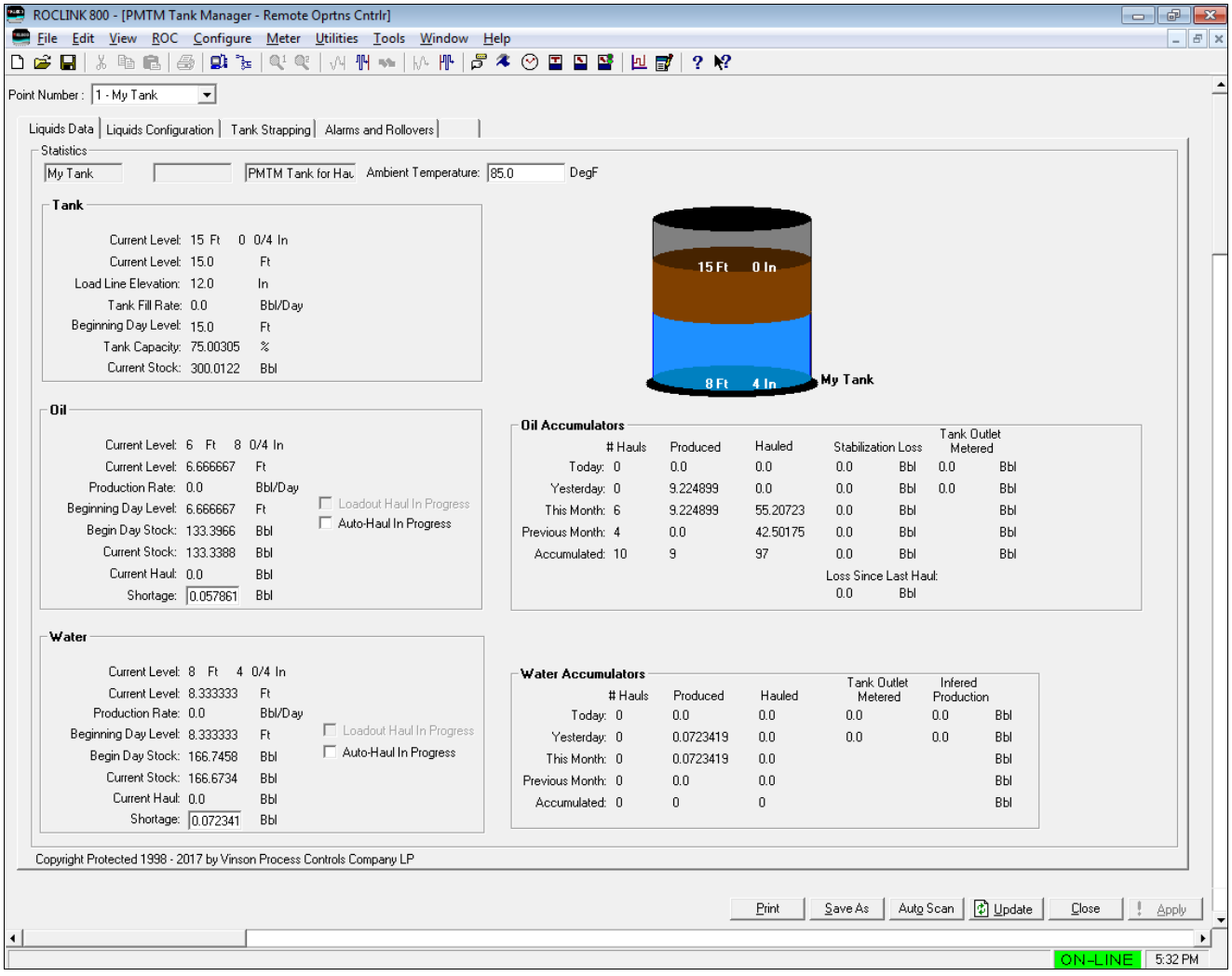
Part Number D301743X012
May 2017

Tank Manager User Manual (for ROC800-Series and FloBoss™ 107 Controllers)



Remote Automation Solutions

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Revision Tracking Sheet

May 2017

This manual may be revised periodically to incorporate new or updated information. The revision date of each page appears at the bottom of the page opposite the page number. A change in revision date to any page also changes the date of the manual that appears on the front cover. Listed below is the revision date of each page (if applicable):

Page	Revision
All pages	May-2017
All pages	March-2017
All pages	October-2015
All pages	June-2015
All pages	September-2014
Initial release	July-2013

Contents

Chapter 1 – Introduction

⚠ Caution **When implementing control using this product, observe best industry practices as suggested by applicable and appropriate environmental, health, and safety organizations. While this product can be used as a safety component in a system, it is NOT intended or designed to be the ONLY safety mechanism in that system.**

This chapter describes the structure of this manual and presents an overview of the Tank Manager program for the ROC800-Series (ROC800) and FloBoss™ 107 (FB107) devices.

1.1 Scope and Organization

This document serves as the user manual for the Tank Manager program, which is intended for use in either a ROC800 or FB107.

This manual describes how to install and configure the Tank Manager program (referred to as the "program" throughout the rest of this manual). You access and configure the program using ROCLINK™ 800 Configuration Software (version 2.41 or greater) loaded on a personal computer (PC) running Microsoft® Windows® 7 (32-bit or 64-bit).

The chapters in this manual provide information in a sequence appropriate for first-time users. Once you become familiar with the procedures and the software running in a ROC800 or FB107, the manual becomes a reference tool.

This manual has the following major sections:

- *Chapter 1 – Introduction*
- *Chapter 2 – Installation*
- *Chapter 3 – Configuration*
- *Chapter 4 – Reference*
- *Appendix A – Log Viewer Utility*
- *Appendix B – Retrieving the Haul Logs via SCADA*

This manual assumes that you are familiar with the ROC800 or FB107 and its configuration. For more information, refer to the following manuals:

- *FloBoss™ 107 Flow Manager Instruction Manual* (Part D301232X012)
- *ROC800 Remote Operations Controller Instruction Manual* (Part D301217X012)
- *ROCLINK 800 Configuration Software User Manual (for FloBoss™ 107)* (Part D301249X012)
- *ROCLINK 800™ Configuration Software User Manual (for ROC800-Series)* (Part D301250X012)

1.2 Product Overview

The Production Manager Tank Manager (PMTM) program or simply Tank Manager is designed to function either as a stand-alone product or as part of Remote Automation Solutions' SmartProcess™ Oil and Gas Application suite. Tank Manager uses a level-based measurement to manage volumetric inventory, calculate well head production, and measure truck-hauled volumes. It calculates net standard volume (NSV) for the hauled hydrocarbon fluid using API Chapter 11, 2004 Calculations (11.1.6.1 and 11.1.6.2) for crude oil. The Production Manager Tank Manager also includes options for API Chapter 18.2 (2016) compliant custody transfer methodology and calculations.

The program provides SCADA-friendly reporting to document hauling events, and hosts an HMI interface for truck drivers. The program supports both metered and level-based hauling measurement, applying NSV correction to the primary measurement. It provides safety/control interlocks to automate loading valves or pumps.

The program can calculate inferred production during hauling, provide "seal on" and "seal off" tracking, and display a variety of tank production statistics in user-friendly displays.

A version of the Tank Manager program is available with a built-in simulator for manipulating tank levels, meter rates, and conducting a haul. This version is intended **only** for labs or testing, and is **not** applicable in a field installation.

⚠ Caution

All the versions of Tank Manager include a watchdog counter that can be used to validate the execution of the program logic. This is a parameter which continuously increments (1 count per second) while the program is running. If the value of the parameter does not change, then the program is not executing logic.

You can monitor this parameter using an external system, such as a SCADA host system, or an FST within the device, to validate operation. For the ROC800, this is Point Type 197, Parameter 125. For the FB107, this is Point Type 179, Parameter 125. For more information, see the definition for this parameter in Chapter 4.

1.2.1 Definition of Terms

The business of tank management and hauling has its own vocabulary. Following are terms frequently used in hauling, which appear in the Tank Manager application.

Term	Definition
API Chapter 11.1.6.1 and 2	The standard for calculating crude oil measurement. Both the Tank Manager application and the 800L programs use the 2004 version of these calculations.

Term	Definition
API Chapter 18.2	The standard used to in part to determine the program behavior for hauls from the load-out terminals. The full title of the standard is Custody Transfer of Crude Oil from Lease Tanks using Alternative Measurement Methods.
Average CTL of Base ALT	Correction factor of density recorded at time of "Grind" to standard temperature.
Average CTL of Observed Base	Correction factor of fluid temperature compared to standard temperature.
Base Conditions	The standard temperature and pressure values defined in the contract, which are typically 60 degrees Fahrenheit and 14.73 PSIA (also as defined by API).
Basic Sediment and Water (BS&W)	The non-oil components in a tank, which tends to be a residual, typically defined as a percentage (%) of volume.
Closeout	The process of final verification by the truck driver of the information entered and/or recorded during the truck haul, which becomes the recorded haul log audit trail.
Correction for the effect of Temperature on Liquid (CTL)	The average of the temperature measured, compared to the standard temperature.
Correction for the effect of Temperature on Steel (CTS)	A correction routine used to compensate for the expansion of the tank shell material (and therefore the tank volume), due to the effect of temperature.
Divert Valve	A 3-way valve with 1 inlet, and 2 outlets. Used commonly in LACT measurement, if the sediment and water percentage for a fluid being transferred exceeds the required tolerance, the divert valve is activated, and transfers oil back to a tank.
Equalized Tanks	A group of identically sized tanks for a single phase liquid application with a common level measurement used to handle larger capacities.
Flow/Tank Volume Reconciliation	Specific to the Tank Manager application, this is the ability to provide and report dual, independent measurements (flow **and** tank volume) of haul events. This process provides a basis for verification when self-proving of flow custody transfer is not available.
Gas/Liquids Ratio (GLR)	A method to estimate liquid production rate, based on measured gas production rate.
Gauging; Gauging the Tank	The manual or automated process to measure the current level in the tank.
Grind; Grinding the Tank	The manual measurement technique for determining the percentage (%) of BS&W in a tank, as well as the density measurement. This process requires a recorded temperature of sample.

Term	Definition
Gross Volume	The total volume of the liquid in the tank at current ambient and fluid temperature.
Inferred Production	A method for estimating production flow into a tank during a hauling event when a direct measurement (such as using GLR) is not available.
Interface	The intermediate level measurement at the separation point between oil and water in the tank.
Leased Automatic Custody Transfer (LACT)	An automated system for measuring, sampling, and transferring oil from a lease location into a pipeline.
Merchantable	Refers to the suitability of oil for purchase or sale. Oil which has unsuitable characteristics (such as high sediment and water content or high amounts of H2S) is said to be non-merchantable.
Net Standard Volume (NSV)	The corrected volume of oil at Base Conditions, less BS&W volume, using the API Chapter 11 standard.
Preset	A predefined volume of liquid for the truck haul.
Seal Off/Seal On Tags	A single-use, metal, pre-stamped, numerical tag connected to the block valve to retain an audit trail of hauling events. The tag number is recorded and removed as a Seal-Off Tag at the beginning of the haul, and a new tag number is recorded and installed as a Seal-On Tag at closeout.
Shrinkage	The difference between the maximum volume (recorded prior to a haul event) and the volume at the start of the haul process (recorded on per-haul event basis). Causes of shrinkage can include gas vaporing or tank waves.
Strapping	Also known as tank calibration, tank strapping is the ability to convert a tank level value (fluid height) to an associated volume.
Tank Aggregate	A group of tanks managing the production of water and/or oil produced from one or several wells.
Tank Instance	Specific to the Tank Manager application, this term defines the number of physical tanks and/or groups of tanks. For example, three equalized tanks count as a single Tank Instance, while an aggregate of three tanks being managed independently as well as a collective group, count as four Tank Instances.

Term	Definition
Tank Strapping	Volumetric equivalent of measured level, based on the cross-sectional dimensions of a tank at different levels. Used for non-cylindrical tanks or where the weight of the liquid causes deflection of the tank sides.
Tank Transfer	A reportable movement of liquid between tanks.
Truck Haul	The custody transfer event where the liquids are loaded onto a truck.
Turndown	When a haul from a tank is started, but is unable to complete for reasons such as equipment failure or non-merchantable oil. The rejected haul is said to be “turned down”.
Unitized Tanks	A predefined/pre-assigned tank piped from the well(s) and separation train.

1.3 Program Features

Program Variants

The Tank Manager program is distributed on one CD, which contains all programs for both the ROC800 and FB107 platforms. The program version you install depends on the functionality you require, the number of licenses you have purchased, and the number of tanks and wells you need to support.

ROC800

The following table shows the number of tanks and wells each program supports:

Program Name	Supported Features
PMTM_V409_xx_8t_SIM.tar	Supports up to 8 tanks and a simulation program. **Note**: The simulation program is **not** intended for installation on an operating tank farm.
PMTM_V409_xx_8t4w.tar	Supports up to 8 tanks and 4 wells.
PMTM_V409_xx_16t_SIM.tar	Supports up to 16 tanks and a simulation program. **Note**: The simulation program is **not** intended for installation on an operating tank farm.
PMTM_V409_xx_16t8w.tar	Supports up to 16 tanks and 8 wells.
PMTM_V409_xx_24t_SIM.tar	Supports up to 24 tanks and a simulation program. **Note**: The simulation program is **not** intended for installation on an operating tank farm.
PMTM_V409_xx_24t12w.tar	Supports up to 24 tanks and 12 wells.
PMTM_V409_xx_32t_SIM.tar	Supports up to 32 tanks and a simulation program. **Note**: The simulation program is **not** intended for installation on an operating tank farm.
PMTM_V409_xx_32t12w.tar	Supports up to 32 tanks and 12 wells.
PMTM_V409_xx_40t_SIM.tar	Supports up to 40 tanks and a simulation program. **Note**: The simulation program is **not** intended for installation on an operating tank farm.
PMTM_V409_xx_40t12w.tar	Supports up to 40 tanks and 12 wells.

FloBoss 107

The following table shows the number of tanks and wells the FB107 program supports:

Program Name	Supported Features
PMTM_v409_xx_7.bin	Supports up to 8 tanks and 4 wells.

Version 4.09 of the Tank Manager program is compatible with firmware version 3.61 of the ROC800, firmware version 1.41 of the ROC800L, firmware version 1.70 of the FB107, and with version 2.41 (or greater) of ROCLINK 800 Configuration software and requires firmware version 1.20 of the keypad display.

Program specifics include:

File Name	Target Unit/ Version	User Defined Point (UDP)	Flash Used (in bytes)	DRAM Used (in bytes)	ROCLINK 800 Version	Display Number
PMTM_V409_xx_ 8t4w.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233	496,248	503,808	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_V409_xx_ 8t_SIM.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233, 234	508,376	557,056	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_V409_xx_ 16t8w.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233	495,477	548,864	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_V409_xx_ 16t_SIM.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233, 234	507,819	565,248	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_v409_xx_ 24t12w.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233	495,550	602,112	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_V409_xx_ 24t_SIM.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233, 234	508,152	618,496	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_v409_xx_ 32t12w.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233	495,594	643,072	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_V409_xx_ 32t_SIM.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233, 234	508,095	663,552	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_v409_xx_ 40t12w.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233	495,540	688,128	2.41	60, 196, 197, 198, 231, 232, 233

File Name	Target Unit/ Version	User Defined Point (UDP)	Flash Used (in bytes)	DRAM Used (in bytes)	ROCLINK 800 Version	Display Number
PMTM_V409_xx_ 40t_SIM.tar	ROC800 v3.61	60, 196, 197, 198, 199, 230, 231, 232, 233, 234	508,325	704,512	2.41	60, 196, 197, 198, 231, 232, 233
PMTM_v409 _xx_7.bin	FB107 v1.70	178, 179, 180, 181, 182, 183, 184, 185, 187	490,236	32,768	2.41	79, 80, 81, 83

Note: Depending on the version you install, the flash memory and DRAM usages may be less.

For information on viewing the memory allocation of user programs, refer either to the *ROCLINK 800 Configuration Software User Manual (for ROC800-Series)* (Part D301250X012) or the *ROCLINK 800 Configuration Software User Manual (for FloBoss 107)* (Part D301249X012).

1.3.1 License Key

License keys, when matched with valid license codes, grant access to applications such as the Tank Manager program.

For **ROC800**, the term "license key" refers to the physical piece of hardware that can contain up to seven different licenses (refer to *Figure 1-1*). Each ROC800 can have none, one, or two license keys installed. If you remove a license key after enabling an application, the firmware disables the task from running. This prevents unauthorized execution of protected applications in a ROC800.

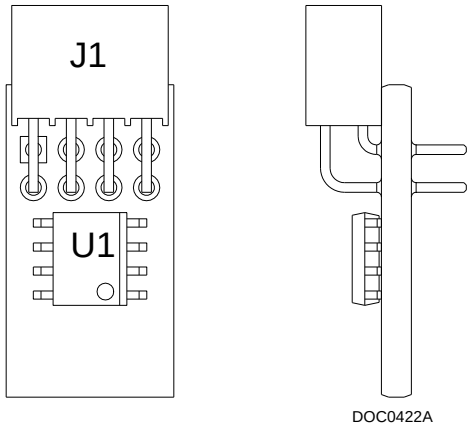

Figure 1-1. License Key

Note: Each **PMTM** license supports up to 8 tanks and 4 wells. Licenses are delivered on a standard ROC800 license key. Consult with your Remote Automation Solutions sales representative to obtain the appropriate number of licenses for your application.

For **FB107**, the software licenses are distributed via a secure SafeNet® Sentinel™ USB drive ("license key"). You must install one license key, **PMTM**, to use the Tank Manager program.

Chapter 2 – Installation

This section provides instructions for installing the Tank Manager program. Read *Section 1.3* of this manual for program requirements.

2.1 Installing the License Key

The Tank Manager application requires a license to function. This section provides instructions for installing the license into the flash memory on the ROC800 or the FB107.

2.1.1 Installing the License Key for the ROC800

⚠ Caution

Failure to exercise proper electrostatic discharge precautions, such as wearing a grounded wrist strap may reset the processor or damage electronic components, resulting in interrupted operations.

When working on units located in a hazardous area (where explosive gases may be present), make sure the area is in a non-hazardous state before performing these procedures. Performing these procedures in a hazardous area could result in personal injury or property damage.

To install a license key:

1. Remove power from the ROC800.
2. If necessary, remove the wire channel cover.
3. Unscrew the screws from the Central Processing Unit (CPU) faceplate.
4. Remove the CPU faceplate.
5. Place the license key in the appropriate terminal slot **(P4** or **P6)** in the CPU (refer to *Figure 2-1*).

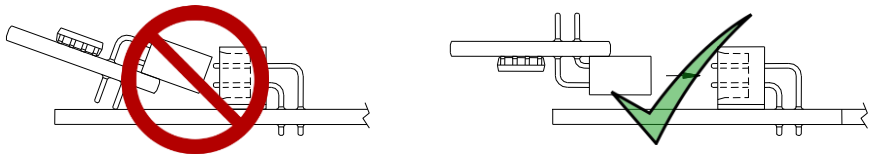

Figure 2-1. License Key Installation

6. Press the license key into the terminal until it is firmly seated (refer to *Figure 2-1*).
7. Re-attach the CPU faceplate.
8. Re-attach the screws on the CPU faceplate.
9. If necessary, re-attach the wire channel cover.
10. Restore power to the ROC800.
11. Proceed to *Section 2.1.3* to verify your license keys.

2.1.2 Installing a License Key for the FB107

Program licenses for the FB107 are stored on a secure SafeNet® Sentinel™ USB license key. To install a license on the FB107:

1. Insert the USB license key in a USB port on your PC.
2. Select **Utilities** > **License Key Administrator** > **Transfer Between DEVICE and KEY** from the ROCLINK 800 menu bar. The Transfer Licenses Between a Device and a Key screen displays.

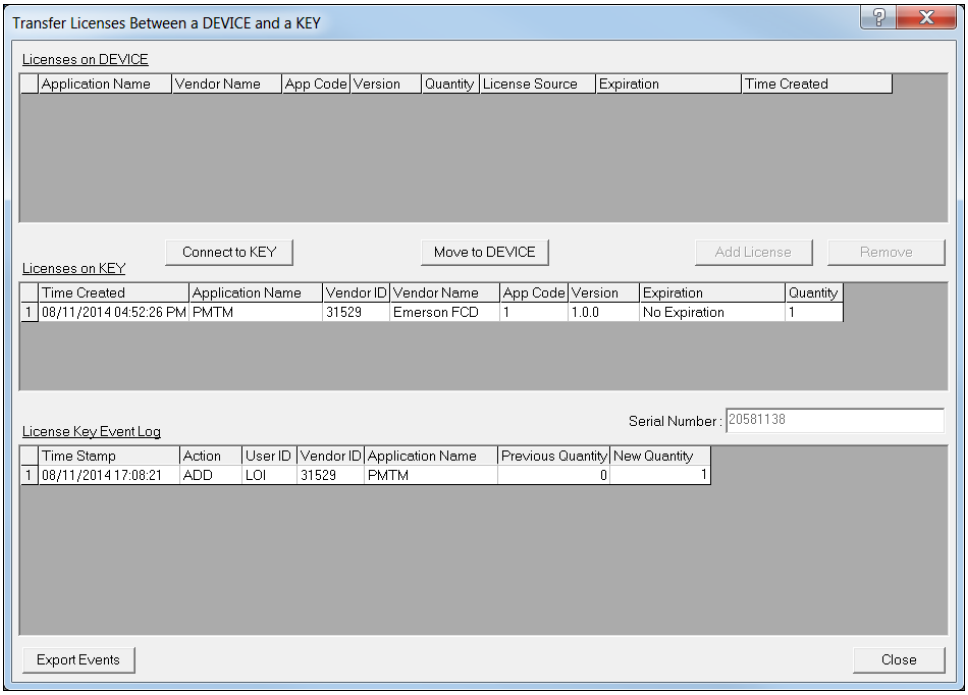

Figure 2-2. Transfer Licenses Between a Device and a Key

Note: This screen has three sections. The upper portion (Licenses on Device) shows any software licenses installed on the FB107. The middle portion (Licenses on Key) shows software licenses on the license key. The lower portion of the screen (License Key Event Log) provides a rolling log of the last eight events related to this license key.

3. Select the key-based license you want to transfer to the FB107 (*PMTM*, as shown in *Figure 2-2*).
4. Click **Move to Device**. ROCLINK moves the license from the key to the FB107 and updates the screen.

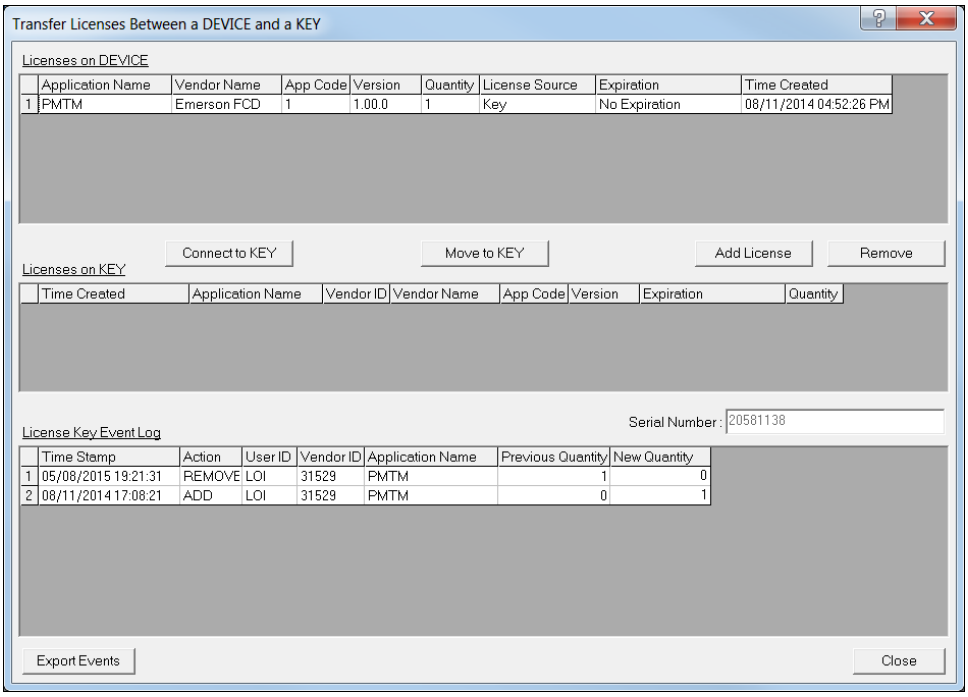

Figure 2-3. License Installed (FB107)

Note: An FB107 can hold up to six different licenses, although you can install only one instance of each license on the FB107. When you click Move to Device, ROCLINK 800 moves only one instance of the license onto the FB107 and automatically decreases the total number of licenses on the USB drive by one (if it contains more than one).

5. Verify that the license name now displays in the Licenses on Device section of the screen. Proceed to *Section 2.2* to download the user program.

2.1.3 Verifying the License Key Installation (for ROC800)

After you install the license key, you can verify whether the ROC800 recognizes the key. From the ROCLINK 800 screen, select **Utilities** > **License Key Administrator**. The License Key Administrator screen displays:

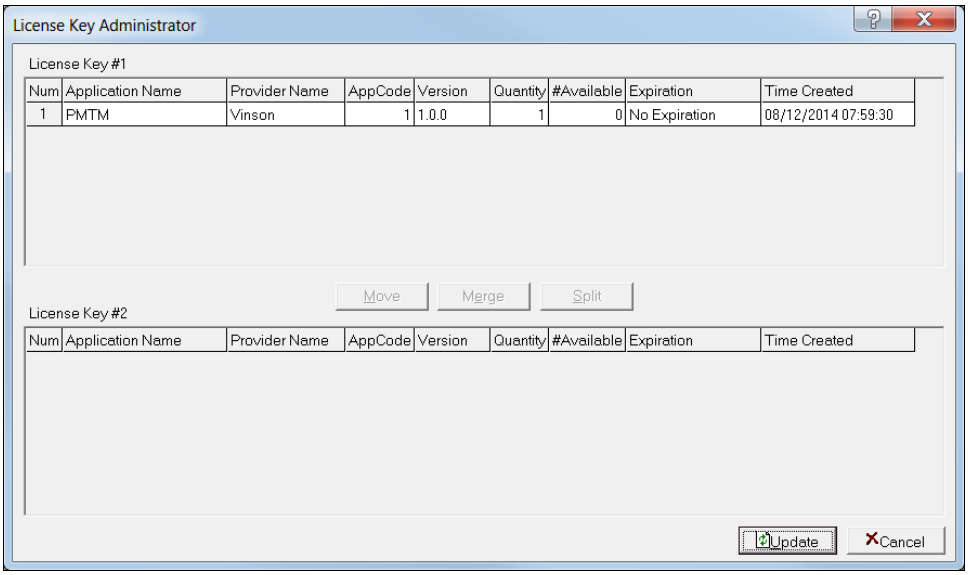

Figure 2-4. Transfer Licenses Between a Device and a Key

2.2 Installing the Program

This section provides instructions for installing the program into the Flash memory on the ROC800 or FB107.

To download the user program using ROCLINK 800 software:

1. Connect the ROC800 to your computer.
2. Start and logon to the ROCLINK 800.
3. Select **ROC** > **Direct Connect** to connect to the ROC800.
4. Select **Utilities** > **User Program Administrator** from the ROCLINK menu bar. The User Program Administrator screen displays (see *Figure 2-5*):

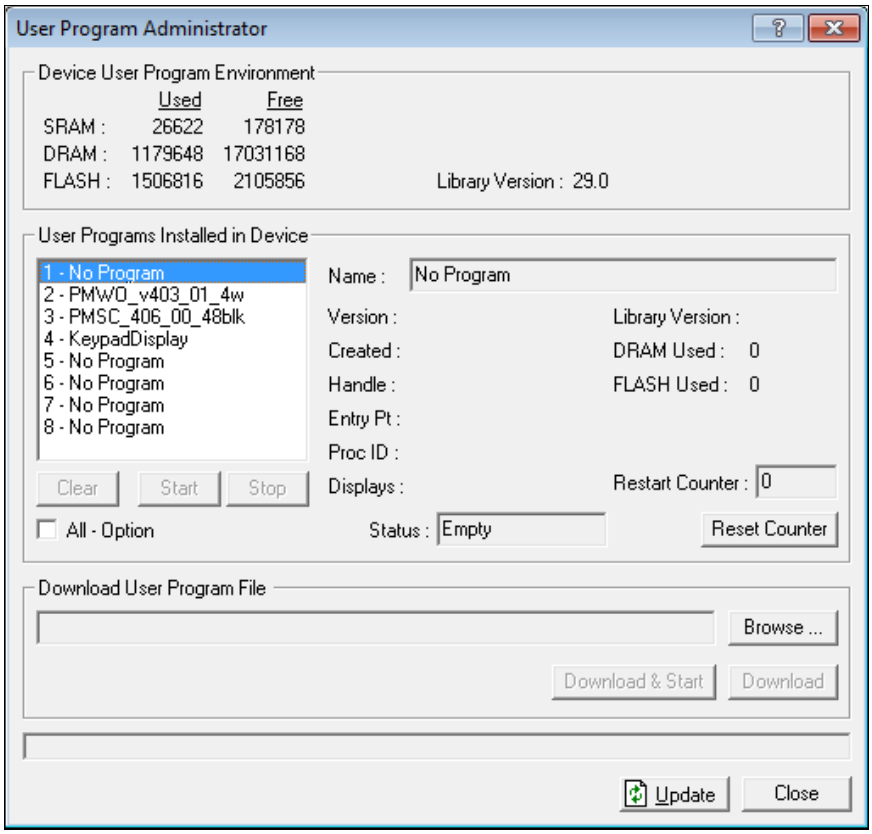

Figure 2-5. User Program Administrator

5. Click **Browse** in the Download User Program File frame. The Select User Program File screen displays (see *Figure 2-5*).

Note: If you install the program in the ROC800, choose any available user program slot. If you use FB107, the program installs automatically in user program slot 7.

6. Select the path and user program file to download from the CD-ROM. (Program files are typically located in the Program Files folder on the CD-ROM). As *Figure 2-6* shows, the screen lists all valid user program files with the **.bin** (for FB107) or **.tar** (for ROC800) extension:

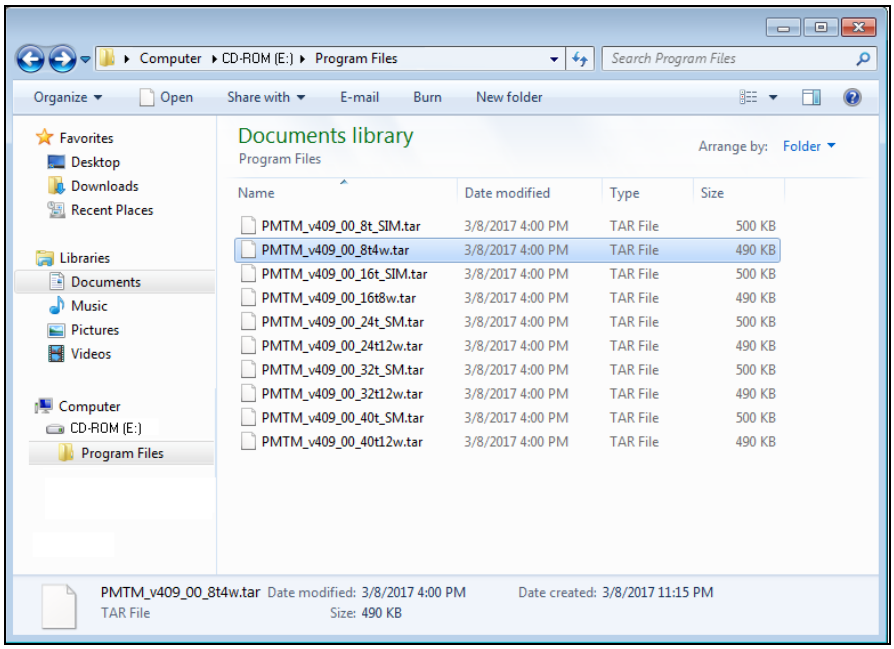

Figure 2-6. Select User Program File

7. Click **Open** to select the program file. The User Program Administrator screen displays. As shown in *Figure 2-7*, note that the Download User Program File frame identifies the selected program and that the **Download & Start** button is active:

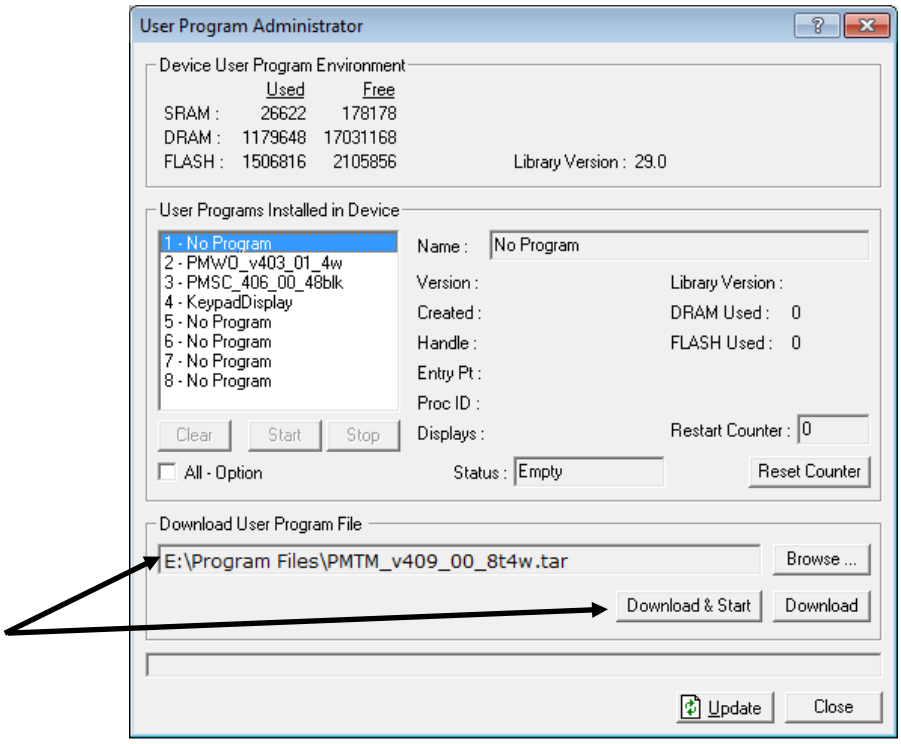

Figure 2-7. User Program Administrator

8. Click **Download & Start** to begin loading the selected program. The following message displays:

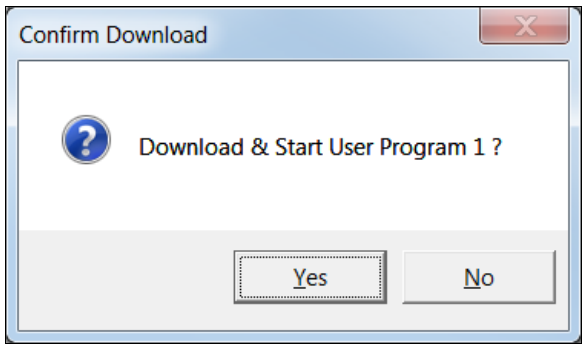

Figure 2-8. Confirm Download

9. Click **Yes** to begin the download. When the download completes the following message displays:

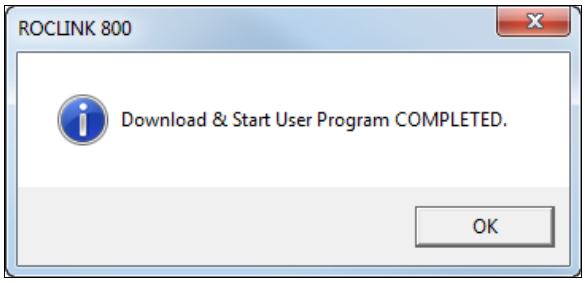

Figure 2-9. ROCLINK 800 Download Confirmation

10. Click **OK**. The User Program Administrator screen displays [see *Figure 2-10 (for ROC800) / Figure 2-10a (for FB107)*]. Note that:

- The Device User Program Environment frame reflects the use of system memory.
- The User Programs Installed in Device frame identifies the installed program(s).
- The Status field indicates that the program is running.

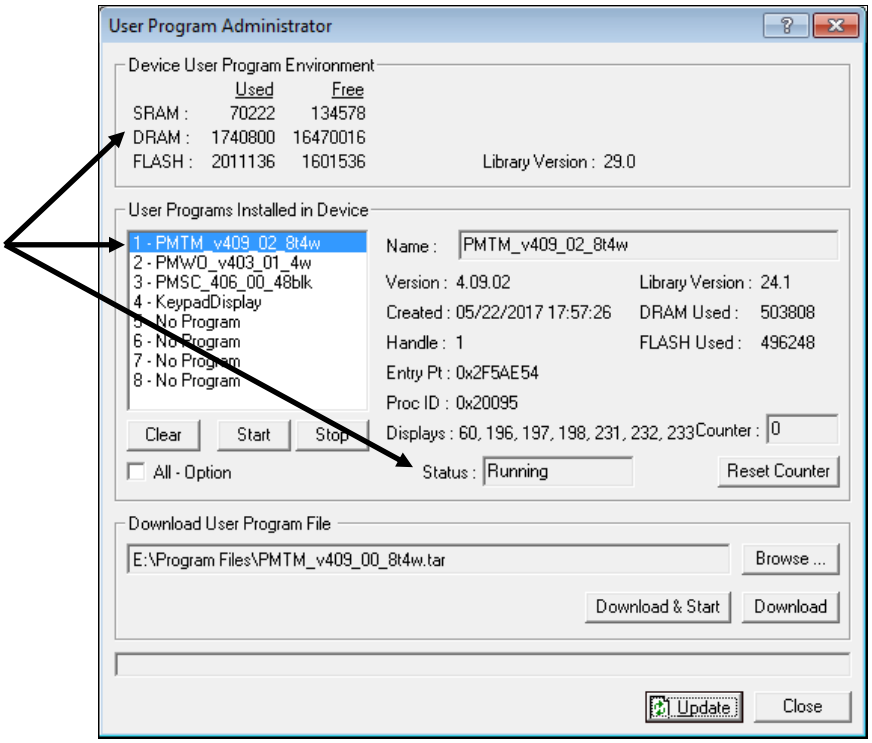

Figure 2-10. User Program Administrator (for ROC800)

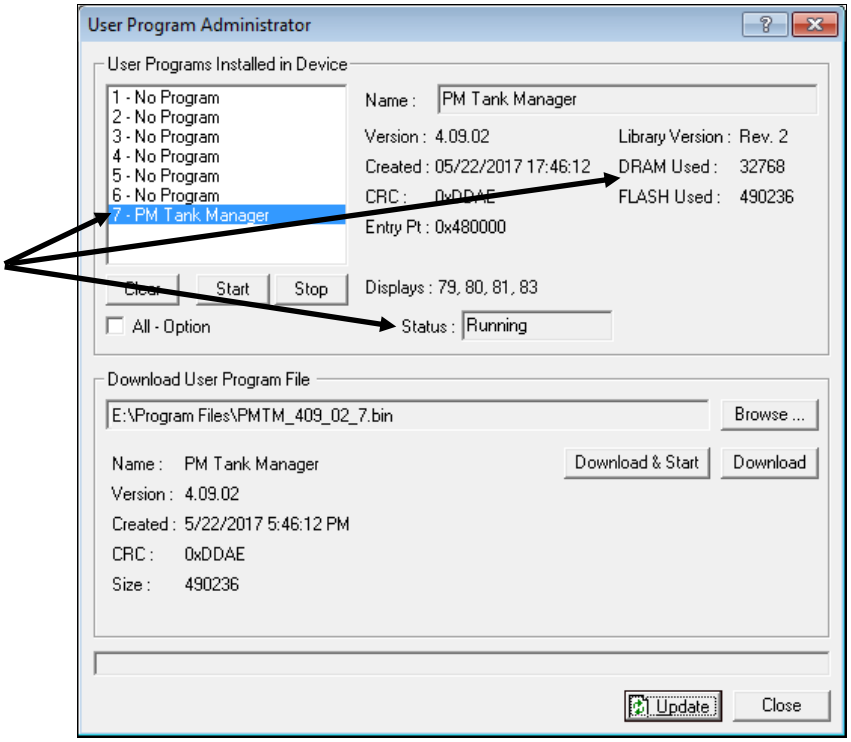

Figure 2-10a. User Program Administrator (for FB107)

11. Click **Close** and proceed to Chapter 3, Configuration to configure the program.

Note: Installing a user program without a license key allows you only to view the program screens (that is, the program outputs no data). Installing the license key enables the program to read from the meter and output data.

2.3 Installing the Optional User Displays (for FB107)

The Tank Manager user program for the FB107 is distributed with three (3) optional user displays:

- Enumerated Lists
- Haul Log Viewer
- Hauler Database

These optional user displays are not installed with the program by default. Although these three (3) displays are needed for configuration of load out functionality, they are not required for operation, and it may not be necessary to install them in some use cases.

These user displays can either be stored on your computer and opened manually "from file" as needed, or they can be installed in the FB107 via the ROCLINK 800 Display Administrator. This manual assumes the displays have been installed in the device using the Display Administer as shown in the following section.

Note that 196,608 bytes are reserved for user displays in the device's flash. The three optional displays included with Tank Manager for the FB107 consume approximately 63,594 bytes. If that amount of space is not available, the three displays cannot be installed until space has been made by removing other user displays.

2.3.1 Installing the Haul Log Viewer Display

To install the Haul Log Viewer Display:

1. Select **View** > **Display** > **From Device** > **Administrator**. The Display Administrator screen displays, showing all displays currently loaded in the FB107.
2. Click slot 1 to highlight it. If slot 1 is not available in your FB107, you can choose any slot that is available.

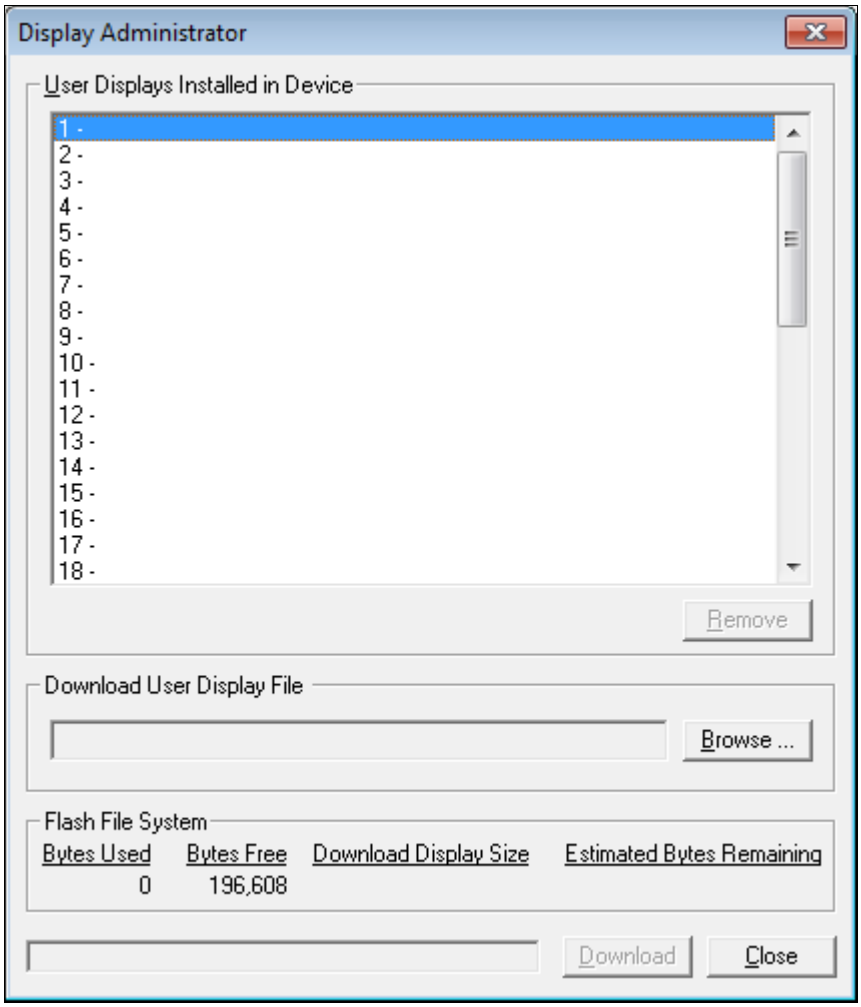

Figure 2-11. Display Administrator, Slot 1

3. Click **Browse** to open the Select User Display File dialog.
4. Double-click PMTM 4_9_2 Haul Log Viewer.dsp.

Note: This file is in the CD of the Tank Manager program.

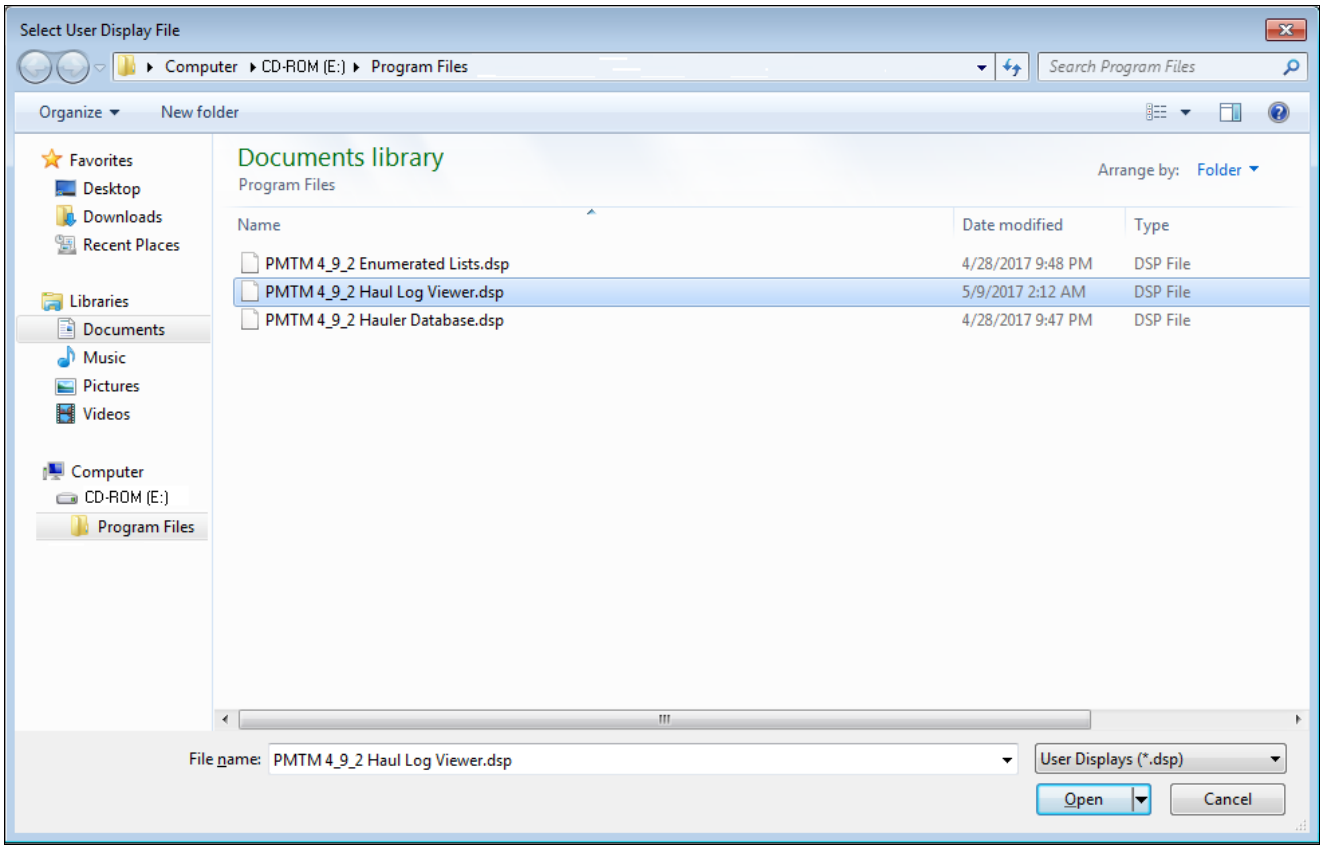

Figure 2-12. Select User Display, PMTM 4_9_2 Haul Log Viewer.dsp

5. The Display Administrator screen re-displays with the **Download** button now active. Click **Download** to add the user display to the FB107.
6. ROCLINK 800 displays a verification dialog.

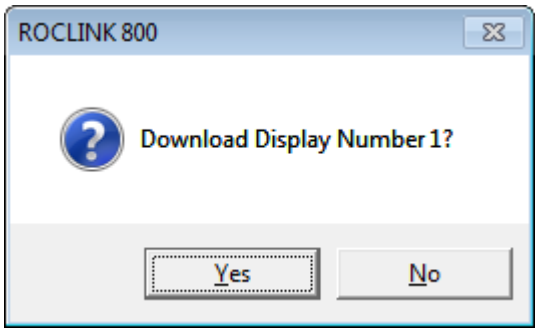

Figure 2-13. Verification – Download Display Number 1

7. Click **Yes**. ROCLINK 800 loads the display in the designated location and displays a completion dialog.

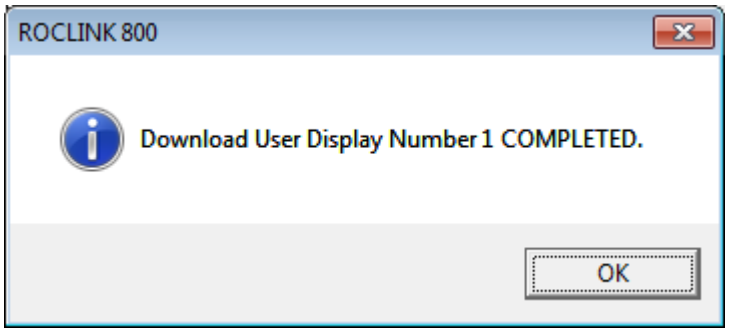

Figure 2-14. Download User Display Number 1 COMPLETED

8. Click **OK** to close the dialog. The Display Administrator screen displays, showing the display you have just added.

Note: Use the Flash File System frame on this screen to monitor the number of bytes you have used and the number of bytes remaining.

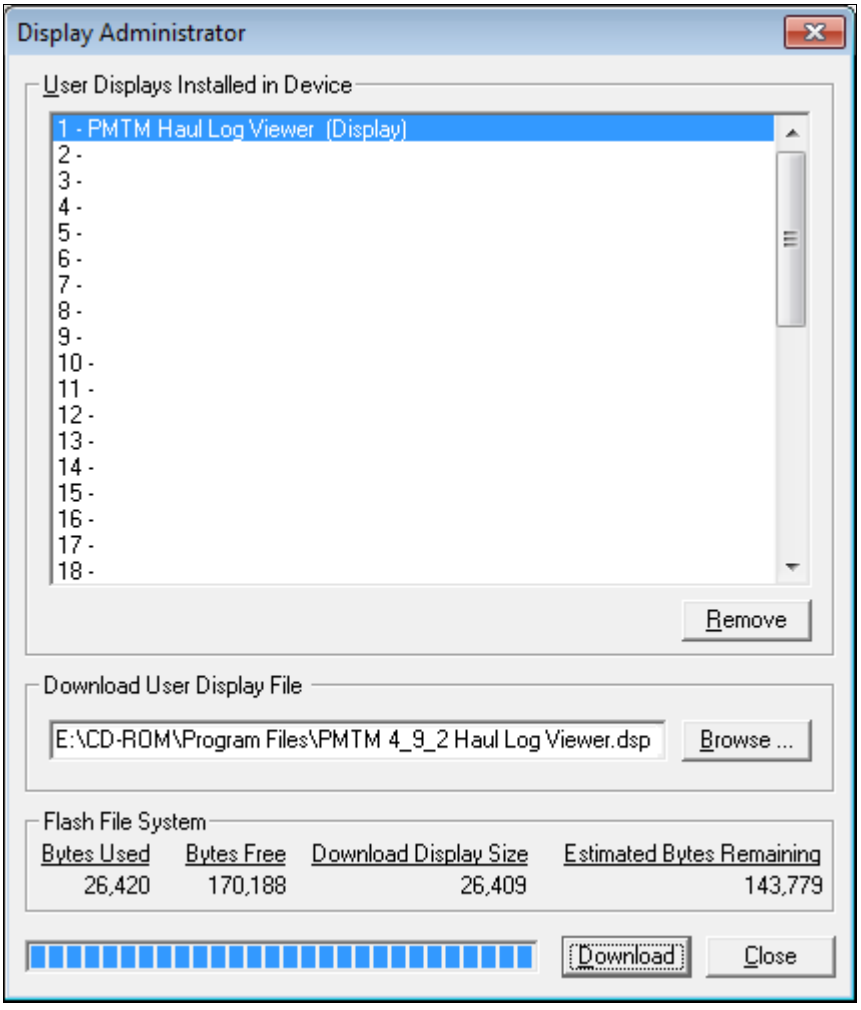

Figure 2-15. Display Administrator, PMTM Haul Log Viewer (Display) Loaded

9. Click **Close**.

Proceed to *Section 3.4 – PMTM Haul Log Viewer* for details.

2.3.2 Installing the Hauler Database Display

To install the Hauler Database Display:

1. Select **View** > **Display** > **From Device** > **Administrator**. The Display Administrator screen displays, showing all displays currently loaded in the FB107.
2. Click slot 2 to highlight it. If slot 2 is not available in your FB107, you can choose any slot that is available.

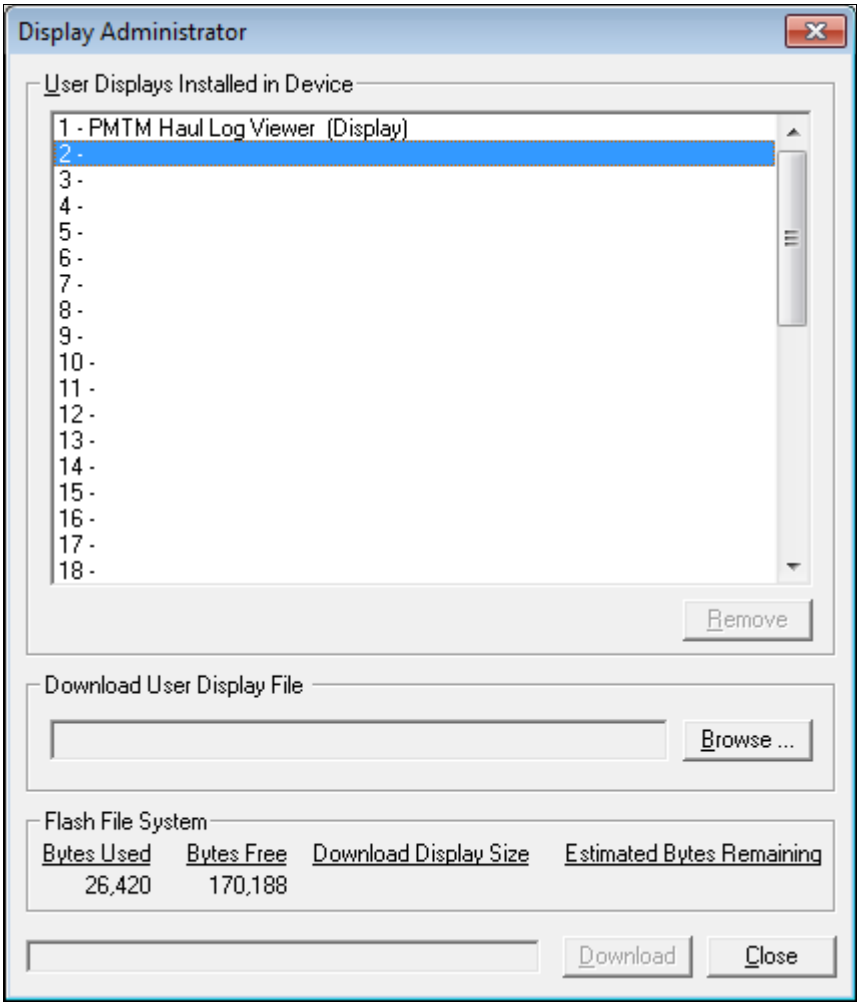

Figure 2-16. Display Administrator, Slot 2

3. Click **Browse** to open the Select User Display File dialog.
4. Double-click PMTM 4_9_2 Hauler Database.dsp.

Note: This file is in the CD of the Tank Manager program.

