

MEASUREMENT ERROR REPORT**FINAL**

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

SITE NAME	LANGHOLM
LDZ	SCOTLAND
START DATE (actual)	7/11/05
LAST GOOD DATE	
END DATE	2/12/08
SIZE OF ERROR (No reconciliation required if under 0.1%)	0.86 % OVER REGISTRATION
ESTIMATE – Y/N?	N
ROOT CAUSE	INCORRECT K-FACTORS
ANALYSIS	APPENDIX A
METER TYPE	TURBINE
AUTHOR	T Roberts
CHECKED BY	B PURL

2. BACKGROUND

Gas is supplied to part of the Scotland network at Langholm Tracker Offtake, which employs a turbine meter to measure the volumetric flow rate in accordance with BS9951.

Turbine meter serial number M00100N01605Q6 was installed 7/11/05 and OMNI k-factors entered from an edited configuration listing. Calculated linearized k-factors and a meter calibration certificate for both low and high pressures were also available as part of a work pack provided for the installation of the meter. During a metering audit 4-5/11/08 it was determined that the OMNI k-factors in use were incorrect. Revised values were calculated and entered on 2/12/08. The period 9/5/06 to 24/10/06 inclusive was excluded from this report as during this period the correct k-factors had been in use.

3. ERROR QUANTIFICATION AND IMPACT

The error would have had a minor affect on odourisation.

Start and finish dates for the error can be demonstrated by reference to HPMIS records.

Applied and Corrected k-factor values have been used to determine the errors for each 4 minute data set. These errors have been used to calculate average daily errors which in turn have been applied to HPMIS DVOL's and tabulated in appendix A (spreadsheet available on request).

4. CAUSES

Conflicting information for OMNI k-factors existed on site. While the data necessary to calculate HP linearised k-factors was available in the calibration certificate and had been calculated correctly in the form of a spreadsheet, the entered k-factors were derived from an edited copy of the OMNI configuration which had used the LP calibration data. This mistake had been corrected for a period in 2006 but the original error was then reinstated.

5. RECOMMENDATIONS AND LEARNING

Provide a master OMNI configuration document containing references to current data sources. Following verification, data sources should be maintained as unambiguous single sources with out of date or incorrect data being removed to avoid confusion.

REFERENCES

HPMIS records

Metco audit report 1684A/08

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>3/2/09</i>
<i>Rev 1</i>	<i>Final</i>	<i>T Roberts</i>	<i>12/2/09</i>

DISTRIBUTION

NG UKT Data assurance and Quality
 SGN S Skipp
 SGN J Martin
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Appendix A

Gas Day	Records	Volume scm	av k-factor error %	Corr factor	Corr vol scm
07-Nov-05	218	3869	0.859611	0.991477	3836
08-Nov-05	328	6347	0.859611	0.991477	6293
09-Nov-05	328	6645	0.859611	0.991477	6588
10-Nov-05	328	5699	0.859611	0.991477	5650
11-Nov-05	328	5960	0.859611	0.991477	5909
12-Nov-05	329	6271	0.859611	0.991477	6218
13-Nov-05	328	7592	0.859611	0.991477	7527
14-Nov-05	328	6798	0.859611	0.991477	6740
15-Nov-05	328	6383	0.859611	0.991477	6329
16-Nov-05	328	7971	0.859611	0.991477	7903
17-Nov-05	328	9888	0.859611	0.991477	9804
18-Nov-05	328	10816	0.859520	0.991478	10724
19-Nov-05	328	10798	0.859611	0.991477	10706
20-Nov-05	328	9885	0.859611	0.991477	9801
21-Nov-05	328	9708	0.859363	0.991480	9625
22-Nov-05	328	10086	0.859363	0.991480	10000
23-Nov-05	328	9637	0.859611	0.991477	9555
24-Nov-05	328	9563	0.859611	0.991477	9481
25-Nov-05	328	10040	0.859611	0.991477	9954
26-Nov-05	329	9262	0.859611	0.991477	9183
27-Nov-05	328	9269	0.859611	0.991477	9190
28-Nov-05	328	10038	0.859611	0.991477	9952
29-Nov-05	329	10642	0.858704	0.991486	10551
30-Nov-05	328	9810	0.859611	0.991477	9726
01-Dec-05	328	8183	0.859611	0.991477	8113
02-Dec-05	328	8041	0.859611	0.991477	7972
03-Dec-05	328	7397	0.859611	0.991477	7334
04-Dec-05	328	7454	0.859611	0.991477	7390
05-Dec-05	327	8293	0.859611	0.991477	8222
06-Dec-05	328	8769	0.859611	0.991477	8694
07-Dec-05	328	10105	0.859611	0.991477	10019
08-Dec-05	328	9808	0.859454	0.991479	9724
09-Dec-05	328	9533	0.859611	0.991477	9452
10-Dec-05	328	7577	0.859611	0.991477	7512
11-Dec-05	328	7086	0.859611	0.991477	7026
12-Dec-05	328	9479	0.859587	0.991477	9398
13-Dec-05	328	9412	0.859570	0.991478	9332
14-Dec-05	328	9349	0.859611	0.991477	9269
15-Dec-05	328	8050	0.859611	0.991477	7981
16-Dec-05	328	8770	0.859611	0.991477	8695
17-Dec-05	329	10773	0.859611	0.991477	10681
18-Dec-05	329	11036	0.859611	0.991477	10942
19-Dec-05	328	10052	0.859611	0.991477	9966
20-Dec-05	328	8992	0.859611	0.991477	8915
21-Dec-05	328	8327	0.859611	0.991477	8256
22-Dec-05	328	8080	0.859611	0.991477	8011
23-Dec-05	328	7182	0.859611	0.991477	7121
24-Dec-05	328	8769	0.859611	0.991477	8694
25-Dec-05	328	9991	0.859611	0.991477	9906
26-Dec-05	328	10053	0.859611	0.991477	9967
27-Dec-05	328	10509	0.859611	0.991477	10419
28-Dec-05	328	11780	0.859164	0.991482	11680
29-Dec-05	328	12336	0.857915	0.991494	12231

