#### **Survey Staff Calibration**

Version 5.6.0.4, Nov 2019

Staff Serial No:212 Length: 4 metres
Staff Owner: Landgate Material: Fibreglass

Test No: Test 3-212 Location: Victor Road, Darlington

Test Date: 17/03/2020 Laboratory: Boya

Observer: V.Ung Audit Test: Test 47:Boya Checked by: Audit Date : 17/03/2020

Signature: Average Observed Temperature25.0 degrees Celsius

Date: Level: Leica/LS15/702272

Correction Factor: 0.99990 At 25.0 degrees Celsius (Correction Factor is temperature dependent).

Graduation Uncertainty: 0.00016 metres at 95% confidence level

		Staff Readings		Known Height	Measured Height	Corrected
		From	То	Difference	Difference	Difference
Set	Pins	(metres)	(metres)	(metres)	(metres)	(metres)
1	1-2	0.07089	0.16170	0.09084	0.09081	0.00003
1	2-3	0.16170	0.32568	0.16401	0.16398	0.00003
1	3-4	0.32568	0.47192	0.14615	0.14624	-0.00009
1	4-5	0.47192	0.68477	0.21305	0.21285	0.00020
1	5-6	0.68477	0.87088	0.18609	0.18611	-0.00002
1	6-7	0.87088	1.07056	0.19975	0.19968	0.00007
1	7-8	1.07056	1.27566	0.20498	0.20510	-0.00012
1	8-9	1.27566	1.52262	0.24691	0.24696	-0.00005
1	9-10	1.52262	1.79026	0.26761	0.26764	-0.00003
1	10-11	1.79026	2.12344	0.33313	0.33318	-0.00005
1	11-12	2.12344	2.38743	0.26384	0.26399	-0.00015
1	12-13	2.38743	2.51328	0.12582	0.12585	-0.00003
1	13-14	2.51328	2.64300	0.12978	0.12972	0.00006
1	14-15	2.64300	2.87156	0.22857	0.22856	0.00001
1	15-16	2.87156	3.05411	0.18243	0.18255	-0.00012
1	16-17	3.05411	3.20591	0.15183	0.15180	0.00003
1	17-18	3.20591	3.35927	0.15330	0.15336	-0.00006
1	18-19	3.35927	3.51648	0.15720	0.15721	-0.00001
1	19-20	3.51648	3.66519	0.14863	0.14871	-0.00008
1	20-21	3.66519	3.87489	0.20969	0.20970	-0.00001

Date:

#### Survey Staff Calibration

Level: Leica/LS15/702272

Version 5.6.0.4, Nov 2019

Staff Serial No:212 Length: 4 metres Staff Owner: Landgate Material: Fibreglass Test No: Test 3-212 Location: Victor Road, Darlington Test Date: 17/03/2020 Laboratory: Boya Observer: Audit Test: Test 47:Boya V.Ung Checked by: Audit Date: 17/03/2020 Average Observed Temperature 25.0 degrees Celsius Signature:

Correction Factor = 0.99989857 (1+(0.00001000 (Temperature - 25.0))) Correction Factor = 1.00000 when the temperature is 35.2 degrees Celsius

Temperature	Correction Factor	Correction/Metre (mm)
0	0. 99965	- 0. 35
2	0. 99967	- 0. 33
4	0. 99969	- 0. 31
6	0. 99971	- 0. 29
8	0. 99973	- 0. 27
10	0. 99975	- 0. 25
12	0. 99977	-0.23
14	0. 99979	-0.21
16	0. 99981	- 0. 19
18	0. 99983	- 0. 17
20	0. 99985	- 0. 15
22	0. 99987	- 0. 13
24	0. 99989	- 0. 11
26	0. 99991	- 0. 09
28	0. 99993	- 0. 07
30	0. 99995	- 0. 05
32	0. 99997	- 0. 03
34	0. 99999	- 0. 01
36	1. 00001	0. 01
38	1. 00003	0. 03
40	1. 00005	0. 05

