0.0468
76	-635	618	-0.7518	-647	629	-0.7656	-0.0138	0.0624
78	-710	712	-0.8532	-694	702	-0.8376	0.0156	0.0762
80	-716	715	-0.8586	-743	725	-0.8808	-0.0222	0.0606
82	-679	659	-0.8028	-680	662	-0.8052	-0.0024	0.0828
84	-780	769	-0.9294	-796	786	-0.9492	-0.0198	0.0852

Depth (ft)	Initial B0	Initial B180	Initial Incr. Dev. (in)	Current B0	Current B180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
86	-986	976	-1.1772	-973	953	-1.1556	0.0216	0.1050
88	-926	935	-1.1166	-929	939	-1.1208	-0.0042	0.0834
90	-826	823	-0.9894	-820	811	-0.9786	0.0108	0.0876
92	-821	805	-0.9756	-799	784	-0.9498	0.0258	0.0768
94	-763	767	-0.9180	-749	744	-0.8958	0.0222	0.0510
96	-803	790	-0.9558	-801	787	-0.9528	0.0030	0.0288
98	-743	754	-0.8982	-743	755	-0.8988	-0.0006	0.0258
100	-570	578	-0.6888	-587	598	-0.7110	-0.0222	0.0264
102	-451	439	-0.5340	-483	474	-0.5742	-0.0402	0.0486
104	-498	488	-0.5916	-486	471	-0.5742	0.0174	0.0888
106	-693	681	-0.8244	-633	622	-0.7530	0.0714	0.0714
108	0	0	0.0000	0	0	0.0000	0.0000	0.0000

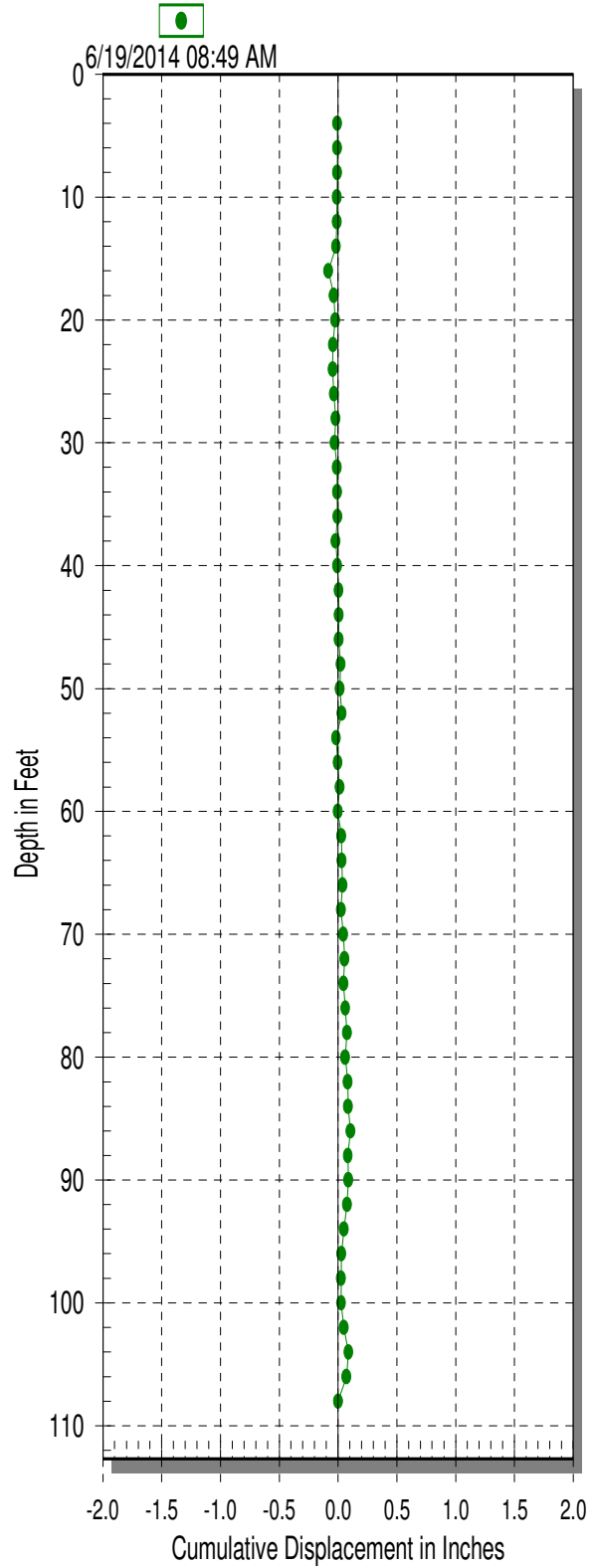
555-1:W-1 - A Axis

Initial survey: 10/16/2012 12:05 PM



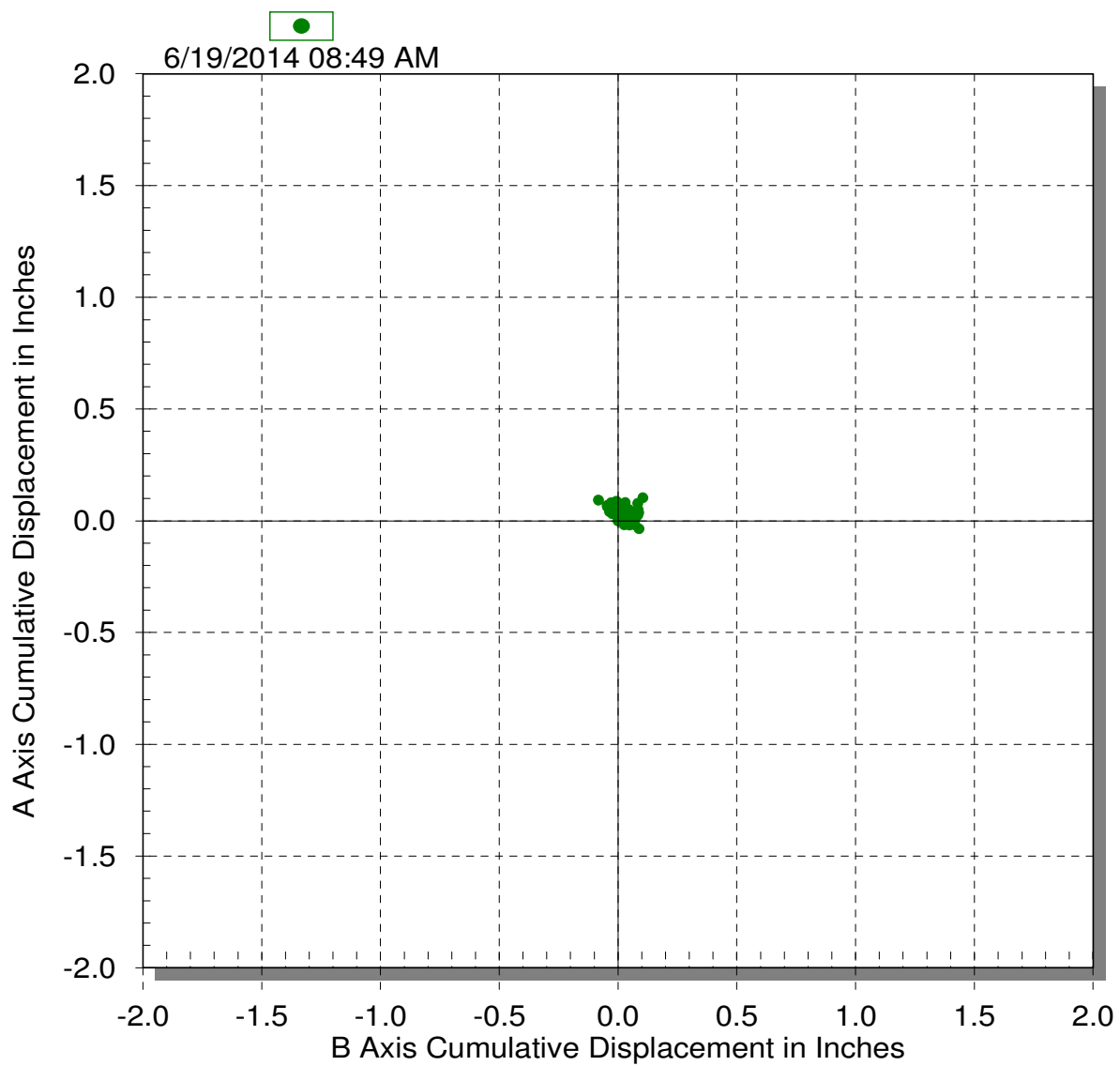
555-1:W-1 - B Axis

Initial survey: 10/16/2012 12:05 PM



555-1:W-1 - A Axis vs B Axis

Initial survey: 10/16/2012 12:05 PM



SITE : 555-1
 INSTALLATION : W-5
 DESCRIPTION : From DataMate

 CURRENT SURVEY : 6/19/2014 10:17:40 AM
 Probe Serial No : 29059

 INITIAL SURVEY : 10/16/2012 8:58:18 AM
 Probe Serial No : 29059

 DATE PRINTED : 7/7/2014 4:21:21 PM

Data Reduction for A Axis:

Depth (ft)	Initial A0	Initial A180	Initial Incr. Dev. (in)	Current A0	Current A180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
4	-598	579	-0.7062	-593	569	-0.6972	0.0090	0.3576
6	-497	480	-0.5862	-494	470	-0.5784	0.0078	0.3486
8	-407	391	-0.4788	-406	383	-0.4734	0.0054	0.3408
10	-333	319	-0.3912	-332	310	-0.3852	0.0060	0.3354
12	-563	543	-0.6636	-562	536	-0.6588	0.0048	0.3294
14	-735	719	-0.8724	-671	649	-0.7920	0.0804	0.3246
16	-815	798	-0.9678	-805	782	-0.9522	0.0156	0.2442
18	-798	783	-0.9486	-769	745	-0.9084	0.0402	0.2286
20	-778	764	-0.9252	-770	751	-0.9126	0.0126	0.1884
22	-715	698	-0.8478	-797	773	-0.9420	-0.0942	0.1758
24	-648	630	-0.7668	-721	697	-0.8508	-0.0840	0.2700
26	-555	538	-0.6558	-642	617	-0.7554	-0.0996	0.3540
28	-391	376	-0.4602	-416	394	-0.4860	-0.0258	0.4536
30	-267	251	-0.3108	-264	241	-0.3030	0.0078	0.4794
32	-326	305	-0.3786	-338	312	-0.3900	-0.0114	0.4716
34	-237	219	-0.2736	-270	247	-0.3102	-0.0366	0.4830
36	-27	9	-0.0216	-42	18	-0.0360	-0.0144	0.5196
38	-44	26	-0.0420	-46	23	-0.0414	0.0006	0.5340
40	-193	176	-0.2214	-273	249	-0.3132	-0.0918	0.5334
42	-181	162	-0.2058	-180	154	-0.2004	0.0054	0.6252
44	21	-37	0.0348	137	-161	0.1788	0.1440	0.6198
46	54	-71	0.0750	135	-157	0.1752	0.1002	0.4758
48	-13	-5	-0.0048	69	-93	0.0972	0.1020	0.3756
50	25	-41	0.0396	61	-86	0.0882	0.0486	0.2736
52	-69	50	-0.0714	-119	96	-0.1290	-0.0576	0.2250
54	109	-125	0.1404	109	-131	0.1440	0.0036	0.2826
56	-177	159	-0.2016	-163	138	-0.1806	0.0210	0.2790
58	-423	407	-0.4980	-415	394	-0.4854	0.0126	0.2580
60	-609	590	-0.7194	-614	590	-0.7224	-0.0030	0.2454
62	-884	867	-1.0506	-874	850	-1.0344	0.0162	0.2484
64	-565	546	-0.6666	-677	651	-0.7968	-0.1302	0.2322
66	-726	708	-0.8604	-687	663	-0.8100	0.0504	0.3624
68	-735	719	-0.8724	-741	719	-0.8760	-0.0036	0.3120
70	-721	700	-0.8526	-746	722	-0.8808	-0.0282	0.3156
72	-708	692	-0.8400	-844	824	-1.0008	-0.1608	0.3438
74	-666	641	-0.7842	-926	895	-1.0926	-0.3084	0.5046
76	-863	846	-1.0254	-671	647	-0.7908	0.2346	0.8130
78	-439	429	-0.5208	68	-90	0.0948	0.6156	0.5784
80	-521	505	-0.6156	-330	306	-0.3816	0.2340	-0.0372
82	-558	538	-0.6576	-633	606	-0.7434	-0.0858	-0.2712
84	-455	441	-0.5376	-644	626	-0.7620	-0.2244	-0.1854

Depth (ft)	Initial A0	Initial A180	Initial Incr. Dev. (in)	Current A0	Current A180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
86	-322	299	-0.3726	-356	326	-0.4092	-0.0366	0.0390
88	-393	379	-0.4632	-417	397	-0.4884	-0.0252	0.0756
90	-235	229	-0.2784	-259	252	-0.3066	-0.0282	0.1008
92	-110	81	-0.1146	-107	65	-0.1032	0.0114	0.1290
94	-44	30	-0.0444	-41	21	-0.0372	0.0072	0.1176
96	-137	123	-0.1560	-131	110	-0.1446	0.0114	0.1104
98	-134	121	-0.1530	-102	82	-0.1104	0.0426	0.0990
100	-172	154	-0.1956	-139	117	-0.1536	0.0420	0.0564
102	-370	354	-0.4344	-370	347	-0.4302	0.0042	0.0144
104	-403	386	-0.4734	-403	379	-0.4692	0.0042	0.0102
106	-425	410	-0.5010	-431	408	-0.5034	-0.0024	0.0060
108	-492	477	-0.5814	-489	466	-0.5730	0.0084	0.0084
110	0	0	0.0000	0	0	0.0000	0.0000	0.0000

SITE : 555-1
 INSTALLATION : W-5
 DESCRIPTION : From DataMate

 CURRENT SURVEY : 6/19/2014 10:17:40 AM
 Probe Serial No : 29059

 INITIAL SURVEY : 10/16/2012 8:58:18 AM
 Probe Serial No : 29059

 DATE PRINTED : 7/7/2014 4:21:21 PM

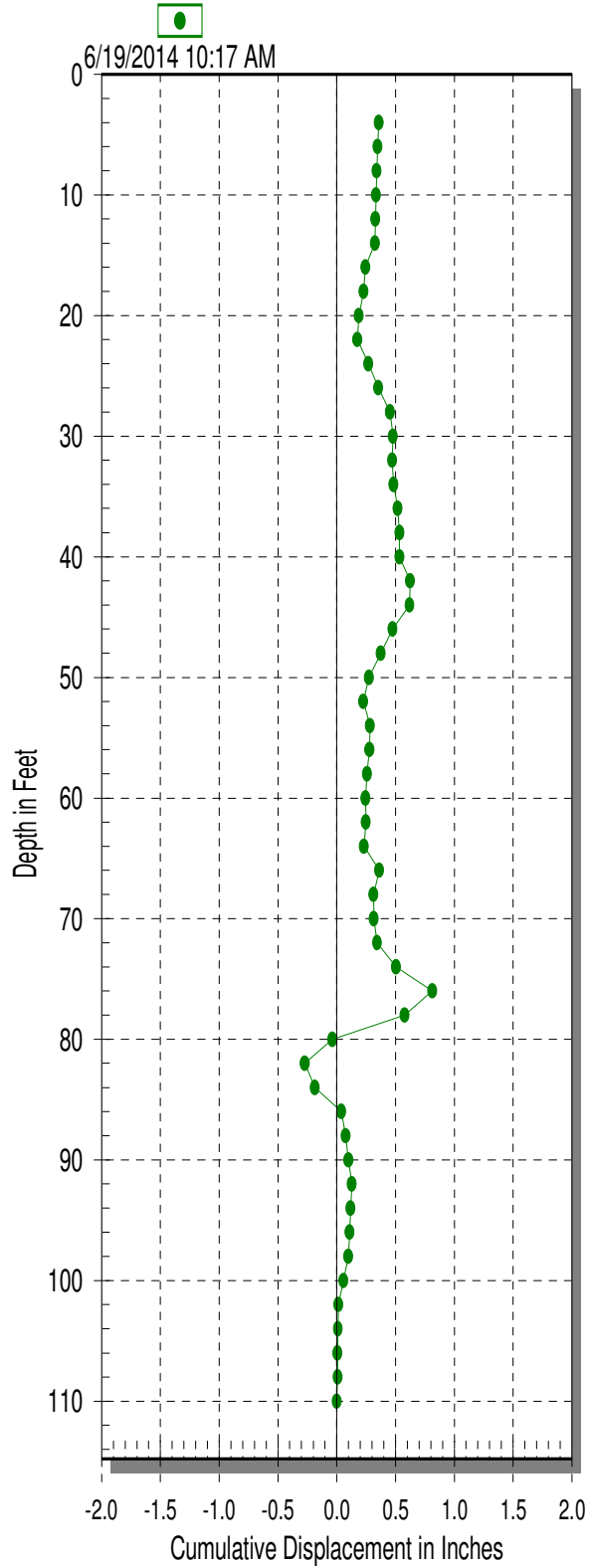
Data Reduction for B Axis:

Depth (ft)	Initial B0	Initial B180	Initial Incr. Dev. (in)	Current B0	Current B180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
4	2	-2	0.0024	-3	1	-0.0024	-0.0048	-0.0222
6	2	-2	0.0024	-3	2	-0.0030	-0.0054	-0.0174
8	-10	3	-0.0078	-20	5	-0.0150	-0.0072	-0.0120
10	-78	74	-0.0912	-82	76	-0.0948	-0.0036	-0.0048
12	-172	170	-0.2052	-168	173	-0.2046	0.0006	-0.0012
14	-210	209	-0.2514	-199	194	-0.2358	0.0156	-0.0018
16	-243	237	-0.2880	-216	206	-0.2532	0.0348	-0.0174
18	-306	297	-0.3618	-291	296	-0.3522	0.0096	-0.0522
20	-124	145	-0.1614	-126	145	-0.1626	-0.0012	-0.0618
22	59	-62	0.0726	115	-119	0.1404	0.0678	-0.0606
24	-95	91	-0.1116	-103	103	-0.1236	-0.0120	-0.1284
26	-122	119	-0.1446	-189	185	-0.2244	-0.0798	-0.1164
28	-146	137	-0.1698	-180	173	-0.2118	-0.0420	-0.0366
30	-49	67	-0.0696	-53	73	-0.0756	-0.0060	0.0054
32	188	-184	0.2232	185	-183	0.2208	-0.0024	0.0114
34	199	-204	0.2418	168	-175	0.2058	-0.0360	0.0138
36	122	-124	0.1476	130	-139	0.1614	0.0138	0.0498
38	62	-69	0.0786	71	-80	0.0906	0.0120	0.0360
40	117	-117	0.1404	140	-146	0.1716	0.0312	0.0240
42	177	-178	0.2130	193	-208	0.2406	0.0276	-0.0072
44	155	-162	0.1902	148	-156	0.1824	-0.0078	-0.0348
46	44	-50	0.0564	38	-53	0.0546	-0.0018	-0.0270
48	13	-12	0.0150	2	-3	0.0030	-0.0120	-0.0252
50	27	-26	0.0318	41	-49	0.0540	0.0222	-0.0132
52	51	-60	0.0666	89	-96	0.1110	0.0444	-0.0354
54	64	-71	0.0810	64	-74	0.0828	0.0018	-0.0798
56	65	-74	0.0834	47	-67	0.0684	-0.0150	-0.0816
58	158	-167	0.1950	145	-161	0.1836	-0.0114	-0.0666
60	113	-118	0.1386	110	-127	0.1422	0.0036	-0.0552
62	73	-75	0.0888	59	-73	0.0792	-0.0096	-0.0588
64	117	-122	0.1434	119	-126	0.1470	0.0036	-0.0492
66	83	-97	0.1080	129	-145	0.1644	0.0564	-0.0528
68	38	-52	0.0540	49	-65	0.0684	0.0144	-0.1092
70	133	-107	0.1440	91	-57	0.0888	-0.0552	-0.1236
72	577	-585	0.6972	513	-531	0.6264	-0.0708	-0.0684
74	753	-760	0.9078	813	-814	0.9762	0.0684	0.0024
76	742	-757	0.8994	901	-919	1.0920	0.1926	-0.0660
78	605	-610	0.7290	761	-763	0.9144	0.1854	-0.2586
80	701	-699	0.8400	617	-625	0.7452	-0.0948	-0.4440
82	589	-592	0.7086	505	-498	0.6018	-0.1068	-0.3492
84	366	-358	0.4344	245	-232	0.2862	-0.1482	-0.2424

Depth (ft)	Initial B0	Initial B180	Initial Incr. Dev. (in)	Current B0	Current B180	Current Incr. Dev. (in)	Incr. Disp. (in)	Cum. Disp. (in)
86	113	-107	0.1320	101	-95	0.1176	-0.0144	-0.0942
88	-45	29	-0.0444	-49	27	-0.0456	-0.0012	-0.0798
90	-113	112	-0.1350	-124	121	-0.1470	-0.0120	-0.0786
92	-249	229	-0.2868	-245	234	-0.2874	-0.0006	-0.0666
94	-385	379	-0.4584	-391	385	-0.4656	-0.0072	-0.0660
96	-382	375	-0.4542	-377	371	-0.4488	0.0054	-0.0588
98	-342	337	-0.4074	-362	352	-0.4284	-0.0210	-0.0642
100	-259	268	-0.3162	-290	299	-0.3534	-0.0372	-0.0432
102	-181	165	-0.2076	-187	171	-0.2148	-0.0072	-0.0060
104	-134	122	-0.1536	-134	121	-0.1530	0.0006	0.0012
106	-99	96	-0.1170	-104	93	-0.1182	-0.0012	0.0006
108	-111	109	-0.1320	-113	104	-0.1302	0.0018	0.0018
110	0	0	0.0000	0	0	0.0000	0.0000	0.0000