30-Dec-05	328	10932	0.859611	0.991477	10839
31-Dec-05	328	9358	0.859611	0.991477	9278
01-Jan-06	328	9596	0.859611	0.991477	9514
02-Jan-06	328	9889	0.859611	0.991477	9805
03-Jan-06	328	9220	0.859611	0.991477	9141
04-Jan-06	328	10663	0.859611	0.991477	10572
05-Jan-06	328	9974	0.859611	0.991477	9889
06-Jan-06	329	10072	0.859611	0.991477	9986
07-Jan-06	328	9553	0.859611	0.991477	9472
08-Jan-06	329	9732	0.859611	0.991477	9649
09-Jan-06	327	9949	0.859611	0.991477	9864
10-Jan-06	328	8440	0.859611	0.991477	8368
11-Jan-06	328	8361	0.859611	0.991477	8290
12-Jan-06	328	8669	0.859611	0.991477	8595
13-Jan-06	328	8142	0.859611	0.991477	8073
14-Jan-06	328	7831	0.859611	0.991477	7764
15-Jan-06	328	8612	0.859611	0.991477	8539
16-Jan-06	328	8229	0.859611	0.991477	8159
17-Jan-06	329	8440	0.859611	0.991477	8368
18-Jan-06	328	7789	0.859611	0.991477	7723
19-Jan-06	328	7269	0.859611	0.991477	7207
20-Jan-06	328	8410	0.859611	0.991477	8338
21-Jan-06	328	8473	0.859611	0.991477	8401
22-Jan-06	328	8528	0.859611	0.991477	8455
23-Jan-06	328	9279	0.859611	0.991477	9200
24-Jan-06	328	9205	0.859611	0.991477	9127
25-Jan-06	328	8932	0.859611	0.991477	8856
26-Jan-06	328	9412	0.859611	0.991477	9332
27-Jan-06	328	9406	0.859611	0.991477	9326
28-Jan-06	328	9313	0.859611	0.991477	9234
29-Jan-06	329	10716	0.859611	0.991477	10625
30-Jan-06	328	12400	0.844282	0.991628	12296
31-Jan-06	328	12212	0.855518	0.991517	12108
01-Feb-06	328	10555	0.859611	0.991477	10465
02-Feb-06	328	9653	0.859611	0.991477	9571
03-Feb-06	328	9199	0.859611	0.991477	9121
04-Feb-06	329	8725	0.859611	0.991477	8651
05-Feb-06	328	8399	0.859611	0.991477	8327
06-Feb-06	328	7990	0.859611	0.991477	7922
07-Feb-06	328	8181	0.859611	0.991477	8111
08-Feb-06	324	8379	0.858679	0.991486	8308
09-Feb-06	328	9737	0.859611	0.991477	9654
10-Feb-06	328	10098	0.859611	0.991477	10012
11-Feb-06	328	10207	0.859611	0.991477	10120
12-Feb-06	328	8355	0.859611	0.991477	8284
13-Feb-06	328	7906	0.859611	0.991477	7839
14-Feb-06	328	7787	0.859611	0.991477	7721
15-Feb-06	328	7650	0.859611	0.991477	7585
16-Feb-06	328	8227	0.859611	0.991477	8157
17-Feb-06	328	7904	0.859611	0.991477	7837
18-Feb-06	328	8622	0.859611	0.991477	8549
19-Feb-06	328	8817	0.859611	0.991477	8742
20-Feb-06	328	8825	0.859611	0.991477	8750
21-Feb-06	328	9147	0.859611	0.991477	9069
22-Feb-06	328	9345	0.859611	0.991477	9265
23-Feb-06	328	9023	0.859611	0.991477	8946

24-Feb-06	332	9138	0.859611	0.991477	9060
25-Feb-06	329	8948	0.859611	0.991477	8872
26-Feb-06	328	8953	0.859611	0.991477	8877
27-Feb-06	328	9215	0.859611	0.991477	9136
28-Feb-06	328	9956	0.859611	0.991477	9871
01-Mar-06	328	10312	0.859520	0.991478	10224
02-Mar-06	328	10234	0.859446	0.991479	10147
03-Mar-06	329	10976	0.858456	0.991489	10883
04-Mar-06	328	10620	0.859587	0.991477	10529
05-Mar-06	328	9830	0.859611	0.991477	9746
06-Mar-06	328	9536	0.858784	0.991485	9455
07-Mar-06	328	9534	0.859611	0.991477	9453
08-Mar-06	328	8371	0.859611	0.991477	8300
09-Mar-06	328	7904	0.859611	0.991477	7837
10-Mar-06	328	8310	0.859611	0.991477	8239
11-Mar-06	328	9262	0.859611	0.991477	9183
12-Mar-06	328	11006	0.859611	0.991477	10912
13-Mar-06	328	10845	0.859611	0.991477	10753
14-Mar-06	328	9996	0.859553	0.991478	9911
15-Mar-06	328	9632	0.859611	0.991477	9550
16-Mar-06	328	9667	0.859611	0.991477	9585
17-Mar-06	328	9384	0.859611	0.991477	9304
18-Mar-06	328	9032	0.859611	0.991477	8955
19-Mar-06	328	8100	0.859611	0.991477	8031
20-Mar-06	328	8654	0.859611	0.991477	8580
21-Mar-06	328	9153	0.859611	0.991477	9075
22-Mar-06	328	9193	0.859611	0.991477	9115
23-Mar-06	328	8476	0.859611	0.991477	8404
24-Mar-06	328	9038	0.859611	0.991477	8961
25-Mar-06	314	6794	0.859611	0.991477	6736
26-Mar-06	328	6398	0.859611	0.991477	6343
27-Mar-06	325	5969	0.859611	0.991477	5918
28-Mar-06	328	7225	0.859611	0.991477	7163
29-Mar-06	328	6905	0.859611	0.991477	6846
30-Mar-06	328	6998	0.859611	0.991477	6938
31-Mar-06	328	6361	0.859611	0.991477	6307
01-Apr-06	328	5871	0.859611	0.991477	5821
02-Apr-06	328	6598	0.859611	0.991477	6542
03-Apr-06	328	7112	0.859611	0.991477	7051
04-Apr-06	328	7318	0.859611	0.991477	7256
05-Apr-06	328	7532	0.859611	0.991477	7468
06-Apr-06	328	6760	0.859611	0.991477	6702
07-Apr-06	328	7379	0.859611	0.991477	7316
08-Apr-06	328	7586	0.859611	0.991477	7521
09-Apr-06	328	7451	0.859611	0.991477	7387
10-Apr-06	328	7365	0.859611	0.991477	7302
11-Apr-06	328	6504	0.859611	0.991477	6449
12-Apr-06	319	6892	0.859611	0.991477	6833
13-Apr-06	328	6539	0.859611	0.991477	6483
14-Apr-06	328	6011	0.859611	0.991477	5960
15-Apr-06	328	5063	0.859611	0.991477	5020
16-Apr-06	328	5032	0.859611	0.991477	4989
17-Apr-06	329	5938	0.859611	0.991477	5887
18-Apr-06	328	5898	0.859611	0.991477	5848
19-Apr-06	328	5349	0.859611	0.991477	5303
20-Apr-06	327	5385	0.859611	0.991477	5339

