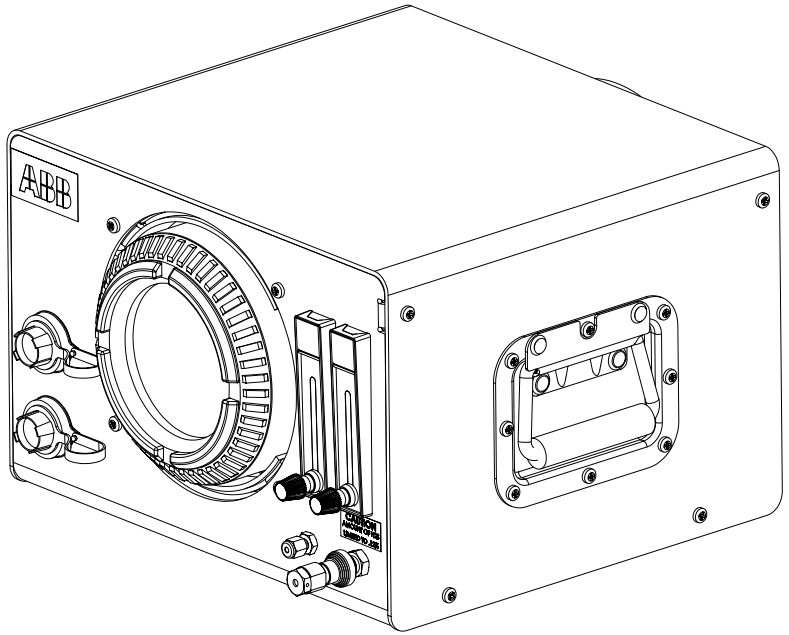
NGC8200 Portable Unit Start-Up Guide



TOTALFLOW

MEASUREMENT & CONTROL SYSTEMS

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Introduction

This is a quick start guide designed for typical installations only. It is recommended that inexperienced technicians consult the *Totalflow® NGC8200 User's Manual* for more detailed information while doing the installation and start-up. Scan through the guide to see what information is available before you begin the installation. If for some reason, you have questions that are not answered in this guide or your other documentation, call your local Totalflow representative or call the number listed on the back page of this guide. Alternate methods of installation are acceptable and may save time. However, it is recommended that inexperienced technicians perform these procedures in this order.

Unpack and inspect the Portable NGC8200 and optional equipment if purchased. Inspect all parts and pieces for damage and missing or incorrect components.

Basic Installation

Step 1 Mechanical/Electrical Installation of Portable NGC8200

The Portable NGC8200 is a natural gas chromatograph designed to be installed in a vehicle. Real-time chromatographic analysis can now be provided for any site that can be driven to. The Portable NGC weighs in at about 38 pounds (17Kg).

The calibration blend and sample gas connect to the front of the Portable NGC (see Figure 1). Also located on the front of the unit you will find the USB and Ethernet connections, as well as both Rotameter adjustment knobs.

The 110VAC power switch/connector, carrier gas input and various vents are located at the rear of the Portable NGC (see Figure 2).

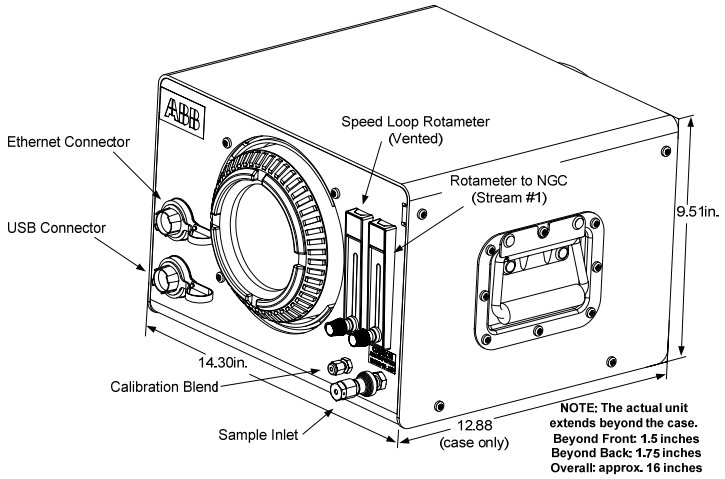


Figure 1 Front View

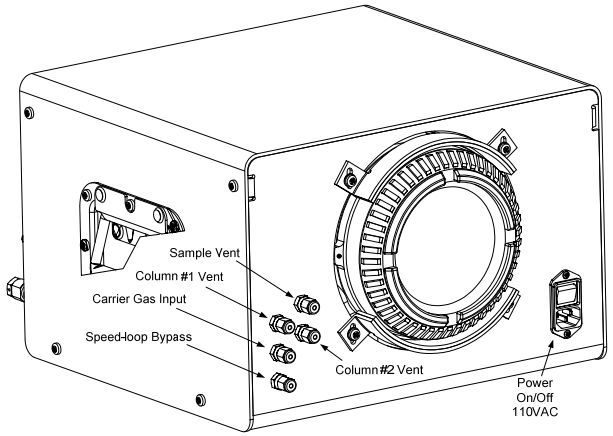


Figure 2 Rear View

1A Mechanical Installation

Vents lines should be installed in the corresponding connectors on the rear of the unit and should not extended beyond about 10 feet (3 meters). Excessive lengths of tubing on the vents can cause problems by back pressuring the columns. Attach Carrier Gas to corresponding connector also on the rear of the unit. The Carrier Gas Input should be regulated to 90psig ± 5psig (see Figure 3).

Attach Calibration Blend to corresponding connector on front of unit. Input should have well regulated input pressure between 10 and 15psig.

