



# BCP Test Manual

## Test Cases for BCP Test Installations

## Notes

The latest version of this documentation can be found in the QuantityWare [Knowledge Base](#). All documentation is kept current for the combinations of latest BCS release with the latest supported SAP Oil, Gas, & Energy release. For all currently supported combinations see [Note #000086 "Support and Release \(Lifecycle\) details" page 2, "Release Lifecycle"](#).

Your release level can be determined via:

`"/o/PTYW/COCKPIT" -> "Cockpit" -> "Support Package Level"`

## Version History

| Version | Date       | Description  |
|---------|------------|--|
| 00      | 2015-05-01 | Initial Version  |
| 01      | 2017-11-11 | Editorial changes  |
| 02      | 2019-06-25 | Editorial changes  |
| 03      | 2020-07-14 | Editorial update   |
| 04      | 2021-09-24 | S/4HANA 2020 / 2020_EX validity confirmed - modern QW document style applied - 30A CSP02 / 30B CSP01 changes |
| 05      | 2023-11-01 | 30A CSP03 / 30B CSP02 changes  |
| 06      | 2024-05-15 | AD note 000119 test scenario screen changes  |

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## 1. Introduction

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You have obtained a free-of-charge test usage key for QuantityWare BCP – Bulk Calculations Petroleum. Your technical team has installed the software package in one of your test systems, following the BCP Technical Installation Guide. In the QuantityWare template client 045, the BCP BC-set has been activated. Your task is now to test BCP within the next 4 weeks (possibly with an extension period granted by QuantityWare).

QuantityWare provides three major customizing and configuration documents along with the BCP software package:

- The BCP Project and Implementation Guidelines – BCP PAIG
- The BCP Supported Standards Manual
- The BCP Documentation Reference Manual

If you decide to conclude a usage agreement for BCP, it is strongly recommended that you consider these three documents - follow the PAIG Methodology to implement BCP into your system landscape as well as familiarizing yourself with the BCP Supported Standards Manual and the BCP Documentation Reference Manual.



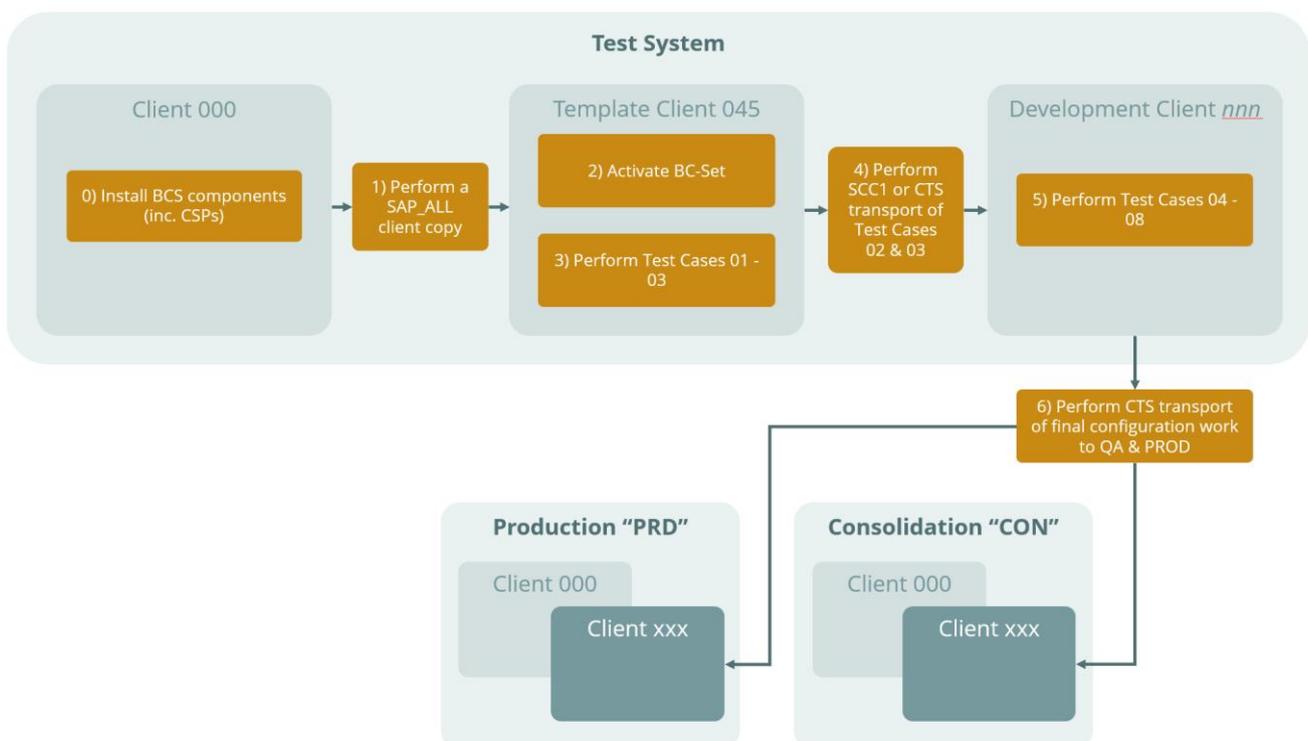
QuantityWare strongly recommends that a certified BCP consultant is employed for the implementation project, or that before implementation, you attend the appropriate BCP certification course.

During the 4 week testing period, you may not have a certified BCP consultant available, and you may not have attended a certification course. Typically, testing time budgets are limited and detailed quantity conversions' configuration knowledge is not commonplace; in order to provide detailed guidance for your testing efforts, this document - the BCP Test Manual - provides a sequence of **eight (8) test cases** which you may execute in your system in order to define a production ready conversion group in your development/test client – including automated test scenarios - based on the BCP template configuration.

The Petroleum Measurement Cockpit (PMC) is the central access point for the configuration and testing of all quantity conversion settings in your system. Thus, all test cases are executed via the PMC. The only exception to this rule is test case 08. There, you require the authority to assign a conversion group and UoM group to a material in the material master.

Each test case contains a sequence of actions to be performed in the BCP Petroleum Measurement Cockpit. These are illustrated with screen shots, to ensure that you can easily identify all steps and execute the test case.

To execute the test cases in your test system, you require access to the **QuantityWare template client 045** and to your development client. In that client, all your business process' configuration data is available, as illustrated below:



In summary, through execution of the 8 test cases you:

- Understand how you selectively probe the rich BCP template in client 045
- Learn how to copy required conversion group configuration data to your Z\* name space
- Transport that data to your development client for additional tests and final configuration.



In order to execute the test cases, you must be familiar with SAP customizing transactions and have knowledge of working with SAP customizing transports. Additionally, good SAP QCI knowledge is required. In order to reduce the number of required screen shots for this document, customizing actions such as copying an object typically omit obvious steps.

The total execution time for all 8 test cases – if your user ID is equipped with all required authorizations – is estimated to be **3 hours** if you fulfill the above noted requirements.

If your organization is unfamiliar with the requirements for quantity conversions or has no documentation / experience concerning existing system configuration in this area, QuantityWare strongly recommends using the services of a QuantityWare certified consultant already at this early stage. QuantityWare can provide your organization with a [list of companies and independents](#) offering such consulting. QuantityWare does not offer such consulting itself and support will not provide remote consulting through the service portal.



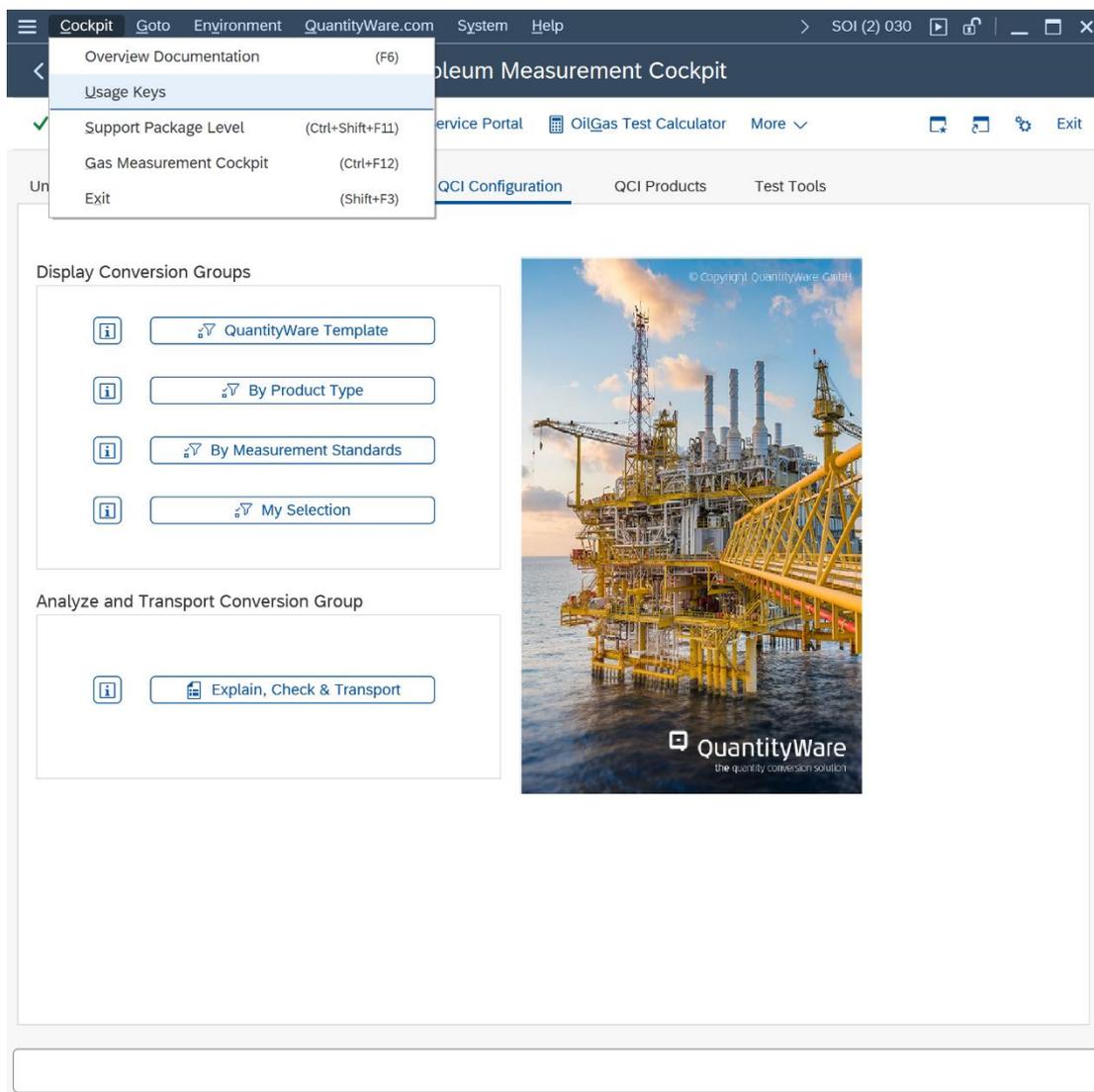
If you are planning to run BCP within your SAP PRA installation, test case 08 is not relevant for you. SAP PRA requires the assignment of a conversion group to a delivery network. Read the QuantityWare working paper "[PRA Measurement System Integration](#)" available in the Knowledge Base at [www.quantityware.com](http://www.quantityware.com) for additional guidance.

