METER ERROR REPORT

FINAL

Reconcile?	Y
Safety Issue?	N
Thesis Report No.	

1. EXECUTIVE SUMMARY

SITE NAME	Aylesbeare	
LDZ	SW	
START DATE (actual)	11th April 2011 (23:12)	
LAST GOOD DATE		
END DATE	12th April 2011 (00:18)	
SIZE OF ERROR (No reconciliation required if under 0.1%)	5,500.59 SCM over registration (equivalent to 1.084%)	
ESTIMATE – Y/N?		
ROOT CAUSE	Pressure transducer locked in over range state	
ANALYSIS	HPMIS RBD Data	
METER TYPE	Orifice Plate	
AUTHOR	S Western	
CHECKED BY	C Stock	
ACCEPTED BY UKD NETWORK		
RECONCILIATION	Distribution	Transportation

2. BACKGROUND

Gas is supplied to part of the South West LDZ, Wales & West Utilities Network, at Aylesbeare FWACV offtake. The site metering system comprises a single Orifice meter with an isolated bypass.
During a period of 1hr 6mins (23:12 to 00:18) on Gas Day 11th April 2011, for some undiscovered reason the pressure transducer locked. This caused the standard flow rate to be incorrectly calculated. The condition was rectified by turning the power to the instrument off and then back on again.

3. ERROR QUANTIFICATION AND IMPACT

The RBD data was reviewed before and after the pressure transducer (PT) locked up. The PT readings, 5 prior and 5 after, were averaged to estimate the actual pressure reading during the period of the PT locking up. See spreadsheet.

Using the HPMIS orifice plate design calculation (See Fig. 1a & 1b) together with the 4 minute RBD and gas composition data, the volume flow for each 3/4/5 minute period was calculated. In each instance, the volume flows for the locked up PT and the estimated PT reading were calculated. By comparing these calculated flows over the period of the PT locking up it was estimated that orifice metering system over-registered 5,500.59 scm of gas.

From HPMIS, the Dvol for Gas Day the 11th of April 2011 was 0.507296mscm so the over-registration equates to 1.084% of Dvol. See spreadsheet.

Fig. 1a - HPMIS screen shot for flow calculation using locked pressure value (23:12).