21-Apr-06	103	2066	0.859611	0.991477	2048
02-Nov-06	211	5019	0.855545	0.991517	4976
03-Nov-06	328	8164	0.859611	0.991477	8094
04-Nov-06	328	6541	0.859611	0.991477	6485
05-Nov-06	326	5856	0.859611	0.991477	5806
06-Nov-06	299	5451	0.859611	0.991477	5405
07-Nov-06	317	5195	0.859611	0.991477	5151
08-Nov-06	329	5645	0.859611	0.991477	5597
09-Nov-06	331	7155	0.859611	0.991477	7094
10-Nov-06	334	7195	0.859611	0.991477	7134
11-Nov-06	334	7233	0.859611	0.991477	7171
12-Nov-06	334	6912	0.859611	0.991477	6853
13-Nov-06	334	6262	0.859611	0.991477	6209
14-Nov-06	334	6320	0.859611	0.991477	6266
15-Nov-06	334	6269	0.859611	0.991477	6216
16-Nov-06	334	6704	0.859611	0.991477	6647
17-Nov-06	329	7322	0.859611	0.991477	7260
18-Nov-06	328	7881	0.859611	0.991477	7814
19-Nov-06	328	8004	0.859611	0.991477	7936
20-Nov-06	328	7194	0.859611	0.991477	7133
21-Nov-06	328	7592	0.859611	0.991477	7527
22-Nov-06	328	7811	0.859611	0.991477	7744
23-Nov-06	328	7347	0.859611	0.991477	7284
24-Nov-06	328	7099	0.859611	0.991477	7038
25-Nov-06	328	6734	0.859611	0.991477	6677
26-Nov-06	328	6631	0.859611	0.991477	6574
27-Nov-06	328	6305	0.859611	0.991477	6251
28-Nov-06	328	6346	0.859611	0.991477	6292
29-Nov-06	328	6315	0.859611	0.991477	6261
30-Nov-06	328	6237	0.859611	0.991477	6184
01-Dec-06	328	6268	0.859611	0.991477	6215
02-Dec-06	328	6781	0.859611	0.991477	6723
03-Dec-06	328	7408	0.859611	0.991477	7345
04-Dec-06	328	6912	0.859611	0.991477	6853
05-Dec-06	328	6535	0.859611	0.991477	6479
06-Dec-06	328	7250	0.859611	0.991477	7188
07-Dec-06	328	7185	0.859611	0.991477	7124
08-Dec-06	328	7789	0.859611	0.991477	7723
09-Dec-06	328	9340	0.859611	0.991477	9260
10-Dec-06	328	8345	0.859611	0.991477	8274
11-Dec-06	328	7505	0.859611	0.991477	7441
12-Dec-06	328	7838	0.859611	0.991477	7771
13-Dec-06	328	7403	0.859611	0.991477	7340
14-Dec-06	328	6907	0.859611	0.991477	6848
15-Dec-06	328	7487	0.859611	0.991477	7423
16-Dec-06	328	8273	0.859611	0.991477	8202
17-Dec-06	328	8848	0.859611	0.991477	8773
18-Dec-06	328	9357	0.859611	0.991477	9277
19-Dec-06	328	10487	0.859611	0.991477	10398
20-Dec-06	328	9586	0.859611	0.991477	9504
21-Dec-06	328	8802	0.859611	0.991477	8727
22-Dec-06	328	7865	0.859611	0.991477	7798
23-Dec-06	328	7954	0.859611	0.991477	7886
24-Dec-06	328	10239	0.859611	0.991477	10152
25-Dec-06	328	10243	0.859611	0.991477	10156
26-Dec-06	328	10052	0.859611	0.991477	9966