## 2. Test Cases

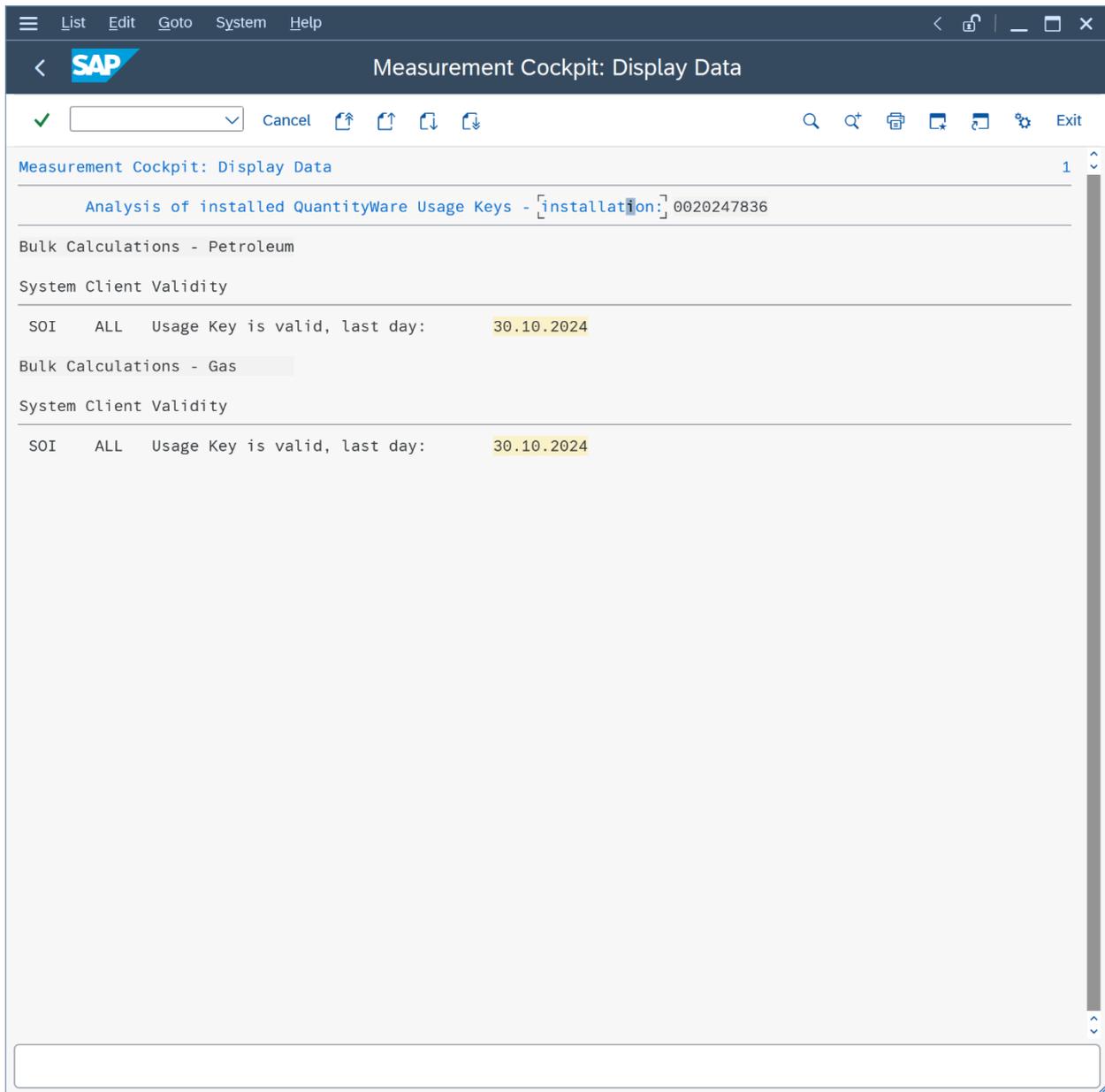
### 2.1. Test Case 01 – Run Installation Test - Template

**Estimated test case execution time: 10 minutes**

**Part 1** - Log on to your template client 045 and launch the Petroleum Measurement Cockpit (PMC) – Transaction /N/QTYW/COCKPIT. You first need to check if your basis team has installed the BCP test usage key. From the Petroleum Measurement Cockpit (PMC) menu select: Cockpit -> Usage Key. Then, select “Display” and note the list display:

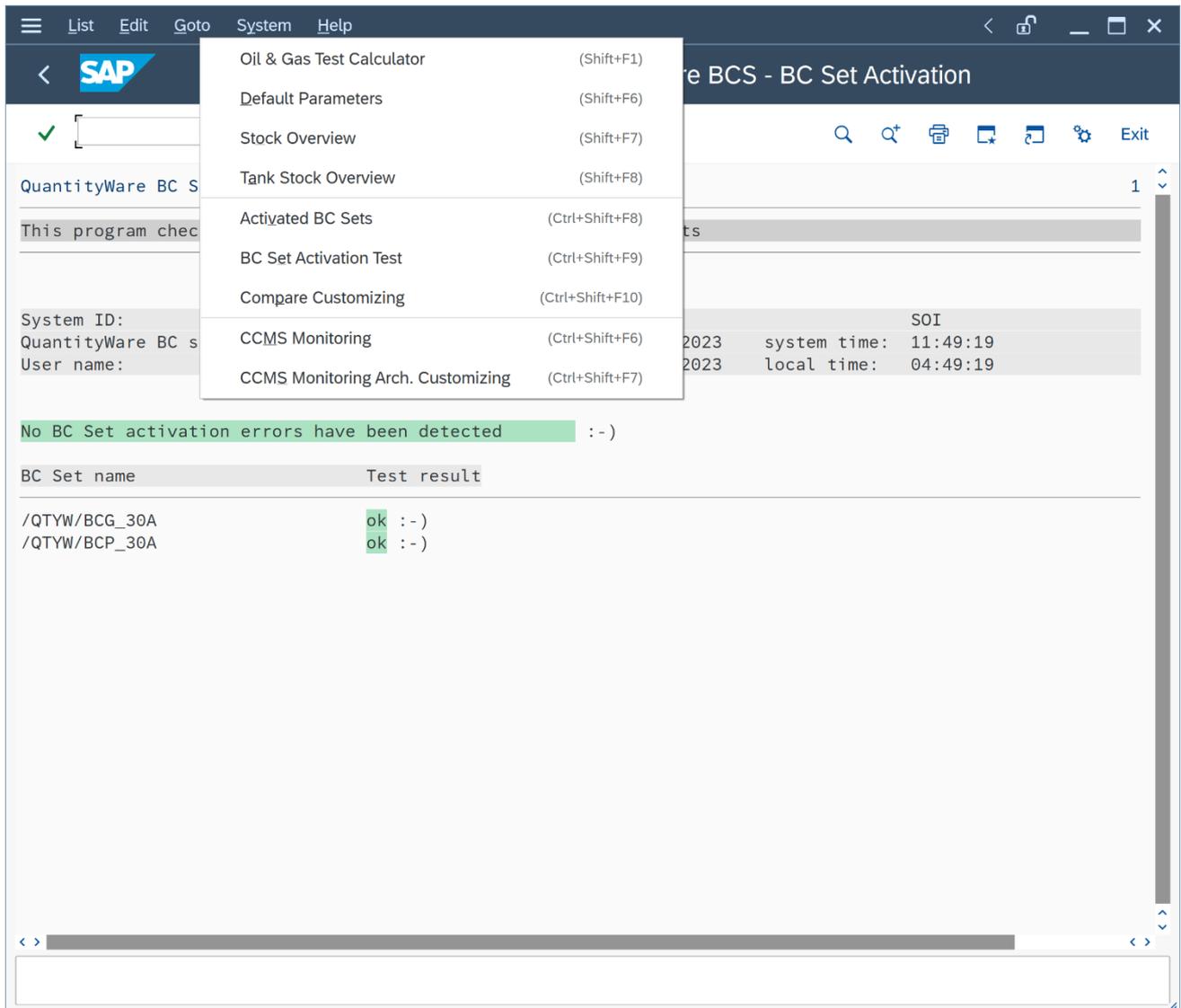


The screenshot shows the SAP Measurement Cockpit interface. At the top, there is a navigation bar with the SAP logo and the text 'SAP'. Below this, a search bar contains a green checkmark and a dropdown arrow. The main content area features a dialog box titled 'Measurement Cockpit: Install & Display QuantityWare Usage ...'. The dialog contains the following text: 'Display installed usage keys: Press - "Display"', 'Install new usage key: Enter the new usage key into the input field below, then: Press - "Install"', and 'New usage key:' followed by an empty input field. At the bottom of the dialog, there are three buttons: 'Install' with a plus icon, 'Display' with a refresh icon (highlighted with a red box), and a close button 'X'.