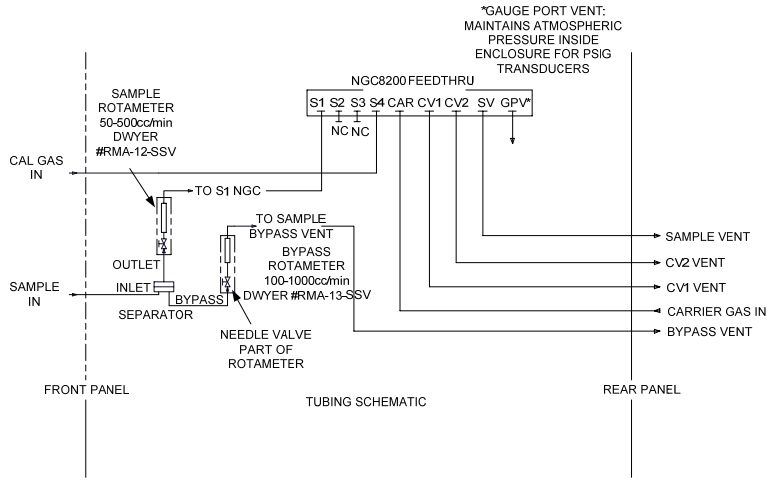


Figure 3 Tubing Schematic

1B Electrical Installation

The 110VAC input is intended to be plugged into your vehicle's power inverter or it may be directly powered from the vehicles 12VDC system. If you require the unit to be powered directly from the vehicle's 12VDC system, please call Totalflow personnel for details (1-800-442-3097).

The NGC's low power consumption lets the operator maintain continuous power on the unit and keep the columns heated for immediate use on site.

1C Allow unit to run for a minimum of 8 hours

During this time, you should continue through steps 2 and 3 in preparation for the calibration procedure.

Step 2 Local and Network Connections to the Portable NGC

The following steps describe three basic ways to connect to the Portable NGC. Go to the step that best addressed your situation.

- Step 2a describes a local connection to the Portable NGC using the USB connector and a USB cable.
- Step 2b describes a local connection to the Portable NGC using the Ethernet connector and an Ethernet crossover cable.
- Step 2c describes a Network connection to the Portable NGC using the Ethernet connector and a standard Ethernet cable.

NOTE: Each section describes setup/configuration for the Portable NGC, the operator's laptop and PCCU32 (NGC version).

2A For Local USB Connection to Portable NGC

Connecting a laptop to the Portable NGC8200 will require PCCU32 for the NGC. If you intend to use the USB connector for the local connection, you will require a USB Cable (P/N 1801800-001) and must install ActiveSync® during the PCCU32 (for NGC) installation. The PCCU32 installation will present a dialog box that will prompt you to install ActiveSync®. The ActiveSync® installation takes a couple of minutes and then returns to the PCCU32 installation.

When you open PCCU32 go to *System Setup (Setup Tab)* and make sure that *PCCU Com. Port* is set to *USB*.

Totalflow generally recommends using a desktop icon to connect to the Portable NGC. To create a desktop PCCU32 (for NGC) shortcut, do the following:

- Go into the folder where you installed PCCU32 for the NGC with Windows Explorer. Right-click on *pccu32.exe* and click *Create Shortcut*. Drag (or Paste) the newly created shortcut to your desktop.
- Right-click on the new shortcut icon on your desktop and click *Properties*.
- Under the *Shortcut* tab set *Target:* to: "C:\PCCU_NGC\pccu32.exe USB:LOCALHOST" where "C:\PCCU_NGC\pccu32.exe" is the install folder for PCCU32 for the NGC. Click *Apply*.
- Under the *General* tab you can give the shortcut a recognizable name (i.e. USB PCCU or USB LOCALHOST).

2B For Direct/Local Ethernet Connection to Portable NGC (with crossover cable)

To connect a laptop to the Portable NGC8200 will require PCCU32 for the NGC. If you intend to use the Ethernet port for your local connection, you will need an Ethernet crossover cable. The Ethernet crossover cable will permit full-duplex communication and not require a switch, hub or router. The NGC, the laptop and PCCU32 must all be properly configured as follows:

Configuration for the Portable NGC

- In the Tree View go to the Communications/Network tab
  Enable DHCP: set to *NO* and send
  IP Address: enter 192.168.0.11
  DNS Server: leave blank
  WINS Server: leave blank
  Subnet Mask: enter 255.255.255.0
  Default Gateway: enter 192.168.0.1
- Click *Send*

Configuration for the Laptop Computer

- Log on to the laptop computer and click *Start* in the lower left corner of your screen.
- Click on *Settings/Control Panel*
- Double click (or *Open*) *Network Connections*
- Right-click on the *Local Area Connection* you want to use and select *Properties*
- On the *General* tab and in the window. *This connection uses the following items:* double click *Internet Protocol (TCP/IP)*
- Click the radio button and scroll down to *Use the following IP address:*
  IP address: enter 192.168.0.10
  Subnet mask: enter 255.255.255.0
  Default gateway: enter 192.168.0.1
- Click *OK*

Configuration for PCCU32 (for direct Ethernet Crossover cable)

- Go into the folder where you installed PCCU32 for the NGC with Windows Explorer. Right-click on *pccu32.exe* and click *Create Shortcut*. Drag (or Paste) the newly created shortcut to your desktop.
- Right-click on the new shortcut icon on your desktop and click *Properties*.
- Under the *Shortcut* tab set *Target:* to: "C:\PCCU_NGC\pccu32.exe TCP:192.168.0.11" where "C:\PCCU_NGC\pccu32.exe" is the install folder for PCCU_NGC. Click *Apply*.
- Under the *General* tab you can give the shortcut a recognizable name (i.e. Crossover Cable PCCU).

