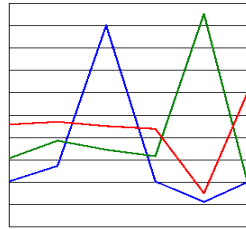


Information Provision Initiative



Systems Solution for UNC Modification 006 -
External User Information

Author: National Grid NTS
Version 2: August 2006

1. **Introduction:**

This document has been produced by National Grid NTS to provide information regarding the systems implementation and functionality that support publication of Near Real-Time Flow Data from Sub Terminals and Storage Sites in accordance with UNC Modification Proposal 006.

The document provides an overview of the functionality, resilience and performance of this system solution, supplying outline definitions of timing, content and format of supplied data.

For ease of use the remainder of this document is presented in four high-level sections: -

Section 2: Data Acquisition & Publication

Section 3: User Functionality

Section 4: Resilience & Performance

Section 5: Data Presentation

2. Data Acquisition and Publication – What Will the New System Do?

This section provides clarity on the data included within the defined scope, how this data will be collated and published and how customers will access this data.

Data Included Within Scope:

Published data made available will consist of flow Data from Terminals, Sub Terminals and Storage Sites. The flow data will be expressed as a flow rate measured in units of million cubic meters (mcm) per day. There may also be flexibility to publish additional data in the future should this be required as a result of further UNC modification proposals.

Data Receipt, Collation and Publication:

Data will be provided by the Data Provider (normally Sub-Terminal or Storage Operators) who will deliver the information to National Grid NTS in accordance with current operational arrangements, via existing measurement and telemetry systems. National Grid NTS will configure the totals and grouping and add supplementary information where necessary.

Only Terminals, sub-terminals and storage sites capable of flowing (in aggregate) in excess of 10mcm/d, or National Grid LNG Storage sites regardless of flow capability will be published individually. Other sites flowing less than 10mcm may be provided in grouped or aggregated form.¹.

The system will publish telemetered flow data for Sub-Terminals and Storage Sites (including totals and supplementary information e.g. context data, time stamps, etc...) at a 2 minute resolution to the Internet. The data will be updated at twelve-minute intervals with each update effectively containing 6 sets of 2 minute data.

This data will be available for on-line query, reporting and download for use to meet individual requirements. The data will be published after the final time slot for the 12 minute period in question.

¹ Capability is defined periodically by National Grid's central forecast, which is part of the TBE process. Where a sites capability changes to the extent that it now meets or no longer meets the 10mcm/day criteria, this change and the implication it has on the published data will be notified to users via the notes field on page 1 of the system.

3. User Functionality – What Can I Do with the New System?

The new system will offer flexible and user-configurable functionality via internet access, enabling the use of this newly available data in a variety of ways to meet user requirements.

Within this section the available functionality is outlined, demonstrating the methods of data access and manipulation to deliver time-efficient and relevant data.

On-Line Data Access via Internet Domain:

The system will be accessed via the National Grid website and will be positioned within the gas/operational data area and labelled as Energy - Flow Data in the side menu. The URL for the site will be: www.nationalgrid.com/uk/gas/data/efd/

The system will provide three convenient summary pages:

The first page will show all data in the most recent data snapshot 'batch' comprising configured and defined Sub-terminal and Storage flow values for the last 6 * 2 minute snapshots in tabular form, and the latest snapshot in graphical form. This page will have download functionality. This page will also contain the notes field and access to historical notes provided by NG NTS to provided supplemental information about the data where deemed necessary (e.g. when sites have been added or removed from the system due to capability changes). The notes history will be available for 2 years to allow cross referencing of historical data with relevant notes.

The second page, for which the time periods can be configured by the user, will show the data in all 6 * 2 minute snapshots over the last 12 minute period available, 1 hour or 24 hours. This will comprise graphical plots for each terminal, for each storage type and for LNG importation facilities.