This looks good 😊, a BCP usage key is in place - in our example we also have a BCG usage key installed, which is not required.

**Part 2:** From the Petroleum Measurement Cockpit menu select: Environment -> BC Set Activation Test - is performed by the basis team, but a 4-eyes principle is always good.

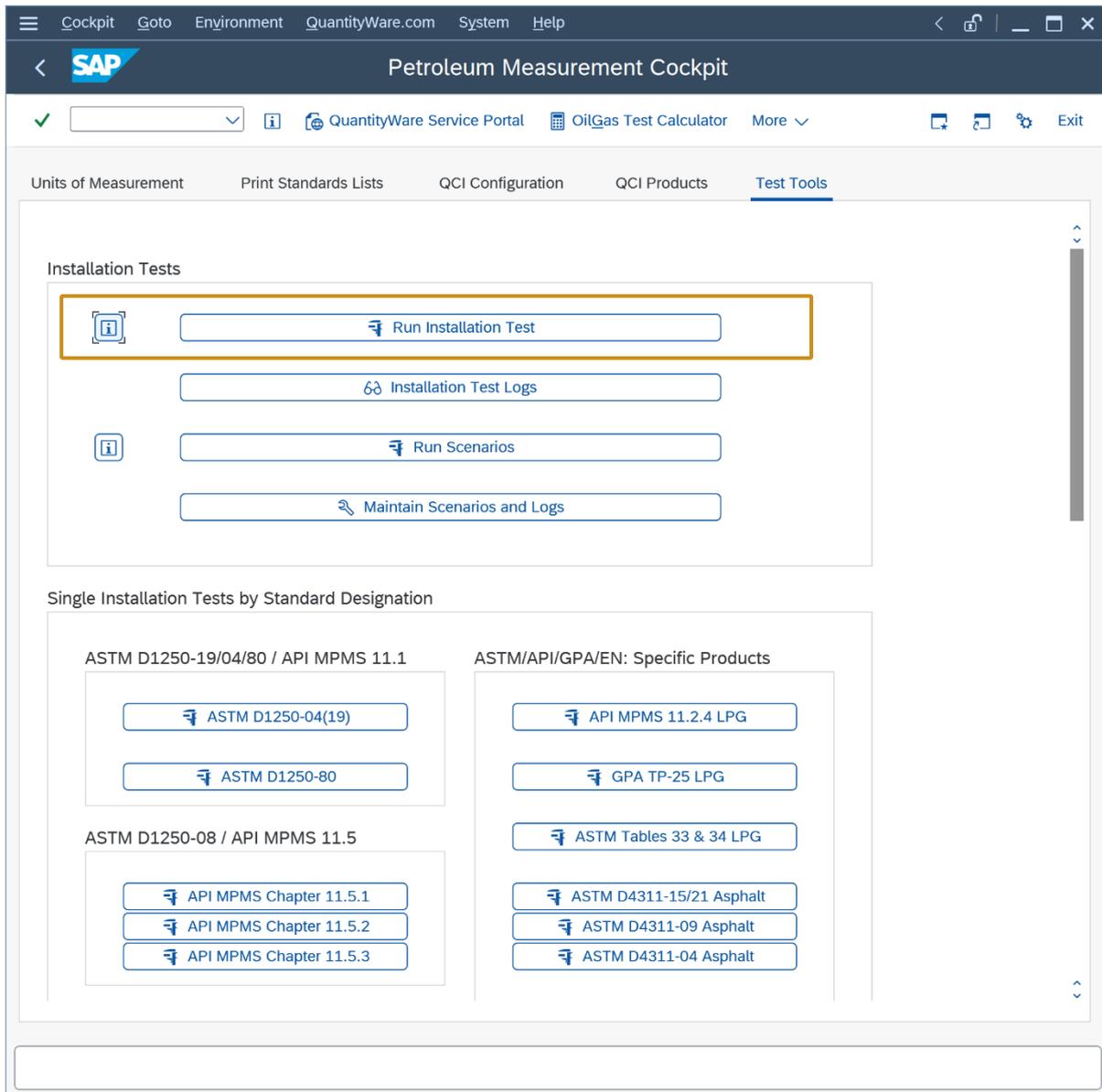


The screenshot shows the SAP QuantityWare interface for the 'BC Set Activation Test'. A menu is open over the 'System' tab, listing various functions. The 'BC Set Activation Test' option is highlighted. Below the menu, a message states 'No BC Set activation errors have been detected :-)' in a green box. A table displays the test results for two BC sets.

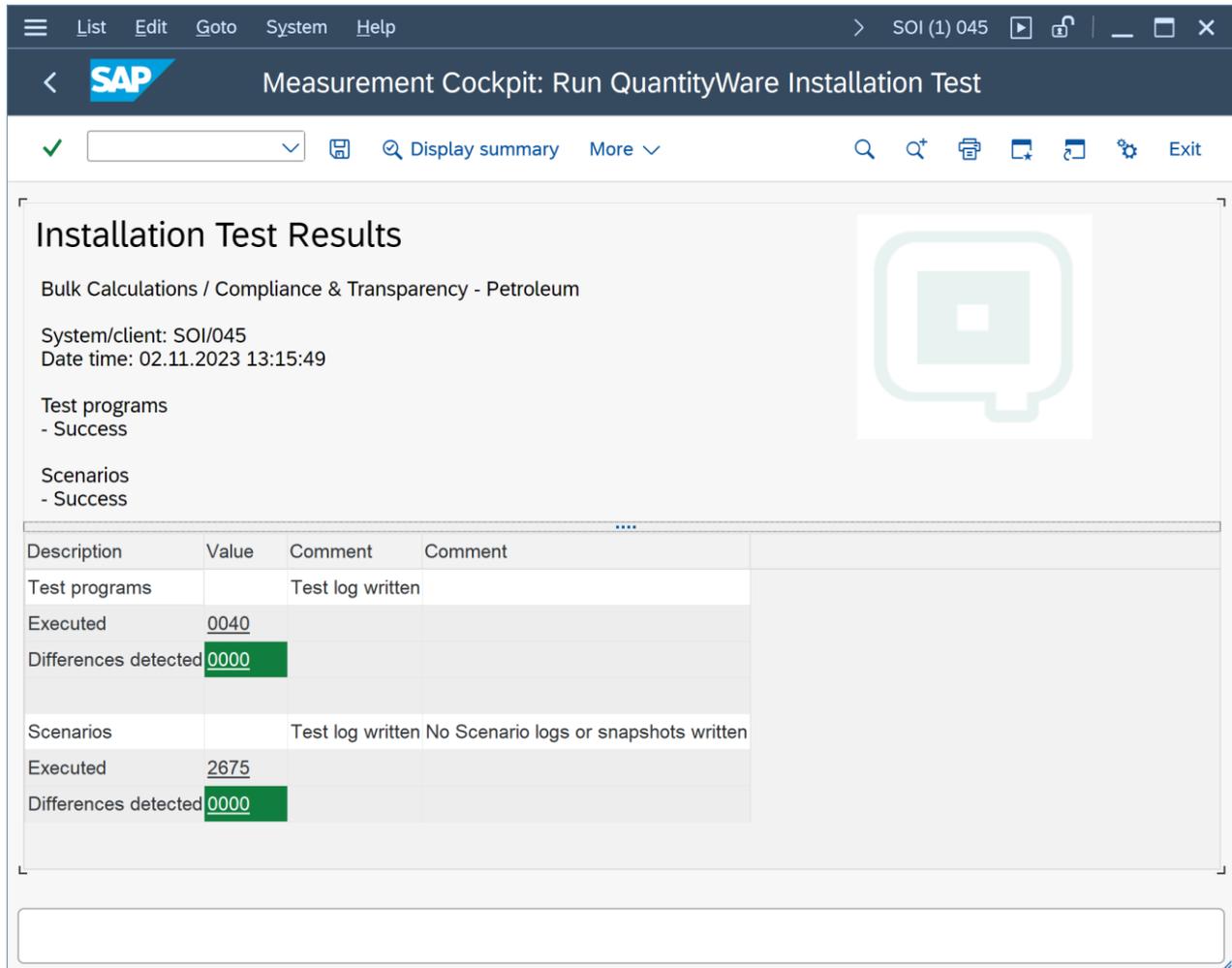
| BC Set name   | Test result |
|---------------|-------------|
| /QTYW/BCG_30A | ok :-)      |
| /QTYW/BCP_30A | ok :-)      |

Additional details visible in the interface include the SAP logo, navigation icons, and system information such as 'System ID: QuantityWare BC s' and 'User name:'. A secondary table shows system and local times for the year 2023.

**Part 3:** Now you run the QuantityWare Installation Test. Select the PMC “Test Tools” tab strip and select the “Run Installation Test” push button.



All test programs (40 if no customer specific test programs are present in your system) and all 2 675 test scenarios need to run “green” i.e., without error. By clicking on the result line, you obtain a list detailing all scenarios. You may select any scenario to inspect its details.