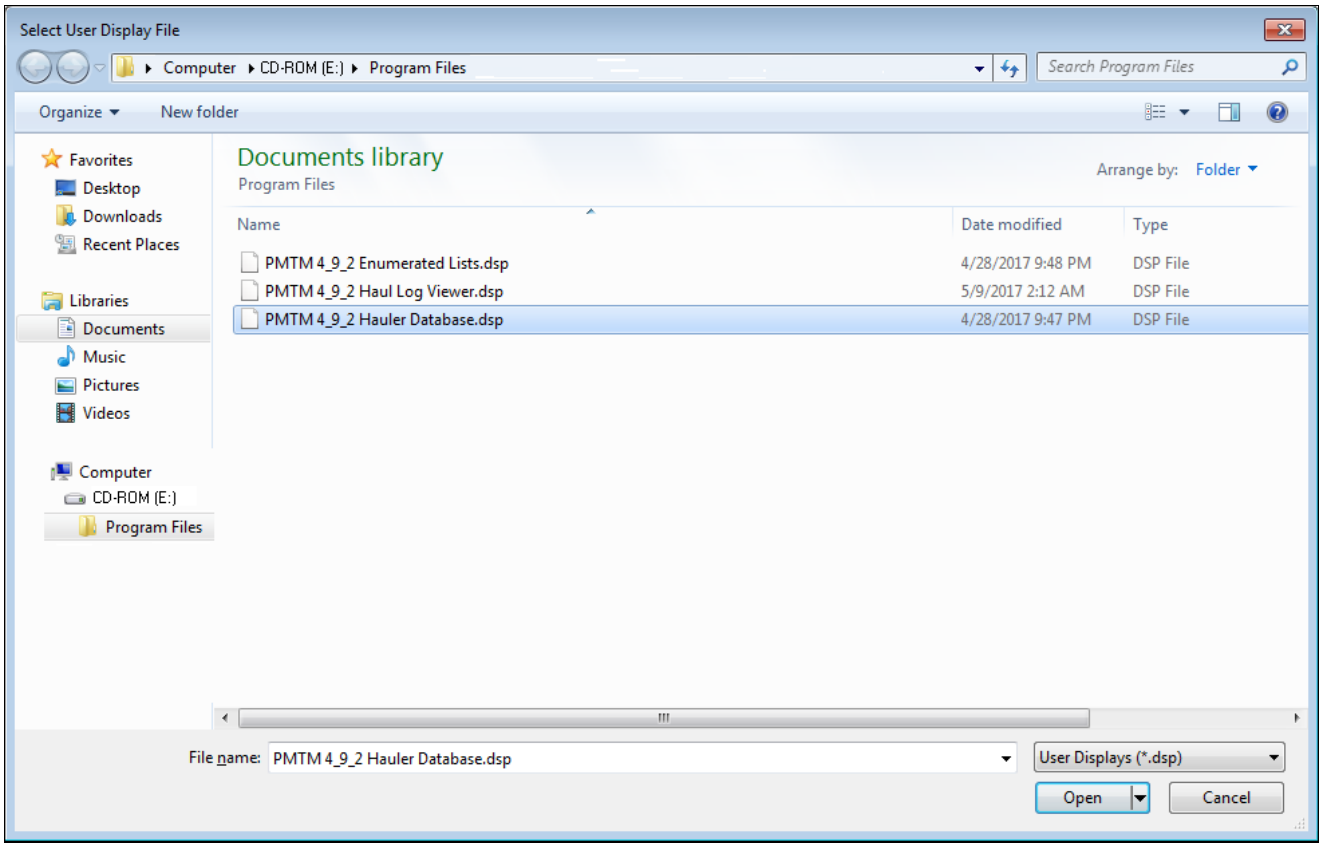

Figure 2-17. Select User Display, PMTM 4_9_2 Hauler Database.dsp

5. The Display Administrator screen re-displays with the **Download** button now active. Click **Download** to add the user display to the FB107.
6. ROCLINK 800 displays a verification dialog.

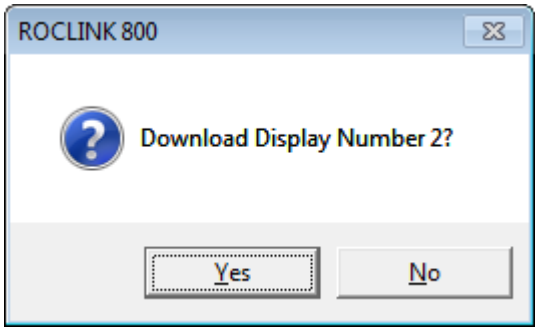

Figure 2-18. Verification – Download Display Number 2

7. Click **Yes**. ROCLINK 800 loads the display in the designated location and displays a completion dialog.

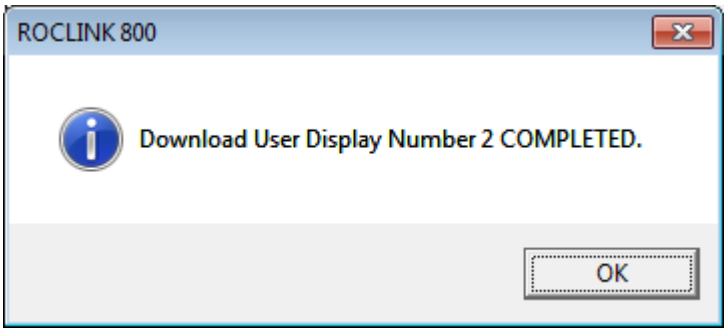

Figure 2-19. Download User Display Number 2 COMPLETED

8. Click **OK** to close the dialog. The Display Administrator screen displays, showing the display you have just added.

Note: Use the Flash File System frame on this screen to monitor the number of bytes you have used and the number of bytes remaining.

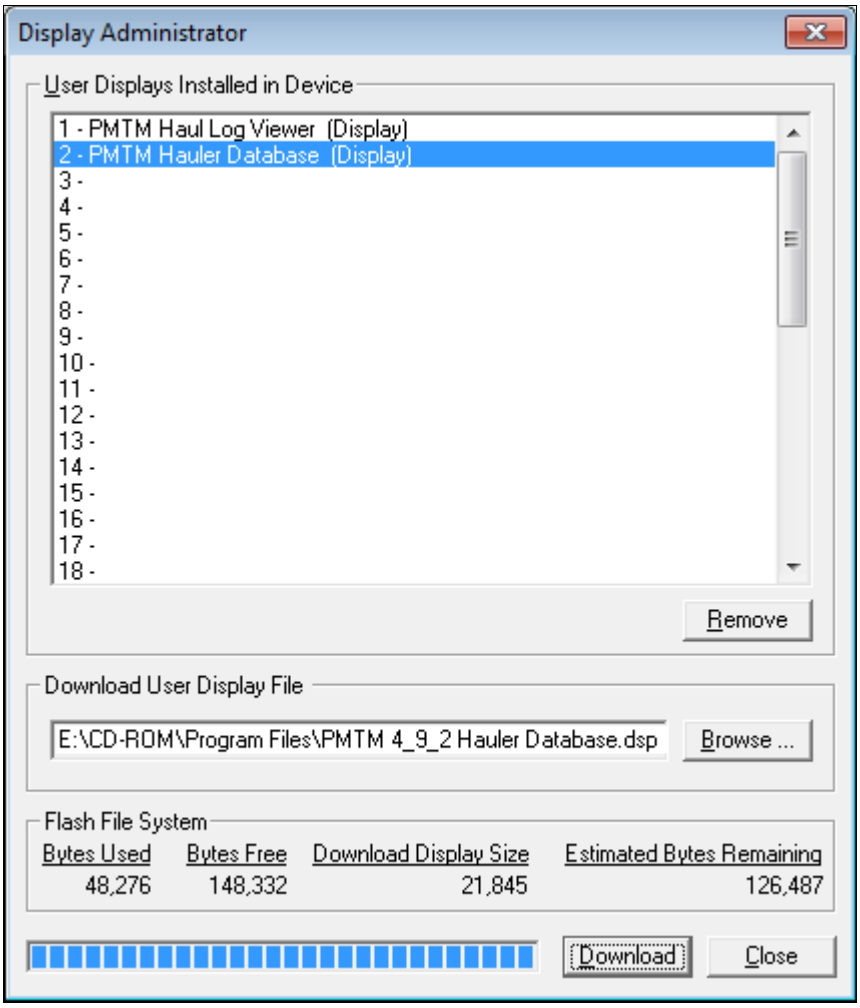

Figure 2-20. Display Administrator, PMTM Hauler Database (Display) Loaded

9. Click **Close**.

Proceed to *Section 3.6 – PMTM Hauler Data Base* for details.

2.3.3 Installing the Enumerated Lists Display

To install the Enumerated Lists Display:

1. Select **View** > **Display** > **From Device** > **Administrator**. The Display Administrator screen displays, showing all displays currently loaded in the FB107.
2. Click slot 3 to highlight it. If slot 3 is not available in your FB107, you can choose any slot that is available.

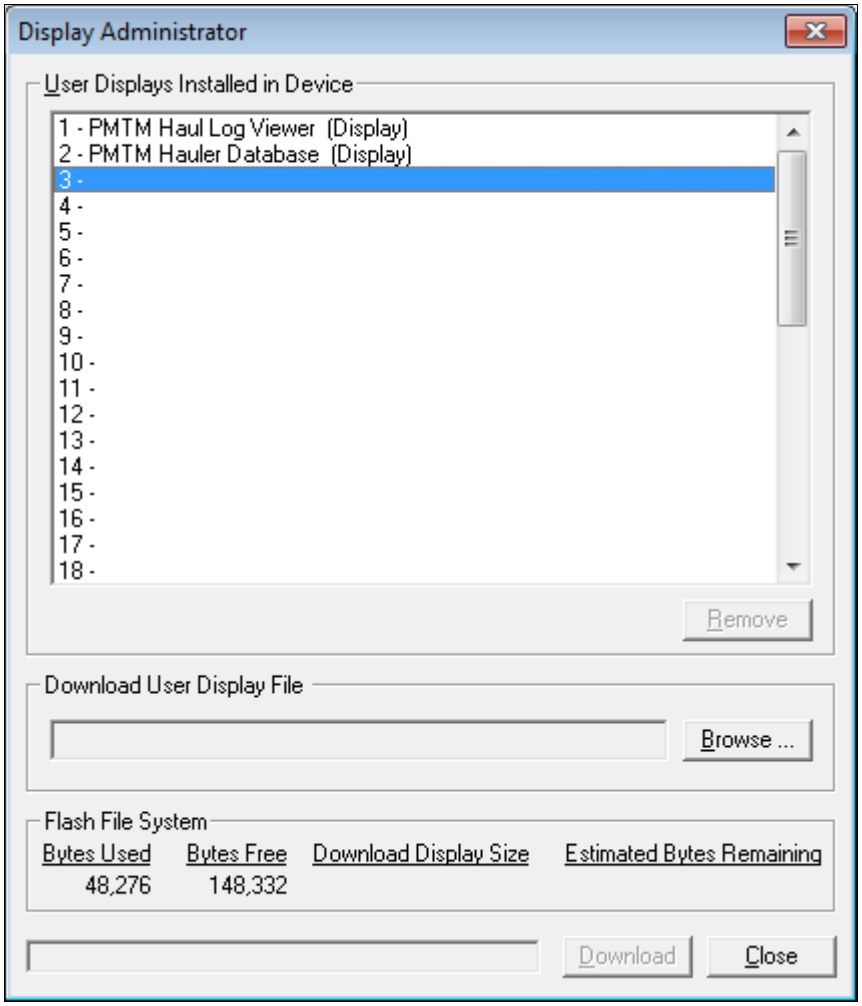

Figure 2-21. Display Administrator, Slot 3

3. Click **Browse** to open the Select User Display File dialog.
4. Double-click PMTM 4_9_2 Enumerated Lists.dsp.

Note: This file is in the CD of the Tank Manager program.

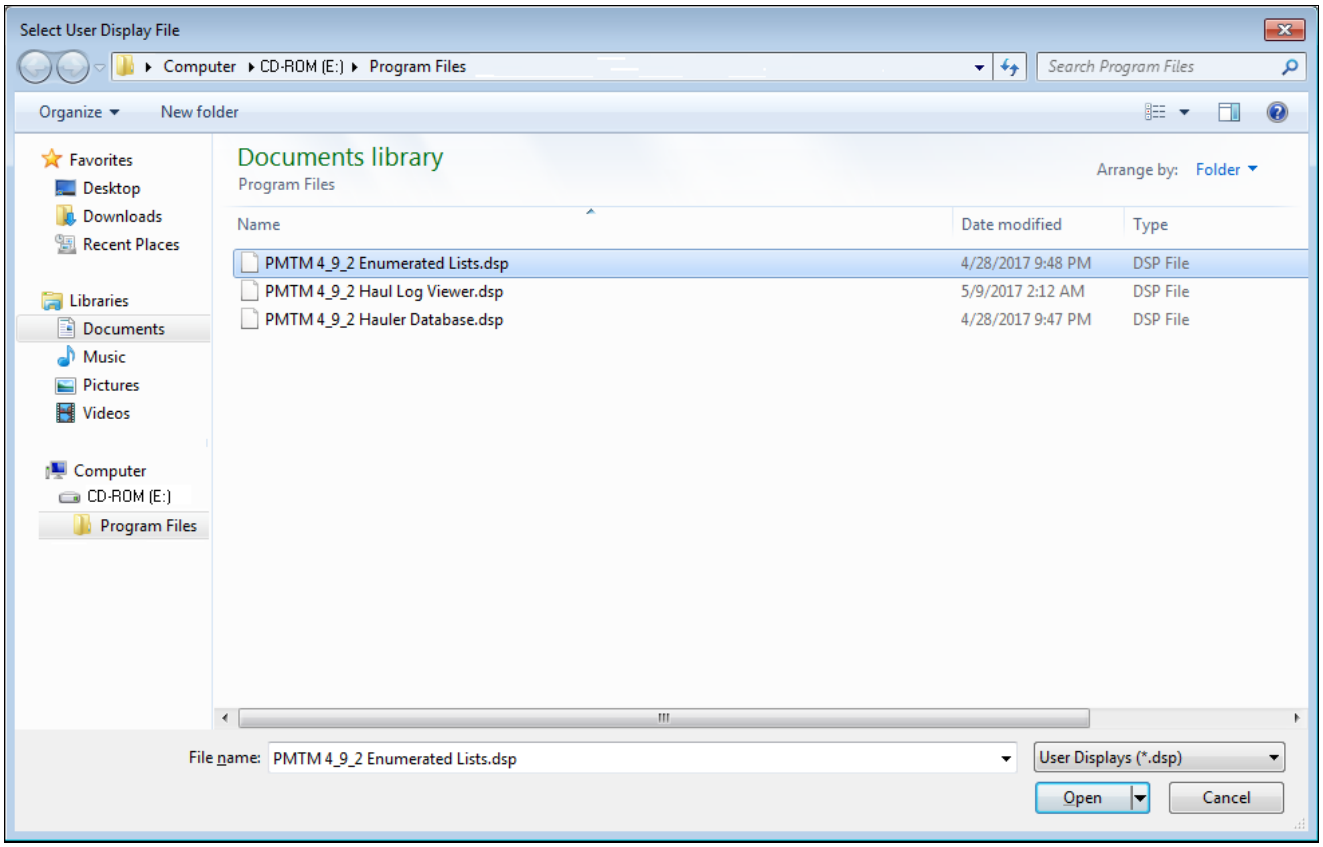

Figure 2-22. Select User Display, PMTM 4_9_2 Enumerated Lists.dsp

5. The Display Administrator screen re-displays with the **Download** button now active. Click **Download** to add the user display to the FB107.
6. ROCLINK 800 displays a verification dialog.

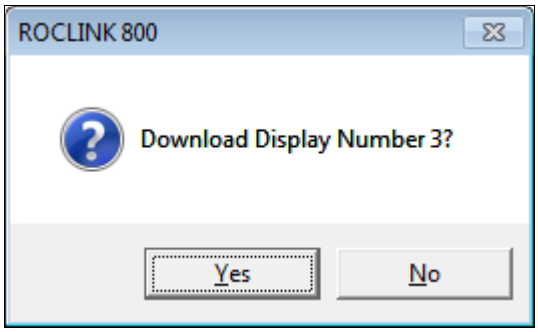

Figure 2-23. Verification – Download Display Number 3

7. Click **Yes**. ROCLINK 800 loads the display in the designated location and displays a completion dialog.

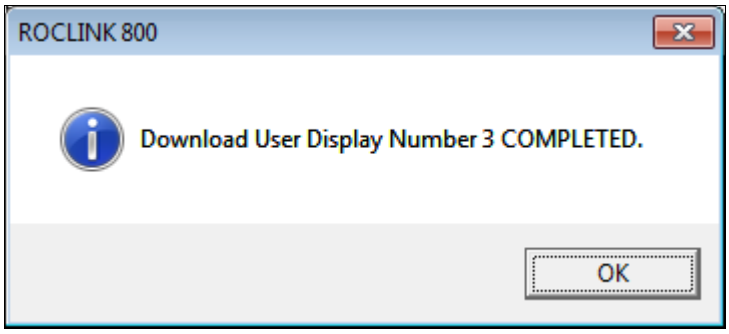

Figure 2-24. Download User Display Number 3 COMPLETED

8. Click **OK** to close the dialog. The Display Administrator screen displays, showing the display you have just added.

Note: Use the Flash File System frame on this screen to monitor the number of bytes you have used and the number of bytes remaining.

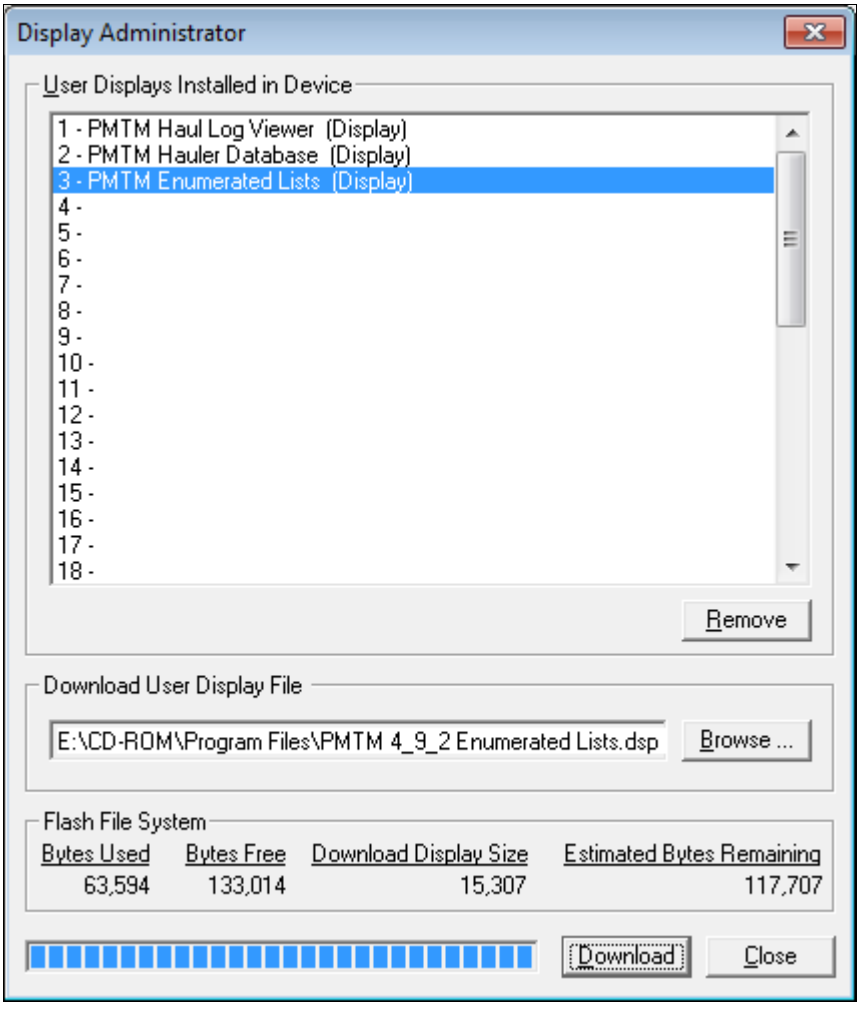

Figure 2-25. Display Administrator, PMTM Enumerated Lists (Display) Loaded

9. Click **Close**.

Proceed to *Section 3.7 – PMTM Enumerated Lists* for details.

2.4 MPU Loading Threshold (for ROC800)

To maximize the performance of your ROC800 device, always verify the performance of specific application combinations before using them in the field to ensure the MPU load typically remains **below** 85% with peak MPU loading levels **below** 95%.

To check the current MPU load at any time, select **ROC** > **Information** > **Other Information** and review the value in the MPU loading field.

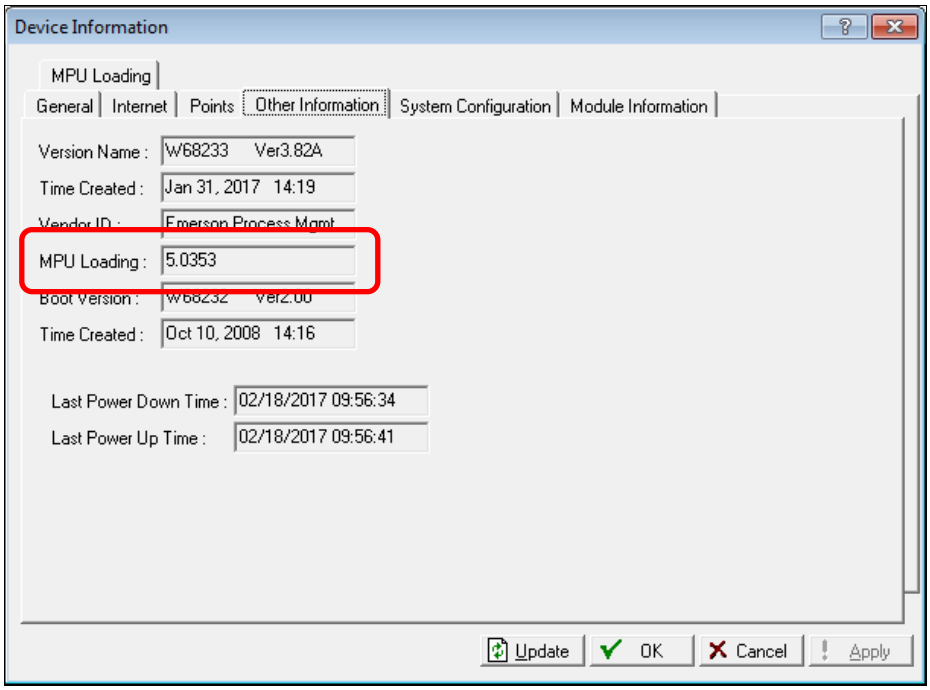

Figure 2-26. MPU Loading

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Chapter 3 – Configuration

After you install the Tank Manager program, you configure it using ROCLINK 800 software. The program uses seven (7) screens:

- Use the **Units** screen to configure the units of measure used throughout the program, as well as other global options.
- Use the **Tank Manager** screen and its tabs to view liquids data, configure fluid properties, view haul details, and run simulations.
- Use the **Allocated Well Values** screen and its tabs to view and configure allocation and production details.
- Use the **Haul Log Viewer** to retrieve detailed information about previous hauls from the tanks.

  Note: For the FB107, this screen is an optional user display. Refer to *Section 2.3.1 – Installing the Haul Log Viewer Display* for installation.

- Use the **LoadOut** screen and its tabs to configure haul details, view specific haul values, and run system diagnostics.
- Use the **Hauler Data Base** screen to manage the database of credentials required to perform a haul.

  Note: For the FB107, this screen is an optional user display. Refer to *Section 2.3.2 – Installing the Hauler Database Display* for installation.

- Use the **Enumerated Lists** screen to manage any combination of Turndown Reject Reasons, Destination and/or Disposition entries up to sixty (60) entries are allowed.

  Note: For the FB107, this screen is an optional user display. Refer to *Section 2.3.3 – Installing the Enumerated Lists Display* for installation.

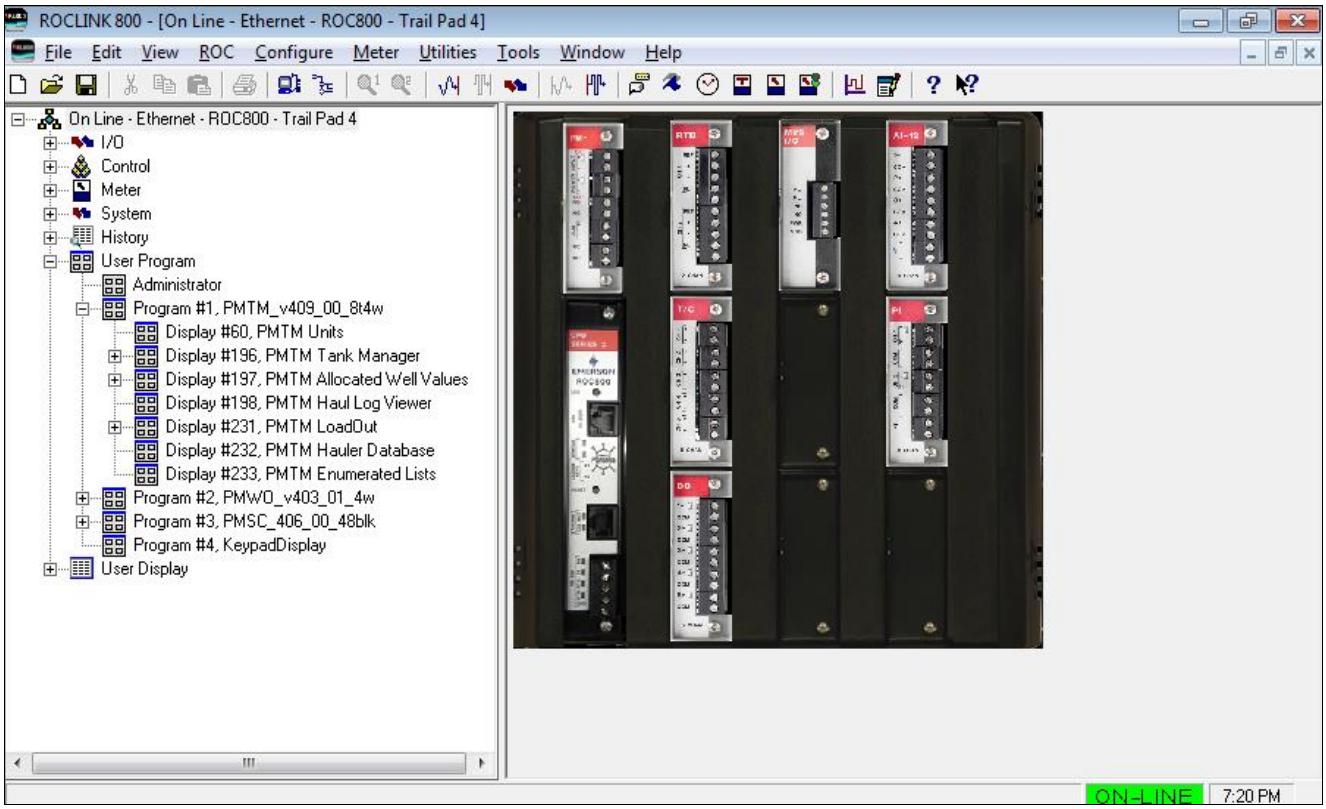


Figure 3-1. ROCLINK 800 (for ROC800)

Note: The program number and name depends on which program you have installed on which platform. This manual uses PMTM_v409_00_8t4w program.

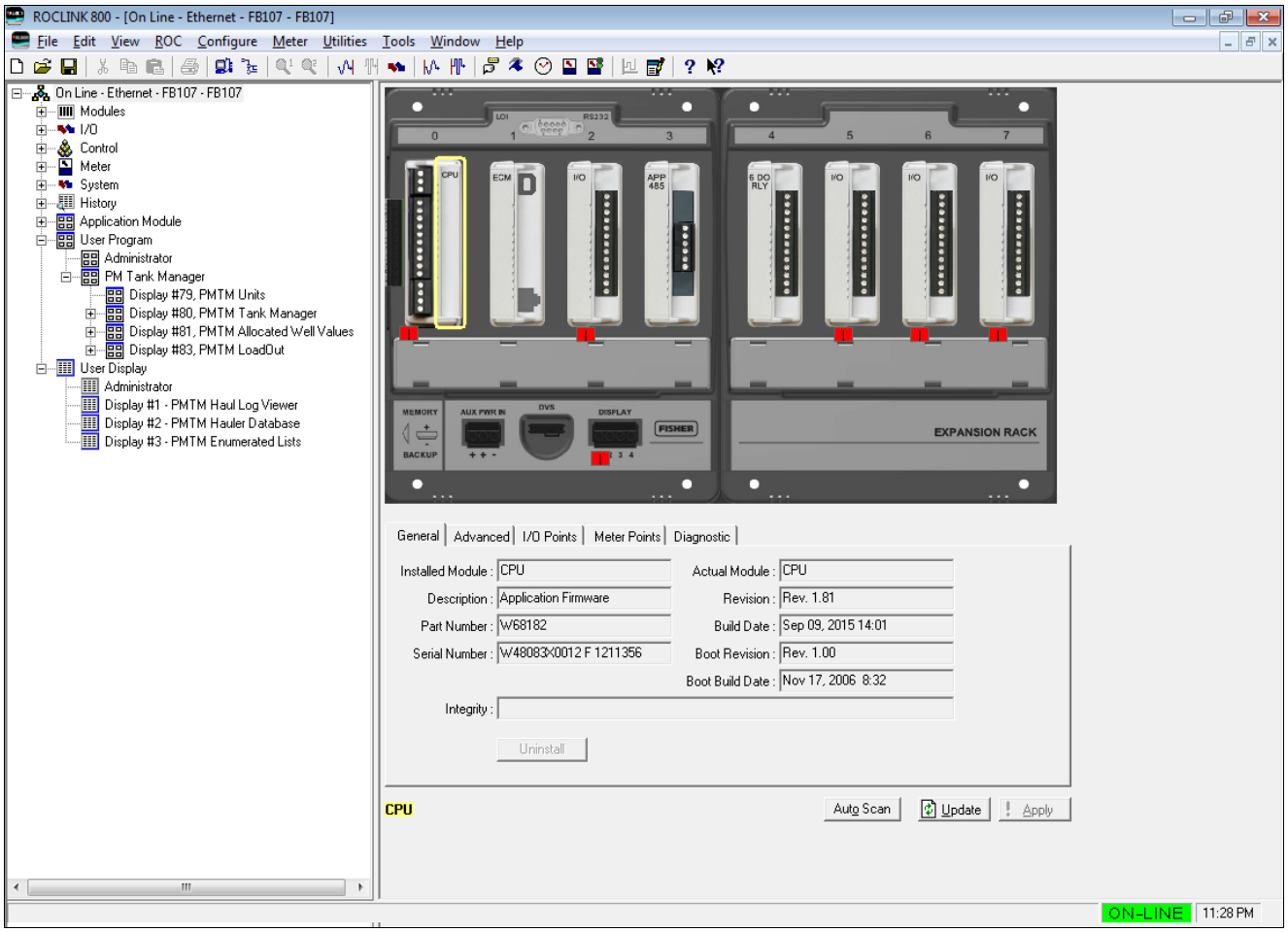


Figure 3-1a. ROCLINK 800 (for FB107)

3.1 PMTM Units

Use this screen to configure units for the tanks, allocation wells, clear haul logs and load outs provided by the program.

When Tank Manager is installed in a ROC800L, the application will align with the unit selections made on the Liquid Calculations – Liquid Preferences screen. When this is true, a note will be displayed on the top of the screen, and options defined in the Liquid Calculations user program will be grayed out.

This screen also includes options for managing the system haul log audit trail.

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click the following:
   - For the ROC800: **Program #1, PM_Tanks_v409_00_8t4w**.
   - For the FB107: **PM Tank Manager**.
3. Double-click the following:

- For the ROC800: **Display #60, PMTM Units**.
- For the FB107: **Display #79, PMTM Units**.

4. The Units screen displays:

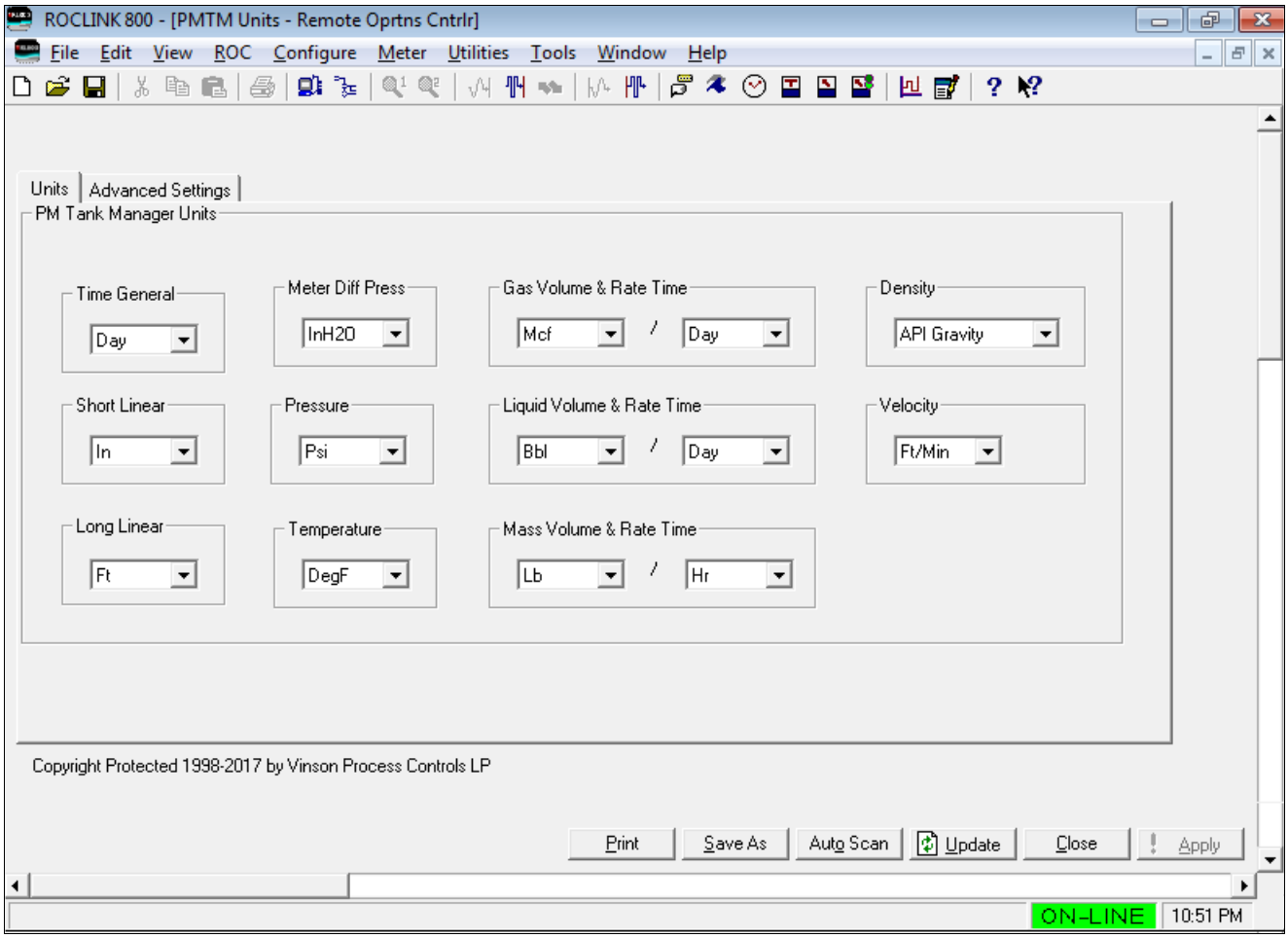


Figure 3-2. Unit Screen

Follow *Section 3.1.1* through *Section 3.1.2* to configure the component tabs of the PMTM Units screen.

3.1.1 PMTM Units – Units Tab

Use this screen to configure units for the tanks.

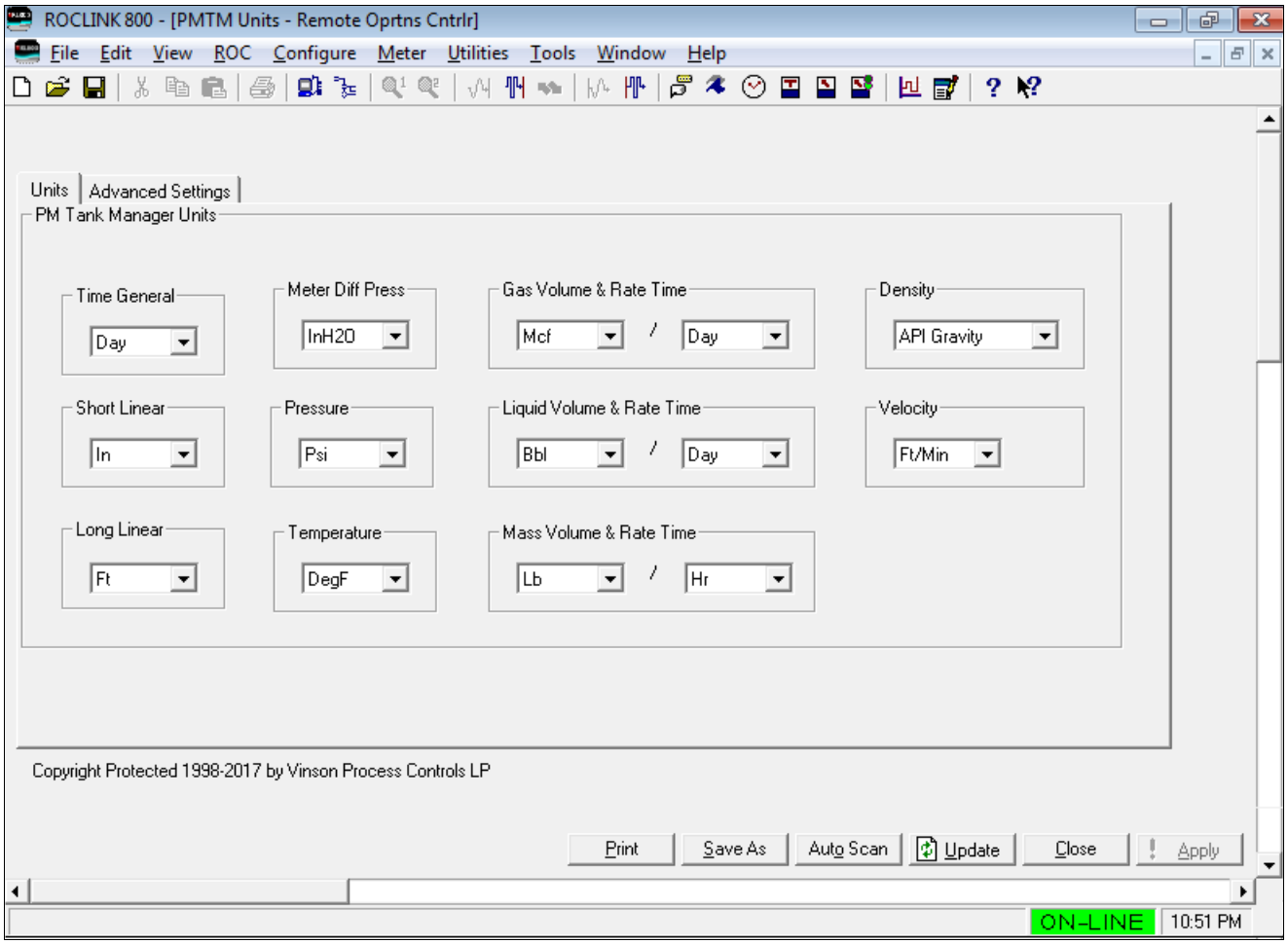


Figure 3-3. PMTM Units – Units tab

1. Review the values in the following fields:

Field	Description
Time General	Sets the unit of measurement the program use for general time. Click▼ to display all valid unit selections.
Short Linear	Sets the unit of measurement the program use for short lengths. Click▼ to display all valid unit selections.
Long Linear	Sets the unit of measurement the program use for long lengths. Click▼ to display all valid unit selections.
Meter Diff Pressure	Sets the unit of measurement the program use for differential pressure. Click▼ to display all valid unit selections.
Pressure	Sets the unit of measurement the program use for pressure. Click▼ to display all valid unit selections.
Temperature	Sets the unit of measurement the program use for temperature. Click▼ to display all valid unit selections.

Field	Description
Gas Volume & Rate Time	Sets the unit of measurement the program use for both the gas volume accumulation and gas volume flowrate values. Click▼ to display all valid options.
Liquid Volume & Rate Time	Sets the unit of measurement the program use for both the liquid volume accumulation and liquid volume flowrate values. Click▼ to display all valid options.
Mass & Rate Time	Sets the unit of measurement the program use for both the mass accumulation and mass flowrate values. Click▼ to display all valid options.
Density	Sets the unit of measurement the program use for density values. Click▼ to display all valid unit selections.
Velocity	Sets the units of measurement the program use for velocity values. Click▼ to display all valid unit selections.

2. Click **Apply** to save any changes you have made to this screen.

3. Proceed to *Section 3.1.2* to configure the Advance Settings tab

3.1.2 PMTM Units – Advance Settings Tab

Use this screen to configure miscellaneous settings applicable to the entire Tank Manager program. This screen also allows for management of the Tank Manager haul log, and the optional startup delay settings.

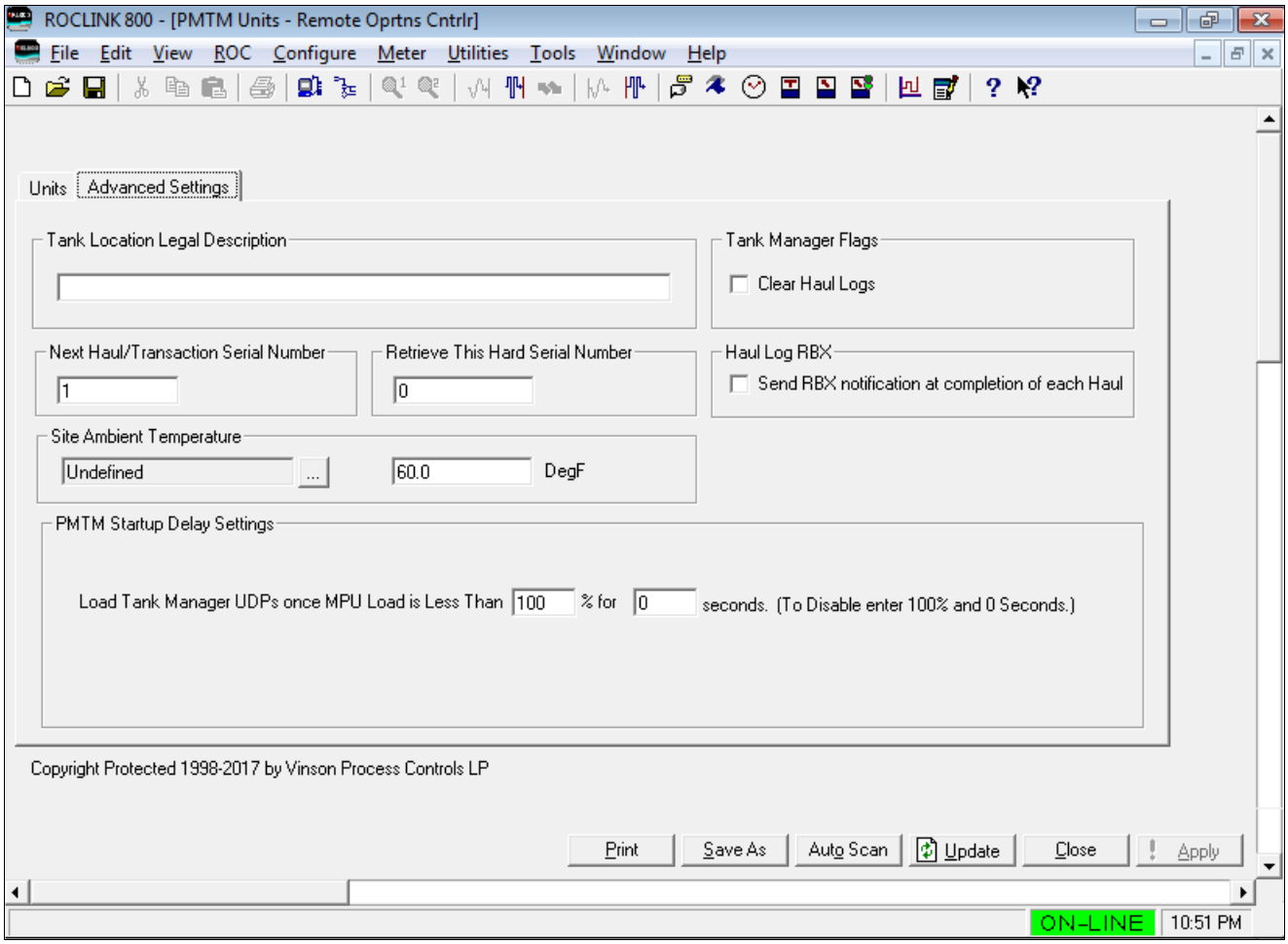


Figure 3-4. PMTM Units – Advance Settings tab

1. Review the values in the following fields:

Field	Description
Tank Location and Legal Description	Provides a text description of the location where you install the device and the associated tanks. You use this for informational purposes only.
Tank Manager Flags	
Clear Haul Logs	Deletes up to 512 records for previous haul transactions the program keeps on the flash file system of the ROC800 or FB107. This also resets the Next Haul/Transaction Serial Number back to 1. **Note**: This is not visible when the haul log is empty.
Contact SCADA for Value: Last Logged Hard SN	Sets the Hard Haul Serial Number to be used for the next haul transaction. This allows the system to resume operation at the next sequential haul number (as tracked via SCADA) after the haul log has been cleared. **Note**: This field is only visible when the haul log is empty.

Field	Description
Next Haul / Transaction Serial Number	Sets the unique serial number for the next haul. This value automatically increments as the hauls occur. This field also allows you to reset the haul serial numbers back to a starting point, or other previous value.
Retrieve this Hard Serial Number	Sets the hard serial number for the haul log record that will be populated in the Detailed Haul Log Viewer (see *Section 3.5*). This field can also be used by a SCADA system to load a previous haul log record for retrieval
Haul Log RBX	This option prompts the program to create an SRBX (Spontaneous Respond By Exception) event when a haul occurs. You use this to inform a host system of the haul event. **Note**: This requires you to configure the SRBX feature on the communications port of your ROC800.
Site Ambient Temperature	Click … and select the TLP that the program will use to read the live ambient temperature of the site. If defined, the current value of the ambient temperature is shown in the field next to the input definition. The ambient temperature is displayed on other screens, and recorded for each entry in the haul log.
PMTM Startup Delay Settings The Tank Manager user program is a large application. In the event of a power cycle or warmstart, the program's initialization routine can take a large number of seconds to complete, depending on other user programs or functionality configured in the device. This feature allows for the Tank Manager to delay its startup, to ease the overall system startup MPU loading. The default settings assure the program will startup as soon as it's able (recommended).	
MPU Load is %	Sets the percentage that the system MPU load is required to drop down to (or below) on an initialization event before Tank Manager will begin its own initialization routine.
Seconds	Sets the number of seconds that the system MPU load must remain below the configured threshold percentage, before Tank Manager will begin its own initialization routine.

2. Click **Apply** to save any changes you have made to this screen.

3. Proceed to *Section 3.2* to configure the Tank Manager.

⚠ Caution **The SCADA System gathers the Haul Log Audit Trail and stays in synchronization with the ROC800 using the Hard Haul Serial Number. If this value is reset in the ROC800, the SCADA stops the synchronization. The Hard Haul Serial Number resets in several method such as, but not limited to:**

- **Loading point type 198 from a configuration file**
- **Cold starting the haul log through Tank Manager**
- **Replacement of the CPU**
- **Enable (check) the Clear Haul Logs field and enter the Hard Haul Serial Number into the Contact SCADA for Value: Last Logged Hard SN box.**

To reset the Hard Haul Serial Number, go to ROC > Flags from the ROCLINK 800 menu and click Cold Start. Go to PMTM Units screen and enter the last known Hard Haul Serial Number in the Next Haul/Transaction Serial Number field. The program starts incrementing the Haul Log with this number.

3.2 PMTM Tank Manager

Use this screen to view liquids data, configure fluid properties, view haul details, and run simulations.

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click one of the following:
   - For the ROC800: **Program #1, PM_Tanks_v409_00_8t4w**.
   - For the FB107: **PM Tank Manager**.
3. Double-click one of the following:
   - For the ROC800: **Display #196, PMTM Tank Manager**.
   - For the FB107: **Display #80, PMTM Tank Manager**.
4. Double-click **#1, Tank 1** for either the ROC800 or FB107.

   Note: The ROC800 can support up to 40 tanks, depending on the program version you install. The FB107 supports up to 8 tanks.

5. The Tank Manager screen displays, showing the Liquids Data tab:

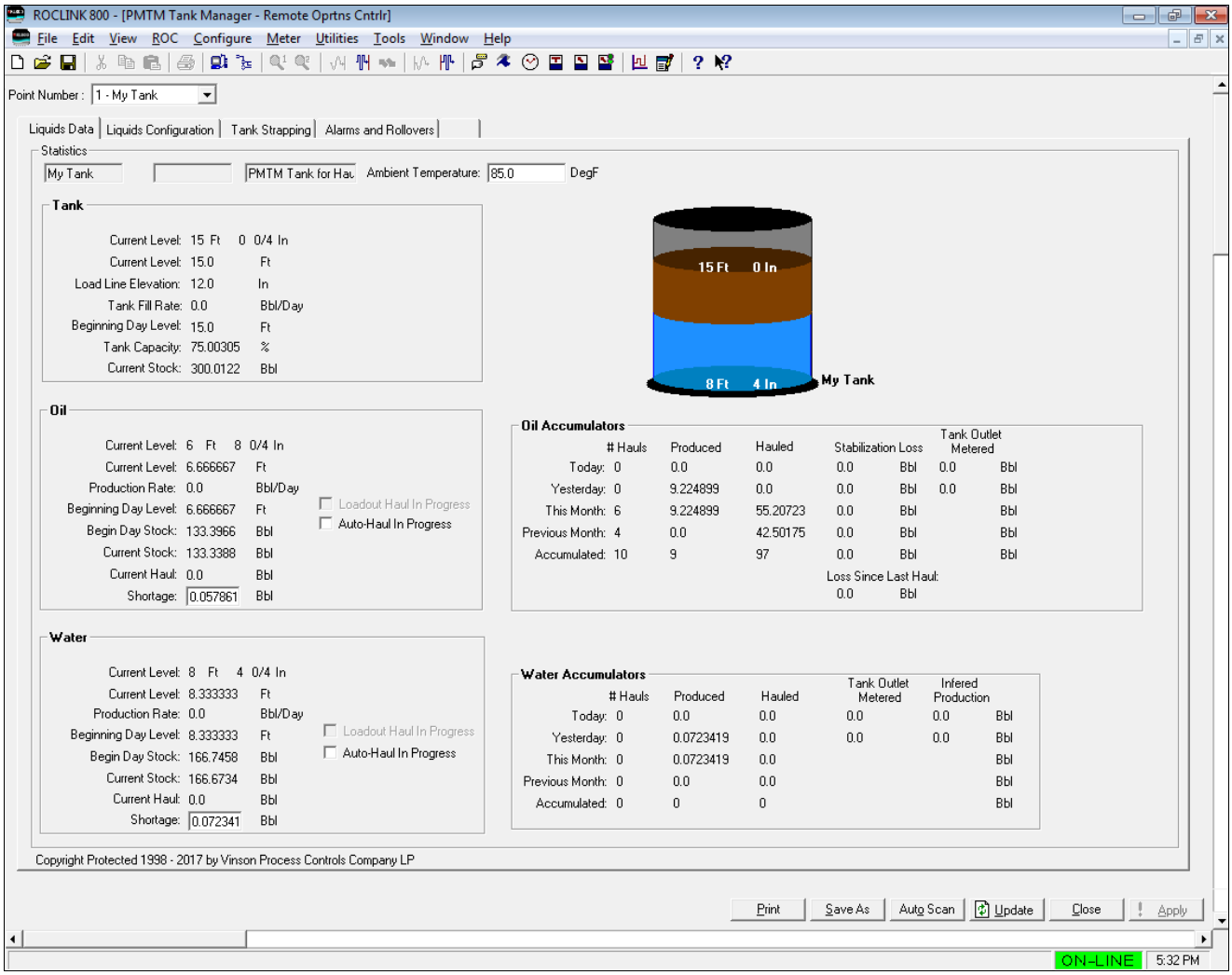


Figure 3-6. Tank Manager Screen

Follow *Section 3.2.1* through *Section 3.2.5* to configure the component tabs of the PMTM Tank Manager screen.

3.2.1 PMTM Tank Manager – Liquids Data Tab

This screen (which displays first when you open the Tank Manager screen) provides an operational overview of the selected tank or aggregate. Use the Point Number field to select up to 8 (for the FB107) or 40 (for the ROC800) defined tanks.

