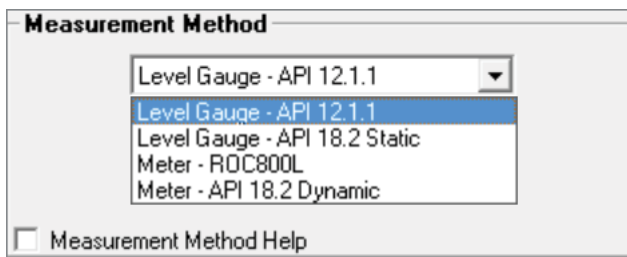


# What's New in PM Tank Manager?

## Version 4.09.00

### Support for the new API MPMS 18.2 tank hauling standard

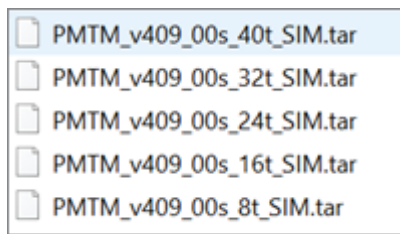
The loadout measurement method now includes options for API 18.2 Static measurement (automated tank level), and API 18.2 Dynamic (pulse meter input).



- Manual or live entry for input signals (temperature, pressure, density, density temperature, density pressure, and BS&W)
- Configurable flow weighted averages or automatically stamped down values at predefined times (for live instruments)
- Driver/operator-selected configurable turndowns
- Free water clearance calculations on interfaced oil tanks
- Entry for beginning haul merchantability
- Support for 18.2 documented haul routine

### Support for 32 or 40 tanks

Additional builds of the program are provided for the ROC800, which support 32 or 40 tanks.

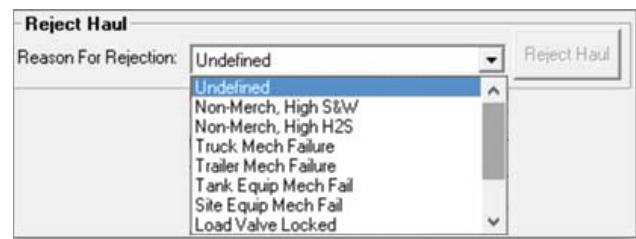


### Method to reject partial loads (turndown)

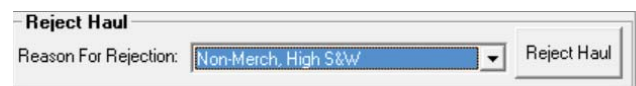
Incomplete hauls — due to equipment failure, non-merchantable oil, etc. — can now be rejected (“turned down”). When the haul is rejected, an appropriate reason must be selected and is then recorded with the haul log record.



ROCLINK 800 loadout operation screen showing turndown options:



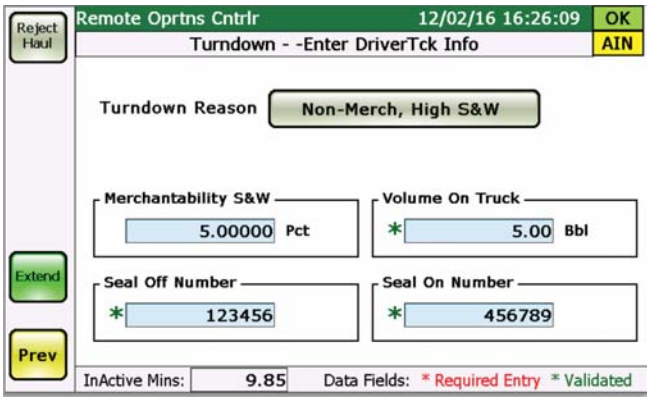
Once the turndown reason is selected, the haul can be rejected:



The turndown reason menu is also included in latest version of PM Local Display Manager:



Once the turndown reason is selected (required), the screen is ready to turn down the load:



The turndown and turndown reason are recorded along with the rejected haul in the haul log:

Haul Log Overview - [Details View and SOGA Filter]

Review the Haul Transaction Number (TICK)