27-Dec-06	326	9947	0.859611	0.991477	9862
28-Dec-06	328	9667	0.859611	0.991477	9585
29-Dec-06	328	8135	0.859611	0.991477	8066
30-Dec-06	328	7783	0.859611	0.991477	7717
31-Dec-06	328	8467	0.859611	0.991477	8395
01-Jan-07	328	8527	0.859611	0.991477	8454
02-Jan-07	328	8454	0.859611	0.991477	8382
03-Jan-07	328	7648	0.859611	0.991477	7583
04-Jan-07	328	7484	0.859611	0.991477	7420
05-Jan-07	328	7288	0.859611	0.991477	7226
06-Jan-07	328	7186	0.859611	0.991477	7125
07-Jan-07	328	7099	0.859611	0.991477	7038
08-Jan-07	328	7436	0.859611	0.991477	7373
09-Jan-07	328	6985	0.859611	0.991477	6925
10-Jan-07	328	8222	0.859611	0.991477	8152
11-Jan-07	328	8564	0.859611	0.991477	8491
12-Jan-07	328	7849	0.859611	0.991477	7782
13-Jan-07	328	8038	0.859611	0.991477	7969
14-Jan-07	328	8244	0.859611	0.991477	8174
15-Jan-07	328	8299	0.859611	0.991477	8228
16-Jan-07	328	8920	0.859611	0.991477	8844
17-Jan-07	328	8870	0.859595	0.991477	8794
18-Jan-07	328	8950	0.859611	0.991477	8874
19-Jan-07	328	8463	0.859611	0.991477	8391
20-Jan-07	328	8516	0.859611	0.991477	8443
21-Jan-07	328	9189	0.859611	0.991477	9111
22-Jan-07	328	10077	0.859611	0.991477	9991
23-Jan-07	325	10374	0.856372	0.991509	10286
24-Jan-07	328	10251	0.859611	0.991477	10164
25-Jan-07	328	10333	0.857865	0.991494	10245
26-Jan-07	328	9054	0.859611	0.991477	8977
27-Jan-07	328	9026	0.859611	0.991477	8949
28-Jan-07	328	7956	0.859611	0.991477	7888
29-Jan-07	328	7414	0.859611	0.991477	7351
30-Jan-07	328	7966	0.859611	0.991477	7898
31-Jan-07	328	7226	0.859611	0.991477	7164
01-Feb-07	328	7016	0.859611	0.991477	6956
02-Feb-07	328	7482	0.859611	0.991477	7418
03-Feb-07	328	9589	0.859611	0.991477	9507
04-Feb-07	328	8709	0.859611	0.991477	8635
05-Feb-07	329	9697	0.859611	0.991477	9614
06-Feb-07	328	11018	0.859164	0.991482	10924
07-Feb-07	328	11194	0.858469	0.991488	11099
08-Feb-07	328	11061	0.859603	0.991477	10967
09-Feb-07	328	11065	0.859603	0.991477	10971
10-Feb-07	328	10584	0.859611	0.991477	10494
11-Feb-07	328	8991	0.859611	0.991477	8914
12-Feb-07	328	8339	0.859611	0.991477	8268
13-Feb-07	329	8199	0.859611	0.991477	8129
14-Feb-07	328	7942	0.859611	0.991477	7874
15-Feb-07	328	8092	0.859611	0.991477	8023
16-Feb-07	328	7506	0.859611	0.991477	7442
17-Feb-07	328	7756	0.859611	0.991477	7690
18-Feb-07	328	8237	0.859611	0.991477	8167
19-Feb-07	328	7827	0.859611	0.991477	7760
20-Feb-07	328	7020	0.859611	0.991477	6960

21-Feb-07	328	7439	0.859611	0.991477	7376
22-Feb-07	329	7121	0.859611	0.991477	7060
23-Feb-07	327	6502	0.859611	0.991477	6447
24-Feb-07	328	6548	0.859611	0.991477	6492
25-Feb-07	328	6689	0.859611	0.991477	6632
26-Feb-07	328	7275	0.859611	0.991477	7213
27-Feb-07	328	7653	0.859611	0.991477	7588
28-Feb-07	329	7805	0.859611	0.991477	7738
01-Mar-07	328	7864	0.859611	0.991477	7797
02-Mar-07	328	8412	0.859611	0.991477	8340
03-Mar-07	328	7284	0.859611	0.991477	7222
04-Mar-07	329	7926	0.859611	0.991477	7858
05-Mar-07	328	7869	0.859611	0.991477	7802
06-Mar-07	328	7010	0.859611	0.991477	6950
07-Mar-07	328	6502	0.859611	0.991477	6447
08-Mar-07	328	7379	0.859611	0.991477	7316
09-Mar-07	328	7615	0.859611	0.991477	7550
10-Mar-07	328	7449	0.859611	0.991477	7386
11-Mar-07	328	7406	0.859611	0.991477	7343
12-Mar-07	328	6907	0.859611	0.991477	6848
13-Mar-07	328	7237	0.859611	0.991477	7175
14-Mar-07	328	7022	0.859611	0.991477	6962
15-Mar-07	329	7410	0.859611	0.991477	7347
16-Mar-07	328	7922	0.859611	0.991477	7854
17-Mar-07	328	7135	0.859611	0.991477	7074
18-Mar-07	329	8252	0.859611	0.991477	8182
19-Mar-07	328	8790	0.859611	0.991477	8715
20-Mar-07	328	9239	0.859611	0.991477	9160
21-Mar-07	328	8654	0.859611	0.991477	8580
22-Mar-07	328	7783	0.859611	0.991477	7717
23-Mar-07	328	7171	0.859611	0.991477	7110
24-Mar-07	314	6322	0.859611	0.991477	6268
25-Mar-07	328	5744	0.859611	0.991477	5695
26-Mar-07	328	5343	0.859611	0.991477	5297
27-Mar-07	328	5175	0.859611	0.991477	5131
28-Mar-07	313	5309	0.859611	0.991477	5264
29-Mar-07	328	6686	0.859611	0.991477	6629
30-Mar-07	328	6171	0.859611	0.991477	6118
31-Mar-07	328	5707	0.859611	0.991477	5658
01-Apr-07	328	5280	0.859611	0.991477	5235
02-Apr-07	328	5466	0.859611	0.991477	5419
03-Apr-07	328	5819	0.859611	0.991477	5769
04-Apr-07	329	5022	0.859611	0.991477	4979
05-Apr-07	328	4878	0.859611	0.991477	4836
06-Apr-07	328	5479	0.859611	0.991477	5432
07-Apr-07	328	4909	0.859611	0.991477	4867
08-Apr-07	312	4526	0.859611	0.991477	4487
09-Apr-07	317	4579	0.859611	0.991477	4540
10-Apr-07	313	4635	0.859611	0.991477	4595
11-Apr-07	326	4311	0.859611	0.991477	4274
12-Apr-07	279	3614	0.859611	0.991477	3583
13-Apr-07	282	3218	0.859611	0.991477	3191
14-Apr-07	244	2270	0.859611	0.991477	2251
15-Apr-07	257	2089	0.859611	0.991477	2071
16-Apr-07	287	2469	0.859611	0.991477	2448
17-Apr-07	324	3645	0.859611	0.991477	3614