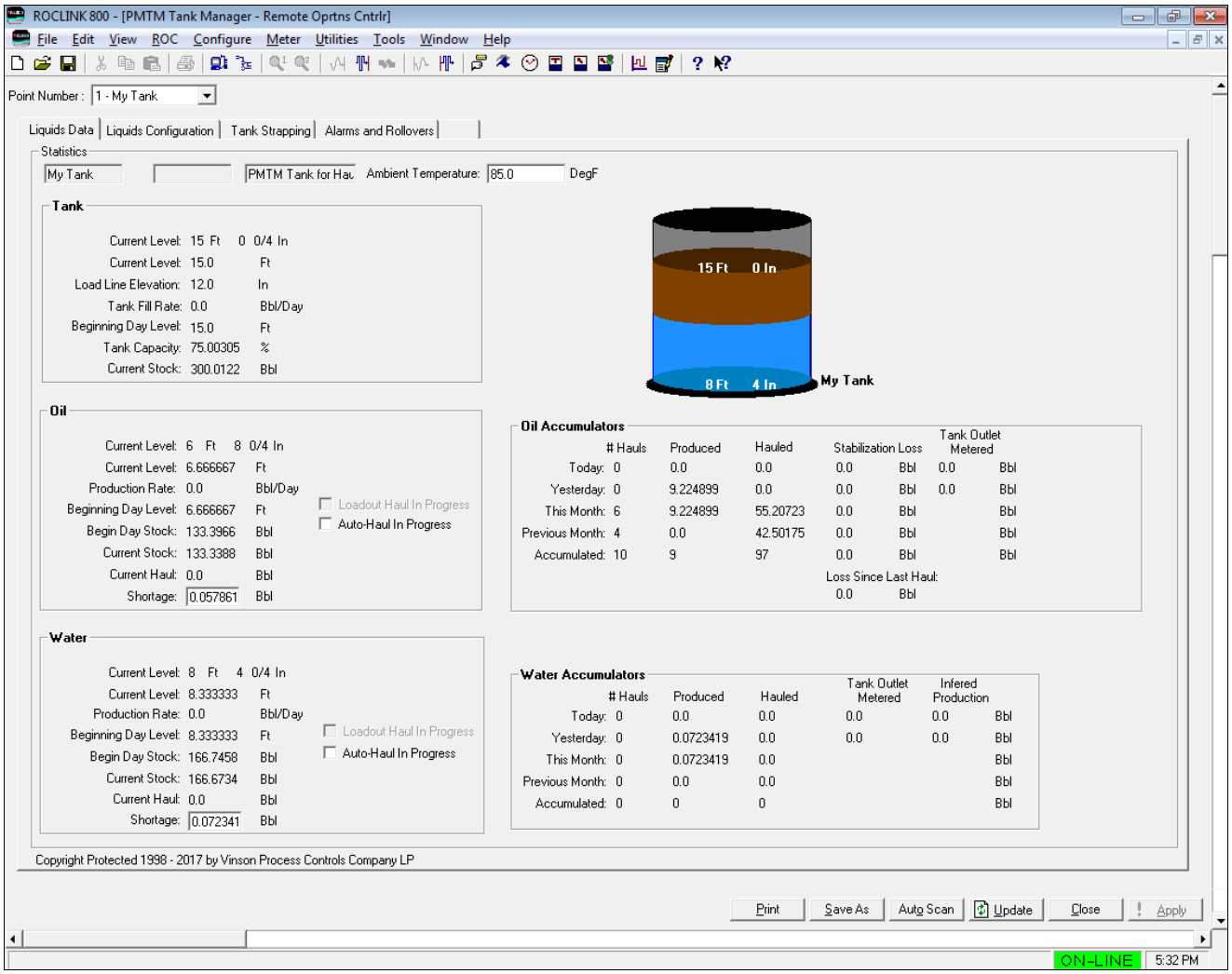


Figure 3-7. Tank Manager Screen – Liquids Data tab

1. Review the values in the following fields:

Field	Description
Point Number	Selects a tank to view. Click ▼ to view all defined tanks. **Note**: This field displays on **all** tabs for the Tank Manager screen.
Statistics	There is an alphanumeric (20 characters) additional description field located beside this field. See below: Oil #1 123456 Oil Tank 123456
Ambient Temperature	Indicates the current value of the ambient temperature for the site.
Tank	Displays the total current values for the defined tank. These values are:

Field	Description	
	Current Level	This **read-only** field displays the current tank level as a whole number in the primary linear units (i.e. feet or meters) as well as the fraction of the short linear units (i.e. inches or millimeters)
	Current Level	This **read-only** field displays the current tank level as a floating point in the primary linear units (i.e. feet or meters).
	Load Line Elevation	This **read-only** field displays the height from the bottom of the tank, where the product outlet line used for loading is located.
	Tank Fill Rate	This **read-only** field displays the volume rate at which the tank is being filled.
	Beginning Day Level	This **read-only** field displays the Current Level in feet. This is the sum of water and oil at the start of the current day.
	Tank Capacity	This **read-only** field displays the Current Stock Bbls divided by the Tank Capacity Bbls configured in the Liquids Configuration tab.
	Current Stock	This **read-only** field displays the Current Level in feet multiplied by 12 to convert into inches. Multiplied again by the Strapping Bbl per inch field in the Liquids Configuration tab.
Oil/Water	Displays the values for the defined tank. If the defined tank contains no oil, all values will be **zero**. This values are: **Note**: The border of this frame turns **red** when an error occurs.	

Field	Description	
	Current Level	This **read-only** field displays the current tank oil or water level as a whole number in the primary linear units (i.e. feet or meters) as well as the fraction of the short linear units (i.e. inches or millimeters).
	Current Level	This **read-only** field displays the current tank oil or water level as a floating point in the primary linear units (i.e. feet or meters).
	Production Rate	This **read-only** field displays the production rate.
	Beginning Day Level	This **read-only** field displays the Current Level value at the start of the current day.
	Begin Day Stock	This **read-only** field displays the Current Level at the start of the current day.
	Current Stock	This **read-only** field displays the Current Level in feet multiplied by 12 to convert into inches. Multiplied again by the Strapping Bbl per inch field in the Liquids Configuration tab.
	Current Haul	This **read-only** field displays the amount of barrels of oil in the current haul when a haul is in progress.
	Shortage	Indicates the current calculated shortage of oil based on the difference between the current measured volume and the highest measured volume since the last haul.

Field	Description	
	Auto-Haul in Progress	This field provides an indication as to if an auto-haul is currently in progress for the tank.
	Loadout Haul in Progress	This field provides an indication as to if a haul is currently in progress for the tank using one of the Tank Manager loadout terminals.
Oil/Water Accumulators	Displays the Number of Hauls (instigated by the HMI or an Auto Haul), the amount of Oil Produced (as the tank rises), Hauled (as the tank lowers), Disposal/Transfer Metered, and produced via Inferred Production. For each quantity, there is an on-going accumulator, as well as time based accumulators relating to Today, Yesterday, This Month, and for the Previous Month. If configured, the Oil Accumulators will include values for the tank loss due to stabilization, which is detected by the drop in tank level when hauls are not occurring, due to stabilization (or settling) of oil.	

2. Click **Apply** to save any changes you have made to this screen.
3. Proceed to *Section 3.2.2* to configure the Liquids Configuration tab.

3.2.2 PMTM Tank Manager – Liquids Configuration Tab

Use this screen to configure tanks or aggregates.

To access this screen:

1. Select the **Liquids Configuration** tab on the Tank Manager screen. The Liquids Configuration screen displays:

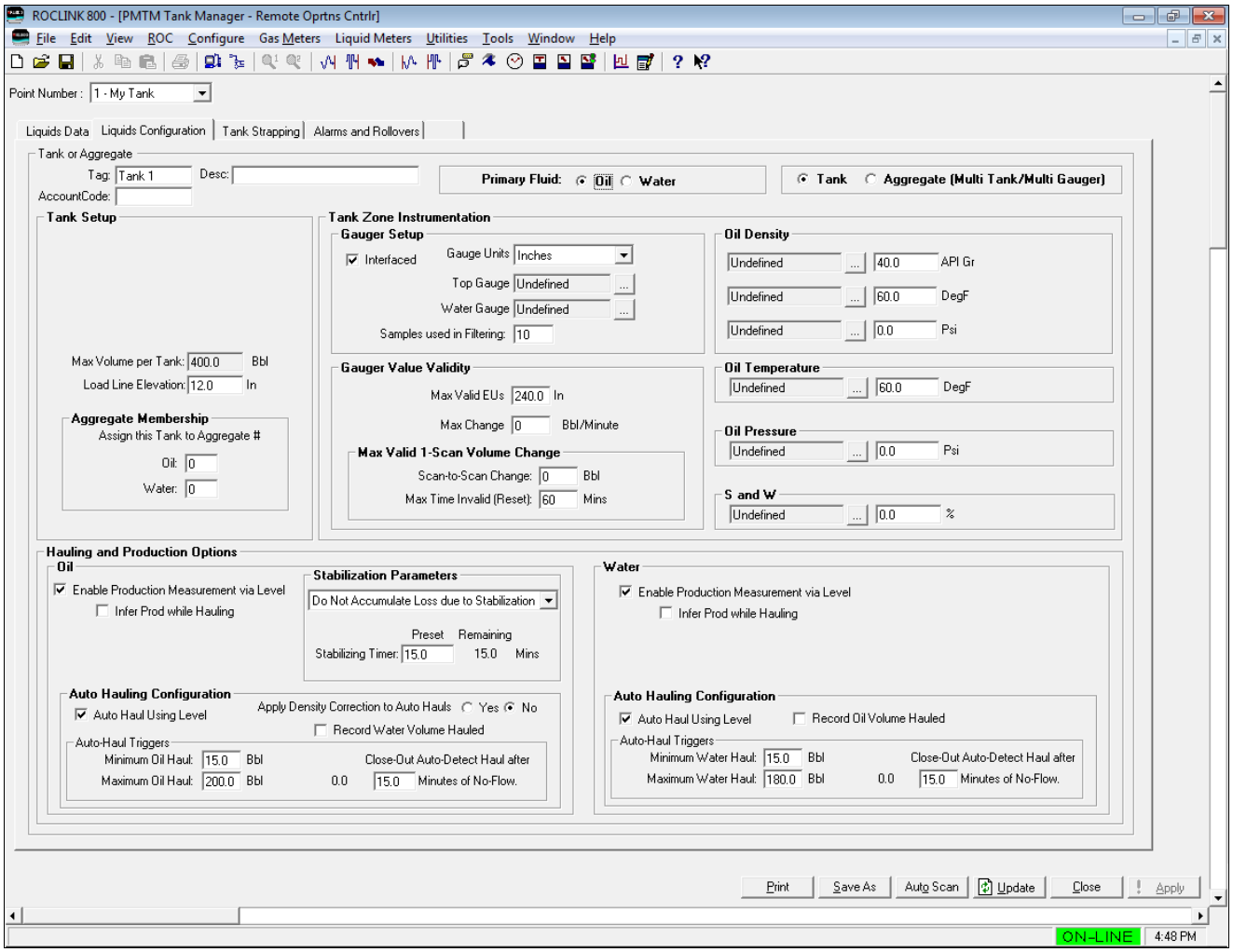


Figure 3-8. Tank Manager Screen – Liquids Configuration tab, Oil

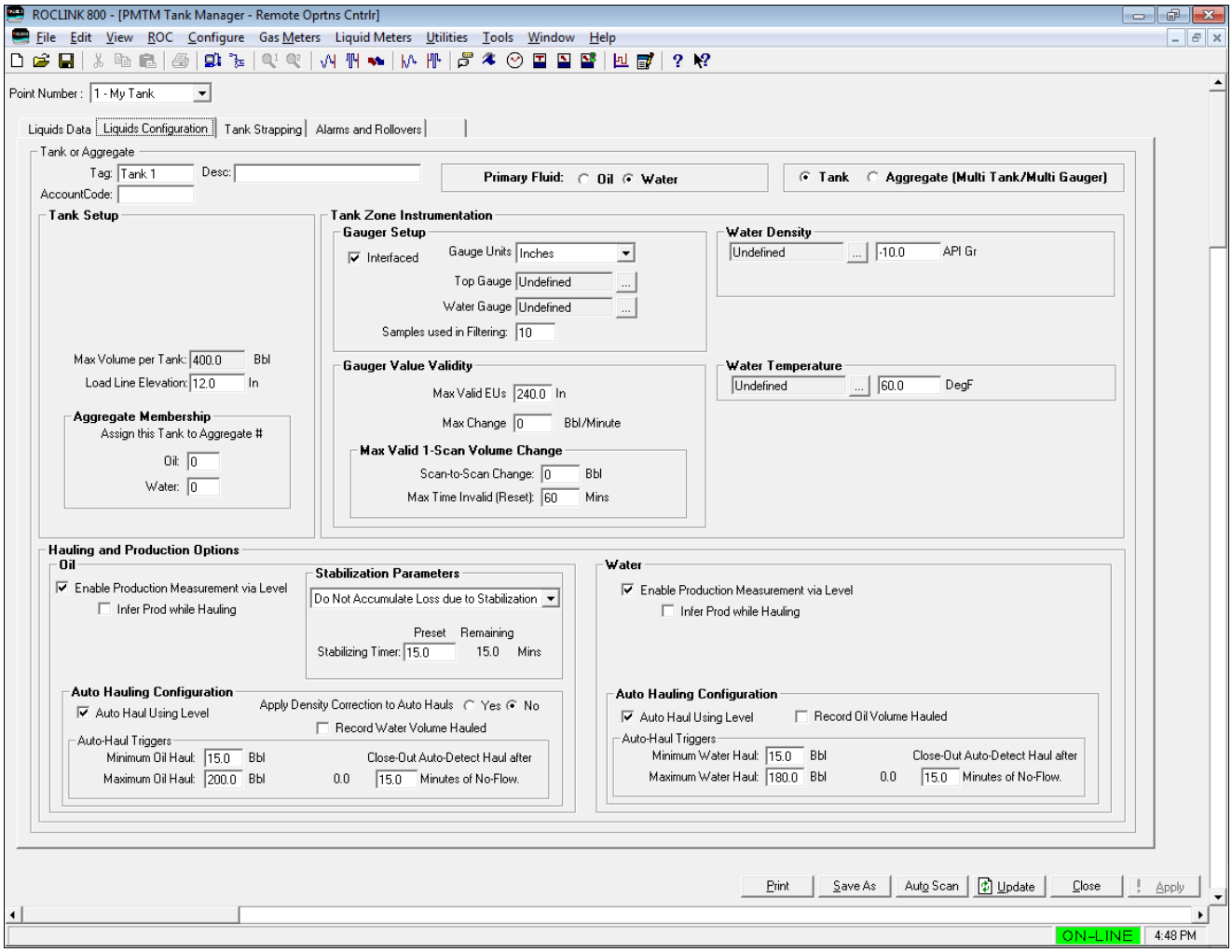


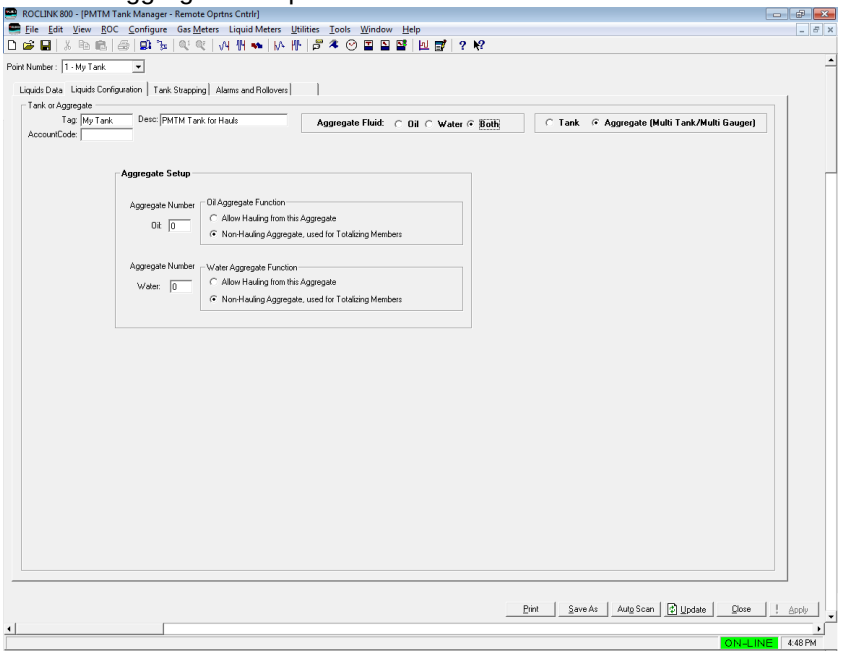
Figure 3-8a. Tank Manager Screen – Liquids Configuration tab, Water

2. Review the values in the following fields:

Field	Description
Tank or Aggregate	
Tag	Provides a 10-character alphanumeric identifier for the tank.
Account Code	Provides an accounting code (if applicable) to identify this tank.
Desc	Provides a 20-character alphanumeric identifier for the tank, which can be used if the facility measurement point (FMP) identifier exceeds the 10 characters allowed for the tag.

Field	Description
Primary Fluid	Indicates the liquid to haul from this tank or aggregate. Valid options are **Oil** or **Water.** **Note**: The Hauling and Production Options pane of this screen changes depending on the Primary Fluid option you choose. When you choose the **Aggregate (Multi Tank/Multi Gauger)** option, this displays **Aggregate Fluid** and the valid options become **Oil**, **Water**, or **Both**.
Tank	You select this option if the object you define represents a single liquid tank.
Aggregate (Multi Tank/Multi Gauger)	You select this option if the object you define represents a combination of multiple tanks.
Tank Setup **Note:** This frame displays **only** if you select **Tank** from the **Tank or Aggragate** frame.	
Max Volume per Tank	This **read-only** field specifies the maximum capacity of the tank.
Load Line Elevation	Specifies the height from the bottom of the tank where the loading flow line out of the tank is located. This value is used when determining the free water clearance for a haul. During a haul, the free water clearance is calculated by subtracting the oil/water interface level from this value. If the free water clearance is less than the required 4 inches (or equivalent), a warning indication is provided.
Aggregate Membership	Specifies the aggregate to which this tank belongs.

Field	Description
Aggregate Setup	
Note:	This frame displays **only** if you select **Aggregate** from the **Tank or Aggregate** frame. An aggregate is the combination of multiple tank instances. On the ROC800, if this tank instance is to be used as an aggregate, the majority of the tank configuration is hidden from the screen, and only the aggregate setup frame is shown.



Aggregate Number: Oil	Assigns an aggregate number. All tanks you tag with this number roll up into this aggregate. **Note**: This field displays **only** if you select **Oil** or **Both** as the **Aggregate Fluid**.
Aggregate Number: Water	Assigns an aggregate number. All tanks you tag with this number roll up into this aggregate. **Note**: This field displays **only** if you select **Water** or **Both** as the **Aggregate Fluid**.
Oil/Water Aggregate Function	Specifies whether the aggregate is hauled directly or if this aggregate totalizes the production of the member tanks and hauls.
Tank Zone Instrumentation	
Gauger Setup	
Note:	This frame displays **only** if you select **Tank** as the configuration option.
Interfaced	Select to indicate that the tank has gauges for **both** oil and water. **Note**: Selecting this value **removes** the Qty of Equalized Tanks w/Single Gauge field from the Tank Setup pane (and sets this value to 1) and displays the Water Gauge field.

Field	Description
Top Gauge	Click … to display the Select TLP screen and define a TLP to hold the Top gauge input value.
Water Gauge	Click … to display the Select TLP screen and define a TLP to hold the water gauge input value. **Note**: This field displays **only** if you enable the **Interfaced** option.
Samples used in Filtering	Indicates the number of four-second scan samplings the program uses for filtering. The default is **10**.
Gauge Units	Defines the gauge units. Click▼ to display all valid units.
Gauger Value Validity	
Max Valid EUs	Specifies the maximum number of valid engineering units the program uses when validating gauger value.
Max Change	Indicates the maximum change, in volume per minute, the program accepts when validating gauger value.
Max 1-Scan Volume Change	Indicates the maximum change in level the program accepts during a single scan when validating gauger value. **Scan-to-Scan Change:** The program scans the top level gauge every 4 seconds. This setting specifies the maximum value (in units of liquid volume) that the level gauge is allowed to change without being considered invalid. Should a level gauge transmitter malfunction, this will keep the invalid reading from being interpreted as true production. **Max Time Invalid (Reset):** If the level gauge malfunction, it provides an unrealistic reading. This setting determines how long to wait before re-baselining the understood true level of the tank. After a guage validity error occurs, if it is cleared before this configurable time expires, the large sudden change in level from the gauge will not be interpreted as true production.
Oil Density	Selects the TLPs that determine the specific gravity, temperatures, and pressure. The program uses these values to calculate the oil density. You can also manually enter specific gravity, temperature, and pressure values in the space provided. **Note:** This section displays **only** when you select **Oil** as the **Primary Fluid**.
Oil Temperature	Sets the TLP of the parameter the program use to determine the oil temperature. You can manually enter the temperature value in the space provided **Note:** This section displays **only** when you select **Oil** as the **Primary Fluid**.

Field	Description
Oil Pressure	Sets the TLP of the parameter the program use to determine the oil pressure. You can manually enter the temperature value in the space provided **Note:** This section displays **only** when you select **Oil** as the **Primary Fluid**.
S and W	Set the TLP of the parameter the program will use to determine the amount of sediment and water in the oil. If a live input is not defined, you can manually enter a fixed S&W value for the tank in the space provided. **Note:** This section displays **only** when you select **Oil** as the **Primary Fluid**.
Water Density	Sets the TLP of the parameter the program use to determine the water specific gravity. You can manually enter the temperature value in the space provided **Note:** This section displays **only** when you select **Water** as the **Primary Fluid**.
Water Temperature	Sets the TLP of the parameter the program use to determine the water. If a live input is not defined, you can manually enter a fixed water temperature for the tank in the space provided **Note:** This section displays **only** when you select **Water** as the **Primary Fluid**.
Hauling and Production Options	
Oil	
Enable Production Measurement via Level	Enables configuration of production and hauling options.
Infer Prod while Hauling	Enables the program to calculate inferred production during the haul and adjust hauled volume accordingly. This situation occurs when your setup injects the production into the tank while the haul is currently in progress.

Field		Description
	Stabilization Parameters	This feature can be used to track the volume changes in an oil tank which are attributed to stabilization and settling of the product. Drops in level which are not large enough to trigger an auto haul can be measured and tracked as stabilization loss. Click▼ to select from the list: ▪ Do Not Accumulate Loss due to Stabilization – Small in level due to stabilization are ignored. ▪ Accumulate Stabilization Loss – Drops in level due to stabilization are recorded as separate volume accumulators (as seen on the Liquid Data tab). ▪ Accumulate Loss and Add To Production – Drops in level due to stabilization are recoded as separate volume accumulators (as seen on the Liquid Data tab) and the accumulation is also added to the Oil Produced accumulators.
	Stabilizer Timer	Indicates the amount of time that must pass, before a small drop in level is determined to be oil stabilization, and the volume quantity is added to the stabilization loss accumulators. When the timer is in use, the Remaining field will count down from the Preset value, to zero. Once it reaches zero, it will automatically reset to the Preset time.
Auto Hauling Configuration		
	Auto Haul Using Level	Enables the program to auto-detect a haul based on a drop in level even without input from the HMI to automatically trigger a haul.

Field	Description
Apply Density Correction to Auto Hauls	Enables corrections of the volume of the haul to to base conditions (NSV), when performing auto-hauls. When you enable this option, you must configure the appropriate tank instrumentation (density, temperature, S&W, etc) or you must enter manual values.
Record Water Volume Hauled	When enabled and an interfaced (oil and water) gauge is used, a drop in the water level during an auto haul for oil will result in that water quantity being recorded. This is only true when the interface level is above the unsafe zone for the tank, as defined by the Load Line Elevation. **Note:** This field displays only when you enable **Auto Haul Using Level**.
Record Oil Volume Hauled	When enabled and an interfaced (oil and water) gauge is used, a drop in the oil level during an auto haul for water will result in that oil quantity being recorded. This is only true when the interface level is above the unsafe zone for the tank, as defined by the Load Line Elevation. **Note:** This field displays only when you enable **Auto Haul Using Level**.

Field	Description	
	Minimum Oil Haul	Indicates the minimum amount of oil level decrease that automatically triggers a haul. The default value is **15.0**. **Note:** This field displays only when you enable **Auto Haul Using Level**.
	Maximum Oil Haul	Indicates the maximum volume of oil on a single haul (ticket). Exceeding this value triggers the creation of additional logs. The default value is **200.0**. **Note:** This field displays only when you enable **Auto Haul Using Level**.
	Close-Out Auto-Detect Haul after [ ] Minutes of No-Flow	Sets the amount of no-flow time, in minutes, to automatically trigger a close-out. The default value is **15.0**. **Note:** This field displays only when you enable **Auto Haul Using Level**.
Water		
Enable Production Measurement via Level	Enables configuration of production and hauling options.	
Infer Prod while Hauling	Enables the program to calculate inferred production during the haul and adjust hauled volume accordingly. This situation occurs when your setup injects the production into the tank while the haul is currently in progress.	
Auto Hauling Configuration		
	Auto Haul Using Level	Enables the program to auto-detect a haul based on a drop in level even without input from the HMI to automatically trigger a haul.

Field	Description
Minimum Water Haul	Indicates the minimum amount of water level decrease that automatically triggers a haul. The default value is **15.0**. **Note:** This field displays only when you enable **Auto Haul Using Level**.
Maximum Water Haul	Indicates the maximum volume of water on a single haul (ticket). Exceeding this value triggers the creation of additional logs. The default value is **180.0**. **Note:** This field displays only when you enable **Auto Haul Using Level**.
Close-Out Auto-Detect Haul after [ ] Minutes of No-Flow	Sets the amount of no-flow time, in minutes, to automatically trigger a close-out. The default value is **15.0**. **Note:** This field displays only when you enable **Auto Haul Using Level**.

3. Click **Apply** to save any changes you have made to this screen.
4. Proceed to *Section 3.2.3* to configure the Tank Strapping tab.

3.2.3 PMTM Tank Manager – Tank Strapping Tab

Use this screen to configure the calibration to allow for the conversion of a level (in feet or inches or meters, etc) to an equivalent volume of product in the tank.

Note: This tab does not display anything when you select **Aggregate (Multi Tank/Multi Gauger)** from the **Tank or Aggrate** frame.

To access this screen:

1. Select the **Tank Strapping** tab on the Tank Manager screen. The Tank Strapping screen displays:

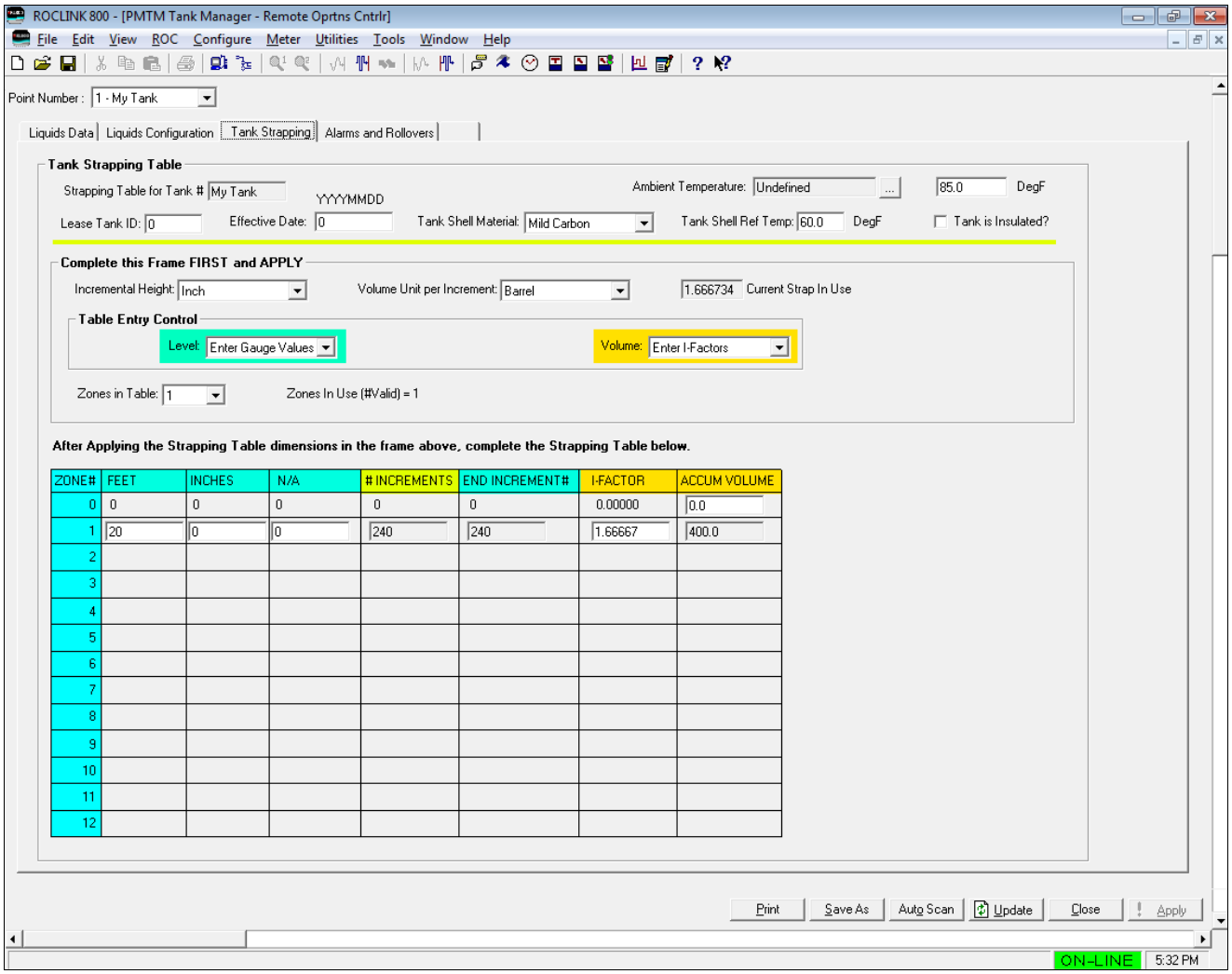


Figure 3-9. Tank Manager Screen – Tank Strapping tab

2. Review the values in the following fields:

Field	Description
Strapping Table for Tank #	Displays the unique tank description (tag) you enter on the previous screen.
Ambient Temperature	Sets the TLP of the parameter the program use to determine the ambient temperature of the site. If a live input is not defined, you can manually enter a fixed ambient temperature in the space provided. Click … to define a TLP for the ambient temperature.
Lease Tank ID	Sets a numeric identifier for the tank within the lease. This optional field is provided for informational purposes only.
Effective Date	Sets the date of the last calibration of the tank in the form of YYYYMMDD, where YYYY is the 4 digit year, MM is the 2 digit month, and DD is the 2 digit day. For example, 20151201 would be December 1st, 2015. This optional field is provided for informational purposes only.

Field	Description
Tank Shell Material	Selects material of construction of your tank. The program uses this selection to calculate the CTS value of the tank. Click▼ to display all valid material types.
Tank Shell Ref Temp:	Sets the reference temperature of the tank during calibration. The program uses this temperature value to calculate the CTS value of the tank. This value is typically 60 deg F or 15 deg C.
Tank Insulated?	Indicates whether the tank includes insulation. The program uses this selection to calculate the CTS value of the tank.
Incremental Height:	Selects the units of the smallest linear increment for the strapping table. Click▼ to display all valid incremental height options.
Volume Unit per Increment:	Selects the volume units of the strapping value increments. Click▼ to display all valid volume unit options.
Current Strap In Use	Shows the calculated strapping value in-use for the current level of the tank.
Table Entry Control **Note:** These options determine which values the program requires to enter and which values the program automatically calculates for the strapping table.	
Level	Determines the primary data entry type for the strapping table. Click▼ to display all valid level entry options. If the strapping table data includes tank height levels, select **Enter Gauge Values**. If the strapping table data available includes volume increments per zone, select **Enter Increments**.
Increments	Sets if each zone uses the number of the volume increments or the number of the end increment in the zone. Click▼ to display all increment entry options. **Note**: This field **only** displays when you select **Enter Increments** from the **Level** field.
Volume	Sets the volume zone to either volume per increment or the volume of the entire zone. Click▼ to display all valid volume entry options.
Zones in Table	Select the number of zones included in the strapping table information available. **Note:** If using a single numerical strapping value for the tank (rather then a table), set this option to a value of 1.
Zones In Use	Displays the number of zones that are currently valid and in use by the strapping table routine. If configuration has been performed correctly, this should equal the value selected for the **Zones In Table** field.
Zone #	Indicates the zone number of the tank strapping entry.

Field	Description
Feet **Meters**	Sets the largest linear unit value for the strapping data based on tank height gaude. Continue to the next column if the height gauge levels include additional resolution (such as inches). The label for this column changes, depending on the **Incremental Height** option you select. This section is in **Feet** if you select **inch**, **1/4-inch**, **1/8-inch**, **1/16-inch**, or **0.01-foot** as **Increment Height**. This section is in **Meters** if you select **centimeter** or **millimeter** as the **Increment Height**.
Inches **Centimeter**	Sets the short linear unit value for the strapping data based on tank height gauge values. Continue to the next column if the height gauge levels include additional resolution (such as ¼-inch). You enter a 0 value if the height gauge values include no additional resolution. The label for this column changes, depending on the **Incremental Height** option you select. This section is in **Inch** if you select **inch**, **1/4-inch**, **1/8-inch**, **1/16-inch**, or **0.01-foot** as **Increment Height**. This section is in **Centimeters** if you select **centimeter** or **millimeter** as the **Increment Height**.
N/A **1/4 Inches** **1/6 Inches** **1/8 Inches**	Sets the fraction of the short linear unit value for the strapping data. Enter a value of 0 if the height gauge values include no additional resolution (column Label shows "**N/A**"). The label for this column changes, depending on the **Incremental Height** option you select. The section label is **N/A** if you select **inch**, **0.01-foot**, **Centimeter**, or **Millimeter** as **Increment Height**. The section label is **¼-inch** if you select **¼-inch** as the **Increment Height**, **1/8-inch** if you select **1/8-inch** as the **Increment Height, or 1/16-inch** if you select **1/16-inch** as the **Increment Height**.
# Increments	Sets the number of volume increments in the zone. This field becomes writable when you select **Enter # of Increments** from the **Increments** field.
End Increment #	Sets the end increment number. This field becomes writable when you select **Enter End Increments #** from the **Increments** field.
I-Factor	For each zone in the table, the tank height levels must include a corresponding volume; you enter the tank volume quantity per increment in this field. Note that the **Accum Volume** in the next column is this value multiplied by the number of increments in the zone.

Field	Description
Accum Volume	If the tank volume per zone is determined by a single accumulated volume value, enter that accumulated volume here. Note that the **I-Factor** in the previous column is this value, divided by the number of increments in the zone.

3. Click **Apply** to save any changes you have made to this screen.
4. Proceed to *Section 3.2.4* to configure Alarms and Rollovers.

3.2.4 PMTM Tank Manager – Alarms and Rollovers Tab

This screen displays real-time totals for a variety of accumulating values for the current haul.

To access this screen:

1. Select the **Alarm and Rollovers** tab on the Tank Manager screen. The Alarm and Rollover screen displays:

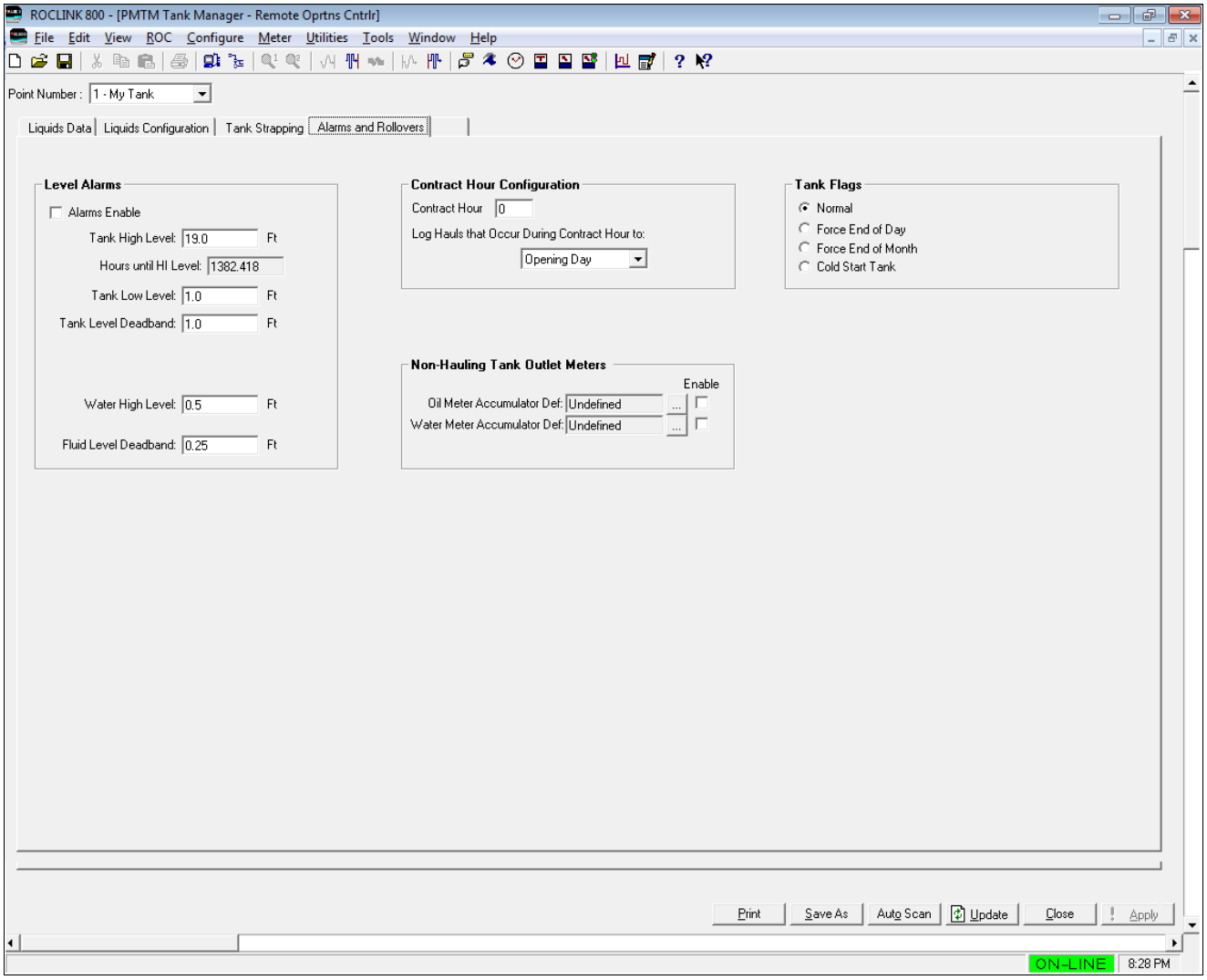


Figure 3-10. Tank Manager Screen – Alarms and Rollovers tab, Oil

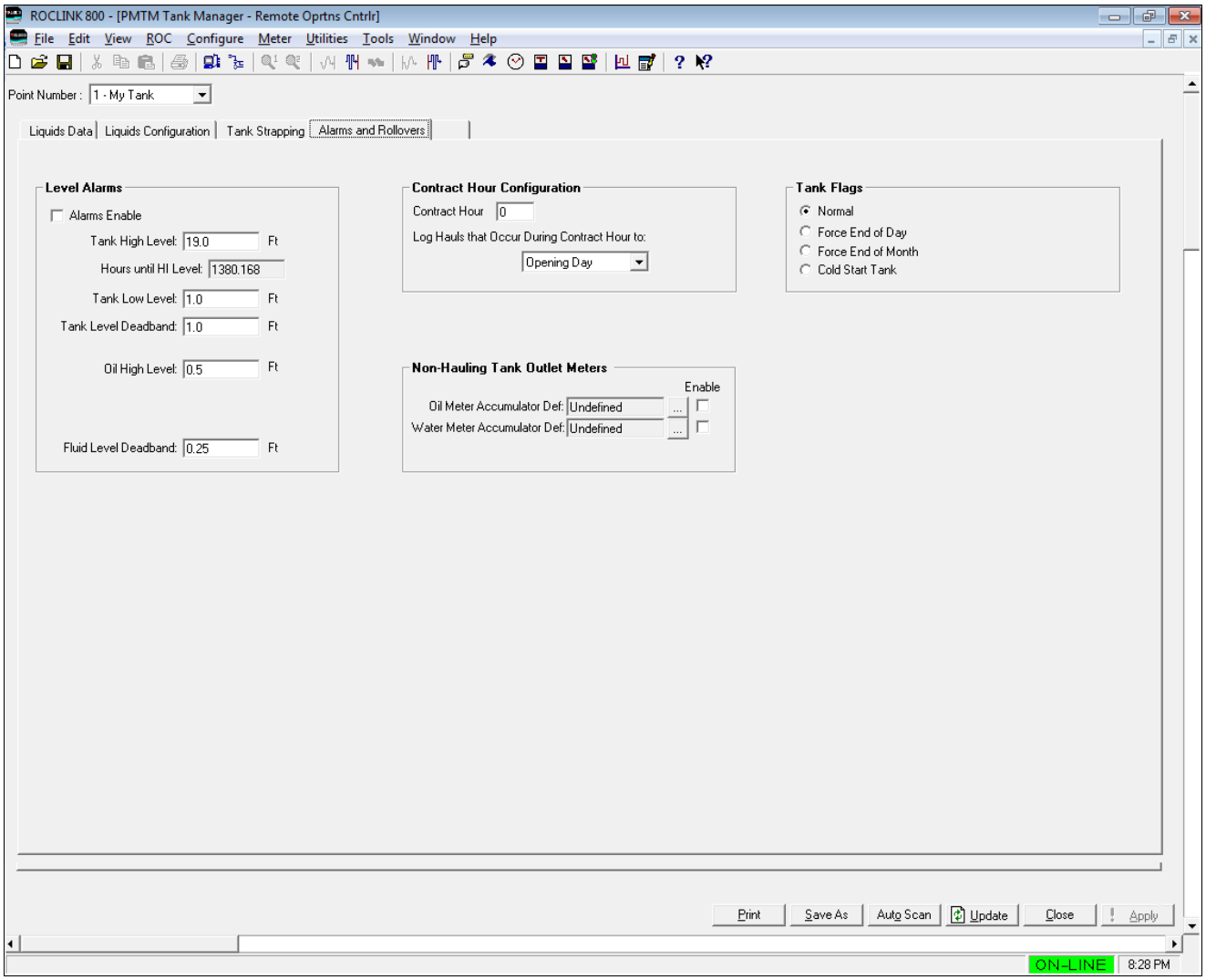


Figure 3-10a. Tank Manager Screen – Alarms and Rollovers tab, Water

2. Review the contents of this screen.

Field	Description
Level Alarms	
Alarms Enable	Enables the logging of alarms based on the tank level.
Tank High Level:	Sets the tank level alarm high value. If the tank level exceeds this value, a tank high level alarm alerts and creates an entry in the alarm log of the FB107 or the ROC800.
Hours until HI Level:	This **read-only** field displays the rate at which the tank level is increasing. This field will show an estimate for the number of hours until the configured Tank high level is reached.
Tank Low Level:	Sets the tank level alarm low value. If the tank level goes below this value, a tank low level alarm alerts and creates an entry in the alarm log of the FB107 or the ROC800.

Field	Description
Tank Level Deadband:	Provides a deadband, to avoid repetitive setting and clearing of alarms. When the in-use level value crosses the high or low level threshold and creates an alarm, the level value must change back within the required threshold plus this deadband value, for the alarm to clear.
Water High Level	Sets the value for the tank high water level at which an alarm will be raised in a primarily oil tank. **Note:** This field is displays **only** when you select **Oil** as the **Primary Fluid** for the tank, and an interfaced (oil and water) tank gauge is defined. Refer to *Figure 3.10* for details.
Oil High Level	Sets the value for the tank high oil level at which an alarm will be raised in a primarily water tank. **Note:** This field is displayed **only** when you select **Water** as the **Primary Fluid** for the tank, and an interfaced (oil and water) tank gauge is defined. Refer to *Figure 3.10a* for more details.
Contract Hour Configuration	
Contract Hour	Sets the hour of the day when the Today values rollover and become the Yesterday values. The valid values include 0 through 23.
Log Hauls that Occur During Contract Hour to:	Selects which day should the Totals from the haul belongs. This is applicable to situations when the haul begins before a contract hour and ends during the contact hour.
Non-Hauling Tank Outlet Meters Some applications require the transfer of fluids out of a tank, but not through the normal hauling mechanism. Assuming you use a meter for this activity and the meter provides a signal to the ROC800 or FB07 where you install the tank manager, this feature provides a way to measure these outbound fluids.	
Oil Meter Accumulator Def:	Click … to display the Select TLP screen and define a TLP to hold the oil meter input to the device. This is TLP is typically an incremental accumulator value, such as a pulse input running total.
Enable:	Enables the Oil Meter Definition option.
Water Meter Accumulator Def:	Click … to display the Select TLP screen and define a TLP to hold the water meter input to the device. This is TLP is typically an incremental accumulator value, such as a pulse input running total.
Enable:	Enables the Water Meter Definition option.

Field	Description
Tank Flags	Selects a tank flag to take effect. **Normal:** Idle state (no action in progress). **Force End of Day:** Causes a new day event to occur immediately. All Today accumulators rollover into the yesterday accumulators. **Force End of Month:** Causes a new month event to occur immediately. All This Month accumulators rollover into the Previous Month accumulators. **Cold Start Tank:** Clears out all accumulators (Daily, Monthly, and Accumulated) for the tank.

3. Proceed to *Section 3.3* to configure the PMTM Allocated Well Values screen.

3.3 PMTM Allocated Well Values

Use this screen and its tabs to view and configure well allocation and production details.

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click one of the following:
   - For the ROC800: **Program #1, PMTM_v409_00_8t4w**.
   - For the FB107: **PM Tank Manager**.
3. Double-click one of the following:
   - For the ROC800: **Display #197, PMTM Allocated Well Values**.
   - For the FB107: **Display #81, PMTM Allocated Well Values**
4. Double-click **#1, Well 1** for either the ROC800 or FB107.
5. The Allocated Well Values screen displays, showing the Allocation/Production Values tab.

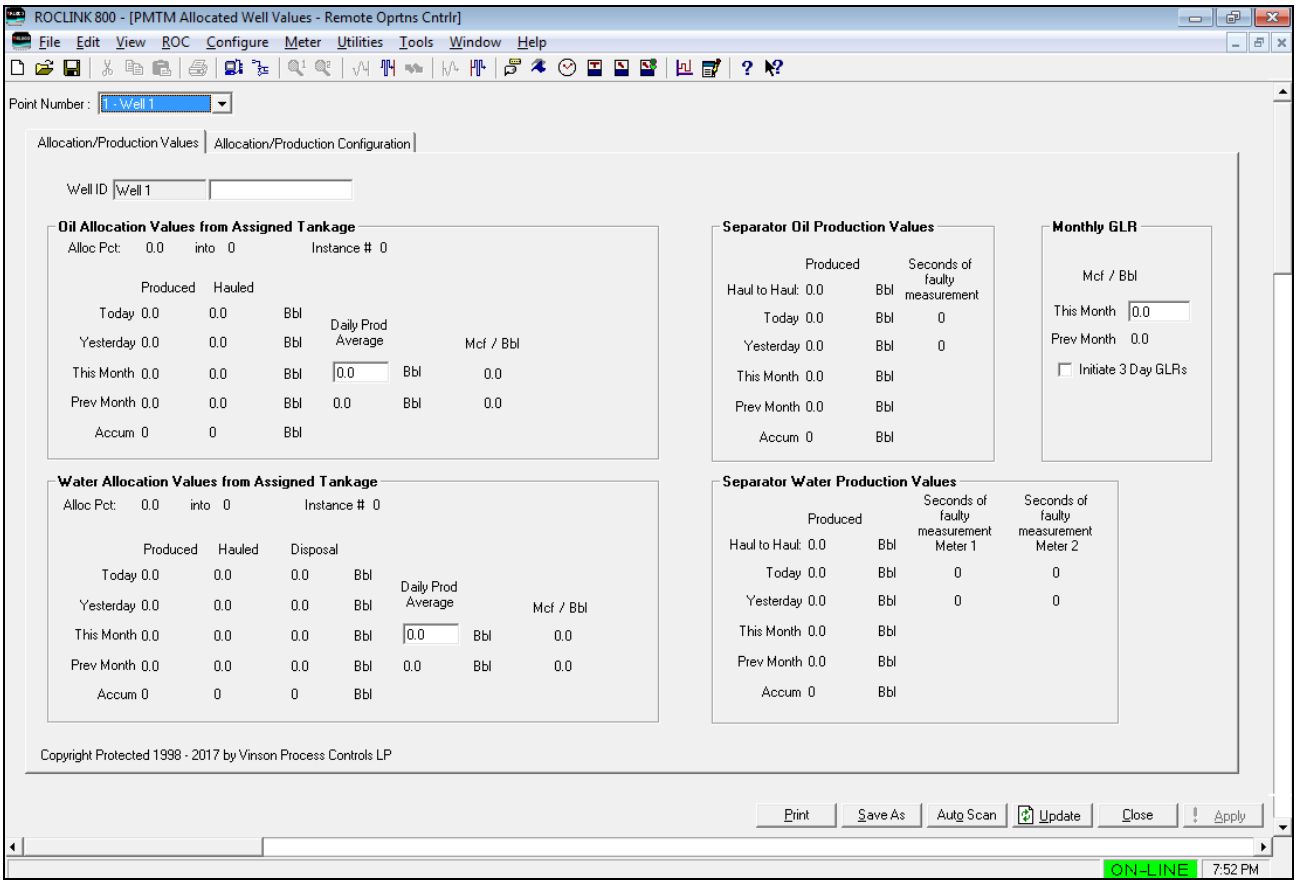


Figure 3-11. Allocated Well Values Screen

3.3.1 PMTM Allocated Well Values – Allocation/Production Values Tab

This screen (which displays first when you open the Allocated Well Values screen) provides an at-a-glance summary of the oil and water allocation values currently defined for the selected well.

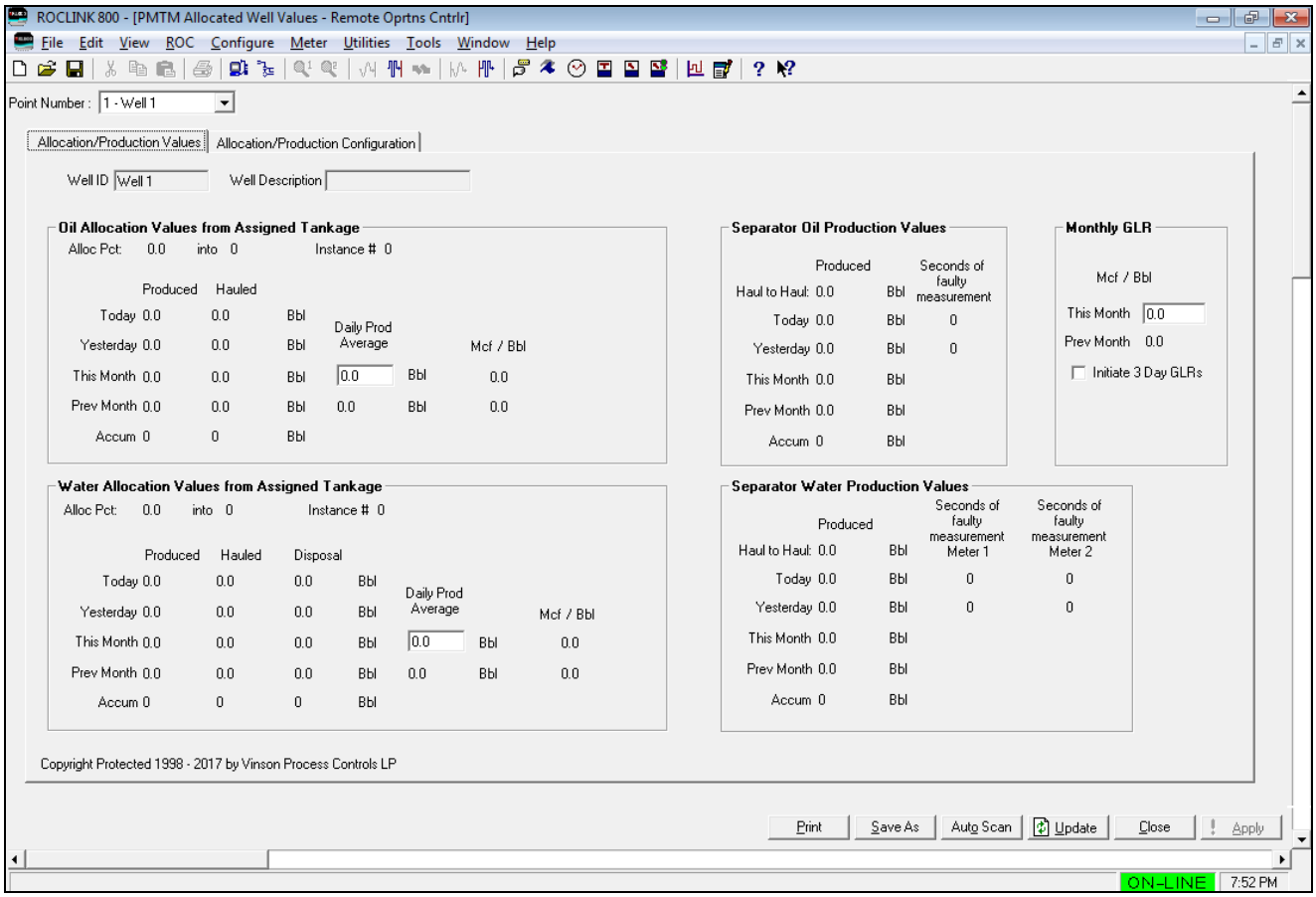


Figure 3-12. Allocated Well Values Screen – Allocation/Production Values tab

1. Review the values in the following fields.

Field	Description
Point Number	Identifies the well for these allocation values.
Well ID	This **read-only** field shows the identifying label associated with this well.
Well Description	Provides a 20-character alphanumeric identifier for the well which can be used to further describe it, or can be used if the facility measurement point (FMP) identifier exceeds the 10 characters allowed for the tag.

Field	Description
Oil Allocation Values from Assigned Tankage	Indicates, in average barrels, the daily production of oil for the selected well. You can edit this field, if necessary.
Alloc Pct	Shows the percent of total production into a tank the well produces. For example, you have two wells producing into the same tank, this shows the percentage on how much of that tanks production was from each individual well. If well 1 is producing 3 times the production of well 2, the well 1 would have 75% Alloc Pct and well 2 would have 25% Alloc Pct. **Note:** This field displays **only** when you select **Use Liquid Production Meters** as the **Allocation Well Liquid Production Method** from the **Allocation/Production Configuration** tab.
into	Displays the tag of the tank the well is producing (oil or water) into.
Instance #	Displays the instance number of the tank the well is producing (oil or water) into.
Produced	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated production volume for the oil tank.
Hauled	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated hauling volume for the oil tank.
Daily Prod Average	Display the daily production average for the current and previous month. You can also update the daily production average for the current month.
Water Allocation Values from Assigned Tankage	Indicates, in average barrels, the daily production of water for the selected well. You can edit this field, if necessary.
Alloc Pct:	Shows the percent of total production into a tank the well produces. For example, you have two wells producing into the same tank, this shows the percentage on how much of that tanks production was from each individual well. If well 1 is producing 3 times the production of well 2, the well 1 would have 75% Alloc Pct and well 2 would have 25% Alloc Pct. **Note:** This field displays **only** when you select **Use Liquid Production Meters** as the **Allocation Well Liquid Production Method** from the **Allocation/Production Configuration** tab.