Common Values												
Haul#	Transaction	Haul#	Transaction	Originated	Haul Opening	Haul Closing	Haul	Amount	Size			
ID	Number	Code	Type	By	Date/Time	Date/Time	Index	Dwg/	Dwg/			
08	75249	1	Turndown	986	10/20/16 10:26:00	0	01	01	00			

HMI Recorded Values												
Ticket Number	Truck Number	Code	Name	Code	Code	Disposition	Disposition	Turndown	Merchantability	Volume	Seal	Seal
						Type	Type	Reason		On Truck	Off	On
11111	1	1234	Alone	12	0	0	0	Non-Merch, High S&W	25.0	5.00000	123456	456789

## ROCLINK 800 turndown configuration display (enumerated lists)

User-configurable sets of enumerated lists are now provided for customized turndown reasons and associated text. These enumerated lists can also define other haul attributes such as custom purchaser names, destinations, and disposition types. Any combination of turndown reject reasons, purchaser, destination, and/or disposition entries can be entered up to 60 times.

**Enumerated Lists**

Enumerated Lists 1-20	Enumerated Lists 21-40	Enumerated Lists 41-60	Enumerated Text	Enumerated Value
1. Turndown Reject Reasons List Entry			Non-Merch, High S&W	1
2. Turndown Reject Reasons List Entry			Non-Merch, High H2S	2
3. Turndown Reject Reasons List Entry			Truck Mech Failure	3
4. Turndown Reject Reasons List Entry			Trailer Mech Failure	4
5. Turndown Reject Reasons List Entry			Tank Equip Mech Fail	5
6. Turndown Reject Reasons List Entry			Site Equip Mech Fail	6
7. Turndown Reject Reasons List Entry			Load Valve Locked	7
8. Turndown Reject Reasons List Entry			Terminal No-Access	8
9. Turndown Reject Reasons List Entry			Vent Line NotWorking	9
10. Turndown Reject Reasons List Entry			Low Tank Level	10
11. No List Attachment				0
12. No List Attachment				0
13. No List Attachment				0
14. No List Attachment				0
15. No List Attachment				0
16. No List Attachment				0
17. No List Attachment				0
18. No List Attachment				0
19. No List Attachment				0
20. No List Attachment				0

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## 'Purchaser', 'Disposition' and 'Destination' fields to the truck hauling interface and haul log

The enumerated lists can define custom text strings for various attributes associated with a haul. These custom text strings — rather than a numeric code — can also be used for attribute selection by the loadout operator during opening edits. These are then recorded and stored in the haul log for each haul.

Enumerated Lists			
List Number	Text	Enumerated Value	
1.	Turndown Reject Reasons List Entry	Non-Merch, High S&W	1
2.	Turndown Reject Reasons List Entry	Non-Merch, High H2S	2
3.	Turndown Reject Reasons List Entry	Truck Mech Failure	3
4.	Turndown Reject Reasons List Entry	Trailer Mech Failure	4
5.	Turndown Reject Reasons List Entry	Tank Equip Mech Fail	5
6.	Turndown Reject Reasons List Entry	Site Equip Mech Fail	6
7.	Turndown Reject Reasons List Entry	Load Valve Locked	7
8.	Turndown Reject Reasons List Entry	Terminal No-Access	8
9.	Turndown Reject Reasons List Entry	Vent Line Not/Working	9
10.	Turndown Reject Reasons List Entry	Low Tank Level	10
11.	No List Attachment		0
12.	Purchasers List Entry	Company A	1
13.	Purchasers List Entry	Company B	2
14.	Purchasers List Entry	Company C	3
15.	Disposition Types List Entry	Oil Haul	1
16.	Disposition Types List Entry	Water Haul	2
17.	Disposition Types List Entry	Unknown Haul	3
18.	Destinations List Entry	Facility A	1
19.	Destinations List Entry	Facility B	2
20.	Destinations List Entry	Facility C	3

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ROCLINK 800 loadout operation screen, showing new fields for purchaser, disposition, and destination:

Purchaser Code: \* Oil Processing Inc

Disposition Type: \* Oil Hauling

Destination Code: \* Refinery

Undefined

Refinery

Processing Plant

Water Disposal

PM Local Display Manager opening edits screen showing new fields for purchaser, disposition, and destination:

Remote Optrns Cntrl 11/11/16 17:12:32 OK

Logout OPEN EDITS-Oil #1-Review: Edit/Accept AIN

Seal Off Number \* 0 Load Preset Value \* 30.00

Driver Haul Opening Level

Feet Inches Quarters

\* 12 1 0/4

Next: will accept the gauger level shown. Edit for a driver measured opening level

Purchaser \* [ ]

Disposition Type \* [ ]

Destination \* [ ]

InActive Mins: 9.68 Data Fields: \* Required Entry \* Validated

## Assignable loadouts to login credentials

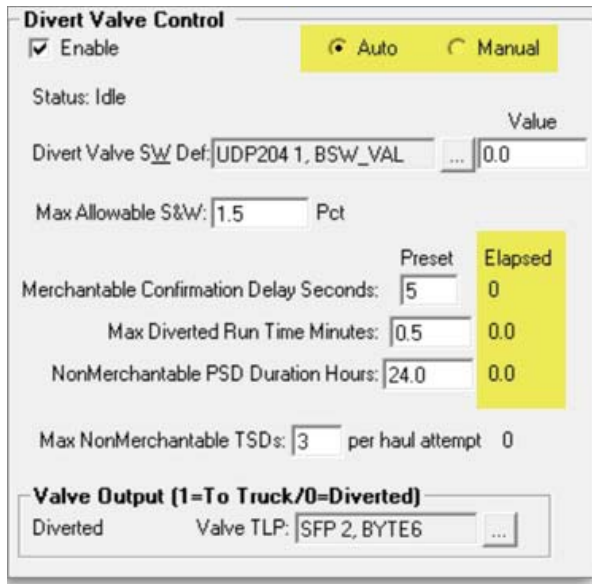
Each of the 60 credentials can be independently assigned to individual loadout terminals. A driver is only allowed to start a haul from loadout terminals where the corresponding credentials are authorized.

HAULING COMPANIES DATA BASE									
Company Code		Driver PIN		Load Outs Allowed 1-6					
Name	Code	Minimum	Maximum	1	2	3	4	5	6
1.	Acme	1234	0	100	✓	✓	✓	✓	✓
2.	Acme, Bob	1234	76	76	✓	✓	✓	✓	✓
3.		0	0	0	✓	✓	✓	✓	✓
4.		0	0	0	✓	✓	✓	✓	✓
5.		0	0	0	✓	✓	✓	✓	✓
6.		0	0	0	✓	✓	✓	✓	✓
7.		0	0	0	✓	✓	✓	✓	✓
8.		0	0	0	✓	✓	✓	✓	✓
9.		0	0	0	✓	✓	✓	✓	✓
10.		0	0	0	✓	✓	✓	✓	✓
11.		0	0	0	✓	✓	✓	✓	✓
12.		0	0	0	✓	✓	✓	✓	✓
13.		0	0	0	✓	✓	✓	✓	✓
14.		0	0	0	✓	✓	✓	✓	✓
15.		0	0	0	✓	✓	✓	✓	✓
16.		0	0	0	✓	✓	✓	✓	✓
17.		0	0	0	✓	✓	✓	✓	✓
18.		0	0	0	✓	✓	✓	✓	✓
19.		0	0	0	✓	✓	✓	✓	✓
20.		0	0	0	✓	✓	✓	✓	✓

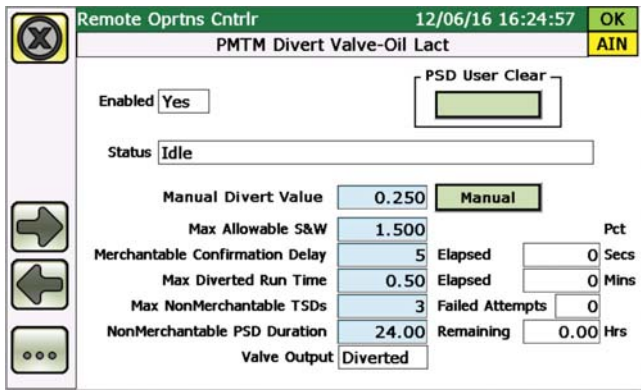
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## Manual BS&W option for the divert valve in case of BS&W instrument failure

The LACT divert valve control has a new option for manual entry of the sediment and water percentage, should the live instrument fail. In addition, the elapsed time for the various divert valve control timers is now shown on the ROCLINK 800 display.