**Installation Test Results**

Bulk Calculations / Compliance & Transparency - Petroleum

System/client: SOI/045  
Date time: 02.11.2023 13:15:49

Test programs  
- Success

Scenarios  
- Success

| Description          | Value | Comment          | Comment                               |
|----------------------|-------|------------------|---------------------------------------|
| Test programs        |       | Test log written |                                       |
| Executed             | 0040  |                  |                                       |
| Differences detected | 0000  |                  |                                       |
| Scenarios            |       | Test log written | No Scenario logs or snapshots written |
| Executed             | 2675  |                  |                                       |
| Differences detected | 0000  |                  |                                       |



If the BCP installation test (validating the BCP template) does not run “green”, do not proceed with the following 7 test cases. Before continuing with the steps described in this document, the issues causing the “red” test runs must be resolved. In such cases, the experience and multi-customer knowledge of a certified consultant can pay for itself in time and effort saved.

## 2.2. Test Case 02 – Identify & Copy LPG Conversion Group - Template

### Estimated test case execution time: 30 minutes

The QuantityWare BCP template contains more than 500 conversion groups, mapping all meaningful BCP supported measurement standard combinations. In the template client, QuantityWare also delivers test UoM groups, allowing you to perform test calculations for each template conversion group in that client without having to perform additional intricate configuration. A complete template of more than 400 UoM definitions (4 languages) is provided as a part of the delivery.

Each conversion group is defined by four (4) different measurement standards:

- UoM conversion standard
- Mass-to-weight conversion standard
- CT(P)L standard (“Corrections for the effect of Temperature and Pressure on Liquid”)
- Calculation model standard



SAP QCI conversion groups only differ in the CT(P)L standard, whereas MQCI conversion groups allow combinations of all four groups of standards.

All QuantityWare template conversion groups are defined in the Q\* name range.

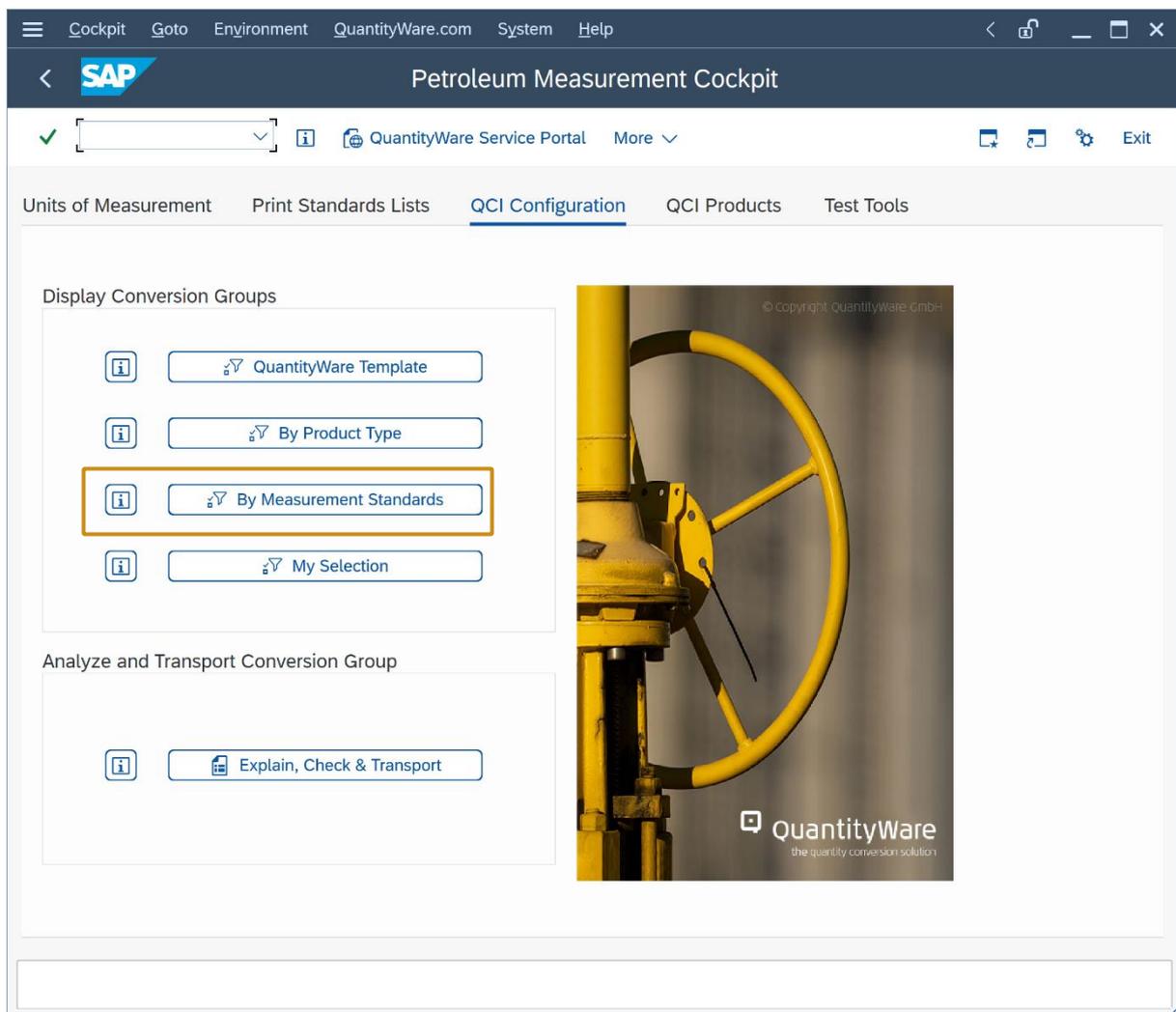
Secondly, a Warning block:

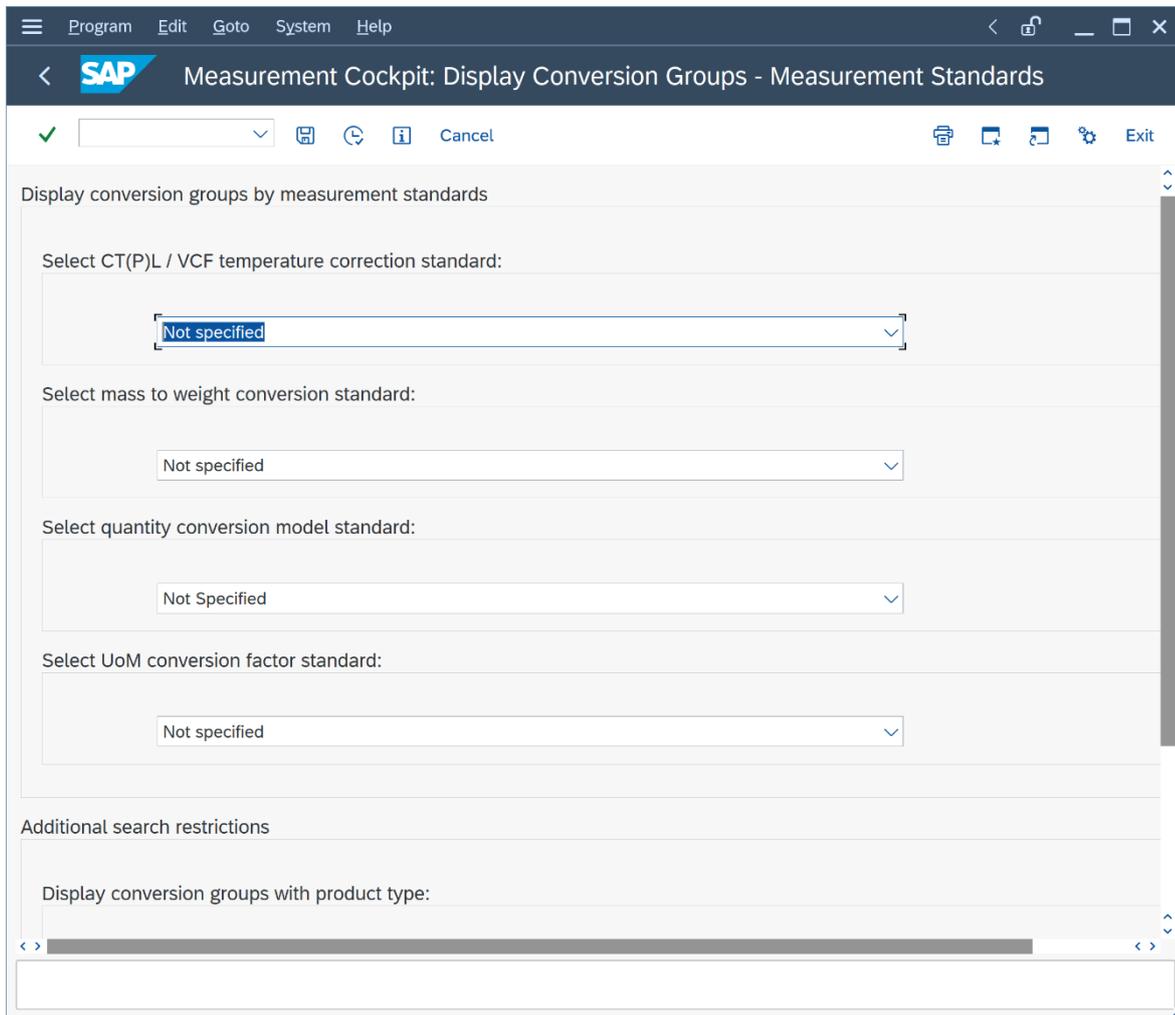


**The most challenging task during BCP implementation is the correct selection of a QuantityWare template conversion group for a material (group of materials).**

Once this assignment is made, you simply copy the Q\*\*\* template conversion group and associated configuration objects (e.g. reading group) to your Z\*\*\* name space in the template client. In this document, we assume that you know exactly which measurement standards are relevant for your materials; if this is not the case, see the PAIG document for the required additional time.