The third page will provide User-Configurable Data viewing and download functionality. This facility will provide efficient access to the most relevant historical information to meet your preferred requirement. It allows users to select the sites of specific interest, the period of viewing or download required and whether the data should be as originally published or whether it should include any subsequent amendments. Due to capacity issues with the potential file size, the maximum period that can be downloaded will be dependant upon the number of sites selected (For example it is anticipated that if all sites were selected, the maximum download period would be limited to approximately 1 week).

Sites selectable for download will include all those that have met the 10mcm criteria over the past 2 years and not just those meeting the criteria at the time (although only data for the period within which the site met the criteria will be populated within the download file).

Efficient access to the data you require - Data Download on User Request:

The data download will be in CSV format enabling the User to easily develop their tables and/or graphs as they require. Data quality issues (Expired, amended, substituted or late data) will be appropriately flagged within the download file.

Automatic Update of Your Selected Data - Application Programming Interface:

For defined queries Users will be able to call an Application Programming Interface (API) built around a Web Services Framework. This will allow data snapshots to be delivered to the User automatically for access via the Internet. As a result we believe that the API will make it unnecessary to use automated 'screen-scraper' tools to obtain relevant data.

Data Quality and Amendments:

As a result of numerous technical and operational reasons, the data published in near real time may, from time to time, be erroneous or late (e.g. loss of telemetry signal or a measurement system failure could lead to a failed reading²). Where any such issues are identified these will be flagged both on screen via an indicator within the data field and in the download file via specific flags. Where data is subsequently amended within day, by National Grid NTS these data amendments will be made available for download and will be suitably flagged as amended data, by the system.

On-Line Help:

All screens will be annotated by suitable definitions that will explain to Users the contexts of the data being viewed and provide definitions of the various data items.

User Queries:

Users will be able to access assistance via a dedicated helpline telephone number: [01926 654639](tel:01926654639) and e-mail address: sysop.centre.reporting@uk.ngrid.com. Users should exclusively use this number and e-mail address for queries related to system functionality (As opposed to any others they may already possess for National Grid.). Both line and e-mail address will be monitored during core business hours with voicemail provision outside of these times. These facilities are provided to support users in making effective use of the service and to report problems, however National Grid will be unable to provide explanation or analysis of underlying reasons for trends in, and changes to, flow rates that can be identified from the data.

² In the case of no data being received the system will publish the last received value, all such data will be flagged to highlight its status.

On-Line Data Retention:

Data will be available for download to Users for a period of two years following publication. No historic data will be migrated to the new system.

4. System Performance and Resilience:

The systems solution has been defined with high-resilience to negative impacts and offering high levels of performance. This has been achieved through the following design elements:

Load Balancing – How Many Users Can Be Accommodated?

Full load balancing will be available over the operational infrastructure; this will deliver a high level of performance over the anticipated usage volumes. Up to 240 concurrent Users (Automated & non-automated) will be able to access the system with short response times across the full range of User functionality.

Auto-Failover:

The operational integrity of the system in the event of technical issues will be preserved due to the provision of automated failover between front-line operational infrastructure (Duty System) and second-line infrastructure (Standby System), providing minimal interruption to operational service. Excluding planned outages the system is designed for 99.9% availability (24/7/365).


No Scrapers Required for Data Updates – Faster System Response!

The specification and delivery of API and User-Configurable functions through User-composed queries, seeks to remove the need for 'screen scraper' tools. 'Screen scrapers' often impair system performance for all users on current industry information provision Internet sites.

5. Data Presentation - This Is How Your System Outputs May Look: -

As described earlier, the system will offer flexible and User configurable access to relevant data. The following examples provide an indication of how your data may appear when viewed on the web site³.

Sample 1: Instantaneous Flows into the NTS.