Field	Description
Into	Displays the tag of the tank the well is producing (oil or water) into.
Instance #	Displays the instance number of the tank the well is producing (oil or water) into.
Produced	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated production volume for the water tank.
Hauled	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated hauling volume for the water tank.
Disposal	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated disposal volume for the water tank.
Daily Prod Average	Display the daily production average for the current and previous month. You can also update the daily production average for the current month.
Separator Oil Production Values **Note:** This section displays **only** when you select **Use Liquid Production Meters** as **Allocate Well Liquid Production Method** from the **Allocation/Production Configuration** tab.	
Produced	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated production volume of oil from the separator.
Seconds of Meter Overrange	Counts the number of seconds the (oil or water) meter flow rate exceeds the maximum flowrate.
Separator Water Production Values **Note:** This section displays **only** when you select **Use Liquid Production Meters** as **Allocate Well Liquid Production Method** from the **Allocation/Production Configuration** tab.	
Produced	This **read-only** field displays the current day, previous day, the current month, the previous month, and the total accumulated production volume of water from the separator.
Seconds of Meter Overrange Meter 1	Counts the number of seconds the (oil or water) meter flow rate exceeds the maximum flowrate for meter 1.
Seconds of Meter Overrange Meter 2	Counts the number of seconds the (oil or water) meter flow rate exceeds the maximum flowrate for meter 2.
Monthly GLR	
This Month	Specifies the GLR value of the current month. You can edit this field, if necessary.
Prev Month	This **read-only** field displays the GLR value of the previous month.

Field	Description
Initiate 3 Day GLRs	Enables the system to recalculate GLR values based on the manually entered 3-day accumulated value.

2. Proceed to *Section 3.3.2* to configure the Allocation/Production Config tab.

3.3.2 PMTM Allocated Well Values – Allocation/Production Config Tab

Use this screen to indicate how the program should allocate production totals back to associated wells.

To access this screen:

1. Select the **Allocation/Production Configuration** tab. The Allocation/Production Configuration screen displays:

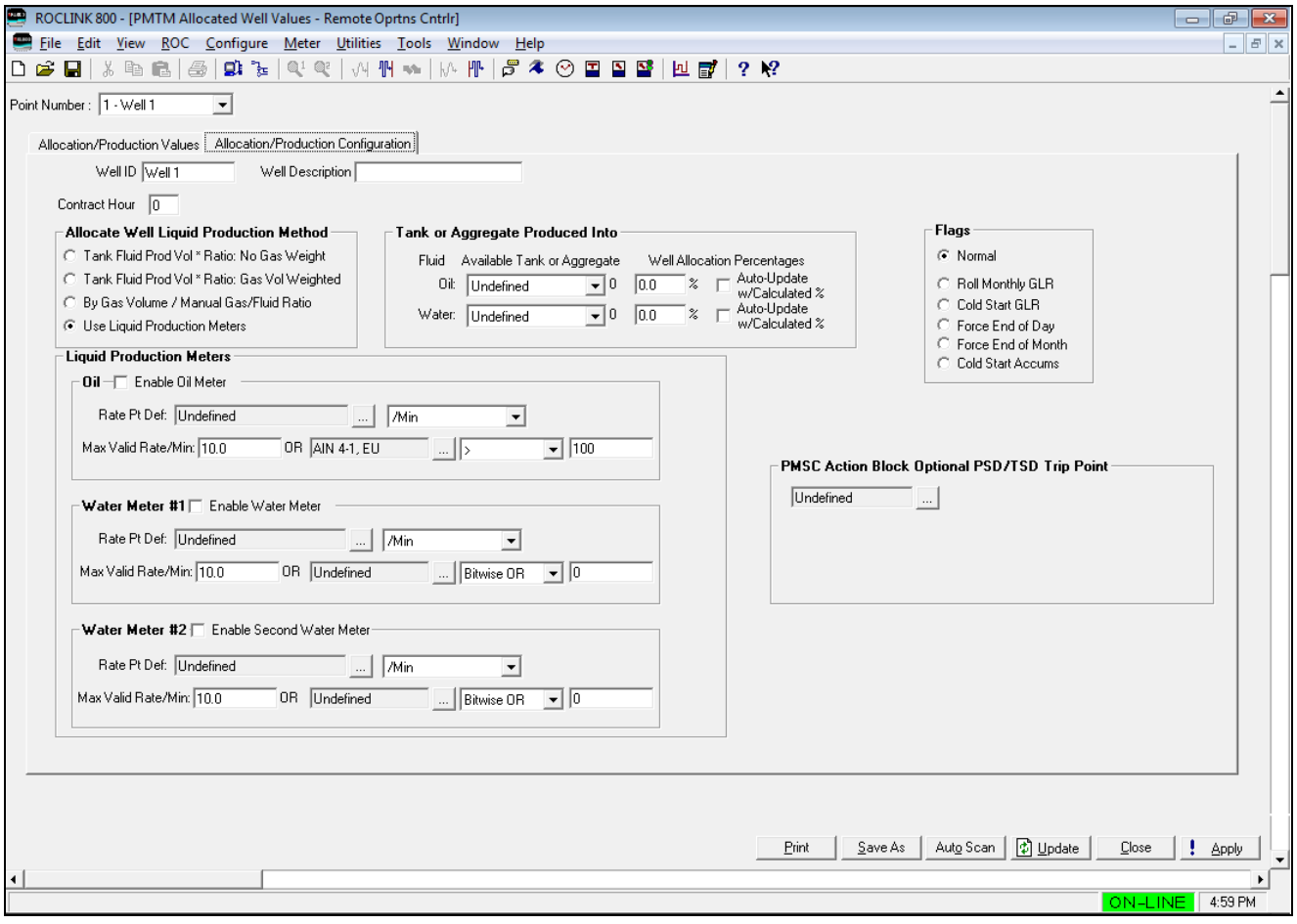


Figure 3-13. Allocated Well Values Screen – Allocation/Production Configuration tab

2. Review the values in the following fields:

Field	Description
Well ID	Specifies the tag identifier for this well. You can define allocations for up to 12 wells.

Field	Description
Well Description (for ROC800)	Provides a 20-character alphanumeric identifier for the well which can be used to further describe it, or can be used if the facility measurement point (FMP) identifier exceeds the 10 characters allowed for the tag.
Contract Hour	Specifies the contract hour for this well. Accumulators roll over at the contract hour you define here.
Allocate Well Liquid Production Method	Indicates the allocation method the program uses. **Tank Fluid Prod Vol x Ratio: No Gas Weight:** Multiplies the fluids produced into the tanks by the Well Allocation Percentage to determine the allocated volume for this well. **Tank Fluid Prod x Ratio: Gas Vol Weighted:** Multiples the fluids produced into the tanks by the Well Allocation Percentage (adjusted by the percentage of total gas volume produced by this well) to determine the allocation volume for this well. This is the default selection. **Note**: Selecting this option displays the Gas Meter Used for GLR Ratios pane. **By Gas Volume / Manual Gas/Fluid Ratio:** Allocates fluids based on fixed GLR factors by dividing the gas volume by the manual gas-to-fluid ratios. This method decouples well allocation volumes from the total volume produced into the tanks. **Note**: Selecting this option displays the Gas Meter Used for GLR Ratio and the Manual Gas/Fluid Ratios panes and removes the Tank or Aggregate Produced Info pane. **Use Liquid Production Meters:** Allocates the production of the well based on input from liquid production meters. Allocation percentages can be automatically derived and updated with this method. **Note**: Selecting this option displays the Liquid Production Meters pane.

Tank or Aggregate Produced Into

Identifies the tank or aggregate into which the well produces and indicates the percentage of fluids allocated to this well.

This pane displays **only** when you select either **Tank Fluid Prod Vol*Ratio: No Gas Weighted**, **Tank Fluid Prod Vol*Ratio: Gas Vol Weighted** or **Use Liquid Production Meters** as **Allocate Well Liquid Production Method**.

Available Tank or Aggregate	Defines the specific tank or aggregate for the respective fluid. Click ▼ to display all defined tanks or aggregates.
Well Allocation Percentages	Indicates the percentage of total volume produced into the selected tank/aggregate allocated to this well.

Field	Description
Auto-Update w/ Calculated %	**Note:** These two checkboxes displays **only** when you select **Use Liquid Production Meters** as **Allocate Well Liquid Production Method**.
Flags	Forces the program to clear process accumulators or GLR values and perform on-demand rollovers of daily and months accumulators.
Gas Meter Used for GLR Ratios	Displays the Select TLP screen you use to define a TLP to accumulate gas meter values. The program selects the correct AGA parameter from the associated logical number. **Note**: This pane displays **only** when you select either **Tank Fluid Prod Vol*Ratio: Gas Vol Weighted** or **By Gas Volume / Manual Gas/Fluid Ratio** as **Allocate Well Liquid Production Method**.
Manual Gas /Fluid Ratios	Indicates a manual value for the gas-to-liquid ratio for oil, water, and total fluid. **Note**: This pane displays **only** when you select **By Gas Volume / Manual Gas/Fluid Ratio** as **Allocate Well Liquid Production Method**.
Liquid Production Meters	Indicates the specific oil or water meters to be used in allocation. **Note**: This pane displays **only** when you select **Use Liquid Production Meters** as **Allocate Well Liquid Production Method**.
Enable Oil Meter	Select to enable the program to use the oil meter.
Rate Pf Def	Displays the Select TLP screen you use to define a TLP to store the defined rate point.
Max Valid Rate/Min	Defines the maximum allowable flow rate per minute. While this value is exceeded, the program does not accumulate liquid volume for this meter and records the amount of time in seconds. **Note**: This assumes that gas (rather than fluid) is flowing through this meter during this excursion.

Field	Description
OR	An additional user defined logic expression can be configured, to determine when the flowrate signal provided by a liquid meter is invalid. When the result of this logic is “true”, the meter flow is considered invalid, and it is not recorded. This can be used to detect a dump valve which is stuck open, or an alarm condition from a smart meter such as a Coriolis. Click … to select a live process variable to be monitored. Click ▼ to select an operator, such as greater than (>), less than (<), equal to (==), etc. Finally configure the value at which the process variable is considered invalid or in alarm.
Enable Water Meter	Select to enable the program to use the primary water meter.
Rate Pf Def	Displays the Select TLP screen you use to define a TLP to store the defined rate point for the primary water meter.
Max Valid Rate/Min	Defines the maximum allowable flow rate per minute. While this value is exceeded, the program does not accumulate liquid volume for this meter and records the amount of time in seconds. **Note**: This assumes that gas (rather than fluid) is flowing through this meter during this excursion.
OR	An additional user defined logic expression can be configured, to determine when the flowrate signal provided by a liquid meter is invalid. When the result of this logic is “true”, the meter flow is considered invalid, and it is not recorded. This can be used to detect a dump valve which is stuck open, or an alarm condition from a smart meter such as a Coriolis. Click … to select a live process variable to be monitored. Click ▼ to select an operator, such as greater than (>), less than (<), equal to (==), etc. Finally configure the value at which the process variable is considered invalid or in alarm.
Enable Second Water Meter	Select to enable the program to use a secondary water meter.
Rate Pf Def	Displays the Select TLP screen you use to define a TLP to store the defined rate point for the secondary water meter.
Max Valid Rate BPM	Defines the maximum allowable flow rate per minute. While this value is exceeded, the program does not accumulate liquid volume for this meter and records the amount of time in seconds. **Note**: This assumes that gas (rather than fluid) is flowing through this meter during this excursion.

Field	Description
OR	An additional user defined logic expression can be configured, to determine when the flowrate signal provided by a liquid meter is invalid. When the result of this logic is "true", the meter flow is considered invalid, and it is not recorded. This can be used to detect a dump valve which is stuck open, or an alarm condition from a smart meter such as a Coriolis. Click ... to select a live process variable to be monitored. Click ▼ to select an operator, such as greater than (>), less than (<), equal to (==), etc. Finally configure the value at which the process variable is considered invalid or in alarm.
PMSC Action Block Optional PSD/TSD Trip Point	Indicates the specific trip point defined in the Surface Control Manager application for either permanent shut down (PSD) or temporary shut down (TSD). For further information on configuring these values, refer to the *Surface Control Manager User Manual (for ROC800-Series and FloBoss 107 Controllers)*, part D301759X012.

3. Proceed to *Section 3.4* to configure the data base for the Haul Log Viewer.

3.4 PMTM Haul Log Viewer

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click one of the following:
   - For the ROC800: **Program #1, PMTM _v409_00_8t4w**.
   - For the FB107: **PM Tank Manager**.
3. Do one of the following:
   - For the ROC800: Double-click **Display #198, PMTM Haul Log Viewer**.
   - For the FB107: Go to **User Display** and double-click **Display #1 – PMTM Haul Log Viewer**.

Note: You may have a different display number. Use the display number that you loaded this screen.

3.4.1 PMTM Haul Log Viewer – Haul Log Overview Tab

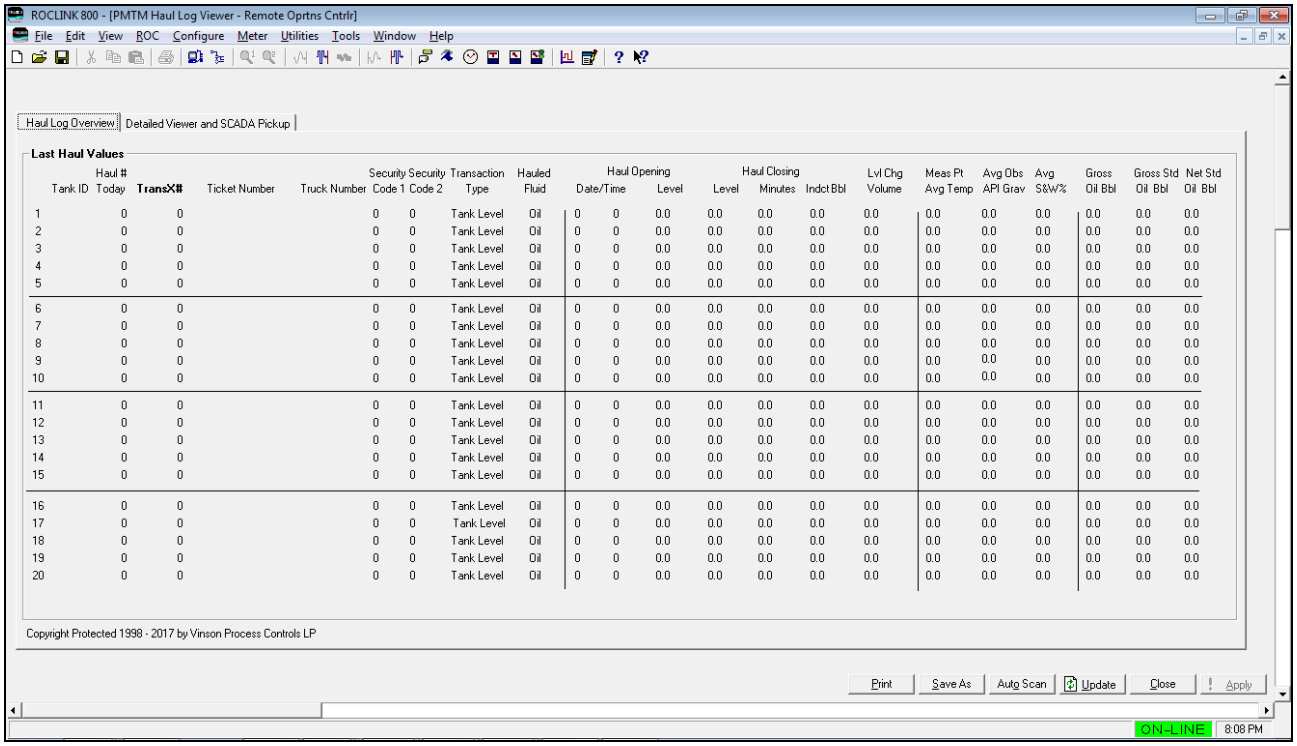


Figure 3-14. Haul Log Overview Screen

The Haul Log Overview screen, as shown in *Figure 3-14*, displays the last 20 hauls, with the most current haul at the top of the screen. Each of the values in this log is stored in an individual TLP. The most recent haul is logical 1 and the last haul is logical 20. A SCADA system can access these logs by polling for TLPs and logical addresses that correspond to the entry in the sequence. The program assigns every completed haul a transaction number. By polling the Transaction Number TLP [198,1,31], the SCADA system can determine when a new log is available.

3.4.2 PMTM Haul Log Viewer – Detailed Viewer and SCADA Pickup Tab

To retrieve detailed haul information:

1. Enter the transaction number of the desired haul into the **Retrieve this Haul Transaction Number** field.

2. Click **Apply** and review all information about that haul.

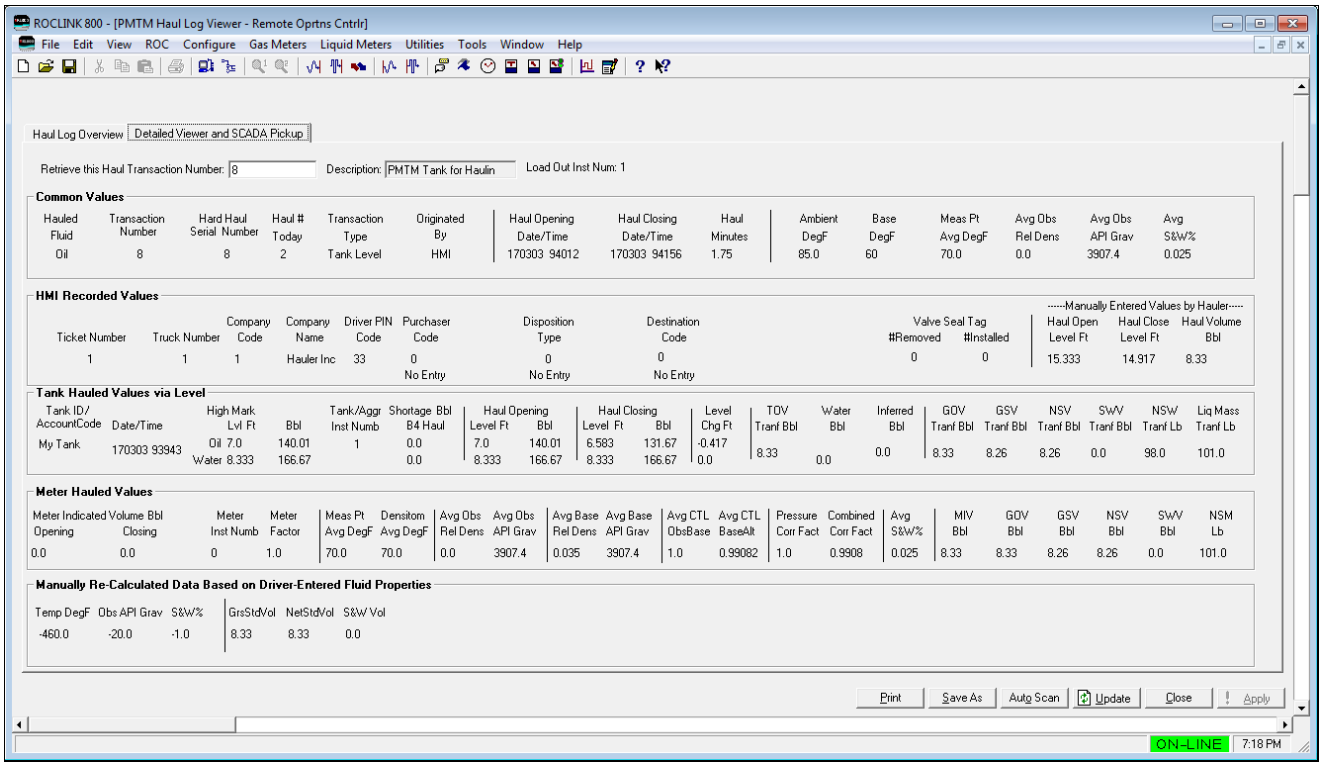


Figure 3-15. Detailed Viewer and SCADA Pickup Screen

In addition to the 20 most recent hauls, which are stored in TLPs for easy access, more haul log records are stored within the device, on the flash file system. The ROC800 stores the most recent 512 hauls in this manner, and the FB107 stores the most recent 64. These additional haul records can be retrieved one at a time by a SCADA system. This is accomplished by writing the haul transaction number to be retrieved into the field mentioned above (which is TLP [198,0,44] on the ROC800, and TLP [180,0,44] on the FB107). The requested record will be populated into logical instance 0 of the Tank Manager haul logs point type (which is PT 198 on the ROC800, and PT 180 on the FB107).

For more details, refer to *Appendix B – Retrieving the Haul Logs via SCADA.*

⚠ Caution

The FB107 utilizes the flash file system of the FB107 to store the previous 64 haul logs. When you perform the cold start of the device, the flash memory space where these log records are located is restored to the point of the previous save-to-flash event. Therefore, in order to avoid the loss of data, and maintain synchronization with any SCADA system, it is required to perform a save-to-flash BEFORE any sort of cold start on the FB107.

3.5 PMTM Load Out

Use this screen and its component tabs to configure haul details, view specific haul values, and run system diagnostics.

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click one of the following:
   1. For the ROC800: **Program #1, PMTM _v409_00_8t4w**.
   2. For the FB107: **PM Tank Manager**.
3. Double-click one of the following:
   - For the ROC800: **Display #231, PMTM LoadOut**.
   - For the FB107: **Display #83, PMTM LoadOut**.
4. Double-click **#1, LoadTerm 1** for either the ROC800 or FB107.
5. The Load Out screen displays, showing the Load Out Control tab:

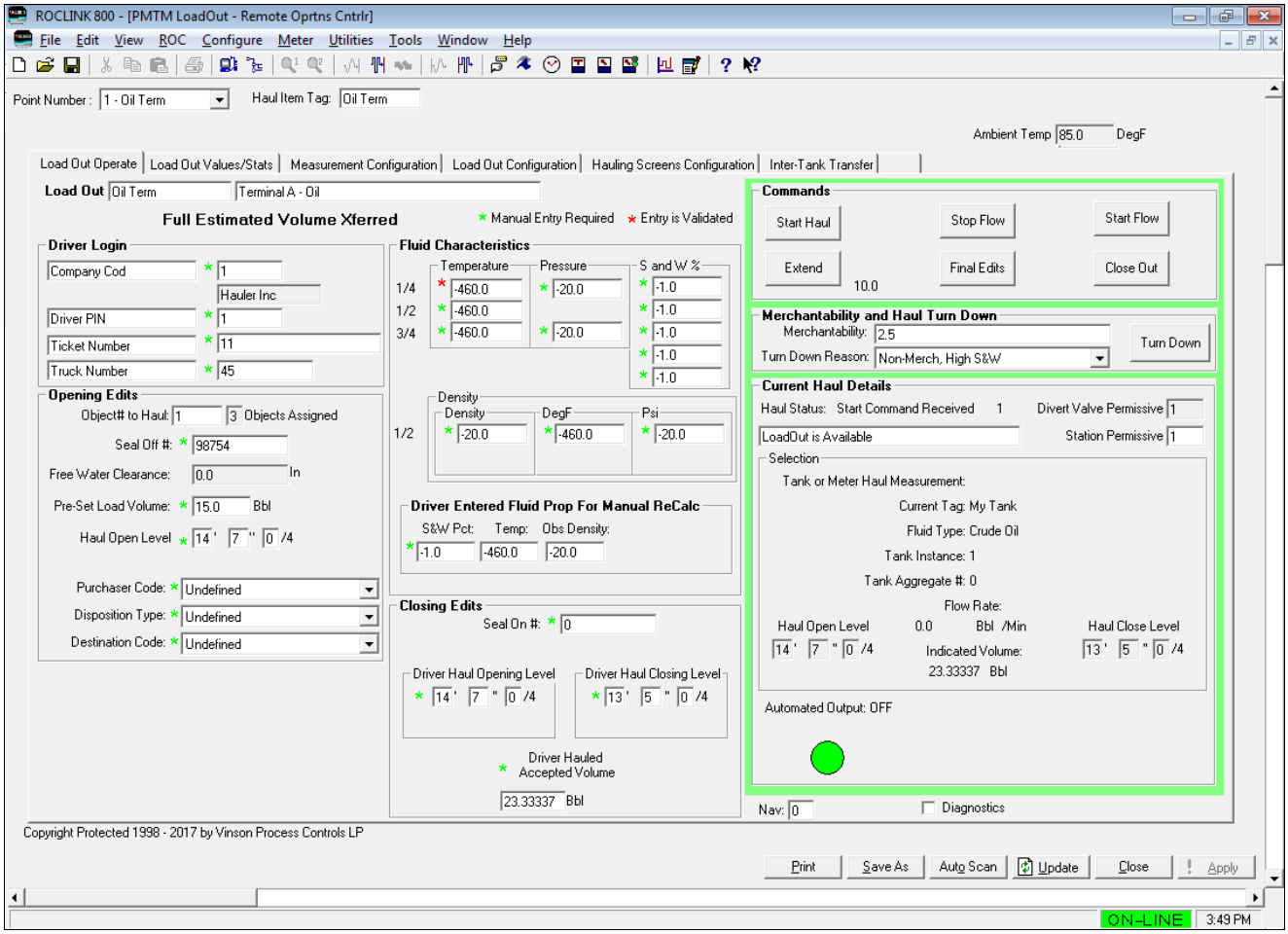


Figure 3-16. Load Out Screen

Note: The light red highlighted border on this screen indicates that no haul is currently underway. When a haul begins, this border changes to green.

6. Review the values in the following fields:

Field	Description
Point Number	Identifies the loading terminal. Click ▼ to display all defined loading terminals. **Note**: This field appears on all Load Out tabs.
Haul Item Tag	Identifies the name of the HMI terminal as defined on the HMI Instance Tag. **Note**: This field appears on all Load Out tabs.
Ambient Temp	Indicates the ambient temperature.

7. Proceed to *Section 3.5.1* the Load Out Operate tab.

3.5.1 PMTM Load Out – Load Out Operate Tab

Use this screen to perform a haul from a Tank Manager load out terminal. Typically, a haul is performed via a local operator HMI panel, however the ROCLINK 800 interface provided on this screen can be used as well. This tab displays when you initially access this screen.

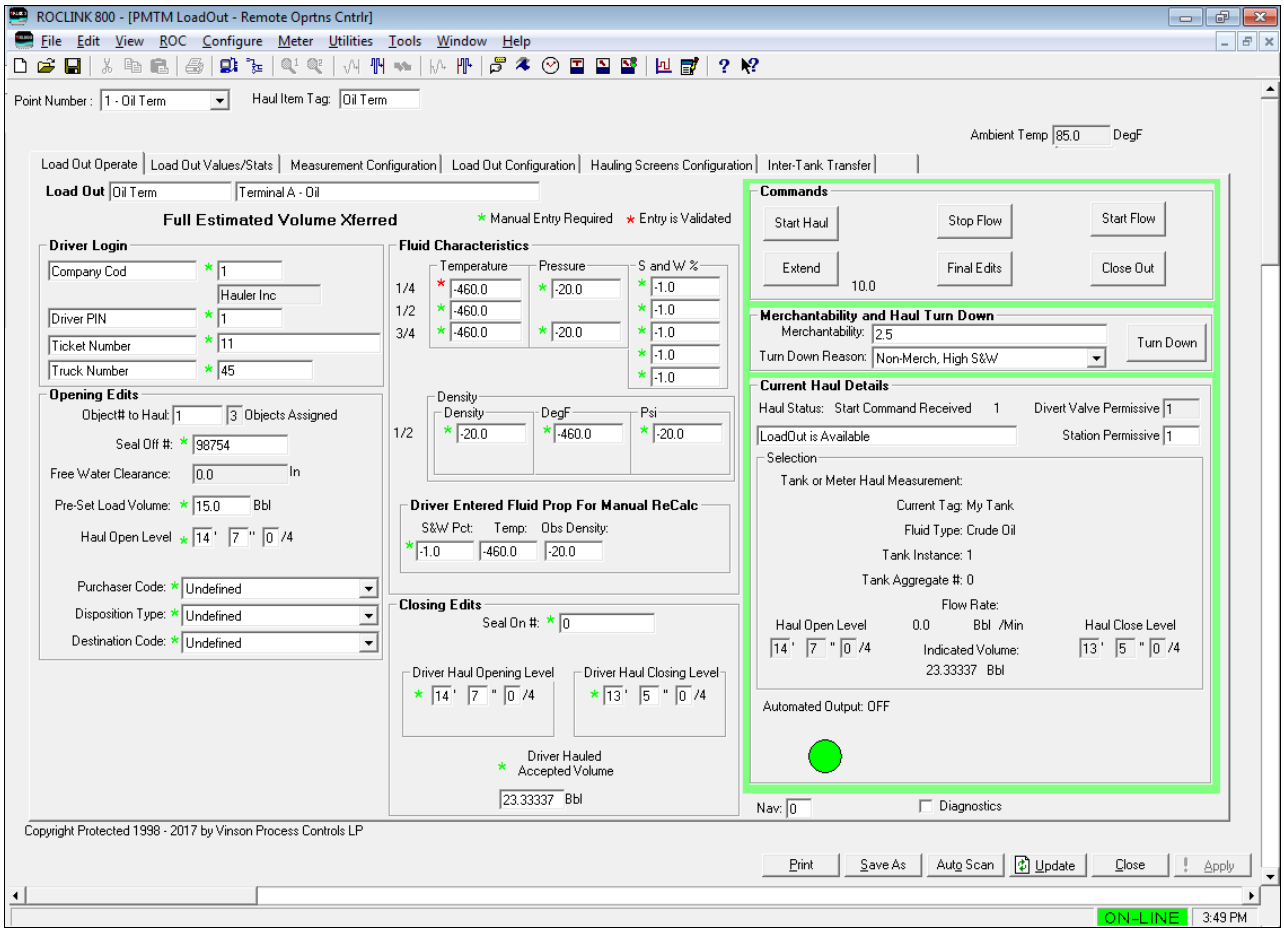


Figure 3-17. Load Out Screen – Load Out Operate tab

1. Review the values in the following fields.

Field	Description
Load Out	Defines a tag name (up to 10 characters long) for this hauling terminal. This value displays on the HMI for driver selection. There is also a 20-character alphanumeric identifier for the load out terminal provided, which can be used to further describe it, or can be used if the facility measurement point (FMP) identifier exceeds the 10 characters allowed for the tag. **Notes**: ▪ While a haul is in progress, this screen displays messages to alert. Examples of messages: ○ Illegal Ticket Number ○ Seal On Required ○ ¼-Way Estimated Vol Xferred ▪ Multiple items on this screen will include a colored asterisk next to the field. These colored asterisks represent the states of **Manual Entry Required** and **Entry is Validated**. When a manual entry is required the asterisk will be red until you enter a value into the field. Once you enter a value, the asterisk will change to green and that field will be validated. Required user interaction is defined on the Hauling Screens Configuration tab.
Driver Login Provides driver validation and ticketing information.	
Company Code	Defines the numerical credentials of the company. When the driver enters a company code on the HMI, the program verifies and validates the code against the ROC Hauler Database (see *Section 3.3*) and shows the validated company name in the Company Verified field. **Note**: This field requires manual entry.
Driver PIN	Defines the numerical credentials of the driver. When the driver enters a driver code on the HMI, the program verifies and validates the code against the Hauler Companies Database (see *Section 3.3*). **Note**: This field requires manual entry.
Ticket Number	Provides the ticket number. This optional 20-character field may be contractually required by an agreement with the owner. The program records this information in the haul log. **Note**: This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.

Field	Description
Truck Number	Provides the truck number. This optional 10-character field may be contractually required by an agreement with the owner. The program records this information in the haul log. **Note**: This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.
Opening Edits Allows the operator to enter information known at the start of a haul, typically before the haul begins.	
Object# to Haul	Provides the numerical equivalent of the object to haul. If you define only one tank on the Measurement Configuration tab, the program automatically completes this field when the driver has entered and validated the company code and driver PIN. If you define two or more tanks, the driver must enter the tank they are hauling from. **Note:** When hauling oil, the object number to haul is the number of the tank instance. If the driver wants to haul oil from Tank 3, they would enter 3 in this field. When hauling water, 100 is added to the number of the tank instance. If the driver wants to haul water from Tank 3, they would enter 103 in this field.
Objects Assigned	This field is **read** only shows the total number of tanks or aggregates assigned to this load out terminal. This is as determined by the **Assigned Tanks** field on the Measurement configuration tab.
Seal Off #	Provides the seal off number. This optional field may be contractually required by an agreement with the owner. The program records this information in the haul log. **Note**: This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.
Free Water Clearance	This **read-only** field displays the amount of level that water is from the tank outlet loading line. For an oil haul, if the water level is too close to the loading line (for example 4 inches or less), this field provides a red warning indication.
Haul Open Level	Specifies the level of the tank, expressed as feet, inches, and quarters, at the beginning of the haul. **Note:** This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.

Field	Description
Purchaser Code	Click ▼ to display all defined purchaser code. Purchaser codes are an enumerated list of strings that can be shown to an operator. For more information on configuring the contents of this list, see *Section 3.7 PMTM Enumerated Lists*.
Disposition Type	Click ▼ to display all defined disposition type. Disposition types are an enumerated list of strings that can be shown to an operator. For more information on configuring the contents of this list, see *Section 3.7 PMTM Enumerated Lists*.
Destination Code	Click ▼ to display all defined destination code. Destination Codes are an enumerated list of strings that can be shown to an operator. For more information on configuring the contents of this list, see *Section 3.7 PMTM Enumerated Lists*.
Fluid Characteristics The program records the fluid properties (temperature, pressure, density, etc) of the product, in order to calculate the volume of a haul. These values can come from live instrumentation configured and assigned to the tank, from live instrumentation configured and assigned to the load out terminal, or from values manually entered by the operator. Depending on the measurement method selected on the **Measurement Configuration** tab, and the Fluid Characteristics section of the **Hauling Screens Configuration** tab, the fields shown on the screen in this section will vary.	
Temp Open	The temperature of the tank or fluid at the opening of the haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **DegF**.
Temp Close	The temperature of the tank or fluid at the closing of the haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **DegF**.
Pressure Open	The pressure of the tank or fluid at the opening of a haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **Psi**.
Pressure Close	The pressure of the tank or fluid at the closing of a haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **Psi**.
S and W% Open	The sediment and water percentage of the tank or fluid at the opening of a haul.

Field	Description
Density	
Density Open	The density of the tank or fluid at the opening of a haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **API Gr**.
Density Close	The density of the tank or fluid at the closing of a haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **API Gr**.
Density Temperature Open	The density temperature of the tank or fluid at the opening of a haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **DegF**.
Density Temperature Close	The density temperature of the tank or fluid at the closing of a haul. **Note:** The description of this field changes based on the user selection on the global Units Configuration. The default unit is **DegF**.
Driver Entered Fluid Prop For Manual ReCalc These fields allow an operator to enter manual readings for the S&W percent, temperature, and density, which may differ from the values automatically recorded during the haul by live instrumentation. These can be used later for a manual recalculation of the haul totals.	
S&W Pct	Indicates the operator entered value for the sediment and water percentage.
Temp	Indicates the operator entered value for the fluid temperature. **Note:** This field displays only when the **Driver Entered Secondary Calculation Parameter** option is set to **Derive GSV from Manual Values** on the Hauling Screens Configuration tab.
Obs Density	Indicates the operator entered value for the fluid observed density. **Note:** This field displays only when the **Driver Entered Secondary Calculation Parameter** option is set to **Derive GSV from Manual Values** on the Hauling Screens Configuration tab.

Field	Description
Closing Edits Allows the operator to enter any additional information (which may be required or optional) at the end of a haul.	
Seal On #	Provides the seal on number. This optional field may be contractually required by an agreement with the owner. The program records this information in the haul log. **Note**: This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.
Driver Haul Open Level	Allows the operator to enter a measured value for the level of the tank, expressed as feet, inches, and quarters, at the beginning of the haul. **Note:** This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.
Driver Haul Close Level	Allows the operator to enter a measured value for the level of the tank, expressed as feet, inches, and quarters, at the close of the haul. **Note:** This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.
Driver Hauled Accepted Volume	Allows the operator to enter the volume of liquid that they believe was hauled, should it differ from the volume calculated by the program. **Note:** This field may require manual entry based on the settings selected on the Hauling Screens Configuration tab.
Commands Provides a number of haul control commands that permit the performance of hauling operations without an HMI. These command buttons are also displayed on the HMI. Also included is the haul inactivity timer, which counts down while a haul is in progress.	
Merchantability and Haul Turn Down Includes commands and fields related to turning down (rejecting) a haul. A haul turn down is when a haul cannot be completed for reasons such as o equipment malfunction, oil which is not merchantable and etc.	
Merchantability	Allows the operator to enter a merchantability value (such as a sediment and water percentage) which is related to the reason the haul was turned down.
Turn Down Reason	Click ▼ to display all defined turndown (reject) reasons. Turn down reasons are an enumerated list of strings that can be shown to an operator. For more information on configuring the contents of this list, see *Section 3.8 PMTM Enumerated Lists (for ROC800)*. This field must be selected, before a haul turn down can be performed.

Field	Description
Reject Haul Turn Down	When this button is pressed a haul in progress is considered turned down (rejected). **Note**: A haul turn down cannot be performed, until a valid turn down reason has been selected.
Current Haul Details Provides operations data for the current haul.	
Haul Status	This **read-only** field shows the current status of the haul.
Divert Valve Permissive	This **read-only** field is controlled by external logic. When the value displays 1, the divert valve is operational. When the value displays 0, the divert valve is close and remains close until you provide the valve permissive.
Station Permissive	Controlled by external logic. When this value is **1**, the automated loading valve is operational. When this value is **0**, the automated valve closes and remains closed. **Note**: To ensure proper safety controls, give special consideration to configuring the "permissive" (safety circuits) that may be operating in your system. These can include external shutdown logic (configured through the Surface Control Manager program), electrical grounding (such as a tank-to-truck grounding strap), grounding alarms, tank levels, and permissive power components, among others.
Selection	These **display-only** fields show the status of various operational components of the haul as well as particulars of the fluid being hauled.
Tank or Meter Haul Measurement	Provides an indication if the current haul in progress is based on tank level, or a dedicated load out terminal meter.
Current Tag	This field shows the tag of the tank being hauled from.
Fluid Type	This field shows the fluid being hauled, either crude oil, or produced water.
Tank Instance	This field shows the instance number for the tank being hauled from.
Tank Aggregate #	This field shows the aggregate number associated with the tank being hauled from (if applicable).
Haul Open Level	This field is automatically populated with the tank level at the open of the haul.

Field	Description	
	Haul Close Level	This field is automatically populated with the tank level at the close of the haul.
	Flow Rate	Represents the flowrate through the haul loading line. This field updates as the haul progresses.
	Indicated Volume	The basic indicated volume recorded for the haul. This field updates as the haul progresses.
	Reset TSD	This button appears when a haul is in progress, and has been placed in temporary shut down (TSD). If required, the operator must acknowledge that the shut down condition has been cleared, before the haul can resume.
Automated Output:	This field shows the status of the automated output as defined on the LACT Configuration screen. When a haul is started, the valve will open and the automated output will display **ON** and turn green**.** Once the Preset Load Volume has been reached or the user stops flow, the valve will close and the automated output will display **OFF** and turn red**.**	
Diagnostics	Enables the display of addition fields which show the state of various values required for the haul. These additional fields can be used for troubleshooting purposes.	

2. Click **Apply** to save any changes to this screen.

3. Proceed to *Section 3.5.2* to review the Load Out Values/Sats currently in progress.

3.5.2 PMTM Load Out – Load Out Values/Stats Tab

This screen provides information on the most recently completed haul. During the period when a haul is occurring, it will show the values recorded for the haul in process. Additionally, historical statistics for the load out terminal, and monthly temperature and pressure averages can be viewed on this tab.

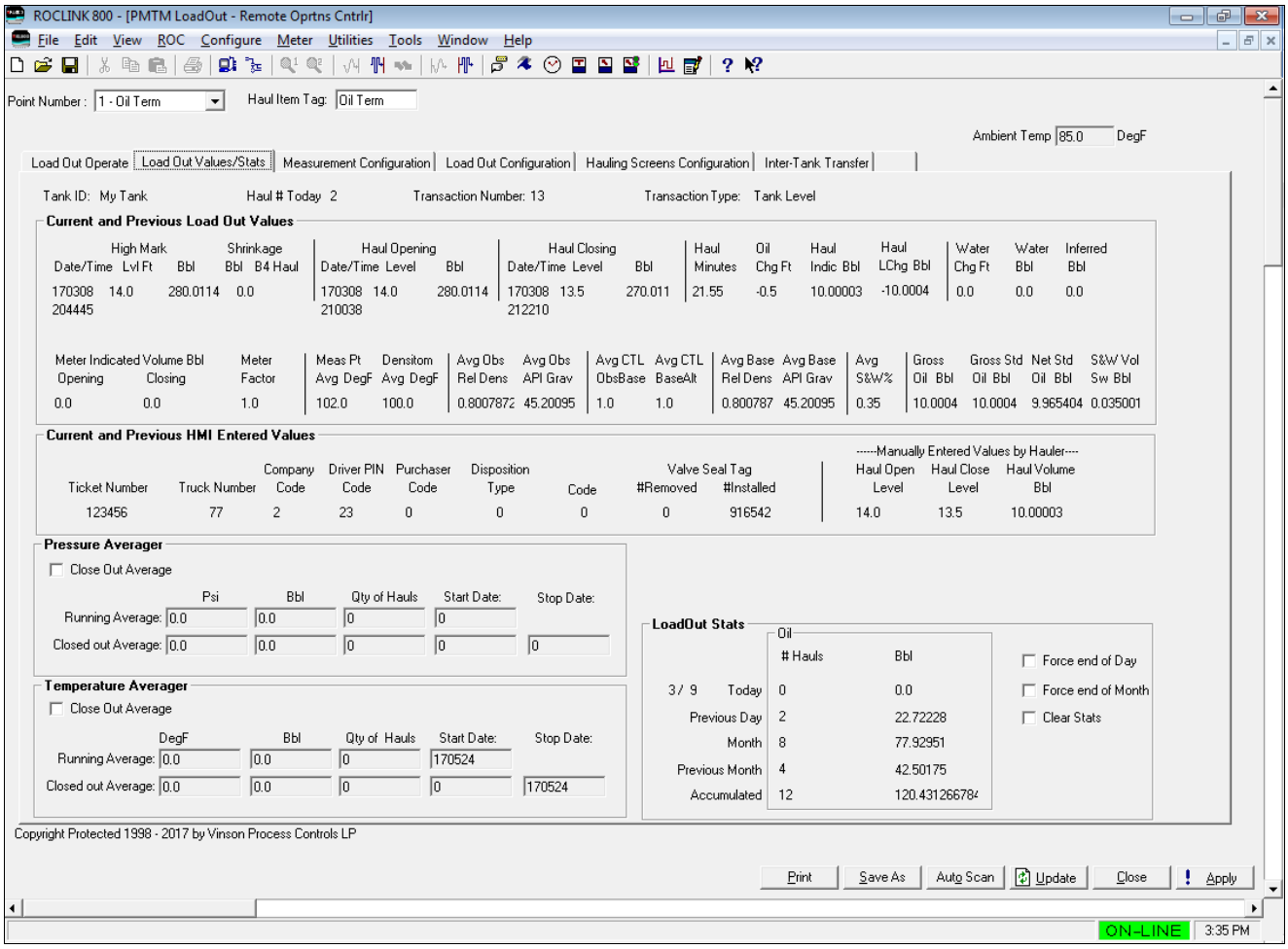


Figure 3-18. Load Out Screen – Load Out Values/Stats tab

1. Review the values in the following fields.

Field	Description
Current and Previous Load Out Values	This is **read-only** displays the values recorded in the haul log for the previous haul event. When a haul is in progress, the values shown are for the current haul.
Current and Previous HMI Entered Values	This is **read-only** only displays the values entered by the operator and recorded in the haul log for the previous haul event. When a haul is in progress, the values shown are what the operator has entered for the current haul.
Pressure Averager	If a live pressure instrument is configured for the load out terminal, a monthly flow weighted average of the pressure reading can be recorded. This feature is enabled on the **Measurement Configuration** tab. Two sets of values are provided, one for the current period, and one for the previous period.
Close Out Average	Enables the end of the month, moving the current pressure average values to the previous values.

Field	Description
Pressure (Psi)	This is **read-only** only displays the current flow weighted pressure average for the month, in user selected units. **Note**: The description of this field changes based on the pressure units selected. The default unit is Psi.
Volume (Bbl)	This is **read-only** only displays the current volume hauled from this load out terminal, which is used to create the flow weighted monthly average pressure. **Note**: The description of this field changes based on the volume units selected. The default unit is Bbl.
Qty of Hauls	This is **read-only** only displays the quantity of hauls that have occurred during the month, during which samples were taken to create the monthly pressure average.
Start Date	This is **read-only** only displays the starting date for the pressure average.
Stop Date	This is **read-only** only displays the end date for the closed out average. Shown as a numerical value with the form of YYMMDD. For example, 170308 represents a date of March 8th, 2017.
Temperature Averager	If a live temperature instrument is configured for the load out terminal, a monthly flow weighted average of the temperature reading can be recorded. This feature is enabled on the **Measurement Configuration** tab.
Close Out Average	Enables the end of the month, moving the current temperature average values to the previous values.
Temperature (DegF)	This is **read-only** only displays the current flow weighted temperature average for the month, in user selected units. **Note**: The description of this field changes based on the temperature units selected. The default unit is degrees F.
Volume (Bbl)	This is **read-only** only displays the current volume hauled from this load out terminal, which is used to create the flow weighted monthly average temperature. **Note**: The description of this field changes based on the volume units selected. The default unit is Bbl.
Qty of Hauls	This is **read-only** only displays the quantity of hauls that have occurred during the month, during which samples were taken to create the monthly temperature average.
Start Date	This is **read-only** only displays the starting date for the temperature average.

Field	Description
Stop Date	This is **read-only** only displays the end date for the closed out average. Shown as a numerical value with the form of YYMMDD. For example, 170308 represents a date of March 8th, 2017.
LoadOut Status	Statistics for the load out terminal, provided on a daily, monthly, and on-going accumulator basis.
# Hauls	This is **read-only** only displays the quantity of hauls that have occurred from this load out terminal.
Volume (Bbl)	This is **read-only** only displays the volume of product hauled from this load out terminal. **Note**: The description for this set of fields changes based on the volume units selected. The default unit is Bbl.
Force end of Day	Enables the program to cause a new day event to occur immediately. All today accumulators rollover into the yesterday accumulators.
Force end of Month	Enables the program to cause a new month event to occur immediately. All This Month accumulators rollover into the Previous Month accumulators.
Clear Status	Enables the program to clear out all accumulators (Daily, Monthly, and Accumulated) for the load out terminal statistics.

2. Proceed to *Section 3.5.3* to view the Measurement Configuration tab.

3.5.3 PMTM Load Out – Measurement Configuration Tab

Use this screen to configure measurement options such as the tanks to be hauled from, the method used to determine the hauled volume, and contract hour options. The screen is also used to determine if the tank instrumentation is to be used for the hauling fluid properties, or if the Load Out has own instrumentation values to calculate the volume hauled.

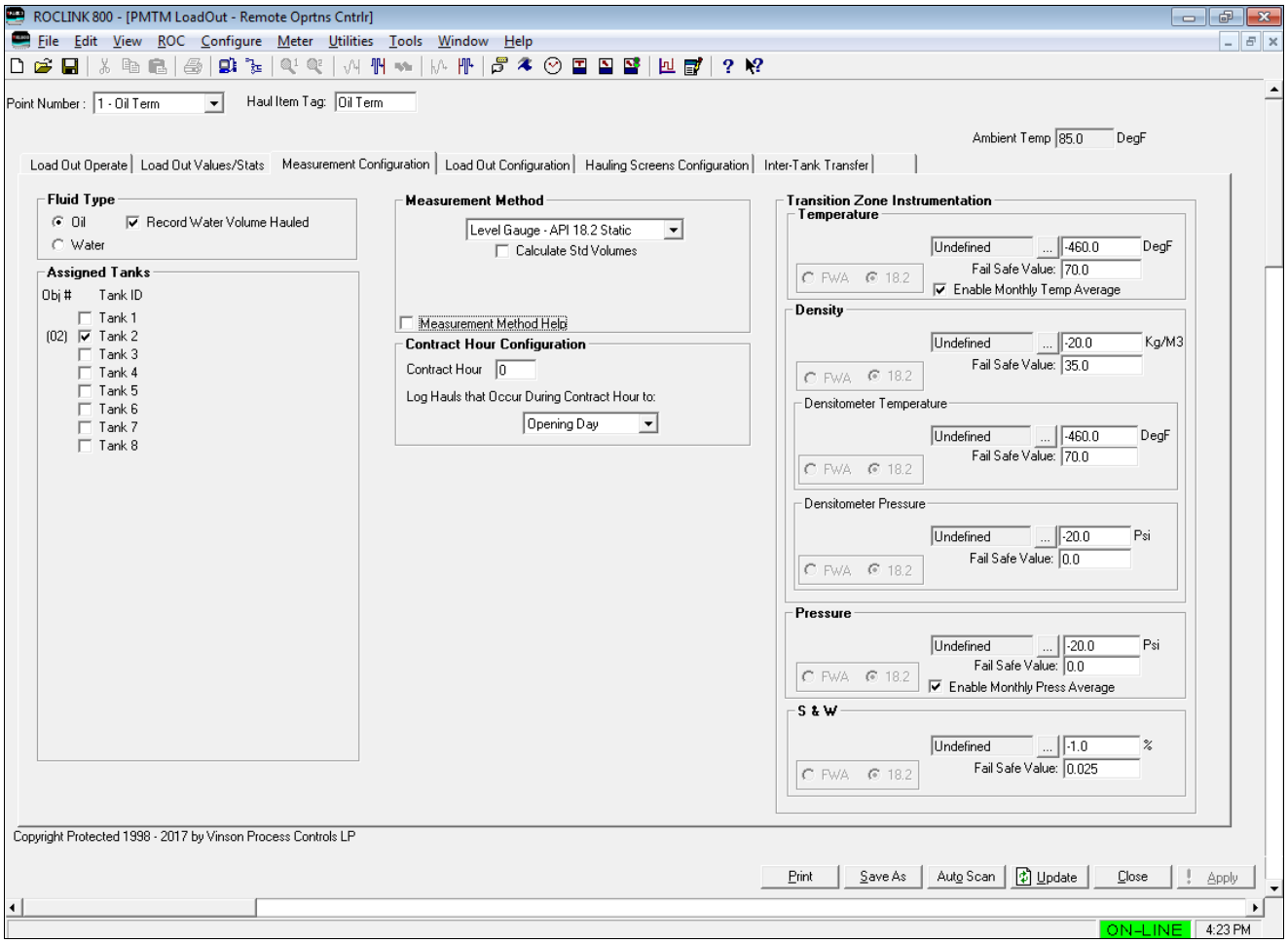
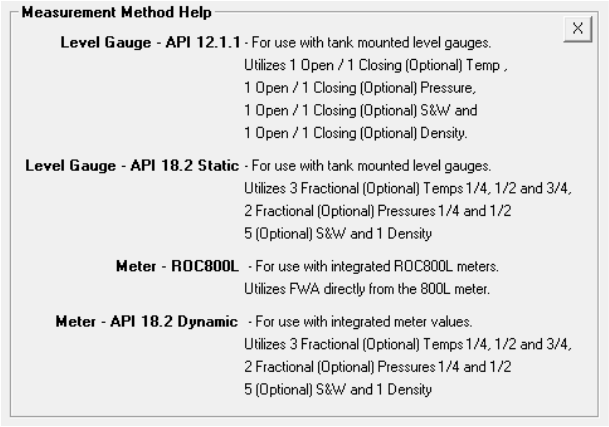


Figure 3-19. Load Out Screen – Measurement Configuration tab

1. Review the values in the following fields.

Field	Description
Fluid Type	Defines the fluid type to be hauled from this Load Terminal. The fluid type will be either oil or water.
Record Water Volume Hauled	When enabled and an interfaced (oil and water) gauge is used, a drop in the water level during an oil haul will result in that water quantity being recorded. This is only true when the interface level is above the unsafe zone for the tank, as defined by the Load Line Elevation. **Note**: This field displays **only** if you select the fluid type **Oil** as the primary fluid.

Field	Description
Record Oil Volume Hauled	When enabled and an interfaced (oil and water) gauge is used, a drop in the oil level during a water haul will result in that oil quantity being recorded. This is only true when the interface level is above the unsafe zone for the tank, as defined by the Load Line Elevation. **Note**: This field displays **only** if you select the fluid type **Water** as the primary fluid.
Assigned Tanks	Defines the tanks that this terminal instance can haul from. If one tank is selected, the object# to haul will automatically fill with the tank number for a haul. When more than one tank can be hauled from for the terminal, you must enter the tank number they wish to haul from.
Measurement Methods Defines the method and calculations to be used for hauls from this load out terminal. Depending on the selection, additional configuration fields will become visible.	
Level Gauge – API 12.1.1	The haul volume will be determined based on changes to the level of the tank being hauled from. A single reading of the tank level is taken at the beginning of the haul. Readings for each of the fluid properties (temperature, pressure, density, S&W) are also recorded on the haul opening. When the haul is completed, a closing tank level is taken, and a second closing set of fluid properties (optional) is recorded. These values are then used to determine the haul volume, based on the API MPMS Chapter 12.1.1 methodology.
Level Gauge – API 18.2 Static	The haul volume will be determined based on changes to the level of the tank being hauled from. Tank level readings are taken at the opening and closing of the haul. Fluid properties (temperature, pressure, density, S&W) are recorded during the haul according to the API MPMS 18.2 methodology. When the haul is completed, the final haul volume is determined according to the calculations outlined in the API MPMS 18.2 standard.
Meter – ROC800L	The load out terminal will read meter accumulation and fluid properties from an associated ROC800L Liquid Meter. Fluid property values (temperature, pressure, density, S&W) are averaged using flow weighing over the period of the haul. These averages are then reported for the haul. The final haul volume is based on the quantities recorded from the ROC800L Liquid Meter.

