

## Note: 000092

---

### Overview

Number	000092
Description	TCV (Total Calculated Volume) - Customer Solution Example
Version	2 from 01.03.2021
Status	Released to Customer
Language	EN
Responsible	Markus Seng
Product	BCP
Category	Consulting & Configuration

---

### Symptom

#### Part 1:

For your MQCI crude oil conversion group, you wish to enter the TCV (Total Calculated Volume) as transaction quantity and the Free Water value (FW) as an additional reading group parameter value, so that the system calculates the Gross Standard Volume (GSV) from these two values and subsequently all values for the UoM defined in the UoM group assigned to the calculation.

The definition of the Total Calculated Volume (TCV) is:

TCV equals gross standard volume (GSV) plus free water (FW) – *API MPMS Chapter 12.1.1.*

Thus  $GSV = TCV - FW$  (in appropriate UoM, e.g. all values in barrels)

#### Part 2:

For your MQCI crude oil conversion group, you wish to enter any NOV, NSV, GOV or GSV UoM (or any mass or weight UoM - NSM, NSW, GSM, GSW) as transaction quantity and the Free Water value (FW) as an additional reading group parameter value, so that the system also calculates the Total Calculated Volume (TCV) from these two values.

$TCV = GSV + FW$  (in appropriate UoM, e.g. all values in barrels)