2C For Networked Ethernet Connection to Portable NGC

To connect a laptop to the Portable NGC8200 will require PCCU32 for the NGC. If you intend to connect to your Portable NGC through your Ethernet Network you will need a standard Ethernet Patch cable (P/N 1681011-012). The NGC, the laptop and PCCU32 for the NGC must all be properly configured as follows:

Configuration for the Portable NGC

- In the Tree View go to the Communications/Network tab
  Network ID: set to recognizable name i.e. NGC-3 (limit characters and use no spaces)
  Enable DHCP: set to *YES* and send
  NOTE: Your network must support DHCP (Dynamic Host Configuration Protocol)
  IP Address: the Network will assign and lease an IP address to this name
  DNS Server: leave blank
  WINS Server: leave blank
  Subnet Mask: enter 255.255.255.0
- Click *Send*

Configuration for the Laptop Computer

- Log on to the laptop computer and click *Start* in the lower left corner of your screen.
- Click on *Settings/Control Panel*
- Double click (or *Open*) *Network Connections*
- Right-click on the *Local Area Connection* you want to use and select *Properties*
- On the *General* tab and in the window..*This connection uses the following items:* double click *Internet Protocol (TCP/IP)*
- Click the radio button *Use the following IP address:*
  IP address: enter 192.168.0.10
  Subnet mask: enter 255.255.255.0
  Default gateway: enter 192.168.0.1
- Click *OK*

Configuration for PCCU32 (for Ethernet Network Connectivity)

- Go into the folder where you installed PCCU32 for the NGC with Windows Explorer. Right-click on *pccu32.exe* and click *Create Shortcut*. Drag (or Paste) the newly created shortcut to your desktop.
- Right-click on the new shortcut icon on your desktop and click *Properties*.
- Under the *Shortcut* tab set *Target:* to: "C:\PCCU_NGC\pccu32.exe TCP:NGC-3" where "C:\PCCU_NGC\pccu32.exe" is the install folder for PCCU_NGC. Click *Apply*. Click *Ok*.
- Under the *General* tab you can give the shortcut a recognizable name (i.e. NGC-3).
- After configuration is completed cycle power on the unit. This causes the NGC to warm start.

Step 3 **Portable PCCU Setup**

PCCU32 for the NGC needs to be set for Portable NGC operation by simply checking the *Enable Portable NGC Operation* box in the *System Setup/Misc* dialog box and restarting PCCU32 (see Figure 4).

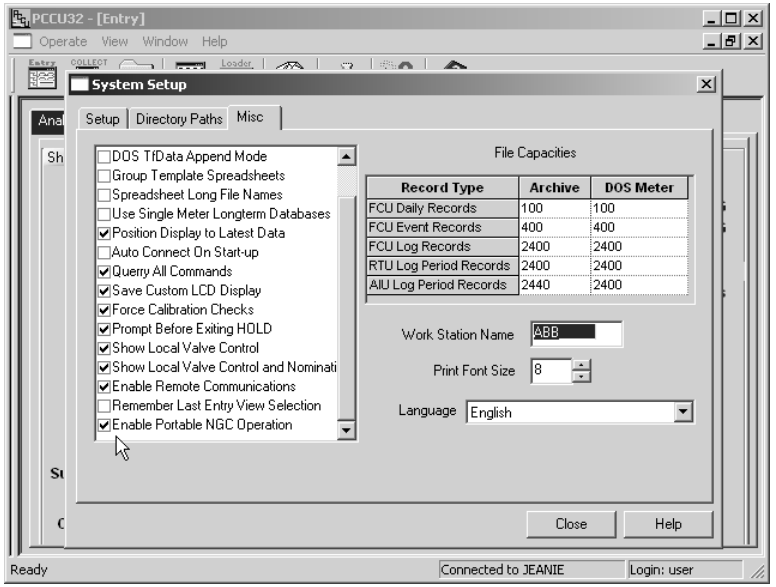


Figure 4 Enabling PCCU32 for Portable Operation

Step 4 **Calibrate the Portable NGC.**

After the unit has run for a minimum of 8 hours, its time to calibrate it.

4A Connect the MMI cable to the unit and start PCCU. Remember if you are using USB and see a screen asking about a Partnership, simply cancel or close the screens.

4B On the *Operation* screen, the unit should be in *Run Mode*. Click the *Hold* button beside the *Next Mode* indicators. The *Next Mode* indicator will illuminate and the unit will go into *Hold* mode at the end of the cycle. You can go on to the next step without waiting for the end of cycle.

4C On the *Operation* screen, click on the *Calibration* button at the side of the screen which will display the *Setup* tab for *Calibration*. Let's verify some calibration information before we start the actual calibration:

- Verify that the calibration stream you're using which is now called the *First Calibration Stream* is correct; change if needed.
- There are default values in the *Calibration Cycles Average* and in the *Purge Cycles* windows. You can change these values.
- Verify the values in the *% Blend 1* column matches your calibration blend bottle and *Total Mole %* is 100. If not 100% and all components are correct, modify Methane (C1) to get 100%.

4D If you made any changes in *Calibration Setup*, click the *Send* button, click the *Re-read* button to verify changes, then click the *Close* button on *Calibration Setup*.

4E On the *Operation* screen, the unit probably indicates by now that it is *Hold Mode* if not, wait until it finishes the cycle and goes to *Hold*.

4F Click the *Cal* button on the left side of the screen and the *Current Mode* indicator for *Calibrate* will illuminate, plus you will get a visual indication of the Calibration stream flowing (see Figure 5). The *Next Mode* should still indicate *Hold* and the unit will go back into *Hold* Mode when the calibration process is finished. If using 2 *Purge* cycles and 3 cycles to average, the calibration process will take approximately 25 minutes.