18-Apr-07	308	4293	0.859611	0.991477	4256
19-Apr-07	327	4822	0.859611	0.991477	4781
20-Apr-07	306	5183	0.859611	0.991477	5139
21-Apr-07	283	4151	0.859611	0.991477	4116
22-Apr-07	289	4577	0.859611	0.991477	4538
23-Apr-07	278	4328	0.859611	0.991477	4291
24-Apr-07	265	3426	0.859611	0.991477	3397
25-Apr-07	287	3482	0.859611	0.991477	3452
26-Apr-07	271	3334	0.859611	0.991477	3306
27-Apr-07	275	3302	0.859611	0.991477	3274
28-Apr-07	265	2765	0.859611	0.991477	2741
29-Apr-07	272	2754	0.859611	0.991477	2731
30-Apr-07	271	2679	0.859611	0.991477	2656
01-May-07	245	2294	0.859611	0.991477	2274
02-May-07	232	1944	0.859611	0.991477	1927
03-May-07	228	1818	0.859611	0.991477	1803
04-May-07	261	2477	0.859611	0.991477	2456
05-May-07	261	2894	0.859611	0.991477	2869
06-May-07	268	3027	0.859611	0.991477	3001
07-May-07	253	3290	0.859611	0.991477	3262
08-May-07	255	3108	0.859611	0.991477	3082
09-May-07	242	2925	0.859611	0.991477	2900
10-May-07	260	3463	0.859611	0.991477	3433
11-May-07	276	4218	0.859611	0.991477	4182
12-May-07	259	3846	0.859611	0.991477	3813
13-May-07	286	4161	0.859611	0.991477	4126
14-May-07	273	3264	0.859611	0.991477	3236
15-May-07	260	3102	0.859611	0.991477	3076
16-May-07	261	3786	0.859611	0.991477	3754
17-May-07	259	3187	0.859611	0.991477	3160
18-May-07	276	3358	0.859611	0.991477	3329
19-May-07	270	3605	0.859611	0.991477	3574
20-May-07	268	2838	0.859611	0.991477	2814
21-May-07	260	2568	0.859611	0.991477	2546
22-May-07	253	2366	0.859611	0.991477	2346
23-May-07	240	2256	0.859611	0.991477	2237
24-May-07	243	2293	0.859611	0.991477	2273
25-May-07	255	2617	0.859611	0.991477	2595
26-May-07	259	3185	0.859611	0.991477	3158
27-May-07	294	3477	0.859611	0.991477	3447
28-May-07	297	3922	0.859611	0.991477	3889
29-May-07	268	3546	0.859611	0.991477	3516
30-May-07	249	3035	0.859611	0.991477	3009
31-May-07	243	2165	0.859611	0.991477	2147
01-Jun-07	237	1798	0.859611	0.991477	1783
02-Jun-07	221	1374	0.859611	0.991477	1362
03-Jun-07	218	1242	0.859611	0.991477	1231
04-Jun-07	201	1189	0.859611	0.991477	1179
05-Jun-07	191	1214	0.859611	0.991477	1204
06-Jun-07	202	1326	0.859611	0.991477	1315
07-Jun-07	209	1403	0.859611	0.991477	1391
08-Jun-07	210	1203	0.859611	0.991477	1193
09-Jun-07	178	874	0.859611	0.991477	867
10-Jun-07	185	910	0.859611	0.991477	902
11-Jun-07	150	774	0.859611	0.991477	767
12-Jun-07	156	867	0.859611	0.991477	860

