Contents

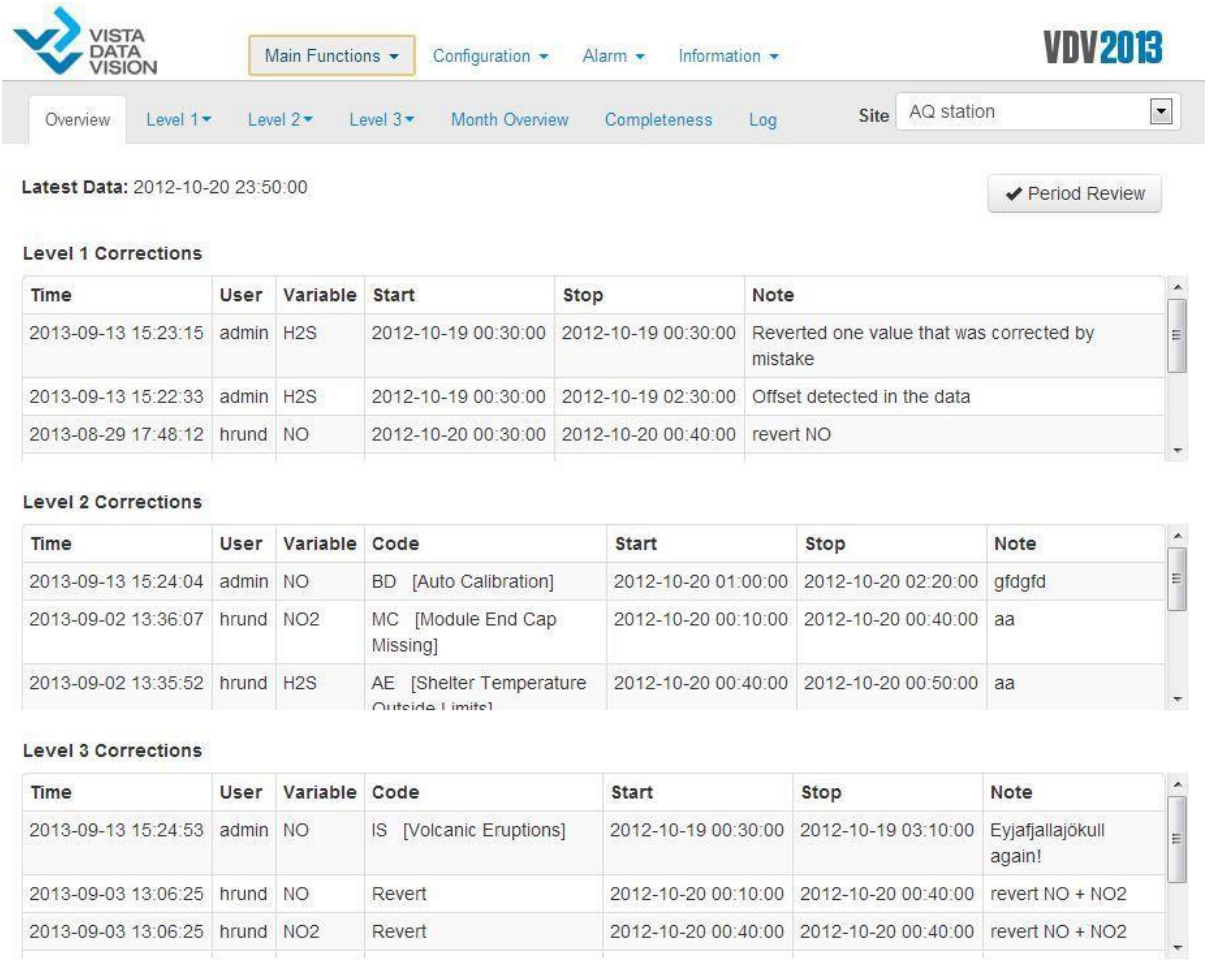
Continuous Water Quality Data Collection

VISTA – DataVison - QAQC MANUAL

1. Audit station

QA/QC stations can be audited through the Quick View of the VISTA interface by the operator and system administrator.

When auditing a station, the auditor may select which level (1,2 or 3) they review and whether they wish to do a manual or bulk edit. Audits must be done in the correct order, which means that a time period must be selected as reviewed for Level 1 to be able to audit it for Level 2.



2. Level 1 Corrections

Level 1 corrections aim to locate erroneous data and either correct it or mark it as faulty record. The real time data stream is checked once daily by the operator to timely detect any sensor damage or malfunction. To ease the operator's responsibilities 10 years of data has been combed through in an effort to establish a reliable alarm system, that would send real time warning as soon as an erroneous value is recorded. We found that for MERI's continuous water quality data, following changes in standard deviation (STDV) for each the variables gives a reliable indication of sensor drift. If the daily STDV values fall below the established ranges, the system will send an alarm messages and the operator will check the data set and ultimately the sensor.

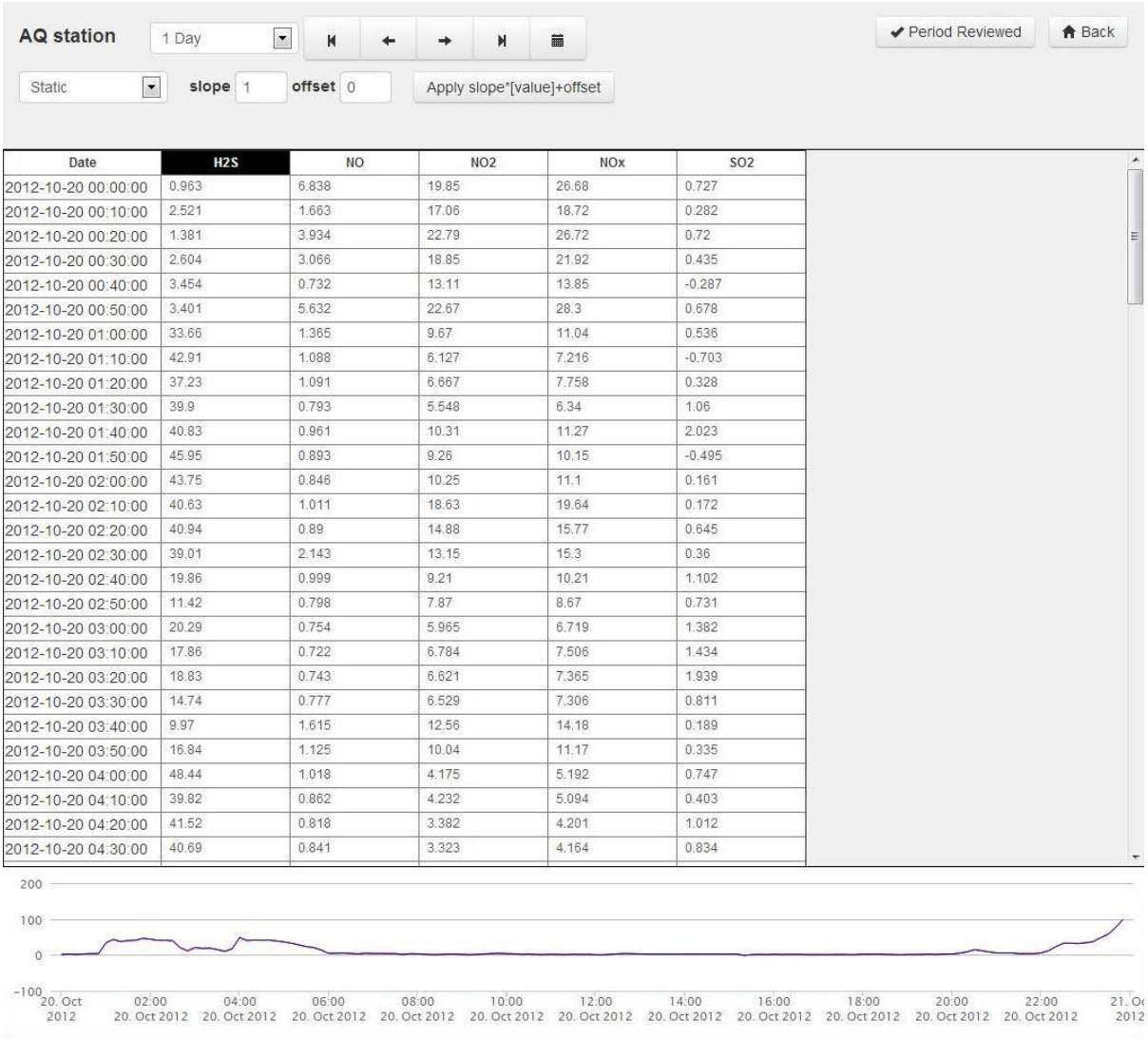
The established ranges are below:

Variable	Dimension	Min	Max
Dissolved Oxygen	%	2.0	10.0%
Dissolved Oxygen	mg/L	0.1	1.0
Conductivity	mS/cm	1.0	7.0
Temperature	F	0.2	1.0
Salinity	ppt	1.0	4.0
pH		0.2	1.6
Water level	ft	1.0	3.0

2.1 Manual Edit

Manual edit lets the operator correct data manually. They can select one or more cells for one or more variables. The manual correction can be made statically or time varying. They need to fill out the slope and offset values for the correction.

To display data in the graph below the table, they can select the header of a field in the table by pressing on it.



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	17.06	18.72	0.282
2012-10-20 00:20:00	1.381	3.934	22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	18.85	21.92	0.435
2012-10-20 00:40:00	3.454	0.732	13.11	13.85	-0.287
2012-10-20 00:50:00	3.401	5.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703
2012-10-20 01:20:00	37.23	1.091	6.667	7.758	0.328
2012-10-20 01:30:00	39.9	0.793	5.548	6.34	1.06
2012-10-20 01:40:00	40.83	0.961	10.31	11.27	2.023
2012-10-20 01:50:00	45.95	0.893	9.26	10.15	-0.495
2012-10-20 02:00:00	43.75	0.846	10.25	11.1	0.161
2012-10-20 02:10:00	40.63	1.011	18.63	19.64	0.172
2012-10-20 02:20:00	40.94	0.89	14.88	15.77	0.645
2012-10-20 02:30:00	39.01	2.143	13.15	15.3	0.36
2012-10-20 02:40:00	19.86	0.999	9.21	10.21	1.102
2012-10-20 02:50:00	11.42	0.798	7.87	8.67	0.731
2012-10-20 03:00:00	20.29	0.754	5.965	6.719	1.382
2012-10-20 03:10:00	17.86	0.722	6.784	7.506	1.434
2012-10-20 03:20:00	18.83	0.743	6.621	7.365	1.939
2012-10-20 03:30:00	14.74	0.777	6.529	7.306	0.811
2012-10-20 03:40:00	9.97	1.615	12.56	14.18	0.189
2012-10-20 03:50:00	16.84	1.125	10.04	11.17	0.335
2012-10-20 04:00:00	48.44	1.018	4.175	5.192	0.747
2012-10-20 04:10:00	39.82	0.862	4.232	5.094	0.403
2012-10-20 04:20:00	41.52	0.818	3.382	4.201	1.012
2012-10-20 04:30:00	40.69	0.841	3.323	4.164	0.834

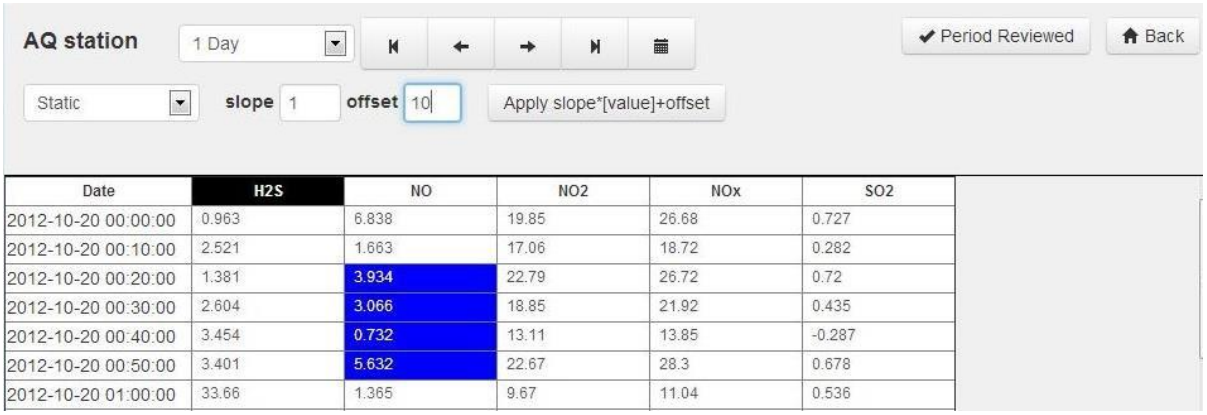
The manual correction can be made statically or time varying.

Controls for Static corrections.

Controls for Time Varying corrections.

2.1.1 Correct Data

To manually edit data, the operator needs to start by applying the changes (while editing, the selected cells appear blue)



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
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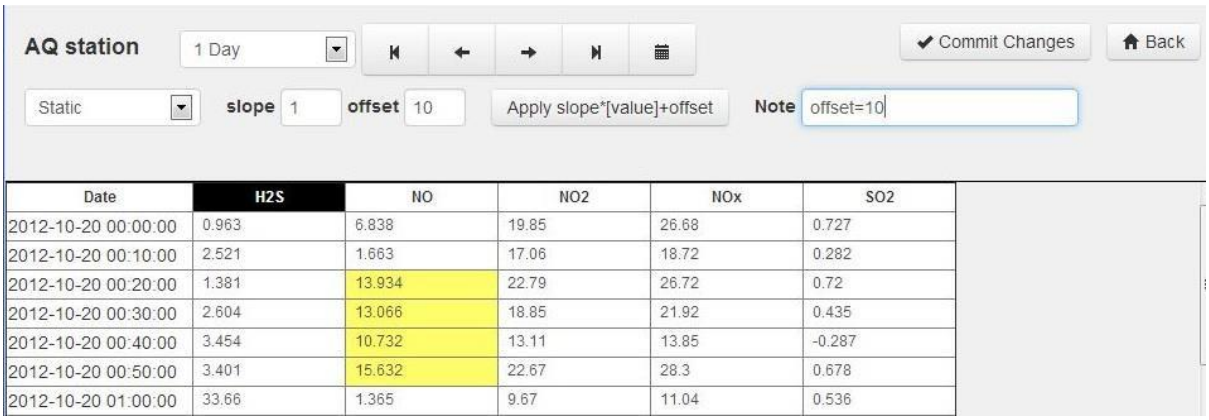
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536

- Select the cells you want to edit
- Select either Static or Time Varying type
- Fill out the slope(s) and offset(s)
- Press the Apply button



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2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
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2012-10-20 00:50:00	3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536

The values in the selected cells are now shown updated but have not yet been saved. The updated values have a yellow background color until the changes have been committed.