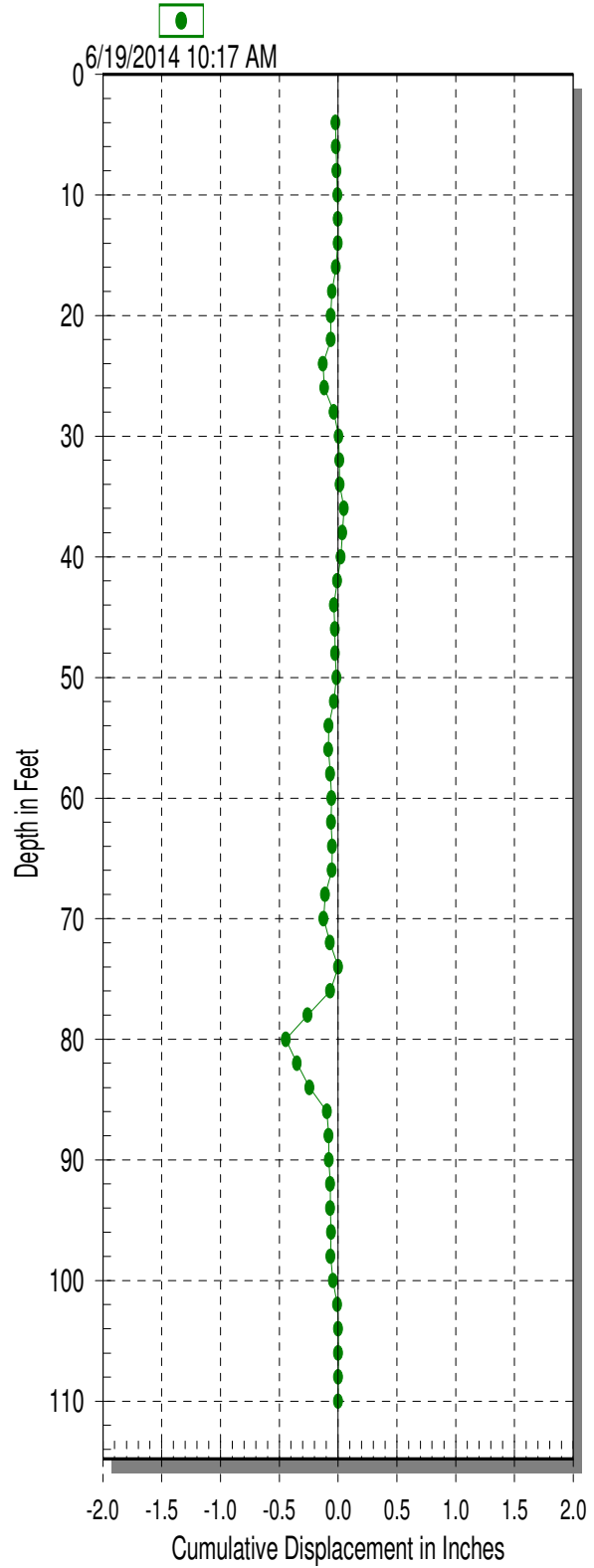
555-1:W-5 - A Axis

Initial survey: 10/16/2012 08:58 AM



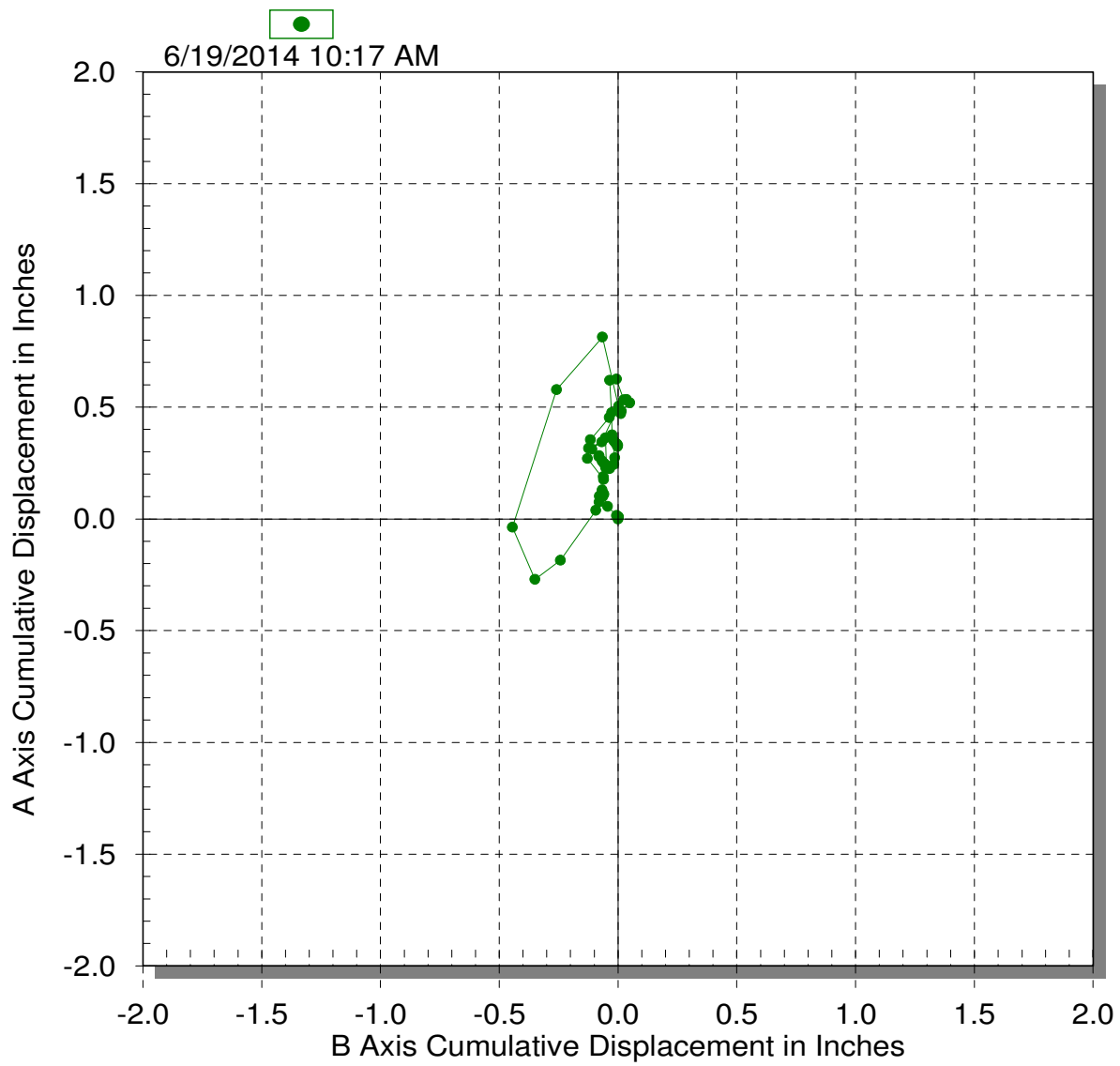
555-1:W-5 - B Axis

Initial survey: 10/16/2012 08:58 AM



555-1:W-5 - A Axis vs B Axis