13-Jun-07	236	1776	0.859611	0.991477	1761
14-Jun-07	240	2779	0.859611	0.991477	2755
15-Jun-07	246	3482	0.859611	0.991477	3452
16-Jun-07	238	2793	0.859611	0.991477	2769
17-Jun-07	242	2016	0.859611	0.991477	1999
18-Jun-07	202	1471	0.859611	0.991477	1458
19-Jun-07	173	1332	0.859611	0.991477	1321
20-Jun-07	172	1194	0.859611	0.991477	1184
21-Jun-07	149	959	0.859611	0.991477	951
22-Jun-07	211	1209	0.859611	0.991477	1199
23-Jun-07	226	1260	0.859611	0.991477	1249
24-Jun-07	225	1617	0.859611	0.991477	1603
25-Jun-07	242	2029	0.859611	0.991477	2012
26-Jun-07	236	1994	0.859611	0.991477	1977
27-Jun-07	46	493	0.859611	0.991477	489
16-Oct-07	264	2920	0.858943	0.991484	2895
17-Oct-07	330	4966	0.859611	0.991477	4924
18-Oct-07	328	5916	0.859611	0.991477	5866
19-Oct-07	324	5753	0.859611	0.991477	5704
20-Oct-07	329	5143	0.859611	0.991477	5099
21-Oct-07	321	5748	0.859611	0.991477	5699
22-Oct-07	328	5910	0.859611	0.991477	5860
23-Oct-07	328	6753	0.859611	0.991477	6695
24-Oct-07	328	6723	0.859611	0.991477	6666
25-Oct-07	328	5821	0.859611	0.991477	5771
26-Oct-07	327	5750	0.859611	0.991477	5701
27-Oct-07	295	5195	0.859611	0.991477	5151
28-Oct-07	328	4621	0.859611	0.991477	4582
29-Oct-07	328	5793	0.859611	0.991477	5744
30-Oct-07	327	5851	0.859611	0.991477	5801
31-Oct-07	278	4541	0.859611	0.991477	4502
01-Nov-07	278	4217	0.859611	0.991477	4181
02-Nov-07	262	3644	0.859611	0.991477	3613
03-Nov-07	326	4595	0.859611	0.991477	4556
04-Nov-07	328	6183	0.859611	0.991477	6130
05-Nov-07	328	5919	0.859611	0.991477	5869
06-Nov-07	328	6142	0.859611	0.991477	6090
07-Nov-07	327	5456	0.859611	0.991477	5409
08-Nov-07	329	6621	0.859611	0.991477	6565
09-Nov-07	328	6952	0.859611	0.991477	6893
10-Nov-07	329	5462	0.859611	0.991477	5415
11-Nov-07	265	6730	0.859611	0.991477	6673
12-Nov-07	300	8122	0.858041	0.991493	8053
13-Nov-07	328	7489	0.859611	0.991477	7425
14-Nov-07	328	7567	0.859611	0.991477	7503
15-Nov-07	328	8503	0.858560	0.991487	8431
16-Nov-07	323	7754	0.859611	0.991477	7688
17-Nov-07	328	7034	0.859611	0.991477	6974
18-Nov-07	328	7497	0.859611	0.991477	7433
19-Nov-07	328	7737	0.859611	0.991477	7671
20-Nov-07	328	7243	0.859611	0.991477	7181
21-Nov-07	328	6577	0.859611	0.991477	6521
22-Nov-07	328	8216	0.859611	0.991477	8146
23-Nov-07	328	9369	0.859123	0.991482	9289
24-Nov-07	328	8345	0.859611	0.991477	8274
25-Nov-07	328	8221	0.859611	0.991477	8151

26-Nov-07	328	8271	0.859611	0.991477	8201
27-Nov-07	328	7364	0.859611	0.991477	7301
28-Nov-07	328	6909	0.859611	0.991477	6850
29-Nov-07	328	7078	0.859611	0.991477	7018
30-Nov-07	328	6439	0.859611	0.991477	6384
01-Dec-07	328	7403	0.859611	0.991477	7340
02-Dec-07	328	7486	0.859611	0.991477	7422
03-Dec-07	328	8752	0.859553	0.991478	8677
04-Dec-07	328	7719	0.859611	0.991477	7653
05-Dec-07	328	6690	0.859611	0.991477	6633
06-Dec-07	328	6671	0.859611	0.991477	6614
07-Dec-07	328	7874	0.859611	0.991477	7807
08-Dec-07	328	8479	0.859611	0.991477	8407
09-Dec-07	328	8644	0.859611	0.991477	8570
10-Dec-07	328	9326	0.859611	0.991477	9247
11-Dec-07	328	9972	0.859611	0.991477	9887
12-Dec-07	328	8908	0.859611	0.991477	8832
13-Dec-07	328	8904	0.859611	0.991477	8828
14-Dec-07	328	9437	0.859611	0.991477	9357
15-Dec-07	328	9984	0.859611	0.991477	9899
16-Dec-07	328	11463	0.858295	0.991490	11365
17-Dec-07	328	11404	0.845945	0.991612	11308
18-Dec-07	328	10069	0.859032	0.991483	9983
19-Dec-07	328	11315	0.845755	0.991613	11220
20-Dec-07	328	11938	0.843992	0.991631	11838
21-Dec-07	328	13058	0.836592	0.991703	12950
22-Dec-07	328	12337	0.847113	0.991600	12233
23-Dec-07	328	10813	0.859496	0.991478	10721
24-Dec-07	328	9111	0.859611	0.991477	9033
25-Dec-07	328	9302	0.859611	0.991477	9223
26-Dec-07	328	8614	0.859611	0.991477	8541
27-Dec-07	328	7466	0.859611	0.991477	7402
28-Dec-07	328	7128	0.859611	0.991477	7067
29-Dec-07	328	8445	0.859611	0.991477	8373
30-Dec-07	328	8551	0.859611	0.991477	8478
31-Dec-07	328	8226	0.859611	0.991477	8156
01-Jan-08	328	7080	0.859611	0.991477	7020
02-Jan-08	328	8334	0.859611	0.991477	8263
03-Jan-08	328	10182	0.859587	0.991477	10095
04-Jan-08	227	7950	0.857980	0.991493	7882
05-Jan-08	35	8550	0.859611	0.991477	8477
06-Jan-08	270	8890	0.859611	0.991477	8814
07-Jan-08	328	9336	0.858660	0.991487	9257
08-Jan-08	328	9304	0.859611	0.991477	9225
09-Jan-08	328	9382	0.858047	0.991493	9302
10-Jan-08	328	8981	0.859520	0.991478	8904
11-Jan-08	328	9567	0.858527	0.991488	9486
12-Jan-08	328	10242	0.859611	0.991477	10155
13-Jan-08	328	8289	0.859611	0.991477	8218
14-Jan-08	328	8069	0.859611	0.991477	8000
15-Jan-08	322	8141	0.855892	0.991514	8072
16-Jan-08	328	8737	0.859611	0.991477	8663
17-Jan-08	328	8823	0.859603	0.991477	8748
18-Jan-08	328	8132	0.859611	0.991477	8063
19-Jan-08	328	7879	0.859611	0.991477	7812
20-Jan-08	328	7985	0.859611	0.991477	7917