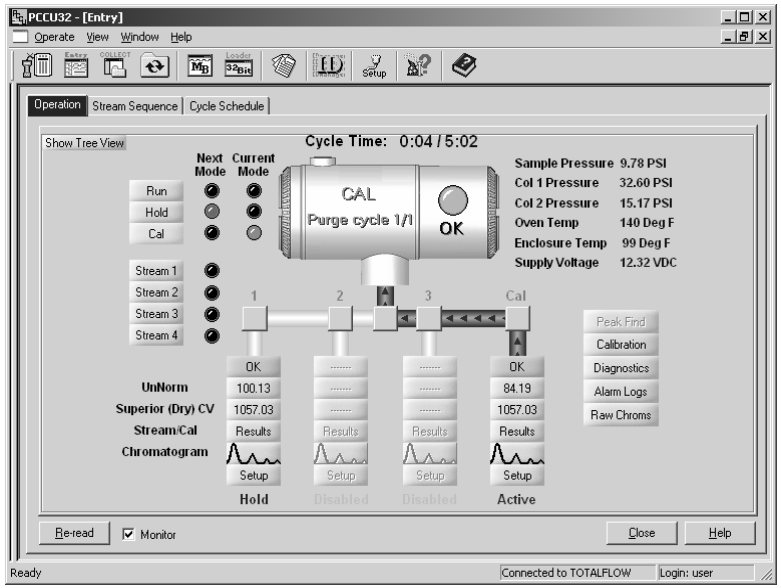


Figure 5 *Operation* Screen (Cal Mode)

NOTE: On the *Operation* screen, if *Enabled*, a stream will display information on the stream buttons as shown by Stream 1. This is always process stream data for that stream. If it's a Calibration stream only, the data shown on the blocks is still process stream data and not Calibration data and therefore not relative. Also, note that if Enabled, a Calibration stream is grayed out during Calibration.

Step 5 Verify Calibration Data

In this step we assume the unit has completed calibration and gone back to *Hold* mode. Let's verify a few things before we put it in *Run Mode*.

5A Click on the *Peak Find* Icon button located on the right side of the *Operation* screen. A chromatogram will load at the bottom of the screen which is the last cycle of the calibration stream. There will be a delay as the data downloads. There is a tab for *Chrom-1* (Heavy Components) and *Chrom-2* (Light Components). Chrom-1 (see Figure 6) is displayed first, so we'll start there. If no Chromatograms, click the *Re-read* button.

5B Look at the date/time below the chromatogram. This time should coincide with the start of the last cycle of the calibration process that you just ran. This means that the calibration data was accepted; no alarms etc. If this is an old date and time, most likely from when it was calibrated in the factory, the new calibration data was not updated for some reason. In this case, there should have been an alarm show up on the *Operation* screen.

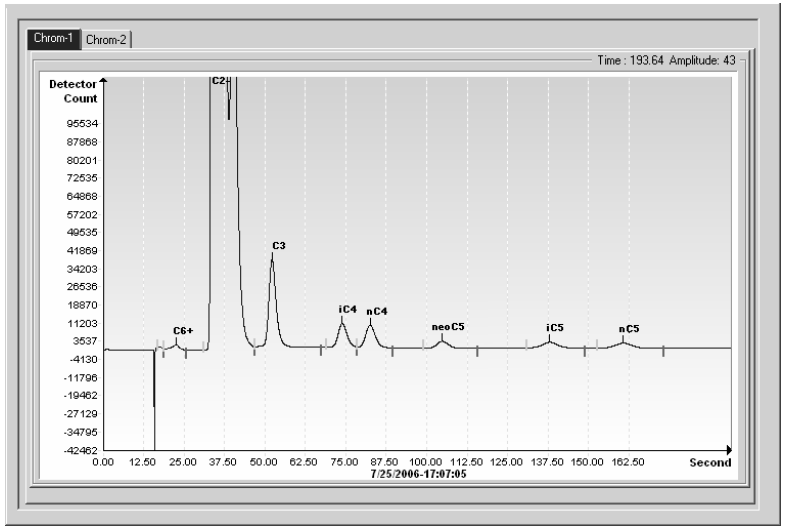


Figure 6 Chrom-1 (Heavies)

5C Verify that you have 7 peaks labeled; C6+, C3, iC4, nC4, neoC5, iC5, and nC5. The second double-looking peak from the left is a composite peak of C2- and may or may not be labeled, but is not used in calculations.

5D Place the vertical line of the cursor over the little tick mark on nC5 and verify the time in the upper right hand corner of the Chrom is approximately 160 seconds. It is not critical that it be right on 160 seconds, but should probably be within 3 or 4 seconds.

5E Click on the Chrom-2 tab and verify that you have 4 peaks labeled; N2, C1, CO2, and C2. The first peak on the left is a

composite peak of C3+ and may or may not be labeled, but is not used in calculations. There could be trace amounts of other components in your calibration blend as indicated by gates with no component label as shown below between CO2 and C2 (see Figure 7).

5F Place the vertical line of the cursor over the little tick mark on C2 and verify the time in the upper right hand corner of the Chrom is approximately 220 seconds. This is not critical that it be right on 220 seconds, but should be within 3 or 4 seconds.