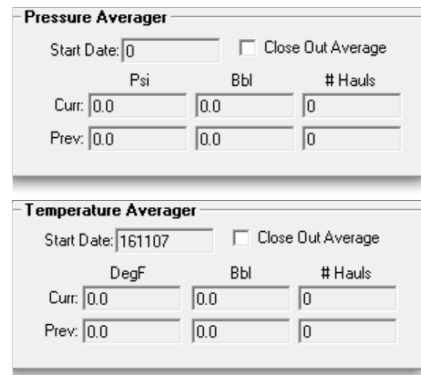
Auto/manual BS&W input incorporated into PM Local Display Manager, allowing local operator to override a failed or bad BS&W signal controlling the divert valve:



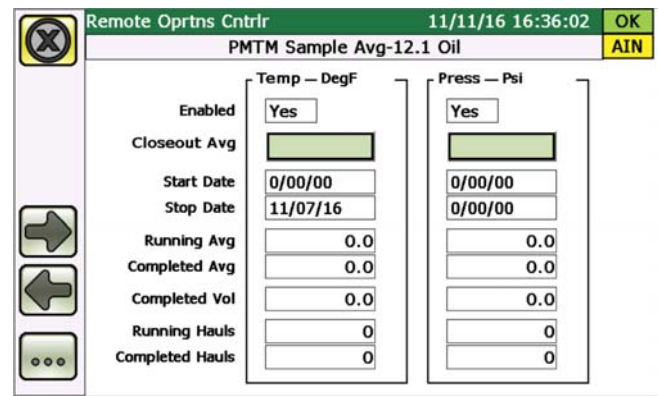
## Resettable flow weighted pressure average function similar to existing temperature average

The average loadout pressure is now recorded and shown in the interface with the average temperature. The averages are flow weighted – samples are not taken when loadout is not in progress.

ROCLINK 800 loadout screens:



Also included in new version of PM Local Display Manager:



Both averaging functions include:

- Start and stop date of the monthly average
- Accumulated indicated volume for monthly average period
- Number of running hauls and completed hauls during this period

### Mandatory entry for secondary calculation data

An option has been added that requires the operator to manually enter secondary calculation data, such as temperature and density readings. When the mandatory option is selected, the operator cannot close out the haul until the fluid characteristics for a secondary recalculation are entered.

**Driver Entered Secondary Calculation Parameter**

GSV:   Allow Driver to Enter 2nd Calcs  
 **Mandatory**

### Customizable description field for tanks, wells, and load outs

As per the updated BLM Onshore orders, a 20-character user-editable facility measurement point (FMP) field was added for each of the tanks, well allocations, and load outs. This allows for a unique identifying text string to be assigned to each object, which is more than the standard 10-character tag.

**Oil #1**

**Well ID**

**Load Out**

### More details and information stored in the Haul Log for each haul

Additional information is now stored with every record in the haul log. The data recorded for each record increased from 162 values, to 184 values.

Rejected Haul:

Haul Log Overview

Retrieve this Haul Transaction Number:

Common Values										
Hauled Fluid	Transaction Number	Haul #	Transaction Type	Originated By	Haul Opening Date/Time	Haul Closing Date/Time	Haul Minutes	Ambient DegF	Base DegF	
Oil	75249	1	Turndown	HMI	161201 163246	0 0	0.0	91.4	60	

HMI Recorded Values												
Ticket Number	Truck Number	Company Code	Company Name	Driver PIN Code	Purchaser Code	Disposition Type	Destination Code	Turn Down Reason	Merchantability	Valve Seal Tag #Removed	Valve Seal Tag #Installed	----Manually Entered Values by Hauler----
11111	1	1234	Acme	12	0	No Entry	0	Non-Merch, High SW	25.0	857458	5874785	Haul Open Level Ft
												Haul Close Level Ft
												Haul Volume Bbl
												11.646
												11.646
												0.0



Accepted and completed Haul:

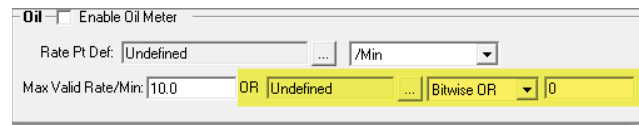
Retrieve this Haul Transaction Number: <input type="text" value="75275"/>															
<b>Common Values</b>															
Hauled Fluid	Transaction Number	Haul # Today	Transaction Type	Originated By	Haul Opening Date/Time	Haul Closing Date/Time	Haul Minutes	Ambient DegF	Base DegF	Meas Pt Avg DegF	Avg Obs Rel Dens	Avg Obs API Grav	Avg S&W%		
Oil	75275	1	Tank Level	HMI	161207 122350	161207 122553	2.07	89.6	60	62.3	0.8	40.0	0.3		
<b>HMI Recorded Values</b>															
Ticket Number	Truck Number	Company Code	Company Name	Driver PIN Code	Purchaser Code	Disposition Type	Destination Code	Turn Down Reason	Merchantability	Valve Seal Tag #Removed	Valve Seal Tag #Installed	-----Manually Entered Values by Hauler-----			
454	i	1234	Acme	36	21	31	0	Haul Accepted	0.0	895745	695874	Haul Open Level Ft	Haul Close Level Ft	Haul Volume Bbl	
					ABC Refining	Oil Hauling	Refinery					12.0	10.0	18.0	
<b>Tank Hauled Values via Level</b>															
Tank ID/AccountCode	Date/Time	High Mark Lvl Ft	Bbl	Shrinkage Bbl B4 Haul	Haul Opening Level Ft	Haul Closing Level Ft	Level Chg Ft	Inferred Bbl	TOV Tranf Bbl	GOV Tranf Bbl	GSV Tranf Bbl	NSV Tranf Bbl	SWV Tranf Bbl	NSW Tranf Lb	Liq Mass Tranf Lb
Oil #1 123456	161202 175118	Oil 11.758	236.15	0.0	11.758 236.15	10.729 215.5	-1.029	0.0	20.65	20.66	20.63	20.33	0.3	5866.0	5874.0
		Water 0.349	7.02	0.0	0.349 7.02	0.349 7.02	0.0								
<b>Manually Re-Calculated Data Based on Driver-Entered Fluid Properties</b>															
S&W%	GrStdVol	NetStdVol	S&W Vol												
0.0	20.63	20.63	0.0												

The new items recorded in each haul log entry include the following:

- 163 Fluid Props in Auto
- 164 Fluid Props API 18.2 Avgd
- 165 Std Volume Calculation Type
- 166 PMTM Version Number
- 167 Destination Code
- 168 Turndown Code
- 169 Reserved U8 1
- 170 Temperature 3/4 way
- 171 Init/TD Merch S&W
- 172 Water Btm Clearance
- 173 FMP# or Tank Description
- 174 Purchaser
- 175 Disposition Type
- 176 Destination
- 177 Turndown Reason
- 178 Hauler Company Name
- 179 Tank Volume Capacity
- 180 Open Obs Dens User EU
- 181 Close Obs Dens User EU
- 182 Reserved Float 1
- 183 Reserved Float 2
- 184 Reserved Float 3

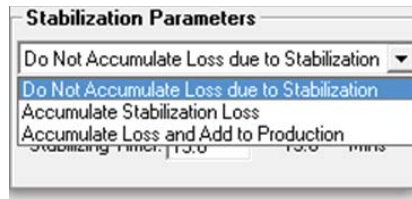
### Optional validity check logic added for each liquid meter in the allocation wells

The validity check on the flowrate has been expanded to the max valid rate or a user-defined logic statement, when performing allocation back to associated wells with dedicated liquid production meters. As an example, this could be used to read the drive gain from a Coriolis meter, and reject the flow as invalid if it gets too high.



## Oil stabilization loss calculation

Drops in levels not large enough to trigger an auto haul are measured and tracked as stabilization loss. This is an option to enable and accumulate the volume separately, or enable and accumulate the volume then add to production volumes.