If the changes are correct, then the next step is to save the changes.

- Fill out the Note field. A note must always be entered when committing changes.
- Press the Commit Changes button

Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	17.06	18.72	0.282
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2012-10-20 00:30:00	2.604	13.066	18.85	21.92	0.435
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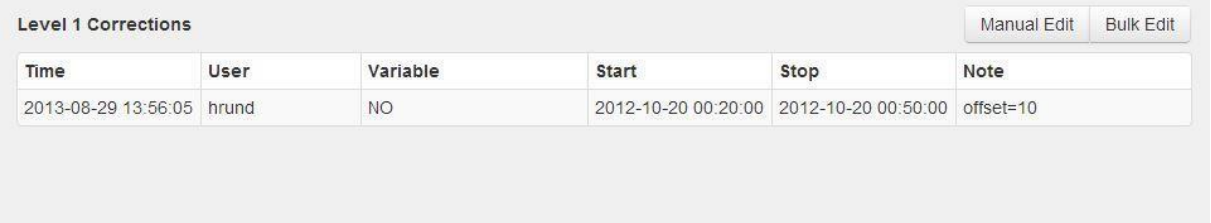
2012-10-20 00:50:00	3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536

When the correction has been committed, a notification appears that your Modifications have been saved and the corrected cells appear green.

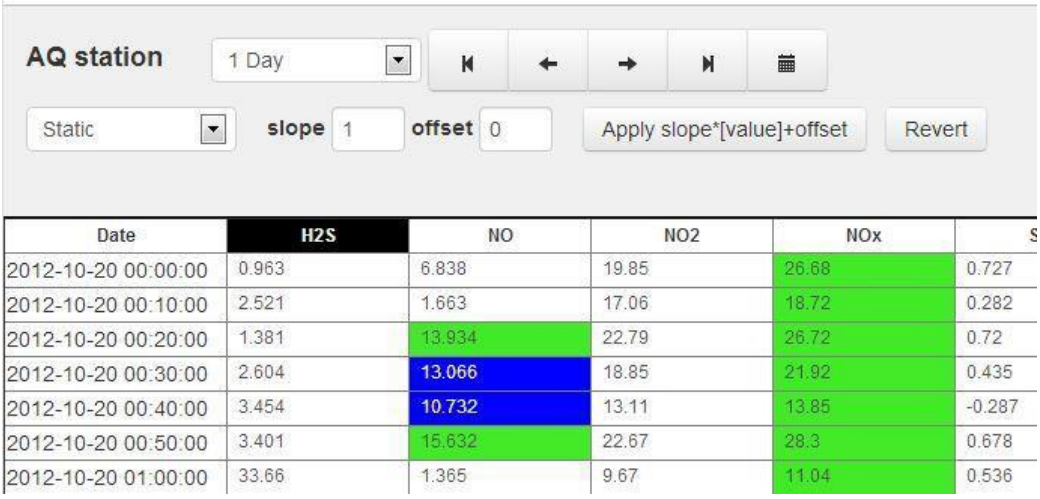
All corrections are logged. A new line for the committed correction appears at the main page



The log entry for the Level 1 correction.

2.1.2 Revert Correction

It is possible to undo changes and revert back to the raw value.



Date	H2S	NO	NO2	NOx	S
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	22.79	26.72	0.72
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2012-10-20 00:50:00	3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536

To revert edited cells

- Select the cells you want to revert. Note only corrected values (shown with a green background) can be reverted
- Press the Revert button

Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	18.85	21.92	0.435
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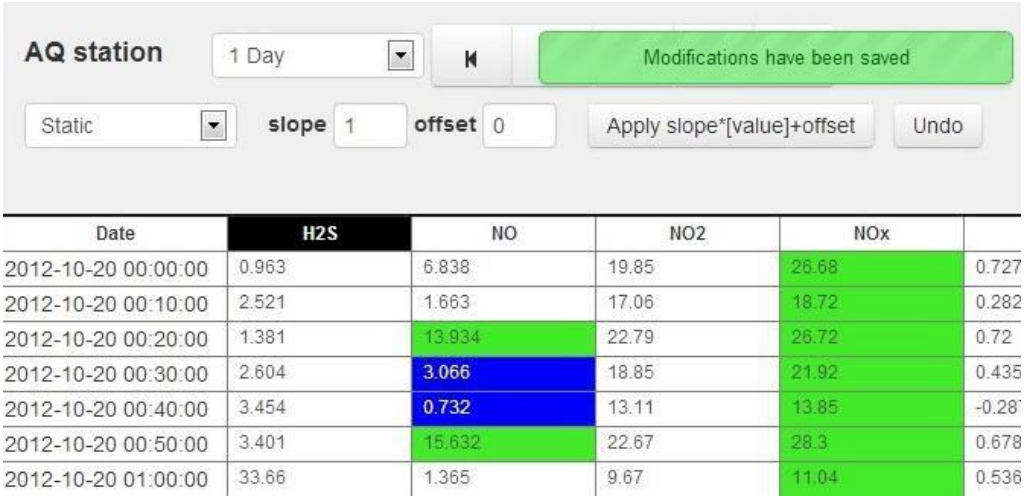
2012-10-20 00:50:00	3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536

- Fill out the Note field
- Press the Commit Changes button



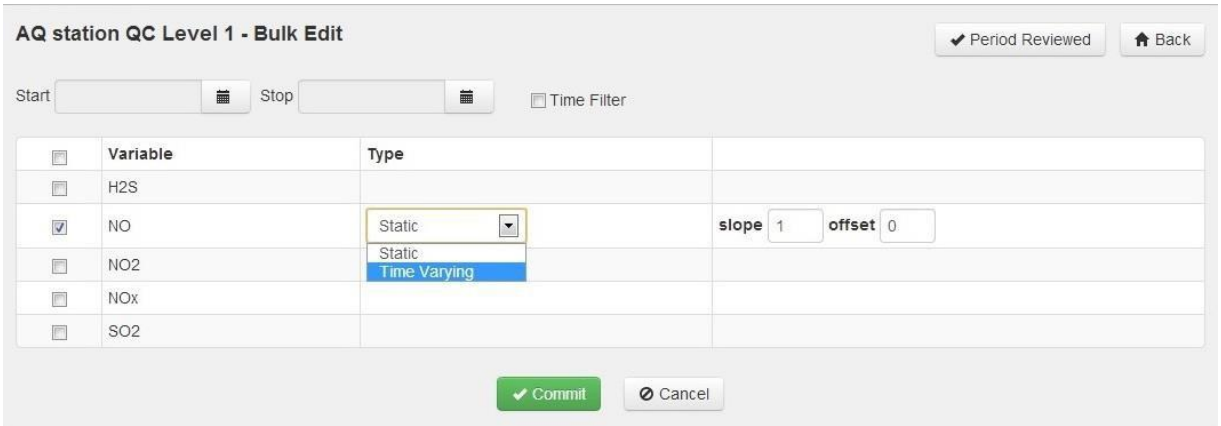
Date	H2S	NO	NO2	NOx	
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	18.85	21.92	0.435
2012-10-20 00:40:00	3.454	0.732	13.11	13.85	-0.28
2012-10-20 00:50:00	3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536

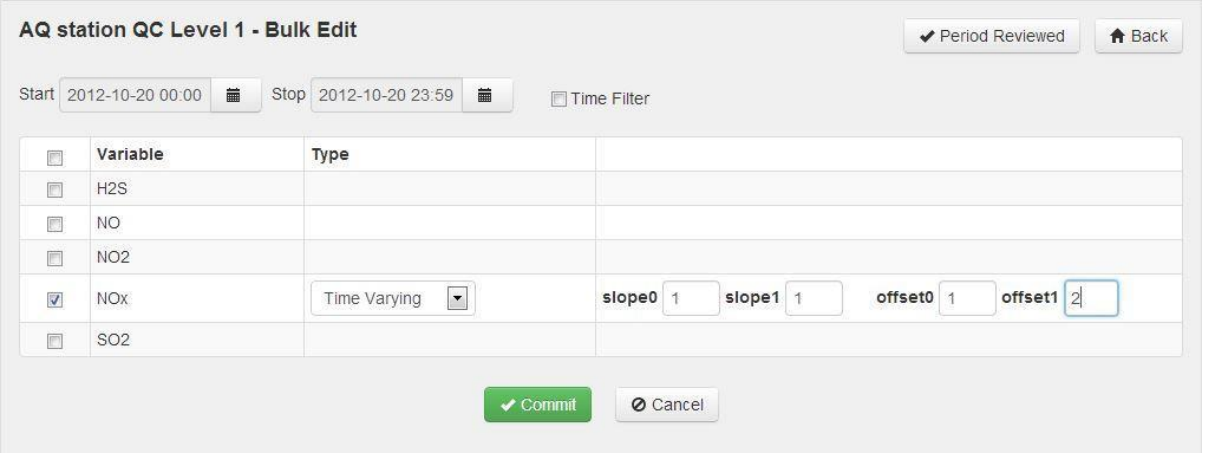
- A notification appears that your modification have been saved

2.2 Bulk Edit

Bulk edit makes it possible to make corrections for a selected time period. As in manual edit, slope and offset needs to be set and it's possible to select between static or time varying editing.

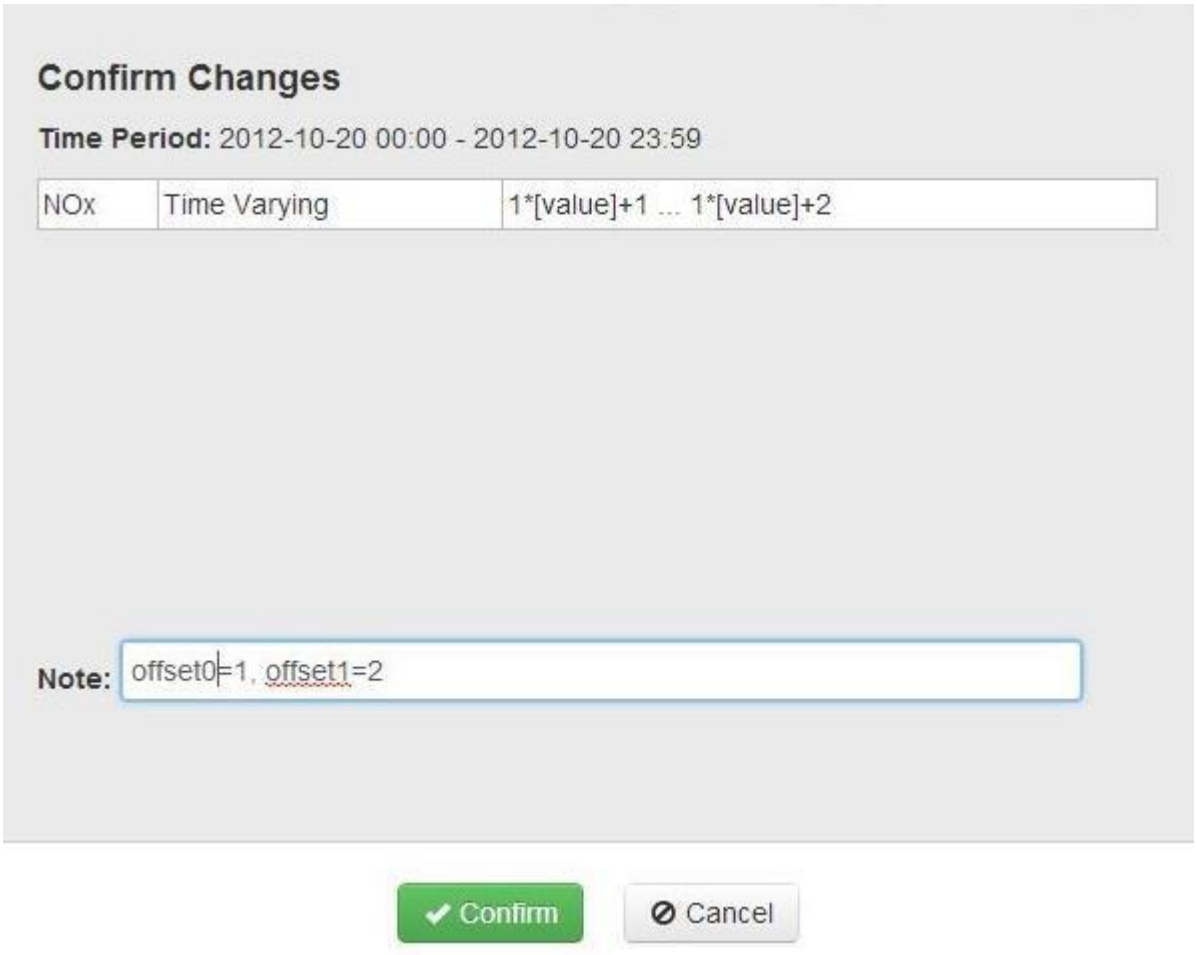
Additionally, time and date periods need to be defined.





To edit the data, you need to start by selecting variables and setting their slopes and offsets.