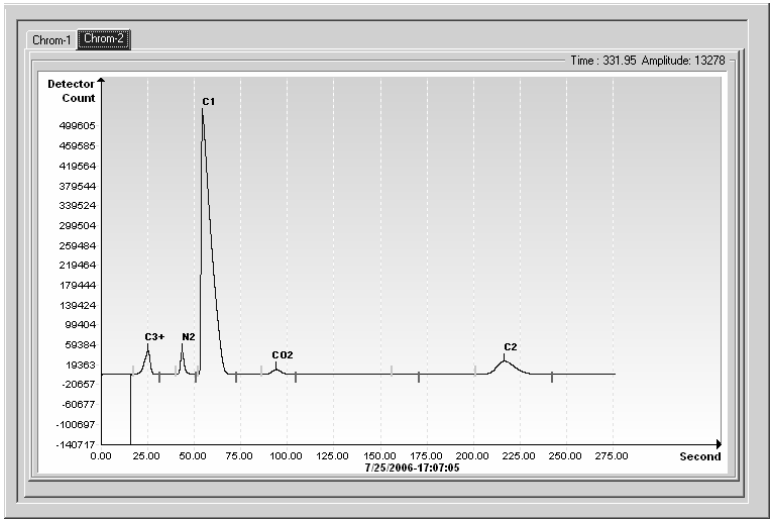


Figure 7 Chrom-2 (Lights)

Step 6 **Portable PCCU Interface (Output Setup and Site Data)**

Now you're ready to collect and analyze a sample from your pipeline. Bring up PCCU32 and click on *Run*. When the *Site Data* page appears click on *Output Setup*. We're going to look at the *Output Setup* first (see Figure 8). The information on the *Output Setup* page generally needs to be entered only once.

NOTE: Much of the information presented in this section can also be found in the PCCU32 Help files.

6A **Output Setup Screen**

Again, the *Output Setup* page is generally only dealt with once. The *Site Data* page, covered in the next section, is filled in by the operator at each site where he intends to take a sample. The *Output Setup* page defines how those various samples are to be taken and how they are to be reported.

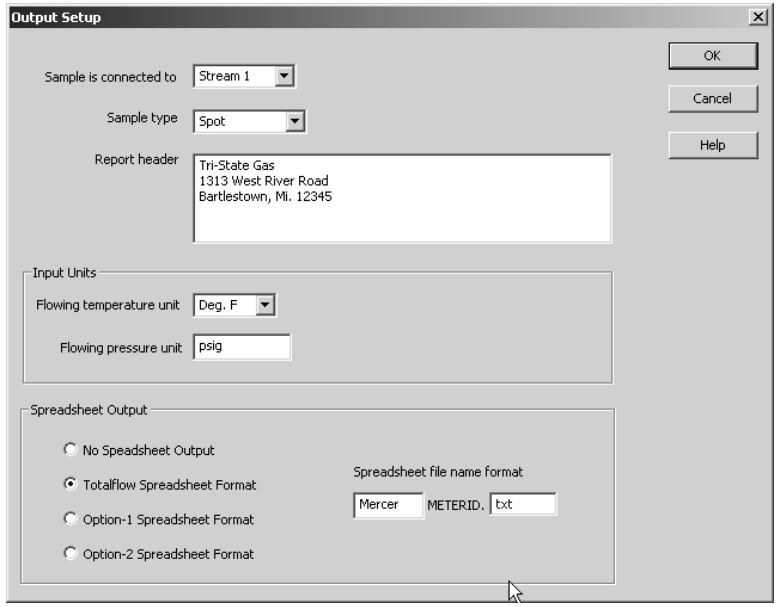


Figure 8 Output Setup Screen

Output Setup Parameters	
Sample is connected to	The Portable NGC has been developed from the NGC8200. The NGC8200 has 4 input streams. Two streams are accessible to the user in the Portable NGC. Stream 1 is for the sample input. Stream 4 is for the calibration blend. Select Stream 1 for your sample.
Sample Type	There are two selections (Spot or Continuous) and this will show on the report.
Report Header	This shows at the top of the report and might include the company name and address.
Flowing temperature unit	Select the engineering units (C or F) for the Flowing Temperature.
Flowing pressure unit	Select the engineering units for Flowing Pressure.
Output data format	Select the appropriate data file format for your purposes. *No Spreadsheet Output* does not generate a spreadsheet, rather a text file that is sent to the *RunReports* folder. The remaining three formats all generate a CSV compatible format with different data presentations.

Output Setup Parameters	
Spreadsheet filename format	The Output Data file will automatically use the Meter ID as part of the filename. The filename you supply here will be appended to the front of the complete filename as a prefix. You can generate any filename extension that might be appropriate for your accounting systems. However, the format will remain CSV compatible. **NOTE:** Spreadsheet files are NOT intended for human viewing. They are intended for data entry into your accounting system. *RunReports* in the RunReport directory are intended for human viewing. The appended prefix and filename extension only pertain to the spreadsheet files being sent to your spreadsheet folder. The *RunReport* files are always meter name and a text extension (.txt).

NOTE: See the PCCU32 Help files for more details.

After filling out the *Output Setup* page you are ready to return to the *Site Data* page by clicking *OK*.

6B Site Data Page

Now you're ready to collect and analyze a sample from your pipeline. If you've setup PCCU32 for Portable NGC operation (Step 3), hitting *Run* at the *Analyzer Operation* screen will bring up the *Site Data* page (see Figure 9).

Site Data Parameters	
Meter ID	The ID will be displayed on the report that is generated at the completion of the analysis and be used as the report's filename. It will also be used in the output data filename.
Optional Description	This is optional and displays at the top of the report that is generated. Since it is at the top, it might inculde the company name and/or the branch location.
Flowing Temperature	Enter the Flowing Temperature of the gas. This can be in degrees C or F. The units are selectable on the Output Setup screen.
Flowing Pressure	Enter the Flowing Pressure of the gas. The units are selectable on the Output Setup screen.
Number of Analyses	Specify the number of analysis cycles to be averaged to compute the value of each variable.

Site Data Parameters	
H2S	If H2S is present in your sample, enter the value and select the units from the pull down window. Check the Input box to include H2S in the calculations.
Helium	If helium is present in your sample, enter the value and select the units from the pull down window. Check the Input box to include helium in the calculations.
H2O	If water is present in your sample, enter the value and select the units from the pull down window. Check the Input box to include water in the calculations.
Technician's Name	Enter the technician's name; the name will appear on the report.
Optional Comments	Comments in this window will show up on the bottom of the report. Any comments can be included here.

