### Landgate

#### **Survey Staff Calibration**

Version 5.6.0.4, Nov 2019

Staff Serial No:213 Length: 4 metres
Staff Owner: Landgate Material: Fibreglass

Test No: Test 2-213 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 Temperature24.6 degrees Celsius

Date: Level: Leica/LS15/702272

Correction Factor: 0.99992 At 25.0 degrees Celsius (Correction Factor is temperature dependent).

Graduation Uncertainty: 0.00017 metres at 95% confidence level

		Staff Readings		Known Height	Measured Height	Corrected
		From	To	Difference	Difference	Difference
Set	Pins	(metres)	(metres)	(metres)	(metres)	(metres)
1	1-2	0.07103	0.16183	0.09084	0.09080	0.00004
1	2-3	0.16183	0.32585	0.16401	0.16402	-0.00001
1	3-4	0.32585	0.47193	0.14615	0.14608	0.00007
1	4-5	0.47193	0.68493	0.21305	0.21300	0.00005
1	5-6	0.68493	0.87096	0.18609	0.18603	0.00006
1	6-7	0.87096	1.07069	0.19975	0.19973	0.00002
1	7-8	1.07069	1.27571	0.20498	0.20502	-0.00004
1	8-9	1.27571	1.52278	0.24691	0.24707	-0.00016
1	9-10	1.52278	1.79054	0.26761	0.26776	-0.00015
1	10-11	1.79054	2.12359	0.33313	0.33305	0.00008
1	11-12	2.12359	2.38747	0.26384	0.26388	-0.00004
1	12-13	2.38747	2.51329	0.12582	0.12582	0.00000
1	13-14	2.51329	2.64309	0.12978	0.12980	-0.00002
1	14-15	2.64309	2.87172	0.22857	0.22863	-0.00006
1	15-16	2.87172	3.05426	0.18243	0.18254	-0.00011
1	16-17	3.05426	3.20600	0.15183	0.15174	0.00009
1	17-18	3.20600	3.35948	0.15330	0.15348	-0.00018
1	18-19	3.35948	3.51656	0.15720	0.15708	0.00012
1	19-20	3.51656	3.66526	0.14863	0.14870	-0.00007
1	20-21	3.66526	3.87495	0.20969	0.20969	0.00000

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Date:

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Level: Leica/LS15/702272

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Staff Serial No:213 Staff Owner: Landgate	Length: 4 metres Material: Fibreglass
Test No: Test 2-213	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 Temperature24.6 degrees Celsius

Correction Factor = 0.99991960 (1+(0.00001000 (Temperature - 24.6)))

Correction Factor = 1.00000 when the temperature is<sup>32.7</sup> degrees Celsius

_Temperature	Correction Factor	Correction/Metre (mm)	
0	0. 99967	- 0. 33	
2	0. 99969	- 0. 31	
4	0. 99971	- 0. 29	
6	0. 99973	- 0. 27	
8	0. 99975	- 0. 25	
10	0. 99977	- 0. 23	
12	0. 99979	- 0. 21	
14	0. 99981	- 0. 19	
16	0. 99983	- 0. 17	
18	0. 99985	- 0. 15	
20	0. 99987	- 0. 13	
22	0. 99989	- 0. 11	
24	0. 99991	- 0. 09	
26	0. 99993	- 0. 07	
28	0. 99995	- 0. 05	
30	0. 99997	- 0. 03	
32	0. 99999	- 0. 01	
34	1. 00001	0. 01	
36	1. 00003	0. 03	
38	1. 00005	0. 05	
40	1. 00007	0. 07	

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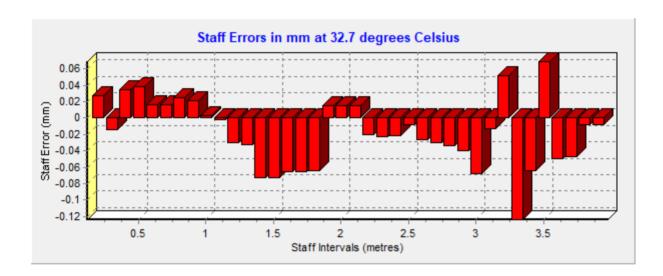
Staff Serial No:213 Length: 4 metres
Staff Owner: Landgate Material: Fibreglass

Test No: Test 2-213 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 Temperature 24.6 degrees Celsius



To (metres)	Error (mm)	Corrected Interval (metres)
0. 200	0. 03	0. 10003
0. 300	- 0. 01	0. 09999
0. 400	0.04	0. 10004
0. 500	0. 04	0. 10004
0. 600	0. 02	0. 10002
0. 700	0. 02	0. 10002
0.800	0. 02	0. 10002
0. 900	0. 02	0. 10002
1. 000	0.00	0. 10000
1. 100	0.00	0. 10000
1. 200	- 0. 03	0. 09997
1. 300	- 0. 03	0. 09997
1. 400	- 0. 07	0. 09993
1. 500	- 0. 07	0. 09993
	(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. 03           0. 300         - 0. 01           0. 400         0. 04           0. 500         0. 04           0. 600         0. 02           0. 700         0. 02           0. 800         0. 02           0. 900         0. 02           1. 000         0. 00           1. 100         0. 00           1. 200         - 0. 03           1. 300         - 0. 07

### Surv

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From (metres)	To (metres)	Error (mm)	Corrected Interval (metres)
1. 500	1. 600	- 0. 07	0. 09993
1. 600	1. 700	- 0. 07	0. 09993
1. 700	1. 800	- 0. 06	0. 09994
1. 800	1. 900	0. 02	0. 10002
1. 900	2. 000	0. 02	0. 10002
2. 000	2. 100	0. 02	0. 10002
2. 100	2. 200	- 0. 02	0. 09998
2. 200	2. 300	- 0. 02	0. 09998
2. 300	2. 400	- 0. 02	0. 09998
2. 400	2. 500	- 0. 01	0. 09999
2. 500	2. 600	- 0. 03	0. 09997
2. 600	2. 700	- 0. 03	0. 09997
2. 700	2. 800	- 0. 03	0. 09997
2. 800	2. 900	- 0. 04	0. 09996
2. 900	3. 000	- 0. 07	0. 09993
3. 000	3. 100	- 0. 01	0. 09999
3. 100	3. 200	0. 05	0. 10005
3. 200	3. 300	- 0. 12	0. 09988
3. 300	3. 400	- 0. 06	0. 09994
3. 400	3. 500	0. 07	0. 10007
3. 500	3. 600	- 0. 05	0. 09995
3. 600	3. 700	- 0. 05	0. 09995
3. 700	3. 800	- 0. 01	0. 09999
3. 800	3. 900	- 0. 01	0. 09999