

FuelForce. Tank Watch Tank Monitoring, Fuel Inventory Reconciliation and Fuel Delivery Notification

TankWatch

TankWatch provides tank monitoring and inventory reconciliation as an integral part of FuelForce. The Host Control Processor ("HCP") can monitor the status of tanks equipped with Tank Level Sensing ("TLS") equipment from a remote location. The Site Control Processor ("SCP") is capable of communicating directly with up to two (2) fuel tank monitoring systems at the site. Veeder-Root TLS-250 and TLS-350 protocols are supported. Many other tank monitoring manufacturers also utilized these protocols.

TankWatch performs Date-to-Date tank inventory reconciliation. The reported products issued are subtracted from the total quantity of product delivered on a tank by tank basis. The difference is compared with the standing inventory and the percentage of error is reported.

TankWatch also performs fill-to-fill tank inventory reconciliation. The system compares the reported product issued to the measured product in a tank to determine if there is a potential leak. Tank volumes and deliveries for tanks which are not equipped with a TLS device may be entered manually at the site via supervisor functions, or at the HCP.

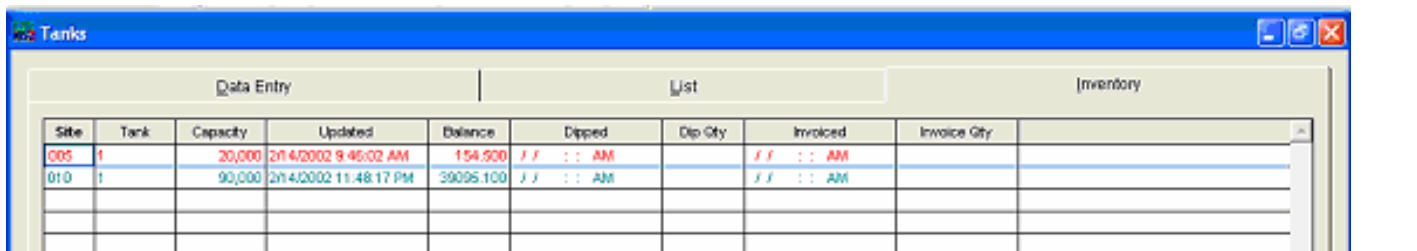
TankWatch allows automated leak testing by shutting down the site, initiating a leak test through the Veeder-Root or other Tank Level Sensing system which performs leak testing, recording the test results, and reactivating the tank when the test is complete. No human intervention is required.

FuelForce can track mobile tanks which may take on product from a site, to report product issued to off-road or remote equipment. The product request procedure is the same as it is for other vehicles and equipment. The tanker fueling transaction is treated as a transfer rather than an issue. This permits fuel reconciliation on the tanker as well as the fixed tank.

Sample FuelForce Tank Inventory Screen

- Accessing the Inventory Tab on the Tank database table. The Inventory Tab is used to show a visual display of the balance of fuel in each tank. This displays the balance in of the fuel tanks. It has been color coded for ease of distinction. **Red** indicates the balance in the tank is less than thirty percent (30%) of the capacity of the tank. **Blue** indicates a balance in the tank between thirty and fifty percent (30-50%) of the capacity of the tank. Black indicates the balance is greater than fifty percent (50%) of the capacity of the tank.

✓ NOTE: This display is always current with the interactive network version of FuelForce software.



Site	Tank	Capacity	Updated	Balance	Dipped	Dip Qty	Invoiced	Invoice Qty
005	1	20,000	2/14/2002 9:46:02 AM	154.500	FF :: AM		FF :: AM	
010	1	90,000	2/14/2002 11:48:17 PM	39095.100	FF :: AM		FF :: AM	
001	1	5000	7/5/04 9:04:02 AM	472.100	7/4/04 10:23:04 PM	600.20	6/15/04 1:02:22 PM	100.200
002	1	10000	7/6/04 9:24:22 AM	3022.500	7/5/04 10:37:44 PM	4211.40	6/13/04 2:41:02 PM	200.300
003	1	12000	7/7/04 2:43:30 PM	10973.400	7/6/04 11:42:33 PM	11332.40	6/12/04 3:54:09 PM	300.400

The Inventory Tab (Tanks Database Only) is used to show a visual display of the balance of fuel in each tank.

The TANKS TABLE (tank_master) defines the physical containers that store the products. These can be either above ground or underground. FuelForce keeps a perpetual inventory in each of the tanks that are set up. This table includes information about the tanks, such as the product it holds, the capacity of the tank, and other pertinent information.

Manual Dip Entries

Manual Dips (Inventory levels): FuelForce is a perpetual inventory control system. Dip readings provide a means to verify the quantity of fuel in any tank. It is recommended that you take a DIP reading immediately preceding a delivery and immediately following the fuel delivery. Capturing the dip readings can be done manually with input at the island or from the host, or can be automatically captured with your tank monitoring system and transferred into the FuelForce database using FuelForce's Tank Watch software.