- Select the start and stop date
  - If time filter is needed, check the Time Filter and select the hours you want the corrections be made between
  - Time filter can also be used when editing needs to be done every x days
- Check the variables you want to edit
- Select either Static or Time Varying type
- Fill out the slope(s) and offset(s)
- Press the Commit button



Next you need to confirm the correction of the data

- Fill out the Note field
- Press the Confirm button

A new line for the committed correction appears at the main page

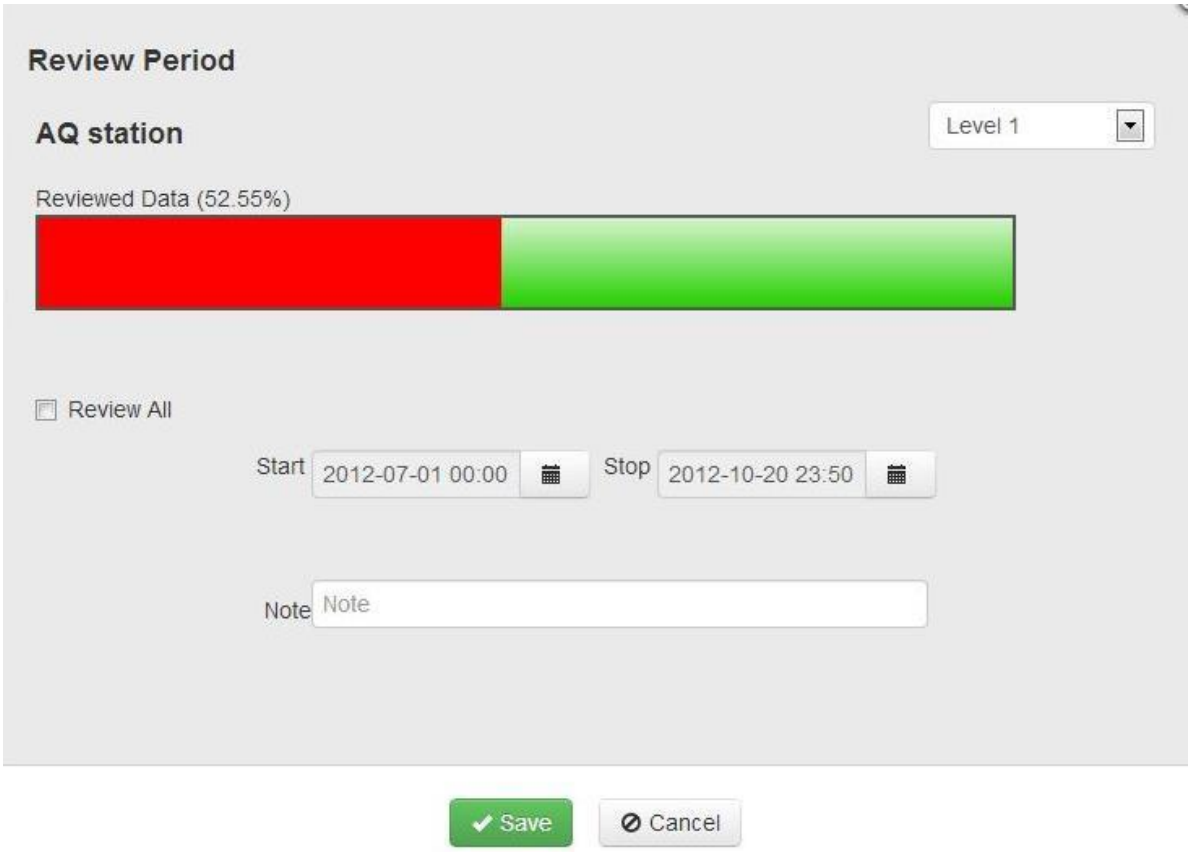
Level 1 Corrections — Manual Edit | Bulk Edit

Time	User	Variable	Start	Stop	Note
2013-08-29 17:25:29	hrund	NOx	2012-10-20 00:00:00	2012-10-20 23:59:00	offset0=1, offset1=2
2013-08-29 13:56:05	hrund	NO	2012-10-20 00:20:00	2012-10-20 00:50:00	offset=10

The log entry for the Level 1 correction.

2.3 Period Review

Reviewing a period, makes it possible to correct data on the next level. The colored bar displays the percentage of the data has been reviewed, red indicates unreviewed data but green reviewed data.



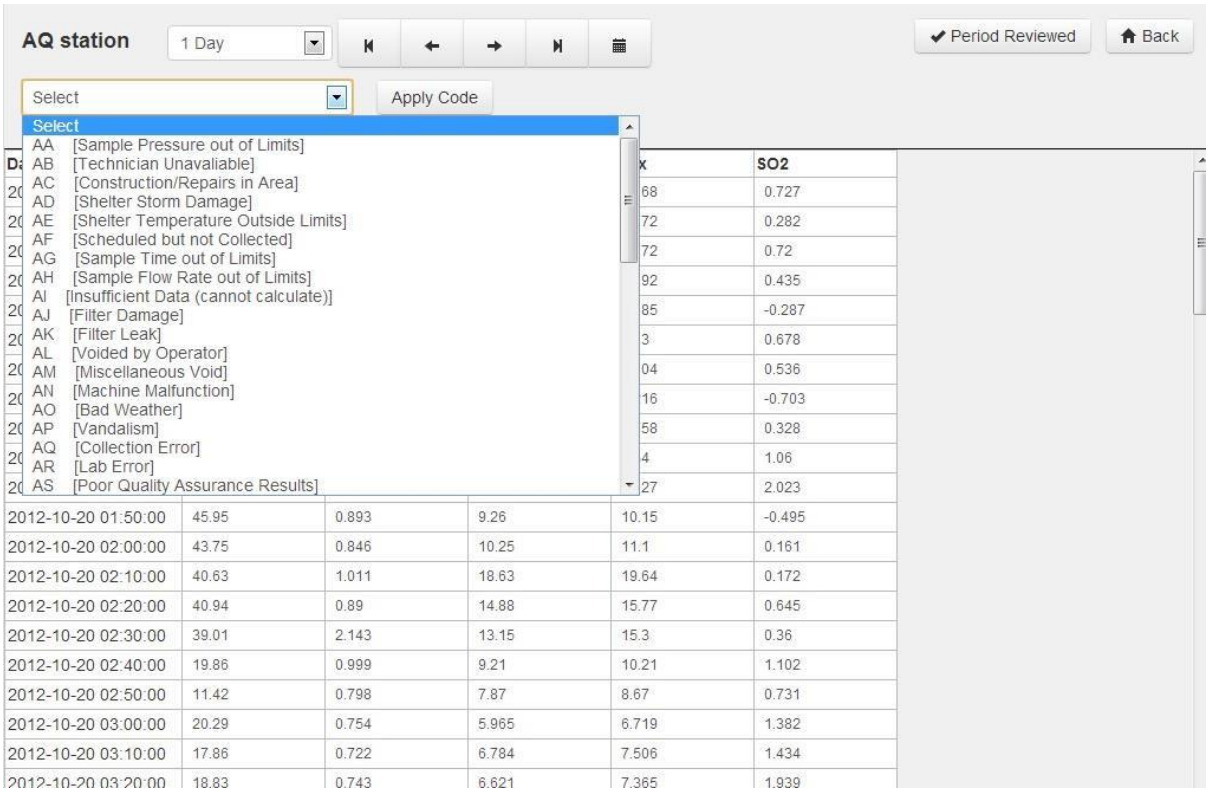
- Select the appropriate level
- Select the time period to review
- Fill out the Note field
- Press the Save button

3. Level 2 Corrections

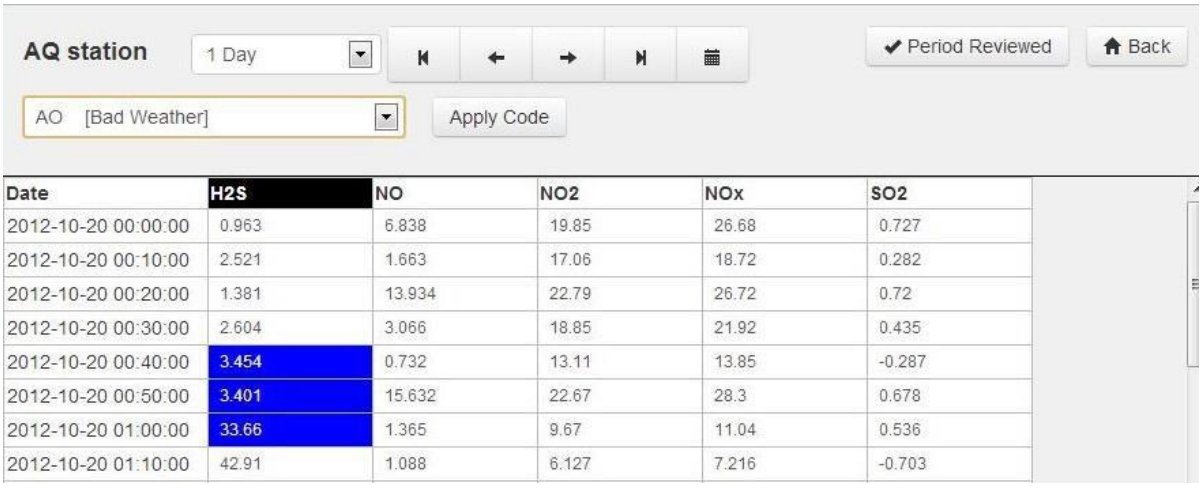
Level 2 correction allow the operator to note the reason the error(s) occurred in the first place. Level 2 correction notes become part of the QA/QC-d data set and are downloaded along with the data table.

3.1 Manual Edit

When a period has been reviewed for Level 1, it's possible to make corrections for Level 2. Level 2 corrections consist of applying Flags to data.



3.1.1 Correct Data



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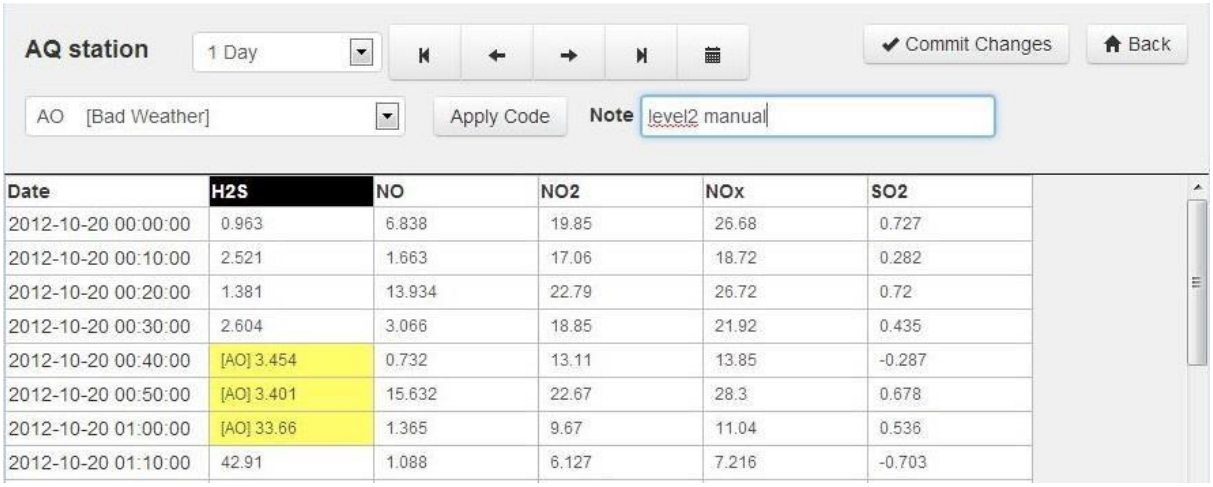
2012-10-20 00:30:00	2.604	3.066	18.85	21.92	0.435
2012-10-20 00:40:00	3.454	0.732	13.11	13.85	-0.287
2012-10-20 00:50:00	3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	33.66	1.365	9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703

- Select the cells you want to edit in the table
- Select the code to be applied
- Press the Apply Code button



Date	H2S	NO	NO2	NOx	SO2
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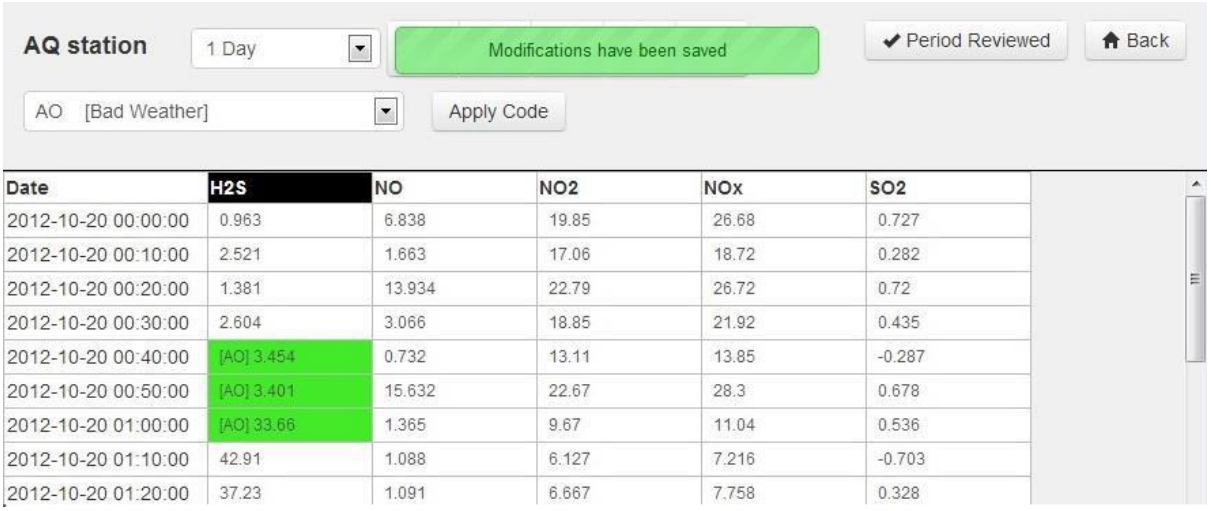
2012-10-20 00:30:00	2.604	3.066	18.85	21.92	0.435
2012-10-20 00:40:00	[AO] 3.454	0.732	13.11	13.85	-0.287
2012-10-20 00:50:00	[AO] 3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	[AO] 33.66	1.365	9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703

After applying the changes, the cell color changes from blue to yellow and the appropriate code has been added in front of the value

- Fill out the Note field
- Press the Commit Changes button



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2012-10-20 00:40:00	[AO] 3.454	0.732	13.11	13.85	-0.287
2012-10-20 00:50:00	[AO] 3.401	15.632	22.67	28.3	0.678
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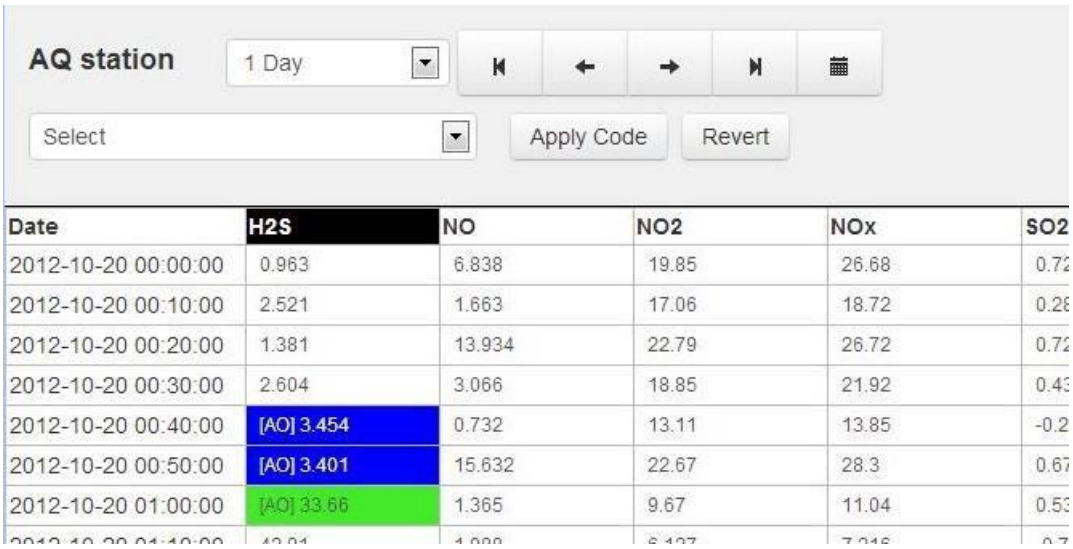
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703
2012-10-20 01:20:00	37.23	1.091	6.667	7.758	0.328

When the changes have been committed the cell color changes from yellow to green

3.1.2 Revert Correction

The changes in Level 2 can be reverted manually like the changes in Level 1.