Field	Description
Meter – API 18.2 Dynamic	The haul volume is determined using a live meter which is configured and dedicated to the load out terminal. Fluid property values (temperature, pressure, density, S&W) are recorded at various periods throughout the haul, in accordance with the methodology outlined in API MPMS 18.2. The final haul volume is calculated using the meter readings and fluid property values recorded during the haul, using the calculations outlined in the API MPMS 18.2 standard.
Calculate Std Volumes	Enables the program to have the tank manager calculate haul volumes at standard conditions (i.e. 60 deg F, and 0.0 psig), also known as the Gross Standard Volume (GSV). For this option to be used, the required instrumentation (temperature, pressure, density) must be configured
Measurement Method Help	Enables the program to view the additional details about the processes used for the various measurement methods, to help the operator select the proper option. This field is provided for informational purposes only, it performs no configuration for the load out terminal. See below: 
Contract Hour Configuration	
Contract Hour	The tank object includes multiple daily accumulators. This selection determines the hour of the day when the Today values rollover and become the yesterday values. Valid values include 0 through 23. **Note**: These fields are a duplicate of those on the Alarms and Rollovers tab of the Tank.
Log Hauls that Occur During Contract Hours to:	It is possible that a haul will begin before a contract hour, and end afterwards, with the contract hour occurring during the haul. When this situation occurs, this option determines to which day the totals from that haul will belong. **Note**: These fields are a duplicate of those on the Alarms and Rollovers tab of the Tank.
Transition Zone Instrumentation	
Temperature	Click … to display the Select TLP screen and define a TLP to hold the temperature input value.

Field		Description
	Fail Safe Value	Indicates the value to be used for the temperature when the live instrument reading is considered invalid.
	Enable Monthly Temp Average	Enables the program to record the rolling average of the product temperature. **Note:** This field is displayed when the Temperature input TLP has been defined.
	FWA / 18.2	When a live instrument is defined, this option determines if a flow weighted average should be recorded over the period of the haul, or if single values (snapshots) should be recorded at the appropriate times, in accordance with the API MPMS 18.2 standard. **Note:** This field is displayed when the measurement method is set to **Level Gauge – API 18.2 Static** or **Meter – API 18.2 Dynamic**.
Density	Click … to display the Select TLP screen and define a TLP to hold the Top gauge input value.	
	Fail Safe Value	Indicates the value to be used for the density when the live instrument reading is considered invalid.
	FWA / 18.2	When a live instrument is defined, this option determines if a flow weighted average should be recorded over the period of the haul, or if single values (snapshots) should be recorded at the appropriate times, in accordance with the API MPMS 18.2 standard. **Note:** This field is displayed when the measurement method is set to **Level Gauge – API 18.2 Static** or **Meter – API 18.2 Dynamic**.
	Densitometer Temperature	Click … to display the Select TLP screen and define a TLP to hold the densitometer temperature input value.
	Fail Safe Value	Indicates the value to be used for the density temperature when the live instrument reading is considered invalid.

Field		Description
	FWA / 18.2	When a live instrument is defined, this option determines if a flow weighted average should be recorded over the period of the haul, or if single values (snapshots) should be recorded at the appropriate times, in accordance with the API MPMS 18.2 standard. **Note:** This field is displayed when the measurement method is set to **Level Gauge – API 18.2 Static** or **Meter – API 18.2 Dynamic**.
	Densitometer Pressure	Click … to display the Select TLP screen and define a TLP to hold the densitometer pressure input value.
	Fail Safe Value	Indicates the value to be used for the density pressure when the live instrument reading is considered invalid.
	FWA / 18.2	When a live instrument is defined, this option determines if a flow weighted average should be recorded over the period of the haul, or if single values (snapshots) should be recorded at the appropriate times, in accordance with the API MPMS 18.2 standard. **Note:** This field is displayed when the measurement method is set to **Level Gauge – API 18.2 Static** or **Meter – API 18.2 Dynamic**.
Pressure	Click … to display the Select TLP screen and define a TLP to hold the pressure input value.	
	Fail Safe Value	Indicates the value to be used for the pressure when the live instrument reading is considered invalid.
	Enable Monthly Press Average	Enables the program to record the rolling average of the product pressure. **Note:** This field is displayed when the Pressure input TLP has been defined.

Field	Description	
	FWA / 18.2	When a live instrument is defined, this option determines if a flow weighted average should be recorded over the period of the haul, or if single values (snapshots) should be recorded at the appropriate times, in accordance with the API MPMS 18.2 standard. **Note:** This field is displayed when the measurement method is set to **Level Gauge – API 18.2 Static** or **Meter – API 18.2 Dynamic**.
S&W	Click … to display the Select TLP screen and define a TLP to hold the S & W input value.	
	Fail Safe Value	Indicates the value to be used for the sediment and water when the live instrument reading is considered invalid.
	FWA / 18.2	When a live instrument is defined, this option determines if a flow weighted average should be recorded over the period of the haul, or if single values (snapshots) should be recorded at the appropriate times, in accordance with the API MPMS 18.2 standard. **Note:** This field is displayed when the measurement method is set to **Level Gauge – API 18.2 Static** or **Meter – API 18.2 Dynamic**.

2. Proceed to *Section 3.5.4* to review the Load Out Configuration tab.

3.5.4 PMTM Load Out – Load Out Configuration Tab

Use this screen to configure aspects of the load out terminal which are not directly related to the measurement, such as the automated loading valve, a divert valve, load out timeout / expiration values, and the optional ticket printer. Many of these features are typically associated with a LACT unit, although they may apply to other load out terminal applications.

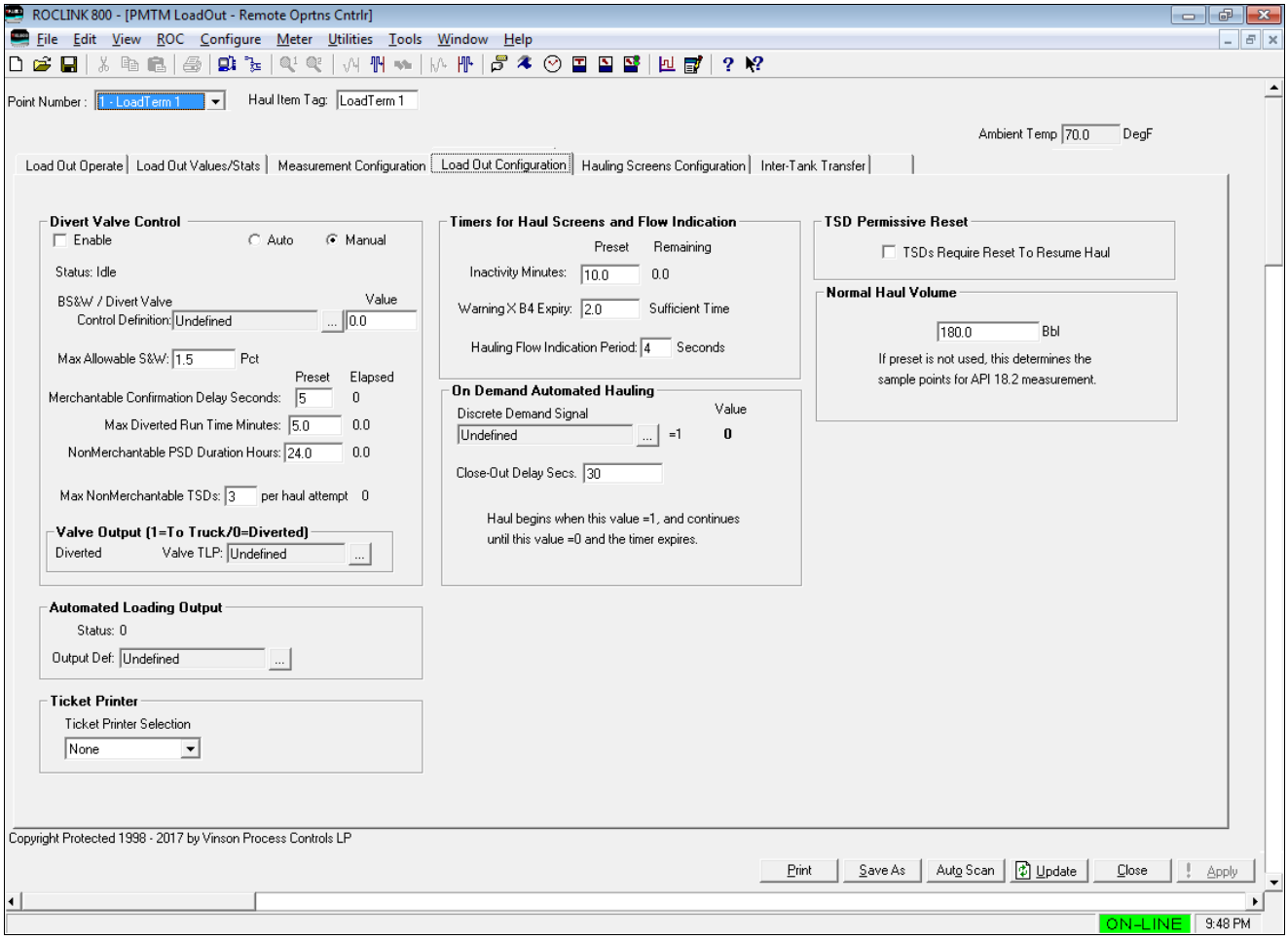


Figure 3-20. Load Out Screen – Load Out Configuration tab

1. Review the values in the following fields.

Field	Description
Divert Valve Control	
Enable	Select to enable diverter valve control. If no diverter valve is available in the system, this option should remain unchecked.
Auto	Select this option to automatically read a live S&W value from the input defined in the **BSW / Divert Valve Control Definition** field.
Manual	Select this option to manually enter a fixed S&W value, when a live S&W instrument is not available.

Field	Description
Status	This read only field provides an indication of the "Merchantable" status of the product. The follow indications can be provided: **Idle**, **Non-Merchantable**, **Merchantable**, **TSD – Divert Time Exceeded**, **PSD – Max TSDs have Occurred**, **Invalid S&W Signal**.
BSW / Divert Valve Control Definition	Click … to display the TLP screen and define a live S&W input value, which will be read periodically through the haul and will determine the behavior of the divert valve.
Value	When a BSW / Divert Valve Control Definition is configured, this field will show the current value of the live input. When the BSW / Divert Valve Control Definition is left undefined, this is the field where a manual S&W value should be entered.
Max Allowable S&W	Enter a percentage (between 0% and 100%) that is the maximum allowed sediment and water percentage reading that is allowed to occur during a haul. If the live value exceeds this limit during a haul (for the number of confirmation delay sections), the flow should be diverted.
Merchantable Confirmation Delay Seconds	The number of seconds that the S&W percentage must be above the max allowable threshold, before the flow is diverted.
Max Diverted Run Time Minutes	Should the flow become diverted, this defines the maximum number of minutes that the diverted state is allowed, before the haul should be aborted (shut down via a TSD).
NonMerchantable PSD Duration Hours	If a PSD occurs due to too many failed haul attempts, the system will no longer allow additional hauls. Hauling can resume after the number of hours configured in this field are passed.
Max NonMerchantable TSDs	If multiple TSD (Temporary Shut Down) events occur sequentially (due to a non-merchantable product state) while attempting to perform a haul, this is only allowed to occur the number of times as configured in this field. Should the maximum number of TSDs occur, then the loadout will enter a state of PSD (Permanent Shut Down), and will be unable to proceed with new hauls for a duration of time.
Valve Output (1=To Truck/0=Diverted)	Provides an indication of the current state of the diverter valve.
Valve TLP	Used to define a discrete output point which controls the diverter valve. Click … to display the Select TLP screen and define a TLP to hold the Top gauge input value.

Field	Description
Automated Loading Output	
Status	Shows the status of the output valve. A status of **0** means the valve is closed. A status of **1** means the valve is open.
Output Def:	Click … to display the select TLP screen and define a TLP to hold the Top gauge input value.
Ticket Printer Selection	Define the printer type to be used.
Timers for Haul Screen and Flow Indication	
Inactivity Minutes	Defines the time allowed where no action has been taken and no flow has been detected before closing out a haul in progress. This timer will be reset when flow is detected or when you complete any action during the haul. You also extend the haul, which adds the inactivity minutes to the current time remaining before a closeout.
Warning X B4 Expiry	Defines the time remaining in which a warning will be given to you. When the inactivity minutes are below this value, you will be notified with a warning.
Hauling Flow Indication Period	Number of consecutive seconds required before the program recognizes that flow is in progress during a haul. If the appearance of flow from an associated meter exists for less than this time period, that state is not considered to be an indication of flow.
On Demand Automated Hauling This feature allows for metered hauls to begin automatically. When the TLP selected (typically a discrete input) is True (1), the load out terminal will enter into hauling mode and will remain in the hauling mode until the TLP is False (0) for the time configured in the Close Out Delay Seconds. This allows a Tank Manager load out terminal to calculate hauls without the need for an operator to log into the HMI (a one button haul configuration option).	
Discrete Demand Signal	Click … to select a discrete signal which will be used to initiate hauls when it transitions from 0 to 1, and will determine the end of the haul when it transitions from 1 to 0. This is typically a discrete input (DI).
Close-Out Delay Secs	Sets the number of seconds that the Discrete Demand Signal must remain at a value of False (0), before a haul in progress will end.
Normal Haul Volume	Specifies the typical expected volume for a haul. For example, the average truck size can be entered. This value is used to determine when a haul reaches certain completion points, such as ¼ completed, ½ completed, etc. This can be overridden by the operator, who can enter a pre-set load volume at the start of a haul.

Field	Description
TSD Permissive Reset	Requires that the operator must manually reset a Temporary Shut Down (TSD) for the load out terminal.
TSDs Require Reset to Resume Haul	If a TSD stops the haul, and this option is enabled, the operator will have to manually press a reset button to clear the TSD and continue a haul. When this occurs, the Reset button is automatically presented to the operator on the HMI and the Load Out Operate tab.

2. Proceed to *Section 3.5.5* to configure the Hauling Screens Configuration tab.

3.5.5 PMTM Load Out – Hauling Screens Configuration Tab

Use this screen to configure what fields are displayed during a haul and which fields require you to enter values when hauling.

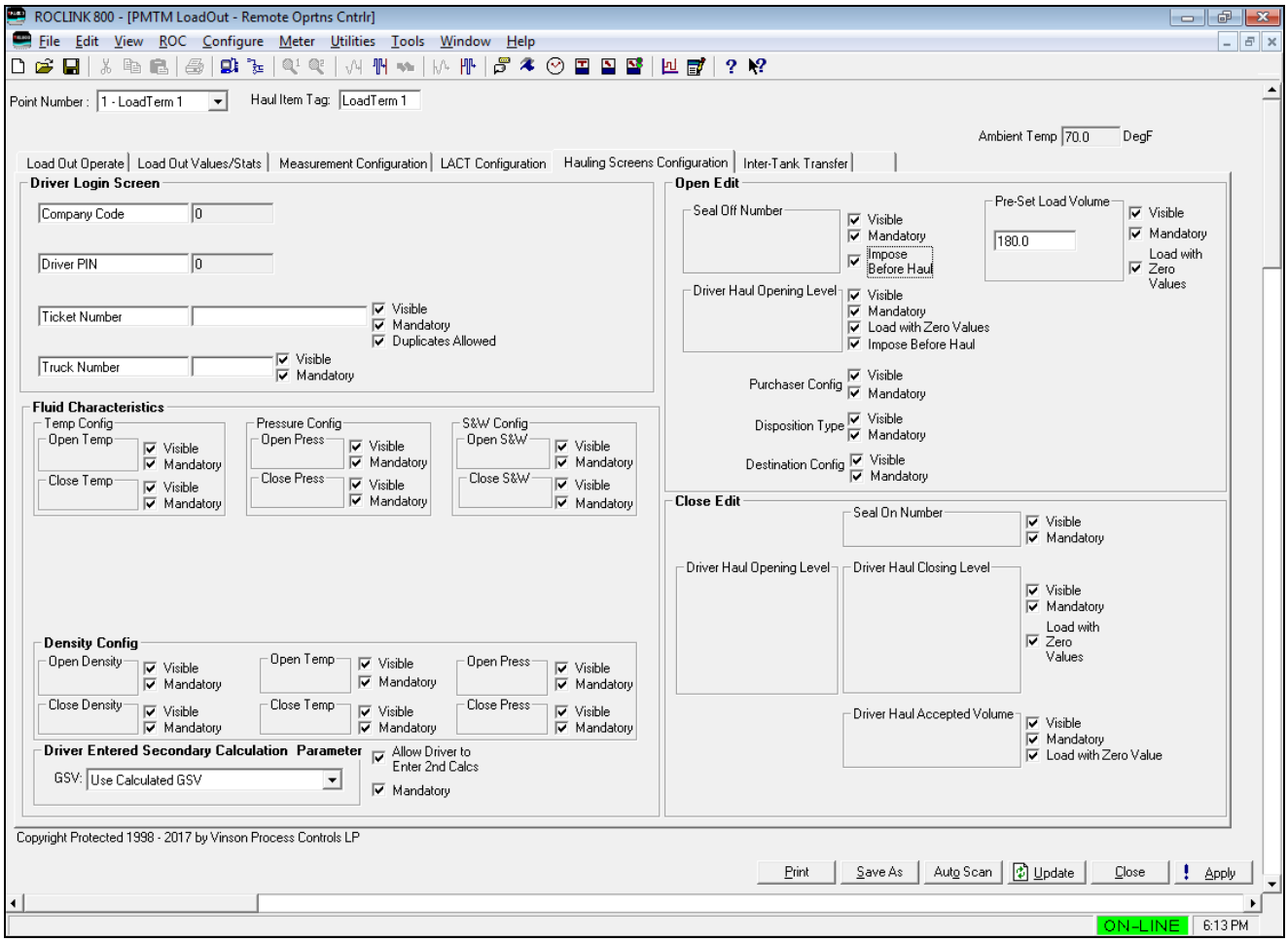


Figure 3-21. Load Out Screen – Hauling Screens Configuration tab

1. Review the values in the following fields.

Field	Description
Driver Login Screen	
Company Code	Defines the numerical credentials of the company. When the driver enters a company code on the HMI, the program verifies and validates the code against the ROC Hauler Database (see *Section 3.6*) and shows the result in the Company Verified field. The program displays the validated company name in the Company Verified field. **Note**: The default text of "Company Code" can be changed to a different customized text label. The custom text entered here will be presented to the operator on the HMI as the label for this field.
Driver Pin	Defines the driver's numerical credentials. When the driver enters a driver code on the HMI, the program verifies and validates the code against the Hauler Companies Database (see *Section 3.6*) and shows the result in the Driver Verified field. **Note**: The default text of "Driver PIN" can be changed to a different customized text label. The custom text entered here will be presented to the operator on the HMI as the label for this field.
Ticket Number	Provides the ticket number. This optional 20-character field may be contractually required by an agreement with the owner. The program records this information in the haul log. **Visible:** When you enable this option, this field becomes visible on the Load Out screen for you to enter values. However, you are not required to enter a value unless you enable **Mandatory.** **Mandatory:** When you enable this option, you must enter a non-zero number into this field for you to advance to the next stage of the haul. **Duplicates Allowed:** When you enable this option, the same ticket number is allowed to be used multiple times. If this option is not enabled, then a ticket number which has already been entered is not allowed. **Note**: The default text of "Ticket Number" can be changed to a different customized text label. The custom text entered here will be presented to the operator on the HMI as the label for this field.

Field	Description
Truck Number	Provides the truck number. This optional 20-character field may be contractually required by an agreement with the owner. The program records this information in the haul log. **Visible:** When you enable this option, this field becomes visible on the Load Out screen for you to enter values. However, you are not required to enter a value unless you enable **Mandatory**. **Mandatory:** When you enable this option, you must enter a non-zero number into this field. You will not be able to advance to the next stage of the haul without entering a value in mandatory fields. **Note**: The default text of "Truck Number" can be changed to a different customized text label. The custom text entered here will be presented to the operator on the HMI as the label for this field.
Fluid Characteristics **Visible:** When you enable this option, this field becomes visible on the Load Out screen for you to enter values. However, you are not required to enter a value unless you enable **Mandatory**. **Mandatory:** When you enable this option, you must enter a non-zero number into this field. You will not be able to advance to the next stage of the haul without entering a value in mandatory fields. This field shows **only** when you enable **Visible**. These values override the manual entries as defined on the Measurement Configuration if don't define an input. If you define an input, it takes precedence over the Default values you enter on the Hauling Screens Configuration tab. **Visible:** When you enable this option, this field becomes visible on the Load Out screen for you to enter values. However, you are not required to enter a value unless you enable **Mandatory**.	
Temp Config	Defines the temperature visibility (Open and Close), default value (Open), and mandatory requirement (Close) selections. **Note**: The fields shown in this section will vary, depending on the measurement type selected for the load out on the Measurement Configuration tab. When the API 12.1.1 option is selected, open and closing fields are shown. When one of the API 18.2 options are selected, fields for ¼ Temp, ½ Temp, and ¾ Temp will be shown. When the Meter - ROC800L option is selected, temperature values are read from the ROC800L liquid meter, and no fields will be shown.
Open Temp	The available selections are: **Visible** **Default** See **Fluid Characteristics** field for the definitions.

Field	Description	
	Close Temp	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
Pressure Config	Defines the pressure visibility (Open and Close), default value (Open), and mandatory requirement (Close) selections. **Note**: The fields shown in this section will vary, depending on the measurement type selected for the load out on the Measurement Configuration tab. When the API 12.1.1 option is selected, open and closing fields are shown. When one of the API 18.2 options are selected, fields for ¼ Press and ¾ Press will be shown. When the Meter - ROC800L option is selected, pressure values are read from the ROC800L liquid meter, and no fields will be shown.	
	Open Press	The available selections are: **Visible** **Default** See **Fluid Characteristics** field for the definitions.
	Close Press	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
S&W Config	Defines the S&W visibility (Open and Close), default value (Open), and mandatory requirement (Close) selections. **Note**: The fields shown in this section will vary, depending on the measurement type selected for the load out on the Measurement Configuration tab. When the API 12.1.1 option is selected, open and closing fields are shown. When one of the API 18.2 options are selected, fields for ¼ S&W, 3rd S&W, ¾ S&W, 4th S&W and 5th S&W will be shown. When the Meter - ROC800L option is selected, sediment and water values are read from the ROC800L liquid meter, and no fields will be shown.	
	Open S&W	The available selections are: **Visible** **Default** See **Fluid Characteristics** field for the definitions.

Field		Description
	Close S&W	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
Density Config	Defines the density visibility (Open and Close), default value (Open), and mandatory requirement (Close) selections. **Note**: The fields shown in this section will vary, depending on the measurement type selected for the load out on the Measurement Configuration tab. When the API 12.1.1 option is selected, open and closing fields for the density, density temperature, and density pressure are shown. When one of the API 18.2 options are selected, fields for ½ Density, ½ Temp, and ½ Press will be shown. When the Meter - ROC800L option is selected, density values are read from the ROC800L liquid meter, and no fields will be shown.	
	Open Density	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
	Close Density	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
	Open Temp	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
	Close Temp	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
	Open Press	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.
	Close Press	The available selections are: **Visible** **Mandatory** See **Fluid Characteristics** field for the definitions.

Field	Description
Driver Entered Secondary Calculation Parameters	When the haul operator is allowed to enter manual values for a secondary haul volume calculation, this field determines how the program will determine the corrected volume (gross standard volume). Click▼ to select from the list: ▪ Use Calculated GSV – The gross standard volume for the secondary calculations will be determined by the program. ▪ Derived GSV From Manual Valves – The gross standard volume for the secondary calculations will be determined by the manual secondary values entered by the haul operator. This option presents the operator with the option to enter a manual temperature and observed density value for the haul.
Allow Driver to Enter 2nd Calcs	When you use instrumentation for the haul fluid properties and you restrict driver to change that value, this field allows the driver to enter a separate manual values to provide a separate calculation based on these values in the Haul Log.
Mandatory	When you select this option, the operator cannot close out the haul until the fluid characteristics for a secondary recalculation is entered.
Open Edit **Visible:** When you enable this option, this field becomes visible on the Load Out screen for you to enter values. However, you are not required to enter a value unless you enable **Mandatory**. **Mandatory:** When you enable this option, you must enter a non-zero number into this field. You will not be able to advance to the next stage of the haul without entering a value in mandatory fields. This field shows **only** when you enable **Visible**. **Load with Zero Values:** When you enable this option, the Load with Zero Values forces the field to 0 for each new haul and does not populate automatically during a haul. This field works in tandem with the Mandatory checkbox to require a manual value in fields that would normally auto-populate based on the change in level of the Tank. When you do not enable this option, the fields auto-populate and pass mandatory validation with no manual values from the user. This field shows **only** when you enable **Visible**. **Impose Before Haul:** When you enable this option, you are required to enter a non-zero value in this field before you are able to start a haul.This field shows **only** when you enable **Mandatory**.	
Seal Off Number	Defines the seal off number visibility, mandatory requirement, and impose before haul selections. The available selections are: **Visible** **Mandatory** **Impose Before Haul** See **Open Edit** field for the definitions.

Field	Description
PreSet Load Volume	Defines the preset visibility, mandatory requirement, and load with zero values selections. The available selections are: **Visible** **Mandatory** **Load with Zero Values** See **Open Edit** field for the definitions.
Driver Haul Opening Level	Defines the driver haul opening level visibility, mandatory requirement, load with zero values, and impose before haul selections. The available selections are: **Visible** **Mandatory** **Load with Zero Values** **Impose Before Haul** See **Open Edit** field for the definitions.
Purchaser Config	Defines the visibility and mandatory requirement for the purchaser list, which is part of the haul opening edits. The available selections are: **Visible** **Mandatory** See **Open Edit** field for the definitions.
Disposition Type	Defines the visibility and mandatory requirement for the disposition type list, which is part of the haul opening edits. The available selections are: **Visible** **Mandatory** See **Open Edit** field for the definitions.
Destination Config	Defines visibility and mandatory requirement for the destination list, which is part of the haul opening edits. The available selections are: Visible Mandatory See Open Edit field above for the definitions. The available selections are: **Visible** **Mandatory** See **Open Edit** field for the definitions.

Field	Description
Close Edit **Visible:** When you enable this option, this field becomes visible on the Load Out screen for you to enter values. However, you are not required to enter a value unless you enable **Mandatory**. **Mandatory:** When you enable this option, you must enter a non-zero number into this field. You will not be able to advance to the next stage of the haul without entering a value in mandatory fields. This field shows **only** when you enable **Visible**. **Load with Zero Values:** When you enable this option, the Load with Zero Values forces the field to 0 for each new haul and does not populate automatically during a haul. This field works in tandem with the Mandatory checkbox to require a manual value in fields that would normally auto-populate based on the change in level of the Tank. When you do not enable this option, the fields auto-populate and pass mandatory validation with no manual values from the user. This field shows **only** when you enable **Visible**.	
Seal On Number	Defines the seal on number visibility and mandatory requirement selections. The available selections are: **Visible** **Mandatory** See **Close Edit** field for the definitions.
Driver Haul Opening Level	Defines the driver haul opening level visibility, mandatory requirement, and load with zero values selections. The available selections are: **Visible** **Mandatory** **Load with Zero Values** See **Close Edit** field for the definitions.
Driver Haul Closing Level	Defines the driver haul closing level visibility, mandatory requirement, and load with zero values selections. The available selections are: **Visible** **Mandatory** **Load with Zero Values** See **Close Edit** field for the definitions.
Driver Haul Accepted Volume	Defines the driver haul accepted volume visibility, mandatory requirement, and load with zero values selections. The available selections are: **Visible** **Mandatory** **Load with Zero Values** See **Close Edit** field for the definitions.

2. Proceed to *Section 3.5.6* to configure the Inter-Tank Transfer tab.

3.5.6 PMTM Load Out – Inter-Tank Transfer Tab

Use this screen to define how the program transfers fluids between tanks. Select the **Inter-tank Transfer** tab to display the screen.

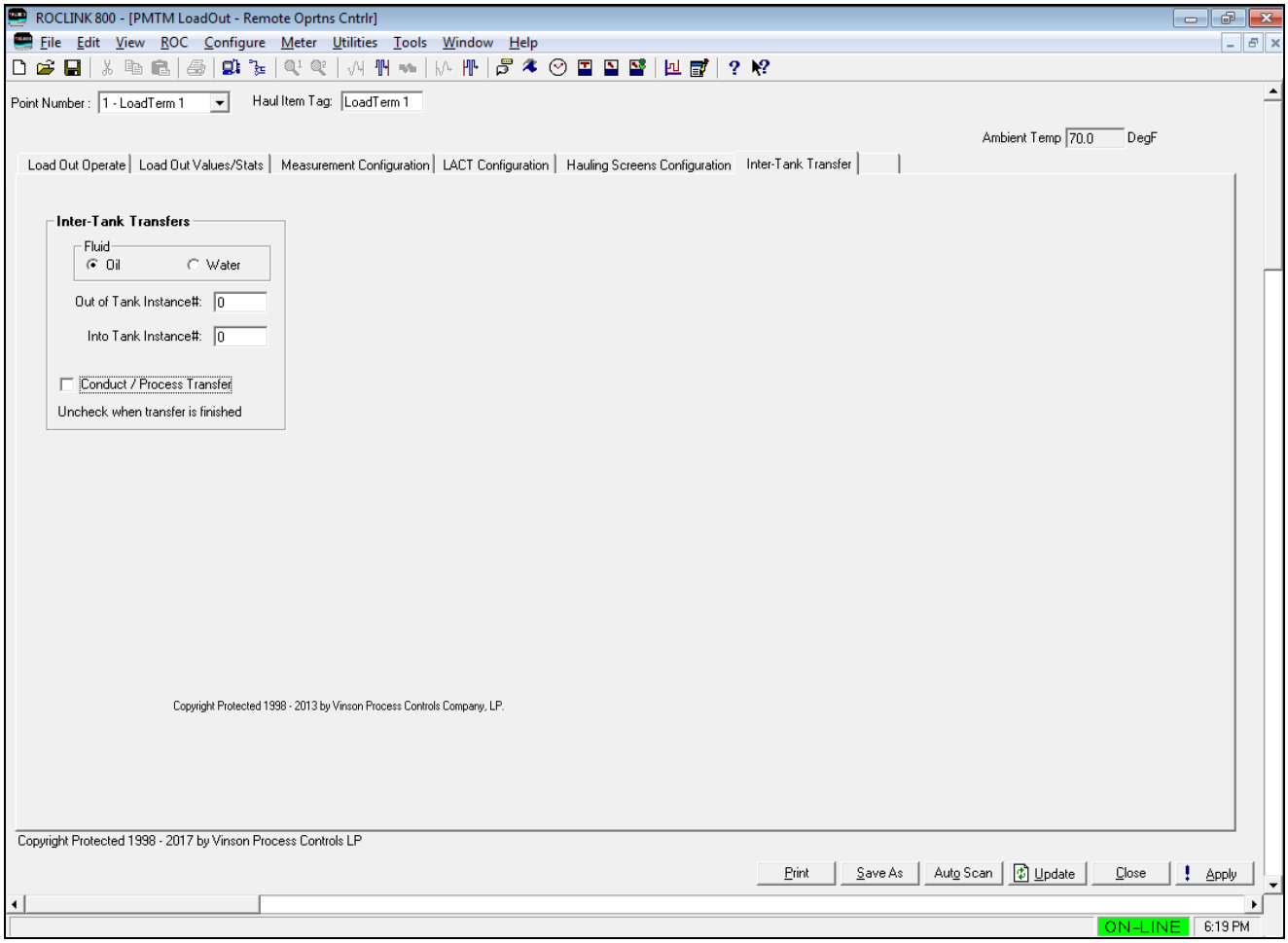


Figure 3-22. Load Out Screen – Inter-Tank Transfer tab

1. Review the values in the following fields.

Field	Description
Fluid	Select the fluid to be transferred. Valid values are **Oil** or **Water**.
Out of Tank Instance#	Specifies the tank the fluid will be coming out of.
Into Tank Instance#	Specifies the tank the fluid will be going in to.
Conduct / Process Transfer	Select to start the transfer process. Unselect this value when the transfer completes.

2. Proceed to *Section 3.6* to configure the PMTM Hauler Database screen.

3.6 PMTM Hauler Data Base

Use this screen and its component tabs to configure the company hauling database and set driver PINs.

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click one of the following:
   - For the ROC800: **Program #1, PMTM _v409_00_8t4w**.
   - For the FB107: **PM Tank Manager**.
3. Do one of the following:
   - For the ROC800: Double-click **Display #232, PMTM Hauler Database**.
   - For the FB107: Go to **User Display** and double-click **Display #2 – PMTM Hauler Database**.

Note: You may have a different display number. Use the display number that you loaded this screen.

The **PMTM Hauler Database** screen displays, showing the Hauler 1-20, Hauler 21-40 and Hauler 41-60 tabs:

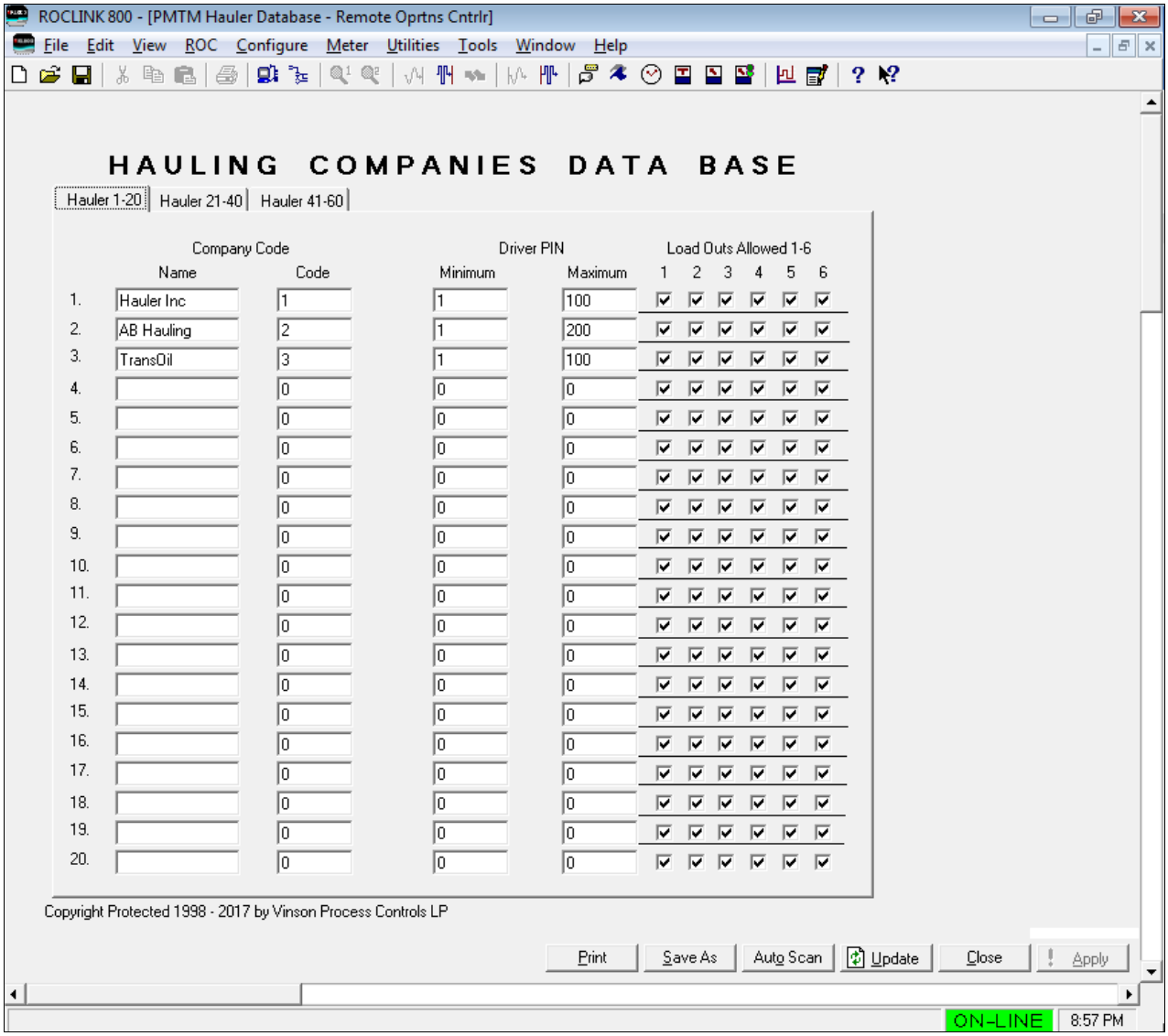


Figure 3-23. PMTM Hauler Database

4. Review the values in the following fields.

Field	Description
Hauler 1-20, Hauler 21-40, Hauler 41-60	This screen provides 3 tabs allowing you to enter a maximum of 60 entries.
Company Name	Identifies the name of the truck hauling company. Enter a maximum of 10 alphanumeric characters.
Company Code	Identifies the code the driver enters to validate his company. Valid values are 1 to 65535.
Min Driver PIN	Indicates the lowest driver personal identification number for this company code. Valid values are 1 to 65535.
Max Driver PIN	Indicates the highest driver personal identification number for this company code. Valid values are 1 to 65535.
Load Outs Allowed 1-6	Assigns the load out terminals that drivers for the configured company are allowed to perform a haul from. There are 6 checkboxes, which correspond to the 6 load out terminals provided with Tank Manager on the ROC800. When a checkbox is not checked, a driver from the company will not be allowed to start a haul from that load out terminal. The default settings allow all drivers to haul from all load out terminals.

5. Click Apply to save any changes.
6. Proceed to *Section 3.7* to configure the PMTM Enumerated Lists screen.

3.7 PMTM Enumerated Lists

This screen and with the component tabs allow for the configuration of lists that are used for operator entry on the load out terminals. These lists consist of entries (rows), which contain a text string (as shown to the operator) and an associated numerical value, which is stored with the data for a haul. These lists can be used for the following 4 operator entries: Turndown Reject Reasons, Purchases, Destinations, and Disposition types. Any combination of these list types may be configured on this screen on any tab. List types will be sorted and combined appropriately before being presented to the operators.

To access this screen:

1. From the Directory Tree, double-click **User Program.**
2. Double-click one of the following:
   - For the ROC800: **Program #1, PMTM _v409_00_8t4w**.

- For the FB107: **PM Tank Manager**.

3. Do one of the following:
   - For the ROC800: Double-click **Display #233, PMTM Enumerated Lists**
   - For the FB107: Go to **User Display** and double-click **Display #3 – PMTM Enumerated Lists**.

   Note: You may have a different display number. Use the display number that you loaded this screen.

The **PMTM Enumerated Lists** screen displays, showing the Enumerated Lists 1-20, Enumerated Lists 21-40 and Enumerated Lists 41-60 tabs:

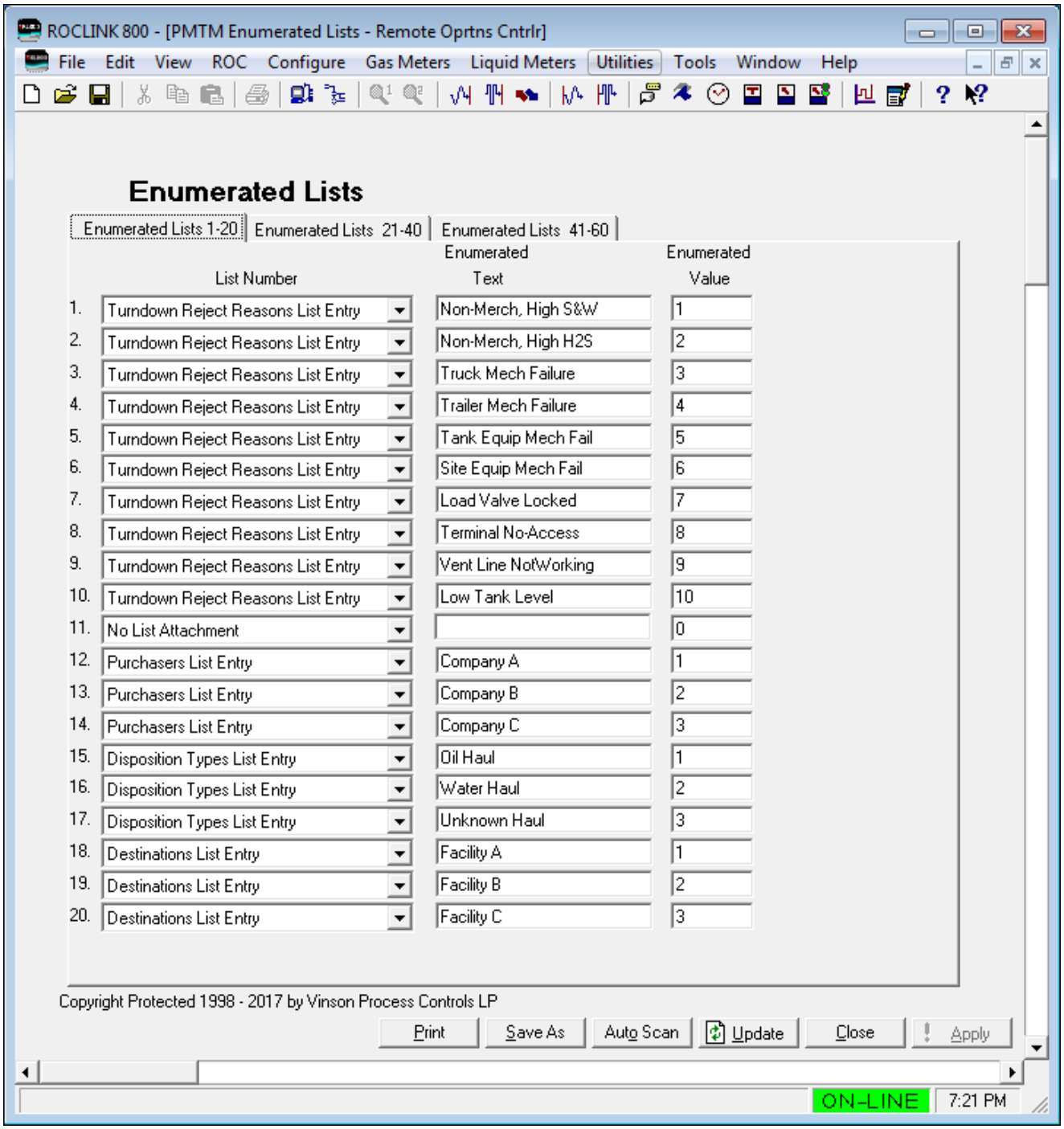


Figure 3-24. PMTM Enumerated Lists

Note: The values shown in the screen above are examples only.

4. Review the values in the following fields.

Field	Description
Enumerated Lists 1-20, Enumerated Lists 21-40, Enumerated Lists 41-60	This screen provides 3 tabs allowing you to enter a maximum of 60 entries.

Field	Description
List Number	Defines the List Entry. Click ▼ to select: ▪ Turndown Reject Reasons List Entry ▪ Purchasers List Entry ▪ Disposition Types List Entry ▪ Destinations List Entry
Enumerated Text	Indicates the text string for the corresponding list entry, which will be shown to the operator in the load out terminal screen.
Enumerated Value	Indicates the numerical value associated with the text string (Enumerated Text). This is the value that will be stored in the haul log.

5. Click Apply to save any changes.

6. Proceed to *Section 3.8* to save your configuration.

3.8 Saving the Configuration

Whenever you modify or change the configuration, it is a good practice to save the final configuration to memory. To save the configuration:

1. Select **ROC** > **Flags**. The Flags screen displays:

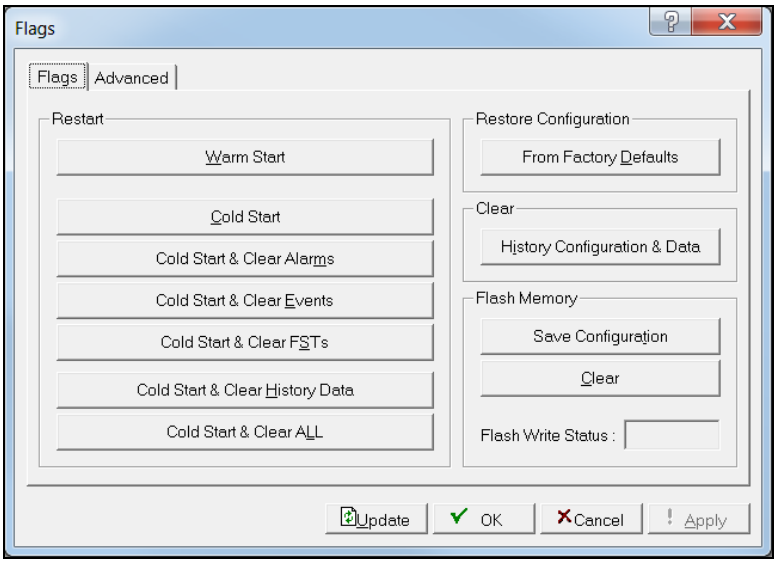


Figure 3-25. Flags (for ROC800)

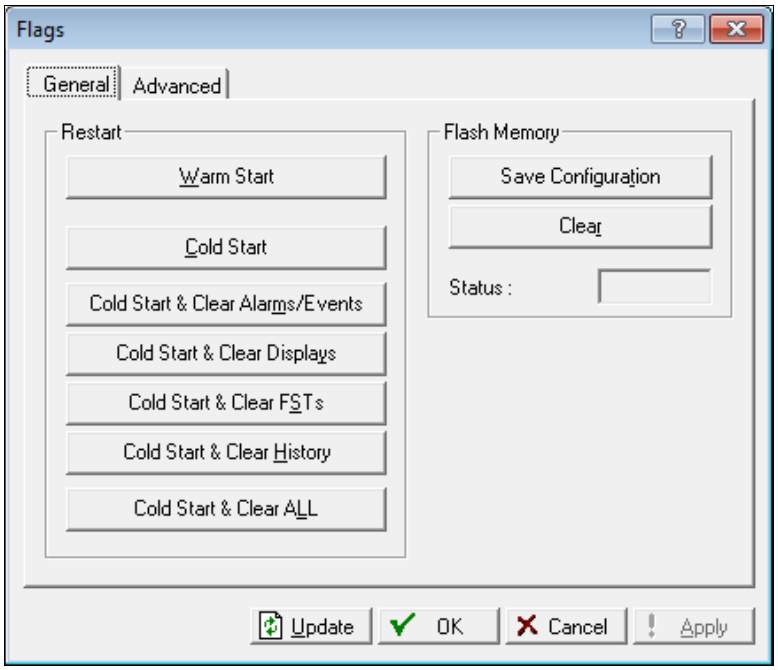


Figure 3-25a. Flags (for FB107)

2. Click **Save Configuration**. A verification message displays:

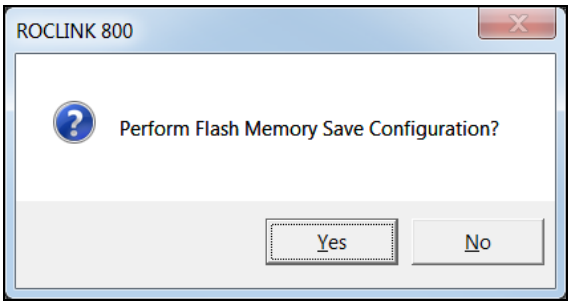


Figure 3-26. Save Verification

3. Click **Yes** to begin the save process. The Flash Write Status field on the Flags screen displays In Progress. When the Save Configuration completes, the Flash Write Status field on the Flags screen displays *Completed*.
4. Click **Update** on the Flags screen. This completes the process of saving your new configuration.

Note: For archive purposes, you should also save this configuration to your PC's hard drive or a removable media (such as a flash drive) using the **File** > **Save Configuration** option on the ROCLINK 800 menu bar.

Chapter 4 – Reference

This section provides tables of information on the user-defined point types the Tank Manager program uses.

The ROC800 and FB107 version of the Tank Manager program uses these point types:

For the ROC800

- Point Type 60 – PMTM Units
- Point Type 196 – PMTM Tanks and Aggregates
- Point Type 197 – PMTM Wells
- Point Type 198 – PMTM Logs
- Point Type 199 – PMTM Haul Ticketing
- Point Type 230 – PMTM Fluid Properties
- Point Type 231 – PMTM Haul Load Outs
- Point Type 232 – PMTM Hauler Database
- Point Type 233 – PMTM Haul Current Values
- Point Type 234 – PMTM Simulator

For the FB107

- Point Type 187 – PMTM Units
- Point Type 178 – PMTM Tanks and Aggregates
- Point Type 179 – PMTM Wells
- Point Type 180 – PMTM Logs
- Point Type 181 – PMTM Haul Ticketing
- Point Type 182 – PMTM Fluid Properties
- Point Type 183 – PMTM Haul Load Outs
- Point Type 184 – PMTM Hauler Database
- Point Type 185 – PMTM Haul Current Values

4.1 Point Type 60/187: PMTM Units

Point type 60 (for the ROC800) or point type 187 (for FB107) defines parameters for unit of measurements. The program supports up to 1 logical for point type 60 (for ROC800) or 1 logical for point type 187 (for FB107).

Point Type 60 (ROC800) or Point Type 187 (FB107): PMTM Units

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Units Point Tag	R/W	User	String10	10	ASCII Chars	Prog Units	4.07.00	Units Point Tag
1	Time General	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the units of Time. Valid values are: **0** = Day **1** = Hr **2** = Min **3** = Sec
2	Pressure	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the units of Pressure. Valid values are: **0** = Psi **1** = kPa **2** = Bar **3** = kg/cm2
3	Temperature	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the units of Temperature. Valid values are: **0** = DegF **1** = DegC
4	Short Linear	R/W	User	UINT8	1	0→2	0	4.07.00	Indicates the short linear units. Valid values are: **0** = Inch **1** = mm **2** = cm
5	Long Linear	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the long linear units. Valid values are: **0** = Feet **1** = Meters
6	Gas Volume	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the volume units. Valid values are: **0** = Mcf **1** = Km3 **2** = Ft3 **3** = M3

Point Type 60 (ROC800) or Point Type 187 (FB107): PMTM Units

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
7	Gas Rate Time	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the gas rate units. Valid values are: **0** = Day **1** = Hr **2** = Min **3** = Sec
8	Liquid Volume	R/W	User	UINT8	1	0→6	0	4.07.00	Indicates the liquid volume units. Valid values are: **0** = Bbl **1** = Mcf **2** = Km3 **3** = Gal **4** = Ft3 **5** = M3 **6** = L
9	Liquid Rate Time	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the liquid rate units. Valid values are: **0** = Day **1** = Hr **2** = Min **3** = Sec
10	Mass Volume	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the mass volume units. Valid values are: **0** = Lb **1** = Kg **2** = Ton **3** = Tonne
11	Mass Rate Time	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the mass rate units of time. Valid values are: **0** = Day **1** = Hr **2** = Min **3** = Sec

Point Type 60 (ROC800) or Point Type 187 (FB107): PMTM Units

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
12	Density	R/W	User	UINT8	1	0→7	0	4.07.00	Indicates the units of density. Valid values are: **0** = Kg/m3 **1** = G/Cm3 **2** = Lb/Ft3 **3** = Lb/Bbl **4** = Lb/Gal **5** = RelDen **6** = API Grav **7** = Kg/L
13	Velocity	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the units of velocity. Valid values are: **0** = Ft/Sec **1** = M/Sec **2** = Ft/Min **3** = M/Min
14	Time General Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Time General Tag
15	Pressure Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Pressure Tag
16	Temperature Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Temperature Tag
17	Short Linear Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Short Linear Tag
18	Long Linear Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Long Linear Tag
19	Gas Volume Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Gas Volume Tag
20	Gas Rate Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Gas Rate Tag
21	Liquid Volume Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Liquid Volume Tag
22	Liquid Rate Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Liquid Rate Tag
23	Mass Volume Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Mass Volume Tag
24	Mass Rate Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Mass Rate Tag
25	Density Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Density Tag
26	Velocity Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Velocity Tag
27	Meter Diff Press	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the units of diff pressure. Valid values are: **0** = InH2O **1** = KPa **2** = mBar
28	Meter Diff Press Tag	R/O	System	String7	7	ASCII Chars		4.07.00	Meter Diff Press Tag
29	Legal Description	R/O	System	String7	7	ASCII Chars		4.07.00	Legal Description

Point Type 60 (ROC800) or Point Type 187 (FB107): PMTM Units

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
30	Next Haul Transaction Number	R/W	Both	UINT32	4	0→4,294,967,295	0	4.07.00	Next Haul Transaction Number
31	Send SRX for Completed Hauls	R/W	User	UINT8	1	0→1	0	4.07.00	Send SRX for Completed Hauls. Valid values are: **0** = No **1** = Yes
32	Clear Haul Logs	R/W	User	UINT8	1	0→1	0	4.07.00	Clears the Haul Logs. Valid values are: **0** = No **1** = Yes
33	Syncing Units from 800L	R/W	User	UINT8	1	0→1	0	4.07.00	Syncing Units from 800L. Valid values are: **0** = No **1** = Yes
34	Retrieve Hard SN	R/W	User	UINT32	4	0→4,294,967,295	0	4.07.02	Used to load a haul log into the detailed viewer, based on the internal record locator serial number.
35	Last Used Hard SN	R/W	User	UINT32	4	0→4,294,967,295	0	4.07.02	Internal record locator used for the last transaction. This value is not published as part of the external facing haul log record.
36	Last Used Trans Num	R/W	User	UINT32	4	0→4,294,967,295	0	4.07.02	The last transaction number presented as part of a haul log record.
37	Turndown List Valid	RO	System	UINT8	1	0→60	0	4.09.00	Turndown List Inst Duplicated
38	Purchaser List Valid	RO	System	UINT8	1	0→60	0	4.09.00	Purchaser List Inst Duplicated
39	Dispo List Valid	RO	System	UINT8	1	0→60	0	4.09.00	Disposition List Inst Duplicated
40	Destin List Valid	RO	System	UINT8	1	0→60	0	4.09.00	Destination List Inst Duplicated
41	Haul Log File Empty	RO	System	UINT8	1	0→1	0	4.09.00	Haul Log File is Empty. Valid values are: **0** = No **1** = Yes
42	Conf MPU B4 Each UDP	RW	User	UINT8	1	0→1	0	4.09.00	Confirm MPU% is OK before each UDP. Valid values are: **0** = No **1** = Yes

Point Type 60 (ROC800) or Point Type 187 (FB107): PMTM Units

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
43	MPU Load% Threshhold	RW	User	UINT8	1	20→100	100	4.09.00	MPU Load% Threshhold (<=)
44	MPU Conf Delay Secs	RW	User	UINT8	1	0→255	0	4.09.00	MPU Load% Confirnation Delay Secs
45	Max Load Delay Secs	RW	User	UINT8	1	0→65535	0	4.09.00	Max Load Delay Secs
46	Ambient Temp Def	RW	User	TLP	3	Any TLP of Float Value	0,0,0	4.09.00	TLP for the site ambient temperature
47	Current Ambient Temp	RW	Both	Float	4	Float Data	0,0	4.09.00	The current value of the site ambient temperature.

4.2 Point Type 196/178: PMTM Tanks and Aggregates

Point type 196 (for ROC800) or point type 178 (for FB107) defines parameters for configuring tanks. The program supports up to 40 logicals of point type 196 (for ROC800) or 8 logicals of point type 178 (for FB107).