Liquids Data | Liquids Configuration | Tank Strapping | Alarms and Rollovers

Statistics

My Tank | PMTM Tank for Haul | Ambient Temperature: 85.12495 DegF

**Tank**

Current Level: 13 Ft 3 2/4 In  
 Current Level: 13.29167 Ft  
 Load Line Elevation: 12.0 In  
 Tank Fill Rate: 0.0 Bbl/Day  
 Beginning Day Level: 13.41667 Ft  
 Tank Capacity: 66.46106 %  
 Current Stock: 265.8442 Bbl

My Tank

**Oil**

Current Level: 4 Ft 11 2/4 In  
 Current Level: 4.958334 Ft  
 Production Rate: 0.0 Bbl/Day  
 Beginning Day Level: 5.083334 Ft  
 Begin Day Stock: 101.6708 Bbl  
 Current Stock: 99.17075 Bbl  
 Current Haul: 0.0 Bbl  
 Shortage: 0.0 Bbl

Loadout Haul In Progress  
 Auto-Haul In Progress

**Oil Accumulators**

	# Hauls	Produced	Hauled	Stabilization Loss	Tank Outlet Metered
Today:	0	0.0	0.0	2.500069 Bbl	0.0 Bbl
Yesterday:	0	0.0	0.0	0.0 Bbl	0.0 Bbl
This Month:	10	42.6753	112.9309	3.194405 Bbl	Bbl
Previous Month:	4	0.0	42.50175	0.0 Bbl	Bbl
Accumulated:	14	42	155	3.194405 Bbl	Bbl
				Loss Since Last Haul:	2.500069 Bbl

**Water**

Current Level: 8 Ft 4 0/4 In  
 Current Level: 8.333333 Ft  
 Production Rate: 0.0 Bbl/Day  
 Beginning Day Level: 8.333333 Ft  
 Begin Day Stock: 166.6734 Bbl  
 Current Stock: 166.6735 Bbl  
 Current Haul: 0.0 Bbl  
 Shortage: 0.07229E Bbl

Loadout Haul In Progress  
 Auto-Haul In Progress

**Water Accumulators**

	# Hauls	Produced	Hauled	Tank Outlet Metered	Inferred Production
Today:	0	0.0	0.0	0.0	0.0 Bbl
Yesterday:	0	0.0	0.0	0.0	0.0 Bbl
This Month:	0	0.0723419	0.0		Bbl
Previous Month:	0	0.0	0.0		Bbl
Accumulated:	0	0	0		Bbl

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## Load line elevation parameter and free water clearance calculation

During hauling operation, the interfaced water level can be used to calculate a free water clearance from the load line.

The free water clearance can be used in PM Surface Controls to drop the permissive for the Tank Manager loading terminal:

Liquids Data | **Liquids Configuration** | Tank Strapping | Alarms and Rollovers | Tank Simulator

Tank or Aggregate  
 Tag: Oil #1 Desc: Oil Tank 123456  
 AccountCode: 123456  
 Primary Fluid:  Oil  Water  
 Tank  Aggregate (Multi Tank/Multi Gauger)

**Tank Setup**

Max Volume per Tank: 301.223 Bbl  
 Load Line Elevation: 12.0 In

**Aggregate Membership**  
 Assign this Tank to Aggregate #  
 Oil: 1  
 Water: 1

**Tank Instrumentation**

**Gauger Setup**  
 Interfaced Gauge Units: Inches  
 Top Gauge: SFP 1, DATA1  
 Water Gauge: SFP 1, DATA2  
 Samples used in Filtering: 10

