Totalflow product line

2106165TB-TB208
NGC Gas Factor File Modifications for GPA 2172 with a Base Temperature of 59F

	Totalflow products	Doc name:	2106165TB-TB208
File name:	**2106165TB-TB208**	Status of document:	Released
Issued by department:	Totalflow customer service	Distribution:	External public
Date:	1/4/2019	Creator name:	USJEBAK
Revision:	AA	Contact:	+1 918.338.4888 or 800.442.3097
Page:	1/5	Language:	En

Proprietary information

1. Introduction

This procedure details the necessary modifications to the gas factor file required to calculate heating value at a base temperature of 59F instead of 60F.

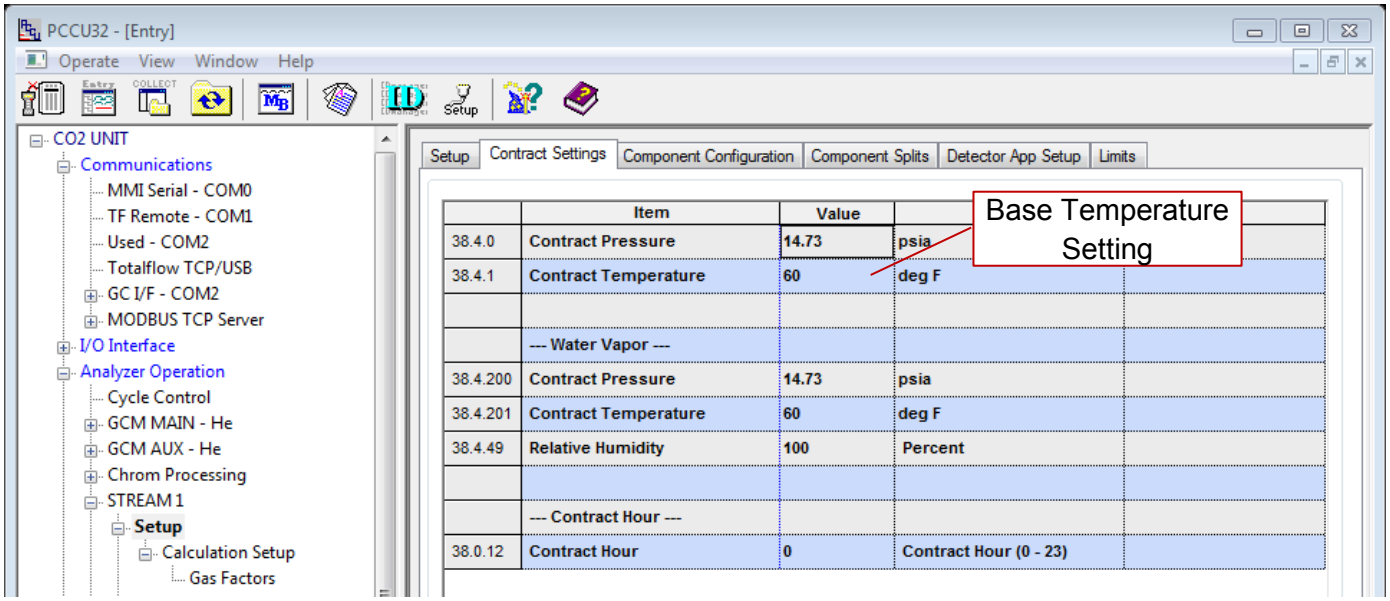
2. Description

During recent testing, it was discovered that the NGC has a software defect related to base temperature conversions in the GPA-2172 calculations in the NGC product line. The defect allows the user to change the base temperature for the calculations, but does not utilize the new value in any energy calculations. The problem was discovered by users trying to use GPA 2172 with imperial units, but at a base temperature of 59F which equates to 15C. Fortunately, ISO calculations at 15C are not affected and continue to be correct.

This technical bulletin describes the necessary changes to gas factor file in order to correctly calculate associated values with GPA-2172 at a base temperature of 59F (15C).

3. Is your product affected?

Your product is affected by this defect, if you are using GPA-2172 as the calculation type combined with any base temperature other than 60F. See screenshot below for location of base temperature setting. Setting is stream dependent so each stream will need to be checked.