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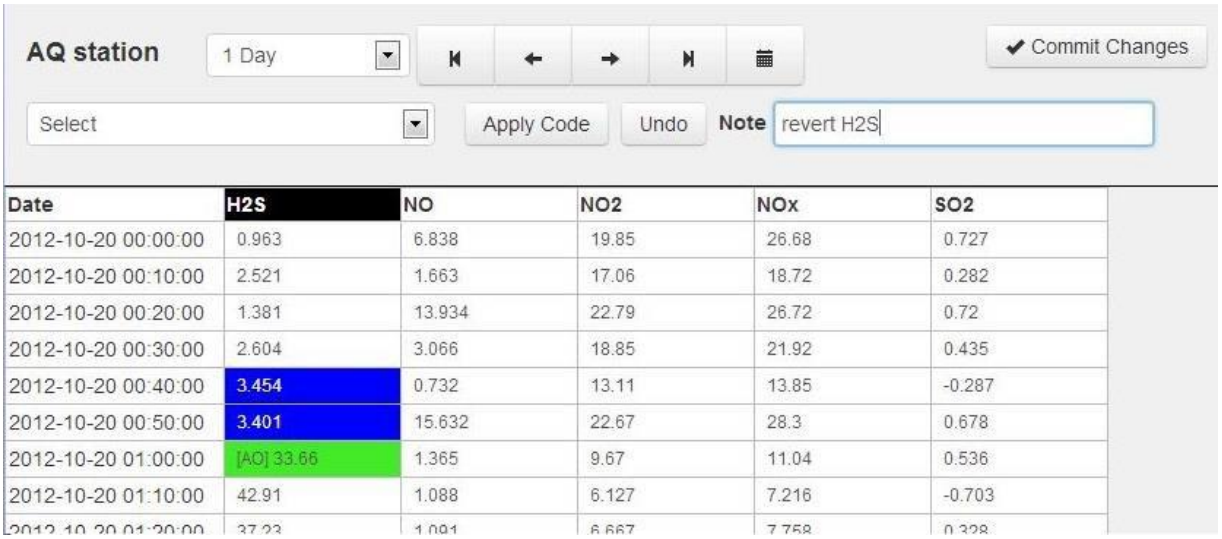
2012-10-20 00:20:00	1.381	13.934	22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	18.85	21.92	0.43
2012-10-20 00:40:00	[AO] 3.454	0.732	13.11	13.85	-0.2
2012-10-20 00:50:00	[AO] 3.401	15.632	22.67	28.3	0.67
2012-10-20 01:00:00	[AO] 33.66	1.365	9.67	11.04	0.53

To revert edited cells

- Select the cells you want to revert (they should be colored green)
- Press the Revert button



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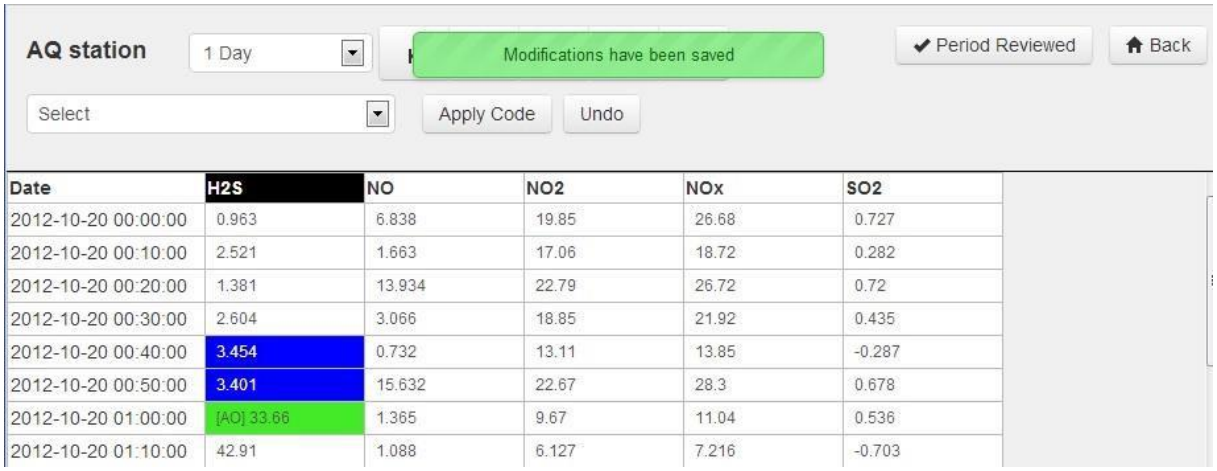
2012-10-20 01:00:00	[AO] 33.66	1.365	9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703

The code in front of the value has been removed

- Fill out the Note field
- Press the Commit Changes button



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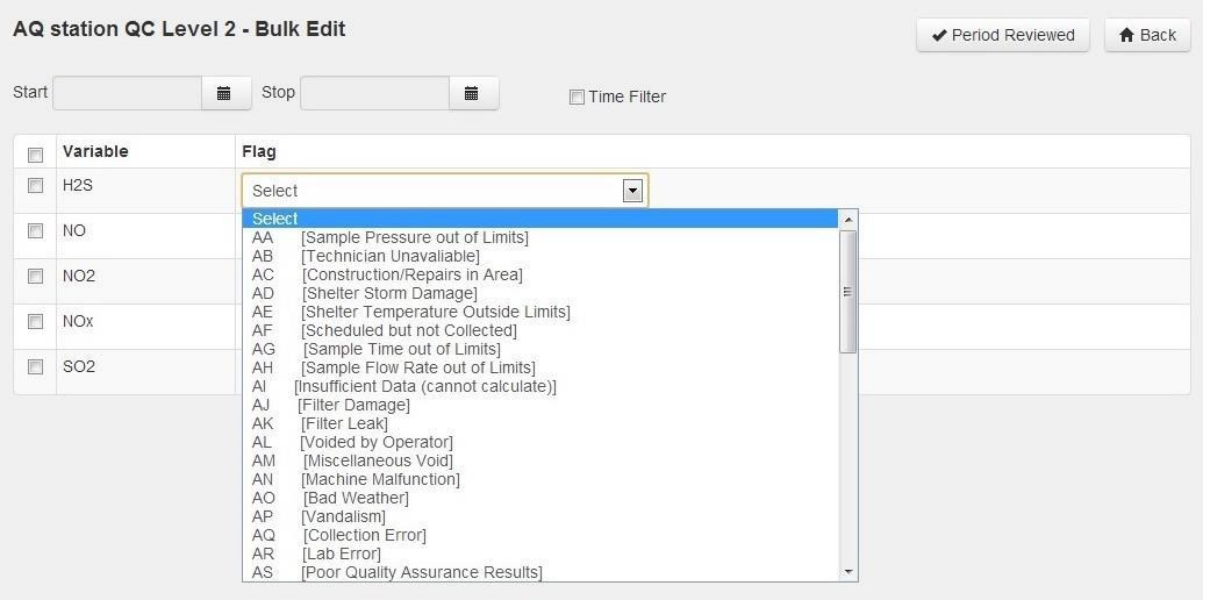
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703

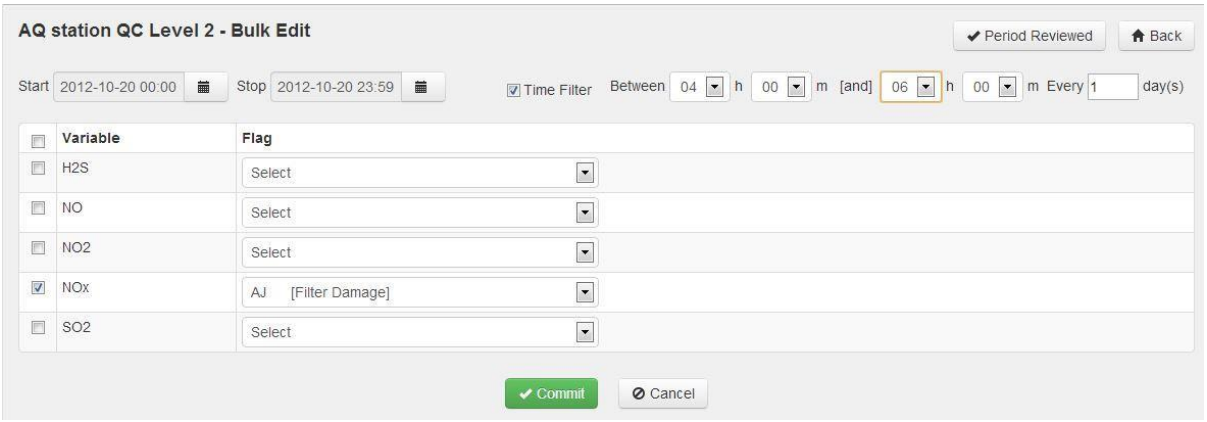
A notification appears that your modification have been saved

3.2 Bulk Edit

Bulk Level 2 corrections consist of applying Flags to data for a selected time period. Bulk edit can be very useful when working with a station that uses periodic processes, for example running a span check every day between 11:00 and 12:00. It is then possible to select the variables, select the appropriate flag and then set the Time Filter to only updated values between 11:00-12:00.

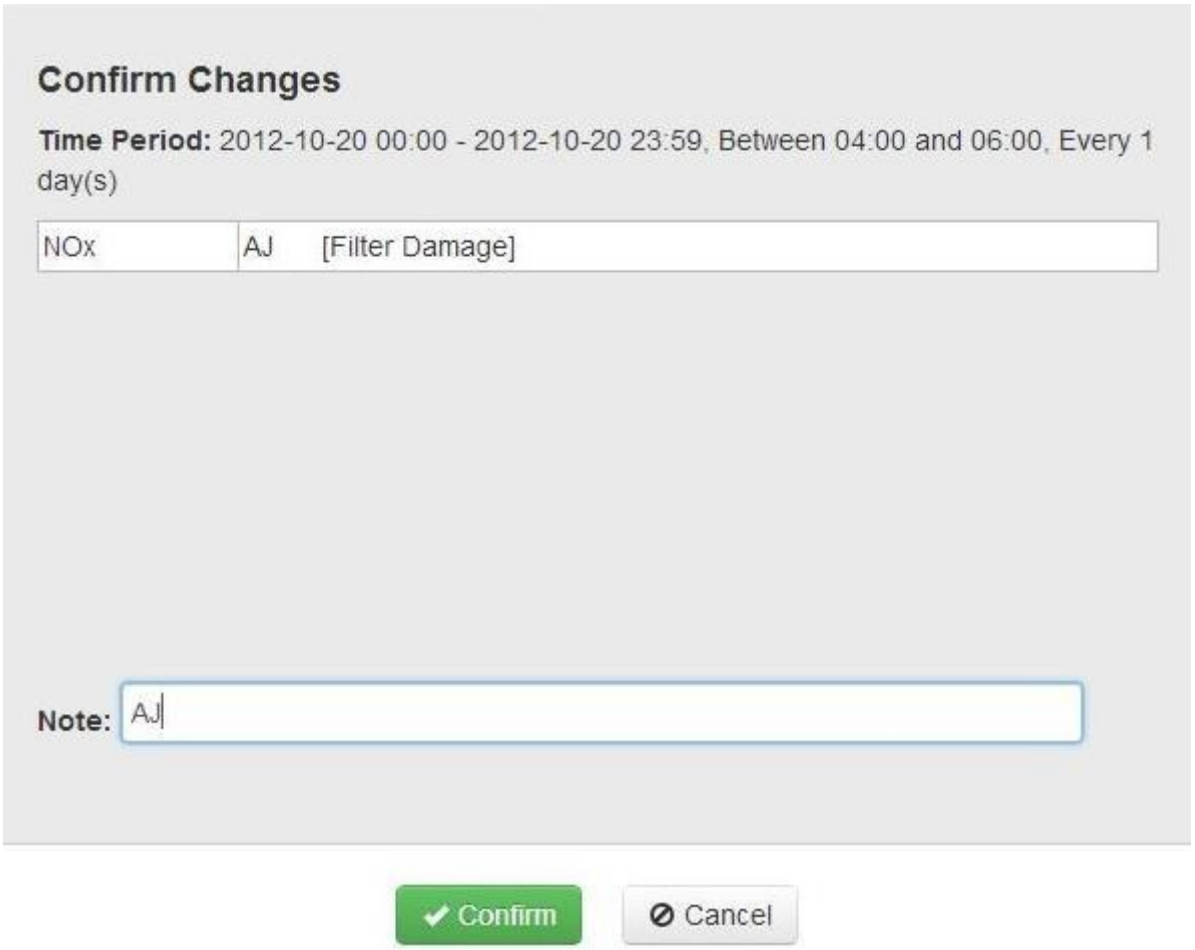


To bulk edit data, you need to start by selecting variables and setting flag.