**Gauger Value Validity**  
 Max Valid EUs: 180.0 In  
 Max Change: 0 Bbl/Minute

**Max Valid 1-Scan Volume Change**  
 Scan-to-Scan Change: 0 Bbl  
 Max Time Invalid (Reset): 60 Mins

**Oil Density**  
 Undefined 40.0 API Gr  
 Undefined 70.0 DegF  
 Undefined 0.0 Psi

**Oil Temperature**  
 Undefined 70.0 DegF

**Oil Pressure**  
 Undefined 0.0 Psi

**S and W**  
 Undefined 0.0 %

**Hauling and Production Options**

**Oil**  
 Enable Production Measurement via Level  
 Infer Prod while Hauling

**Shrinkage**  
 Accumulate Shrinkage  
 Preset Remaining  
 Stabilizer Timer 15.0 0.0

**Auto Hauling Configuration**  
 Auto Haul Using Level

**Water**  
 Enable Production Measurement via Level  
 Infer Prod while Hauling

**Auto Hauling Configuration**  
 Auto Haul Using Level



**Load Out** 12.1 Oil

\* Manual Entry Required \* Entry is Validated

**Driver Login**

Company Code \* 1234  
Acme  
Driver PIN \* 12  
Ticket Number \* 12  
Truck Number \* 12

**Opening Edits**

Object# to Haul: 1 1 Objects Assigned  
Object FMP #  
Seal Off #: \* 0  
**Free Water Clearance: 7.825874 "**  
Pre-Set Load Volume: \* 0.0 Bbl  
Haul Open Level \* 0' 0" 0 /4

Purchaser Code: \* Undefined  
Disposition Type: \* Undefined  
Destination Code: \* Undefined

**Fluid Characteristics**

	DegF	Pressure	S and W %
Open	* 70.0	* -20.0	* -1.0
Close	* -460.0	* -20.0	* -1.0

Density

	DegF	Psi
Open	* -20.0	* -20.0
Close	* -20.0	* -20.0

**Closing Edits**

Seal On #: \* 0

Driver Haul Opening Level \* 0' 0" 0 /4  
Driver Haul Closing Level \* 0' 0" 0 /4

\* Driver Hauled Accepted Volume  
0.0 Bbl

**Commands**

Start Haul  
Extend 10.0  
Final Edits  
Close Out

**Reject Haul**

Reason For Rejection: Undefined  
Reject Haul

**Current Haul Details**

Haul Status: No Ticket in Progress 0 Divert Valve Permissive 1  
LoadOut is Available Station Permissive 1

Selection

Tank or Meter Haul Measurement: Tank Level Delta  
Current Tag: Oil #1  
Fluid Type: Crude Oil  
Tank Instance: 1  
Tank Aggregate #: 0

Flow Rate:  
Haul Open Level 0.0 Bbl /Min Haul Close Level  
0' 0" 0 /4 Indicated Volume: 0' 0" 0 /4  
0.0 Bbl

Automated Output: OFF

Nav: 0  Diagnostics

### Operator messaging for haul status, entry errors, etc.

Messages have been added to the loading screen to alert the operator of progress through the haul or of any errors which must be resolved to progress through the haul.

**Load Out** 18.2 Level API 18.2 Level Haul

**Full Estimated Volume Xferred** \* Manual Entry Required \* Entry is Validated

**Driver Login**

Company Code \* 1234  
Acme  
Driver PIN \* 8

**Opening Edits**

Object# to Haul: 1 1 Objects Assigned

Free Water Clearance: 7.9 In  
Pre-Set Load Volume: \* 10.0 Bbl

**Fluid Characteristics**

	Temperature	Pressure	S and W %
1/4	* 81.08872	* 1.3765	* 1.65
1/2	* 81.08872	* 1.3765	* 1.65
3/4	* 81.08872	* 1.3765	* 1.65

Density

	DegF	Psi
1/2	* 39.23651	* 81.08872

**Closing Edits**

**Commands**

Start Haul  
Stop Flow  
Start Flow  
Extend 9.466675  
Final Edits  
Close Out

**Merchantability and Haul Turn Down**

Merchantability: 0.0  
Turn Down Reason: Undefined  
Turn Down

**Current Haul Details**

Haul Status: Valve Closed: No Flow 4 Divert Valve Permissive 1  
Haul Paused No Flow Station Permissive 1