FuelForce/PC TankWatch Report (Detail)

Date/Time Range = 06/01/2003 12:00:00 AM - 08/01/2003 12:00:00 AM

Vehicle Filter =

Driver Filter =

Site Filter = 001

Product Filter =

Tank Filter =

Unprocessed Filter = Exclude

Site: 001 Tank: 1

Date	Time	Measured Balance	Total Delivered	Pulsed Volume	Calc. Balance	Variance	Adj (+/-)	% of Pulsed
05/27/2003	7:17:05 AM	1324.000						
06/02/2003	7:10:13 AM	1602.000	1350.000	1053.650	1620.350	-18.350	0.000	-1.74%
06/09/2003	8:30:32 AM	1672.000	1103.000	1053.800	1651.200	20.800	0.000	1.97%
06/16/2003	7:10:54 AM	1324.000	917.000	1249.500	1339.500	-15.500	0.000	-1.24%
06/23/2003	8:24:23 AM	1463.000	1148.000	1030.550	1441.450	21.550	0.000	2.09%
06/30/2003	7:16:40 AM	1393.000	927.000	1014.050	1375.950	17.050	0.000	1.68%
07/08/2003	7:28:09 AM	1359.000	1013.000	1050.250	1355.750	3.250	0.000	0.30%
07/14/2003	7:13:23 AM	1010.000	0.000	770.200	588.800	421.200	0.000	54.68%
07/21/2003	8:15:45 AM	1393.000	1153.000	1001.200	1161.800	231.200	0.000	23.09%
07/28/2003	7:17:40 AM	1498.000	1186.000	1055.800	1523.200	-25.200	0.000	-2.38%
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05/27/2003	7:17:05 AM	1324.000	8797.000	9279.000	842.000	656.000	0.000	7.06%
07/28/2003	7:17:40 AM	1498.000						

Site: 001 Tank: 2

Date	Time	Measured Balance	Total Delivered	Pulsed Volume	Calc. Balance	Variance	Adj (+/-)	% of Pulsed
05/27/2003	7:17:20 AM	1079.000						
06/02/2003	7:10:31 AM	1289.000	950.000	726.400	1302.600	-13.600	0.000	-1.87%
06/09/2003	8:30:50 AM	1428.000	875.000	752.250	1411.750	16.250	0.000	2.16%
06/16/2003	7:11:12 AM	1463.000	750.000	717.650	1460.350	2.650	0.000	0.36%
06/23/2003	8:24:48 AM	1324.000	700.000	809.700	1353.300	-29.300	0.000	-3.61%
06/30/2003	7:16:59 AM	940.000	0.000	438.250	885.750	54.250	0.000	12.37%
07/08/2003	7:28:25 AM	1846.000	1500.000	676.750	1763.250	82.750	0.000	12.22%
07/14/2003	7:13:40 AM	1254.000	0.000	803.900	1042.100	211.900	0.000	26.35%
07/21/2003	8:16:05 AM	452.000	0.000	581.000	673.000	-221.000	0.000	-38.03%
07/28/2003	7:17:24 AM	1184.000	1302.000	539.300	1214.700	-30.700	0.000	-5.69%
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05/27/2003	7:17:20 AM	1079.000	6077.000	6045.200	1110.800	73.200	0.000	1.21%
07/28/2003	7:17:24 AM	1184.000						

Fuel Delivery Notification Package

NEED: Customers want tank level data to be available to their fuel delivery company to facilitate efficient and cost effective fuel replenishment.

GOAL: Obtain automated process for obtaining "full load" deliveries from your fuel company.

SAVINGS: Now Customers receive a full load of fuel when it is needed, avoiding "delivery charges" for partial loads.

Your fuel delivery company is responsible for making delivery within agreed upon timeframe, greatly reducing administrative tasks at your office.

HARDWARE: 1) FuelForce Fuel Controller, with dial-up phone line;
2) Electronic Tank Level Sensor monitor (Veeder-Root protocol) with serial port wired to the FuelForce system.

HOW IT WORKS: Fuel Delivery Notification Package

The Customer and Multiforce set up the "Reorder Point" for each fuel tank.

When the "reorder point" is reached for a particular tank, an email message stating a delivery is required is sent to both:

- a. the fuel delivery company representative ; and
- b. the Customer's fleet or fuel manager.

SOFTWARE: Email Communicator

The FuelForce Email Communicator automatically transfers selected Alarm Messages and TLS or SCP Site messages such as "Reorder Points" from the FuelForce database to specified email addresses.

By Adding Email Communicator to FuelForce's TankWatch software, the customer can select from a list of alarms, and when those alarm conditions occur, the TLS sends a message to FuelForce, which checks to confirm the alarm is not a duplicate alarm notification, then relays it to the client pre-selected email addresses notifying them of the Alarm condition at the particular fuel tank.

The module can also be utilized to send an email message for other selected alarm conditions (for example, an unauthorized entry attempt into the fuel controller).