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Tank Tag	R/W	User	String10	10	Printable ASCII characters	Tank 1	4.00.00	Indicates a user-defined 10-character identifying tag
1	Tank Gauge Type	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the type of tank gauge. Valid values are **0** (Single Gauge) and **1** (Interfaced gauge; 2 gauges)
2	Tank Primary Fluid	R/W	User	UINT8	1	0→2	0	4.00.00	Indicates the primary fluid for the tank. Valid values are: **0** = Oil (Hydrocarbon) **1** = Water **2** = Both fluids
3	Curr Strap In Use	R/W	System	Float	4	Positive Float Number	1.67	4.00.00	Volume per increment height
4	Qty Equalized Tnks	User	User	1			1	4.00.00	Quantity of tanks for a single gauge
5	Max Tank Capacity	R/W	System	Float	4	Positive Float Number	400	4.00.00	Volume at full capacity
6	Is a Horizontal Tank	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the tank is horizontal. Valid values are **0** (vertical tank) and **1** (horizontal tank with flat sides)
7	Horizontal Tank Diameter Ft	R/W	User	Float	4	Positive Float Number	11.9571	4.00.00	Vertical height of horizontal tank in feet
8	Horizontal Length Ft	R/W	User	Float	4	Positive Float Number	20	4.00.00	Length (flat to flat) of horizontal tank.
9	Tank Contract Hour	R/W	User	UINT8	1	0→ 23	0	4.00.00	Rollover hour for tank

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
10	Lev Gauge Unit	R/W	User	UINT8	1	0→ 3		4.00.00	Indicates the level gauge unit. Valid values are: **0** = Gauger Indicates Volume **1** = Gauger Indicates Long Linear **2** = Gauger Indicates Short Linear **3** = Gauger Indicates Long & Short Linear (2 Values)
11	Prod + Haul Enable Oil	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program calculates production or haul values for water. Valid values are: **0** = Do Not Calc Production or Haul Volumes **1** = Calculate Production or Haul Volumes
12	Prod + Haul Enable Water	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program calculates production or haul values for water. Valid values are: **0** = Do Not Calc Production or Haul Volumes **1** = Calculate Production or Haul Volumes
13	Top Level Gauge TLP	R/W	User	TLP	3	Any TLP of Float Value	Undefined	4.00.00	TLP for gauge value of top fluid
14	Water Level Gauge TLP	R/W	User	TLP	3	Any TLP of Float Value	Undefined	4.00.00	TLP for gauge value of oil/water interface
15	Disp/Transf Meter TLP Oil	R/W	User	TLP	3	Any TLP of Float Value	Undefined	4.00.00	TLP for hydrocarbon (off-premise) disposal
16	Disp/Transf Meter TLP Wtr	R/W	User	TLP	3	Any TLP of Float Value	Undefined	4.00.00	TLP for water (off-premise) disposal
17	Dispos/Transf Mtr Enab Oil	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program enables off-premise disposal metering for oil. Valid values are **0** (No; disable off-premise disposal metering) and **1** (Yes; enable metering)

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
18	Dispos/Transf Mtr Enab Wtr	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program enables off-premise disposal metering for water. Valid values are **0** (No; disable off-premise disposal metering) and **1** (Yes; enable metering)
19	Trans Meter Dest Tank Oil	R/W	None	UINT8	1		0	4.00.00	
20	Trans Meter Dest Tank Wtr	R/W	None	UINT8	1		0	4.00.00	
21	Auto-Detect Hauls Oil	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program can auto-detect hauls for oil. Valid values are **0** (No; disable auto-detection of hauls) and **1** (Yes; enable auto-detection)
22	Auto-Detect Hauls Wtr	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program can auto-detect hauls for water. Valid values are **0** (No; disable auto-detection of hauls) and **1** (Yes; enable auto-detection)
23	Minim Haul Vol Oil	R/W	User	Float	4	Positive Float Number	15	4.00.00	Minimum volume of oil to trigger an auto-detect
24	Minim Haul Vol Wtr	R/W	User	Float	4	Positive Float Number	15	4.00.00	Minimum volume of water to trigger an auto-detect
25	Oil Column Height LLin	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Height (LLin) of Oil Column in Tank
26	Water Column Height Llin	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Height (LLin) of Water Column in Tank
27	Cur Top Gauge Llin	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Height (LLin) of Fluid Column in Tank
28	Level Dampening Method	R/W	User	UINT8	1		0	4.00.00	Method used to dampen
29	Level Dampening Periods	R/W	User	UINT8	1		10	4.00.00	Samples considered in current level
30	Current Volume Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Oil volume in barrels in tank
31	Current Volume Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Water volume in barrels in tank
32	Current Tank Vol All Liquids	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Fluid volume in barrels in tank

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
33	Tdy Opening Volume Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil at contract hour
34	Tdy Opening Volume H2O	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of water at contract hour
35	Cycle Open Low Vol Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil at end of previous haul
36	Cycle Open Low Vol Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of water at end of previous haul
37	Cycle High Vol Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Greatest volume in barrels of oil in tank since previous haul
38	Cycle High Vol Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Greatest volume in barrels of oil in tank since previous haul
39	Vol Produced Today Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil produced into tank today
40	Vol Produced Today Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil produced into tank today
41	Vol Prod Yday Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil produced into tank yesterday
42	Vol Prod Yday Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of water produced into tank yesterday
43	Vol Hauled Today Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil hauled from tank today
44	Vol Hauled Today Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of water hauled from tank today
45	Vol Hauled Yday Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of oil hauled from tank yesterday
46	Vol Hauled Yday Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume in barrels of water hauled from tank yesterday
47	Times Hauled Tdy Oil	R/W	System	UINT16	2	0→65535		4.00.00	Number of oil hauls today
48	Times Hauled Tdy Wtr	R/W	System	UINT16	2	0→65535		4.00.00	Number of water hauls today
49	Times Hauled Yday Oil	R/W	System	UINT16	2	0→65535		4.00.00	Number of oil hauls yesterday
50	Time Hauled Yday Wtr	R/W	System	UINT16	2	0→65535		4.00.00	Number of water hauls yesterday
51	VolMetered Tdy Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume of oil disposal metered today
52	VolMetered Tdy Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume of water disposal metered today

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
53	Vol Metered Yday Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume of oil disposal metered yesterday
54	Vol Metered Yday Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume of oil disposal metered yesterday
55	Cur Accnt Mark Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Internal usage – production mark for oil
56	Cur Accnt Mark Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Internal usage – production mark for water
57	Haul InProg Flag Oil	R/W	System	UINT8	1	0→1		4.00.00	Indicates whether an oil haul is in progress. Valid values are **0** (No haul in progress) and **1** (Haul in progress)
58	Haul InProg Flag Wtr	R/W	System	UINT8	1	0→1		4.00.00	Indicates whether a water haul is in progress. Valid values are **0** (No haul in progress) and **1** (Haul in progress)
59	Vol Shortage Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Oil volume below highest measured for this cycle.
60	Vol Shortage Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Water volume below highest measured for this cycle
61	Max Vol Per Haul Oil	R/W	User	Float	4	Zero or Positive Float Data	200	4.00.00	Maximum oil volume for single auto-detect ticket
62	Max Vol Per Haul Wtr	R/W	User	Float	4	Zero or Positive Float Data	180	4.00.00	Maximum water volume for single auto-detect ticket
63	Gage Max EU	R/W	User	Float	4	Zero or Positive Float Data	180	4.00.00	Maximum valid EUs for Gauger
64	Gauger Code Oil	R/W	System	UINT8	1	0→15 Bitwise	0	4.00.00	Indicates the gauger status for oil. Valid values are: **Bit 0** = Gauger Rate of Change > Limit **Bit 1** = Change in Single Scan Exceeded Max **Bit 2** = Cur Gauger Value is Out of Range **Bit 3** = High Alarm

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
65	Gauger Code Wtr	R/W	System	UINT8	1	0→15 Bitwise	0	4.00.00	Indicates the gauger status for water. Valid values are: **Bit 0** = Gauger Rate of Change > Limit **Bit 1** = Change in Single Scan Exceeded Max **Bit 2** = Cur Gauger Value is Out of Range **Bit 3** = High Alarm
66	Haul Opening Reqd Oil	R/W	System	UINT8	1	0→1		4.07.02	Haul Opening Required Oil
67	Haul Opening Reqd Oil	R/W	System	UINT8	1	0→1		4.07.02	Haul Opening Required Wtr
68	Cur Pct of Tank Capacity	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Current fluid volume percent of maximum volume
69	MxLevelChg Vol/Min	R/W	User	UINT8	1	0	0	4.00.00	Maximum valid level rate change (in inches/minute)
70	Max 1Scan Vol Chnge	R/W	User	UINT8	1	0	0	4.00.00	Maximum level change in value for a single scan
71	Liquids Flags for Tanks	R/W	User	UINT8	1	0,1,2,8,16	0	4.00.00	Activates system processing. Valid values are: **0** = No action **1** = Force end of day **2** = Force end of month **8** = Cold start tank **16** = Clear Haul Log →Strapping Table
72	Cur Level LLin Oil	R/O	System	UINT8	1	0→255		4.00.00	Current level of oil in feet
73	Cur Level LLin Wtr	R/O	System	UINT8	1	0→255		4.00.00	Current level of water in feet
74	Cur Level LLin Top	R/O	System	UINT8	1	0→255		4.00.00	Current top (fluid) level in feet
75	Cur Level SLin Oil	R/O	System	UINT8	1	0→11		4.00.00	Current oil level (in inches)
76	Cur Level SLin Wtr	R/O	System	UINT8	1	0→11		4.00.00	Current water level (in inches)
77	Cur Level SLin Top	R/O	System	UINT8	1	0→11		4.00.00	Current top (fluid) level (in inches)
78	Cur Level FLin Oil	R/O	System	UINT8	1	0→3		4.00.00	Current oil level (in quarter inches)
79	Cur Level FLin Wtr	R/O	System	UINT8	1	0→3		4.00.00	Current water level (in quarter inches)

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
80	Cur Level SSLin Top	R/O	System	UINT8	1	0→3		4.00.00	Current top (fluid) level (in quarter inches)
81	Level in Short Linear Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Current oil level (in inches)
82	Level in Short Linear Wtr	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Current water level (in inches)
83	Level in Short Linear Top	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Current top (fluid) level (in inches)
84	Record Wtr Hld-OilHl	R/W	User	UINT8	1	0→1	0	4.09.02	Record Water Volume Hauled During an Oil Haul: **0** = No **1** = Yes
85	Record Oil Hld-WtrHl	R/W	User	UINT8	1	0→1	0	4.09.02	Record Oil Volume Hauled During a Water Haul: **0** = No **1** = Yes
86	Prod Vol Accum Oil	R/W	System	UINT32	4	0→4,294,967,295		4.00.00	Accumulated oil production (in barrels)
87	Prod Vol Accum Wtr	R/W	System	UINT32	4	0→4,294,967,295		4.00.00	Accumulated water production (in barrels)
88	Prod Vol Acc Modulus Oil	R/W	System	Float	4	0→1 Float Data		4.00.00	Fractional part of accumulated oil production
89	Prod Vol Acc Modulus Wtr	R/W	System	Float	4	0→1 Float Data		4.00.00	Fractional part of accumulated water production
90	Haul Vol Accum Oil	R/W	System	UINT32	4	0→4,294,967,295		4.00.00	Accumuiated oil haul (in barrels)
91	Haul Vol Accum Wtr	R/W	System	UINT32	4	0→4,294,967,295		4.00.00	Accumuiated water haul (in barrels)
92	Haul Vol Acc Modulus Oil	R/W	System	Float	4	0→1 Float Data		4.00.00	Fractional part of accumulated oil haul (in barrels)
93	Haul Vol Acc Modulus Wtr	R/W	System	Float	4	0→1 Float Data		4.00.00	Fractional part of accumulated water haul (in barrels)
94	Vol Prod TMonth Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oil volume (in barrels) produced into tank this month
95	Vol Prod TMonth Wtr	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Water volume (in barrels) produced into tank this month

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
96	Vol Prod PMonth Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oil volume (in barrels) produced into tank previous month
97	Vol Prod PMonth Wtr	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Water volume (in barrels) produced into tank previous month
98	Use Infer Prod WHaul Oil	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program calculates and adds an inferred oil production volume. Valid values are **0** (do not calculate inferred production volume) and **1** (calculate and add inferred production volume)
99	Use Infer Prod WHaul Wtr	R/W	User	UINT8	1	0→ 1	0	4.00.00	Indicates whether the program calculates and adds an inferred water production volume. Valid values are **0** (do not calculate inferred production volume) and **1** (calculate and add inferred production volume)
100	Infer Prod Vol WHaul Tdy Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Inferred oil volume produced during hauls today
101	Infer Prod Vol WHaul Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Inferred water volume produced during hauls today
102	Infer Prod Vol WHaul Ydy Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Inferred oil volume produced during hauls yesterday
103	Infer Prod Vol WHaul Ydy Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Inferred water volume produced during hauls yesterday
104	Is Tank or Aggr or hMtr Oil	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates tank type. Valid values are: **0** = Tank **1** = Tank aggregate **2** = Meter for hauling only (no level gauges)
105	Tank/Aggr Num Oil	R/W	User	UINT8	1	0→255	0	4.00.00	Numerical designation for oil aggregate
106	Tank/Aggr Num Wtr	R/W	User	UINT8	1	0→255	0	4.00.00	Numerical designation for water aggregate
107	Member of AggrNum Oil	R/W	User	UINT8	1		0	4.00.00	Aggregate number for oil in tank

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
108	Member of AggrNum Wtr	R/W	User	UINT8	1		0	4.00.00	Aggregate number for water in tank
109	Haul Meas Method Oil	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the method for measuring hauled oil. Valid values are **0** (use change in tank level) and **1** (use ROC800L meter instance)
110	Haul Meas Method Wtr	R/W	User	UINT8	1	0 →2	0	4.00.00	Indicates the method for measuring hauled water. Valid values are: **0** = Use change in tank level **1** = Use ROC800L meter instance **2** = Use Water Meter (Pulse Input)
111	PM Haul Obj Num Oil	R/W	User	UINT8	1	0 →255	0	4.00.00	Unique number for driver's selection to haul
112	PM Haul Obj Num Wtr	R/W	User	UINT8	1	0→255	0	4.00.00	Unique number for driver's selection to haul
113	Actual Haul Mtr TLP Oil	R/W	User	TLP	3	Any UDP 204 instance	Undefined	4.00.00	TLP of the ROC800L meter
114	Actual Haul Mtr TLP Wtr	R/W	User	TLP	3	Any UDP 204 or PI instance	Undefined	4.00.00	TLP of the ROC800L meter or water meter (PI)
115	Clear Haul History Oil	R/W	None	UINT8	1		0	4.00.00	None – use Tank Flags, parm 71
116	Clear Haul History Wtr	R/W	None	UINT8	1		0	4.00.00	None – use Tank Flags, parm 71
117	Cur Contract Day	R/W	System	UINT8				4.00.00	System's current contract day for tank
118	Cur Contract Month	R/W	System	UINT8				4.00.00	System's current contract month for tank
119	Cur Stock Slope Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Current oil level trend (in inches/minute)
120	Cur Stock Slope Wtr	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Current water level trend (in inches/minute)
121	Proc Inv Mark Volume Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume marker for beginning of oil haul
122	Proc Inv Mark Volume Water	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume marker for beginning of water haul

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
123	Input Level LLin Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oil level value without faults or averaging
124	Input Level LLin Water	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Water level value without faults or averaging
125	Raw Level LLin Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oil level value without averaging
126	Raw Level LLin Water	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Water level value without averaging
127	Raw Inventory Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oil volume without Gauger averaging
128	Raw Inventory Water	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Water volume without Gauger averaging
129	Inventory Damp POT Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Summation of oil volumes for averaging
130	Inventory Damp POT Water	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Summation of water volumes for averaging
131	Inventory Damp Samp Oil	R/W	System	UINT8	1			4.00.00	Number of oil volume samples in current average
132	Inventory Damp Samp Water	R/O	System	UINT8	1			4.00.00	Number of water volume samples in current average
133	Inventory Oldest Avg Oil	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oldest oil volume sample value in average
134	Inventory Oldest Avg Water	R/O	System	Float	4	Zero or Positive Float Data		4.00.00	Oldest water volume sample value in average
135	Inventory Damp Ptr Oil	R/O	System	UINT8	1			4.00.00	Pointer for current oil sample placement
136	Inventory Damp Ptr Water	R/O	System	UINT8	1			4.00.00	Pointer for current water sample placement
137	Load Rack Inst Num Oil	R/W	User	UINT8	1	0→6 (0→32 bitweighted)	0	4.00.00	Rack number where tank fluid can be hauled
138	Load Rank Inst Num Wtr	R/W	User	UINT8	1	0→6 (0→32 bitweighted)	0	4.00.00	Rack number where tank fluid can be hauled
139	Log Hauls on Day Start/End	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates how the system handles logging. Valid values are **0** (log on the day haul started) and **1** (log on day haul ended)
140	Cur Haul Volume – Oil	R/W	User	Float	4	Zero or Positive Float Data		4.00.00	Volume of current oil haul (in barrels)

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
141	Cur Haul Volume – Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume of current water haul (in barrels)
142	Qty Hauls This Month Oil	R/W	System	UINT16	2			4.00.00	Number of oil hauls this month
143	Qty Hauls This Month Wtr	R/W	System	UINT16	2			4.00.00	Number of water hauls this month
144	Qty Hauls Prev Month Oil	R/W	System	UINT16	2			4.00.00	Number of oil hauls the previous month
145	Qty Hauls Prev Month Wtr	R/W	System	UINT16	2			4.00.00	Number of water hauls the previous month
146	Qty Hauls Accum Oil	R/W	System	UINT16	2			4.00.00	Accumulated number of oil hauls
147	Qty Hauls Accum Wtr	R/W	System	UINT16	2			4.00.00	Accumulated number of water hauls
148	Vol Hauled This Month Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume (in barrels) of oil hauled this month
149	Vol Hauled This Month Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume (in barrels) of water hauled this month
150	Vol Hauled Prev Month Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume (in barrels) of oil hauled the previous month
151	Vol Hauled Prev Month Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Volume (in barrels) of water hauled the previous month
152	Vol Hauled Accum Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Accumulated oil volume hauled (in barrels)
153	Vol Hauled Accum Wtr	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Accumulated water volume hauled (in barrels)
154	Prev Haul InProg Flag – Oil	R/W	System	UINT8	1			4.00.00	Oil haul was in progress on previous scan
155	Prev Haul InProg Flag – Wtr	R/W	System	UINT8	1			4.00.00	Water haul was in progress on previous scan
156	Tank Accounting Code	R/W	User	String10	10			4.00.00	User accounting system identifier for tank
157	Max Logicals	R/O	System	UINT8	1			4.00.00	Number of tank logicals in this version of the program

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
158	Agr Mode – Track Member Vals Oil	R/W	User	UINT8	1	0→1	1	4.01.00	Indicates how the system handles oil aggregates.Valid values are **0** (aggregate is "supertank": sum of levels hauled) and **1** (aggregate accumulates production and hauls of members) **Note**: Not used in the FB107.
159	Agr Mode – Track Member Vals Water	R/W	User	UINT8	1	0→1	1	4.01.00	Indicates how the system handles water aggregates.Valid values are **0** (aggregate is "supertank": sum of levels hauled) and **1** (aggregate accumulates production and hauls of members) **Note**: Not used in the FB107.
160	Start of Day Level Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Oil level (column feet) at contact hour **Note**: Not used in the FB107.
161	Start of Day Level Water	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Water level (column feet) at contact hour **Note**: Not used in the FB107.
162	Start of Day Level Tank	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Fluid level (column feet) at contact hour **Note**: Not used in the FB107.
163	Enable Level Alarming	R/W	User	UINT8	1	0→1	1	4.06.00	Enable Level Alarming
164	Tank Level Alarm Code	R/W	System	UINT8	1	0→24	1	4.06.00	Indicates tank level alarm codes. Valid values are: **Bit 3** = High Alarm **Bit 4** = Low Alarm
165	Tank High Alarm Level	R/W	System	Float	4	Zero or Positive Float Data	19.00	4.06.00	Tank High Alarm Level
166	Tank Low Alarm Level	R/W	System	Float	4	Zero or Positive Float Data	1.00	4.06.00	Tank Low Alarm Level
167	Tank Level Alarm Deadband	R/W	System	Float	4	Zero or Positive Float Data	1.00	4.06.00	Tank Level Alarm Deadband
168	Oil High Alarm Level	R/W	System	Float	4	Zero or Positive Float Data	0.50	4.06.00	Oil High Alarm Level

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
169	Water High Alarm Level	R/W	System	Float	4	Zero or Positive Float Data	0.50	4.06.00	Water High Alarm Level
170	Fluid Level Alarm Deadband	R/W	System	Float	4	Zero or Positive Float Data	0.25	4.06.00	Fluid Level Alarm Deadband
171	Gauger Deviation Error Reset (Mins)	R/W	User	UINT16	2	0→65535	60	4.06.00	Gauger Deviation Error Reset (Mins)
172	Vol Max Integral per Minute	R/W	User	Float	4	Zero or Positive Float Data	0.00	4.07.00	Vol Max Integral per Minute
173	Vol Max Vol Rate of Chg	R/W	User	Float	4	Zero or Positive Float Data	0.00	4.07.00	Vol Max Vol Rate of Chg
174	Auto-Haul in Progress - Oil	R/W	Both	UINT8	1	0→1	0	4.07.00	Indicates Auto-Haul in Progress – Oil codes. Valid values are: **0** = No **1** = Yes
175	Auto-Haul in Progress - Wtr	R/W	Both	UINT8	1	0→1	0	4.07.00	Indicates Auto-Haul in Progress – Wtr codes. Valid values are: **0** = No **1** = Yes
176	Prev Scan AutoHauling Oil	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates Prev Scan Auto-Haul in Progress – Oil codes. Valid values are: **0** = No **1** = Yes
177	Prev Scan AutoHauling Wtr	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates Prev Scan Auto-Haul in Progress – Wtr codes. Valid values are: **0** = No **1** = Yes
178	Agr Member Hauling Oil	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates Agr Member Hauling Oil codes. Valid values are: **0** = No **1** = Yes
179	Agr Member Hauling Wtr	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates Agr Member Hauling Wtr codes. Valid values are: **0** = No **1** = Yes
180	Agr Memb PrevScan Haul Oil	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates Agr Member Prev Scan Haul Oil. Valid values are: **0** = No **1** = Yes

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
181	Agr Memb PrevScan Haul Wtr	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates Agr Member Prev Scan Haul Wtr. Valid values are: **0** = No **1** = Yes
182	Haul Inactivity Mins Preset Oil	R/W	User	Float	4	Zero or Positive Float Data	15.0	4.07.00	Haul Inactivity Mins Preset Oil
183	Haul Inactivity Mins Preset Wtr	R/W	User	Float	4	Zero or Positive Float Data	15.0	4.07.00	Haul Inactivity Mins Preset Wtr
184	Haul Inactivity Mins Remain Oil	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Haul Inactivity Mins Remain Oil
186	Fill Rate prDay Tank	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Fill Rate per Day Tank
187	Prod Rate perDay Oil	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Prod Rate per Day Oil
188	Prod Rate perDay Wtr	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Prod Rate per Day Water
189	Hours Until HI Level	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Hours Until High Alarm Level
190	Tank Description	R/W	User	String20	20	Printable ASCII Characters		4.09.00	Tank Description for BLM
191	Load Line Elevation	R/W	System	Float	4	Zero or Positive Float Data	12.0	4.09.00	Load Line Elevation from Bottom of Tank
192	Shrinkage This Cycle	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss This Cycle
193	Shrinkage Prev Cycle	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss Previous Cycle
194	Shrinkage/Loss Today	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss Today
195	Shrinkage Prev Day	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss Previous Day
196	Shrinkage This Month	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss This Month
197	Shrinkage Prev Month	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss Previous Month
198	Shrinkage Accum	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Shrinkage/Loss Accumulation
199	Stabiliz Preset Mins	R/W	User	Float	4	Zero or Positive Float Data	15.0	4.09.00	Stabilization Timer Preset Minutes

Point Type 196 (ROC800) or Point Type 178 (FB107): PMTM Tanks and Aggregates

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
200	Stabiliz Remain Mins	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Stabilization Timer Remaining Minutes
201	Shrinkage Calc Switch	R/W	User	UINT8	1	0→1	0	4.09.00	Shrinkage Accumulation Config Switch. Valid values are: **0** = Do Not Accumulate Shrinkage **1** = Accumulate Shrinkage **2** = Accumulate Shrinkage and Add to Production

4.3 Point Type 197/179: PMTM Wells

Point type 197 (for ROC800) or point type 179 (for FB107) defines parameters for configuring the well and aggregate allocations. The program supports up to 12 logicals of point type 197 (for ROC800) or 4 logicals of point type 179 (for FB107).

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Well ID	R/W	User	String10		Printable ASCII characters	Well 1	4.00.00	Well identifier
1	Liquid Flags	R/W	User	UINT8		0,1,2,8,16,32,64	0	4.00.00	Various system processing flags. Valid values are: **0** = No action **1** = Force End of Day **2** = Force End of Month **8** = Cold Start Well Accumulations **16** = Roll over month GLRs **32** = Initiate new 3-day GLR **64** = Cold start GLRs
2	Tanks Where Meas Oil 1	R/O	System	UINT16		0→16	0	4.00.00	Tank instance where oil is sent (1-16)
3	Tanks Where Meas Oil 2	R/O	System	UINT16		0→16	0	4.00.00	Tank instance where oil is sent (17-24)
4	Tanks Where Meas Oil 3	R/O	System	UINT16		0→16	0	4.00.00	Tank instance where oil is sent (25-32)
5	Tanks Where Meas Wtr 1	R/O	System	UINT16		0→16	0	4.00.00	Tank instance where water is sent (1-16)
6	Tanks Where Meas Wtr 2	R/O	System	UINT16		0→16	0	4.00.00	Tank instance where water is sent (17-24)
7						0→16		4.00.00	Tank instance where water is sent (25-32)
8	WTot Oil Prod Today	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production allocated to well today (in barrels)
9	WTot H2O Prod Today	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production allocated to well today (in barrels)
10	WTot Oil Prod Yday	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production allocated to well yesterday (in barrels)
11	WTot H2O Prod Yday	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production allocated to well yesterday (in barrels)

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
12	WTotal Oil Produced	R/W	System	UINT32		Zero or Positive Float Data	0	4.00.00	Accumlated oil production allocated to well
13	WTotal H2O Produced	R/W	System	UINT32		Zero or Positive Float Data	0	4.00.00	Fractional oil production allocated to well
14	WTotl Oil Prod Modul	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Accumulated water production allocated to well
15	WTot H2O Prod Modul	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Fractional water production allocated to well
16	WTot Oil Hauled Today	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil haul allocated to well today (in barrels)
17	WTot H2O Hauled Today	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water haul allocated to well today (in barrels)
18	WTot Oil Hauled Yday	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil haul allocated to well yesterday (in barrels)
19	WTot H2O Hauled Yday	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water haul allocated to well yesterday (in barrels)
20	WTotal Oil Hauled	R/W	System	UINT32		Zero or Positive Float Data	0	4.00.00	Accumulated oil haul allocated to well
21	WTotal H2O Hauled	R/W	System	UINT32		Zero or Positive Float Data	0	4.00.00	Fractional oil haul allocated to well
22	WTot Oil Haul Modul	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Accumulated water haul allocated to well
23	WTot H2O Haul Modul	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Fractional water haul allocated to well
24	WTot Oil Mtrd Today	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil disposal allocated to well today (in barrels)
25	WTot H2O Mtrd Today	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water disposal allocated to well today (in barrels)
26	WTot Oil Mtrd Yday	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil disposal allocated to well yesterday (in barrels)
27	WTot H2O Mtrd Yday	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water disposal allocated to well yesterday (in barrels)
28	WTotal Oil Metered	R/W	System	UINT32		Zero or Positive Float Data	0	4.00.00	Accumulated oil disposal allocated to well
29	WTotal H2O Metered	R/W	System	UINT32		Zero or Positive Float Data	0	4.00.00	Fractional oil disposal allocated to well
30	WTot Oil Mtrd Modul	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Accumulated water disposal allocated to well

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
31	WTot H2O Mtrd Modul	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Fractional water disposal allocated to well
32	Avg Oil Prd VPD TMon	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Avg Daily Oil Production This Month
33	Avg H2O Prd VPD TMon	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Avg Daily Water Production This Month
34	Avg Oil Prd VPD PMon	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Avg Daily Oil Production Prev Month
35	Avg H2O Prd VPD PMon	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Avg Daily Water Production Prev Month
36	WTot GOR This Month	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Calculated gas:oil ratio this month
37	WTot GWR This Month	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Calculated gas:water ratio this month
38	WTot GOR Prev Month	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Calculated gas:oil ratio previous month
39	WTot GWR Prev Month	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Calculated gas:water ratio previous month
40	WTot GLR This Month	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Calculated gas:liquid ratio this month
41	WTot GLR Prev Month	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Calculated gas:liquid ratio previous month
42	Gas Start Vol TMon	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Gas accumulated mark of meter at start of month
43	Future	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Future
44	Future	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Future
45	Future	R/O	System	Float		Zero or Positive Float Data	0	4.00.00	Future
46	Future	R/O	System	Float		Zero or Positive Float Data	0	4.00.00	Future
47	Future	R/O	System	Float		Zero or Positive Float Data	0	4.00.00	Future
48	Future	R/O	System	Float		Zero or Positive Float Data	0	4.00.00	Future
49	Future	R/O	System	Float		Zero or Positive Float Data	0	4.00.00	Future

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
50	Well Allocation Method	R/W	User	UINT8		0→3	0	4.00.00	Indicates the method for allocating production. Valid values are: **0** = GLRs multiplied by allocation percentage multiplied by gas volume (normalized) **1** = Straight GLRs multiplied by allocation percent (no gas factoring) **2** = Use manual GLRs **3** = Use production separator metering
51	Manual Gas Oil Ratio	R/W	User	Float		Positive Float Number	100	4.00.00	Gas-to-oil ratio used to determine production allocation volume
52	Manual Gas Water Ratio	R/W	User	Float		Positive Float Number	100	4.00.00	Gas-to-water ratio used to determine production allocation volume
53	Manual Gas Liquid Ratio	R/W	User	Float		Positive Float Number	50	4.00.00	Gas-to-liquid ratio used to determine production allocation volume
54	Seconds This Month	R/W	System	UINT32		0→2,678,400	0	4.00.00	Serial seconds elapsed this month
55	Available UINT32 Param 1	R/W	User	Float		0	0	4.00.00	
56	This Month Gas Prod	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Gas production this month
57	TSD Setpt Holder	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Setpoint holder for action block TSDs
58	Well Prod This Month Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production allocated to well this month (in barrels)
59	Well Prod This Month Water	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production allocated to well this month (in barrels)
60	Well Prod Prev Month Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production allocated to well previous month (in barrels)
61	Well Prod Prev Month Water	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production allocated to well previous month (in barrels)
62	Well Gas Values TLP	R/W	User	TLP		Any ROC TLP	Undefined	4.00.00	TLP of gas volume
63	Max Logicals	R/O	System	UINT8		0→12	0	4.00.00	Number of well logical in this version of the program

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
64	Well Contract Hour	R/W	User	UINT8		0→23	0	4.00.00	Rollover hour for well
65	Cur Contract Day - *Var*	R/W	System	UINT8		0→31	0	4.00.00	Current contract day for well
66	Cur Contract Month - *Var*	R/W	System	UINT8		0→12	0	4.00.00	Current contract month for well
67	Enable Prod Metering Oil	R/W	User	UINT8		0→1	0	4.00.00	Enables separator production metering for oil. Valid values are **0** (disable separator production metering) and **1** (enable separator production metering).
68	Enable Prod Metering Wtr	R/W	User	UINT8		0→1	0	4.00.00	Enables separator production metering for oil. Valid values are **0** (disable separator production metering) and **1** (enable separator production metering).
69	Prod Meter Def Oil	R/W	User	TLP		Any ROC TLP	Undefined	4.00.00	TLP of oil production meter
70	Prod Meter Def Wtr	R/W	User	TLP		Any ROC TLP	Undefined	4.00.00	TLP of water production meter
71	Prod Meter Units Oil	R/W	User	UINT8		0→3	0	4.00.00	Indicates the oil production meter units. Valid values are: **0** = Barrels per minute **1**= Barrels per hour **2** = Barrels per day **3** = Production meter is a totalizer
72	Prod Meter Units Wtr	R/W	User	UINT8		0→3	0	4.00.00	Indicates the oil production meter units. Valid values are: **0** = Barrels per minute **1**= Barrels per hour **2** = Barrels per day **3** = Production meter is a totalizer
73	Max Valid Rate VPM Oil	R/W	User	Float		Positive Float Number	10	4.00.00	Maximum allowable oil production meter rate
74	Max Valid Rate VPM Wtr	R/W	User	Float		Positive Float Number	10	4.00.00	Maximum allowable water production meter rate
75	Haul to Haul Volume Oil	R/W		Float		Zero or Positive Float Data	0	4.00.00	Oil volume accumulated since previous haul end
76	Haul to Haul Volume Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water volume accumulated since previous haul end

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
77	Calcd Aggr Alloc Pct Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Allocation percentage calculated by production meter compare
78	Calcd Aggr Alloc Pct Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Allocation percentage calculated by production meter compare
79	Enable Alloc Pct Upd Oil	R/W	User	UINT8		0→1	0	4.00.00	Enables allocation percent calculation for oil. Valid values are **0** (disable allocation percentage calculation) and **1** (enable allocation percentage calculation).
80	Enable Alloc Pct Upd Wtr	R/W	User	UINT8		0→1	0	4.00.00	Enables allocation percent calculation for water. Valid values are **0** (disable allocation percentage calculation) and **1** (enable allocation percentage calculation).
81	Well Hauled TMonth Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil haul allocated to well this month (in barrels)
82	Well Hauled TMonth Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water haul allocated to well this month (in barrels)
83	Well Hauled PMonth Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil haul allocated to well previous month (in barrels)
84	Well Hauled PMonth Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water haul allocated to well previous month (in barrels)
85	Well Disposed TMonth Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water disposal allocated to well this month (in barrels)
86	Well Disposed PMonth Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water disposal allocated to well previous month (in barrels)
87	Separ Prod Today Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production meter volume today
88	Separ Prod Today Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production meter volume today
89	Separ Prod Yday Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production meter volume yesterday
90	Separ Prod Yday Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production meter volume yesterday
91	Separ Prod TMon Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production meter volume this month

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
92	Separ Prod TMon Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production meter volume this month
93	Separ Prod PMon Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil production meter volume previous month
94	Separ Prod PMon Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water production meter volume previous month
95	Separ Prod Accum Oil	R/W	System	UINT32		0→4,294,967,295	0	4.00.00	Accumulated oil production meter volume
96	Separ Prod Accum Wtr	R/W	System	UINT32		0→4,294,967,295	0	4.00.00	Accumulated water production meter volume
97	Separ Prod AcModu Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Accumulated oil production meter volume
98	Separ Prod AcModu Wtr	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Accumulated oil production meter volume
99	Today Seconds Overranged Oil	R/W	System	UINT32		0→86400	0	4.00.00	Seconds oil production meter overranged today
100	Today Seconds Overranged Wt	R/W	System	UINT32		0→86400	0	4.00.00	Seconds water production meter overranged today
101	Yday Seconds Overranged Oil	R/W	System	UINT32		0→86400	0	4.00.00	Seconds oil production meter overranged yesterday
102	Yday Seconds Overranged Wtr	R/W	System	UINT32		0→86400	0	4.00.00	Seconds water production meter overranged yesterday
103	Well Status	R/W	System	UINT8		Future	0	4.00.00	Well permissive/shutdown status
104	Well Valve PID/DO Def	R/W	User	TLP		Any ROC PID or DO pt	Undefined	4.00.00	Well shutdown valve IO definition
105	Simulator Daily Gas MMCF	R/W	User	UINT16		0→65535	0	4.00.00	Simulated well gas rate
106	Simulator Daily Oil Prod	R/W	User	UINT16		0→65535	0	4.00.00	Simulated well oil production rate (in barrels per day)
107	Simulator Daily Water Prod	R/W	User	UINT16		0→65535	0	4.00.00	Simulated well water production rate (in barrels per day)
108	Enable Well Simulate	R/W	User	UINT16		0→1	0	4.00.00	Enables well simulation. Valid values are **0** (disable well simulation) and **1** (enable wel simulation).
109	Sim Target Tank for Oil	R/W	User	UINT8		0→24	0	4.00.00	Target tank instance receiving well oil production

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
110	Sim Target Tank for Water	R/W	User	UINT8		0→24	0	4.00.00	Target tank instance receiving well water production
111	Sim Cur Tank for Oil	R/W	System	UINT8		0→24	0	4.00.00	Current tank instance receiving well oil production
112	Sim Cur Tank for Water	R/W	System	UINT8		0→24	0	4.00.00	Current tank instance receiving well water production
113	2nd Enable Prod Meter Wtr	R/W	User	UINT8		0→1	0	4.00.00	Enables second separator production metering for water. Valid values are **0** (disable second separator) and **1** (enable second separator).
114	2nd Prod Meter Def Wtr	R/W	User	TLP		Any ROC TLP	Undefined	4.00.00	TLP of second water production meter
115	2nd Prod Meter Units Wtr	R/W	User	UINT8		0→3	0	4.00.00	Indicates the unit of the second water production meter. Valid values are: **0** = Barrels per minute **1** = Barrels per hour **2** = Barrels per day **3** = Production meter is a totalizer
116	2nd Max Valid Rate VPM Wtr	R/W	User	Float		Positive Float Number	10	4.00.00	Maximum allowable second water production meter rate
117	2nd Tday Secs Overranged Wtr	R/W	System	UINT32		0→86400	0	4.00.00	Seconds second water production meter overranged today
118	2nd Yday Secs Overranged Wtr	R/W	System	UINT32		0→86400	0	4.00.00	Seconds second water production meter overranged yesterday
119	GLR This Month Oil Vol	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil volume used in this month's GLR calculation
120	GLR This Month Wtr Vol	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water volume used in this month's GLR calculation
121	Allocation Source Tank Oil	R/W	User	UINT8		0→24	0	4.00.00	Tank/aggregate into which oil is produced
122	Allocation Source Tank Water	R/W	User	UINT8		0→24	0	4.00.00	Tank/aggregate into which water is produced
123	Allocation Pct Oil	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Oil manual allocation percentage

Point Type 197 (ROC800) or Point Type 179 (FB107): PMTM Wells

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
124	Allocation Pct Water	R/W	System	Float		Zero or Positive Float Data	0	4.00.00	Water manual allocation percentage
125	User Prog Watchdog Timer	R/O	System	UINT16		0→65535	0	4.00.00	User program continuous counter **Note**: Not used in the FB107
126	Well Status Text	R/O	System	AC		Printable ASCII characters	" "	4.02.00	First-out tag for any associated PMSC action block.
127	Well PMSC Trip Code	R/W	User	UINT8		0→148	0	4.02.00	Trip code for use with associated PMSC control logic.
128	PM Diag Pt Def Oil	R/W	User	TLP		Any ROC TLP	Undefined	4.09.00	Production Meter Diagnostic Pt Def Oil
129	PM Diag Pt Def Wtr1	R/W	User	TLP		Any ROC TLP	Undefined	4.09.00	Production Meter Diagnostic Pt Def Water1
130	PM Diag Pt Def Wtr2	R/W	User	TLP		Any ROC TLP	Undefined	4.09.00	Production Meter Diagnostic Pt Def Water2
131	PM Diag Test Opr Oil	R/W	User	UINT8		0→6	2	4.09.00	Indicates the Production Meter Diagnostic Test Operator Oil. Valid values are: **0** = Greater Than (>) **1** = Greater Than or Equal To (>=) **2** = Equal To (==) **3** = Not Equal To (!=) **4** = Less Than or Equal **5** = Less Than (<) **6** = Bitwise OR (I) TRUE is any bits listed are TRUE
132	PMDiag Test Opr Wtr1	R/W	User	UINT8		0→6	2	4.09.00	Production Meter Diagnostic Test Operator Water1
133	PMDiag Test Opr Wtr2	R/W	User	UINT8		0→6	2	4.09.00	Production Meter Diagnostic Test Operator Water2
134	PM Diag SetPt Oil	R/W	User	UINT32		0→2147483648	0.0	4.09.00	Production Meter Diagnostic SetPt Oil
135	PM Diag SetPt Wtr1	R/W	User	UINT32		0→2147483648	0.0	4.09.00	Production Meter Diagnostic SetPt Water1
136	PM Diag SetPt Wtr2	R/W	User	UINT32		0→2147483648	0.0	4.09.00	Production Meter Diagnostic SetPt Water2
137	Well Description	R/W	User	String20		Printable ASCII characters		4.09.00	Well Description for BLM

4.4 Point Type 198/180: PMTM Haul Logs

Point type 198 (for ROC800) or point type 180 (for FB107) defines parameters for configuring the haul logs. The program supports up to 21 logicals of point type 198 (for ROC800) or 21 logicals of point type 180 (for FB107).

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Tank ID	R/W	System	String10	10	Printable ASCII characters		4.00.00	Tag of tank hauled
1	Haul Number Today	R/W	System	UINT8	1	0→255		4.00.00	Number of times this tank/fluid was hauled today
2	Opening Date	R/W	System	UINT32	4	13101→991231		4.00.00	Haul start date in YYMMDD format
3	Opening Time	R/W	System	UINT32	4	000000→23595		4.00.00	Haul start time in HHMMSS format
4	Closing Date	R/W	System	UINT32	4	13101→991231		4.00.00	Haul end date in YYMMDD format
5	Closing Time	R/W	System	UINT32	4	000000→23595		4.00.00	Haul end time in HHMMSS format
6	Haul Duration Minutes	R/W	System	Float	4	Positive Float Data		4.00.00	Haul duration in minutes
7	Total Indicated Volume	R/W	System	Float	4	Positive Float Data		4.00.00	Haul volume from level change or meter indicated volume
8	High Level Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Highest tank level this cycle (in feet)
9	High Stock Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Highest tank fluid volume this cycle
10	High Mark Date	R/W	System	UINT32	4	Positive Float Data		4.00.00	High level date in YYMMDD format
11	High Mark Time	R/W	System	UINT32	4	Positive Float Data		4.00.00	High level time in HHMMSS format
12	Shrinkage B4 Haul Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Difference between high and opening tank volumes
13	Opening Level Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid level at start of haul (in feet)
14	Opening Stock Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid volume at start of haul (in barrels)
15	Closing Level Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid level at start of haul (in feet)

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
16	Closing Stock Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid volume at start of haul (in barrels)
17	Avg Temperature	R/W	System	Float	4	Positive Float Data		4.00.00	Average fluid temperature during haul
18	Avg Obs Rel Density	R/W	System	Float	4	Positive Float Data		4.00.00	Average observed relative density during haul
19	Avg S and W	R/W	System	Float	4	Positive Float Data		4.00.00	Average sediment and water measured during haul
20	Avg API Grav Base Temp	R/W	System	Float	4	Positive Float Data		4.00.00	Average standard API gravity during oil haul
21	Avg Rel Dens Base temp	R/W	System	Float	4	Positive Float Data		4.00.00	Average standard relative density during oil haul
22	Avg CTL Obs to Base	R/W	System	Float	4	Positive Float Data		4.00.00	Average temperature correction factor observed temperature to 60F for oil haul
23	Cor Factor Calc is Invalid	R/W	System	UINT8	1	0→1		4.00.00	Indicates how the program uses the CTL correction. Valid values are **0** (CTL calculation is valid) and **1** (CTL calculation is invalid; standard=observed)
24	Oil Level Change	R/W	System	Float	4	Positive Float Data		4.00.00	Change in oil level during haul (in feet)
25	Gross Oil Vol Hauled	R/W	System	Float	4	Positive Float Data		4.00.00	Gross oil volume hauled (difference between indicated if meter factor =1)
26	Gross Std Oil Vol Hauled	R/W	System	Float	4	Positive Float Data		4.00.00	Gross Oil Vol Hauled, Corrected to Base Temp
27	Net Oil Vol Hauled	R/W	System	Float	4	Positive Float Data		4.00.00	Gross standard oil volume hauled less S&W volume
28	Water Level Change	R/W	System	Float	4	Positive Float Data		4.00.00	Change in water level during haul (in feet)
29	Water Vol Hauled	R/W	System	Float	4	Positive Float Data		4.00.00	Water volume hauled (in barrels)
30	Inferred (Gross) Volume During Haul	R/W	System	Float	4	Positive Float Data		4.00.00	Vol Calculated to Have Entered Tank During Haul
31	Haul Serial Number	R/W	System	UINT32	4	1→4,294,697,295		4.00.00	Serial number identifier for haul
32	Haul Ticket Number	R/W	System	String20	20	Printable ASCII characters		4.00.00	Hauling company ticket number for haul

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
33	Transaction Type (Indv,Aggr,Meter)	R/W	System	UINT8	1	1→6		4.00.00	Indicates the transaction type. Valid values are: **1** = Individual tank **2** = Tank aggregate **3** = ROC800 meter instance **4** = Water meter (pulse input) instance **5** = Tank-to-tank transfer outbound **6** = Tank-to-tank transfer inbound
34	Meter Factor (Coriolis)	R/W	System	Float	4	Positive Float Data		4.00.00	ROC800L meter factor
35	Strapping Corr Factor (Tanks)	R/W	System	Float	4	Positive Float Data		4.00.00	
36	Observed API Gravity	R/W	System	Float	4	Positive Float Data		4.00.00	Average observed API gravity during haul
37	Meter Start Volume	R/W	System	Float	4	Positive Float Data		4.00.00	ROC800L or Pulse Input starting indicated accumulation
38	Meter End Volume	R/W	System	Float	4	Positive Float Data		4.00.00	ROC800L or Pulse Input ending indicated accumulation
39	Company Code	R/W	System	UINT16	2	1→65535		4.00.00	Company identifier for haul
40	Driver Code	R/W	System	UINT16	2	1→65535		4.00.00	Driver identifier for haul
41	Disposition Type	R/W	System	UINT8	1	0→255		4.00.00	User-enumerated disposition type for haul
42	Manual Obs API Density	R/W	System	Float	4	Positive Float Data		4.00.00	Driver-entered alt-calc observed API gravity
43	Manual BS and W	R/W	System	Float	4	Positive Float Data		4.00.00	Driver-entered alt-calc S&W percentage
44	Haul Serial Num Index Cmd	R/W	User	UINT32	4	1→4,294,697,295		4.00.00	Serial number of log requested for logical zero
45	Average Densitometer Tempt	R/W	System	Float	4	Positive Float Data		4.00.00	Average temperature DegF at densitometer
46	Avg CTL Base to Alt	R/W	System	Float	4	Positive Float Data		4.00.00	Average temperature correction factor 60F to density temperature for oil haul
47	Truck Number	R/W	System	String10	10	Printable ASCII characters		4.00.00	Hauling company truck number for haul

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
48	Purchaser Code	R/W	System	UINT16	2	0→65535		4.00.00	User-enumerated purchaser code for haul
49	Manual Temperature	R/W	System	Float	4	Positive Float Data		4.00.00	Driver-entered alt-calc temperature DegF
50	Manual Derived Grs Std Vol Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Alt-Calc Gross Standard oil volume using alt-calc inputs
51	Manual Derived Net Std Vol Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Alt-Calc Net Standard oil volume using alt-calc inputs
52	Level Change Volume	R/W	System	Float	4	Positive Float Data		4.00.00	Change in tank fluid level (in feet) multiplied by strapping value
53	Fluid Type Hauled	R/W	System	UINT8	1	0→1		4.00.00	Indicates the type of fluid. Valid values are **0** (oil/hydrocarbon) and **1** (produced water)
54	Tank Accounting Code	R/W	System	String10	10	Printable ASCII characters		4.00.00	User accounting system identifier for tank hauled
55	Load Line Seal Off Num	R/W	System	UINT32	4	1→4,294,697,295		4.00.00	Number of seal removed from load line
56	Load Line Seal On Num	R/W	System	UINT32	4	1→4,294,697,295		4.00.00	Number of seal placed on load line
57	Driver Haul Opening LLin	R/W	System	Float	4	Positive Float Data		4.00.00	Driver-Entered Haul Opening Level (in LLin)
58	Driver Haul Closing LLin	R/W	System	Float	4	Positive Float Data		4.00.00	Driver-Entered Haul Closing Level (in LLin)
59	Driver Haul Accepted Volume	R/W	System	Float	4	Positive Float Data		4.00.00	Driver-entered accepted haul volume (in barrels)
60	HMI or Auto-Detected Haul	R/O	System	UINT8	1	0→1		4.00.00	Indicates how the haul is generated. Valid values are **0** (HMI-generated haul) and **1** (auto-detected haul)
61	High Level Oil	R/W	System	Float	4	Positive Float Data		4.00.00	High column height for oil this cycle (in feet)
62	High Level Water	R/W	System	Float	4	Positive Float Data		4.00.00	High column height for water this cycle (in feet)
63	High Stock Oil	R/W	System	Float	4	Positive Float Data		4.00.00	High volume for oil this cycle (in barrels)
64	High Stock Water	R/W	System	Float	4	Positive Float Data		4.00.00	High volume for water this cycle (in barrels)

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
65	Opening Level Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil column height at start of haul (in feet)
66	Opening Level Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water column height at start of haul (in feet)
67	Opening Stock Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil volume at start of haul (in barrels)
68	Opening Stock Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water volume at start of haul (in barrels)
69	Closing Level Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil column height at end of haul (In feet)
70	Closing Level Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water column height at end of haul (in feet)
71	Closing Stock Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil volume at start of haul (in barrels)
72	Closing Stock Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water volume at start of haul (in barrels)
73	Shrinkage B4 Haul Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Difference between high and opening oil volumes
74	Shrinkage B4 Haul Water	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Difference between high and opening water volumes
75	Level Change Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Fluid level change during haul
80	Record Location in File	R/W	System	UINT16	2	0→511		4.07.00	Haul Record Location in File
81	Hard Haul Serial Number	R/W	System	UINT32	4	0→4,294,967,295	0	4.07.00	Hard Haul Serial Number
82	Compressibility Factor	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Compressibility Factor
83	Correction for S&W	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Correction for S&W
84	PWA Average Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	PWA Average Pressure
85	Average Densitometer Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Average Densitometer Pressure
86	Equilibrium Base Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Equilibrium Base Pressure
87	Correction for Pressure	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Correction for Pressure
88	Correction for Temp & Press	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Correction for Temp & Press
89	Combined Correction Factor	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Combined Correction Factor
90	Observed Density in Kg/m3	R/W	System	Float	4	Positive Float Data		4.07.00	Observed Density in Kg/m3
91	Base Density in Kg/m3	R/W	System	Float	4	Positive Float Data		4.07.00	Base Density in Kg/m3

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
92	Observed Density in User Units	R/W	System	Float	4	Positive Float Data		4.07.00	Observed Density in User Units
93	Base Density in User Units	R/W	System	Float	4	Positive Float Data		4.07.00	Base Density in User Units
94	Correction for Tank Shell Temp	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Correction for Tank Shell Temp
95	Gross Mass at Opening	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data		4.07.00	Gross Mass at Opening
96	Gross Mass at Closing	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data		4.07.00	Gross Mass at Closing
97	Rollover for Double Accums	R/W	System	Double (ROC800) Float (FB107)	8	Positive Double Float Data		4.07.00	Rollover for Double Accums
98	Base Temperature	R/W	System	UINT16	2	15, 20, 30, 60	60	4.07.00	Indicates the Base Temperature. Valid values are: **15** = 15 degC **20** = 20 degC **30** = 30 degC **60** = 60 degF
99	Net Standard Mass	R/W	System	Float	4	Positive Float Data		4.07.00	Net Standard Mass
100	Net Standard Weight	R/W	System	Float	4	Positive Float Data		4.07.00	Net Standard Weight
101	Level EU	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates the Level EU. Valid values are: **0** = Feet **1** = Meters
102	Temperature EU	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates the Temperature EU. Valid values are: **0** = Deg F **1** = Deg C

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
103	Pressure EU	R/W	System	UINT8	1	0→2	0	4.07.00	Indicates the Pressure EU. Valid values are: **0** = PSI **1** = kPa **2** = Bar
104	Liquid Density EU	R/W	System	UINT8	1	0→7	6	4.07.00	Indicates the Liquid Density EU Valid values are: **0** = Kg/m3 **1** = g/cm3 **2** = Lb/ft3 **3** = Lb/bbl **4** = Lb/gal **5** = Relative Density **6** = API Gravity **7** = Kg/L
105	Volume EU	R/W	System	UINT8	1	0→6	0	4.07.00	Indicates the Volume EU. Valid values are: **0** = Bbl **1** = Mcf **2** = Km3 **3** = Gal **4** = ft3 **5** = m3 **6** = Liter
106	Mass EU	R/W	System	UINT8	1	0→3	0	4.07.00	Indicates the Mass EU. Valid values are: **0** = Lb **1** = Kg **2** = Ton **3** = Tonnes
107	Opening Temperature	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Temperature
108	Opening Pressure	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Pressure
109	Opening S&W Pct	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening S&W Pct
110	Opening Obs Dens Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Obs Dens Kg/m3
111	Opening Dens Temp	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Dens Temp
112	Opening Dens Press	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Dens Press
113	Opening 60F Dens Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening 60F Dens Kg/m3

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
114	Opening 15C Dens Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening 15C Dens Kg/m3
115	Opening TOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening TOV
116	Opening CTSh	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Opening CTSh
117	Opening GOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening GOV
118	Opening CTL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Opening CTL
119	Opening CPL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Opening CPL
120	Opening CTPL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Opening CTPL
121	Opening GSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening GSV
122	Opening CSW	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Opening CSW
123	Opening NSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSV
124	Opening NSM	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSM
125	Opening NSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSW
126	Closing Temperature	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing Temperature
127	Closing Pressure	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing Pressure
128	Closing S&W Pct	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing S&W Pct
129	Closing Obs Dens Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing Obs Dens Kg/m3
130	Closing Dens temp	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing Dens temp
131	Closing Dens Press	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing Dens Press
132	Closing 60F Dens Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing 60F Dens Kg/m3
133	Closing 15C Dens Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing 15C Dens Kg/m3
134	Closing TOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing TOV
135	Closing CTSh	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Closing CTSh
136	Closing GOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing GOV
137	Closing CTL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Closing CTL
138	Closing CPL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Closing CPL
139	Closing CTPL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Closing CTPL
140	Closing GSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing GSV
141	Closing CSW	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Closing CSW
142	Closing NSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSV
143	Closing NSM	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSM
144	Closing NSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSW

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
145	Gross Vol Mtr Open	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	Gross Vol Mtr Open
146	GSV Mtr Open	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	GSV Mtr Open
147	NSV Mtr Open	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	NSV Mtr Open
148	SWV Mtr Open	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	SWV Mtr Open
149	Gross Vol Mtr Close	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	Gross Vol Mtr Close
150	GSV Mtr Close	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	GSV Mtr Close
151	NSV Mtr Close	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	NSV Mtr Close
152	SWV Mtr Close	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Float Data	0.0	4.07.00	SWV Mtr Close
153	TOV Tranf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	TOV Tranf Qty
154	GOV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	GOV Transf Qty
155	GSV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	GSV Transf Qty

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
156	NSV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	NSV Transf Qty
157	SWV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	SWV Transf Qty
158	NSW Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	NSW Transf Qty
159	Liquid Mass Trans Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Liquid Mass Trans Qty
160	Tank/Aggr Inst Num	R/W	System	UINT8	1	1→24	0.0	4.08.00	Tank/Aggr Inst Num
161	Meter Inst Num	R/W	System	UINT8	1	1→6	0.0	4.08.00	Meter Inst Num
162	LoadOut Inst Num	R/W	System	UINT8	1	1→6	0.0	4.08.00	LoadOut Inst Num
163	Fluid Props in Auto	R/W	System	UINT8	1	Bitwise 0→65	0.0	4.09.00	Fluid Property Values in Auto (Live). Valid values are: **1** = Temperature Signal is AUTO **2** = Pressure Signal is AUTO **3** = S&W Signal is AUTO **4** = Obs Density Signal is AUTO **5** = Density Temperature Signal is AUTO **6** = Density Pressure Signal is AUTO

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
164	FProps API 18.2 Avgd	R/W	System	UINT8	1	Bitwise 0→65	0.0	4.09.00	Fluid Property Values API 18.2 Averaged. Valid values are: **1** = Temp is MANU (Meter) / In Transition Zone (Level) **2** = Pressure is MANU (Meter) / In Transition Zone (Level) **3** = S&W is MANU (Meter) / In Transition Zone (Level) **4** = Obs Dens is MANU (Meter) / In Transition Zone (Level) **5** = Dens Temp is MANU (Meter) / In Transition Zone (Level) **6** = Dens Pres is MANU (Meter) / In Transition Zone (Level)
165	Std Volume Calc Type	R/W	System	UINT8	1	Enum Value 0→6	0.0	4.09.00	Standard Volume Calculation Type (Auto-Selected). Valid values are: **0** = None; No Corrections **1** = None; CSW Only **2** = ROC800L / CLAP Accumulator Differentials **3** = API 12.2 **4** = API 18.2 Dynamics (pgs 19-23) / API 12.2 less FWAs **5** = API 12.1 Tanking Snapshots Differential **6** = API 18.2 Static (pgs 15-18)
166	PMTM Version Num	R/W	System	UINT16	2	40900→65535	40900	4.09.00	PMTM User Program Version Number
167	Destination Code	R/W	System	UINT16	2	0→255 per List #4 Entries	0.0	4.09.00	Destination Code
168	Turndown Code	R/W	System	UINT8	1	0→255 per List #1 Entries	0.0	4.09.00	Turndown Code
169	Reserved U8 1	R/W	System	UINT8	1		0.0	4.09.00	Spare U8 1
170	Temperature 3/4 way	R/W	System	Float	4	Float Data	0.0	4.09.00	3/4 way Temperature Sample

Point Type 198 (ROC800) or Point Type 180 (FB107): PMTM Haul Logs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
171	Init/TD Merch S&W	R/W	System	Float	4	Float Data	0.0	4.09.00	Initial/Turndown Merchantability S&W%
172	Water Btm Clearance	R/W	System	Float	4	Float Data	0.0	4.09.00	Water Bottom Clearance
173	FMP# or Tank Desc	R/W	System	String20	20	LDO FMP# or Assoc Tk Desc		4.09.00	FMP (Facility Measurement Point) or Tank Desc
174	Purchaser	R/W	System	String20	20	Any HDB P6 List#2 Entry		4.09.00	Purchaser Description
175	Disposition Type	R/W	System	String20	20	Any HDB P6 List#3 Entry		4.09.00	Disposition Type Description
176	Destination	R/W	System	String20	20	Any HDB P6 List#4 Entry		4.09.00	Destination Description
177	Turndown Reason	R/W	System	String20	20	Any HDB P6 List#1 Entry		4.09.00	Turndown (Rejection) Reason Description
178	Hauler Company Name	R/W	System	String10	10	Any HDB Company Entry		4.09.00	Hauler Company Name Text
179	Tank Volume Capacity	R/W	System	Float	4	Float Data	0.0	4.09.00	Water Bottom Clearance
180	Open Obs Dens UserEU	R/W	System	Float	4	Float Data	0.0	4.09.00	Opening Observed Density in User Eus
181	Close Obs Dens UserEU	R/W	System	Float	4	Float Data	0.0	4.09.00	Closing Observed Density in User Eus
182	Reserved Float 1	R/W	System	Float	4	Float Data	0.0	4.09.00	Spare Float 1
183	Reserved Float 2	R/W	System	Float	4	Float Data	0.0	4.09.00	Spare Float 2
184	Reserved Float 3	R/W	System	Float	4	Float Data	0.0	4.09.00	Spare Float 3

4.5 Point Type 199/181: PMTM Haul Ticketing

Point type 199 (for ROC800) or point type 181 (for FB107) defines parameters to configure the haul ticketing. The program supports up to 40 logicals of point type 199 (for ROC800) or 8 logicals of point type 180 (for FB107).