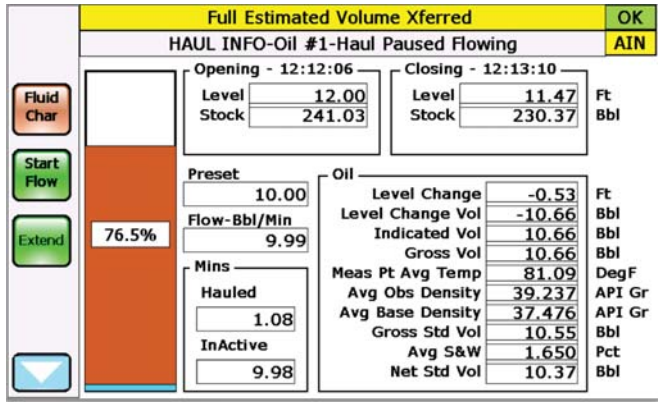
Selection

Tank or Meter Haul Measurement:  
Current Tag: Oil #1  
Fluid Type: Crude Oil  
Tank Instance: 1  
Tank Aggregate #: 0

Flow Rate:  
0.0 Bbl /Min  
Indicated Volume:  
10.65961 Bbl

Automated Output: OFF

Nav: 4  Diagnostics



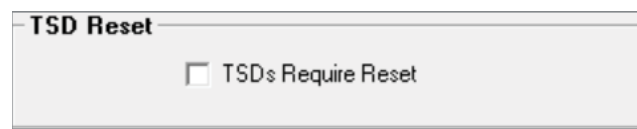
The following is the list of possible messages:

- 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 Required
- 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 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

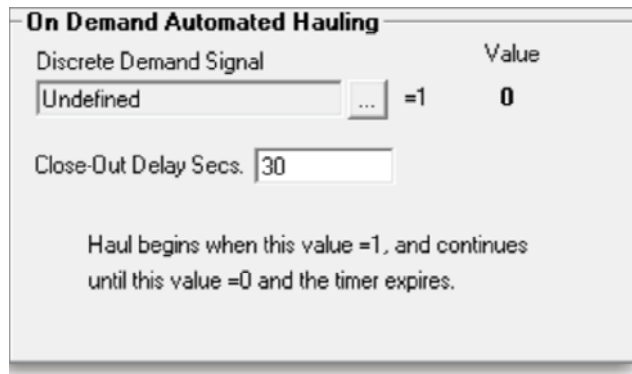
## Support for manual reset of load out temporary shutdowns

If a temporary shutdown (TSD) stops the haul, and the manual reset option is enabled, the operator will have to manually press a reset button to clear the TSD and continue a haul. The reset button is automatically available on PM Local Display Manager.



## Auto haul feature for load outs

This feature allows Tank Manager to calculate hauls without logging into the HMI, essentially providing a “one button haul” configuration. Works for either metered or level measured hauls.



**On Demand Automated Hauling**

Discrete Demand Signal: Undefined Value: 0

Close-Out Delay Secs.: 30

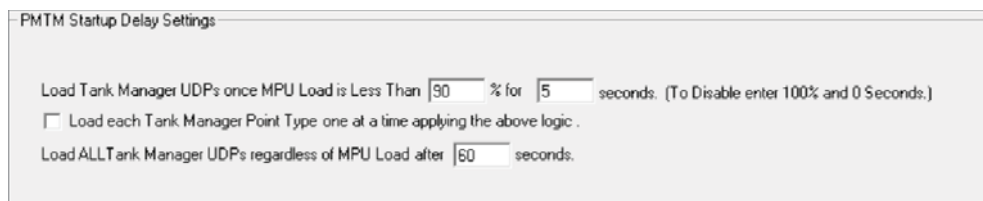
Haul begins when this value =1, and continues until this value =0 and the timer expires.

## User program startup delay, MPU loading enhancement during startup

When Tank Manager is given the start command from the operating system after a reboot, cold start or similar, it will check the MPU load to validate if it is less than the MPU load set point for the required amount of time before loading and initializing all of its user defined points (UDPs) and starting the application.

Each point type can be loaded one at a time applying the above logic if desired by checking the box, but if all UDPs are not loaded by the max wait time, it will immediately load all remaining UDPs.

This is in an effort to reduce MPU load spikes during restarts.



PMTM Startup Delay Settings

Load Tank Manager UDPs once MPU Load is Less Than 90 % for 5 seconds. (To Disable enter 100% and 0 Seconds.)

Load each Tank Manager Point Type one at a time applying the above logic.

Load ALL Tank Manager UDPs regardless of MPU Load after 60 seconds.



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