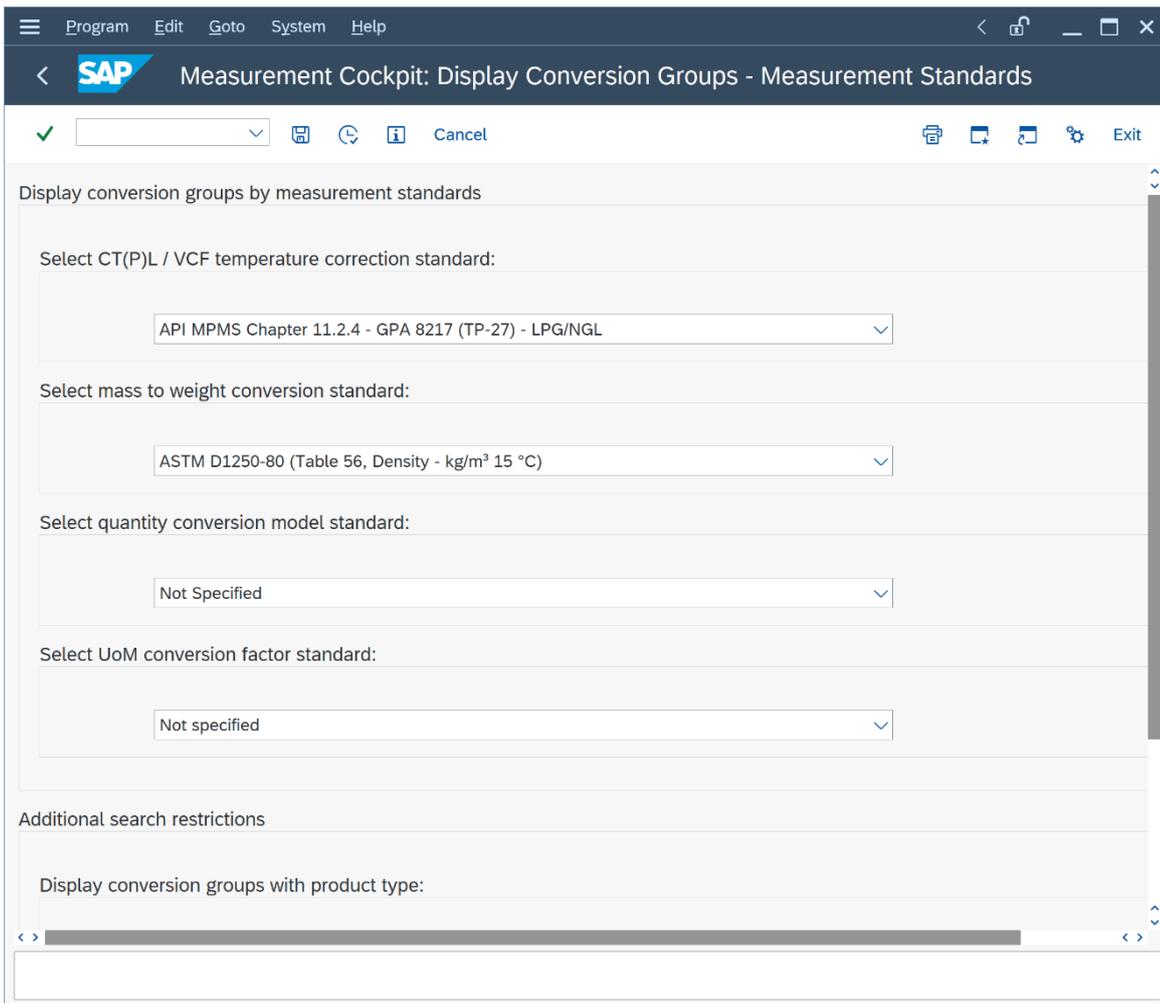
**Part 1:** Select the PMC “QCI Configuration” tab strip. Several selections are available to display defined subsets of the template conversion groups. Select “By Measurement Standards”:





With this selection, you probe the template conversion groups by measurement standards, additionally you may restrict the search by product type and conversion group base temperature.

For this test case, we wish to determine an LPG conversion group for our LPG products (e.g. commercial propane, commercial butane etc.). Select “API MPMS Chapter 11.2.4 – GPA 8217 (TP-27) – LPG/NGL” as CT(P)L standard, “ASTM D1250-80 (Table 56, Density – kg/m<sup>3</sup> 15 °C)” as mass to weight conversion standard and “15 °C” as conversion group base temperature and select “Execute” (F8):



List Edit Goto Settings System Help
 < 🔒 \_ □ ×

SAP Measurement Cockpit: Display Conversion Groups - Measurement Standards

✓  ≡ ≡ 🔍 📄 📊 ⚙ More ▾ 🔍 🔍+ 🖨 📄 📄 ⚙ Exit

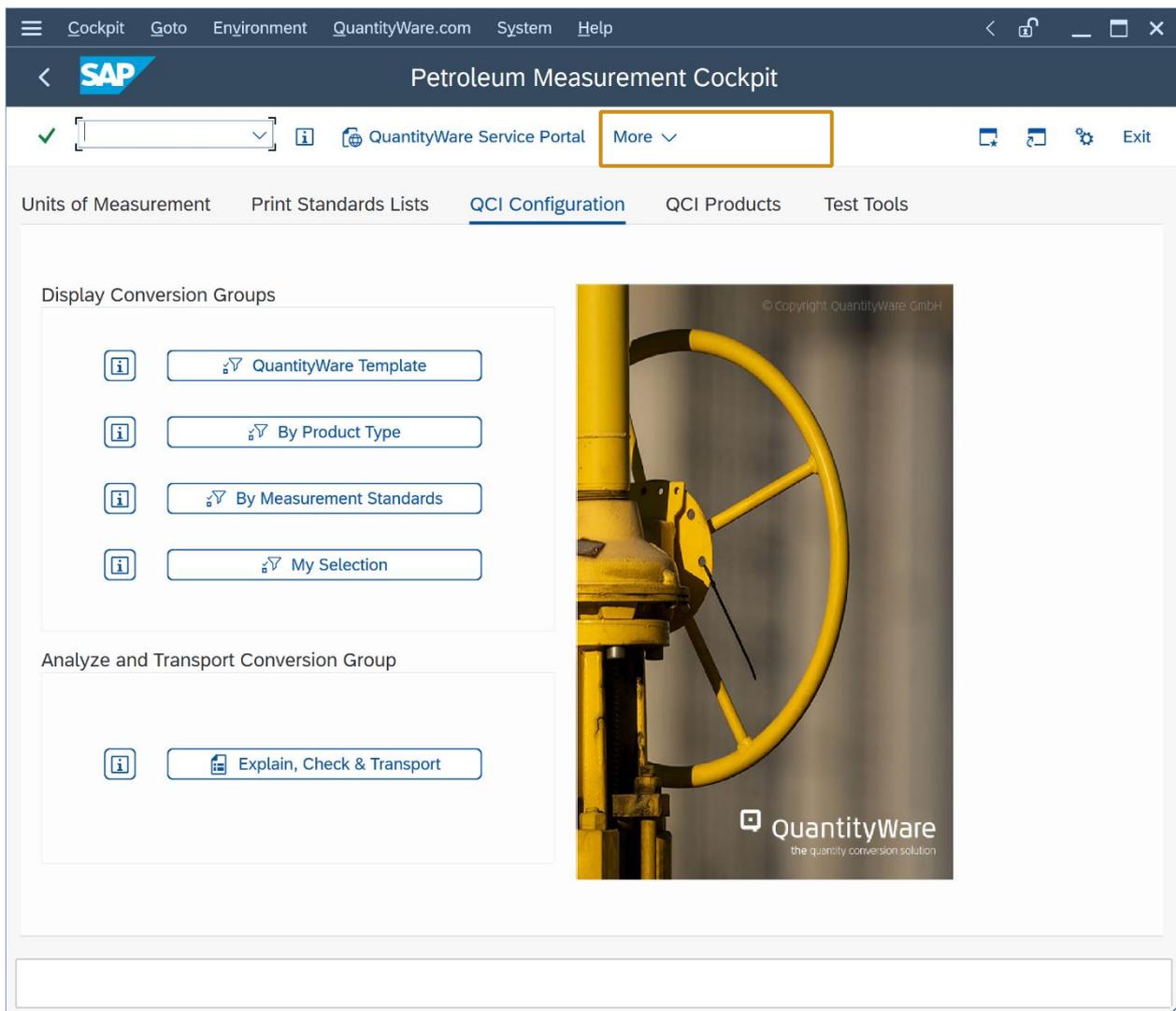
### Display Conversion Groups by Measurement Standards