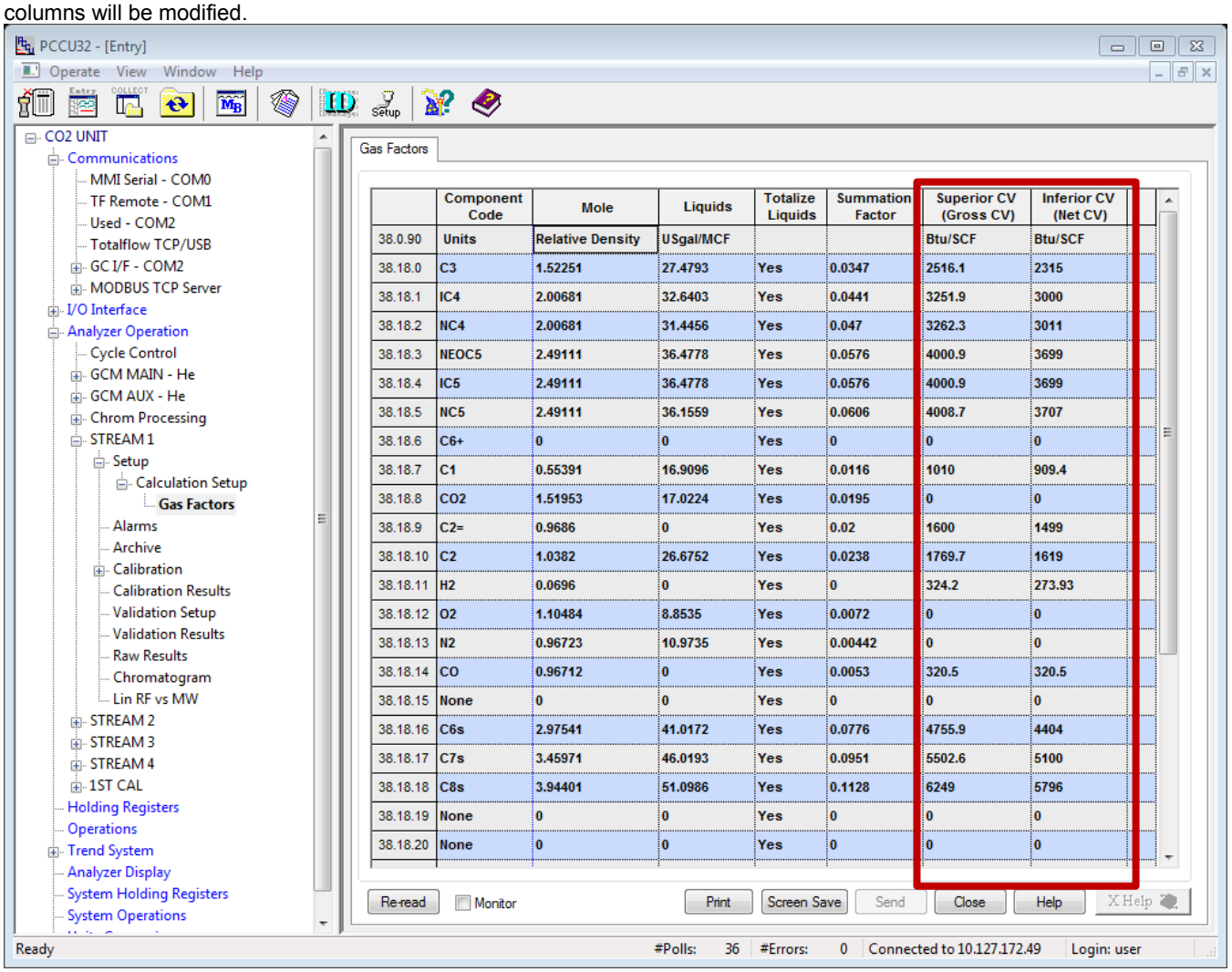


Your product is not affected by this defect, if you are using a base temperature of 60F with GPA-2172, or you are using ISO-6976 for your energy calculations.

4. Resolution

In order to resolve the problem, the gas factor file needs to be modified with factors that are already adjusted to a base temperature of 59F.

In expert view mode, the screenshot below shows the location of the gas factors in PCCU. As with the base temperature, these factors are stream dependent and must be changed under each stream. The values in the Superior CV and Inferior CV columns will be modified.