[Home](#) | [Contact Us](#) | [Our Other Sites](#)

> [Gas](#) | > [Electricity](#) | > [Wireless](#) | > [Metering](#) | > [Property](#) | > [Interconnectors](#) | > [Land & Development](#) | > [Grain LNG](#)

Instantaneous Flows Report

[Print-friendly version](#)

Instantaneous Flows into the NTS **Current Gas Day : Monday, 13-Mar-06**

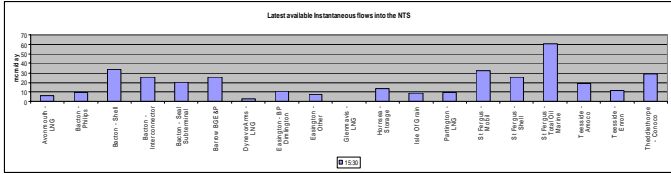
Notes for Today Click [here](#) for Notes

Flows into the NTS

Zone Supply

System Entry Name	Instantaneous Flows (mcm/day)					
	15:20	15:22	15:24	15:26	15:28	15:30
Avonmouth - LNG	5.96535	5.96592	5.94874	5.98961	6.02257	5.96328
Bacton - Philips	9.09001	9.10738	9.12810	9.30780	9.17953	9.24369
Bacton - Shell	34.94621	34.29275	33.81323	33.56374	33.75944	33.83383
Bacton - Interconnector	25.03548	25.13436	25.13436	25.26619	25.18654	25.12337
Bacton - Seal Subterminal	20.19501	20.30671	20.30671	20.30671	20.33600	20.25727
Barrow BGE&P	25.97735	25.97735	25.97735	25.97735	26.01514	26.01514
DynevorArms - LNG	3.00000	3.00000	3.00000	3.00000	3.00000	3.00000
Easington - BP Dimlington	11.14536	11.14536	11.14536	11.14536	11.11408	11.11408
Easington - Other	7.16837	7.23460	7.25071	7.23515	7.23386	7.21445
Clermans - LNG	0.02593	0.02593	0.02593	0.02593	0.02593	0.02593
Homesea - Storage	13.09110	12.98123	12.69741	13.19181	13.07965	13.21469
Isle Of Grain	8.74525	8.65237	8.79654	8.77565	8.75548	8.71658
Parlington - LNG	9.55000	9.55000	9.55000	9.55000	9.55000	9.55000
St Fergus - Mobil	32.24220	32.50038	32.14881	32.23346	32.05388	32.05388
St Fergus - Shell	25.59453	25.66631	25.67071	25.59453	25.59453	25.59453
St Fergus - Total Oil Marine	61.10343	60.99796	61.10343	60.95108	60.95108	61.05655
Teeside - Amoco	18.65013	18.79185	18.79185	18.79185	18.72099	18.93193
Teeside - Enron	11.39750	11.39750	11.44419	11.40201	11.42969	11.42969
Theddlethorpe - Conoco	29.26583	28.76484	28.49325	28.69365	29.00216	28.89668

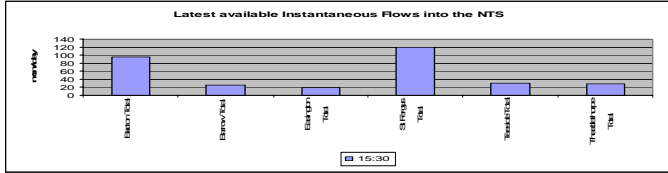
Latest available instantaneous flows into the NTS



Terminal Supply

Terminal Totals	15:20	15:22	15:24	15:26	15:28	15:30
Bacton Total	95.83801	95.37541	94.94207	95.00612	95.02320	95.01984
Barrow Total	25.97735	25.97735	25.97735	25.97735	26.01514	26.01514
Easington Total	18.31373	18.37996	18.39607	18.38051	18.34794	18.32853
St Fergus Total	118.94016	119.16465	118.92294	118.83908	118.63949	118.74496
Teeside Total	30.03763	30.17935	30.23604	30.19386	30.15068	30.36162
Theddlethorpe Total	29.26583	28.76484	28.49325	28.69365	29.00216	28.89668