- Select the start and stop date
    - If time filter is needed, check the Time Filter and select the hours you want the corrections be made between
    - Time filter can also be used when editing needs to be done every x days
- Check the variables you want to edit
- Select the flag you want to use
- Press the Commit button

Next you need to confirm the correction of the data

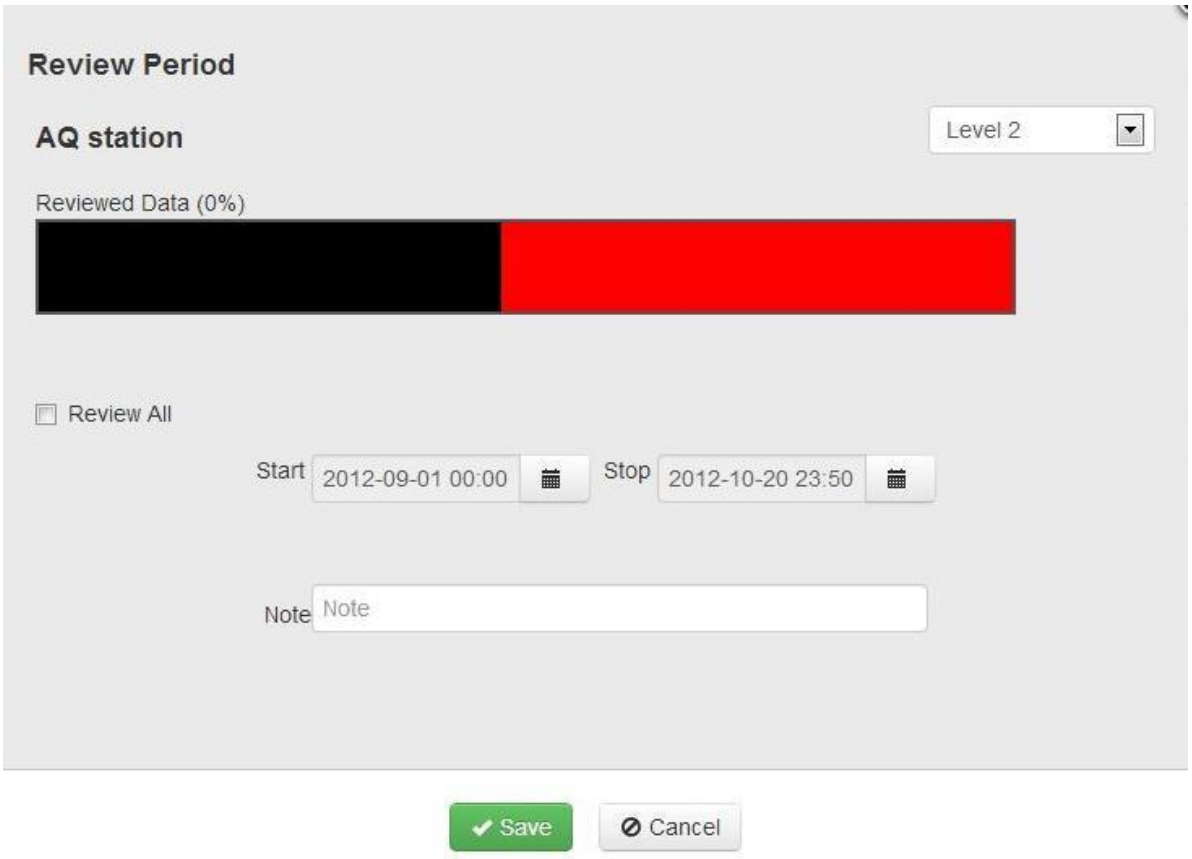


Notice that the Confirm window lists all Variables that will be updated and the selected Time Period and the Time Filter if selected.

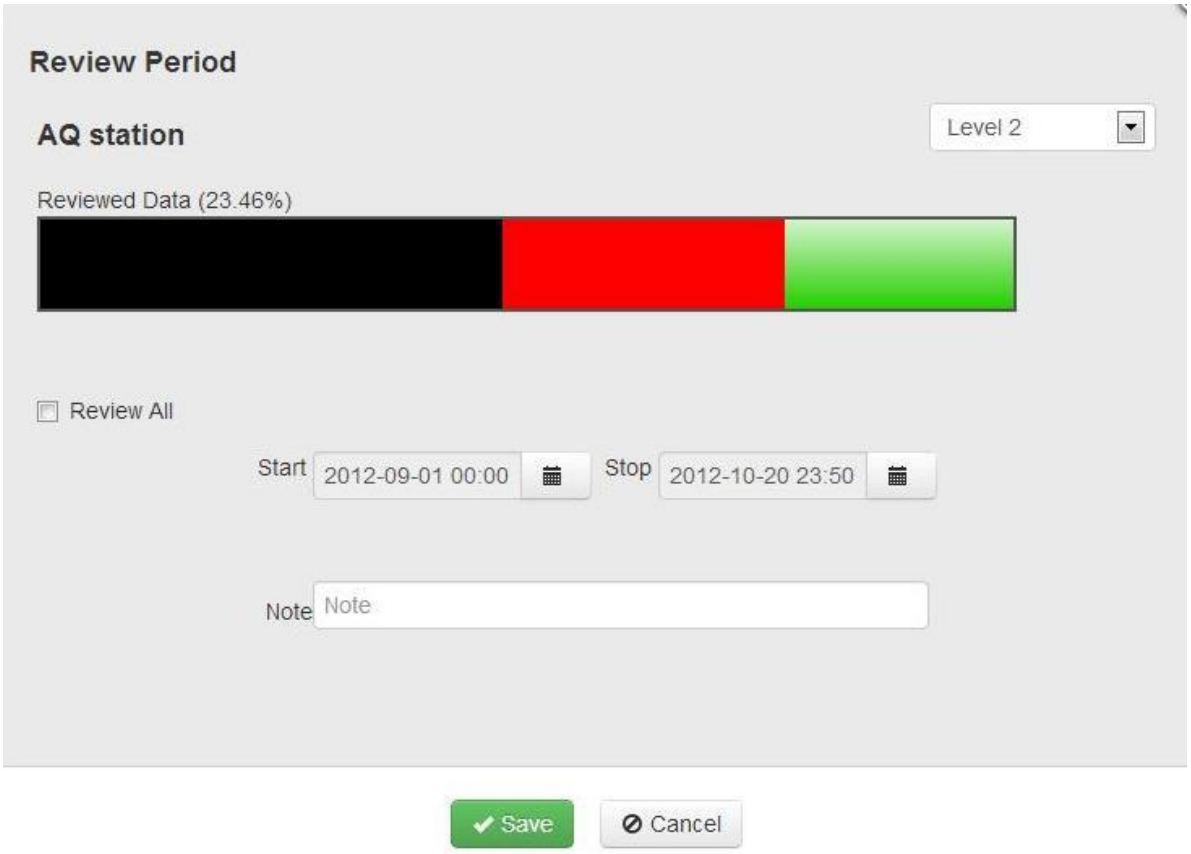
- Fill out the Note field
- Press the Confirm button

3.3 Period Review

The data needs to be reviewed for Level 2 to make it possible to correct the data for the same time period for Level 3. It's only possible to review the data for time period that is colored red because that data has been reviewed for Level 1. The colored bar displays the percentage of the data has been reviewed, black indicates the data that hasn't been reviewed in the previous level (Level 1), red indicates unreviewed data in Level 2 and green the data that has been reviewed in both Level 1 and Level 2.



- Select the appropriate level
- Select the time period to review
- Fill out the Note field
- Press the Save button

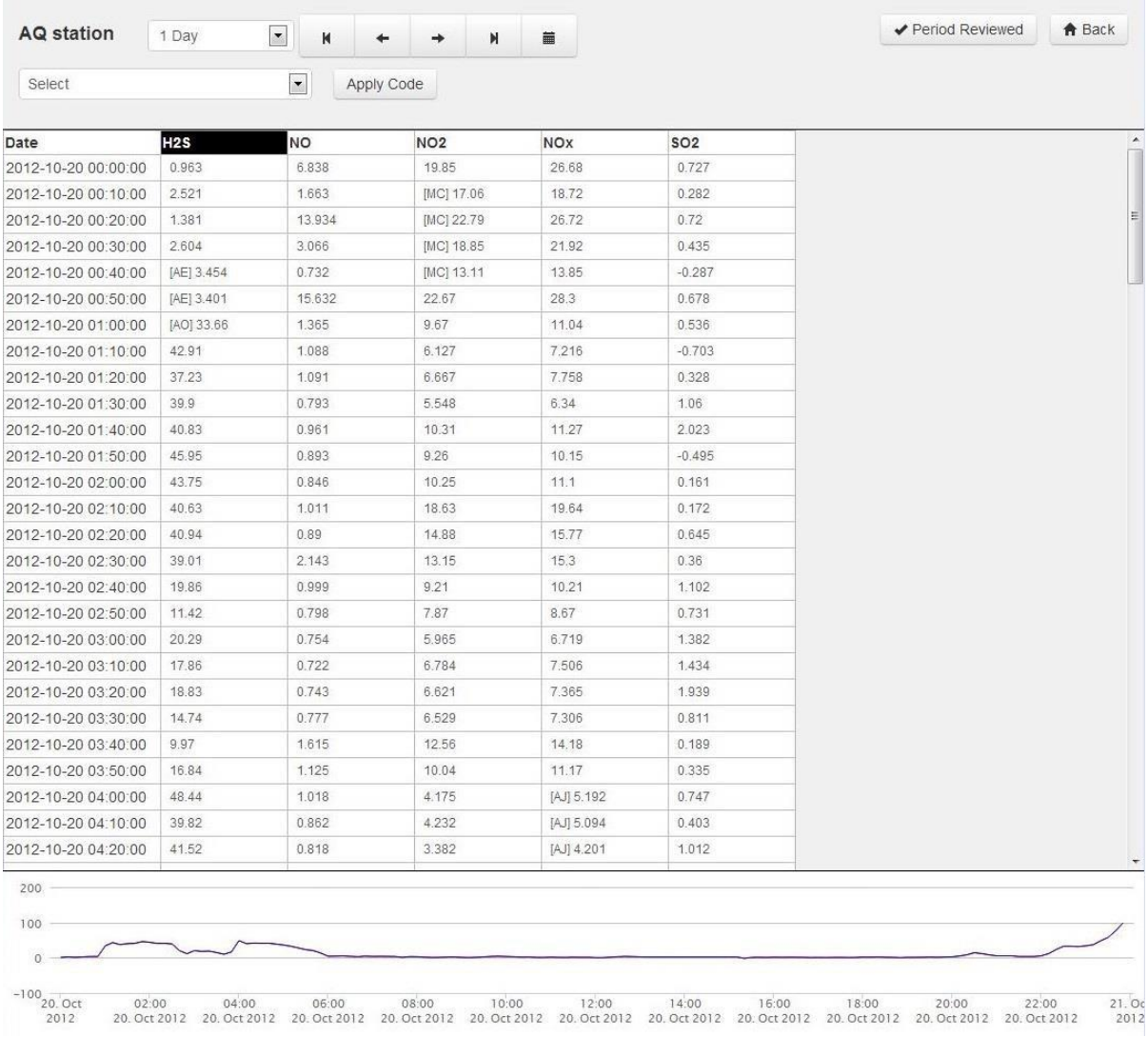


After the Save button has been pressed the selected reviewed period is now shown green.

4. Level 3 Corrections

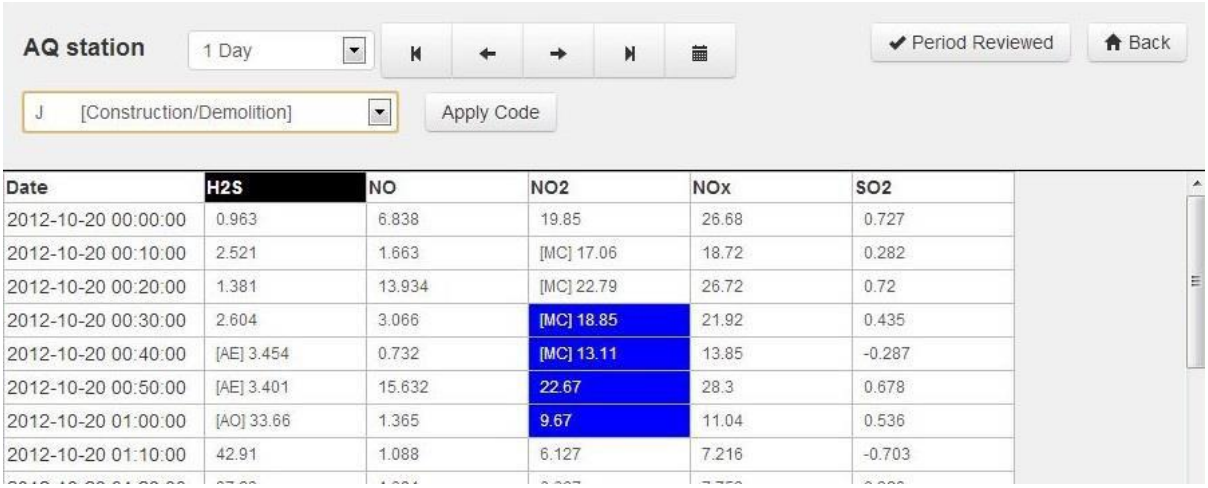
4.1 Manual Edit

After period has been reviewed for previous levels, it's possible to make corrections for Level 3. A flag is applied to the values being edited. When manually editing Level 3, it's possible to see the values that have been corrected for Level 2.