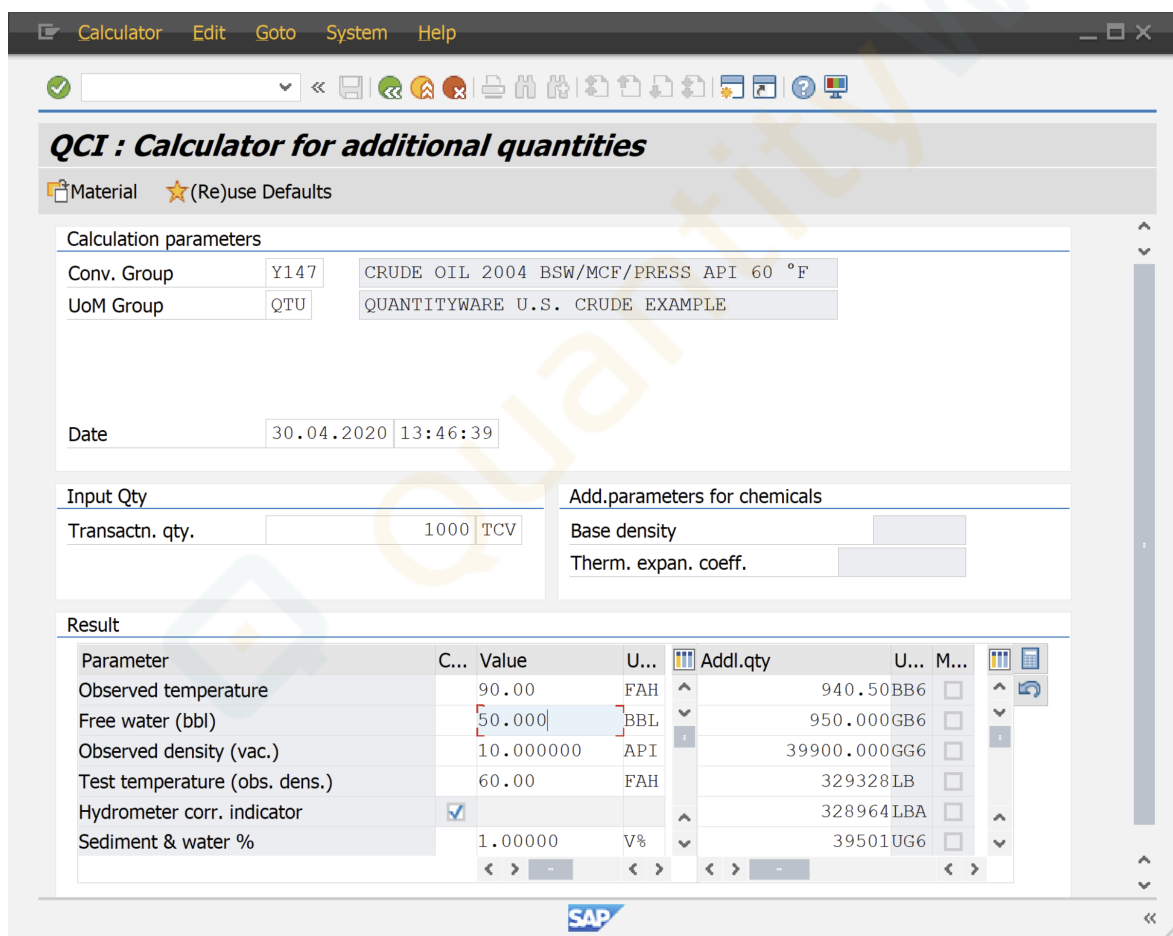
## Cause

API MPMS crude oil model extension requirement - TCV and FW are reported from terminals / operators / TCV needs to be calculated and reported.

## Solution

This solution may only be implemented with the support of a QW-Certified consultant.

Depending on your business process design and configuration (e.g. TSW ticketing, delivery processing ...), you can extend the BCP MQCI crude oil conversion group with two customer specific MQCI functions. One function performs the simple calculation of an "internal" GSV for one dedicated TCV transaction UoM. The FW value can be passed to the MQCI as customer specific parameter:



**QCI : Calculator for additional quantities**

Material (Re)use Defaults

Calculation parameters

Conv. Group: Y147 CRUDE OIL 2004 BSW/MCF/PRESS API 60 °F  
 UoM Group: QTU QUANTITYWARE U.S. CRUDE EXAMPLE

Date: 30.04.2020 13:46:39

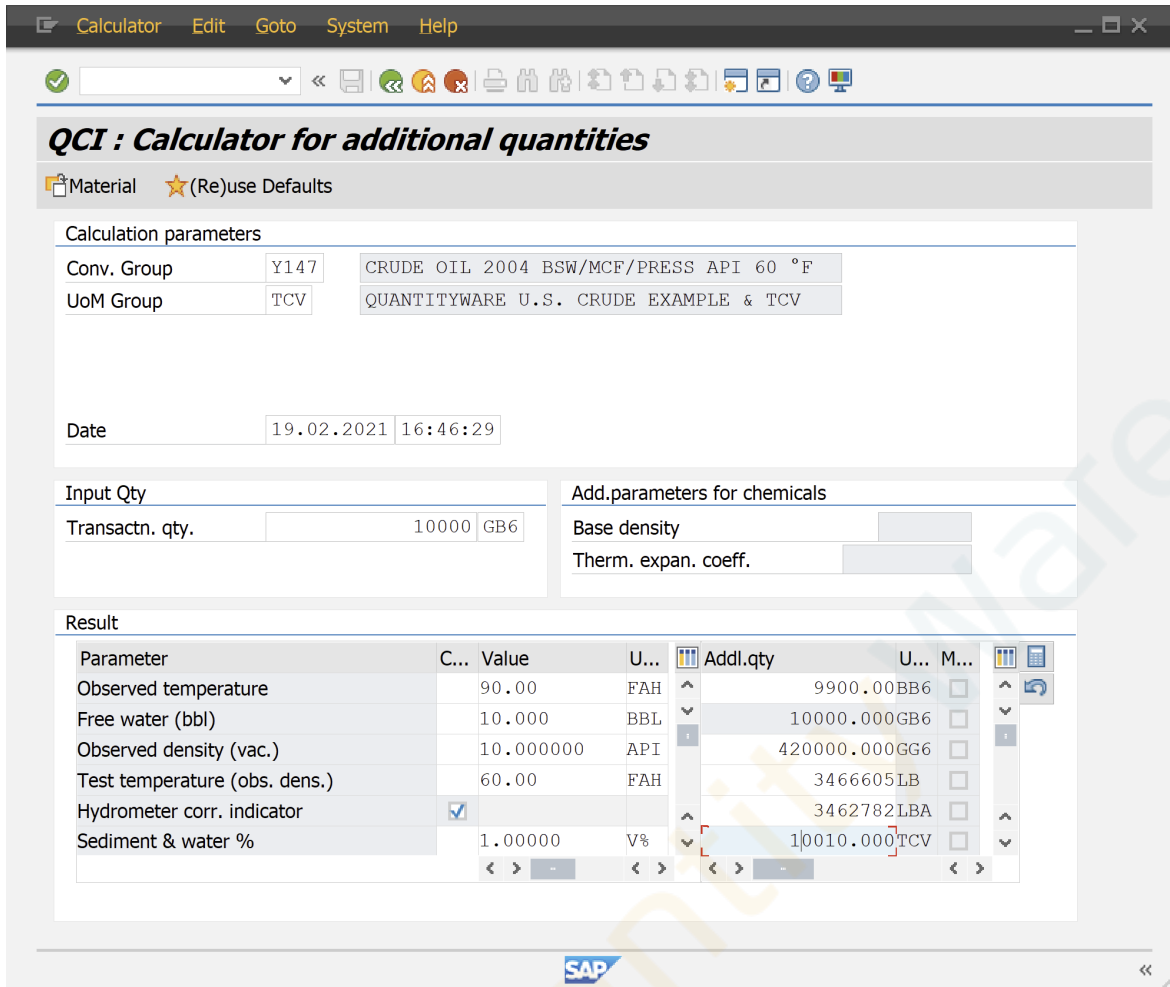
Input Qty: Transactn. qty. 1000 TCV

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

Result

Parameter	C...	Value	U...	Addl.qty	U...	M...
Observed temperature		90.00	FAH	940.50	BB6	
Free water (bbl)		50.000	BBL	950.000	GB6	
Observed density (vac.)		10.000000	API	39900.000	GG6	
Test temperature (obs. dens.)		60.00	FAH	329328	LB	
Hydrometer corr. indicator	<input checked="" type="checkbox"/>			328964	LBA	
Sediment & water %		1.00000	V%	39501	UG6	

The second function performs the calculation of the dedicated UoM TCV:



**QCI : Calculator for additional quantities**

Material (Re)use Defaults

Calculation parameters

Conv. Group: Y147 CRUDE OIL 2004 BSW/MCF/PRESS API 60 °F

UoM Group: TCV QUANTITYWARE U.S. CRUDE EXAMPLE & TCV

Date: 19.02.2021 16:46:29

Input Qty: Transactn. qty. 10000 GB6

Add.parameters for chemicals

Base density: [ ]

Therm. expan. coeff.: [ ]

Result

Parameter	C...	Value	U...	Addl.qty	U...	M...
Observed temperature		90.00	FAH	9900.00	BB6	
Free water (bbl)		10.000	BBL	10000.000	GB6	
Observed density (vac.)		10.000000	API	420000.000	GG6	
Test temperature (obs. dens.)		60.00	FAH	3466605	LB	
Hydrometer corr. indicator	<input checked="" type="checkbox"/>			3462782	LBA	
Sediment & water %		1.00000	V%	10010.000	TCV	

With this note, QuantityWare releases a general consultancy-based solution example (Part 1 and Part 2) containing:

- two example function modules (ABAP code), which you may plug into your existing conversion group configuration
- an example UoM TCV configuration - specific to the function modules
- configuration steps how to integrate the customer functions into existing crude oil configurations

## Transport Reference

No SAP-based transport

Detailed implementation Detailed information is available in two separate PDF documents (Part 1 and Part

2) for certified BCP consultants - accessible via the QuantityWare Service Portal in the "Consultant Files" area.

## Validity

SAP Release	From SP	To SP	In SP Shipment
ECC600	BCS 3.0 CSP01		
S/4 HANA	BCS 3.0 CSP00		