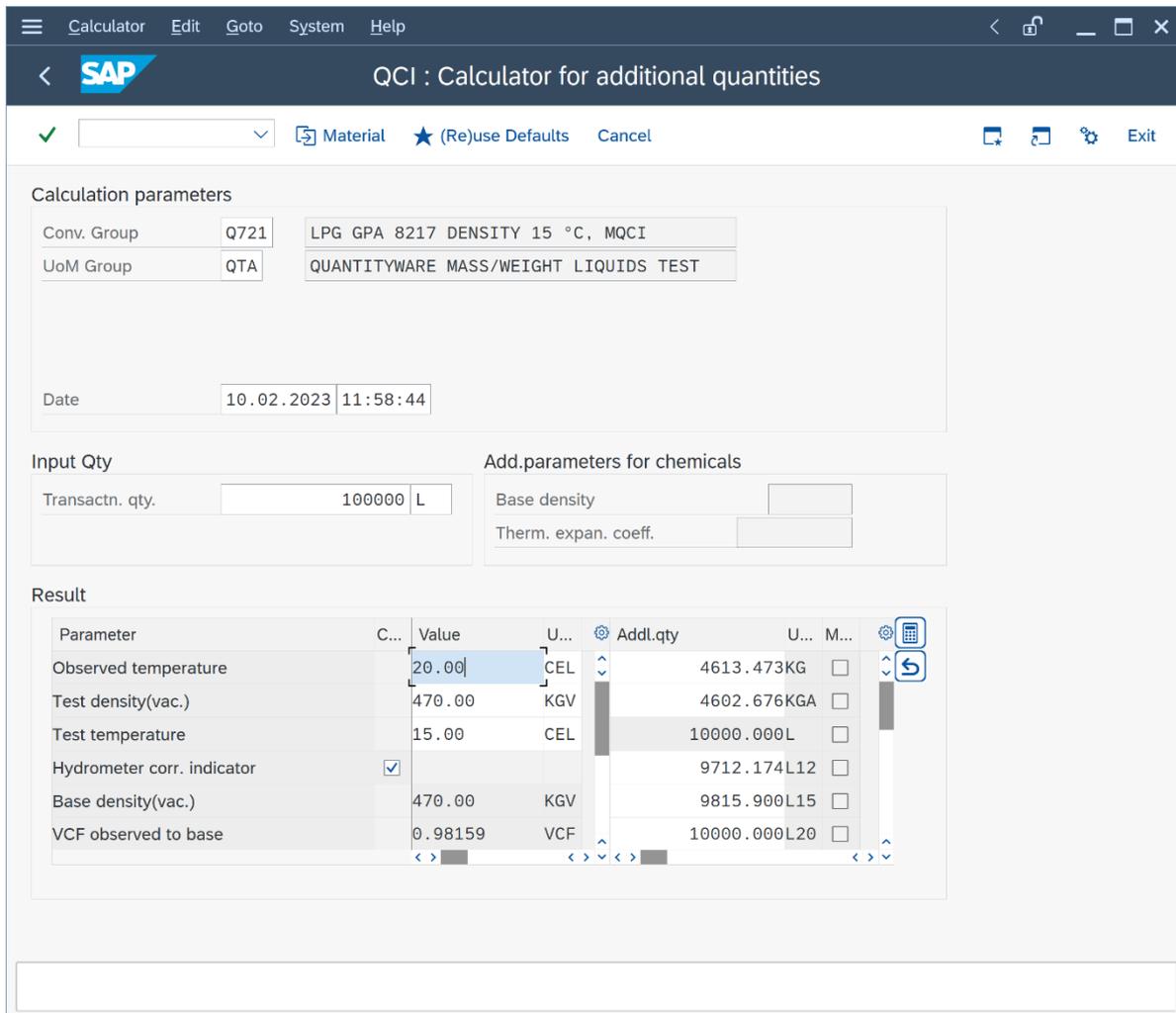
CTPL measurement standard:  
 API MPMS Chapter 11.2.4 - GPA 8217 (TP-27) - LPG/NGL  
 Weight & mass conversion standard:  
 ASTM D1250-80 (Table 56, Density - kg/m<sup>3</sup> 15 °C)  
 Quantity conversion model standard:  
 Not specified  
 Unit of measure intraconversion standard:  
 Not specified  
 Product type:  
 Not specified  
 15 °C



| No | C.Grp | Rdg. group | Ranges | QCI  | Set ID | Description                            | P.t. | Qty.EL % | Qty.WL % | Qty WH % | Qty.EH % |
|----|-------|------------|--------|------|--------|--|------|----------|----------|----------|----------|
| 1  | Q721  | Q721       | Q721   | QTYW |        | LPG GPA 8217 DENSITY 15 °C, MQCI       | 8    | 0.50     | 0.10     | 0.10     | 0.50     |
| 2  | Q72A  | Q72A       | Q72A   | QTYW |        | LPG GPA 8217 & CPL DENSITY 15 °C, MQCI | 8    | 0.50     | 0.10     | 0.10     | 0.50     |

Two template conversion groups are available which fulfill your selection criteria. By double-clicking on the description text a detailed description of the conversion group is displayed, in this case informing you that conversion group Q72A is configured for dynamic CPL (pressure correction) calculations too, which is not required. Thus, template conversion group Q721 looks like a good candidate. Let's perform a trial conversion using conversion group Q721. In the PMC, select push button "Oil & Gas Test Calculator" (More -> ) to use the calculator in conversion group mode:





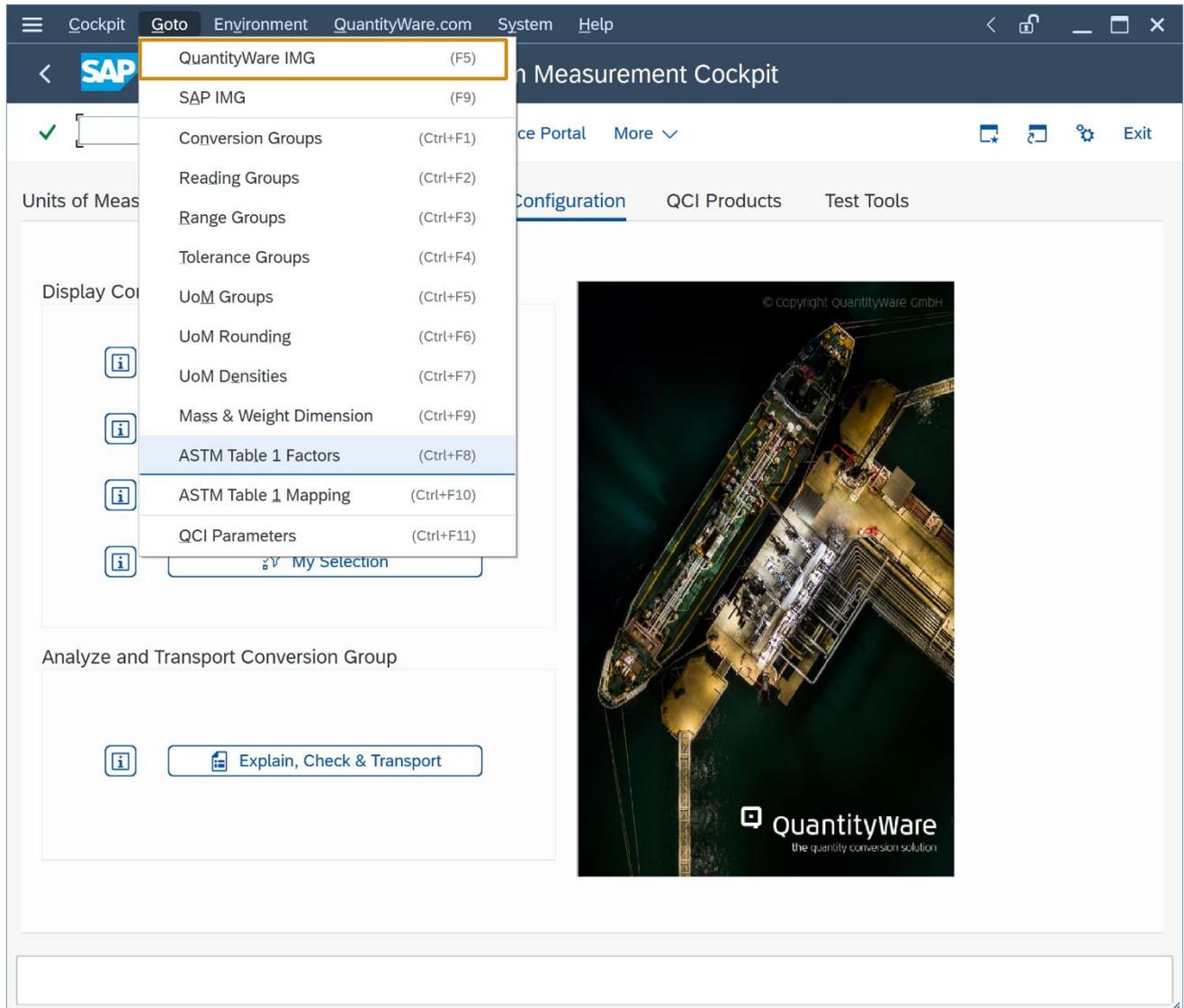
The screenshot shows the SAP QCI Calculator for additional quantities. The interface includes a menu bar (Calculator, Edit, Goto, System, Help), a title bar (QCI : Calculator for additional quantities), and a toolbar with icons for Material, (Re)use Defaults, and Cancel. The main area is divided into several sections:

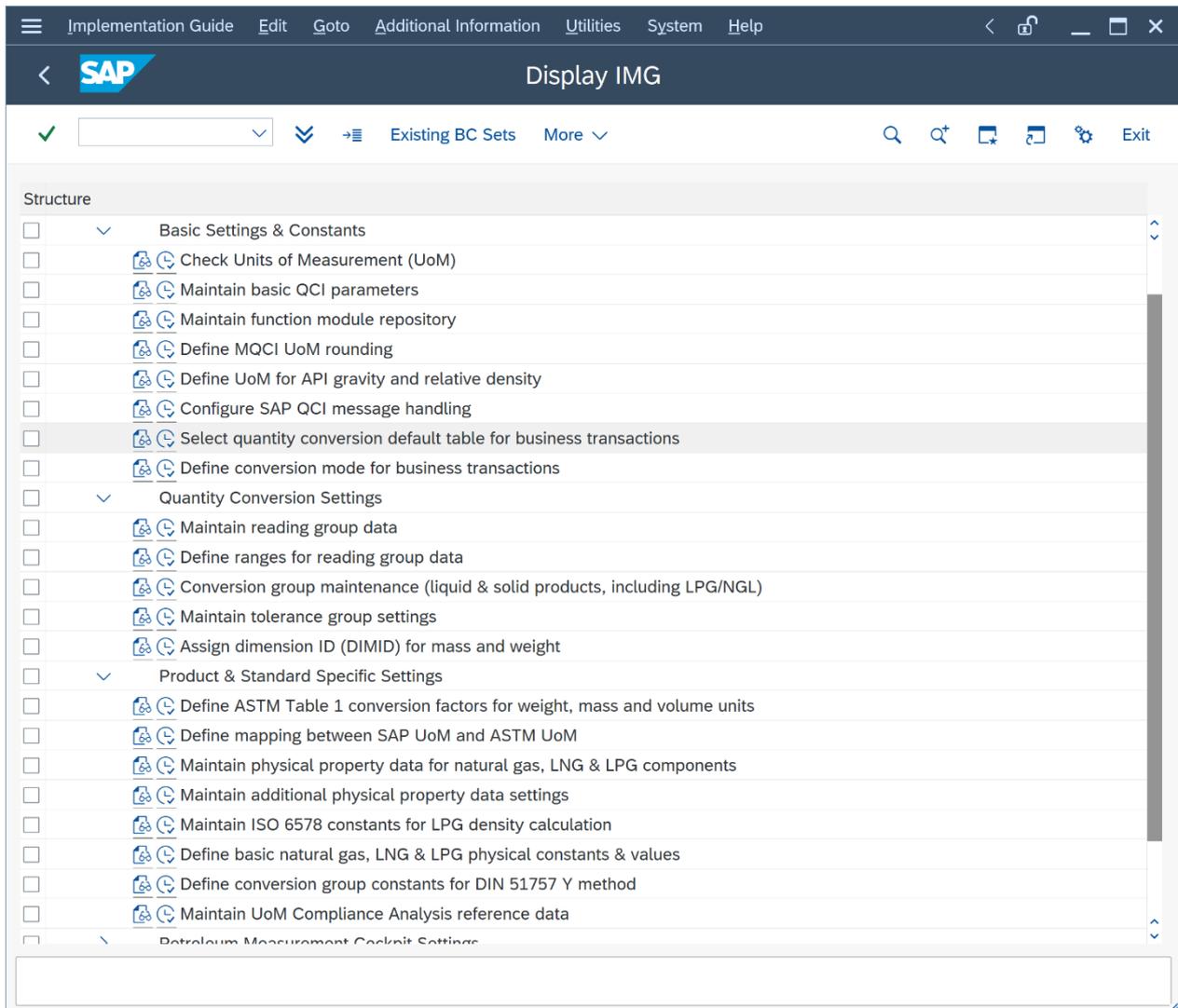
- Calculation parameters:** Contains input fields for Conv. Group (Q721), UoM Group (QTA), Date (10.02.2023 11:58:44), and a text box with "LPG GPA 8217 DENSITY 15 °C, MQCI" and "QUANTITYWARE MASS/WEIGHT LIQUIDS TEST".
- Input Qty:** A field for "Transactn. qty." with the value "100000 L".
- Add.parameters for chemicals:** Fields for "Base density" and "Therm. expan. coeff.".
- Result:** A table displaying calculated values for various parameters.

| Parameter                  | C...                                | Value   | U... | Add.qty      | U... | M... |
|----------------------------|-------------------------------------|---------|------|--------------|------|------|
| Observed temperature       |                                     | 20.00   | CEL  | 4613.473KG   |      |      |
| Test density(vac.)         |                                     | 470.00  | KGV  | 4602.676KGA  |      |      |
| Test temperature           |                                     | 15.00   | CEL  | 10000.000L   |      |      |
| Hydrometer corr. indicator | <input checked="" type="checkbox"/> |         |      | 9712.174L12  |      |      |
| Base density(vac.)         |                                     | 470.00  | KGV  | 9815.900L15  |      |      |
| VCF observed to base       |                                     | 0.98159 | VCF  | 10000.000L20 |      |      |

Enter conversion group Q721 and test UoM group QTA and a transaction quantity of e.g. 100,000 L. The quantity values for all UoM defined in UoM group QTA are readily calculated. Note that this conversion group is an MQCI conversion group, for which masses (here, UoM KG) and weights (here, UoM KGA) may be calculated in parallel. Additionally, the VCF and "base density in air" are displayed for each calculation as well.

**Part 2:** Now let's copy template conversion group Q721 in the template client to the customer name range - Z721. You have two options. Either navigate to the QuantityWare IMG via menu path: Goto -> QuantityWare IMG

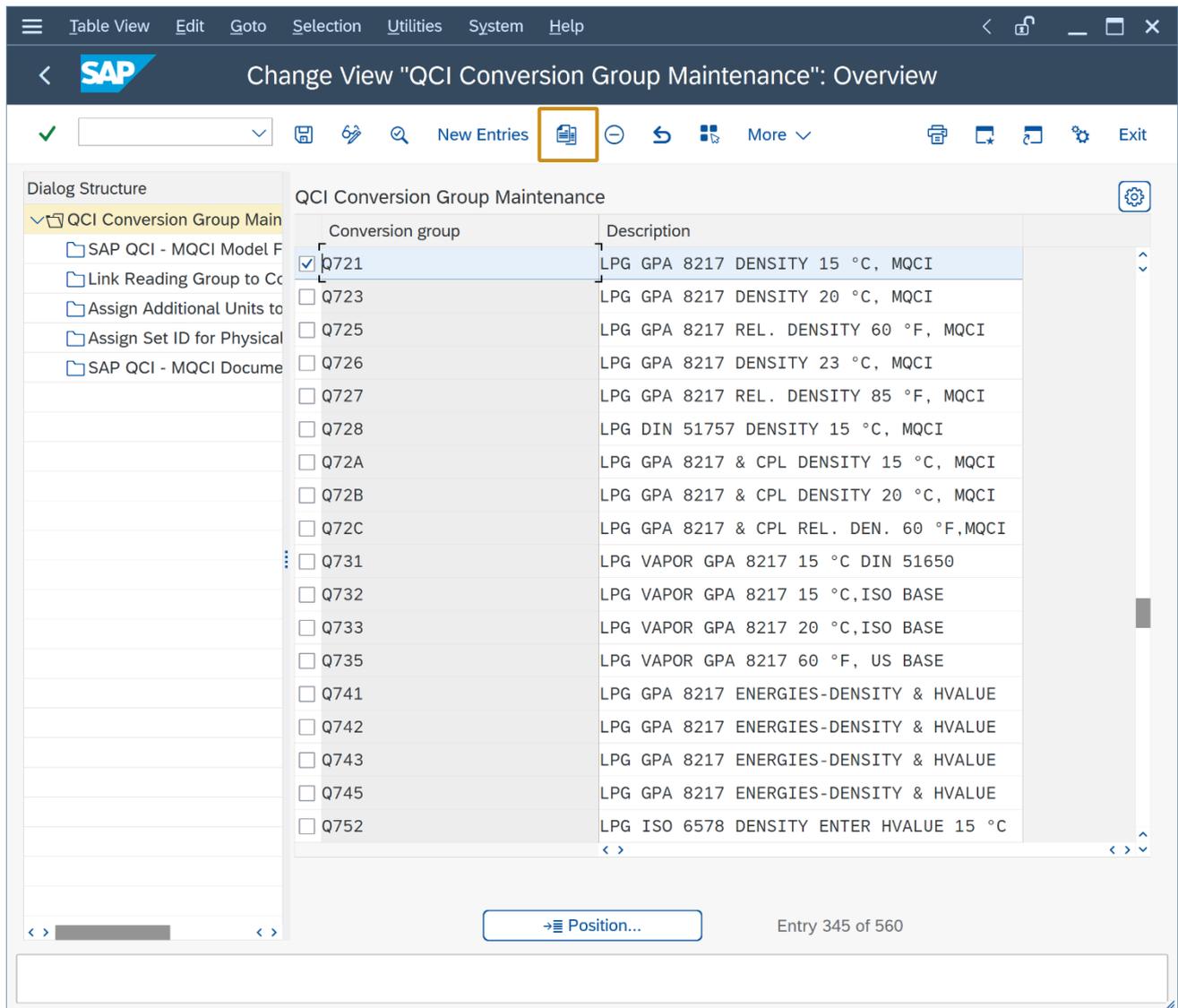




and select the relevant customizing nodes, or directly access the three relevant nodes via the direct menu path access: Goto -> Conversion Groups / Reading Groups / Range Groups .... The second option is faster, so here goes 😊:

**Goto -> Conversion Groups:**

In "Change" mode, select conversion group Q721 and select "Copy As ... (F6):



The screenshot shows the SAP S/4HANA interface for 'Change View "QCI Conversion Group Maintenance": Overview'. The top menu bar includes 'Table View', 'Edit', 'Goto', 'Selection', 'Utilities', 'System', and 'Help'. The toolbar contains various icons, with the 'Copy As ... (F6)' icon (represented by a document with a plus sign) highlighted with a yellow box. The main area displays a table of conversion groups.

| Conversion group                         | Description                              |
|--|--|
| <input checked="" type="checkbox"/> Q721 | LPG GPA 8217 DENSITY 15 °C, MQCI         |
| <input type="checkbox"/> Q723            | LPG GPA 8217 DENSITY 20 °C, MQCI         |
| <input type="checkbox"/> Q725            | LPG GPA 8217 REL. DENSITY 60 °F, MQCI    |
| <input type="checkbox"/> Q726            | LPG GPA 8217 DENSITY 23 °C, MQCI         |
| <input type="checkbox"/> Q727            | LPG GPA 8217 REL. DENSITY 85 °F, MQCI    |
| <input type="checkbox"/> Q728            | LPG DIN 51757 DENSITY 15 °C, MQCI        |
| <input type="checkbox"/> Q72A            | LPG GPA 8217 & CPL DENSITY 15 °C, MQCI   |
| <input type="checkbox"/> Q72B            | LPG GPA 8217 & CPL DENSITY 20 °C, MQCI   |
| <input type="checkbox"/> Q72C            | LPG GPA 8217 & CPL REL. DEN. 60 °F, MQCI |
| <input type="checkbox"/> Q731            | LPG VAPOR GPA 8217 15 °C DIN 51650       |
| <input type="checkbox"/> Q732            | LPG VAPOR GPA 8217 15 °C, ISO BASE       |
| <input type="checkbox"/> Q733            | LPG VAPOR GPA 8217 20 °C, ISO BASE       |
| <input type="checkbox"/> Q735            | LPG VAPOR GPA 8217 60 °F, US BASE        |
| <input type="checkbox"/> Q741            | LPG GPA 8217 ENERGIES-DENSITY & HVALUE   |
| <input type="checkbox"/> Q742            | LPG GPA 8217 ENERGIES-DENSITY & HVALUE   |
| <input type="checkbox"/> Q743            | LPG GPA 8217 ENERGIES-DENSITY & HVALUE   |
| <input type="checkbox"/> Q745            | LPG GPA 8217 ENERGIES-DENSITY & HVALUE   |
| <input type="checkbox"/> Q752            | LPG ISO 6578 DENSITY ENTER HVALUE 15 °C  |

At the bottom of the window, there is a 'Position...' button and a status indicator showing 'Entry 345 of 560'.