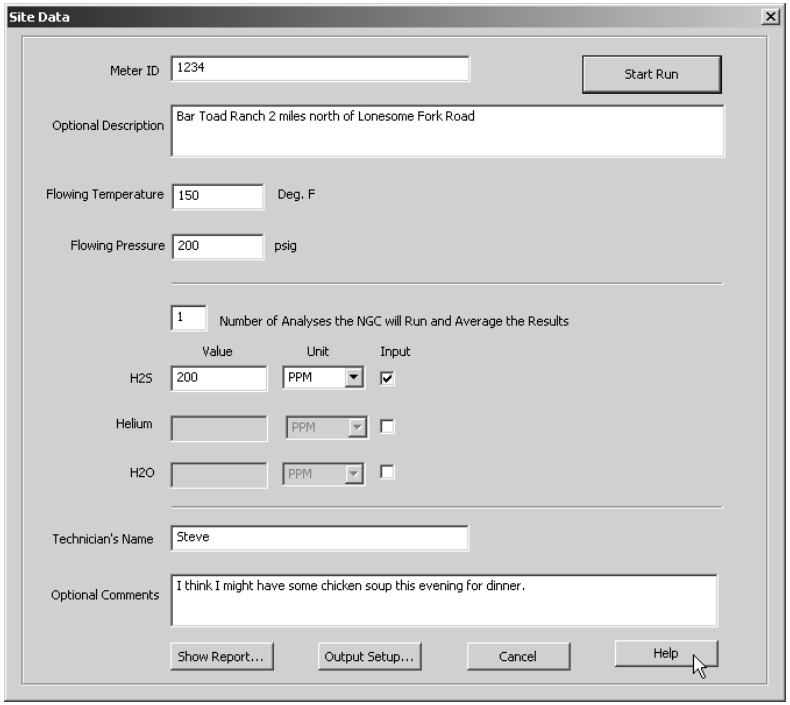


Figure 9 Site Data Screen

Step 7 **Verify Stream Sequence**

For a stream to automatically sequence, it must be *Enabled* and be in the *Stream Sequence* (see Figure 10).

The *Calibration* stream will function without being *Enabled* and shouldn't be *Enabled* and in the *Stream Sequence* unless you want to run cycles on the *Calibration* stream. Additionally, if the Calibration stream is *Enabled*, information such as *Unnormalized Total*, *Superior CV*, etc., is displayed on the front of the *Operation* screen. This is process stream information and not calibration stream information, so this may be confusing.

After confirming the streams, close the *Stream Sequence* screen.

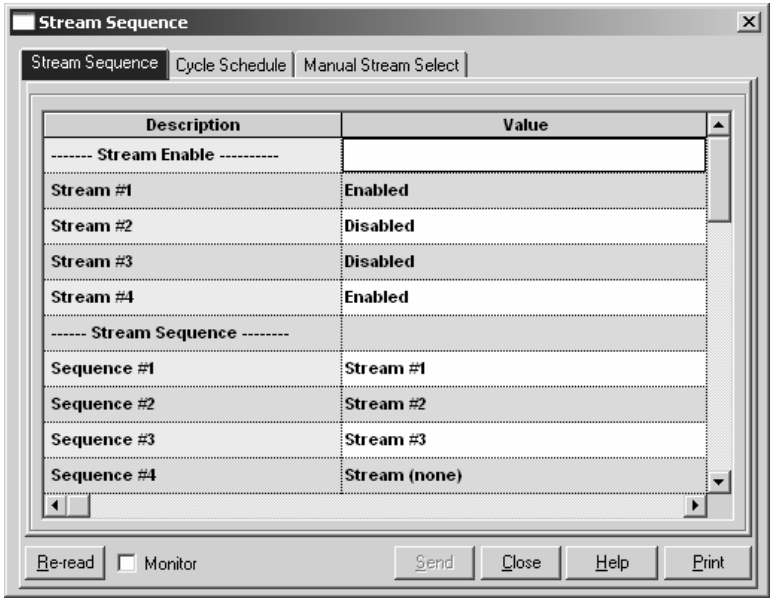


Figure 10 Stream Sequencing

NOTE: Be sure that Stream 1 (your sample stream) is *Enabled*. The NGC will *Disable* Stream 1 during self-diagnostics if no sample pressure is apparent. Diagnostics are run automatically during start up.

Step 8 **Connect to Sample Stream**

Move the truck as close to the sample point as is practical. A flexible sample line[1] with attached sample regulator[2] set between 10 and 15 psig to is then uncoiled and attached to the probe in the flowing natural gas pipeline. If the dew point of the gas or the weather demands it, this flexible tubing must be heated.

NOTE 1: By flexible tubing we only mean that 1/16 inch stainless can be coiled into a large loop in the back of a pickup. Teflon, or any

polymer lined "flexible" tubing (or fittings) should be avoided. You should also avoid getting any kinks in the stainless steel tubing.

NOTE 2: Totalflow strongly suggests a Temperature Compensating, Pressure Regulating Sample Probe be used. Refer to any manufacturer's recommendations supplied with probe. If Sample Probe is to be mounted in a section of pipe where cathodic currents exist, you should install isolators in Sample Tubing between probe and NGC.

Both flow meters have been set at the factory and should not need adjustment. However, should it be determined that they DO need adjustment, both meters should be set to their midrange values. Gas flows continually through the speed-loop, but only briefly into the NGC for analysis, therefore, setting the flow rate into the NGC must be done during the first 20 seconds of each analysis cycle (the purge cycle). The flow meters adjust flow levels through the speed-loop and into the Portable NGC for analysis.