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	High Level Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Highest tank level this cycle (in feet)
1	High Level Water	R/W	System	Float	4	Positive Float Data		4.00.00	Highest column height for oil this cycle (in feet)
2	High Level Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Highest column height for water this cycle (in feet)
3	High Stock Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Highest tank fluid volume this cycle
4	High Stock Water	R/W	System	Float	4	Positive Float Data		4.00.00	High volume for oil this cycle (in barrels)
5	High Stock Tank	R/W	System	Float	4	Positive Float Data		4.00.00	High volume for water this cycle (in barrels)
6	High Mark Date	R/W	System	UINT32	4	Positive Float Data		4.00.00	High level data in YYMMDD format
7	High Mark Time	R/W	System	UINT32	4	Positive Float Data		4.00.00	High level time in HHMMSS format
8	Opening Level Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil column height (in feet) at start of haul
9	Opening Level Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water column height (in feet) at start of haul
10	Opening Level Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid level (in feet) at start of haul
11	Opening Stock Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil volume (in barrels) at start of haul
12	Opening Stock Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water volume (in barrels) at start of haul
13	Opening Stock Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid volume (in barrels) at start of haul
14	Opening Mark Date	R/W	System	UINT32	4	Positive Float Data		4.00.00	Haul start date in YYMMDD format
15	Opening Mark Time	R/W	System	UINT32	4	Positive Float Data		4.00.00	Haul start time in HHMMSS format

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
16	Shrinkage B4 Haul Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Difference between high and opening oil volumes
17	Shrinkage B4 Haul Water	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Difference between high and opening water volumes
18	Shrinkage B4 Haul Tank	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Difference between high and opening tank volumes
19	Closing Level Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil column height (in feet) at end of haul
20	Closing Level Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water column height (in feet) at end of haul
21	Closing Level Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid level (in feet) at end of haul
22	Closing Stock Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Oil volume (in barrels) at end of haul
23	Closing Stock Water	R/W	System	Float	4	Positive Float Data		4.00.00	Water volume (in barrels) at end of haul
24	Closing Stock Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Tank fluid volume (in barrels) at end of haul
25	Closing Mark Date	R/W	System	UINT32	4	Positive Float Data		4.00.00	Haul end date in YYMMDD format
26	Closing Mark Time	R/W	System	UINT32	4	Positive Float Data		4.00.00	Haul end time in HHMMSS format
27	Level Change Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Change in oil level (in feet) during haul
28	Level Change Water	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Change in water level (in feet) during haul
29	Level Change Tank	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Change in tank fluid level (in feet) during haul
30	Stock Change Oil	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Change in oil volume (in barrels) during haul
31	Stock Change Water	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Change in water volume (in barrels) during haul
32	Stock Change Tank	R/W	System	Float	4	Zero or Positive Float Data		4.00.00	Change in tank fluid volume (in barrels) during haul

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
33	Get Haul Opening	R/W	System	UINT8	1	0→1		4.00.00	Indicates whether the system records a valid haul opening value. Valid values are **0** (valid haul opening value is recorded) and **1** (valid haul opening value is not recorded)
34	Strap Adj Factor – Oil	R/W	System	Float	4	Positive Float Data		4.00.00	ROC800L Meter Factor
35	Strap Adj Factor – Water	R/W	System	Float	4	Positive Float Data		4.00.00	Future
36	Indicated Haul Vol – Oil	R/W	System	Float	4	Positive Float Data		4.00.00	Difference between closing and opening 800L-indicated oil volume
37	Indicated Haul Vol – Water	R/W	System	Float	4	Positive Float Data		4.00.00	Difference between closing and opening 800L-indicated water volume
38	Indicated Haul Vol – Tank	R/W	System	Float	4	Positive Float Data		4.00.00	Difference between closing and opening 800L-indicated tank volume
39	Last HMI Number Used Oil	R/W	System	UINT8	4	0→6		4.00.00	HMI station where oil tank is/was hauled
40	Last HMI Number Used Wtr	R/W	System	UINT8	4	0→6		4.00.00	HMI station where water tank is/was hauled
41	Meter Opening Ind Vol Oil - *Var*	R/W	System	Double (ROC800) Float (FB107)	1	Positive Double Data		4.00.00	Opening 800L indicated oil volume
42	Meter Opening Ind Vol Wtr - *Var*	R/W	System	Double (ROC800) Float (FB107)	1	Positive Double Data		4.00.00	Opening 800L indicated water volume
43	Meter Opening Gross Vol Oil - *Var*	R/W	System	Double (ROC800) Float (FB107)	8	Positive Double Data		4.00.00	Opening 800L gross volume oil
44	Meter Opening Gross Vol Wtr - *Var*	R/W	System	Double (ROC800) Float (FB107)	8	Positive Double Data		4.00.00	Opening 800L gross volume water

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
45	Meter Opening GStd Vol Oil - *Var*	R/W	System	Double (ROC800) Float (FB107)	8	Positive Double Data		4.00.00	Opening 800L gross standard volume oil
46	Meter Opening GStd Vol Wtr - *Var*	R/W	System	Double (ROC800) Float (FB107)	8	Positive Double Data		4.00.00	Change in tank fluid volume (in barrels) during haul
47	Meter Opening Net Std Vol - *Var*	R/W	System	Double (ROC800) Float (FB107)	8	Positive Double Data		4.00.00	Opening 800L net standard volume oil
48	Dispo/Xfer InProgr Delv	R/W	System	UINT8	1	0→1		4.00.00	Indicates whether an outgoing tank transfer is in progress. Valid values are **0** (no outgoing transfer in progress) and **1** (outgoing tank-to-tank transfer in progress)
49	Dispo/Xfer InProg Recv	R/W	System	UINT8	1	0→1		4.00.00	Indicates whether an incoming tank transfer is in progress. Valid values are **0** (no incoming transfer in progress) and **1** (incoming tank-to-tank transfer in progress)
50	Xfer Vol Increase	R/W	System	Float	4	Positive Float Data		4.00.00	Increase in volume (in barrels) in fluid inbound tank
51	Xfer Delv to Inst	R/W	System	UINT8	1	0→24		4.00.00	Tank instance number of other transfer tank
52	Strapping Table Status	R/W	System	UINT8	1			4.07.00	Strapping Table Status
53	Quantity Valid Zones	R/W	System	UINT8	1	0→12	1	4.07.00	Quantity Valid Zones
54	Strapping Date	R/W	User	UINT32	4	19700101→ 21001231		4.07.00	Strapping Date

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
55	Table increment Height	R/W	User	UINT8	1	0→6	0	4.07.00	Indicates the Table Increment Height. Valid values are: **0** = Inch **1** = 1/4-inch **2** = 1/8-inch **3** = 1/16-inch **4** = 0.01-foot **5** = Centimeter **6** = Millimeter
56	Table Volume Unit	R/W	User	UINT8	1	0→4	0	4.07.00	Indicates the Table Volume Unit. Valid values are: **0** = Barrel **1** = US Gallon **2** = Cubic meter **3** = Liter **4** = Cubic Foot
57	Level Entry Type	R/W	User	UINT8	1	0→1	1	4.07.00	Indicates the Level Entry Type. Valid values are: **0** = Enter Gauge Values **1** = Enter Increments
58	Increment Entry Type	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Increment Entry Type. Valid values are: **0** = Enter Quantity in Zone **1** = Enter Running Total
59	Volume Entry Type	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Volume Entry Type. Valid values are: **0** = Enter I-Factors **1** = Enter Accum Volume
60	Zone Zero Volume	R/W	User	Float	4	Zero or Positive Float Data	0.0	4.07.00	Zone Zero Volume
61	Long Level Value Zone 1	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 1
62	Long Level Value Zone 2	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 2
63	Long Level Value Zone 3	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 3
64	Long Level Value Zone 4	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 4
65	Long Level Value Zone 5	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 5
66	Long Level Value Zone 6	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 6

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
67	Long Level Value Zone 7	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 7
68	Long Level Value Zone 8	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 8
69	Long Level Value Zone 9	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 9
70	Long Level Value Zone 10	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 10
71	Long Level Value Zone 11	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 11
72	Long Level Value Zone 12	R/W	Both	UINT16	2	0→1000		4.07.00	Long Level Value Zone 12
73	Short Level Value Zone 1	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 1
74	Short Level Value Zone 2	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 2
75	Short Level Value Zone 3	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 3
76	Short Level Value Zone 4	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 4
77	Short Level Value Zone 5	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 5
78	Short Level Value Zone 6	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 6
78	Short Level Value Zone 7	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 7
80	Short Level Value Zone 8	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 8
81	Short Level Value Zone 9	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 9
82	Short Level Value Zone 10	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 10
83	Short Level Value Zone 11	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 11
84	Short Level Value Zone 12	R/W	Both	UINT16	2	0→1000		4.07.00	Short Level Value Zone 12
85	Fractional Level Value Zone 1	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 1
86	Fractional Level Value Zone 2	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 2
87	Fractional Level Value Zone 3	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 3
88	Fractional Level Value Zone 4	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 4
89	Fractional Level Value Zone 5	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 5
90	Fractional Level Value Zone 6	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 6
91	Fractional Level Value Zone 7	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 7
92	Fractional Level Value Zone 8	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 8

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
93	Fractional Level Value Zone 9	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 9
94	Fractional Level Value Zone 10	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 10
95	Fractional Level Value Zone 11	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 11
96	Fractional Level Value Zone 12	R/W	Both	UINT8	1	0→15		4.07.00	Fractional Level Value Zone 12
97	Increments Quantity Zone 1	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 1
98	Increments Quantity Zone 2	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 2
99	Increments Quantity Zone 3	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 3
100	Increments Quantity Zone 4	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 4
101	Increments Quantity Zone 5	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 5
102	Increments Quantity Zone 6	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 6
103	Increments Quantity Zone 7	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 7
104	Increments Quantity Zone 8	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 8
105	Increments Quantity Zone 9	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 9
106	Increments Quantity Zone 10	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 10
107	Increments Quantity Zone 11	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 11
108	Increments Quantity Zone 12	R/W	Both	UINT16	2	0→65535		4.07.00	Increments Quantity Zone 12
109	End Increment Number Zone 1	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 1
110	End Increment Number Zone 2	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 2
111	End Increment Number Zone 3	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 3
112	End Increment Number Zone 4	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 4
113	End Increment Number Zone 5	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 5
114	End Increment Number Zone 6	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 6

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
115	End Increment Number Zone 7	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 7
116	End Increment Number Zone 8	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 8
117	End Increment Number Zone 9	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 9
118	End Increment Number Zone 10	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 10
119	End Increment Number Zone 11	R/W	Both	UINT16	2	0→65535		4.07.00	End Increment Number Zone 11
120	End Increment Number Zone 12	R/W	Both	UINT16	4	0→65535		4.07.00	End Increment Number Zone 12
121	Volume I-Factor Zone 1	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 1
122	Volume I-Factor Zone 2	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 2
123	Volume I-Factor Zone 3	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 3
124	Volume I-Factor Zone 4	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 4
125	Volume I-Factor Zone 5	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 5
126	Volume I-Factor Zone 6	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 6
127	Volume I-Factor Zone 7	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 7
128	Volume I-Factor Zone 8	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 8
129	Volume I-Factor Zone 9	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 9
130	Volume I-Factor Zone 10	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 10
131	Volume I-Factor Zone 11	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 11
132	Volume I-Factor Zone 12	R/W	Both	Float	4	Positive Float Data		4.07.00	Volume I-Factor Zone 12
133	End Accum Volume Zone 1	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 1
134	End Accum Volume Zone 2	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 2
135	End Accum Volume Zone 3	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 3
136	End Accum Volume Zone 4	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 4
137	End Accum Volume Zone 5	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 5
138	End Accum Volume Zone 6	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 6
139	End Accum Volume Zone 7	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 7
140	End Accum Volume Zone 8	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 8
141	End Accum Volume Zone 9	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 9

Point Type 199 (ROC800) or Point Type 181 (FB107): PMTM Haul Ticketing

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
142	End Accum Volume Zone 10	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 10
143	End Accum Volume Zone 11	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 11
144	End Accum Volume Zone 12	R/W	Both	Float	4	Positive Float Data		4.07.00	End Accum Volume Zone 12
145	Strapping Table Zones	R/W	User	UINT8	1	0→12		4.07.00	Strapping Table Zones
146	Lease Tank ID Number	R/W	User	UINT32	4	0→999999		4.07.00	Lease Tank ID Number
147	Tank Material	R/W	User	UINT8	1	0→3	0	4.07.00	Indicates the Tank Material. Valid values are: **0** = Mild Carbon Steel **1** = 304 SS **2** = 316 SS **3** = 17-4PH SS
148	Tank Strapping Ref Temp	R/W	User	Float	4	Positive Float Data	60.0	4.07.00	Tank Strapping Ref Temp
149	Tank Is Insulated Y/N	R/W	User	UINT8	1	0→1	0	4.07.00	Tank Is Insulated Y/N: **0** = NO **1** = YES

4.6 Point Type 230/182: PMTM Fluid Properties

Point type 230 (for ROC800) or point type 182 (for FB107) defines the parameters to configure the net standard volume (NSV). The program supports up to 40 logicals of point type 230 (for ROC800) or 8 logicals of point type 182 (for FB107).

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Calculate NSV	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether program performs temperature correction. Valid values are **0** (do not perform temperature correction) and **1** (perform temperature correction)
1	Temperate Def Oil	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.00.00	TLP of oil temperature signal
2	Temperature Def Water	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.00.00	TLP of water temperature signal
3	1st/Top Temp Value Oil	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Oil temperature value DegF
4	Temperature Value Water	R/W	Both	Float	4	Zero or Positive Float Data	0	4.00.00	Water temperature value DegF
5	2nd/Mid Temp Value Oil	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Second temperature value(manual)
6	3rd/Btm Temp Value Oil	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Third temperature value (manual)
7	Obs Density Def Oil	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.00.00	TLP of oil density signal
8	Obs Density Def Water	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.00.00	TLP of water density signal
9	Obs Density Units Oil	R/W	User	UINT8	1	0→7	0	4.00.00	Indicates the oil density units. Valid values are: **0** = Kilograms/Cubic Meter **1**= Grams/centimeter **2** = Lbs/CuFt **3** = Lbs/BBL **4** = Lbs/Gallon **5** = Relative Density **6** = API Gravity **7** = Kilograms/Liter

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
10	Obs Density Units Water	R/W	User	UINT8	1	0→7	0	4.00.00	Indicates the water density units. Valid values are: 0 = Kilograms/Cubic Meter 1= Grams/centimeter 2 = Lbs/CuFt 3 = Lbs/BBL 4 = Lbs/Gallon 5 = Relative Density 6 = API Gravity 7 = Kilograms/Liter
11	Obs Density Value Oil	R/W	Both	Float	4	Zero or Positive Float Data	0	4.00.00	Observed oil density value
12	Obs Density Value Water	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Observed water density value
13	2nd Manu Density Val Oil	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Second oil density value (manual)
14	S and W Def	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.00.00	TLP of S&W signal
15	S and W Value	R/W	Both	Float	4	Zero or Positive Float Data	0	4.00.00	Sediment & Water (S&W) percentage value
16	2nd Manu S+W Pct – Oil	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Second S&W percentage value (manual)
17	Temperature Avg Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average oil temperature during haul
18	Temperature Avg Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average water temperature during haul
19	Rel Density Value Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Oil relative density value
20	Rel Density Value Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Water relative density value
21	Rel Density Avg Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average oil relative density during haul
22	Rel Density Avg Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average water relative density during haul
23	S and W Avg	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average S&W during haul
24	Rel Dens60 Value	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Current relative density at 60F
25	Rel Dens 60 Avg	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average relative density at 60F during haul

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
26	API Grav 60 Value	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Current API gravity at 60F
27	API Grav 60 Avg	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average API gravity at 60F during haul
28	Oil Gross 60 Avg	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Gross standard oil volume for haul
29	Oil Net Vol	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Net standard oil volume for haul
30	Push Temp to Densitometer	R/W	User	UINT8	1	0→3	0	4.00.00	Indicates whether program pushes temperature to densitometer. Valid values are: **0** = Do not forward temperature to densitometer **1** = Use first temperature at densitometer **2** = Use second temperature at densitometer **3** = Use third temperature at densitometer
31	Dens Cur Temp Def	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.00.00	TLP of densitometer temperature signal
32	Dens Temp Value	R/W	Both	Float	4	Zero or Positive Float Data	0	4.00.00	Densitometer temperature value
33	Dens Avg Temp Value	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average densitometer temperature value during haul
34	Alt Cur CTL	R/W	System	Float	4	Zero or Positive Float Data	1	4.00.00	Current temperature correction factor 60F to densitometer temperature
35	Alt Avg CTL	R/W	System	Float	4	Zero or Positive Float Data	1	4.00.00	Average temperature correction factor 60F to densitometer temperature
36	Cur CTL	R/W	System	Float	4	Zero or Positive Float Data	1	4.00.00	Current temperature correction factor of observed fluid to 60F
37	Avg CTL	R/W	System	Float	4	Zero or Positive Float Data	1	4.00.00	Average temperature correction factor of observed fluid to 60F
38	CTL Calc is Invalid	R/W	System	UINT8	1	0→1	0	4.07.00	Indicates the validity of the CTL calculation. Valid values are **0** (CTL calculation is valid) and **1** (CTL calculation is invalid; CTL= 1.0)

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
39	Amb Temp Def	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Amb Temp Def
40	Ambient Temperature	R/W	Both	Float	4	Positive Float Data	70.0	4.07.00	Ambient Temperature
41	Pressure TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Pressure TLP
42	Current Pressure	R/W	Both	Float	4	Zero or Positive Float Data	0.0	4.07.00	Current Pressure
43	Average Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Average Pressure
44	Dens Pressure TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Dens Pressure TLP
45	Cur Dens Pressure	R/W	Both	Float	4	Zero or Positive Float Data	0.0	4.07.00	Cur Dens Pressure
46	Avg Dens Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg Dens Pressure
47	Spare Float 3	R/W	User	Float	4	Float Data	0.0	4.07.00	Spare Float 3
48	Net Std Oil Vol Hauled Today	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Net standard oil volume hauled today
49	Net Std Oil Volume Prev Day	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Net standard oil volume hauled previous day
50	Net Std Oil Volume This Month	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Net standard oil volume hauled this month
51	Net Std Oil Volume Prev Month	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Net standard oil volume hauled previous month
52	Net Std Oil Volume Accum	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Accumulated net standard oil volume hauled
53	Average CPL	R/W	System	Float	4	Positive Float Data	1.0	4.07.00	Average CPL
54	Avg Obs Density Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg Obs Density Kg/m3
55	Avg Base Density Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg Base Density Kg/m3
56	Avg 60F Density Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg 60F Density Kg/m3
57	Avg 15C Density Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg 15C Density Kg/m3
58	Avg Fpr	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg Fpr
59	Avg CSW	R/W	User	Float	4	Positive Float Data	0.0	4.07.00	Avg CSW
60	Avg Obs Dens Usr Units Oil	R/W	System	Float	4	Float Data	0.0	4.07.00	Avg Obs Dens Usr Units Oil
61	Avg Obs Dens Usr Units Wtr	R/W	System	Float	4	Float Data	0.0	4.07.00	Avg Obs Dens Usr Units Wtr

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
62	Opening Obs Den UsrUnt	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Obs Den UsrUnt
63	Closing Obs Den UsrUnt	R/W	System	Float	4	Float Data	0.0	4.07.00	Closing Obs Den UsrUnt
64	Enable Monthly Avg Temp	R/W	User	UINT8	1	0→1	0.0	4.07.00	Indicates the Enable Monthly Avg Temp. Valid values are: **0** = NO **1** = YES
65	Monthly Avg Temp Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Data	0.0	4.07.00	Monthly Avg Temp Summation
66	Monthly Avg Temp Volume	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Double Data	0.0	4.07.00	Monthly Avg Temp Volume
67	Monthly Avg Temp Samples	R/W	System	UINT32	4	0→4,294,967,295	0	4.07.00	Monthly Avg Temp Samples
68	This Month Temp Avg	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	This Month Temp Avg
69	Prev Month Temp Avg	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Prev Month Temp Avg
70	Closeout Monthly Avg Temp	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Closeout Monthly Avg Temp. Valid values are: **0** = NO **1** = YES
71	Monthly Avg Temp Start Date	R/W	System	UINT32	4	0→4,294,967,295	0	4.07.00	Monthly Avg Temp Start Date
72	Opening Temperature	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Temperature
73	Opening Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Opening Pressure
74	Opening S&W Pct	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Opening S&W Pct
75	Opening Dens Obs Kg/m3	R/W	System	Float	4	Float Data	0.0	4.07.00	Opening Dens Obs Kg/m3
76	Opening Dens Temp	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Dens Temp
77	Opening Dens Press	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Opening Dens Press
78	Opening Dens at 60F kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Dens at 60F kg/m3
79	Opening Dens at 15C kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Dens at 15C kg/m3

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
80	Opening TOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening TOV
81	Opening CTSh	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CTSh
82	Opening GOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening GOV
83	Opening CTL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CTL
84	Opening CPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CPL
85	Opening CTPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CTPL
86	Opening GSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening GSV
87	Opening CSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CSW
88	Opening NSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSV
89	Opening NSM	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSM
90	Opening NSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSW
91	Closing Temperature	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Temperature
92	Closing Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Closing Pressure
93	Closing S&W Pct	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Closing S&W Pct
94	Closing Dens Obs Kg/m3	R/W	System	Float	4		0.0	4.07.00	Closing Dens Obs Kg/m3
95	Closing Dens Temp	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Dens Temp
96	Closing Dens Press	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Closing Dens Press
97	Closing Dens at 60F kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Dens at 60F kg/m3
98	Closing Dens at 15C kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Dens at 15C kg/m3
99	Closing TOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing TOV
100	Closing CTSh	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CTSh
101	Closing GOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing GOV
102	Closing CTL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CTL
103	Closing CPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CPL
104	Closing CTPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CTPL
105	Closing GSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing GSV
106	Closing CSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CSW
107	Closing NSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSV
108	Closing NSM	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSM

Point Type 230 (ROC800) or Point Type 182 (FB107): PMTM Fluid Properties

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
109	Closing NSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSW
110	Opening Base Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Base Dens Kg/m3
111	Closing Base Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Base Dens Kg/m3
112	TOV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	TOV Transf Qty
113	GOV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	GOV Transf Qty
114	GSV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	GSV Transf Qty
115	NSV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	NSV Transf Qty
116	SWV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	SWV Transf Qty
117	NSW Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	NSW Transf Qty
118	Liquid Mass Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Liquid Mass Transf Qty
119	Cmpl Avg Temp Vol	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.09.00	Volume During Completed Avg Temperature
120	Cmpl Avg Temp Hauls	R/W	System	UINT32	4	0→4,294,967,295	0.0	4.09.00	Hauls Included in Completed Avg Temperature
121	Cmpl TAvg Start Date	R/W	System	UINT32	4	101→991231	0.0	4.09.00	Completed Temperature Average Start Date

4.7 Point Type 231/183: PMTM Load Outs

Point type 231 (for ROC800) or point type 183 (for FB107) defines the parameters to configure the huma machine interface (HMI) displays. The program supports up to 6 logicals of point type 231 (for ROC800) or 2 logicals of point type 183 (for FB107).

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	HMI Tag	R/W	User	String10	10	Printable ASCII characters	Load Term 1	4.00.00	Load station identifier
1	Haul Ticket #	R/W	User	String20	20	Printable ASCII characters		4.00.00	Hauler ticket number for haul
2	Company Code	R/W	User	UINT16	2	1→65535	0	4.00.00	Hauler company code
3	Driver Code	R/W	User	UINT16	2	1→65535	0	4.00.00	Hauler driver code
4	Invalid Company Flag	R/O	System	UINT8	1	0→1	1	4.00.00	Indicates whether the company code is valid. Valid values are **0** (company code is valid) and **1** (company code is not valid).
5	Invalid Driver Flag	R/O	System	UINT8	1	0→1	1	4.00.00	Indicates whether the driver code is valid. Valid values are **0** (driver code is valid) and **1** (driver code is not valid).
6	Haul Status Flag	R/O	User	UINT8	1	0→5	0	4.00.00	Indicates the haul's current status. Valid values are: **0** = No ticket in progress **1** = In progress; valve open; no flow **2** = In progress; valve open; flowing **3** = In progress; valve closed; flowing **4** = In progress; valve closed; no flow **5**= At closing edits
7	Fluid Type in Haul	R/W	System	UINT8	1	0→2	0	4.00.00	Indicates the fluid type in the haul. Valid values are **1** (oil) and **2** (water).
8	Tank Instance# in Haul	R/W	System	UINT8	1	1→40	0	4.00.00	Tank instance number in haul
9	Tank Letter in Haul	R/W	System	UINT8	1			4.00.00	Load station identifier
10	Tank Aggregate in Haul	R/W	System	UINT8	1	0→255	0	4.00.00	Aggregate number (if any) in haul
11	Coriolis Meter# in Haul	R/W	User	UINT8	1	0→255	0	4.00.00	Driver selection number

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
12	Haul Inactivity Mins Preset	R/W	User	Float	4	Positive Float Number	10	4.00.00	Minutes allowed no changes, no flow
13	Haul Inactivity Mins Remain	R/O	System	Float	4	Zero or Positive Float Data	0	4.00.00	Remaining minutes no changes, no flow
14	Pause Haul Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the haul command that pauses the process. Valid values are **0** (Command Inactive) and **1** (Close Station Valve).
15	Resume Haul Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the haul command that resumes the process. Valid values are **0** (Command Inactive) and **1** (Reopen Station Valve).
16	Max Pause Mins Preset	R/W	User	Float	4			4.00.00	
17	To CloseOut Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the command that closes out the process. Valid values are **0** (Command Inactive) and **1** (Move to Final Edits).
18	Warn X Mins B4 Haul End	R/W	User	Float	4	Positive Float Number	2	4.00.00	Minutes of advanced warning before closeout occurs
19	Haul End Warning Indication	R/O	System	UINT8	1	0→1	0	4.00.00	Indicates the end of haul. Valid values are **0** (sufficient time) and **1** (Low time warning).
20	Extend Haul Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the command that extends the haul. Valid values are **0** (Command Inactive) and **1** (Add Inactive Preset to Remaining Minutes)
21	Close-out Haul Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the command that closes extends the haul. Valid values are **0** (Command Inactive) and **1** (Add Inactive Preset to Remaining Minutes)
22	Use Tank / Meter Mease	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates how the tank is measured. Valid values are **0** (measure using level change) and **1** (measure using meter change)

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
23	Use Aggregate / Individ Tk Logs	R/W	User	UINT8	1	0→1	1	4.00.00	1 = Measure using meter accum change.
24	Haul Start Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the command that starts the haul. Valid values are **0** (Command Inactive) and **1** (Start Haul, Open Station Valve)
25	Disposition Type	R/W	User	UINT8	1	0→255	0	4.00.00	User-enumerated value
26	Cur Avg Obs Temperature	R/W	System	Float	4	Zero or Positive Float Data	70	4.00.00	Average hauling fluid temperature
27	Cur Avg Obs Density	R/W	System	Float	4	Zero or Positive Float Data	0.7	4.00.00	Average hauling fluid density
28	Cur Avg Obs S and W	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average oil S&W percentage
29	Manual Observed Density	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered alt-calc observed density
30	Manual BS and W	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered alt-calc S&W percentage
31	Diagnostic Soft Point (1-30)	R/W	User	UINT8	1	0→32	0	4.00.00	Setpoint number to view diagnostic listing
32	Reserved U8 1	R/W	User	UINT8	1	0→255	0	4.07.00	Reserved U8 1
33	Temperature Value 3	R/W	System	Float	4	Zero or Positive Float Data	-460.0	4.00.00	Temperature Val 3 (3/4 way API 18.2 only)
34	Manual Temperature	R/W	User	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-enteredalt-calc temperature
35	Purchaser Code	R/W	User	UINT16	2	0→65535	0	4.00.00	User-enumerated value for fluid purchaser
36	Hauler ID #2	R/W	User	String10	10	Printable ASCII characters		4.00.00	Hauler Identification Number 2 (Truck #)
37	Tank Gauge Number	R/W	User	UINT8	1	0→48	0	4.00.00	Internal tank gauge number (two per tank)
38	Manu Density Units (0-Rel/1-API)	R/W	System	UINT8	1	0→1	1	4.00.00	Indicates the manually entered density units. Valid values are **0** (use relative density) and **1** (use API gravity) **Note**: This field also accommodates a driver-entered alt-calc density unit.

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
39	Haul Item Tag	R/O	System	String10	10	Printable ASCII characters		4.00.00	Tag for tank or aggregate in haul
40	LDO Simulator Enable	R/W	User	UINT8	1	0→1	0	4.00.00	LDO Simulator Enable
41	Divert Logic Permisv	R/W	User	UINT8	1	0→1	0	4.00.00	Divert Valve Logic Permissive
42	ApplyMeterPres -Tanks	R/W	User	UINT8	1	0→1	0	4.00.00	Apply Meter Pressure to Tanks
43	Temperature Value 1	R/W	System	Float	4	Zero or Positive Float Data	-460.0	4.00.00	Indicates 1st manual temperature for haul
44	Temperature Value 2	R/W	System	Float	4	Zero or Positive Float Data	-460.0	4.00.00	Indicates 2nd manual temperature for haul
45	Meter Factor	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Indicates the Meter Factor
46	Density Units	R/W	User	UINT8	1	0→7	0	4.00.00	Indicates the density units used. Valid values are: **0** = Kilograms/Cubic Meter **1** = Grams/Centimeters **2** = Lbs/CuFt **3** = Lbs/BBL **4** = Lbs/Gallon **5** = Relative Density **6** = API Gravity **7** = Kilograms/Liter
47	Density Value 1	R/W	System	Float	4	Zero or Positive Float Data	-100.0	4.00.00	Fluid Density of Haul (Opening or 1/2 way)
48	Density Temp Value 1	R/W	System	Float	4	Zero or Positive Float Data	-460.0	4.00.00	Density Temp (Opening or 1/2 way)
49	S and W Value 1	R/W	System	Float	4	Zero or Positive Float Data	-1.0	4.00.00	S&W Pct (Opening or 1/4 way)
50	HMI Message Field	R/W	System	String20	20	Printable ASCII characters	0	4.00.00	Status message for Beijer display
51	HMI Object Count	R/W	User	UINT8	1	0→24	0	4.00.00	Haul Items Configured for this HMI Instance
52	ShowDriver-Man Input	R/W	User	UINT8	1		0	4.00.00	
53	HMI Permissive	R/W	User	UINT8	1	0→1	1	4.00.00	Indicates whether the load station value can be opened. Valid values are **0** (load station valve cannot be opened) and **1** (load station valve is operable)

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
54	HMI Navigation	R/W	User	UINT8	1	0→7	0	4.00.00	Controls the message field for the Beijer display. Valid values are: **0** = User is logged out **1** = Driver ID accepted **2** = Opening edits **3** = Editing fluid characteristics **4** = Haul in progress **5** = Closing edits **6** = Haul finished **7** = Displaying final summary
55	Ticket Print Command	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates whether the program prints a haul transaction ticket. Valid values are **0** (no action) and **1** (print ticket)
56	Temperature Signal Type	R/O	System	UINT8	1	0→1	0	4.00.00	Indicates whether the program allows edits of the temperature signal. Valid values are **0** (no edits; signal is automatic) and **1** (user can edit signal)
57	Density Signal Type	R/O	System	UINT8	1	0→1	0	4.00.00	Indicates whether the program allows edits of the density signal. Valid values are **0** (no edits; signal is automatic) and **1** (user can edit signal)
58	Density Temp Signal Type	R/O	System	UINT8	1	0→1	0	4.00.00	Indicates whether the program allows edits of the density temperature signal. Valid values are **0** (no edits; signal is automatic) and **1** (user can edit signal)
59	S and W Signal Type	R/O	System	UINT8	1	0→1	0	4.00.00	Indicates whether the program allows edits of the S&W signal. Valid values are **0** (no edits; signal is automatic) and **1** (user can edit signal)
60	LDO Valve Command Value	R/W	System	UINT8	1	0→1	0	4.00.00	Controls the load station valve. Valid values are **0** (close load station valve) and **1** (open load station valve)

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
61	LDO Valve Def	R/W	User	TLP	3	Any DO point status parameters	0	4.00.00	TLP of valve (DO status parameter)
62	Enable Load Preset	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the Load Preset Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Volume **Bit 2** = Load With Zero Value **Bit 7** = Validated
63	Load Preset Value	R/W	User	Float	4	Positive Float Number	0	4.00.00	Target haul value in barrels.
64	Load Line Seal Off Num	R/W	User	UINT32	4	0→4,294,967,295	0	4.00.00	Number of seal removed from load line
65	Load Line Seal On Num	R/W	User	UINT32	4	0→4,294,967,295	0	4.00.00	Number of seal placed on load line
66	Driver Haul Opening LLin	R/W	User	UINT8	1	0→255	0	4.00.00	Driver-Entered Opening Gauge LLin (Integer)
67	Driver Haul Opening SLin	R/W	User	UINT8	1	0→11	0	4.00.00	Driver-Entered Opening Gauge SLin (Integer)
68	Driver Haul Opening FLin	R/W	User	UINT8	1	0→3	0	4.00.00	Driver-Entered Opening Gauge FLin (Integer)
69	Driver Haul Closing LLin	R/W	User	UINT8	1	0→255	0	4.00.00	Driver-Entered Closing Gauge LLin (Integer)
70	Driver Haul Closing SLin	R/W	User	UINT8	1	0→11	0	4.00.00	Driver-Entered Closing Gauge SLin (Integer)
71	Driver Haul Closing FLin	R/W	User	UINT8	1	0→3	0	4.00.00	Driver-Entered Closing Gauge FLin (Integer)
72	Driver Haul Accepting Volume	R/W	User	Float	4	Positive Float Number	0	4.00.00	Driver-entered estimate of haul volume in barrels
73	RTU Haul Opening LLin	R/W	System	UINT8	1	0→255	0	4.00.00	RTU-Measured Opening Gauge LLin (Integer)
74	RTU Haul Opening SLin	R/W	System	UINT8	1	0→11	0	4.00.00	RTU-Measured Opening Gauge SLin (Integer)
75	RTU Haul Opening FLin	R/W	System	UINT8	1	0→3	0	4.00.00	RTU-Measured Opening Gauge FLin (Integer)
76	RTU Haul Closing LLin	R/W	System	UINT8	1	0→255	0	4.00.00	RTU-Measured Closing Gauge LLin (Integer)

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
77	RTU Haul Closing SLin	R/W	System	UINT8	1	0→11	0	4.00.00	RTU-Measured Closing Gauge SLin (Integer)
78	RTU Haul Closing FLin	R/W	System	UINT8	1	0→3	0	4.00.00	RTU-Measured Closing Gauge FLin (Integer)
79	Transfer Out Tank Num	R/W	User	UINT8	1	0→24	0	4.00.00	Tank instance for outgoing fluid transfer
80	Transfer In Tank Num	R/W	User	UINT8	1	0→24	0	4.00.00	Tank instance for incoming fluid transfer
81	Transfer Fluid	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates the fluid being transferred. Valid values are **0** (oil/hydrocarbon) and **1** (water)
82	Transfer InProcess	R/W	System	UINT8	1	0→1	0	4.00.00	Indicates if a transfer is in process. Valid values are **0** (no transfer in process) and **1** (transfer in process)
83	Printer Exists	R/W	User	UINT8	1	0→1	0	4.00.00	Indicates if a printer is available. Valid values are **0** (no printer exists) and **1** (printer exists). If the value is **1**, the program displays a **Print** button. **Note**: Not used on the FB107.
84	Hauler Company Name	R/O	System	String10	10	Printable ASCII characters	0	4.00.00	Name of hauling company (from entered code). **Note**: Not used on the FB107.
85	Load Out PMSC Trip Code	R/W	System	UINT8	1	0→148	0	4.02.00	Load Out PMSC Trip Code
86	Manual Calc Inputs Switch	R/W	User	UINT8	1	0→1	0	4.05.00	Identifies the Manual Calc Inputs Switch. Valid values are: 0 = Use Calculated Avg GSV 1 = Use Driver Inputs to Calculate GSV
87	Haul Object Type	R/W	User	UINT8	1	0→1	0	4.06.00	Identifies the Haul Object Type. Valid values are: **0** = Tank **1** = Aggregate **2** = LACT **3** = Item

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
88	Haul Attributes of Interest	R/O	System	UINT8	1	1→6 Bitwise	3	4.06.00	Haul Attributes of Interest. Valid values are: **Bit 0** = Show Levels (bitwise) **Bit 1** = Show Inventory **Bit 2** = Show Open/Close Accumulators
89	Identifier Field 1 Config	R/W	User	UINT8	1	1→131 Bitwise	3	4.06.00	Identifier Field 1 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Text **Bit 7** = Validated
90	Identifier Field 2 Config	R/W	User	UINT8	1	1→131 Bitwise	3	4.06.00	Identifier Field 2 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Text **Bit 7** = Validated
91	Temperature 1 Config	R/W	User	UINT8	1	1→131 Bitwise	3	4.06.00	Temperature 1 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
92	Temp 2 Config	R/W	User	UINT8	1	1→131 Bitwise	0	4.06.00	Temperature 2 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Madatory Positive Value (Use) **Bit 7** = Validated
93	Config Bit Overview	R/W	User	UINT8	1	1→131 Bitwise	0	4.06.00	Config Bit Overview. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value (Use)
94	Density 1 Config	R/W	User	UINT8	1	1→131 Bitwise	3	4.06.00	Density 1 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
95	Density 2 Config	R/W	User	UINT8	1	1→131 Bitwise	0	4.06.00	Density 2 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value (Use) **Bit 7** = Validated
96	S & W 1 Config	R/W	User	UINT8	1	1→131 Bitwise	3	4.06.00	S & W 1 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
97	S & W 2 Config	R/W	User	UINT8	1	1→131 Bitwise	0	4.06.00	S & W 1 Config. Valid values are: **Bit 0** = Make Visible **Bit** 1 = Mandatory Positive Value (Use) **Bit 7** = Validated
98	Density Temp Config	R/W	User	UINT8	1	1→131 Bitwise	3	4.06.00	Density Temp Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
99	Seal Off Number Config	R/W	User	UINT8	1	1→131 Bitwise	1	4.06.00	Seal Off Number Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value **Bit 3** = Impose before Loading **Bit 7** = Validated
100	Seal On Number Config	R/W	User	UINT8	1	1→131 Bitwise	1	4.06.00	Seal On Number Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value **Bit 7** = Validated

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
101	Driver Opening Level Config	R/W	User	UINT8	1	1→135 Bitwise	3	4.06.00	Driver Opening Level Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value **Bit 2** = Load With Zero Values **Bit 3** = Impose before Loading **Bit 7** = Validated
102	Driver Closing Level Config	R/W	User	UINT8	1	1→135 Bitwise	3	4.06.00	Driver Closing Level Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value **Bit 2** = Load With Zero Values **Bit 7** = Validated
103	Driver Accepted Volume Config	R/W	User	UINT8	1	1→135 Bitwise	3	4.06.00	Driver Accepted Volume Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Positive Value **Bit 2** = Load With Zero Value **Bit 7** = Validated
104	Temperature Default Value	R/W	User	Float	4	Zero or Positive Float Data	70.0	4.06.00	Temperature Default Value
105	Density Default Value	R/W	User	Float	4	Zero or Positive Float Data	35.0	4.06.00	Density Default Value
106	S & W Default Value	R/W	User	Float	4	Zero or Positive Float Data	0.02500	4.06.00	S & W Default Value
107	Density Temp Default Value	R/W	User	Float	4	Zero or Positive Float Data	70.0	4.06.00	Density Temp Default Value
108	Flow Indication Update Period (Secs)	R/W	User	UINT8	1	1→60	4	4.06.00	Flow Indication Update Period (Secs)
109	Security Field 1 Text	R/W	User	AC20	20	Printable ASCII characters	Company Code	4.06.00	Security Field 1 Text
110	Security Field 2 Text	R/W	User	AC20	20	Printable ASCII characters	Driver Code	4.06.00	Security Field 2 Text

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
111	Identifier Field 1 Text	R/W	User	AC20	20	Printable ASCII characters	Ticket Number	4.06.00	Identifier Field 1 Text
112	Identifier Field 2 Text	R/W	User	AC20	20	Printable ASCII characters	Truck Number	4.06.00	Identifier Field 2 Text
113	Density 2 / S&W 3	R/W	User	Float	4	Zero or Positive Float Data	-100.0	4.06.00	Closing Density Value / API 18.2 3rd S&W Extra
114	S and W Value 2	R/W	User	Float	4	Zero or Positive Float Data	-1.00	4.06.00	S and W Value 2 (Closing or 3/4 way)
115	Haul Validation Level	R/O	System	UINT8	1	0→3	0	4.06.00	Indicates the Haul Validation Level. Valid values are: **0** = None **1** = Identification Complete **2** = PreLoad Complete **3** = All Required Complete
116	Divert Valve Control Enable	R/W		UINT8	1	0→1	0	4.07.00	Divert Valve Control Enable. Valid values are: **0** = Disabled **1** = Enabled
117	DVC Max S&W Pct	R/W		Float	4	Positive Float Number	1.5	4.07.00	DVC Max S&W Pct
118	DVC S&W Verify Delay Sec	R/W		UINT8	1	0→255	30	4.07.00	DVC S&W Verify Delay Sec
119	DVC Verification Period Minutes	R/W		Float	4	Positive Float Number	3.0	4.07.00	DVC Verification Period Minutes
120	DVC Verification Attempts	R/W		UINT8	1	0→255	3	4.07.00	DVC Verification Attempts
121	Divert Valve TLP	R/W		TLP	3	Any ROC Float TLP	Undefined	4.07.00	Divert Valve TLP
122	DVC PSD Hours	R/W		Float	4	Zero or Positive Float Data	24.0	4.07.00	DVC PSD Hours
123	DVC PSD User Clear Cmd	R/W		UINT8	1	0→1	0	4.07.00	Indicates the DVC PSD User Clear Cmd. Valid values are: **0** = Idle **1** = Clear PSD

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
124	Divert Valve Control Status	R/O		UINT8	1	0→5	0	4.07.00	Indicates the Divert Valve Control Status. Valid values are: **0** = Idle **1** = Non-Merchantable State **2** = Merchantable State **3** = TSD in Effect **4** = PSD in Effect **5** = No S&W Input Configured
125	Divert Valve Output	R/O		UINT8	1	0→1	0	4.07.00	Indicates the Divert Valve Output. Valid values are: **0** = Diverted to Tank **1** = Open to Truck
126	DVC Verifications Failed	R/O		UINT8	1	0→255	0	4.07.00	DVC Verifications Failed
127	Ambient Temperature	R/W		Float	4	Positive Float Number	70.0	4.07.00	Ambient Temperature
128	Enable Rung Avg Temp	R/W		UINT8	1	0→1	0	4.07.00	Indicates the Enable Monthly Avg Temp. Valid values are: **0** = Disabled **1** = Enabled
129	Rung Avg Temp Summation	R/W		Double (ROC800) Float (FB107)	8	Zero or Positive Double Data	0.0	4.07.00	Running Avg Temp Summation
130	Rung Avg Temp Volume	R/W		Double (ROC800) Float (FB107)	8	Zero or Positive Double Data	0.0	4.07.00	Running Avg Temp Volume
131	Rung Avg Temp Hauls	R/W		UINT32	4	0→30000000	0	4.07.00	Hauls Included in Running Avg Temp
132	Running Temp Avg	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Running FW Average Temperature
133	Completed Temp Avg	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Completed FW Average Temperature
134	Closeout Rung Avg Temp	R/W		UINT8	1	0→1	0	4.07.00	Indicates the Closeout Monthly Avg Temp. Valid values are: **0** = Idle **1** = Perform Rollover

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
135	Compl Avg Stop Date	R/W		UINT8	1	101→991231	0	4.07.00	Completed Avg Temperature Stop Date
136	Deliver Out or Receive In	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Deliver Out or Receive In. Valid values are: **0** = Deliver Out **1** = Receive In
137	Load Out Fluid Type	R/W	User	UINT8	1	0→1	0	4.07.00	Indicated the Load Out Fluid Type. Valid values are: **0** = Crude Oil (Hydrocarbon). **1** = Produced Water
138	Measurement Method	R/W	User	UINT8	1	0→2	0	4.07.00	Indicates the Measurement Method. Valid values are: **0** = Tank Level Delta: API 12.1.1 **1** = ROC800L / CLAP Meter **2** = PI Meter (API 12.2 / API 18.2 **3** = Tank Level Delta: API 18.2 Static
139	Meter TLP	R/W	User	TLP	3	ROC PI, APM or 800L Mtr Inst	Undefined	4.07.00	Meter TLP
140	Is a Standalone LACT	R/W	User	UINT8	1	0→1	1	4.07.00	Is a Standalone LACT. Valid values are: **0** = No **1** = Yes
141	Associated Tank/Agr Insts 1	R/W	User	UINT8	1	0→7 Bitwise	0	4.07.00	Associated Tank/Agr Insts 1
142	Associated Tank/Agr Insts 2	R/W	User	UINT8	1	0→7 Bitwise	0	4.07.00	Associated Tank/Agr Insts 2
143	Associated Tank/Agr Insts 3	R/W	User	UINT8	1	0→7 Bitwise	0	4.07.00	Associated Tank/Agr Insts 3
144	Temperature TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Temperature TLP
145	Density TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Density TLP
146	S&W TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	S&W TLP
147	Pressure TLP	R/W	User	TLP	3	Any ROC Float	Undefined	4.07.00	Pressure TLP

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
						TLP			
148	Densitometer Temp TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Densitometer Temp TLP
149	Densitometer Press TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Densitometer Press TLP
150	Ambient Temp TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.07.00	Ambient Temp TLP
151	Calculate Standard Volumes	R/W	User	UINT8	1	0→1	1	4.07.00	Calculate Standard Volumes. Valid values are: **0** = No **1** = Yes
152	Dens Temp 2 / S&W 4	R/W	User	Float	4	Zero or Positive Float Value	-460.00	4.07.00	Closing Density Temp Value / S&W Val 4 (extra)
153	Pressure Value 1	R/W	User	Float	4	Zero or Positive Float Value	-20	4.07.00	Pressure Value 1 (Opening or 1/4 way)
154	Pressure Value 2	R/W	User	Float	4	Zero or Positive Float Value	-20	4.07.00	Pressure Value 2 (Closing or 3/4 way)
155	Densitometer Press Value 1	R/W	User	Float	4	Zero or Positive Float Value	-20	4.07.00	Density Press Value (Opening or 1/2 way)
156	Den Press 2 / S&W 5	R/W	User	Float	4	Zero or Positive Float Value	-20.00	4.07.00	Closing Density Press Val / S&W Val 5 (extra)
157	Density Temp 2 Config	R/W	User	UINT8	1	0→131 Bitwise	3	4.07.00	Density Temp 2 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
158	Pressure 1 Config	R/W	User	UINT8	1	0→131 Bitwise	3	4.07.00	Pressure 1 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
159	Pressure 2 Config	R/W	User	UINT8	1	0→131 Bitwise	3	4.07.00	Pressure 2 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
160	Density Press 1 Config	R/W	User	UINT8	1	0→131 Bitwise	3	4.07.00	Density Press 1 Config. Valid values are:

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
									Bit 0 = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
161	Density Press 2 Config	R/W	User	UINT8	1	0→131 Bitwise	3	4.07.00	Density Press 2 Config. Valid values are: **Bit 0** = Make Visible **Bit 1** = Load with Default Value **Bit 7** = Validated
162	Pressure Default Value	R/W	User	Float	4	Zero or Positive Float Value	0.00	4.07.00	Pressure Default Value
163	Density Press Default Value	R/W	User	Float	4	Zero or Positive Float Value	0.00	4.07.00	Density Press Default Value
164	Temp Signal Def is Local/At Tank	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Temp Signal Def is Local/At Tank. Valid values are: **0** = Use Def at LoadOut Display **1** = Use Defs at Tank Display
165	Pres Signal Def is Local/At Tank	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Pres Signal Def is Local/At Tank. Valid values are: **0** = Use Def at LoadOut Display **1** = Use Defs at Tank Display
166	S&W Signal Def is Local/At Tank	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the S&W Signal Def is Local/At Tank. Valid values are: **0** = Use Def at LoadOut Display **1** = Use Defs at Tank Display
167	Dens Signal Def is Local/At Tank	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Dens Signal Def is Local/At Tank. Valid values are: **0** = Use Def at LoadOut Display **1** = Use Defs at Tank Display
168	Dens Temp Signal Def is Local/At Tank	R/W	User	UINT8	1	0→1	0	4.07.00	Indicates the Dens Temp Signal Def is Local/At Tank. Valid values are:

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
									0 = Use Def at LoadOut Display **1** = Use Defs at Tank Display
169	Dens Pres Signal Def is Local/At Tank	R/W	User	UINT8	8	0→1	0	4.07.00	Indicates the Dens Pres Signal Def is Local/At Tank. Valid values are: **0** = Use Def at LoadOut Display **1** = Use Defs at Tank Display
170	Pressure Signal Type	R/W		UINT8	1	0→1	0	4.07.00	Indicates the Pressure Signal Type. Valid values are: **0** = Auto **1** = Manual
171	Density Press Signal Type	R/W		UINT8	1	0→1	0	4.07.00	Indicates the Density Press Signal Type. Valid values are: **0** = Auto **1** = Manual
172	Equilibrium Pressure	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Equilibrium Pressure
173	Prev Haul Status	R/W		UINT8	1	0→1	0	4.07.00	Indicates the Prev Haul Status. Valid values are: **0** = Not Hauling **1** = Hauling
174	Haul Volume This Day Oil	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume This Day Oil
175	Haul Volume This Day Wtr	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume This Day Wtr
176	Haul Volume Prev Day Oil	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume Prev Day Oil
177	Haul Volume Prev Day Wtr	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume Prev Day Wtr
178	Haul Volume This Month Oil	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume This Month Oil
179	Haul Volume This Month Wtr	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume This Month Wtr
180	Haul Volume Prev Month Oil	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume Prev Month Oil

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
181	Haul Volume Prev Day Wtr	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	Haul Volume Prev Day Wtr
182	Haul Volume Accum Oil	R/W		Double (ROC800) Float (FB107)	8	Zero or Positive Double Value	0.0	4.07.00	Haul Volume Accum Oil
183	Haul Volme Accum Wtr	R/W		Double (ROC800) Float (FB107)	8	Zero or Positive Double Value	0.0	4.07.00	Haul Volme Accum Wtr
184	Qty Hauls This Day Oil	R/W		UINT8	1	0→255	0	4.07.00	Qty Hauls This Day Oil
185	Qty Hauls This Day Wtr	R/W		UINT8	1	0→255	0	4.07.00	Qty Hauls This Day Wtr
186	Qty Hauls Prev Day Oil	R/W		UINT8	1	0→255	0	4.07.00	Qty Hauls Prev Day Oil
187	Qty Hauls Prev Day Wtr	R/W		UINT8	1	0→255	0	4.07.00	Qty Hauls Prev Day Wtr
188	Qty Hauls This Month Oil	R/W		UINT16	2	0→65535	0	4.07.00	Qty Hauls This Month Oil
189	Qty Hauls This Month Wtr	R/W		UINT16	2	1→65535	0	4.07.00	Qty Hauls This Month Wtr
190	Qty Hauls Prev Month Oil	R/W		UINT16	2	2→65535	0	4.07.00	Qty Hauls Prev Month Oil
191	Qty Hauls Prev Month Wtr	R/W		UINT16	2	3→65535	0	4.07.00	Qty Hauls Prev Month Wtr
192	Qty Hauls Accum Oil	R/W		UINT32	4	0→4,294,967,295	0	4.07.00	Qty Hauls Accum Oil
193	Qty Hauls Accum Wtr	R/W		UINT32	4	0→4,294,967,295	0	4.07.00	Qty Hauls Accum Wtr
194	LoadOut Contract Hour	R/W		UINT8	1	0→255	0	4.07.00	LoadOut Contract Hour
195	Log Hauls on Day Start/End	R/W		UINT8	1	0→255	0	4.07.00	Log Hauls on Day Start/End
196	Cur Contract Day	R/W		UINT8	1	0→31	0	4.07.00	Cur Contract Day
197	Cur Contract Month	R/W		UINT8	1	0→12	0	4.07.00	Cur Contract Month
198	Clear Haul Stats	R/W		UINT8	1	0→1	0	4.07.00	Clear Haul Stats. Valid values are: **0** = NO **1** = YES
199	DVC PSD Remaining Hours	R/W		Float	4	Zero or Positive Float Value	0.0	4.07.00	DVC PSD Remaining Hours
200	DVC PSD in Effect	R/W		UINT8	1	0→1	0	4.07.00	DVC PSD in Effect
201	Cmpl Avg Temp Vol	R/W	System	Float	4	Zero or Positive Float Value	0.0	4.09.00	Volume During Completed Avg Temperature

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
202	Cmpl Avg Temp Hauls	R/W	System	UINT32	4	0→4,294,967,295	0.0	4.09.00	Hauls Included in Completed Avg Temperature
203	Cmpl TAvg Start Date	R/W	System	UINT32	4	101→991231	0	4.09.00	Completed Temperature Average Start Date
204	Enable Rung Avg Pres	R/W	User	UINT8	1	0→1	0	4.09.00	Enable Running Average Pressure. Valid values are: **0** = NO **1** = YES
205	Cmpl PAvg Stop Date	R/W	System	UINT32	4	101→991231	0	4.09.00	Completed Avg Pressure Stop Date
206	Cmpl PAvg Start Date	R/W	System	UINT32	4	101→991231	0	4.09.00	Completed Avg Pressure Start Date
207	Running Pres Avg	R/W	System	Float	4	Float Value	0.0	4.09.00	Running Average Pressure
208	Complete Pres Avg	R/W	System	Float	4	Float Value	0.0	4.09.00	Completed Average Pressure
209	Rung Avg Pres Vol	R/W	System	Float	4	Zero or Positive Float Value	0.0	4.09.00	Volume During Running Avg Pressure
210	Cmpl Avg Pres Vol	R/W	System	Float	4	Zero or Positive Float Value	0.0	4.09.00	Volume During Completed Avg Pressure
211	Rung Avg Pres Sum	R/W	System	Double (ROC800) Float (FB107)	4	Zero or Positive Double Float	0.0	4.09.00	Summation for Running Avg Pressure
212	Rung Avg Pres Hauls	R/W	System	UINT32	4	0→4,294,967,295	0	4.09.00	Hauls Included in Running Avg Pressure
213	Cmpl Avg Pres Hauls	R/W	System	UINT32	4	0→4,294,967,295	0.0	4.09.00	Hauls Included in Completed Avg Pressure
214	Close Rung Avg Pres	R/W	System	UINT8	1	0→1	0	4.09.00	CloseOut Running Avg Pressure Command. Valid values are: **0** = No Action **1** = Close Out Averaging Period
215	TSDs Require Reset	R/W	User	UINT8	1	0→1	0	4.09.00	Require a Reset for TSDs. Valid values are: **0** = No **1** = Yes, reset is Required.