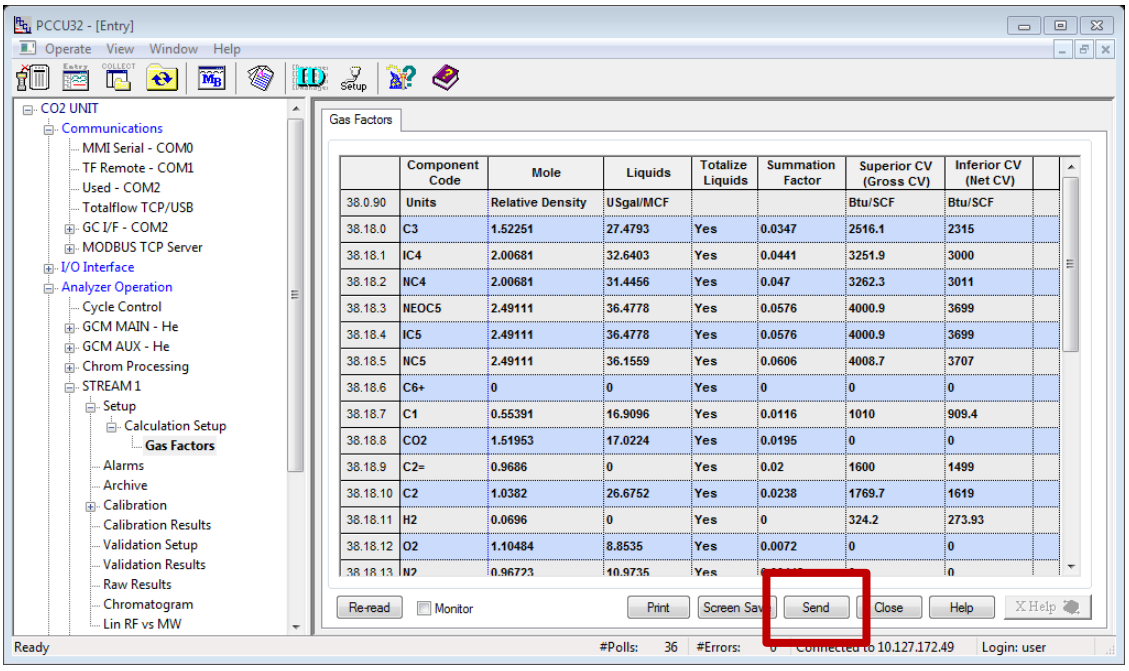


	Component Code	Mole	Liquids	Totalize Liquids	Summation Factor	Superior CV (Gross CV)	Inferior CV (Net CV)
38.0.90	Units	Relative Density	USgal/MCF			Btu/SCF	Btu/SCF
38.18.0	C3	1.52251	27.4793	Yes	0.0347	2516.1	2315
38.18.1	IC4	2.00681	32.6403	Yes	0.0441	3251.9	3000
38.18.2	NC4	2.00681	31.4456	Yes	0.047	3262.3	3011
38.18.3	NEOC5	2.49111	36.4778	Yes	0.0576	4000.9	3699
38.18.4	IC5	2.49111	36.4778	Yes	0.0576	4000.9	3699
38.18.5	NC5	2.49111	36.1559	Yes	0.0606	4008.7	3707
38.18.6	C6+	0	0	Yes	0	0	0
38.18.7	C1	0.55391	16.9096	Yes	0.0116	1010	909.4
38.18.8	CO2	1.51953	17.0224	Yes	0.0195	0	0
38.18.9	C2=	0.9686	0	Yes	0.02	1600	1499
38.18.10	C2	1.0382	26.6752	Yes	0.0238	1769.7	1619
38.18.11	H2	0.0696	0	Yes	0	324.2	273.93
38.18.12	O2	1.10484	8.8535	Yes	0.0072	0	0
38.18.13	N2	0.96723	10.9735	Yes	0.00442	0	0
38.18.14	CO	0.96712	0	Yes	0.0053	320.5	320.5
38.18.15	None	0	0	Yes	0	0	0
38.18.16	C6s	2.97541	41.0172	Yes	0.0776	4755.9	4404
38.18.17	C7s	3.45971	46.0193	Yes	0.0951	5502.6	5100
38.18.18	C8s	3.94401	51.0986	Yes	0.1128	6249	5796
38.18.19	None	0	0	Yes	0	0	0
38.18.20	None	0	0	Yes	0	0	0

The superior and inferior CV values need to be changed to the values listed in the table below. These values have been adjusted to a base temperature of 59F.

Component	Superior CV @59F	Inferior CV @59F
C3	2520.95	2319.46
IC4	3258.17	3005.78
NC4	3268.59	3016.81
NeoC5	4008.61	3706.13
IC5	4008.61	3706.13
NC5	4016.43	3714.15
C1	1011.95	911.15
C2	1773.11	1622.12
C2=	1603.09	1501.89
H2	324.83	274.45
CO	321.12	321.12
C6's	4765.07	4412.49
C7's	5513.21	5109.83
C8's	6261.05	5807.18

After these values have been changed in the gas factor file, make sure to press the send button at the bottom of the PCCU screen.



The configuration is now ready to calculate at a base temperature of 59F and may now be backed up, as per normal procedures. Please contact support for any additional information on this procedure at the information listed below.

5. Additional Information

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