A sample of the gas is extracted from the probe, purged through the flexible tubing and transported to the analyzer. At the analyzer it is processed for particle removal and phase integrity and injected into the chromatographic columns for analysis. The components are separated, their peak areas integrated and individual concentrations are calculated. Other data of interest is calculated from these concentrations.

Step 9 **Put the Unit in Run Mode**

As you know from Step 3, if you have *Enabled Portable NGC Operation*, clicking on *Run* at the *Operation* screen will bring up the *Site Data* page. After completing the information required on the *Site Data* page, click *Start Run* and the analysis cycle will begin. The unit will run in this mode until manually put in a different mode.

As the Portable NGC is moved from site to site you would expect each new sample to be very different from the previous sample. If you become concerned that a previous site's sample is contaminating your current sample, consider lengthening the *Sample Purge Time*. *Sample Purge Time* is in the *Peak Find* screen and generally defaulted to 20 seconds. Another option would be to run samples until two consecutive cycles produce similar results.

At this point you are through with setting up the NGC as it relates to processing analysis data. For additional information, see the *NGC8200 Users Manual* or refer to the PCCU32's context driven Help screens.

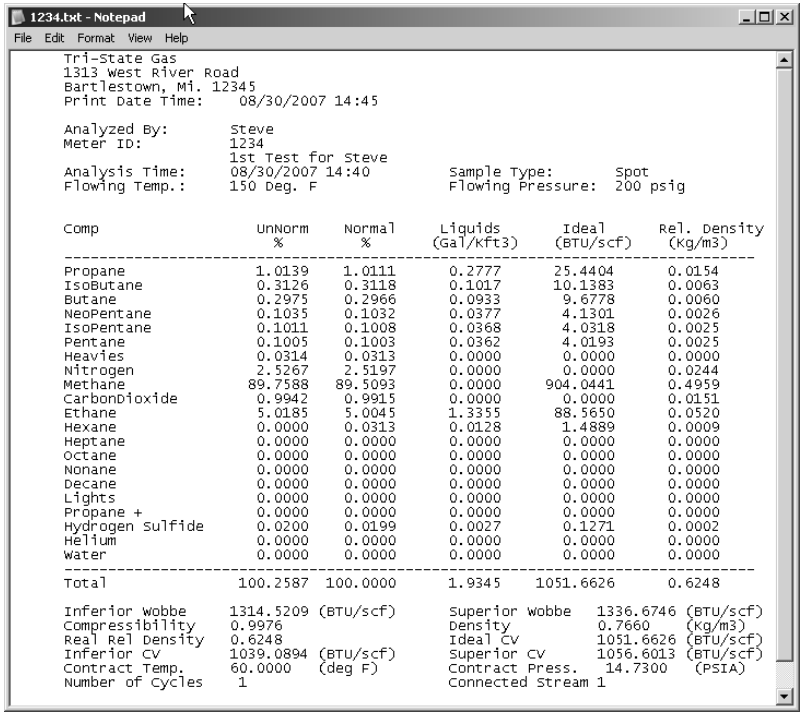
Step 10 **Portable PCCU Reporting**

The Portable PCCU sends reports and spreadsheets to two different directories. Every sample run will generate a text file (MeterID.txt) that will be sent to the *RunReports* directory (C:\PCCU_NGC\RunReports…).

If you select a spreadsheet output, the spreadsheet file will be sent to the folder you have setup for spreadsheets. The Totalflow default for spreadsheet files is C:\PCCU_NGC\spreadsh\...You can redirect spreadsheet files by going into *System Setup/Directory Paths*.

RunReports are intended for human viewing (see Figure 11). The various spreadsheet formats are NOT intended for human viewing. Spreadsheet formats are intended for data entry into your accounting system.

The various spreadsheet formats pertain to how the information is arranged. To see how the differing formats arrange the data refer to the PCCU32 Help files. All the spreadsheet files are ASCII text with fields separated by commas (CSV).



1234.txt - Notepad

File Edit Format View Help

```
Tri-State Gas
1313 West River Road
Bartlestown, Mi. 12345
Print Date Time:    08/30/2007 14:45

Analyzed By:       Steve
Meter ID:          1234
                   1st Test for Steve
Analysis Time:     08/30/2007 14:40        Sample Type:       Spot
Flowing Temp.:     150 Deg. F              Flowing Pressure:  200 psig


Comp                  UnNorm     Normal     Liquids       Ideal      Rel. Density
                        %          %       (Gal/Kft3)    (BTU/scf)    (Kg/m3)
-------------------------------------------------------------------------------
Propane               1.0139     1.0111      0.2777      25.4404      0.0154
IsoButane             0.3126     0.3118      0.1017      10.1383      0.0063
Butane                0.2975     0.2966      0.0933       9.6778      0.0060
NeoPentane            0.1035     0.1032      0.0377       4.1301      0.0026
IsoPentane            0.1011     0.1008      0.0368       4.0318      0.0025
Pentane               0.1005     0.1003      0.0362       4.0193      0.0025
Heavies               0.0314     0.0313      0.0000       0.0000      0.0000
Nitrogen              2.5267     2.5197      0.0000       0.0000      0.0244
Methane              89.7588    89.5093      0.0000     904.0441      0.4959
CarbonDioxide         0.9942     0.9915      0.0000       0.0000      0.0151
Ethane                5.0185     5.0045      1.3355      88.5650      0.0520
Hexane                0.0000     0.0313      0.0128       1.4889      0.0009
Heptane               0.0000     0.0000      0.0000       0.0000      0.0000
Octane                0.0000     0.0000      0.0000       0.0000      0.0000
Nonane                0.0000     0.0000      0.0000       0.0000      0.0000
Decane                0.0000     0.0000      0.0000       0.0000      0.0000
Lights                0.0000     0.0000      0.0000       0.0000      0.0000
Propane +             0.0000     0.0000      0.0000       0.0000      0.0000
Hydrogen Sulfide      0.0200     0.0199      0.0027       0.1271      0.0002
Helium                0.0000     0.0000      0.0000       0.0000      0.0000
Water                 0.0000     0.0000      0.0000       0.0000      0.0000
-------------------------------------------------------------------------------
Total               100.2587   100.0000      1.9345    1051.6626      0.6248

Inferior Wobbe     1314.5209 (BTU/scf)      Superior Wobbe   1336.6746 (BTU/scf)
Compressibility    0.9976                   Density          0.7660    (Kg/m3)
Real Rel Density   0.6248                   Ideal CV         1051.6626 (BTU/scf)
Inferior CV        1039.0894 (BTU/scf)      Superior CV      1056.6013 (BTU/scf)
Contract Temp.     60.0000   (deg F)        Contract Press.   14.7300   (PSIA)
Number of Cycles    1                       Connected Stream 1
```