Latest available Instantaneous Flows into the NTS



Total Supply

Total System Supply	15:20	15:22	15:24	15:26	15:28	15:30
Total	373.40103	372.33993	371.39211	372.49598	371.90615	371.87089

[Entry Zone Graphs](#)

[User defined download](#)

Click [here](#) to download data

Publish Timestamp : 13/03/06 15:42

Definitions

³ The final layout may differ slightly from above but content will be unchanged. These are examples displayed for information only and compressed in order to fit onto the printed page. All data shown is dummy data.

Page 8 of 12

Sample 2: Flows by Entry Zone – Latest Update (MCM/Day).

[Print-friendly version](#)

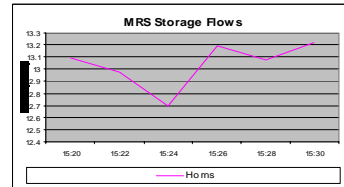
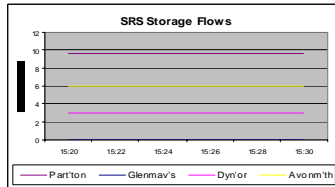
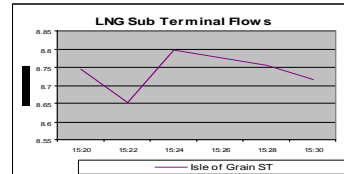
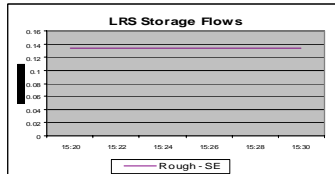
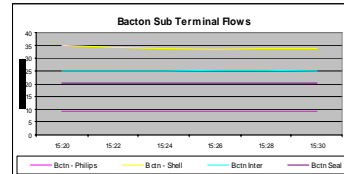
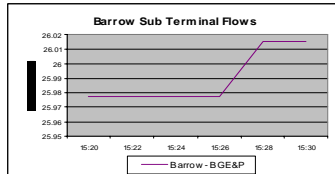
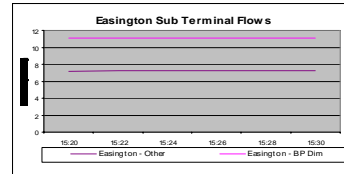
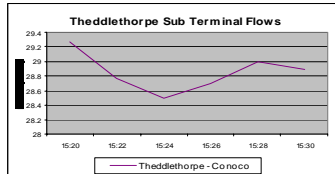
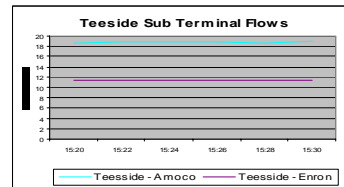
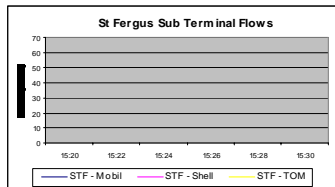
Entry Zone Graphs

Current Gas Day : Monday, 13-Mar-06

Flows by Entry Zone
(mcm/day)

Select time period

Last Update	X
Last Hour	
Last 24 hrs	



[User defined download](#)

[Return to main Instantaneous Flows Page](#)

Definitions

Sample 3: Flows by Entry Zone - Last Hour (MCM/Day).

