

NULL METER ERROR REPORT**FINAL**

Reconcile?	N
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Safety Issue?	N
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Thesis Report No.	N/A
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1. EXECUTIVE SUMMARY

SITE NAME	BRAISHFIELD B
LDZ	SOUTH
LAST GOOD DATE	29/12/09
START DATE	29/12/09
END DATE	26/01/10
SIZE OF ERROR (No reconciliation required if under 0.1%)	<0.1%
ESTIMATE – Y/N?	N
ROOT CAUSE	LDP & Pressure errors
ANALYSIS	Appendix B
METER TYPE	ORIFICE
AUTHOR	T Roberts
CHECKED BY	

2. BACKGROUND

Gas is supplied to part of the SoE network at Braishfield B FWACV Offtake which employs an orifice plate meter to measure the volumetric flow rate in accordance with BS EN ISO 5167.

Following a lightning strike on 23/12/09 that damaged a large amount of equipment a re-commissioning ME2 validation was carried out to validate the metering system on 29/12/09. Further calibrations were carried out in January 2010 which recorded as-found errors to the low dp (2) and compensation pressure (1).

3. ERROR QUANTIFICATION AND IMPACT

Further checks were subsequently carried out as follows:

14/1/10	Low dp	as-found error - corrected
15/1/10	Compensation pressure	as-found error - corrected
26/1/10	Low dp	as-found error - transmitter replaced

A summary of the calibration results has been entered in this report as Appendix A.

The checks above have resulted in three separate errors that have been investigated.

Error 1 – Low dp transmitter and ADC drift 29/12/09 – 14/1/10

Error 2 – Low dp transmitter drift 14/1/10 – 26/1/10

Error 3 – Pressure transmitter drift 29/12/09 – 15/1/10

Analysis of the data between 29/12/09 and 26/1/10 shows that on a number of Gasdays (16, 17, 18, 19, 20, 21, 24, 25 January) the low dp did not provide the in-use dp so these days have been excluded. Additionally on the 29/12/09 hvols were manually corrected by System Control so this Gasday has also been excluded.

Four minute HPMIS data for the affected Gasdays was corrected for all three errors and then using GasVLe both uncorrected and corrected flow were calculated to provide the overall error for each Gasday.

Errors for all affected Gasdays were less than 0.1%, when divided by two as the timing of the drift is unknown. Results have been tabulated in Appendix B

4. CAUSES

Instability ADC and transmitters replaced after the lightning strike.

5. RECOMMENDATIONS AND LEARNING

It is a recommendation of this report that a 'Null' result be recorded.

REFERENCES

HPMIS records
Gemini records
ME2 calibrations

VERSION HISTORY

<i>Version</i>	<i>Changes</i>	<i>Author</i>	<i>Date</i>
<i>Rev 0</i>	<i>First draft</i>	<i>T Roberts</i>	<i>08/2/12</i>
<i>Rev 1</i>	<i>Final, no changes</i>	<i>T Roberts</i>	<i>10.4.12</i>

DISTRIBUTION

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Appendix A

P Tx 15Jan As-Found error%

bar	Tx	ADC	Loop
0	0.003125	0.001429	0.004554
17.5	0.129506	0.008571	0.138077
37.5	0.028636	0.008571	0.037208
52.5	0.167236	0.015714	0.18295
70	0.220398	0.022857	0.243255

DP Tx 14Jan As-Found error%

mbar	Tx	ADC	Loop
0	0.004688	-3.5016	-3.49691
12.5	0.490896	-3.5042	-3.0133
25	0.515542	-3.494	-2.97846
37.5	0.292688	-3.4966	-3.20391
50	-0.08079	-3.4928	-3.57359

DP Tx 26Jan As-Found error%

mbar	Tx	ADC	Loop
0	0.013125		0.013125
12.5	0.490896		0.490896
25	0.282458		0.282458
37.5	0.292688		0.292688
50	-0.08079		-0.08079

Low dp ADC checks not done on
26th. Subsequent check on 7/6/10
recorded as a Pass.

BRAISHFIELD B MER SO003 Rev1

Appendix B

Gasday	Error%	Error%/2
30/12/2009	0.11	0.05
31/12/2009	0.12	0.06
01/01/2010	0.12	0.06
02/01/2010	0.12	0.06
03/01/2010	0.13	0.06
04/01/2010	0.11	0.05
05/01/2010	0.13	0.07
06/01/2010	0.13	0.06
07/01/2010	0.12	0.06
08/01/2010	0.12	0.06
09/01/2010	0.12	0.06
10/01/2010	0.13	0.06
11/01/2010	0.13	0.06
12/01/2010	0.12	0.06
13/01/2010	0.13	0.07
14/01/2010	0.14	0.07
15/01/2010	0.02	0.01
22/01/2010	0.00	0.00
23/01/2010	0.00	0.00
26/01/2010	0.01	0.01