#### Survey Staff Calibration

Version 5.6.0.4, Nov 2019

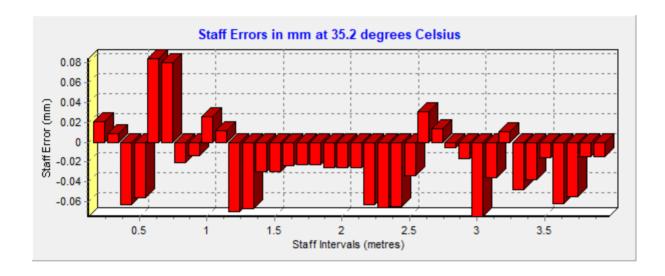
Staff Serial No:212 Length: 4 metres
Staff Owner: Landgate Material: Fibreglass

Test No: Test 3-212 Location: Victor Road, Darlington

Test Date: 17/03/2020 Laboratory: Boya

Observer: V.Ung Audit Test: Test 47:Boya Audit Date: 17/03/2020

Average Observed Temperature25.0 degrees Celsius



To (metres)	Error (mm)	Corrected Interval (metres)
0. 200	0. 02	0. 10002
0. 300	0. 01	0. 10001
0. 400	- 0. 06	0. 09994
0. 500	- 0. 06	0. 09994
0. 600	0. 08	0. 10008
0. 700	0. 08	0. 10008
0.800	- 0. 02	0. 09998
0. 900	- 0. 01	0. 09999
1. 000	0. 03	0. 10003
1. 100	0. 01	0. 10001
1. 200	- 0. 07	0. 09993
1. 300	- 0. 07	0. 09993
1. 400	- 0. 03	0. 09997
1. 500	- 0. 03	0. 09997
	(metres)  0. 200  0. 300  0. 400  0. 500  0. 600  0. 700  0. 800  0. 900  1. 000  1. 100  1. 200  1. 300  1. 400	(metres)         (mm)           0. 200         0. 02           0. 300         0. 01           0. 400         - 0. 06           0. 500         - 0. 06           0. 600         0. 08           0. 700         0. 08           0. 800         - 0. 02           0. 900         - 0. 01           1. 000         0. 03           1. 100         0. 01           1. 200         - 0. 07           1. 300         - 0. 03

### Survey Staff Calibration

Version 5.6.0.4, Nov 2019

From (metres)	To (metres)	Error (mm)	Corrected Interval (metres)
1. 500	1. 600	- 0. 02	0. 09998
1. 600	1. 700	- 0. 02	0. 09998
1. 700	1. 800	- 0. 02	0. 09998
1. 800	1. 900	- 0. 03	0. 09997
1. 900	2. 000	- 0. 03	0. 09997
2. 000	2. 100	- 0. 03	0. 09997
2. 100	2. 200	- 0. 06	0. 09994
2. 200	2. 300	- 0. 07	0. 09993
2. 300	2. 400	- 0. 06	0. 09994
2. 400	2. 500	- 0. 03	0. 09997
2. 500	2. 600	0. 03	0. 10003
2. 600	2. 700	0. 01	0. 10001
2. 700	2. 800	- 0. 01	0. 09999
2. 800	2. 900	- 0. 02	0. 09998
2. 900	3. 000	- 0. 08	0. 09992
3. 000	3. 100	- 0. 04	0. 09996
3. 100	3. 200	0. 01	0. 10001
3. 200	3. 300	- 0. 05	0. 09995
3. 300	3. 400	- 0. 04	0. 09996
3. 400	3. 500	- 0. 02	0. 09998
3. 500	3. 600	- 0. 06	0. 09994
3. 600	3. 700	- 0. 06	0. 09994
3. 700	3. 800	- 0. 01	0. 09999
3. 800	3. 900	- 0. 01	0. 09999