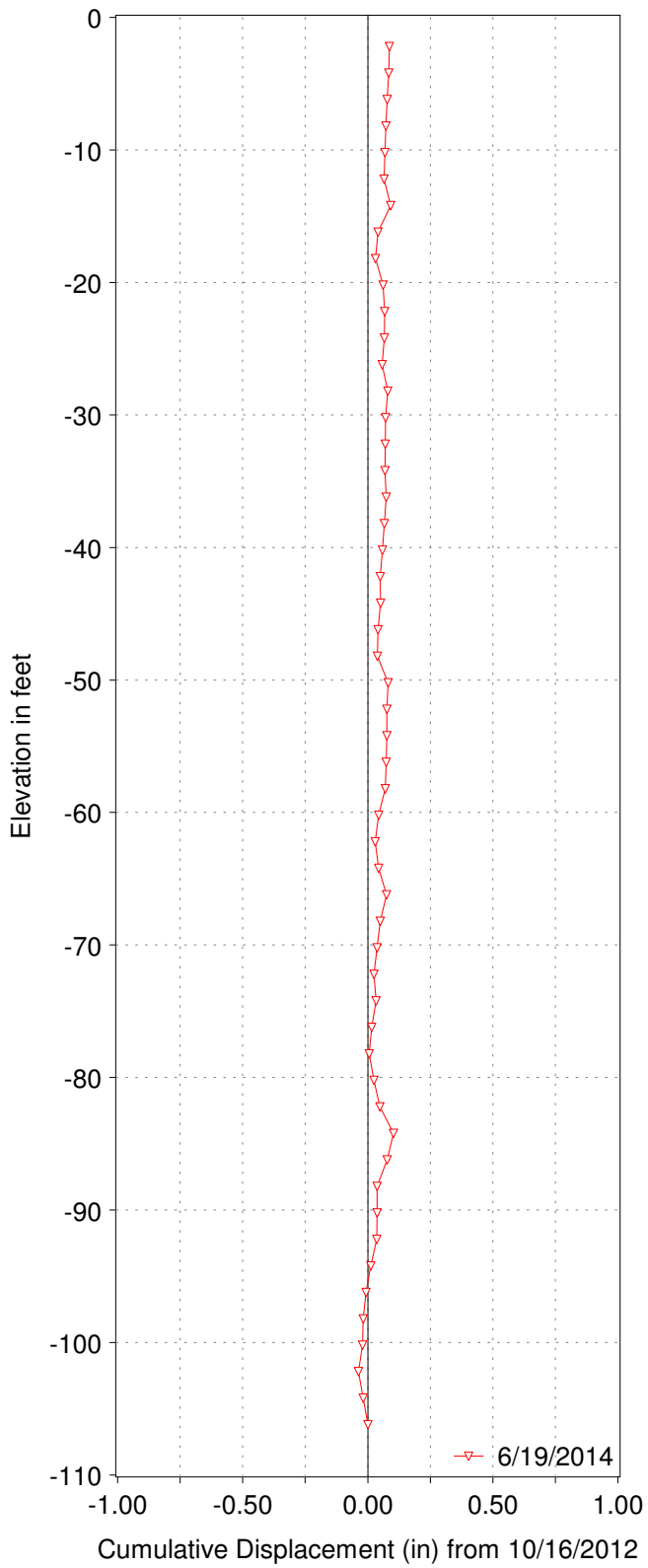
Initial survey: 10/16/2012 08:58 AM



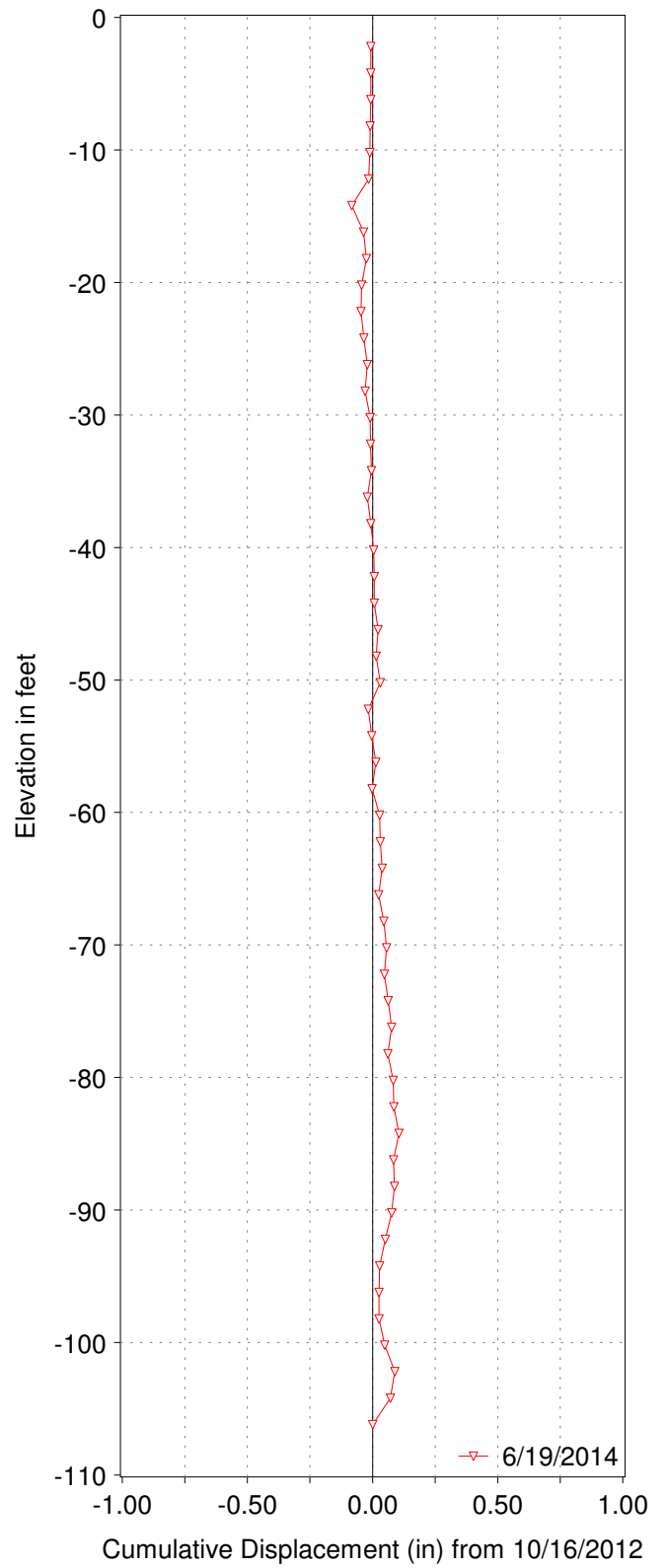
APPENDIX B

Reading Comparisons at W SI-1 and W SI-5

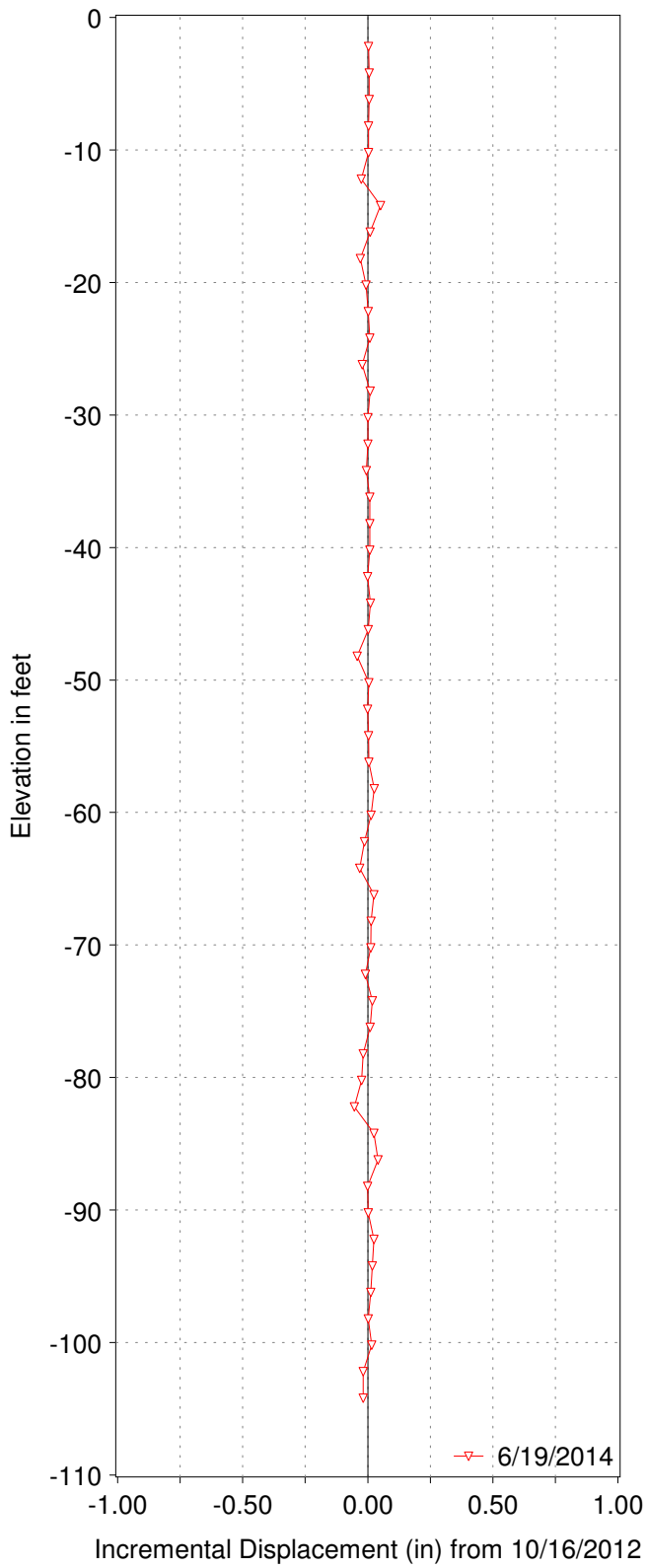
555-2 W-1, A-Axis