[Print-friendly version](#)

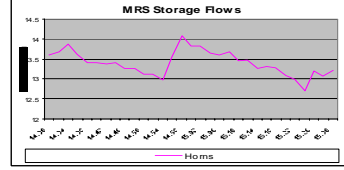
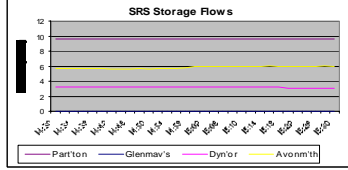
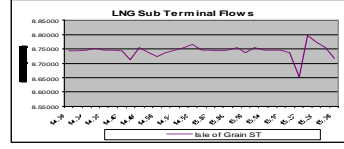
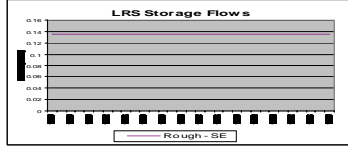
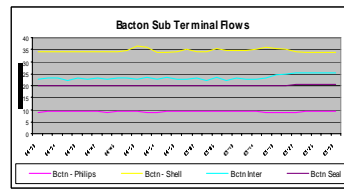
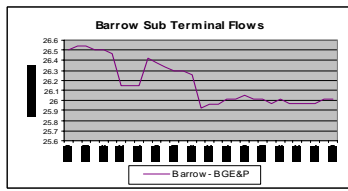
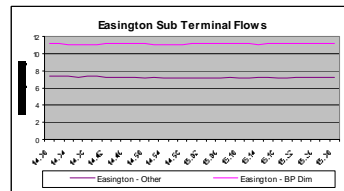
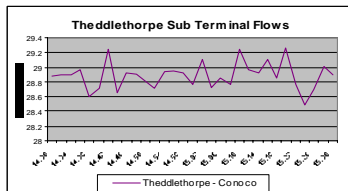
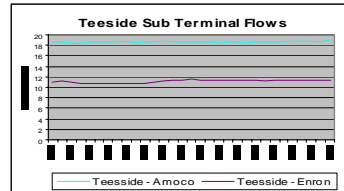
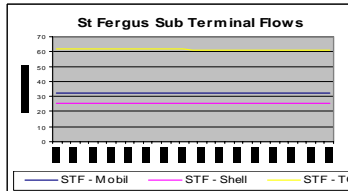
Entry Zone Graphs

Current Gas Day : Monday, 13-Mar-06

Flows by Entry Zone (mcm/day)

Select time period

Last Update:	
Last Hour:	X
Last 24 hrs:	



[User defined download](#)

[Return to main Instantaneous Flows Page](#)

Definitions

Sample 4: User Defined Download.

User Defined Download

Current Gas Day : Monday, 13-Mar-06

Select time period

Last Update	<input checked="" type="checkbox"/>
Last Hour	<input type="checkbox"/>
Last 24 hrs	<input type="checkbox"/>

Or user defined time period

From	<input type="text"/>	13/03/2006
To	<input type="text"/>	13/03/2006

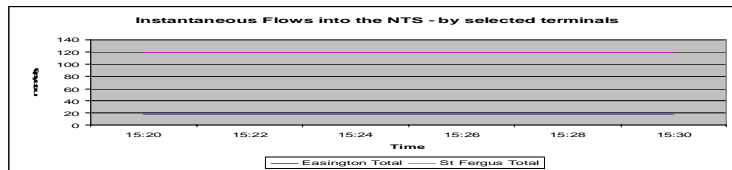
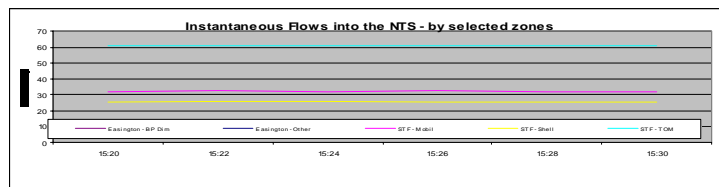
Latest Available	<input checked="" type="checkbox"/>
Originally published	<input type="checkbox"/>