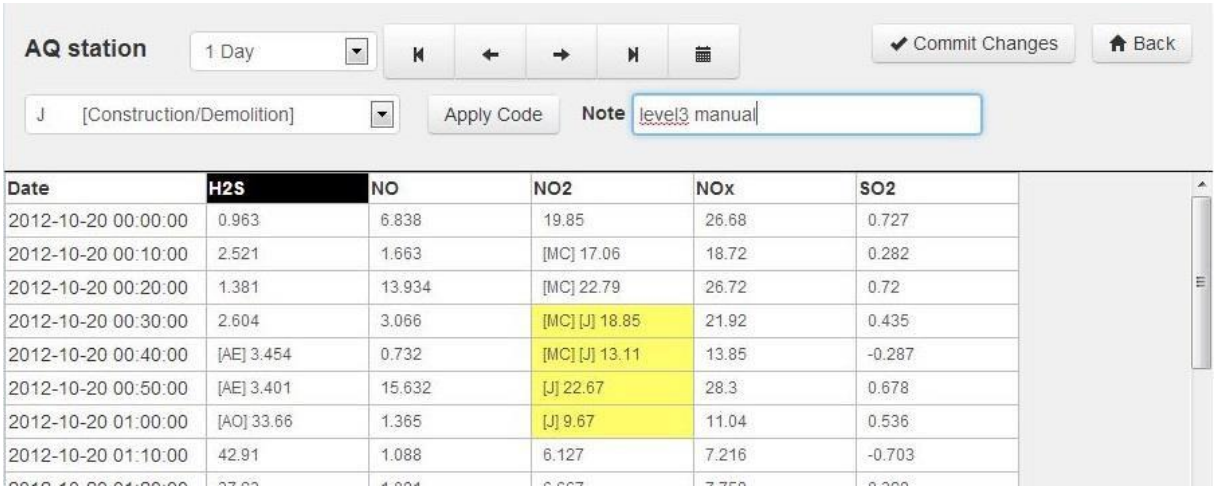
Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	[MC] 17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	[MC] 22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	[MC] 18.85	21.92	0.435
2012-10-20 00:40:00	[AE] 3.454	0.732	[MC] 13.11	13.85	-0.287
2012-10-20 00:50:00	[AE] 3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	[AO] 33.66	1.365	9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703
2012-10-20 01:20:00	37.23	1.091	6.667	7.758	0.328
2012-10-20 01:30:00	39.9	0.793	5.548	6.34	1.06
2012-10-20 01:40:00	40.83	0.961	10.31	11.27	2.023
2012-10-20 01:50:00	45.95	0.893	9.26	10.15	-0.495
2012-10-20 02:00:00	43.75	0.846	10.25	11.1	0.161
2012-10-20 02:10:00	40.63	1.011	18.63	19.64	0.172
2012-10-20 02:20:00	40.94	0.89	14.88	15.77	0.645
2012-10-20 02:30:00	39.01	2.143	13.15	15.3	0.36
2012-10-20 02:40:00	19.86	0.999	9.21	10.21	1.102
2012-10-20 02:50:00	11.42	0.798	7.87	8.67	0.731
2012-10-20 03:00:00	20.29	0.754	5.965	6.719	1.382
2012-10-20 03:10:00	17.86	0.722	6.784	7.506	1.434
2012-10-20 03:20:00	18.83	0.743	6.621	7.365	1.939
2012-10-20 03:30:00	14.74	0.777	6.529	7.306	0.811
2012-10-20 03:40:00	9.97	1.615	12.56	14.18	0.189
2012-10-20 03:50:00	16.84	1.125	10.04	11.17	0.335
2012-10-20 04:00:00	48.44	1.018	4.175	[AJ] 5.192	0.747
2012-10-20 04:10:00	39.82	0.862	4.232	[AJ] 5.094	0.403
2012-10-20 04:20:00	41.52	0.818	3.382	[AJ] 4.201	1.012

4.1.1 Correct Data



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	[MC] 17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	[MC] 22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	[MC] 18.85	21.92	0.435
2012-10-20 00:40:00	[AE] 3.454	0.732	[MC] 13.11	13.85	-0.287
2012-10-20 00:50:00	[AE] 3.401	15.632	22.67	28.3	0.678
2012-10-20 01:00:00	[AO] 33.66	1.365	9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703

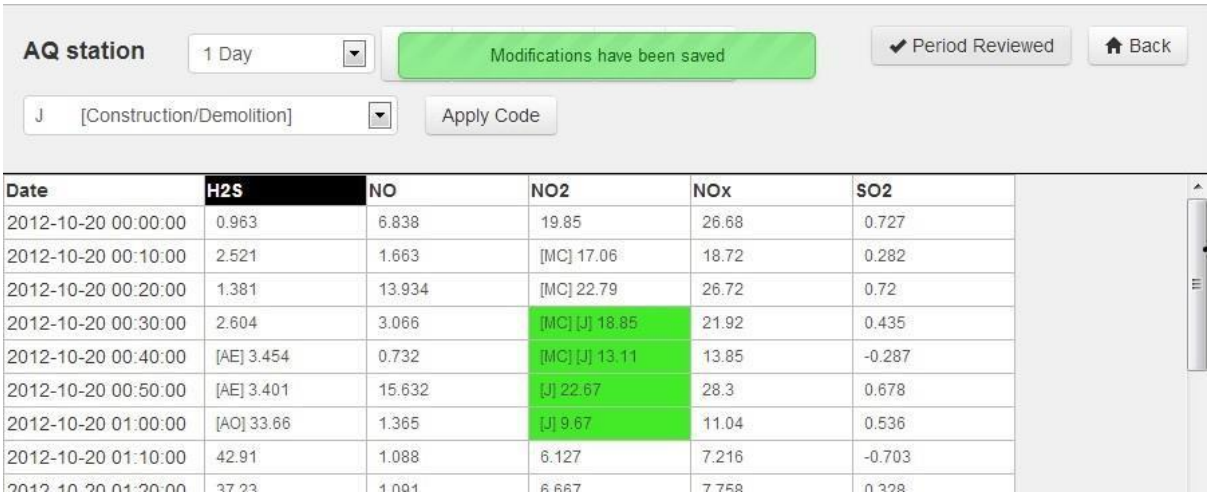
- Select the cells you want to edit in the table
- Select the code to be applied
- Press the Apply Code button



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	[MC] 17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	[MC] 22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	[MC] [J] 18.85	21.92	0.435
2012-10-20 00:40:00	[AE] 3.454	0.732	[MC] [J] 13.11	13.85	-0.287
2012-10-20 00:50:00	[AE] 3.401	15.632	[J] 22.67	28.3	0.678
2012-10-20 01:00:00	[AO] 33.66	1.365	[J] 9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703

After applying the changes, the cell color changes from blue to yellow and the code has been added in front of the value and the code from Level 2 if it exists.

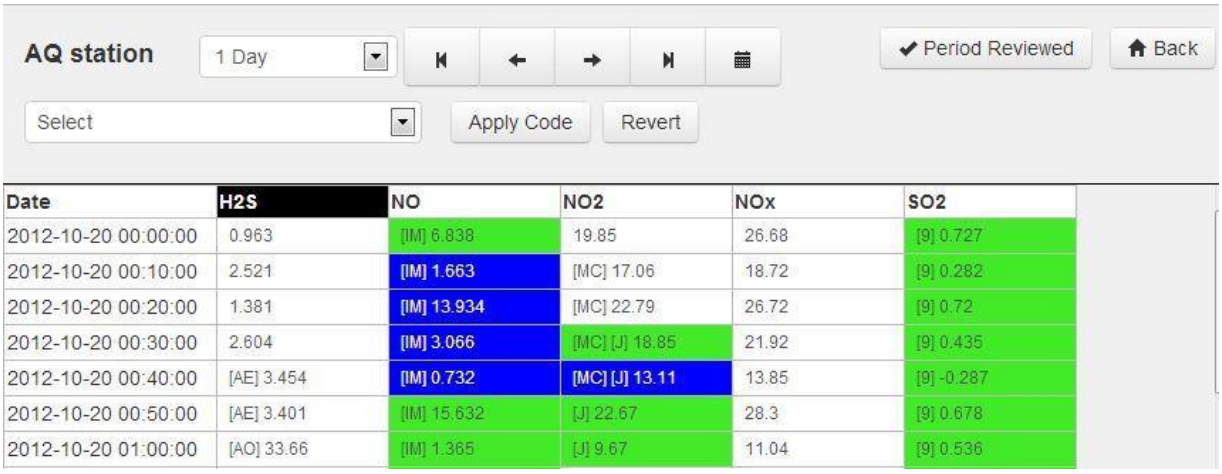
- Fill out the Note field
- Press the Commit Changes button



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	6.838	19.85	26.68	0.727
2012-10-20 00:10:00	2.521	1.663	[MC] 17.06	18.72	0.282
2012-10-20 00:20:00	1.381	13.934	[MC] 22.79	26.72	0.72
2012-10-20 00:30:00	2.604	3.066	[MC] [J] 18.85	21.92	0.435
2012-10-20 00:40:00	[AE] 3.454	0.732	[MC] [J] 13.11	13.85	-0.287
2012-10-20 00:50:00	[AE] 3.401	15.632	[J] 22.67	28.3	0.678
2012-10-20 01:00:00	[AO] 33.66	1.365	[J] 9.67	11.04	0.536
2012-10-20 01:10:00	42.91	1.088	6.127	7.216	-0.703
2012-10-20 01:20:00	37.23	1.091	6.667	7.758	0.328

When the changes have been committed the cell color changes from yellow to green.

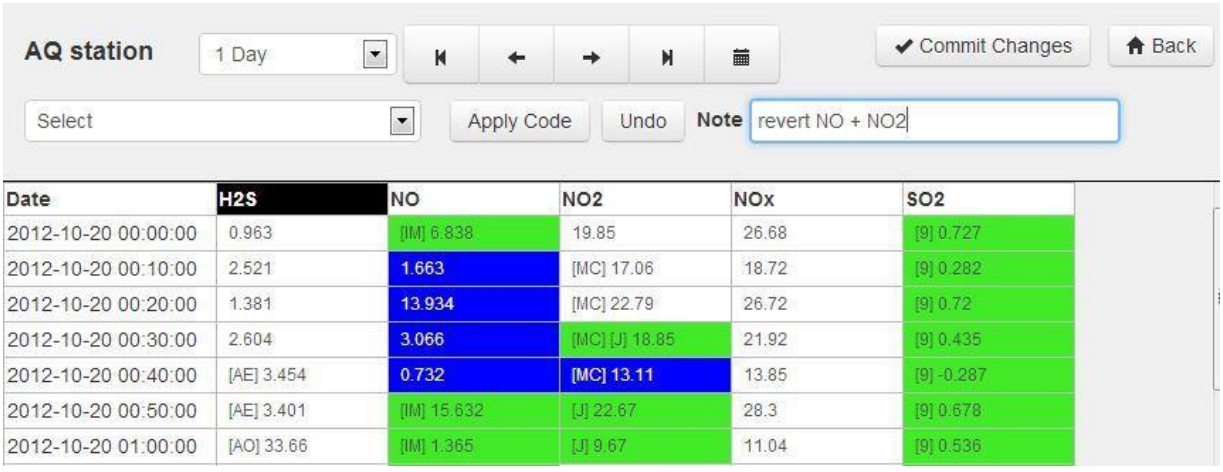
4.1.2 Revert Correction



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	[IM] 6.838	19.85	26.68	[9] 0.727
2012-10-20 00:10:00	2.521	[IM] 1.663	[MC] 17.06	18.72	[9] 0.282
2012-10-20 00:20:00	1.381	[IM] 13.934	[MC] 22.79	26.72	[9] 0.72
2012-10-20 00:30:00	2.604	[IM] 3.066	[MC] [J] 18.85	21.92	[9] 0.435
2012-10-20 00:40:00	[AE] 3.454	[IM] 0.732	[MC] [J] 13.11	13.85	[9] -0.287
2012-10-20 00:50:00	[AE] 3.401	[IM] 15.632	[J] 22.67	28.3	[9] 0.678
2012-10-20 01:00:00	[AO] 33.66	[IM] 1.365	[J] 9.67	11.04	[9] 0.536

To revert edited cells

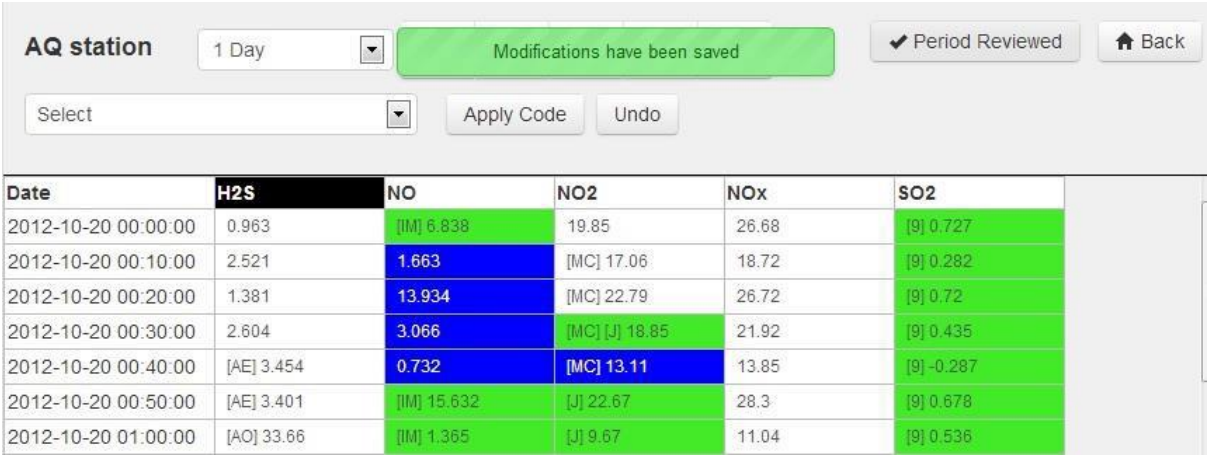
- Select the cells you want to revert (they should be colored green)
- Press the Revert button



Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	[IM] 6.838	19.85	26.68	[9] 0.727
2012-10-20 00:10:00	2.521	1.663	[MC] 17.06	18.72	[9] 0.282
2012-10-20 00:20:00	1.381	13.934	[MC] 22.79	26.72	[9] 0.72
2012-10-20 00:30:00	2.604	3.066	[MC] [J] 18.85	21.92	[9] 0.435
2012-10-20 00:40:00	[AE] 3.454	0.732	[MC] 13.11	13.85	[9] -0.287
2012-10-20 00:50:00	[AE] 3.401	[IM] 15.632	[J] 22.67	28.3	[9] 0.678
2012-10-20 01:00:00	[AO] 33.66	[IM] 1.365	[J] 9.67	11.04	[9] 0.536