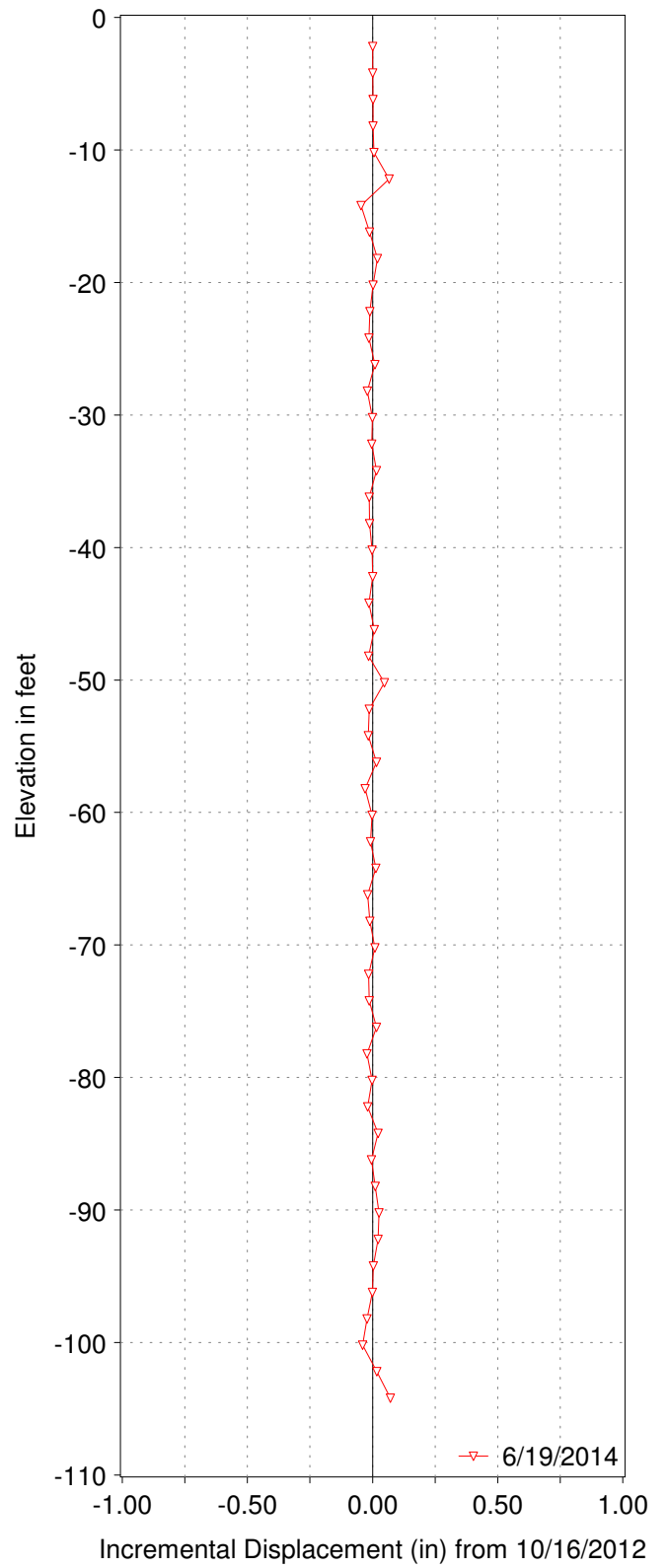
555-2 W-1, B-Axis



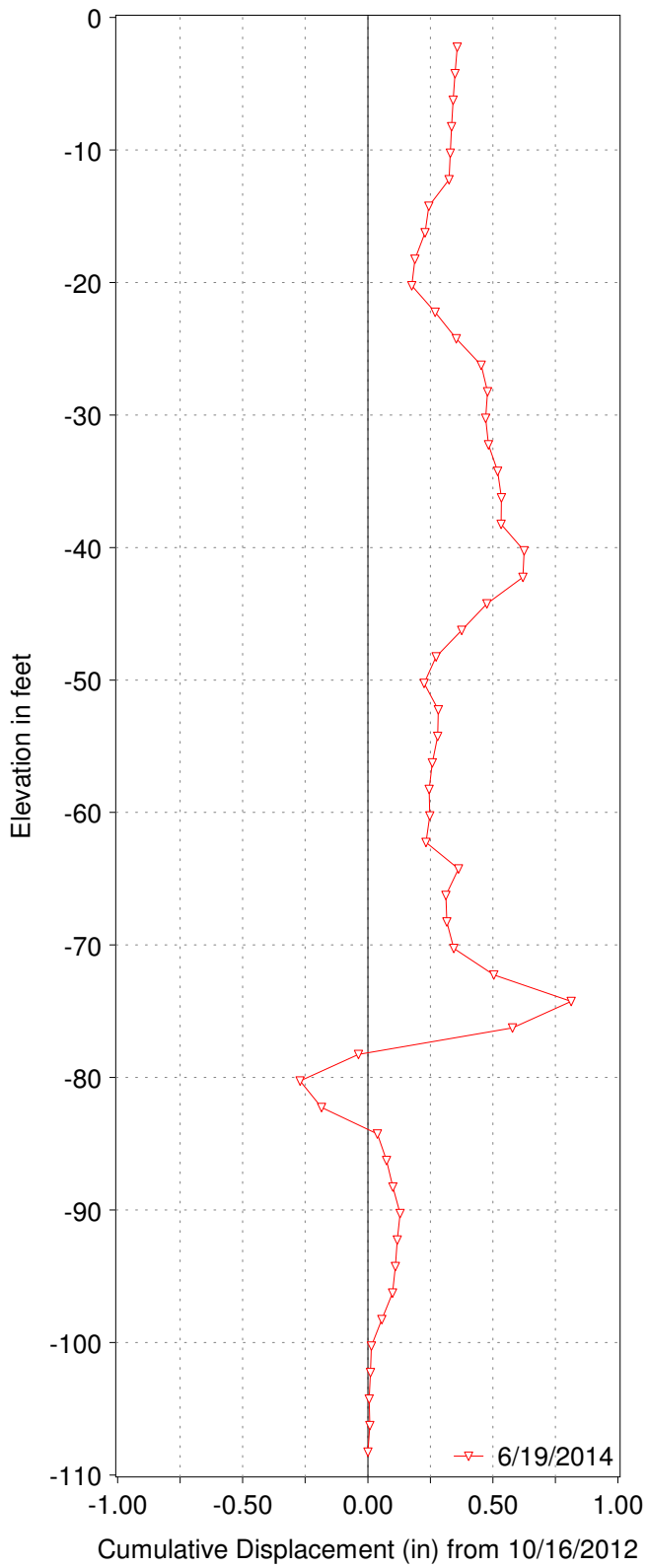
555-2 W-1, A-Axis



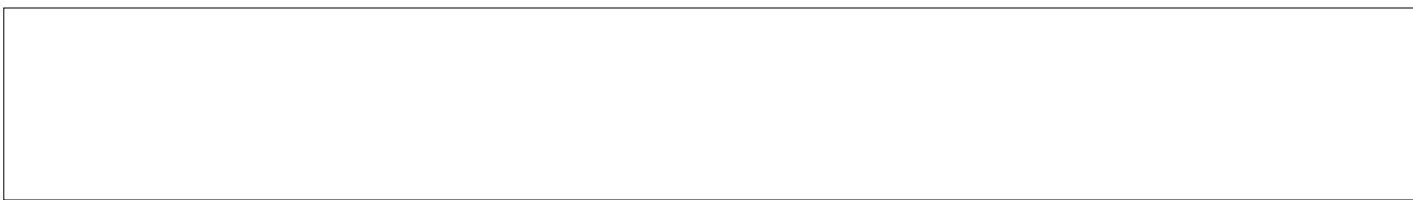
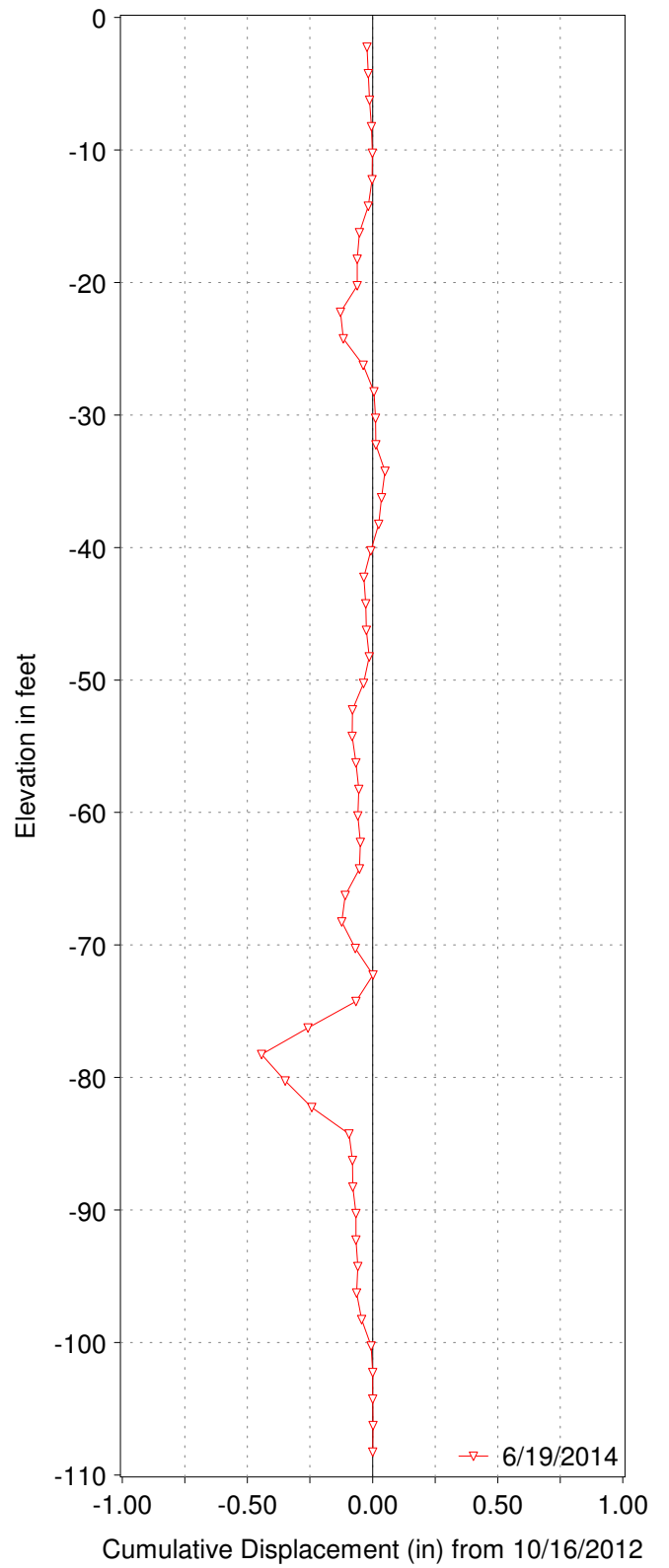
555-2 W-1, B-Axis