Figure 11 Spreadsheet Report

Start-Up Troubleshooting

Troubleshooting Solutions

Oven Temperature Stabilization

The Oven Temperature MUST be stabilized to get good repeatable data. The Oven Temperature is typically stable enough in 30 to 60 minutes to pass diagnostics. This allows the user to proceed with all the required setup information. But, for the oven and other components to fully stabilized, Totalflow recommends that the unit be allowed a burn-in

period of 8 hours. The end caps should be installed during this period and naturally during normal processing. Based on ambient temperatures, not having the end caps installed could impede the Oven Temperature from stabilizing at 60° C (140° F).

Carrier Pressure Set Point

The NGC has two column trains, each with its own carrier pressure regulator. Tests show that if nC5 on Column 1 elutes at approximately 160 seconds and C2 on Column 2 elutes at approximately 220 seconds, the unit performs at its best. This is not to say that there may be special applications which may cause these times to be different.

If nC5 and C2 are not within 3 - 4 seconds of these times, you may want to change the carrier pressures. However, changing the carrier pressures will move the other peaks and therefore, you might want to do an *Auto Peak Find*.

To change carrier pressures you must be in *Hold* mode. Click the *Hold* button on the *Operation* screen and wait until the end of cycle. When the unit enters *Hold* mode, click on the *Peak Find* button. If the *Manual* check box at the top of the screen is grayed out, close the *Peak Find* screen and click the *View* menu at the top of the main screen and select *Factory* mode. Click the *Peak Find* button again and *Manual* mode will be selectable.

Units will vary some from one to another, but a rough rule of thumb, is that 1 PSI change will move the nC5 or C2 peak 10 – 12 seconds. Increase pressure to decrease the time the components elute and decrease pressure to increase the time they elute. After making a pressure change, click *Send Setup* then *Run Single Cycle*. The chromatograms will update at the end of the cycle, typically 5 minutes. Repeat this process until you have the desired results.

NOTE: In the Manual Peak Find screen, changes to Gate Times and Peak Labeling may be seen immediately by selecting Post Process. All changes in the pressure or times in the windows at the right of the screen, will be reflected following a Run Single Cycle.

Gating Peaks

Gate On and *Gate Off* times in the *Peak Setup* table in the *Manual Peak Find* screen instructs the process when to begin and stop looking for peaks. Each *Gate On/Gate Off* time applies the parameters in its row to the peaks in its time frame. The *Gate On* time should begin in an area prior to the first component peak and in a relatively flat area on the baseline. Likewise the *Gate Off* time should not fall during a component peak.

Make changes in the *Peak Setup* table in the *Peak Find Screen*. *Send Setup*, then *Post Process* to see update chromatograms.

Labeling Peaks

If peaks are integrated correctly, and column pressures are within range, but no labels appear, you may need to label the peaks. Manually label the

peaks in the *Peak Find* screen by zooming in on the chrom, place cursor inside of the peak, right click and select *Label Peak*. When the new window appears, select the component for that peak from the drop down window and click the *Label Peak* button. Continue until all peaks are labeled.

Send Setup and select the *Post Process* button and wait for the screen to update the chromatograms.

Forward Flow Duration

A small peak (part of C6+) appearing after the NC5 peak indicates that the *Forward Flow* is too long. It may be necessary to shorten the *Forward Flow Flow*/inject Time. Make small time increment changes to avoid over compensation. Make adjustments to the forward flow time in the *Peak Find* window, *Send Setup* and run a *Single Cycle*. Repeat as necessary. If Cal Blend component concentrations IC5 and NC5 are similar, the peak areas should be within 3% of each other. If using our standard blend, IC5 and NC5 are approximately 0.1%.

If water is a problem, you may need to increase the *Backflush*/Reverse Time. For additional information, see the *Troubleshooting* Chapter in the *NGC8200 User's Manual*.

Stream Sequencing–Enable or Disable Streams

Following initial setup, if a stream was not connected or connected/disconnected after start-up, you may be required to manually enable or disable a stream.

NOTE: *Disable* Streams that do not have sample gas connected to them. If a Stream (typically stream 4) is a dedicated calibration stream, you may want to disable it or at least remove it from the Stream Sequence. Enabling it will display ambiguous data on the *Operation* screen because it only displays process stream data.

To *Disable* any streams not in use:

- On *Operation* screen, under *Stream Sequence, Stream Enable,* set the value next to the Stream to *Disable*.
- Remove unused streams from the *Stream Sequence* by setting the value next to the unused stream to *Stream (none)*.
- When finished, click on the *Send* button.

NOTE: Streams Enabled, but removed from the Sequence will show Skip on the *Operation* screen. Streams Disabled and removed from the Sequence will show Disabled.

To *Enable* additional streams:

- *Enable* Stream by selecting the value column next to the stream number and changing to *Enable*.
- Under *Stream Sequence* select the value column next to Sequence number and select the stream number to add.

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