British Oceanographic Data Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

Sea Level Data File Format

This document provides details of file format for

1. Observation and Residual Data Files
2. Monthly Extremes ('extremes')
3. Monthly Extreme Surges ('surges')
4. Monthly Means ('means')

1. Observation and Residual Data Files

Header Information

- The first line in each file is the **Port** number, a unique identifier assigned to each tide gauge by BODC.
- The second line is the **Site** name, usually the name of the town/city where the gauge is located.
- The third and fourth lines are the approx **Latitude** and **Longitude** of the gauge.
- The fifth and sixth lines of each file give the **Start Date** and **End Date** of the data in the file, in the format DDMONYYYY-24hr.MI.SS. All times UTC (GMT).
- The seventh line names the **Contributor** - the person or organisation who supplied the data.
- The eighth line gives the **Datum** (vertical reference) the data are measured to. For NTSLF data, all values are relative to Admiralty Chart Datum (ACD).
- The ninth line lists the **Parameter Code**. BODC uses these codes to identify how the measurements were obtained and the instrument used.

Body Information

The first two lines show how the information is listed within the file. Each line consists of a

- **Cycle Number** (an incrementing integer)
- **Date** (format yyyy/mm/dd)
- **Time** (format 24-hour hh:mi:ss), given in UTC (Universal Coordinated Time)
    - This will be followed by a **Flag,** if problems with the time channel have been identified
- **S ea level value** (e.g. parameter ASLVBG02)
    - This will be followed by a **Flag,** if problems with the sea level value have been identified
- **Residual** (calculated from the observed sea level value minus the predicted sea level value)
    - This will be followed by a **Flag,** if problems with the associated sea level value have been identified

Flags

Three different flags are used

Flag	Description
M	Value flagged as 'improbable' by BODC quality control
N	Null value (height value always set to -99.000)
T	Value interpolated from adjacent values

Example of start of a file

```
Port: P038
Site: Aberdeen
Latitude: 57.1441
Longitude: -2.0787
Start Date: 01MAR2003-00.00.00
End Date: 31MAR2003-23.45.00
Contributor: National Oceanography Centre, Liverpool
Datum Information: The data refer to Admiralty Chart Datum (ACD)
Parameter Code: ASLVBG02=Sea level,Bubbler tide gauge (second sensor)
Cycle Date Time ASLVBG02 Residual
Number yyyy mm dd hh mi ssf f f
1) 2003/03/01 00:00:00 3.846 0.003
```

2. Monthly Extremes ('extremes')

Extremes are the maximum and minimum sea level height values recorded during the month. Interpolated data are excluded. All values are relative to Admiralty Chart Datum (ACD).

Format

On a single line:
Site name
Date (dd/mm/yyyy) and **Time** (24-hour UTC)
Minimum observed value (metres)
Date (dd/mm/yyyy) and **Time** (24-hour UTC)
Maximum observed value (metres)

Example:

```
ILFRACOMBE,09/04/2005 12:15,.319,09/04/2005 06:15,9.56
```

3. Monthly Extreme Surges ('surges')

Extreme surges are the maximum and minimum tidal residuals calculated during the month (the residual is the measured height minus the predicted height). The predicted values are derived from a database of tidal constants maintained by the National Oceanography Centre Application Group. All values are relative to Admiralty Chart Datum (ACD).

Format

On a single line:
Site name
Date (dd/mm/yyyy) and **Time** (24-hour UTC)
Minimum surge value (metres)
Date (dd/mm/yyyy) and **Time** (24-hour UTC)
Maximum surge value (metres)

Example:

```
ILFRACOMBE,08/04/2005 21:15,-.352,17/04/2005 18:00,.47
```

4. Monthly Means ('means')

Monthly mean sea level values are calculated at BODC from a filter working on quarter-hourly values derived from one or more cubic splines applied to the raw data. The filter is a convolution of the Vassie 03B filter (which converts 15-minute data to hourly values) and the Doodson X0 filter. All values are relative to Admiralty Chart Datum (ACD).

Format

Site name
Month (mm/yyyy)
Monthly mean sea level value (metres)
Number of days of data used in the calculation of the mean value

Example:
`ILFRACOMBE,04/2005,4.96,29`

On the Web

The above information is available online at
https://www.bodc.ac.uk/data/codes_and_formats/sea_level/ntslf_format/