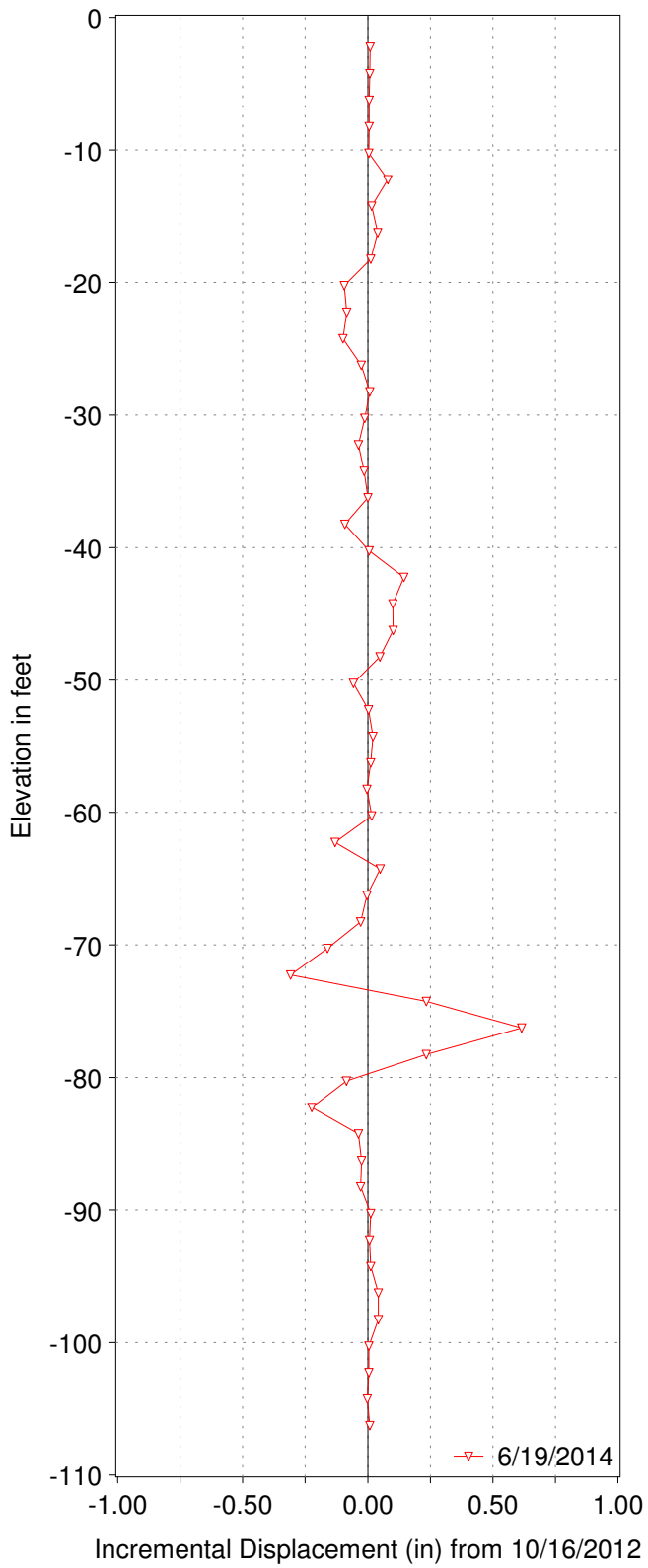
555-2 W-5, A-Axis



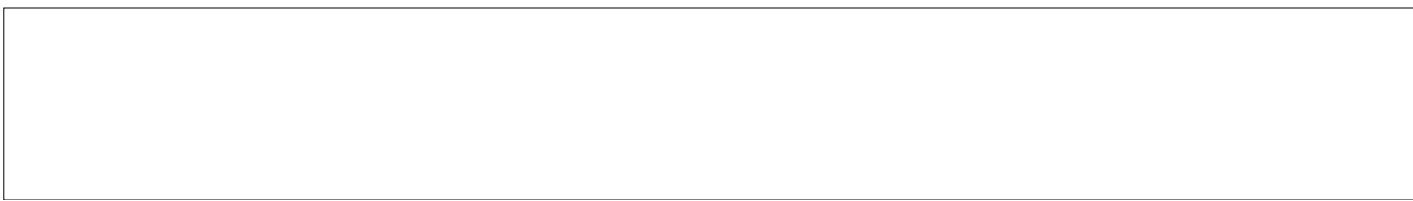
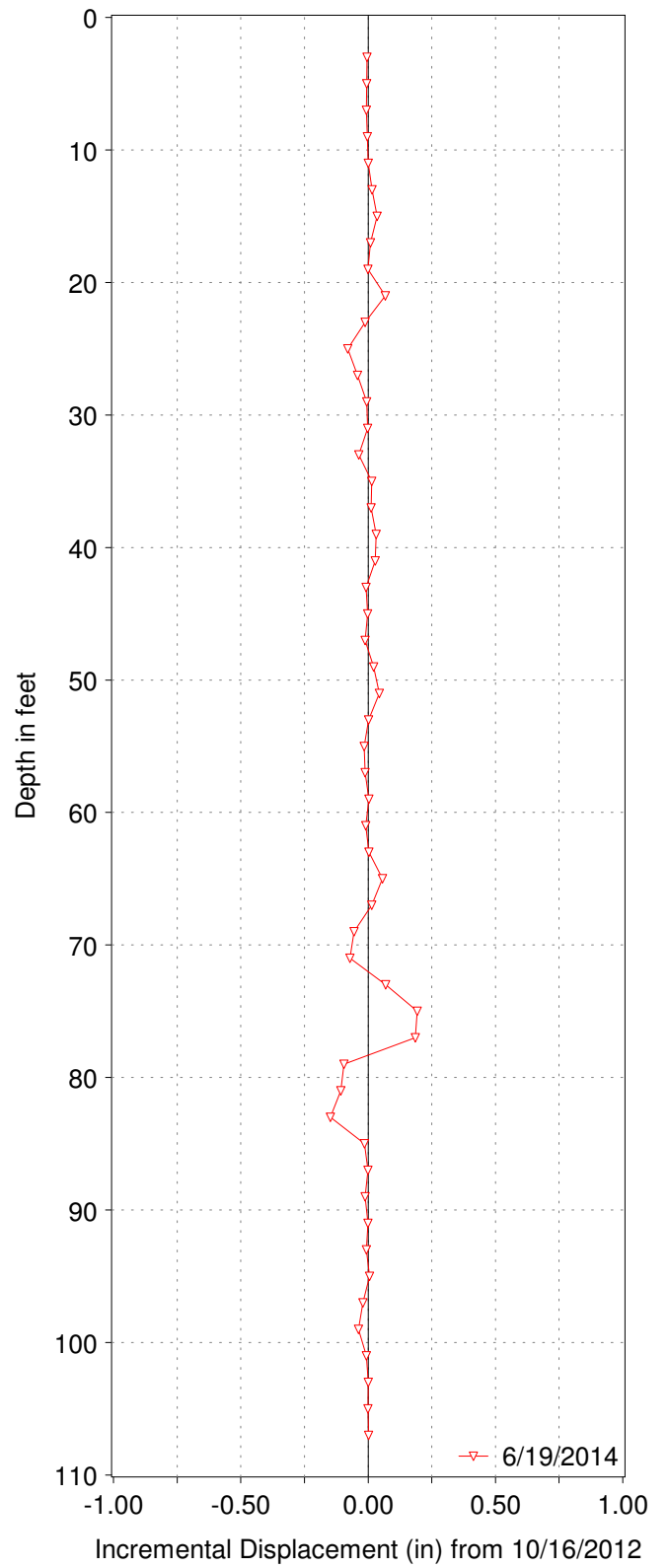
555-2 W-5, B-Axis



555-2 W-5, A-Axis



555-2 W-5, B-Axis



APPENDIX C

Vibrating Wire and Open Pipe Piezometer Measurements

SFB 555-2

Kelok Way Monitoring, Clayton, CA

Date of Monitoring: 6/19/14 to 6/20/14

Open Standpipe Piezometer	Depth to GW (ft)
W SI-1	23.8
W-2	33.1
W-3	20.4
W-4	23.4
W SI-5	83.2
W-6	85.6
CEGPZ-1	22.2
CEGPZ-2	47.0
MW-1	21.0
CEGSI-1*	10.6
CEGSI-3*	21.4
BGCSI-1*	61.6
CSASI-1*	66.3
CSASI-2*	57.6

*Note: Inclinator casing with open bottom.

VW Piezometer	Depth (ft)	S/N	R0	T0 (°C)	G	K	Hz	T1(°C)	R1	P (psi)	P (psf)	Water (ft) Above VW Piezo	Depth to GW (ft)
CSA-1	36	07-17286	9110	22.8	0.01497	-0.01814	3028.5	16.3	9171.8	-0.8074	-116.3	-1.9	Dry**
	70	07-13836	8876	21.8	0.02439	-0.01615	2922.7	16.6	8542.2	8.2260	1184.5	19.0	51.0
	125	07-14513	9095	21.0	0.02356	-0.03009	2837.7	16.8	8052.5	24.6867	3554.9	57.0	68.0
CSA-2	77	07-17287	9002	22.4	0.01562	-0.01583	3011.2	17.4	9067.3	-0.9412	-135.5	-2.2	Dry**
	97	07-13835	8874	21.9	0.02318	-0.02480	2928.4	17.2	8575.5	7.0352	1013.1	16.2	80.8
	127	07-14512	8278	22.2	0.02452	-0.02357	2694.7	17.3	7261.4	25.0423	3606.1	57.8	69.2
CSA-3	77	07-17309	8954	22.1	0.01842	-0.02201	2988.5	17.1	8931.1	0.5313	76.5	1.2	75.8
	97	07-15712	8901	21.5	0.02413	-0.02937	2894.8	17.5	8379.9	12.6924	1827.7	29.3	67.7
	127	07-15716	8914	21.4	0.02465	-0.02996	2786.8	17.6	7766.3	28.4058	4090.4	65.6	61.4
CSA-4	44	07-17310	8894	22.2	0.01538	-0.00761	3002.0	16.3	9012.0	-1.7700	-254.9	-4.1	Dry**
	60	07-15711	7692	21.1	0.02356	-0.00656	2788.5	16.1	7775.7	-1.9399	-279.4	-4.5	Dry**
	125	07-15715	8929	21.3	0.02343	-0.02363	2820.8	16.7	7956.9	22.8847	3295.4	52.8	72.2

**Note: No positive water pressure measured by VW piezometer.

APPENDIX D

Historical Piezometer Measurement Records

SFB 555-2

Kelok Way Monitoring, Clayton, CA

Measured Groundwater Level in Feet Below Ground Surface

Monitored by	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	SFB	SFB
Open Standpipe Piezometer	9/24/07	10/18/07	4/3/08	6/26/08	1/15/09	1/27/10	3/24/10	9/31/10	1/28/11	5/10/11	5/16/11	6/3/11	6/20/11	7/22/11	11/29/12	6/19/14 to 6/20/14
W SI-1															22.4	23.8
W-2															37.3	33.1
W-3															26.1	20.4
W-4															25.6	23.4
W SI-5															83.2	83.2
W-6															85.7	85.6
CEGPZ-1	23	22.3	23.7	22.2	24.4	23.4	24.1	23.1	23.1	21.8				21		22.2
CEGPZ-2	46.5	45.9	46.2	45.8	46.2	45.7	46.9	46.4	46.9	46.4				46		47.0
MW-1											15.2	17.3	17.2	17.5		21.0
CEGSI-1*												49.0	35.0	22.5		10.6
CEGSI-3*																21.4
BGCSI-1*														66.2		61.6
CSASI-1*														71.9		66.3
CSASI-2*														86.1		57.6

*Note: Inclinator casing with open bottom.