The code in front of the value has been removed

- Fill out the Note field
- Press the Commit Changes button

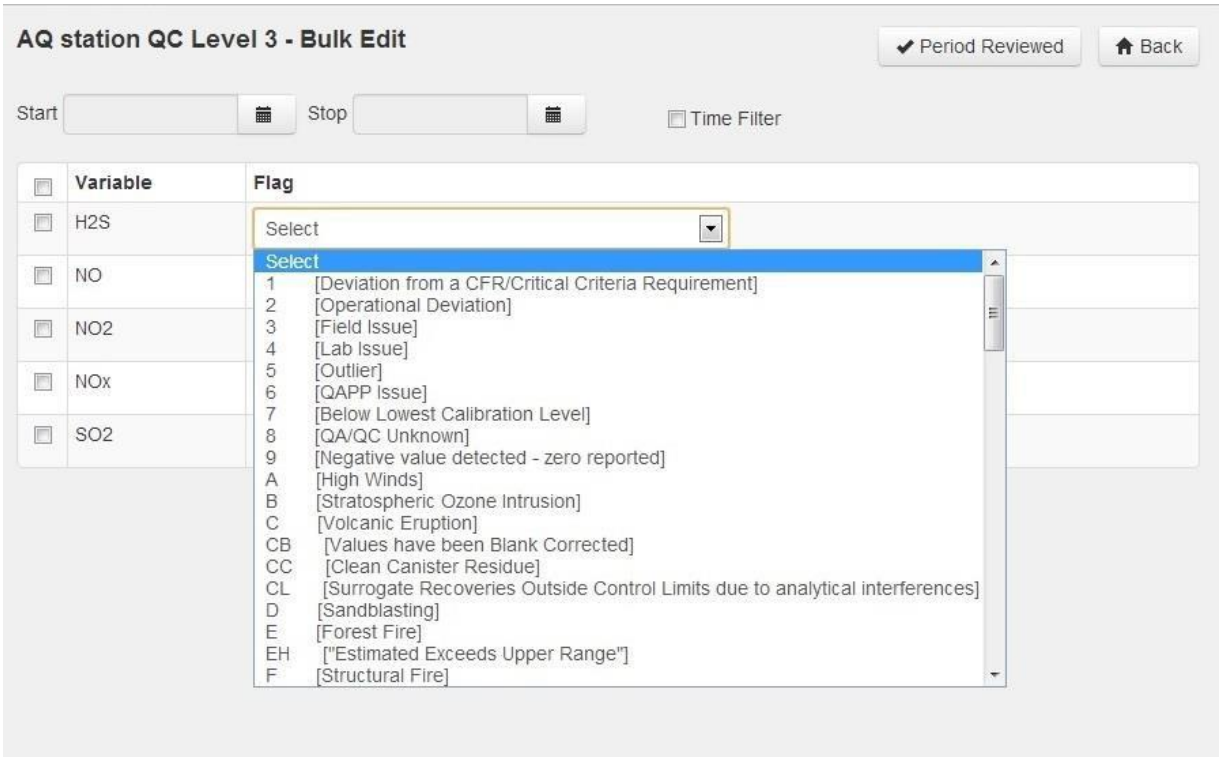


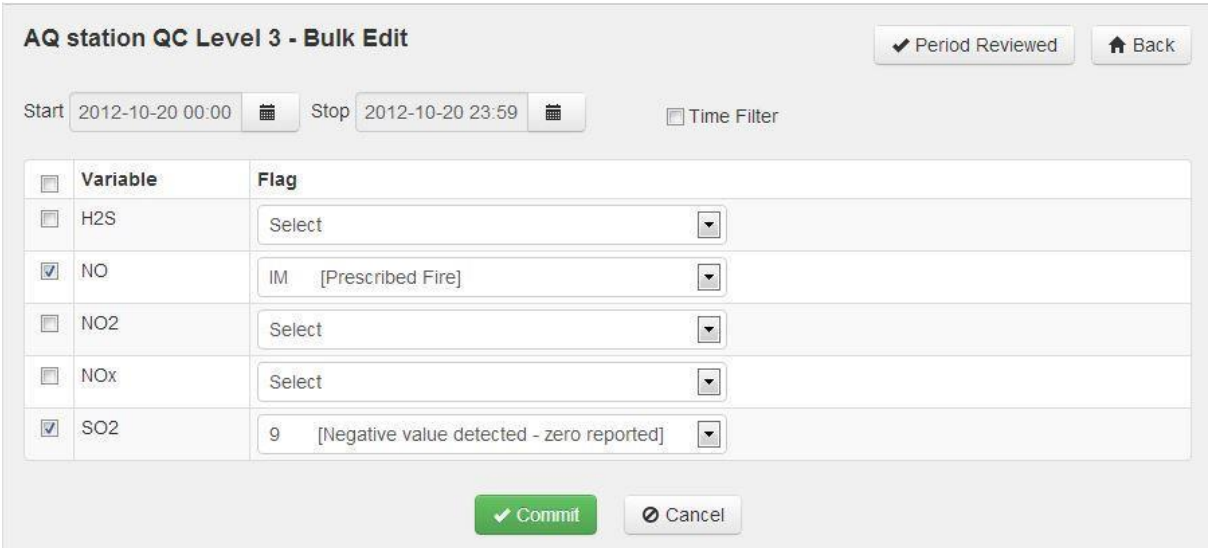
Date	H2S	NO	NO2	NOx	SO2
2012-10-20 00:00:00	0.963	[IM] 6.838	19.85	26.68	[9] 0.727
2012-10-20 00:10:00	2.521	1.663	[MC] 17.06	18.72	[9] 0.282
2012-10-20 00:20:00	1.381	13.934	[MC] 22.79	26.72	[9] 0.72
2012-10-20 00:30:00	2.604	3.066	[MC] [J] 18.85	21.92	[9] 0.435
2012-10-20 00:40:00	[AE] 3.454	0.732	[MC] 13.11	13.85	[9] -0.287
2012-10-20 00:50:00	[AE] 3.401	[IM] 15.632	[J] 22.67	28.3	[9] 0.678
2012-10-20 01:00:00	[AO] 33.66	[IM] 1.365	[J] 9.67	11.04	[9] 0.536

A notification appears that your modification have been saved and the flag of the reverted cells has been removed.

4.2 Bulk Edit

Similar to bulk edit for Level 2, there are flags that are set for variables during a selected time period.

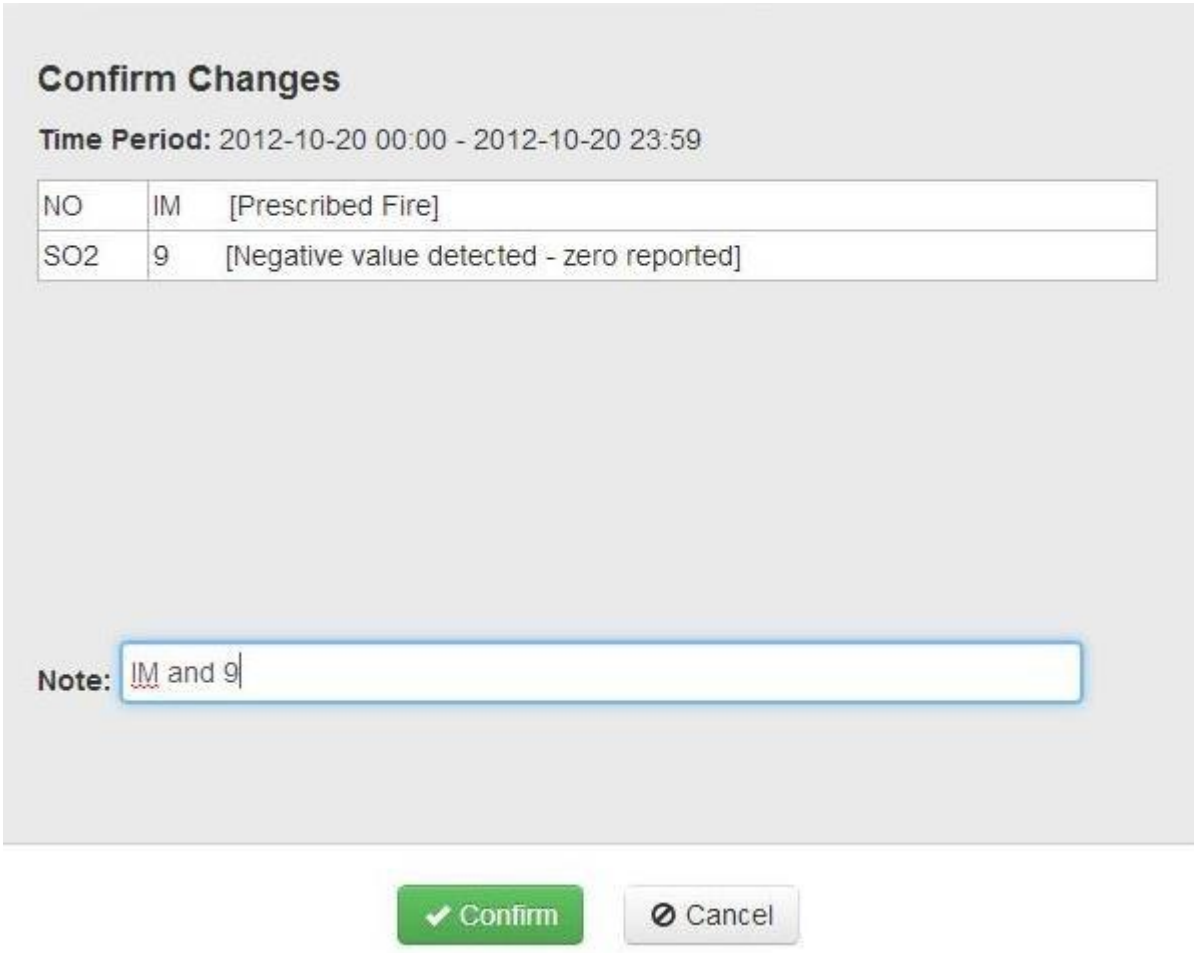




To bulk edit data, you need to start by selecting variables and setting flag.

- Select the start and stop date
  - If time filter is needed, check the Time Filter and select the hours you want the corrections be made between
  - Time filter can also be used when editing needs to be done every x days
- Check the variables you want to edit

- Select the flag you want to use
- Press the Commit button

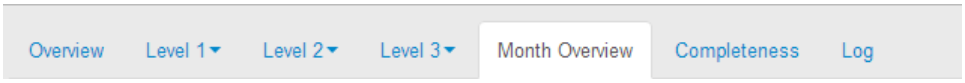


Next you need to confirm the correction of the data

- Fill out the Note field
- Press the Confirm button

5. Reports

The reports can be accessed through the Quick View. They can all be downloaded to a text file.



5.1 Month Overview

HR-BEG HR-END DAY	00 01	01 02	02 03	03 04	04 05	05 06	06 07	07 08	08 09	09 10	10 11	11 12	12 13	13 14	14 15	15 16	16 17	17 18	18 19	19 20	20 21	21 22	22 23	23 24	AVG	MAX	MIN
1	2.94	0.36	0.68	0.26	0.29	1.58	1.83	21	37.5	15.2	11.6	4.52	2.74	1.33	1.5	1.52	1.9	1.83	3.28	11.6	10.6	9.47	4.57	3.59	6.32	37.5	0.26
2	1.43	1.33	1.05	1.05	0.34	0.66	1.53	5.17	11	8.03	7.11	4.89	6.13	5.58	6.61	6.34	11.6	8.65	11	7.64	6.56	5.9	3.5	2.42	5.23	11.6	0.34
3	0.68	0.92	0.15	0.11	0.15	1.74	1.8	9.84	35.2	11.8	2.97	1.64	0.74	1.74	2.33	2.23	6.24	8.79	7.68	5.52	4.67	5.27	2.97	2.56	4.91	35.2	0.11
4	1.09	1.37	0.34	1.29	0.14	0.63	1.76	7.38	21.3	8.94	5.36	6.87	5.99	7.45	7.33	8.34	7.59	6.95	5.98	5.42	3.55	3.03	1.98	1.27	5.06	21.3	0.14
5	1.57	1.04	1.06	0.65	0.43	0.45	1.14	0.68	1.73	1.96	4.93	4.25	4.16	5.77	8.94	2.06	1.74	2.57	6.78	4.52	3.51	2.68	1.69	1.5	2.74	8.94	0.43
6	3.53	1.28	1.26	0.37	0.17	0.094	0.72	3.44	0.67	0.6	1.5	1.17	0.22	0.53	3.09	0.48	0.59	0.46	0.39	1.42	8.86	16.2	7.05	6.7	2.53	16.2	0.094
7	1.07	5.6	7.66	1.65	0.69	4.11	2.65	15.4	61.3	7.98	1.5	1.3	0.3	0.97	0.38	0.91	1.02	1.13	0.77	0.19	0.18	6.99	13.9	8.99	6.11	61.3	0.18
8	3.54	5.45	11.1	0.98	0.59	3.25	18.9	24.8	93.5	32.6	24.1	15	7.4	1.39	0.94	1.14	1.53	1.67	1.67	0.41	0.068	0.019	-0.032	-0.032	10.4	93.5	-0.032
9	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	0	0	0
10	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	0	0	0
11	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	0	0	0
12	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	[BL]	0	2.65	2.65
13	2.65	0.26	0.97	0.15	0.16	0.25	0.19	0.029	0.17	0.29	0.51	2.15	1.62	1.4	2.12	2.85	2.52	2.39	2.48	1.16	1.91	1.24	0.64	0.34	1.19	2.85	0.029
14	0.13	0.048	0.016	-0.031	0.017	0.12	0.51	2.88	7.14	4.1	2.55	3.86	3	3.85	3.95	3.66	6.99	4.06	2.36	1.51	1.48	0.96	0.65	0.75	2.27	7.14	-0.031
15	0.23	0.05	0.076	0.035	0.013	0.02	0.12	1.03	1.68	0.68	0.57	0.5	0.4	0.57	0.92	0.79	0.68	-0.014	0.0097	0.15	0.047	0.28	0.64	1.58	0.46	1.68	-0.014
16	1.09	0.17	1.26	0.018	0.14	0.068	0.29	4.61	9.21	3.62	4.46	3.43	4.39	4.99	5.44	6.39	9.31	5.86	4.89	4.55	2.69	1.46	1.86	1.08	3.39	9.31	0.018
17	0.52	0.068	0.06	0.035	0.17	0.15	0.23	4.09	14.7	14.2	8.79	4.44	6.84	6.34	3.2	1.32	1.46	1.75	4.57	6.81	6.88	2.86	4.64	3.09	4.05	14.7	0.035
18	[AJ]	[AJ]	[AJ]	[AJ]	[AJ]	[AJ]	1.68	6.71	38.7	15.6	7.34	9.02	8.06	5.79	7.14	10.6	5.83	10.1	2.6	2.95	8.82	8.48	10.3	7	9.26	38.7	1.68
19	5.49	3.12	1.6	1.25	2.16	1.71	1.57	2.76	6.53	9.6	6.31	3.51	4.37	1.29	1.69	1.53	5.89	1.5	1.63	5.26	6.97	3.44	1.95	5.26	3.6	9.6	1.25
20	3.55	1.92	1.53	1	0.3	0.54	0.36	0.28	0.32	1.2	1.53	2.77	2.4	3.61	4.25	3.08	1.43	6.66	4.6	1.94	0.72	0.1	0.079	0.19	1.85	6.66	0.079
21	0.056	0.054	0.023	0.075	0.056	0.053	0.07	0.062	0.7	0.2	0.34	0.25	0.12	0.91	1.57	2.82	0.54	0.48	0.44	0.22	3.72	0.46	0.29	0.1	0.57	3.72	0.023
22	0.091	0.059	0.055	0.042	0.049	0.051	0.042	0.37	19.9	9.91	7.46	5.83	4.89	9.82	2.96	1.24	1.4	9.02	11.1	25.8	16	6.61	5.75	2.19	5.86	25.8	0.042
23	1.48	0.27	0.32	0.21	0.47	0.82	1.13	8.84	38.7	41.6	9.55	5.97	2.33	1.23	0.78	1.32	1.53	2.59	4.95	1.82	8.41	5.15	2.57	3.35	6.06	41.6	0.21
24	2.82	0.72	0.53	0.14	0.16	0.32	0.3	0.65	1.68	1.02	0.75	0.2	0.19	0.13	0.42	0.2	0.44	0.34	0.8	10.5	11.3	6.01	6.68	3.55	2.08	11.3	0.13
25	0.66	0.13	0.093	0.068	0.07	0.11	0.067	0.075	0.22	0.18	0.42	0.96	1.3	0.85	0.99	0.95	[RS]	[RS]	[RS]	[RS]	0.68	0.34	0.33	0.28	0.44	1.3	0.067
26	0.14	0.14	0.092	0.15	0.082	0.068	0.11	0.18	0.22	1.79	1.78	0.93	0.73	1.08	0.65	0.81	0.46	0.44	0.4	0.12	0.059	0.16	0.14	0.041	0.45	1.79	0.041
27	0.07	0.0047	0.0028	0.0005	0.029	-0.029	-0.08	-0.09	-0.042	-0.028	[IH]	[IH]	[IH]	[IH]	0.32	0.11	0.051	0.11	0.064	0.0048	-0.016	0.055	0.047	0.02	0.03	0.32	-0.09
28	-0.0085	-0.007	0.0012	0.11	0.13	0.53	4.45	23.6	70.9	42.5	[IH]	[IH]	[IH]	[IH]	2.25	1.73	0.47	1.29	4.83	39	94.9	65.2	54.6	44.6	22.6	94.9	-0.0085
29	25.8	3.51	0.95	2.09	0.54	2.28	2.78	11.3	32.5	27.1	12	4.02	2.44	1.61	1.1	0.93	0.91	0.71	0.48	0.55	0.12	0.17	0.15	0.13	5.59	32.5	0.12
30	0.11	0.12	0.13	0.11	0.12	0.15	0.78	1.81	35.8	33.7	5.17	2.68	5.55	1.1	1.21	0.95	0.6	0.59	4.13	14.2	13.9	12.6	12.2	8.7	6.52	35.8	0.11
AVG	2.43	1.12	1.24	0.47	0.3	0.79	1.73	6.03	20.8	11.3	5.36	3.76	3.18	2.89	2.77	2.47	2.91	3.2	3.52	6.13	8.33	6.35	5.35	4.2	3.9		
MAX	25.8	5.6	11.1	2.09	2.16	4.11	18.9	24.8	93.5	42.5	24.1	15	8.06	9.82	8.94	10.6	11.6	10.1	11.1	39	94.9	65.2	54.6	44.6		94.9	
MIN	-0.0085	-0.007	0.0012	-0.031	0.013	-0.029	-0.08	-0.09	-0.042	-0.028	0.34	0.2	0.12	0.13	0.32	0.11	0.051	-0.014	0.0097	0.0048	-0.016	0.019	-0.032	-0.032			-0.09