User to select required Terminal or Individual entry zones

Select Zone	System Entry Name
<input type="checkbox"/>	Avonmouth - LNG
<input type="checkbox"/>	Bacton - Philips
<input type="checkbox"/>	Bacton - Shell
<input type="checkbox"/>	Bacton Interconnector
<input type="checkbox"/>	Bacton Seal Subterminal
<input type="checkbox"/>	Barrow - BGE&P
<input type="checkbox"/>	Dynevor - LNG
<input checked="" type="checkbox"/>	Easington - BP Dimlington
<input checked="" type="checkbox"/>	Easington - Other
<input type="checkbox"/>	Glenmavis - LNG
<input type="checkbox"/>	Horsea - Storage
<input type="checkbox"/>	Isle of Grain
<input type="checkbox"/>	Partington - LNG
<input type="checkbox"/>	Rough - Storage
<input checked="" type="checkbox"/>	ST Fergus - Mobil
<input checked="" type="checkbox"/>	ST Fergus - Shell
<input checked="" type="checkbox"/>	ST Fergus - Total Oil Marine
<input type="checkbox"/>	Teesside - Amoco
<input type="checkbox"/>	Teesside - Enron
<input type="checkbox"/>	Theddlethorpe - Conoco
<input type="checkbox"/>	All Zones
<input type="checkbox"/>	Bacton Terminal
<input type="checkbox"/>	Barrow Terminal
<input checked="" type="checkbox"/>	Easington Terminal
<input checked="" type="checkbox"/>	St Fergus Terminal
<input type="checkbox"/>	Teesside Terminal
<input type="checkbox"/>	Theddlethorpe Terminal
<input type="checkbox"/>	All Terminals

Click [here](#) to update graphs

Click [here](#) to download



[Entry Zone Graphs](#)

[Return to main Instantaneous Flows Page](#)

Definitions

Sample 5: CSV Format.