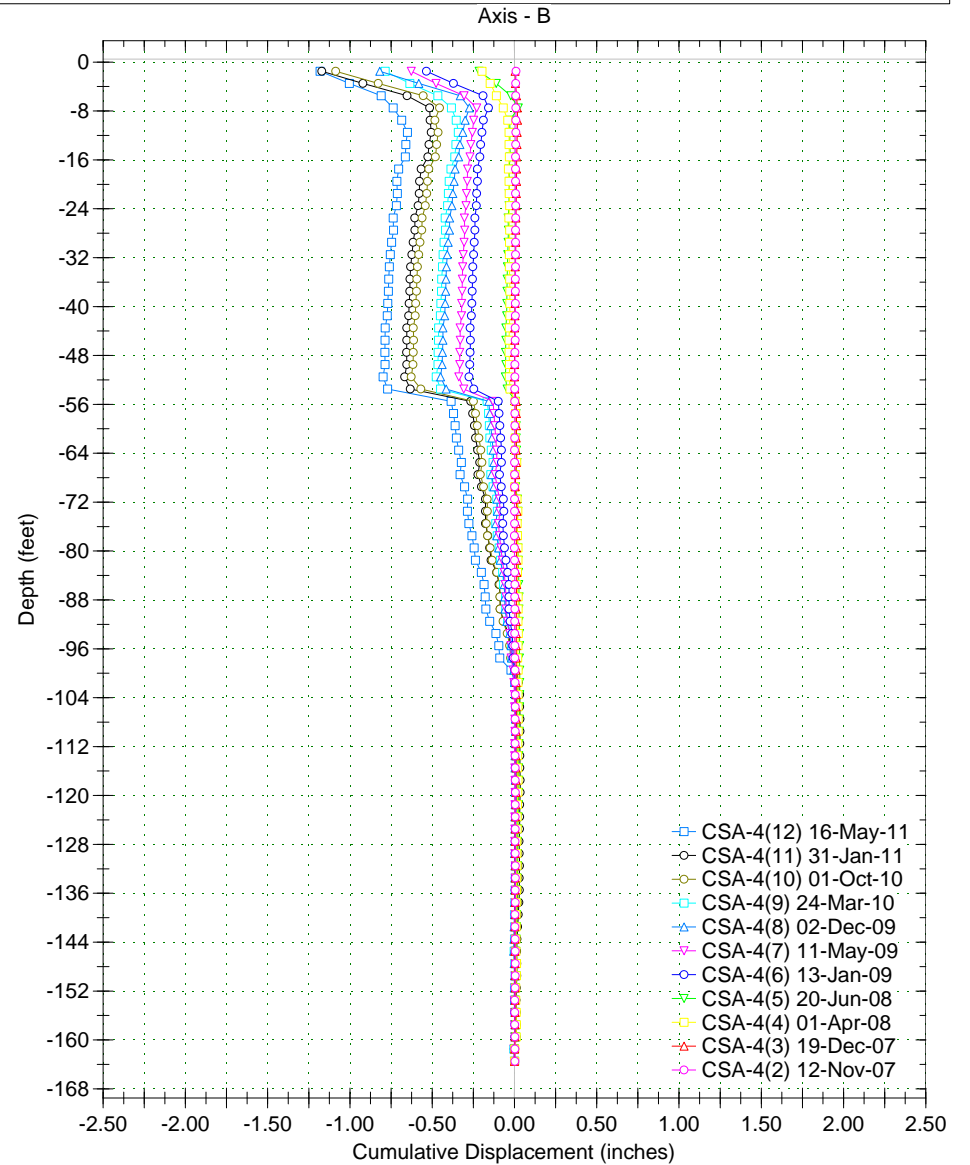
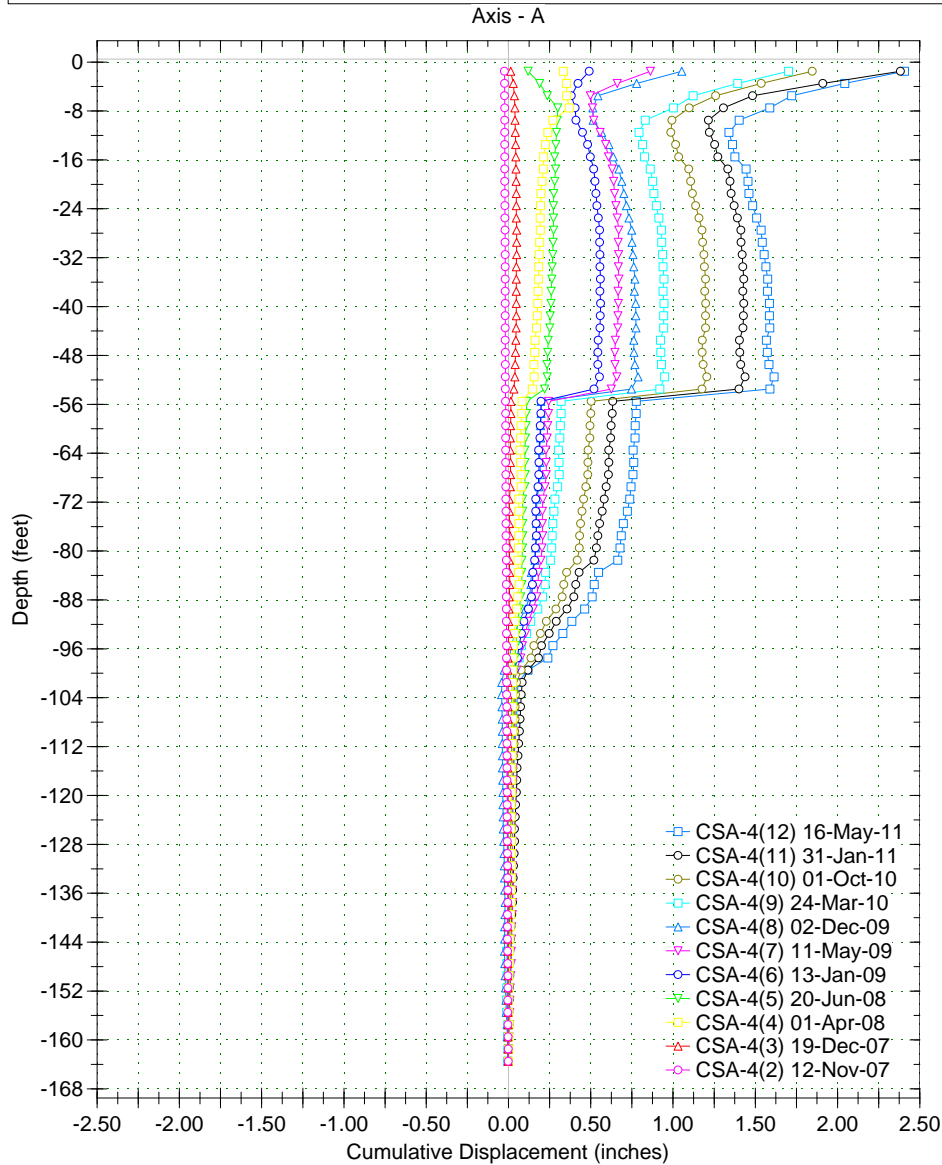
Monitored by	CEG	CEG	CEG	CEG	CEG	CEG	CEG	CEG	SFB
VW Piezometer	Depth (ft)	1/13/09	12/2/09	3/4/10	9/30/10 to 10/1/10	1/28/11 to 1/31/11	5/10/11 to 5/16/11	7/22/11	6/19/14 to 6/20/14
CSA-1	36	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**
	70	54.9	58.0	55.9	55.8	55.6	53.0	53.6	51.0
	125	50.9	54.8	53.7	54.3	55.2	53.7	69.4	68.0
CSA-2	77	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**
	97	79.7	80.6	80.8	81.3	81.2	81.1	80.6	80.8
	127	59.0	61.8	61.9	63.7	63.5	63.6	66.0	69.2
CSA-3	77	70.0	68.8	68.9	69.1	68.8	68.9	68.9	75.8
	97	71.7	73.4	73.6	74.6	74.5	74.0	74.4	67.7
	127	68.4	69.4	69.2	69.7	69.2	68.6	69.0	61.4
CSA-4	44	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**
	60	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**	Dry**
	125	70.6	71.4	68.4	68.3	68.9	61.3	63.1	72.2

**Note: No positive water pressure measured by VW piezometer.

APPENDIX E
Historical CSA SI-4 Monitoring Records

Borehole : CSA-4
 Project : Katzman v. Clayton
 Location : Clayton, California
 Northing : 2171334.8
 Easting : 6151152.2
 Collar :

Spiral Correction : N/A
 Collar Elevation : 0.5 feet
 Borehole Total Depth : 164.0 feet
 North Groove Azimuth : N 3 E
 Base Reading : 2007 Nov 12 12:08
 Axis A Azimuth : 0.0 degrees



Borehole : CSA-4
Project : Katzman v. Clayton
Location : Clayton, California
Northing : 2171334.8
Easting : 6151152.2
Collar :

Spiral Correction : N/A
Collar Elevation : 0.5 feet
Borehole Total Depth : 164.0 feet
North Groove Azimuth : N 3 E
Base Reading : 2007 Nov 12 12:08
Axis A Azimuth : 0.0 degrees