21-Jan-08	328	9608	0.859611	0.991477	9526
22-Jan-08	328	10007	0.857782	0.991495	9922
23-Jan-08	328	8104	0.859611	0.991477	8035
24-Jan-08	328	8959	0.859529	0.991478	8883
25-Jan-08	328	8254	0.859611	0.991477	8184
26-Jan-08	328	7483	0.859611	0.991477	7419
27-Jan-08	328	7211	0.859611	0.991477	7150
28-Jan-08	328	7330	0.859611	0.991477	7268
29-Jan-08	328	7536	0.859611	0.991477	7472
30-Jan-08	328	8826	0.859611	0.991477	8751
31-Jan-08	328	9395	0.859553	0.991478	9315
01-Feb-08	328	10489	0.850962	0.991562	10400
02-Feb-08	328	9943	0.859611	0.991477	9858
03-Feb-08	328	8943	0.859611	0.991477	8867
04-Feb-08	328	8839	0.859446	0.991479	8764
05-Feb-08	328	8877	0.859611	0.991477	8801
06-Feb-08	329	8810	0.858836	0.991485	8735
07-Feb-08	328	8019	0.859611	0.991477	7951
08-Feb-08	328	7486	0.859611	0.991477	7422
09-Feb-08	328	6713	0.859611	0.991477	6656
10-Feb-08	328	6963	0.859611	0.991477	6904
11-Feb-08	328	8167	0.859156	0.991482	8097
12-Feb-08	328	8691	0.859611	0.991477	8617
13-Feb-08	328	8876	0.859611	0.991477	8800
14-Feb-08	329	8771	0.859603	0.991477	8696
15-Feb-08	328	8946	0.859611	0.991477	8870
16-Feb-08	328	9531	0.859471	0.991479	9450
17-Feb-08	328	10297	0.859611	0.991477	10209
18-Feb-08	328	10098	0.857774	0.991495	10012
19-Feb-08	328	10135	0.854827	0.991524	10049
20-Feb-08	328	10362	0.859289	0.991480	10274
21-Feb-08	328	8626	0.859611	0.991477	8552
22-Feb-08	328	8340	0.859611	0.991477	8269
23-Feb-08	328	7699	0.859611	0.991477	7633
24-Feb-08	328	7447	0.859611	0.991477	7384
25-Feb-08	328	8606	0.859611	0.991477	8533
26-Feb-08	329	8381	0.859611	0.991477	8310
27-Feb-08	328	8324	0.857939	0.991494	8253
28-Feb-08	328	8327	0.859611	0.991477	8256
29-Feb-08	328	8436	0.859611	0.991477	8364
01-Mar-08	328	7788	0.859611	0.991477	7722
02-Mar-08	328	7644	0.859611	0.991477	7579
03-Mar-08	328	9034	0.859446	0.991479	8957
04-Mar-08	329	8967	0.857293	0.991500	8891
05-Mar-08	328	8697	0.859537	0.991478	8623
06-Mar-08	328	7556	0.859611	0.991477	7492
07-Mar-08	325	7716	0.859611	0.991477	7650
08-Mar-08	328	7692	0.859611	0.991477	7626
09-Mar-08	328	7709	0.859611	0.991477	7643
10-Mar-08	328	8112	0.859611	0.991477	8043
11-Mar-08	328	7954	0.859611	0.991477	7886
12-Mar-08	328	8383	0.856458	0.991508	8312
13-Mar-08	328	8330	0.859189	0.991481	8259
14-Mar-08	328	7635	0.859611	0.991477	7570
15-Mar-08	328	7698	0.859611	0.991477	7632
16-Mar-08	328	7388	0.859611	0.991477	7325

17-Mar-08	328	8183	0.859611	0.991477	8113
18-Mar-08	328	8085	0.859611	0.991477	8016
19-Mar-08	329	8029	0.859521	0.991478	7961
20-Mar-08	329	7918	0.859611	0.991477	7851
21-Mar-08	322	9688	0.859473	0.991479	9605
22-Mar-08	233	8760	0.859611	0.991477	8685
23-Mar-08	283	8061	0.859611	0.991477	7992
24-Mar-08	324	8791	0.859611	0.991477	8716
25-Mar-08	327	8500	0.859337	0.991480	8428
26-Mar-08	328	8267	0.859611	0.991477	8197
27-Mar-08	287	7460	0.859611	0.991477	7396
28-Mar-08	288	7500	0.859611	0.991477	7436
29-Mar-08	274	7220	0.859611	0.991477	7158
30-Mar-08	328	6718	0.859611	0.991477	6661
31-Mar-08	328	6271	0.859611	0.991477	6218
01-Apr-08	328	6978	0.859611	0.991477	6919
02-Apr-08	327	5880	0.859611	0.991477	5830
03-Apr-08	328	4716	0.859611	0.991477	4676
04-Apr-08	328	5073	0.859611	0.991477	5030
05-Apr-08	328	6555	0.859611	0.991477	6499
06-Apr-08	328	8133	0.859611	0.991477	8064
07-Apr-08	328	7570	0.859611	0.991477	7505
08-Apr-08	328	6937	0.859611	0.991477	6878
09-Apr-08	328	6750	0.859611	0.991477	6692
10-Apr-08	328	6671	0.859611	0.991477	6614
11-Apr-08	328	6891	0.859611	0.991477	6832
12-Apr-08	328	7094	0.859611	0.991477	7034
13-Apr-08	328	6673	0.859611	0.991477	6616
14-Apr-08	328	6738	0.859429	0.991479	6681
15-Apr-08	328	7394	0.859611	0.991477	7331
16-Apr-08	328	7227	0.859611	0.991477	7165
17-Apr-08	328	6939	0.859611	0.991477	6880
18-Apr-08	328	7044	0.859611	0.991477	6984
19-Apr-08	328	6341	0.859611	0.991477	6287
20-Apr-08	328	6449	0.859611	0.991477	6394
21-Apr-08	328	5928	0.859611	0.991477	5877
22-Apr-08	328	4880	0.859611	0.991477	4838
23-Apr-08	328	5354	0.859611	0.991477	5308
24-Apr-08	328	5277	0.859611	0.991477	5232
25-Apr-08	328	5203	0.859611	0.991477	5159
26-Apr-08	328	5327	0.859611	0.991477	5282
27-Apr-08	326	4240	0.859611	0.991477	4204
28-Apr-08	328	4719	0.859611	0.991477	4679
29-Apr-08	328	4761	0.859611	0.991477	4720
30-Apr-08	328	5039	0.859611	0.991477	4996
01-May-08	328	4985	0.859611	0.991477	4943
02-May-08	328	4188	0.859611	0.991477	4152
03-May-08	297	3434	0.859611	0.991477	3405
04-May-08	328	3495	0.859611	0.991477	3465
05-May-08	282	2607	0.859611	0.991477	2585
06-May-08	255	1954	0.859611	0.991477	1937
07-May-08	252	1646	0.859611	0.991477	1632
08-May-08	235	1460	0.859611	0.991477	1448
09-May-08	231	1405	0.859611	0.991477	1393
10-May-08	214	1099	0.859611	0.991477	1090
11-May-08	226	1158	0.859611	0.991477	1148