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
216	Reset TSD Now	R/W	User	UINT8	1	0→1	0	4.09.00	Reset TSD Now. Valid values are: **0** = No Action **1** = Reset the Cleared TSD Condition.
217	DVC S&W Def	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.09.00	Divert Valve S&W Point Definition
218	DVC S&W Value	R/W	Both	Float	4	Zero or Positive Float Value	0.0	4.09.00	Divert Valve S&W Value (AUTO or MANU)
219	DVC Auto/Manu Switch	R/W	User	UINT8	1	0→1	0	4.09.00	Divert Valve Auto/Manual Switch. Valid values are: **0** = Use Auto Signal from TLP **1** = Use/Hold User Entered Value
220	Reject Haul Command	R/W	User	UINT8	1	0→1	0	4.09.00	Reject the Current Haul (Command Button). Valid values are: **0** = Haul/Transaction Accepted **1** = Haul/Transaction Rejected
221	Reject Haul Enum Code	R/W	User	UINT8	1	0→255 per List #1 Values	0	4.09.00	Enum Reason Code for Haul Rejection
222	Initial Merch Val	R/W	Both	Float	4	Zero or Positive Float Value	0.0	4.09.00	Initial Merchantability Value
223	FW Outlet Clearance	R/W	Both	Float	4	Float Value	0.0	4.09.00	Free Water to Outlet Clearance Inches
224	Metered AutoHaul TLP	R/W	User	TLP	3	Any ROC Float TLP	Undefined	4.09.00	Metered AutoHaul TLP Discrete Signal Definition
225	Metered AutoHaul Val	R/W	User	UINT8	1	0→1	1	4.09.00	AutoHaul Mins Allowed Signal OFF before Closeout. Valid values are: **0** = Auto Haul Not in Progress **1** = Auto Haul in Progress (include Timeout Period)
226	Assoc Tank/Agr Inst4	R/W	User	UINT8	1	0→7 (bitwise)	0.0	4.09.00	Associated Tank/Agr Insts 4 (Tanks #25-32)
227	Assoc Tank/Agr Inst5	R/W	User	UINT8	1	0→7 (bitwise)	0.0	4.09.00	Associated Tank/Agr Insts 5 (Tanks #33-40)

Point Type 231 (ROC800) or Point Type 183 (FB107): PMTM Load Outs

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
228	Destination Code	R/W	User	UINT16	2	0→65535 per List #4 Values	0.0	4.09.00	User-Enumerated Value for Fluid Destination
229	Loadout FMP Number	R/W	User	String20	20	Printable ASCII characters		4.09.00	Loadout FMP Number from BLM
230	Purchaser Config	R/W	User	UINT8	1	0→133 (bitwise)	1	4.09.00	Purchaser Config Byte. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Valid Selection **Bit 7** = Validated
231	Disposition Config	R/W	User	UINT8	1	0→133 (bitwise)	1	4.09.00	Disposition Type Config Byte. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Valid Selection **Bit 7** = Validated
232	Destination Config	R/W	User	UINT8	1	0→133 (bitwise)	1	4.09.00	Destination Config Byte. Valid values are: **Bit 0** = Make Visible **Bit 1** = Mandatory Valid Selection **Bit 7** = Validated

4.8 Point Type 232/184: PMTM Hauler Database

Point type 232 (for ROC800) or point type 184 (for FB107) defines the parameters to configure the hauler database. The program supports up to 60 logicals of point type 232 (for ROC800) or 60 logicals of point type 184 (for FB107).

Point Type 232 (ROC800) or Point Type 184 (FB107): PMTM Hauler Database

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Company Tag	R/W	User	String10	10	Printable ASCII characters		4.00.00	Name of hauling company
1	Security Code 1	R/W	User	UINT16	2	0→65535	0	4.00.00	Code number for hauling company
2	Security Code 2 Min	R/W	User	UINT16	2	0→65535	0	4.00.00	Lowest valid driver PIN number
3	Security Code 2 Max	R/W	User	UINT16	2	0→65535	0	4.00.00	Highest valid driver PIN number
4	LoadOuts Allowed	R/W	User	UINT8	1	0→63 (Bitwise)	0	4.09.00	LoadOuts Allowed
5	List Number	R/W	User	UINT8	1	0→4	0	4.09.00	List Number for Parameters 6, 7. Valid values are: **0** = No List Attachment **1** = Turndown Reject Reasons List Entry **2** = Purchasers List Entry **3** = Disposition Types List Entry **4** = Destinations List Entry
6	Enum Text	R/W	User	String20	20	Printable ASCII characters		4.09.00	Text Entry for Reject, Purch, Dispo, Dest
7	Enum Entry Value	R/W	User	UINT16	2	0→65535	0	4.09.00	Value Entry for Reject, Purch, Dispo, Dest

4.9 Point Type 233/185: PMTM Haul Current Values

Point type 233 (for ROC800) or point type 185 (for FB107) defines the parameters to configurate current haul values. The program supports up to 6 logicals of point type 233 (for ROC800) or 2 logicals of point type 185 (for FB107).

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Tank ID	R/W	System	String10	10	ASCII Characters	<idle>	4.00.00	Identifies tag for tank hauled.
1	Haul Number Today	R/W	System	UINT8	1	0→255	0	4.00.00	Indicates the number of times today this tank has been hauled.
2	Opening Date	R/W	System	UINT32	4	101→991231	0	4.00.00	Haul start date in format YYMMDD.
3	Opening Time	R/W	System	UINT32	4	0→235959	0	4.00.00	Haul start time in format HHMMSS
4	Closing Date	R/W	System	UINT32	4	101→991231	0	4.00.00	Haul end date in format YYMMDD
5	Closing Time	R/W	System	UINT32	4	0→235959	0	4.00.00	Haul end time in format HHMMSS
6	Haul Duration Minutes	R/W	System	Float	4	Positive Float Data	0	4.00.00	Haul duration in minutes
7	Total Gross Volume	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Haul volume from level change or meter indicated volume
8	High Level	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Highest tank level in feet for this cycle.
9	High Stock	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Highest tank fluid volume for this cycle
10	High Mark Date	R/W	System	UINT32	4	101→991231	0	4.00.00	Date of highest level in format YYMMDD
11	High Mark Time	R/W	System	UINT32	4	0→235959	0	4.00.00	Time of highest level in format HHMMSS
12	Shrinkage B4 Haul	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Difference between high and opening tank volumes
13	Opening Level	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Tank fluid level, in feet, at start of haul
14	Opening Stock	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Tank fluid volume, in barrels, at start of haul
15	Closing Level	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Tank fluid level, in feet, at close of haul
16	Closing Stock	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Tank fluid volume, in barrels, at close of haul

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
17	Avg Temperature	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average fluid temperature during haul
18	Avg Obs Rel Density	R/W	System	Float	4	Float Data	0	4.00.00	Average observed relative density during haul
19	Avg S and W	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average sediment and water measured during haul
20	Avg API Grav 60	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average standard API gravity during oil haul
21	Avg Rel Dens 60	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average standard relative density during oil haul
22	Volume Cor Factor	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average temperature correction factor of observed temperature to 60F for oil haul
23	Copr Factor Calc is Invalid	R/W	System	UINT8	1	0→1	0	4.00.00	Indicates if correction factor calculation is correct. Valid values are **0** (CTL calc is valid) and **1** (CTL calc in invalid, standard = observed)
24	Oil Level Change	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Change in oil level, in feet, during haul.
25	Gross Oil Vol Hauled	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Gross oil volume hauled (difference from Ind if Mtr Factor ! = 1)
26	Gross Oil 60 Vol Hauled	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Gross volume of oil hauled, corrected to 60°F
27	Net Oil Vol Hauled	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Gross standard oil volume hauled, less S&W volume
28	Water Level Change	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Change in water level, in feet, during haul
29	Water Vol Hauled	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Volume of water, in barrels, hauled
30	Inferred (Gross) BBL During Haul	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Barrels calculated to have entered tank during haul
31	Haul Serial Number	R/W	System	UINT32	4	0→4,294,967,295	0	4.00.00	Serial identifier for haul
32	Haul Ticket Number	R/W	System	String20	20	ASCII Characters	0	4.00.00	Hauling company ticket number for haul

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
33	Transaction Type (Indv,Aggr,Meter)	R/W	System	UINT8	1	1→6	1	4.00.00	Indicates the type of transaction. Valid values are: **1** = Individual tank **2** = Tank Aggregate **3** = ROC800 Water Instance **4** = Water Meter (Pulse Input) Instance **5** = Tank-to-tankTransfer Outbound **6** = Tank-to-tankTransfer Inbound
34	Meter Factor (Coriolis)	R/W	System	Float	4	Positive Float Data	1	4.00.00	ROC800L meter factor
35	Meter Density Kg/m3	R/W	System	Float	4	Positive Float Data	0	4.00.00	
36	Observed API Gravity	R/W	System	Float	4	Float Data	0	4.00.00	Average observed API gravity during haul
37	Meter Start Volume	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	ROC800L or Pulse Input Starting Indicated accumulation
38	Meter End Volume	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	ROC800L or Pulse Input Ending Indicated accumulation
39	Company Code	R/W	System	UINT16	2	0→65535	0	4.00.00	Company identifier for haul
40	Driver Code	R/W	System	UINT16	2	0→65535	0	4.00.00	Driver identifier for haul
41	Disposition Type	R/W	System	UINT8	4	0→255	0	4.00.00	User-enumerated Disposition for haul
42	Manual Corr API Censity	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered alternate observed API gravity
43	Manual BS and W	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered alternate S&W percentage
44	Haul Serial Num Index Cmd	R/W	System	UINT32	4	0→4,294,967,295	0	4.00.00	Serial number of log requested for logical zero
45	Avg Densitometer Tempt	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average temperature DegF at densitometer
46	Avg CTL Base to Alt	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Average temperature correction factor 60F to density temperature for oil haul
47	Truck Number	R/W	System	String10	10	ASCII Characters	0	4.00.00	Hauling company truck number for haul
48	Purchaser Code	R/W	System	UINT16	2	0→65535	0	4.00.00	User-enumerated purchaser code for haul

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
49	Manual Temperature	R/W	System	Float	4	0→65535	0	4.00.00	Driver-entered alternate calculation for temperature DegF
50	Manual Derived Grs Std Vol Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Alternate calculated gross standard oil volume using alternate calc inputs
51	Manual Derived Net Std Vol Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Alternate calculated net standard oil volume using alternate calc inputs
52	Level Change Volume	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Change in tank fluid level in feet (“strapping value”)
53	Fluid Type Hauled	R/W	System	UINT8	1	0→1	0	4.00.00	Indicates the fluid hauled. Valid values are **0** (Oil/hydrocarbon) or **1** (produced water).
54	Tank Accounting Code	R/W	System	String10	10	ASCII Characters	0	4.00.00	User accounting system identifier for tank hauled
55	Load Line Seal Off Num	R/W	System	UINT32	4	0→4,294,967,295	0	4.00.00	Number of seal removed from load line
56	Load Line Seal On Num	R/W	System	UINT32	4	0→4,294,967,295	0	4.00.00	Number of seal placed from load line
57	Driver Haul Opening Feet	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered haul opening level, in feet.
58	Driver Haul Closing Feet	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered haul closing level, in feet.
59	Driver Haul Accepted Volume	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Driver-entered accepted haul volume, in barrels
60	HMI or Auto-Detected Haul	R/O	System	UINT8	1	0→1	0	4.00.00	Indicates how the haul is detected. Valid values are **0** (HMI generated haul) or **1** (Auto-detected haul)
61	High Level Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	High column height in feet for oil this cycle.
62	High Level Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	High column height in feet for water this cycle.
63	High Stock Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	High volume in barrels for oil this cycle.
64	High Stock Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	High volume in barrels for water this cycle.

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
65	Opening Level Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Oil column height in feet at start of haul.
66	Opening Level Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Water column height in feet at start of haul.
67	Opening Stock Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Oil volume in barrels at start of haul
68	Opening Stock Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Water volume in barrels at start of haul
69	Closing Level Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Oil column height in feet at close of haul.
70	Closing Level Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Water column height in feet at close of haul.
71	Closing Stock Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Oil volume in barrels at end of haul
72	Closing Stock Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Water volume in barrels at end of haul
73	Shrinkage B4 Haul Oil	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Difference between high and opening oil volumes
74	Shrinkage B4 Haul Water	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Differece between high and opening water volumes
75	Level Change Tank	R/W	System	Float	4	Zero or Positive Float Data	0	4.00.00	Fluid level change during haul
78	S and W Volume	R/W	System	Float	4	Zero or Positive Float Data	0	4.05.00	S and W Volume
79	S and W Vol - Manual Calc	R/W	System	Float	4	Zero or Positive Float Data	0	4.05.00	S and W Vol - Manual Calc
80	Record Location in File	R/W	System	UINT16	2	0→511	0	4.07.00	Haul Record Location in File
81	Hard Haul Serial Number	R/W	System	UINT32	4	0→4,294,967,295	0.0	4.07.00	Hard Haul Serial Number
82	Mtr Opening Gross Volume	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Opening Gross Volume
83	Mtr Opening GSV	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Opening GSV

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
84	Mtr Opening NSV	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Opening NSV
85	Mtr Opening SWV	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Opening SWV
86	Mtr Opening Mass	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Opening Mass
87	Mtr Closing Gross Volume	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Closing Gross Volume
88	Mtr Closing GSV	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Closing GSV
89	Mtr Closing NSV	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Closing NSV
90	Mtr Closing SWV	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Closing SWV
91	Mtr Closing Mass	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Mtr Closing Mass
92	Temperature Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Temperature Summation

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
93	Pressure Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Pressure Summation
94	Density Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Density Summation
95	S&W Pct Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	S&W Pct Summation
96	Dens Temp Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Dens Temp Summation
97	Dens Press Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Dens Press Summation
98	Avg Obs Dens UserUnit	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg Obs Dens UserUnit
99	Avg Base Dens UserUnit	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg Base Dens UserUnit
100	Base Temperature DegF	R/W	System	Float	4	Positive Float Data	60.0	4.07.00	Base Temperature DegF
101	Flow Rate per Minute	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Flow Rate per Minute
102	Future Float	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Future Float
103	Future Float	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Future Float
104	Avg Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg Pressure
105	Avg Densitometer Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg Densitometer Pressure
106	Avg Obs Density Kg/m3	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg Obs Density Kg/m3

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
107	Avg 60F Density Kg/m3	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Avg 60F Density Kg/m3
108	Avg 15C Density Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg 15C Density Kg/m3
109	CTLob Avg Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	CTLob Avg Summation
110	CTLba Avg Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	CTLba Avg Summation
111	Volume FWA Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Volume FWA Summation
112	Record Wtr Hld-OilHl	R/W	System	UINT8	1	0→1	0	4.09.02	Record Water Volume Hauled During an Oil Haul: **0** = No **1** = Yes
113	Record Oil Hld-WtrHl	R/W	System	UINT8	1	0→1	0	4.09.02	Record Oil Volume Hauled During a Water Haul: **0** = No **1** = Yes
114	Opening Temperature	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Temperature
115	Opening Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Opening Pressure
116	Opening S&W Pct	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Opening S&W Pct
117	Opening Obs Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Obs Dens Kg/m3
118	Opening Dens Temp	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Dens Temp
119	Opening Dens Press	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Opening Dens Press
120	Opening CTL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CTL
121	Opening CPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CPL
122	Opening CTPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CTPL
123	Opening CSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CSW

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
124	Closing Temperature	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Temperature
125	Closing Pressure	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Closing Pressure
126	Closing S&W Pct	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Closing S&W Pct
127	Closing Obs Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Obs Dens Kg/m3
128	Closing Dens Temp	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Dens Temp
129	Closing Dens Press	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Closing Dens Press
130	Closing CTL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CTL
131	Closing CPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CPL
132	Closing CTPL	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CTPL
133	Closing CSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CSW
134	Prev Scan Mtr Accum	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Prev Scan Mtr Accum
135	Prev Scan Fluid Inventory	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Prev Scan Fluid Inventory
136	Opening TOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening TOV
137	Opening CTSh	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening CTSh
138	Opening GOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening GOV
139	Opening GSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening GSV
140	Opening NSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSV
141	Opening NSM	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSM
142	Opening NSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening NSW
143	Closing TOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing TOV
144	Closing CTSh	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing CTSh
145	Closing GOV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing GOV
146	Closing GSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing GSV
147	Closing NSV	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSV
148	Closing NSM	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSM
149	Closing NSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing NSW
150	TOV Transf Qty	R/W	System	Float	4	Zero or Positive	0.0	4.07.00	TOV Transf Qty

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
						Float Data			
151	GOV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	GOV Transf Qty
152	GSV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	GSV Transf Qty
153	NSV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	NSV Transf Qty
154	SWV Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	SWV Transf Qty
155	NSW Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	NSW Transf Qty
156	Liquid Mass Transf Qty	R/W	System	Float	4	Zero or Positive Float Data	0.0	4.07.00	Liquid Mass Transf Qty
157	Combined Corr Fact	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Combined Corr Fact
158	Avg Base Density Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg Base Density Kg/m3
159	Avg CPL B2A	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg CPL B2A
160	Avg Fpr	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg Fpr
161	Avg CSW	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Avg CSW
162	Obs Dens Sum Kg/m3	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Obs Dens Sum Kg/m3
163	Base Dens Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Base Dens Summation
164	60F Dens Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	60F Dens Summation
165	15C Dens Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	15C Dens Summation
166	CPL Summation	R/W	System	Double (ROC800) Float	8	Zero or Positive Float Data	0.0	4.07.00	CPL Summation

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
				(FB107)					
167	Fpr Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	Fpr Summation
168	CSW Summation	R/W	System	Double (ROC800) Float (FB107)	8	Zero or Positive Float Data	0.0	4.07.00	CSW Summation
169	Opening Base Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening Base Dens Kg/m3
170	Opening 60F Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening 60F Dens Kg/m3
171	Opening 15C Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Opening 15C Dens Kg/m3
172	Closing Base Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing Base Dens Kg/m3
173	Closing 60F Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing 60F Dens Kg/m3
174	Closing 15C Dens Kg/m3	R/W	System	Float	4	Positive Float Data	0.0	4.07.00	Closing 15C Dens Kg/m3
175	DV Merch Secs Elap	R/W	System	UINT8	1	0→255	0	4.09.00	Divert Valve Merchantable Oil Seconds Elapsed
176	DV NonMerch Secs Elp	R/W	System	Float	4	Zero or Positive Float Data	0	4.09.00	Divert Valve Non-Merchantable Oil Seconds Elapsed
177	DV PSD Close Hrs Elp	R/W	System	Float	4	Zero or Positive Float Data	0	4.09.00	Divert Valve PSD Period Hours Elapsed
178	AutH InactMins Elaps	R/W	System	Float	4	Zero or Positive Float Data	0	4.09.00	AutoHaul Mins Elapsed Signal OFF before Closeout
179	Fluid Props in Auto	R/W	System	UINT8	1	Bitwise 0→63	0	4.09.00	Fluid Property Values in Auto (Live). Valid values are: **1** = Temperature Signal is AUTO **2** = Pressure Signal is AUTO **3** = S&W Signal is AUTO **4** = Obs Density Signal is AUTO **5** = Density Temperature Signal is AUTO **6** = Density Pressure Signal is AUTO

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
180	FProps API 18.2 Avgd	R/W	System	UINT8	1	Bitwise 0→63	0	4.09.00	Fluid Property Values API 18.2 Averaged. Valid values are: **1** = Temp is MANUAL & Not Using API 12.1.1 (Level) **2** = Pressure is MANUAL & Not Using API 12.1.1 (Level) **3** = S&W is MANUAL & Not Using API 12.1.1 (Level) **4** = Obs Dens is MANUAL & Not Using API 12.1.1 (Level) **5** = Dens Temp is MANUAL & Not Using API 12.1.1 (Level) **6** = Dens Pres is MANUAL & Not Using API 12.1.1 (Level)
181	Std Volume Calc Type	R/W	System	UINT8	1	Enum Value 0→6	1	4.09.00	Standard Volume Calculation Type . Valid values are: **0** = None; No Corrections **1** = None; CSW Only **2** = ROC800L / CLAP Accumulator Differentials **3** = API 12.2 **4** = API 18.2 Dynamic (API 12.2 less FW) **5** = API 12.1 Tanking **6** = API 18.2 Static
182	Open Obs Dens UserEU	R/W	System	Float	4	Float Data	0.0	4.09.00	Opening Observed Density in User Eus
183	Close Obs Dens UsrEU	R/W	System	Float	4	Float Data	0.0	4.09.00	Closing Observed Density in User Eus
184	Temperature Value 3	R/W	System	Float	4	Float Data	0.0	4.09.00	Third Temperartue Entry (1/2 - way per API 18.2)
185	Normal Haul Volume	R/W	User	Float	4	Positive Float Data	0.0	4.09.00	Normal Haul Volume
186	AutoHaul Cls Dly Sec	R/W	User	UINT16	2	0→65535	30	4.09.00	AutoHaul Closeout Delay Seconds
187	UserFeedback Message	R/O	System	String30	30	ASCII Characters		4.09.00	User Feedback Message

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
188	User Feedback Code	R/O	System	UINT8	1	0→64	0	4.09.00	User Feedback Code. Valid values are: **0** = ? **1** = No Haul Object is Configured **2** = Loadout is Already in Use **3** = Company Not in Data Base **4** = Driver PIN Not in Data Base **5** = Valid Company Name Required **6** = Valid Driver PIN Required **7** = Ticket# Was Already Used **8** = Ticket# Is Required **9** = Truck# Required **10** = Haul Object Entered Is Invalid **11** = SealOff & SealOn# Cannot Match **12** = Value Entered is Out-Of-Range **13** = Outlet Valve is Not Open **14** = Permissive is Dropped **15** = Haul Preset Volume is Required **16** = Seal Off Number is Required **17** = Opening Level Gauge Required **18** = Purchaser is Required **19** = Disposition Type is Required **20** = Destination is Required **21** = Flow Must First Be Stopped **22** = Outlet Valve is Not Closed **23** = Delay Time is at Maximum **24** = 1/4-Way Temperature

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
									25 = 1/2-Way Temperature Required **26** = 3/4-Way Temperature Required **27** = Opening Temperature Required **28** = Closing Temperature Required **29** = 1/2-Way Obs Density Required **30** = Opening Obs Density Required **31** = Closing Obs Density Required **32** = 1/2-Way Density Temperature Required **33** = Opening Density Temperature Required **34** = Closing Density Temperature Required **35** = 1/2-Way Density Pressure Required **36** = Opening Density Pressure Required **37** = Closing Density Pressure Required **38** = 1/4-Way Pressure Required **39** = 3/4-Way Pressure Required **40** = Opening Pressure Required **41** = Closing Pressure Required **42** = 1/4-Way S&W Required **43** = 3/4-Way S&W Required **44** = Opening S&W Required **45** = Closing S&W Required **46** = First Extra S&W is

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
									Required **47** = Second Extra S&W is Required **48** = Third Extra S&W is Required **49** = Seal-On Number is Required **50** = Closing Level Gauge Required **51** = Driver Loaded Volume Required **52** = Driver Secondary Temperature Required **53** = Driver Secondary Obs Dens Required **54** = Driver Secondary S&W Required **55** = Unmanned Haul in Progress **56** = Invalid Meter Spec for ROC800L **57** = Invalid Meter Specification **58** = Invalid Tank Num Specification **59** = Invalid Tank Selection for LDO **60** = Assoc Tank Currently in Haul **61** = 1/4-Way Estimated Vol Xferred **62** = 1/2-Way Estimated Vol Xferred **63** = 3/4-Way Estimated Vol Xferred **64** = Full Estimated Volume Xferred
189	User PSD of Loadout	R/W	User	UINT8	1	0→1	0	4.09.00	User (PLC) Logic Target for Loadout PSD

Point Type 233 (ROC800) or Point Type 185 (FB107): PMTM Current Haul Values

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
190	User TSD of Loadout	R/W	User	UINT8	1	0→1	0	4.09.00	User (PLC) Logic Target for Loadout TSD.
191	LDO Shutdown Bits	R/W	User	UINT8	1	0→191		4.09.00	Bitwise Summary of SSD Types in Effect. Valid values are: **1** = User PSD (LDOx9) **2** = User TSD (HCVx189) **4** = PMSC PSD **8** = PMSC TSD **16** = Divert Valve PSD **32** = Divert Valve TSD **128** = TSD Held for User Reset Action

4.10 Point Type 234: PMTM Simulator

Point type 234 (for ROC800) defines the parameters to configurate the tank simulator. The program supports up to 40 logicals of point type 234 (for ROC800).

Point Type 234 (ROC800): PMTM Simulator

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
0	Tank Simulate Enable	R/W	User	UINT8	1	0→1	0	4.00.00	Enables the simulation within the program. Valid values are 0 (no simulation) and 1 (enable simulation).
1	Maximum Fill Pct Capacity	R/W	User	Float	4	0→100.0	90	4.00.00	Indicates, as a percentage of the total volume of the tank, the maximum fill capacity the simulation allows.
2	Minimum Haul Pct Capacity	R/W	User	Float	4	0→100.0	10	4.00.00	Indicates, as a percentage of the total volume of the tank, the minimum haul capacity the simulation allows.
3	Fill Enable (Produce)	R/W	User	UINT8	1	0→1	0	4.00.00	Enables the introduction of produced fluid into the simulation.
4	Fill Pattern	R/W	User	UINT8	1	0	0	4.00.00	Indicates the fill pattern for the simulation.
5	Fill Rate BPM – Primary Fluid	R/W	User	Float	4		1	4.00.00	Indicates the fill rate in barrels per minute for the primary fluid.
6	Fill Rate VPM – Sec Fluid	R/W	User	Float	4		0.005	4.00.00	Indicates the fill rate in barrels per minute for the second fluid.
7	Haul VPM	R/W	User	Float	4		6	4.00.00	Indicates the load rate in barrels per minute for the haul.
8	Enable Auto-Haul	R/W	User	UINT8	1	0→1	0	4.00.00	Enables auto-haul in the simulation. Valid values are 0 (do not simulate hauls without the HMI) and 1 (simulate hauls without the HMI).
9	Auto-Haul Volume	R/W	User	Float	4		160	4.00.00	Indicates the volume of auto-haul the simulation allows.
10	Auto-Haul AlowPct Below MaxCap	R/W	User	UINT8	1		25	4.00.00	Indicates the allowable percentage of auto-haul in relation to the maximum capacity of the tank.

Point Type 234 (ROC800): PMTM Simulator

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
11	Auto-Haul Randomizer Start	R/W	User	UINT8	1		1	4.00.00	Allows the auto-haul to start randomly.
12	Force Haul Now (Auto-Detect)	R/W	User	UINT8	1	0→1	0	4.00.00	Forces the start of the haul based on an automatically detect value. Valid values are 0 (no action) and 1 (force non-HMI haul now).
13	Aft-Haul Fill Delay Sec	R/W	User	UINT16	2		60	4.00.00	Indicates, in seconds, the duration of the delay once a haul completes, before the program closes the haul.
14	Prod During Hauls	R/W	User	UINT8	1		0	4.00.00	Indicates whether production into tanks occurs during hauls. Valid values are 0 (do not produce into tank during haul).
15	Disposal Level Drop LLin	R/W	User	UINT8	1		3	4.00.00	Indicates, in (Llin), how low the disposal level may drop during the simulation.
16	Disposal Rate VPM	R/W	User	UINT8	1		10	4.00.00	Indicates the volume removal rate for disposal in barrels per minute.
17	Transfer Out Rate VPM	R/W	User	UINT8	1		4	4.00.00	Indicates, in barrels per minute, the rate for transferring fluids out of the primary tank into another tank.
18	Transfer Time Minutes	R/W	User	UINT8	1		3	4.00.00	Indicates, in minutes, the allowable duration of a tank-to-tank transfer.
19	Prod During Transfer	R/W	User	UINT8	1		0	4.00.00	Indicates whether produced fluid can be introduced to the tank during a transfer. Valid values are 0 (do not produce into a tank during transfers).
20	Prod Metering Pct	R/W	User	UINT8	1		101	4.00.00	Indicates, as a percentage of the total tank volume,

Point Type 234 (ROC800): PMTM Simulator

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
21	CurMode	R/W	User	UINT8	1	0→27	0	4.00.00	Indicates the current simulator mode. Valid values are: 0 = Idle; no simulation 1 = Normal production (filling) 2 = HMI Haul, Loading 3 = HMI Haul, Loading and Filling 4 = HMI Haul, Valve Closed 5 = HMI Haul, Valve Closed, Filling 6 = Non-HMI Haul, Loading 7 = Non-HMI Haul, Loading while Filling 8 = Disposal (Metered) in Progress 9 = Disposal in Process while Filling 10 = Outbound Transfer in Progress 11 = Outbound Transfer in Progress with Filling 12 = Inbound Transfer in Progress 13 = Inbound Transfer in Progress with Filling 16 = Same as #2, but Hauling Secondary Fluid 17 = Same as #3, but Hauling Secondary Fluid 18 = Same as #4, but Hauling Secondary Fluid 19 = Same as #5, but Hauling Secondary Fluid 20 = Same as #6, but Hauling Secondary Fluid 21 = Same as #7, but Hauling Secondary Fluid 22 = Same as #8, but Hauling Secondary Fluid 23 = Same as #9, but Hauling Secondary Fluid 24 = Same as #10, but Transferring Secondary

Point Type 234 (ROC800): PMTM Simulator

Param #	Name	Access	System or User Update	Data Type	Length	Range	Default	Version	Description of Functionality and Meaning of Values
									Fluid 25 = Same as #11, but Transferring Secondary Fluid 26 = Same as #12, but Transferring Secondary Fluid 27 = Same as #13, but Transferring Secondary Fluid
22	Disposal Trigger Level LLin	R/W	User	UINT8	1		12	4.00.00	Indicates, in (LLin), the tank level that triggers the automated disposal process.
23	Use Well Prod/Manu Rates	R/W	User	UINT8	1		0	4.00.00	Indicates whether the simulation uses actual well production rates or manually entered rates.
24	Skim Oil to Tank#	R/W	User	UINT8	1		0	4.00.00	Indicates whether the simulation skims oil to a specified tank.
25	Comingle with Tank#	R/W	User	UINT8	1		0	4.00.00	Indicates whether the simulation comingles transferred oil with oil currently in another specified tank.
26	Prod Side Manifold with Tank#	R/W	User	UINT8	1		0	4.00.00	Indicates whether the simulation joins the production of another specified tank with the current tank.
27	Bottom Equalized with Tank#	R/W	User	UINT8	1		0	4.00.00	Indicates whether the simulation equalized the bottom level of the current tank with another specified tank.
28	Tank Prod Valve Outp	R/W	User	UINT8	1		0	4.00.00	Indicates the value provided by the output valve of the production tank.
29	Agr Pull from Tank#	R/W	User	UINT8	1		0	4.00.00	Indicates the aggregate value pulled from another specific tank.
30	Equalize VPM per LLin Diff	R/W	User	UINT8	1		0	4.00.00	Indicates whether the simulation equalizes the fluid flow
31	Auto Mode Oil Shrinkage Pct	R/W	User	UINT8	1		0	4.00.00	Indicates the percentage of oil loss (shrinkage).

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Appendix A – Log Viewer Utility

The Well Optimization and Tank Manager user programs also include a Log Viewer utility. Use this application to view a device's tank manager haul logs in an offline environment, after you retrieve the log file from the device. You can view the entire log (all records) at once or use filters to sort and arrange the data as needed. You can also generate individual report files representing a single record from the log and save them to a file or send them to a printer. Additionally, you can export the entire log as a comma-separated value (.csv) file for additional analysis or charting within an application such as Microsoft Excel.

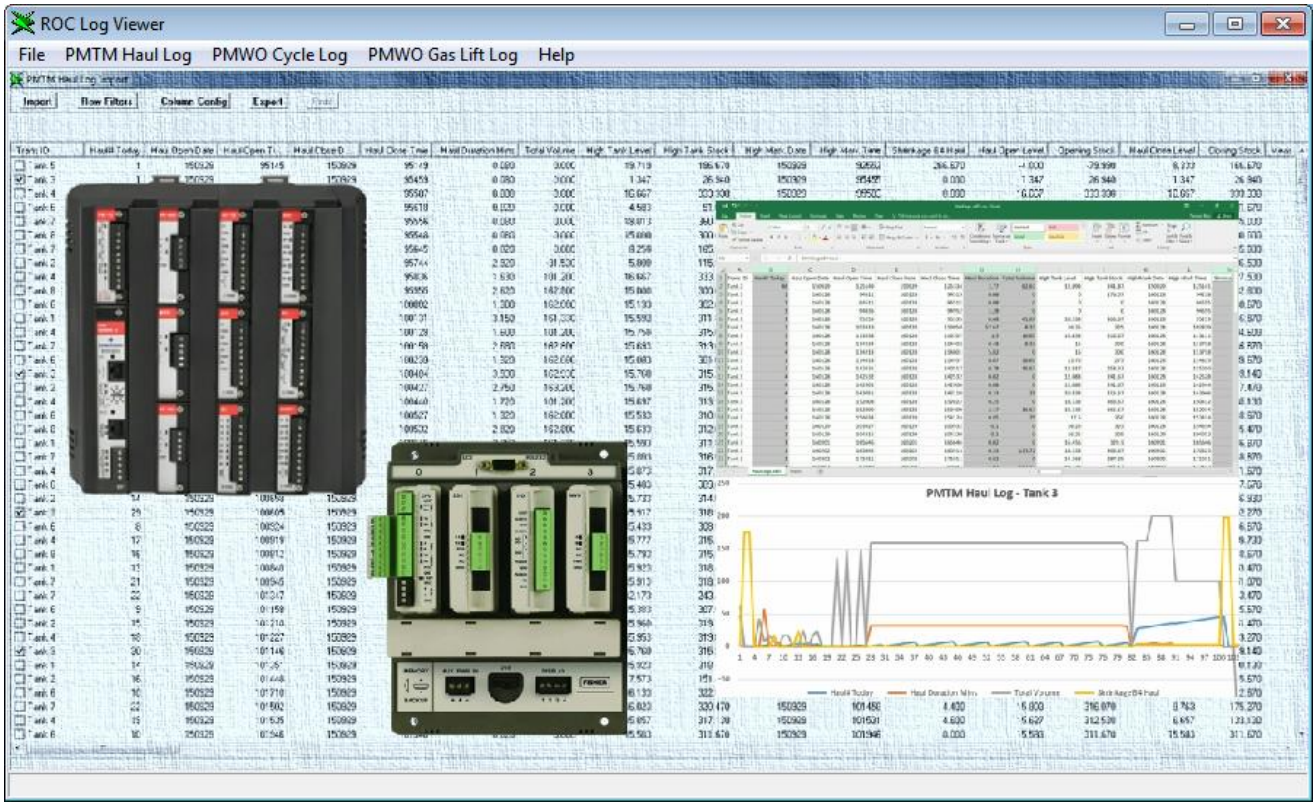


Figure A-1. Log Viewer Utility

The utility supports the following Production Manager log files:

- Tank Manager (PMTM) haul logs
- Well Optimization (PMWO) plunger cycle logs
- Well Optimization (PMWO) gas lift logs

To retrieve these files from a device, open ROCLINK 800 and select **Utilities** > **Read File from Device**. The program saves the file to a location on your local PC.

The program stores these files on the device's flash file system in the following folders:

- **PMTM Haul Log File:** \flash\data\PMTM\HaulLogs_v407.log
- **PMWO Plunger Cycle Log File:** \flash\data\PMWO\CycData_v403.log
- **PMWO Gas Lift Log File:** \flash\data\PMWO\GlfData_v403.log

Although the device stores additional files in these folders, the Log Viewer utility does not use them. You do not need to retrieve them.

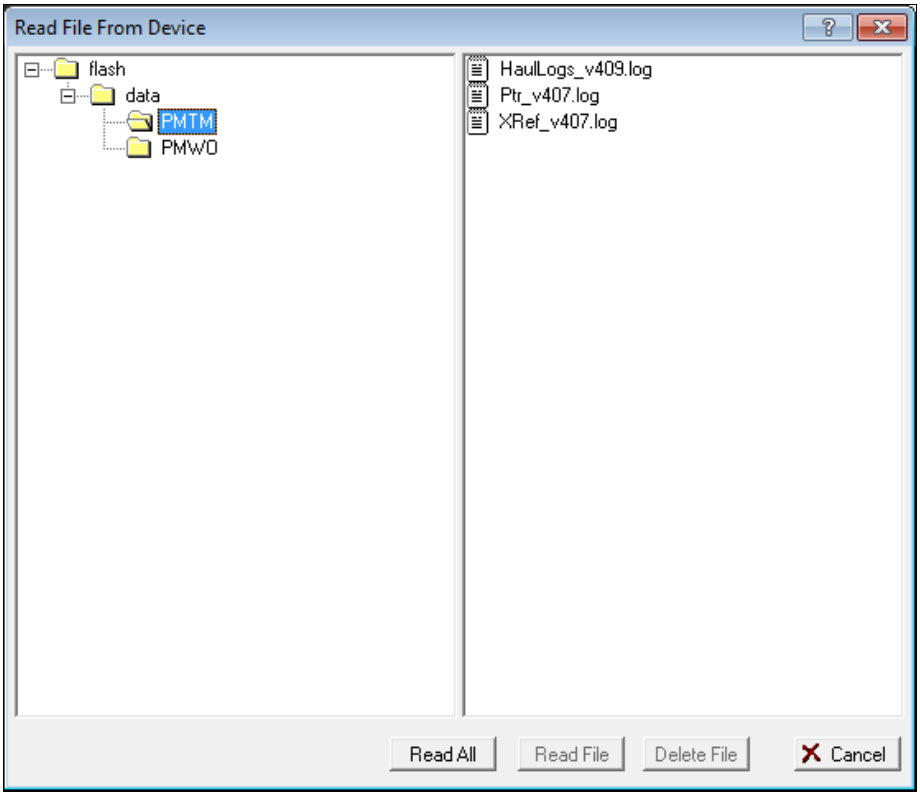


Figure A-2. Read File From Device screen

Once you retrieve the desired log file, open it by selecting the log type from the Log Viewer menu.

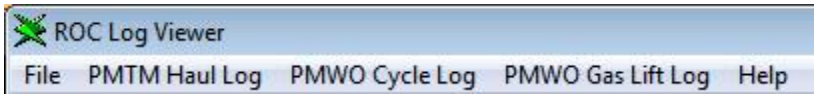
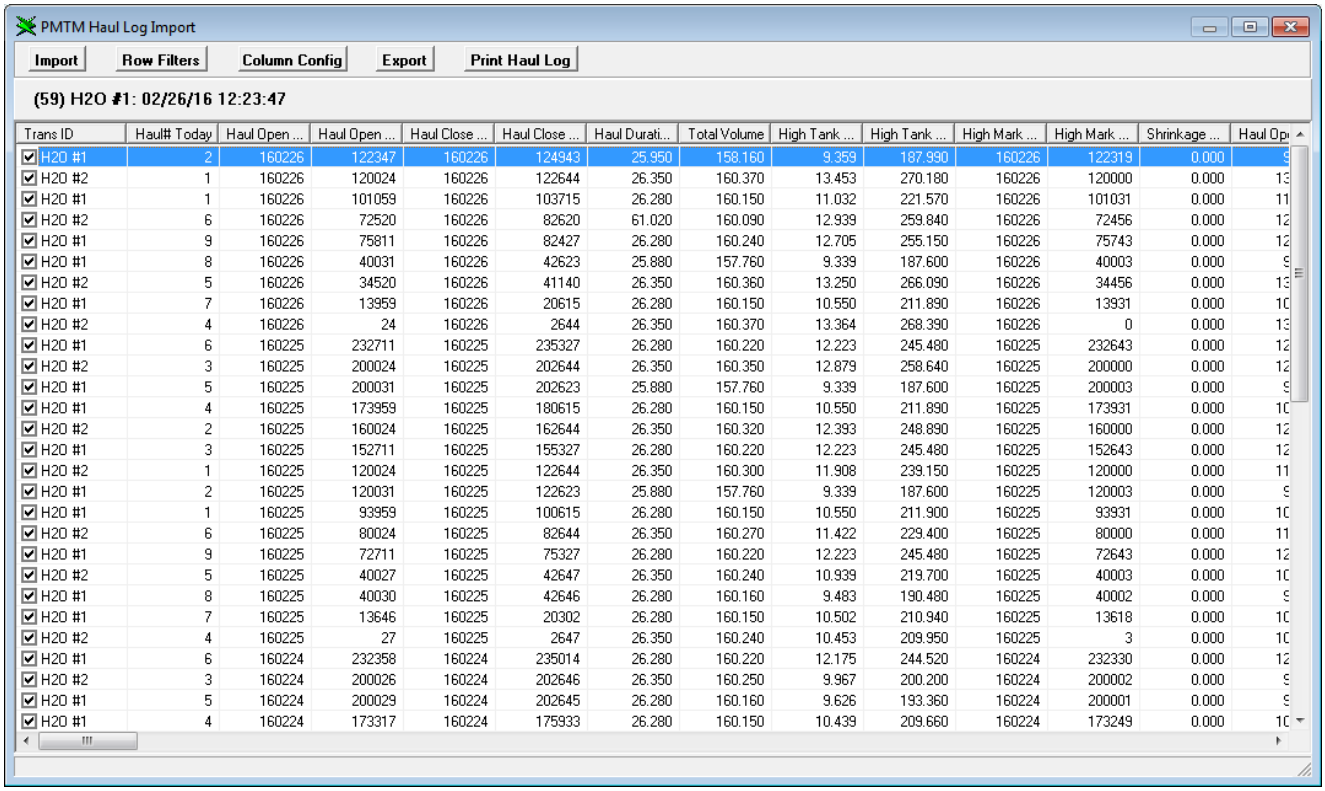


Figure A-3. Log Viewer menu

The program opens a new window for the requested log type. Click **Import** to open the log file retrieved from the device.



Trans ID	Haul# Today	Haul Open ...	Haul Open ...	Haul Close ...	Haul Close ...	Haul Durati...	Total Volume	High Tank ...	High Tank ...	High Mark ...	High Mark ...	Shrinkage ...	Haul Op
H2O #1	2	160226	122347	160226	124943	25.950	158.160	9.359	187.990	160226	122319	0.000	9
H2O #2	1	160226	120024	160226	122644	26.350	160.370	13.453	270.180	160226	120000	0.000	13
H2O #1	1	160226	101059	160226	103715	26.280	160.150	11.032	221.570	160226	101031	0.000	11
H2O #2	6	160226	72520	160226	82620	61.020	160.090	12.939	259.840	160226	72456	0.000	12
H2O #1	9	160226	75811	160226	82427	26.280	160.240	12.705	255.150	160226	75743	0.000	12
H2O #1	8	160226	40031	160226	42623	25.880	157.760	9.339	187.600	160226	40003	0.000	9
H2O #2	5	160226	34520	160226	41140	26.350	160.360	13.250	266.090	160226	34456	0.000	13
H2O #1	7	160226	13959	160226	20615	26.280	160.150	10.550	211.890	160226	13931	0.000	10
H2O #2	4	160226	24	160226	2644	26.350	160.370	13.364	268.390	160226	0	0.000	13
H2O #1	6	160225	232711	160225	235327	26.280	160.220	12.223	245.480	160225	232643	0.000	12
H2O #2	3	160225	200024	160225	202644	26.350	160.350	12.879	258.640	160225	200000	0.000	12
H2O #1	5	160225	200031	160225	202623	25.880	157.760	9.339	187.600	160225	200003	0.000	9
H2O #1	4	160225	173959	160225	180615	26.280	160.150	10.550	211.890	160225	173931	0.000	10
H2O #2	2	160225	160024	160225	162644	26.350	160.320	12.393	248.890	160225	160000	0.000	12
H2O #1	3	160225	152711	160225	155327	26.280	160.220	12.223	245.480	160225	152643	0.000	12
H2O #2	1	160225	120024	160225	122644	26.350	160.300	11.908	239.150	160225	120000	0.000	11
H2O #1	2	160225	120031	160225	122623	25.880	157.760	9.339	187.600	160225	120003	0.000	9
H2O #1	1	160225	93959	160225	100615	26.280	160.150	10.550	211.900	160225	93931	0.000	10
H2O #2	6	160225	80024	160225	82644	26.350	160.270	11.422	229.400	160225	80000	0.000	11
H2O #1	9	160225	72711	160225	75327	26.280	160.220	12.223	245.480	160225	72643	0.000	12
H2O #2	5	160225	40027	160225	42647	26.350	160.240	10.939	219.700	160225	40003	0.000	10
H2O #1	8	160225	40030	160225	42646	26.280	160.160	9.483	190.480	160225	40002	0.000	9
H2O #1	7	160225	13646	160225	20302	26.280	160.150	10.502	210.940	160225	13618	0.000	10
H2O #2	4	160225	27	160225	2647	26.350	160.240	10.453	209.950	160225	3	0.000	10
H2O #1	6	160224	232358	160224	235014	26.280	160.220	12.175	244.520	160224	232330	0.000	12
H2O #2	3	160224	200026	160224	202646	26.350	160.250	9.967	200.200	160224	200002	0.000	9
H2O #1	5	160224	200029	160224	202645	26.280	160.160	9.626	193.360	160224	200001	0.000	9
H2O #1	4	160224	173317	160224	175933	26.280	160.150	10.439	209.660	160224	173249	0.000	10

Figure A-4. PMTM Haul Log

For more information on the Log Viewer Utility, contact your Emerson Local Business Partner.

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Appendix B – Retrieving the Haul Logs via SCADA

These same hauls can also be retrieved by a SCADA system. This can be accomplished two ways depending on the version of Tank Manager.

For versions prior to 4.7.x this is accomplished using the same method as described above. SCADA would read the latest Transaction Number from TLP (198,1,31) in the ROC800 or (180,1,31) from the FB107. This would be compared to the latest Transaction Number stored in SCADA and would determine how many haul records they are behind. SCADA would then write the Transaction Number of the haul record being requested to TLP (198,0,44) in the ROC800 or (180,0,44) in the FB107. This will force the ROC800 to load the associated haul record into logical zero of point type 198 and the FB107 to load its requested haul record into logical zero of point type 180. SCADA would then retrieve the haul record from logical zero of point type 198 from the ROC800 or 180 from the FB107, validate it is the Transaction Number being requested and then write the Transaction Number of the next haul record needing to be retrieved back to TLP (198,1,44) in the ROC or (180,1,44) in the FB107 and the routine continues until SCADA is in synch with the available haul records in the unit.

For versions 4.7.x and greater this can be accomplished in the same methodology just described for previous versions or by using another method which is more efficient for the RTU. In versions greater than 4.7.x a new point type is introduced to support metric or US units. This new point type aids in retrieval of haul records by allowing SCADA to request the Hard Haul Serial Number from the ROC or FloBoss rather than the Transaction Number. SCADA can write the value of the Hard Haul Serial number to be retrieved into TLP (60,0,34) on the ROC800, and TLP (187,0,34) on the FB107. The requested record will be populated into logical instance 0 of the Tank Manager haul logs point type 198 on the ROC800, or point type 180 on the FB107 where it can then be retrieved in the same fashion as the previous method. Again the available Hard Haul Serial Number is compared to the last retrieved Hard Haul Serial Number stored in SCADA to determine if the two are in synch. Since the Hard Haul Serial number is a non-editable field it is a more reliable method to retrieve a haul record.

See *Figure B-1* a flow chart referencing a generic SCADA haul log retrieval method using the Hard Haul Serial Number.

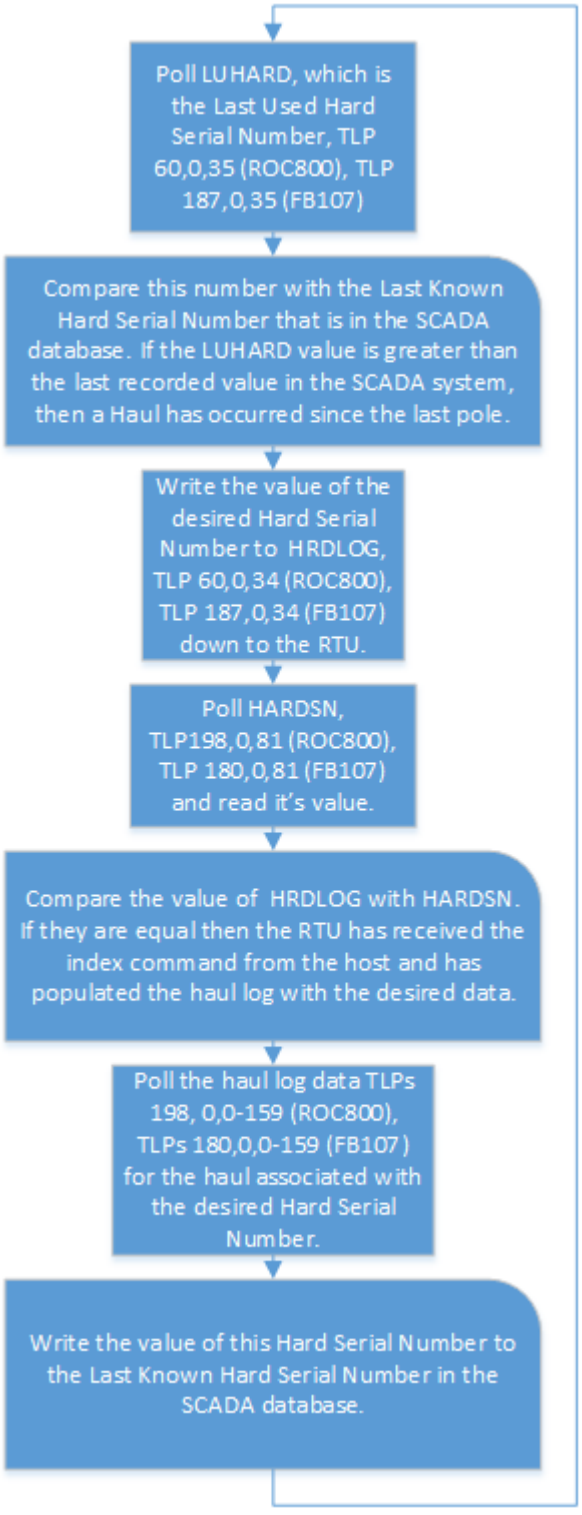

Figure B-1. SCADA Haul Log Retrieval Method

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