TOTAL HOURS = 720, NUMBER OF GOOD HOURS = 606, NUMBER OF MISSING HOURS = 114, DATA_CAPTURE = 84.2 (PERCENT)

- Select variable, year, month and level
- Year will show a list of all the years where the selected Site has data
- It is possible to download the data to a delimited text file

5.2 Completeness

Variable	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Q1	Q2	Q3	Q4	Year
H2S	32.6%	100%	100%	100%	100%	100%	100%	63.8%	11.1%	100%	100%	21.5%	58.2%
NO	32.6%	100%	100%	100%	100%	100%	84.2%	60.8%	11.1%	100%	94.8%	20.5%	56.6%
NO2	32.6%	100%	100%	100%	100%	100%	100%	64.2%	11.1%	100%	100%	21.6%	58.2%
NOx	32.6%	100%	100%	100%	100%	100%	100%	61.3%	11.1%	100%	100%	20.7%	58.0%
SO2	32.6%	100%	100%	100%	100%	100%	100%	61.3%	11.1%	100%	100%	20.7%	58.0%

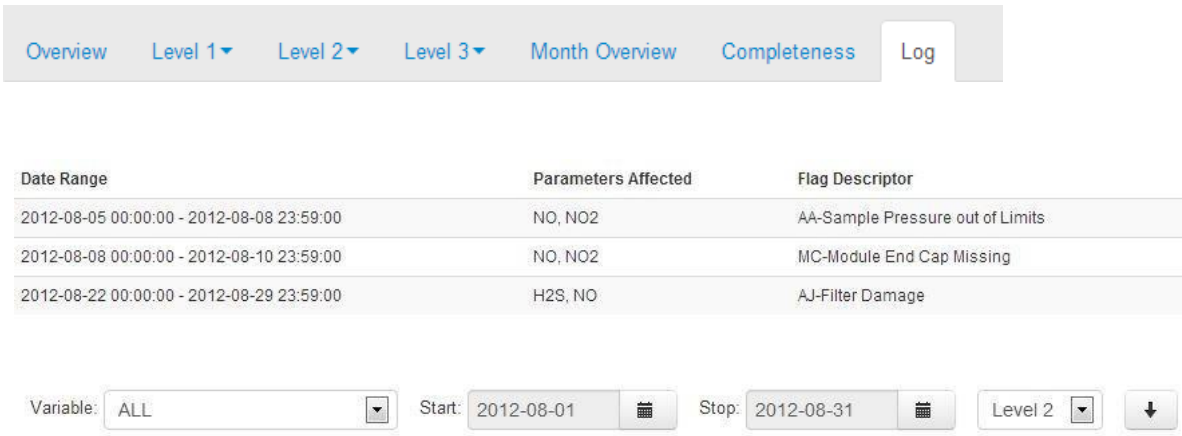
All months selected.

Variable	September	Total	Valid
H2S	100%	4320	4320
NO	84.2%	4320	3636
NO2	100%	4320	4320
NOx	100%	4320	4320
SO2	100%	4320	4320

One month and details selected.

- Select year, month, level and details
- Year will show a list of all the years where the selected Site has data
- Details will show the counts behind the percentages
- It is possible to download the data to a delimited text file

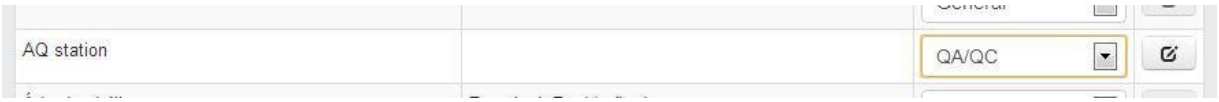
5.3 Log



- Select variable, start and stop time and level

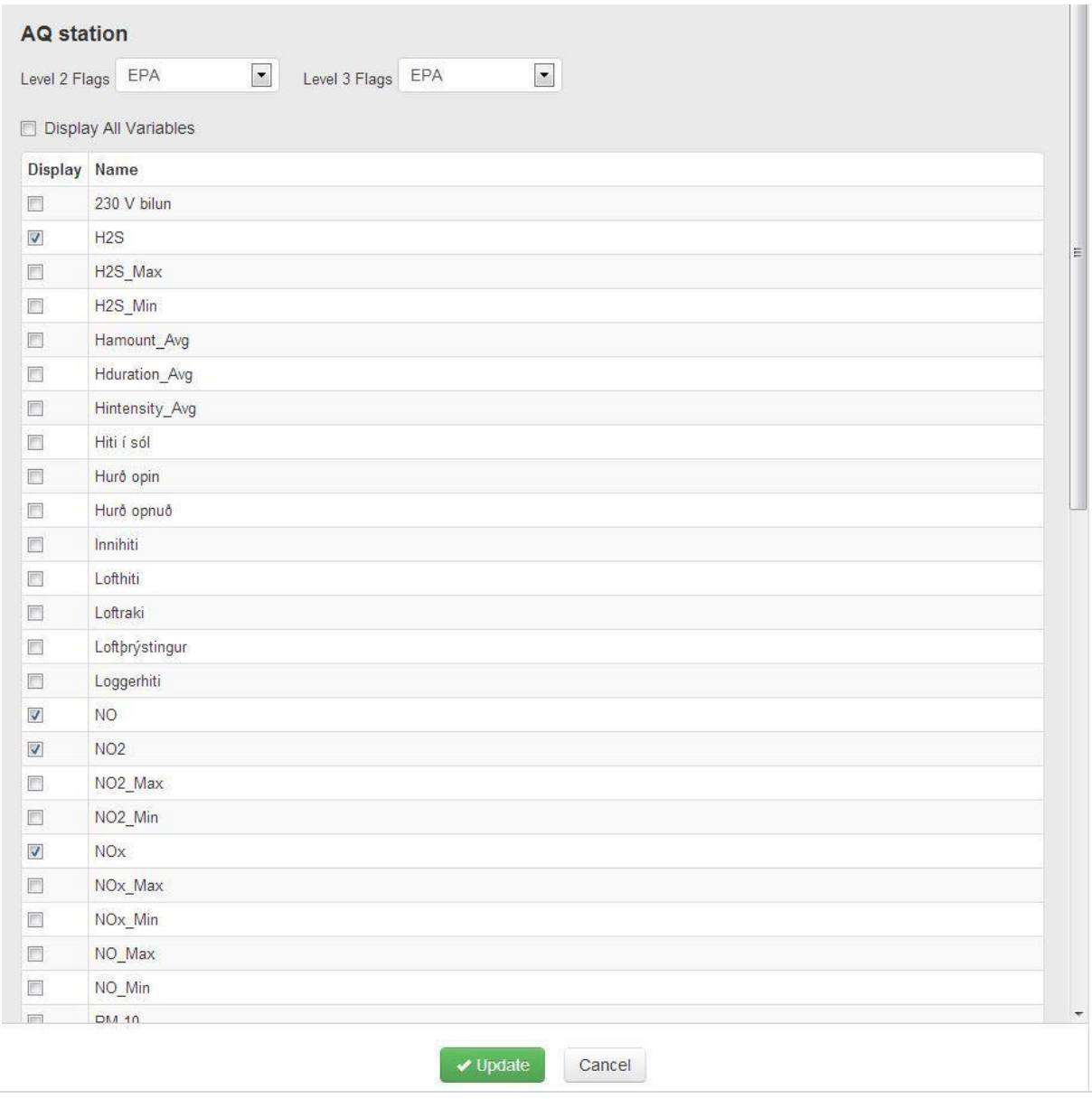
Appendix - Configuration

The Quality Control only needs to be configured once in the beginning which can only be done by users who have access to QC site setup. The configuration is accessed through the Quick View Setup configuration.



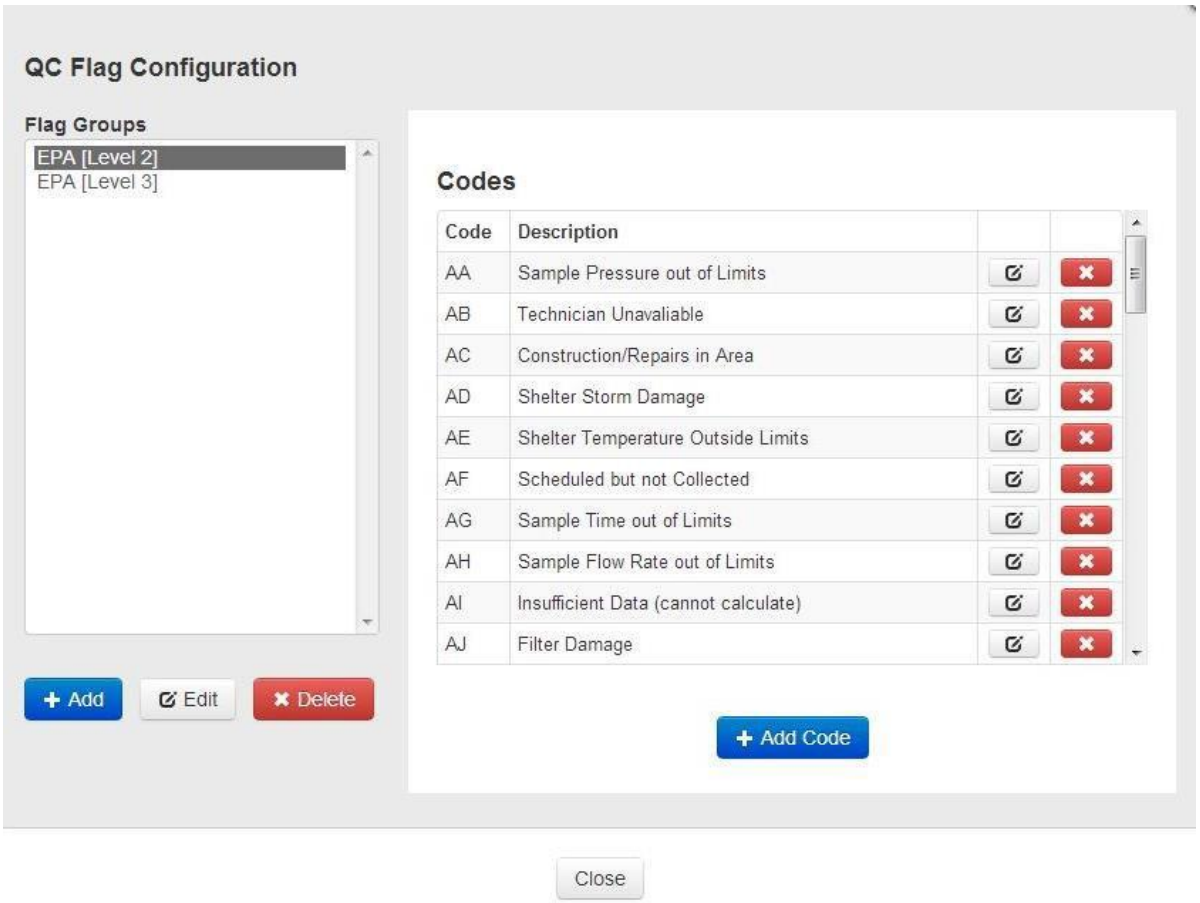
On the main QC site, the sites can be configured. For the station you wish to configure, select QA/QC from the select list and press the Edit button.

1. Site Configuration



- Select the Level 2 and Level 3 flags
- Select which variables you wish to be able to correct. For example maintenance variables such as battery voltage would not be selected.

2. Flag Configuration



Users that have the QC flag setup access, can edit the Flag Configuration.

EPA is the default flag. It‘s possible to add new flag groups if necessary.