12-May-08	237	1345	0.859611	0.991477	1334
13-May-08	249	1445	0.859611	0.991477	1433
14-May-08	255	1587	0.859611	0.991477	1573
15-May-08	51	526	0.859611	0.991477	522
23-May-08	2	20	0.859611	0.991477	20
03-Oct-08	201	2990	0.851547	0.991556	2965
04-Oct-08	328	5538	0.859611	0.991477	5491
05-Oct-08	328	4611	0.859611	0.991477	4572
06-Oct-08	301	4786	0.859611	0.991477	4745
07-Oct-08	293	3922	0.859611	0.991477	3889
08-Oct-08	299	3756	0.859611	0.991477	3724
09-Oct-08	276	3985	0.859611	0.991477	3951
10-Oct-08	265	3712	0.859611	0.991477	3680
11-Oct-08	286	3114	0.859611	0.991477	3087
12-Oct-08	281	3148	0.859611	0.991477	3121
13-Oct-08	321	3421	0.859611	0.991477	3392
14-Oct-08	327	4198	0.859611	0.991477	4162
15-Oct-08	328	4644	0.859611	0.991477	4604
16-Oct-08	328	4776	0.859611	0.991477	4735
17-Oct-08	326	4819	0.859611	0.991477	4778
18-Oct-08	312	4212	0.859611	0.991477	4176
19-Oct-08	310	4625	0.859611	0.991477	4586
20-Oct-08	325	4345	0.859611	0.991477	4308
21-Oct-08	328	5203	0.859611	0.991477	5159
22-Oct-08	328	5194	0.859611	0.991477	5150
23-Oct-08	328	5077	0.859611	0.991477	5034
24-Oct-08	328	4890	0.859611	0.991477	4848
25-Oct-08	342	5626	0.859611	0.991477	5578
26-Oct-08	328	5321	0.859611	0.991477	5276
27-Oct-08	328	6280	0.859611	0.991477	6226
28-Oct-08	328	7880	0.859611	0.991477	7813
29-Oct-08	317	8535	0.859611	0.991477	8462
30-Oct-08	328	8236	0.859611	0.991477	8166
31-Oct-08	328	8035	0.859611	0.991477	7967
01-Nov-08	328	7326	0.859611	0.991477	7264
02-Nov-08	328	6983	0.859611	0.991477	6923
03-Nov-08	328	6321	0.859611	0.991477	6267
04-Nov-08	327	6256	0.859611	0.991477	6203
05-Nov-08	207	5710	0.859611	0.991477	5661
06-Nov-08	322	5698	0.859611	0.991477	5649
07-Nov-08	328	5616	0.859611	0.991477	5568
08-Nov-08	328	5685	0.859611	0.991477	5637
09-Nov-08	328	6879	0.859611	0.991477	6820
10-Nov-08	324	6951	0.859611	0.991477	6892
11-Nov-08	328	6677	0.859611	0.991477	6620
12-Nov-08	325	6837	0.859611	0.991477	6779
13-Nov-08	328	6211	0.859611	0.991477	6158
14-Nov-08	328	5441	0.859611	0.991477	5395
15-Nov-08	328	5194	0.859611	0.991477	5150
16-Nov-08	328	6551	0.859611	0.991477	6495
17-Nov-08	328	7265	0.859611	0.991477	7203
18-Nov-08	328	6206	0.859611	0.991477	6153
19-Nov-08	328	5984	0.859611	0.991477	5933
20-Nov-08	328	6411	0.859611	0.991477	6356
21-Nov-08	328	7367	0.859611	0.991477	7304
22-Nov-08	328	8440	0.859611	0.991477	8368

23-Nov-08	328	8628	0.859611	0.991477	8554
24-Nov-08	328	8604	0.859611	0.991477	8531
25-Nov-08	328	8205	0.859611	0.991477	8135
26-Nov-08	328	7039	0.859611	0.991477	6979
27-Nov-08	328	7307	0.859611	0.991477	7245
28-Nov-08	328	8306	0.859611	0.991477	8235
29-Nov-08	328	10204	0.859611	0.991477	10117
30-Nov-08	328	11712	0.859098	0.991482	11612
01-Dec-08	323	11405	0.855938	0.991513	11308
02-Dec-08	328	11361	0.851516	0.991557	11265