System Entry Name	Published time	Value	Timestamp	Expired (Y/N)	Amended (Y/N)	Amended Timestamp	Substituted (Y/N)	Late received (Y/N)
Avonmouth LNG	03/19/2006 14:12	0.041375142	03/19/2006 14:00	N	N		Y	N
Avonmouth LNG	03/19/2006 14:12	0.041375142	03/19/2006 14:02	N	N		Y	N
Avonmouth LNG	03/19/2006 14:12	0.041375142	03/19/2006 14:04	N	N		Y	N
Avonmouth LNG	03/19/2006 14:12	0.041375142	03/19/2006 14:06	N	N		Y	N
Avonmouth LNG	03/19/2006 14:12	0.041375142	03/19/2006 14:08	N	N		Y	N
Avonmouth LNG	03/19/2006 14:12	0.041375142	03/19/2006 14:10	N	N		Y	N
Bacton Amoco	03/19/2006 14:12	7.194781303	03/19/2006 14:00	N	N		N	N
Bacton Amoco	03/19/2006 14:12	7.106889248	03/19/2006 14:02	N	N		N	N
Bacton Amoco	03/19/2006 14:12	7.106889248	03/19/2006 14:04	N	N		N	N
Bacton Amoco	03/19/2006 14:12	7.035477161	03/19/2006 14:06	N	N		N	N
Bacton Amoco	03/19/2006 14:12	7.035477161	03/19/2006 14:08	N	N		Y	N
Bacton Amoco	03/19/2006 14:12	7.035477161	03/19/2006 14:10	N	N		Y	N
Bacton Interconnector	03/19/2006 14:12	0	03/19/2006 14:00	N	N		N	N
Bacton Interconnector	03/19/2006 14:12	0	03/19/2006 14:02	N	N		N	N
Bacton Interconnector	03/19/2006 14:12	0	03/19/2006 14:04	N	N		N	N
Bacton Interconnector	03/19/2006 14:12	0	03/19/2006 14:06	N	N		N	N
Bacton Interconnector	03/19/2006 14:12	0	03/19/2006 14:08	N	N		Y	N
Bacton Interconnector	03/19/2006 14:12	0	03/19/2006 14:10	N	N		Y	N
Bacton Others	03/19/2006 14:12	30.05768299	03/19/2006 14:00	N	N		N	N
Bacton Others	03/19/2006 14:12	30.01152229	03/19/2006 14:02	N	N		N	N
Bacton Others	03/19/2006 14:12	29.98411179	03/19/2006 14:04	N	N		N	N
Bacton Others	03/19/2006 14:12	30.04270554	03/19/2006 14:06	N	N		N	N
Bacton Others	03/19/2006 14:12	30.04270554	03/19/2006 14:08	N	N		Y	N
Bacton Others	03/19/2006 14:12	30.04270554	03/19/2006 14:10	N	N		Y	N
Bacton Shell	03/19/2006 14:12	35.60311508	03/19/2006 14:00	N	N		N	N
Bacton Shell	03/19/2006 14:12	35.5069809	03/19/2006 14:02	N	N		N	N
Bacton Shell	03/19/2006 14:12	35.57221222	03/19/2006 14:04	N	N		N	N
Bacton Shell	03/19/2006 14:12	35.57793427	03/19/2006 14:06	N	N		N	N
Bacton Shell	03/19/2006 14:12	35.57793427	03/19/2006 14:08	N	N		Y	N
Bacton Shell	03/19/2006 14:12	35.57793427	03/19/2006 14:10	N	N		Y	N
Barrow Sub Terminal	03/19/2006 14:12	25.8314476	03/19/2006 14:00	N	N		N	N
Barrow Sub Terminal	03/19/2006 14:12	25.95801163	03/19/2006 14:02	N	N		N	N
Barrow Sub Terminal	03/19/2006 14:12	25.95801163	03/19/2006 14:04	N	N		N	N
Barrow Sub Terminal	03/19/2006 14:12	25.83672142	03/19/2006 14:06	N	N		N	N
Barrow Sub Terminal	03/19/2006 14:12	25.83672142	03/19/2006 14:08	N	N		Y	N
Barrow Sub Terminal	03/19/2006 14:12	25.83672142	03/19/2006 14:10	N	N		Y	N
Beltolt Storage	03/19/2006 14:12	0	03/19/2006 14:00	N	N		N	N
Beltolt Storage	03/19/2006 14:12	0	03/19/2006 14:02	N	N		N	N
Beltolt Storage	03/19/2006 14:12	0	03/19/2006 14:04	N	N		N	N
Beltolt Storage	03/19/2006 14:12	0	03/19/2006 14:06	N	N		N	N
Beltolt Storage	03/19/2006 14:12	0	03/19/2006 14:08	N	N		Y	N
Beltolt Storage	03/19/2006 14:12	0	03/19/2006 14:10	N	N		Y	N
DynevornArmsLNG	03/19/2006 14:12	0.010411993	03/19/2006 14:00	N	N		Y	N
DynevornArmsLNG	03/19/2006 14:12	0.010411993	03/19/2006 14:02	N	N		Y	N
DynevornArmsLNG	03/19/2006 14:12	0.010411993	03/19/2006 14:04	N	N		Y	N
DynevornArmsLNG	03/19/2006 14:12	0.010411993	03/19/2006 14:06	N	N		Y	N
DynevornArmsLNG	03/19/2006 14:12	0.010411993	03/19/2006 14:08	N	N		Y	N
DynevornArmsLNG	03/19/2006 14:12	0.010411993	03/19/2006 14:10	N	N		Y	N
EsngrnAmethyst ST	03/19/2006 14:12	3.924802303	03/19/2006 14:00	N	N		N	N
EsngrnAmethyst ST	03/19/2006 14:12	3.915280581	03/19/2006 14:02	N	N		N	N
EsngrnAmethyst ST	03/19/2006 14:12	3.937620163	03/19/2006 14:04	N	N		N	N
EsngrnAmethyst ST	03/19/2006 14:12	3.921506405	03/19/2006 14:06	N	N		N	N