

04.02.2010 - News Item: Crude oil quantity conversion based on API MPMS Chapter 12.2: Sediment & water, pressure and temperature corrections and meter correction

API MPMS Chapter 12.2 specifies the exact calculation sequence for petroleum quantities using dynamic measurement methods and volumetric correction factors.

With BCP 10B, QuantityWare delivers a new crude oil MQCI conversion model which will enable BCP customers to calculate net standard volumes (NSV) and gross standard volumes (GSV) from indicated volumes (IV) or gross volumes (GV) according to the calculation steps defined in API MPMS Chapter 12.2 . A combined correction factor including the temperature, pressure and meter correction is applied for the calculation to obtain gross standard volumes, which are then converted to net standard volumes by the correction for sediment and water content (CSW).

This is achieved by the unique flexibility of QuantityWare's MQCI in combination with the proven SAP Unit of Measure concept. Via a new QuantityWare dimension ID for gross volumes, customers can clearly distinguish between gross and net volume quantities. Masses are calculated as gross masses.

This solution will be accessible via new QuantityWare template conversion groups. With this new development, QuantityWare enables full scale crude oil quantity conversions including realistic pipeline scenarios.

Details:

The following screen shot, shows an example calculation. A crude volume of 1,000,000 GBL (barrel, gross) is transferred through a pipeline at an average temperature and pressure value as shown, with a sediment & water content of 1 % (volume). The gross and net barrel volumes at 60 ° F, as well as the gross and net gallon values at 60 ° F and the mass and weight in pound, are calculated.

Calculator Edit Goto System Help

QCI : Calculator for additional quantities

Material (Re)use Defaults

Calculation parameters

Conv. Group **Q133** CRUDE OIL 2004 BSW/MCF/PRESS API 60 °F
 UoM Group QTU QUANTITYWARE U. S. CRUDE EXAMPLE

Date 28.01.2010 17:00:40

Input Qty
 Transactn. qty. 1000000 GBL

Add.parameters for chemicals
 Base density
 Therm. expan. coeff.

Result

Parameter	C...	Value	U...	Addl.qty	U...	M...
Observed temperature		90,00	FAH	976427,100	BB6	<input type="checkbox"/>
Observed pressure		70,000	PSI	986290,000	GB6	<input type="checkbox"/>
Observed density (vac.)		34,0	API	41424180,000	GG6	<input type="checkbox"/>
Test temperature (obs. dens.)		60,00	FAH	295278991,752	LB	<input type="checkbox"/>
Hydrometer corr. indicator	<input checked="" type="checkbox"/>			294898910,744	LBA	<input type="checkbox"/>
Sediment & water %		1,00000	V%	41009938,200	UG6	<input type="checkbox"/>

SAP