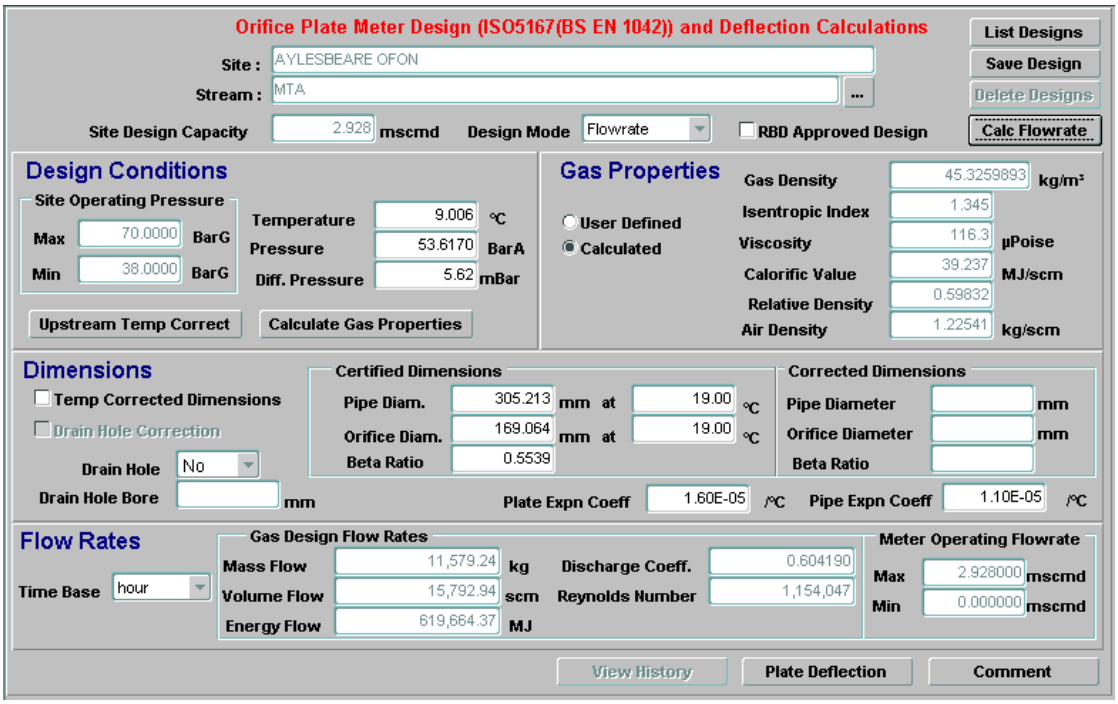
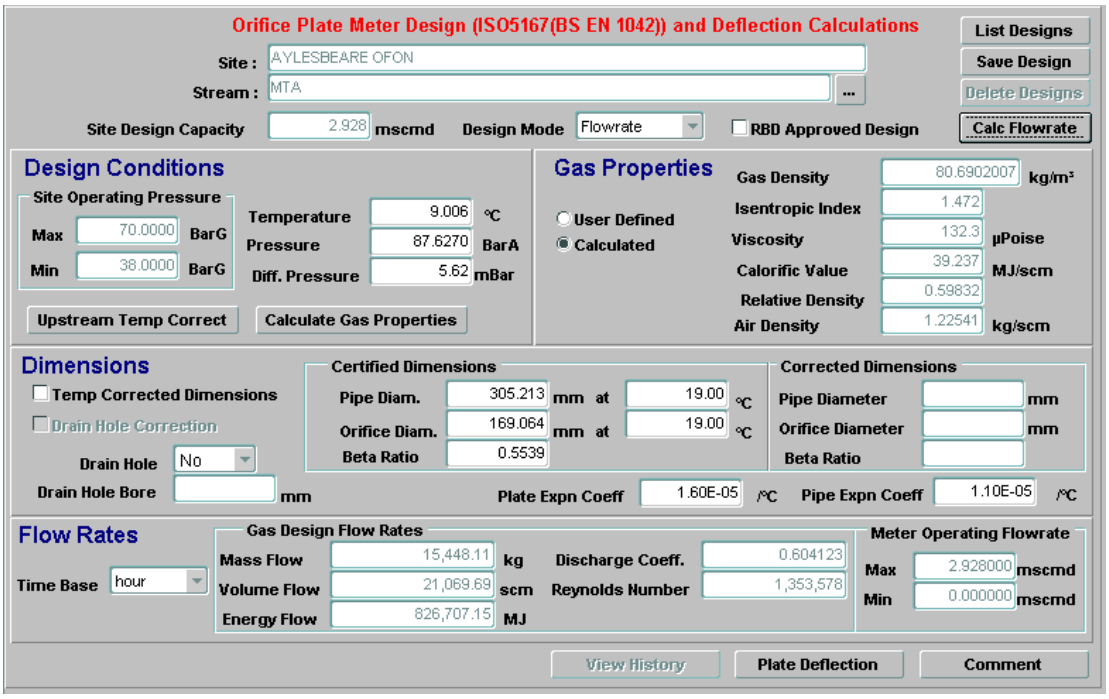


Fig. 1b - HPMIS screen shot for flow calculation using calculated average pressure value (23:12).



4. RECOMMENDATIONS AND LEARNING

HPMIS (RBD data) should be monitored to identify any such future errors. Should the error re-occur an assessment of the transmitter may be required to ensure its integrity.

REFERENCES

ISO 5167

HPMIS database

VERSION HISTORY

Version	*Changes*	*Author*	*Date*
Rev0	*First issue*	*S Western*	*18/04/2011*