SAP Change View "QCI Conversion Group Maintenance": Details of Selected Se

Conversion group:  Description: LPG GPA 8217 DENSITY 15 °C, MQCI

**Basic settings**

Product type: Liquid petroleum gas (LPG/NGL)

Aromatics:

Dens. Type: Density (absolute)

Density unit: KGV Density unit(ext.):

Extend range of standard implementation

Activate dynamic CPL calculation

**Temperature and pressure base settings**

Base temperature:

Base pressure:

**Standard and model specific settings**

Ext Vers: AGA and API 1980 - 2004

Liquid handling: call external routines

Meter CorrFactorInd.

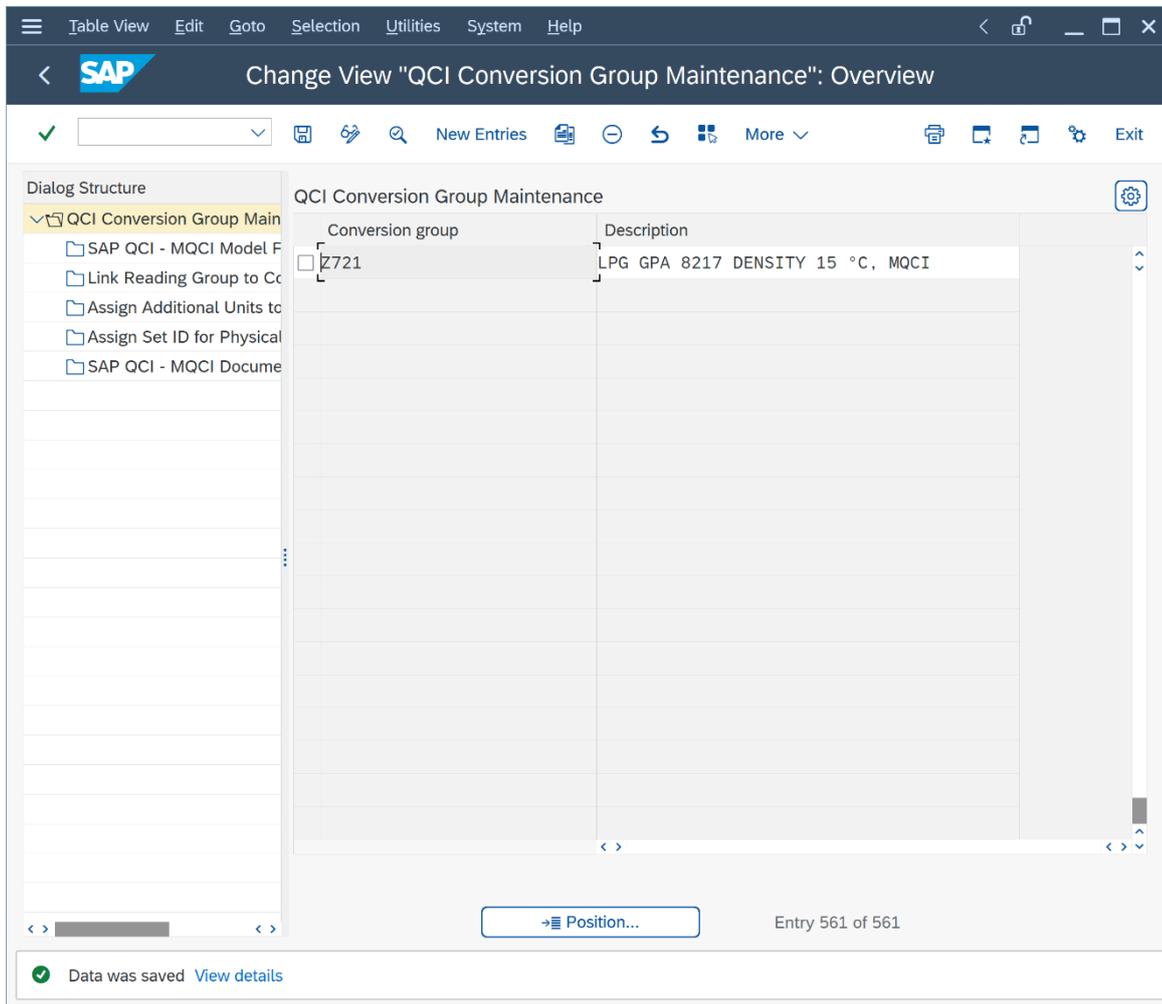
Activate no.rd.: Round CTPL as defined in ASTM D1250-80/04

Vol.correction: First Volume Correction Factor (5 decimal places)

ASTM Table 1: Do not use ASTM Table 1 conversion factors

Specify target entries [View details](#)

In the details screen, enter Z721 as target name and select "copy all" after you press "Return".

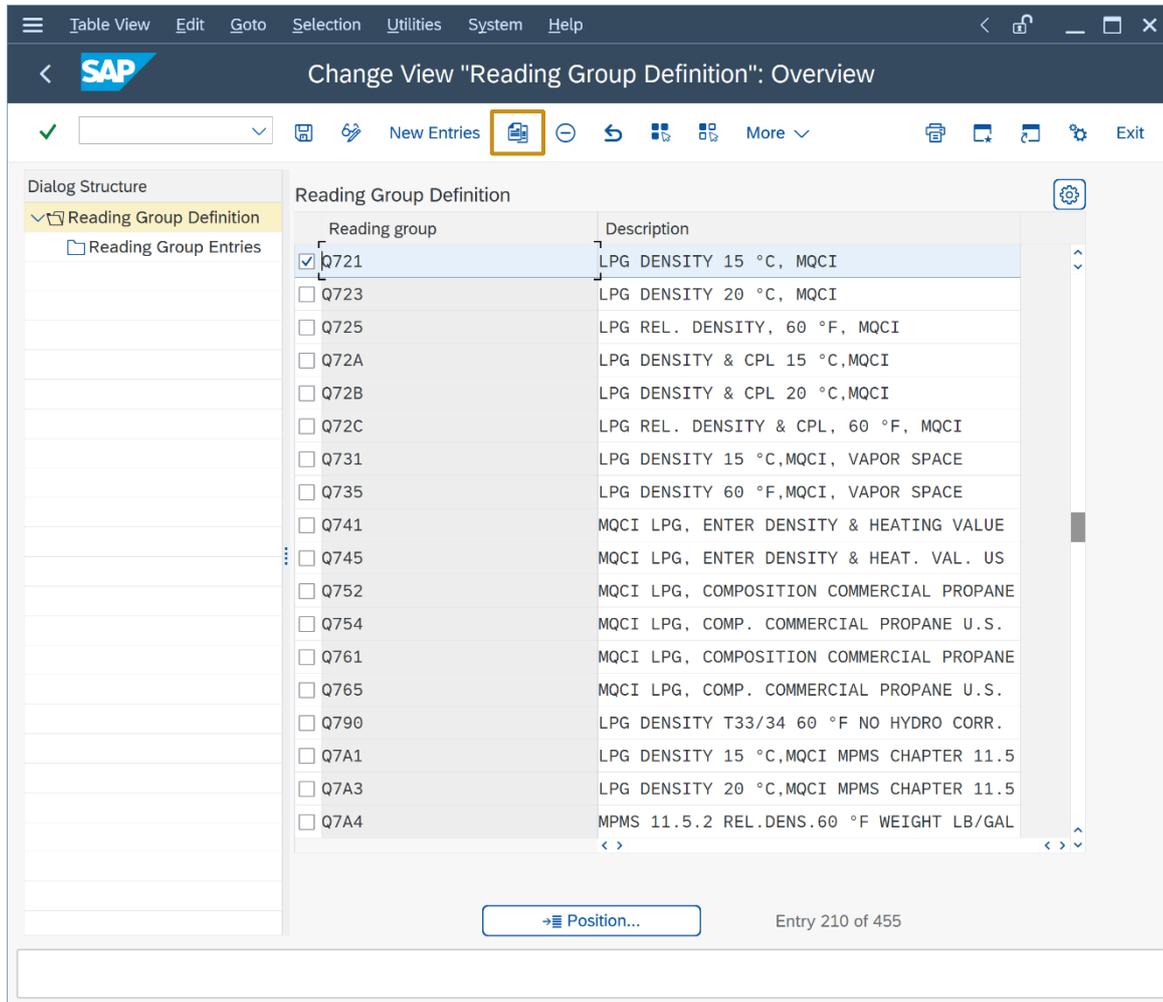


| Conversion group | Description                      |
|------------------|----------------------------------|
| Z721             | LPG GPA 8217 DENSITY 15 °C, MQCI |

Save your actions and select an appropriate customizing transport.

**Goto -> Reading Groups:**

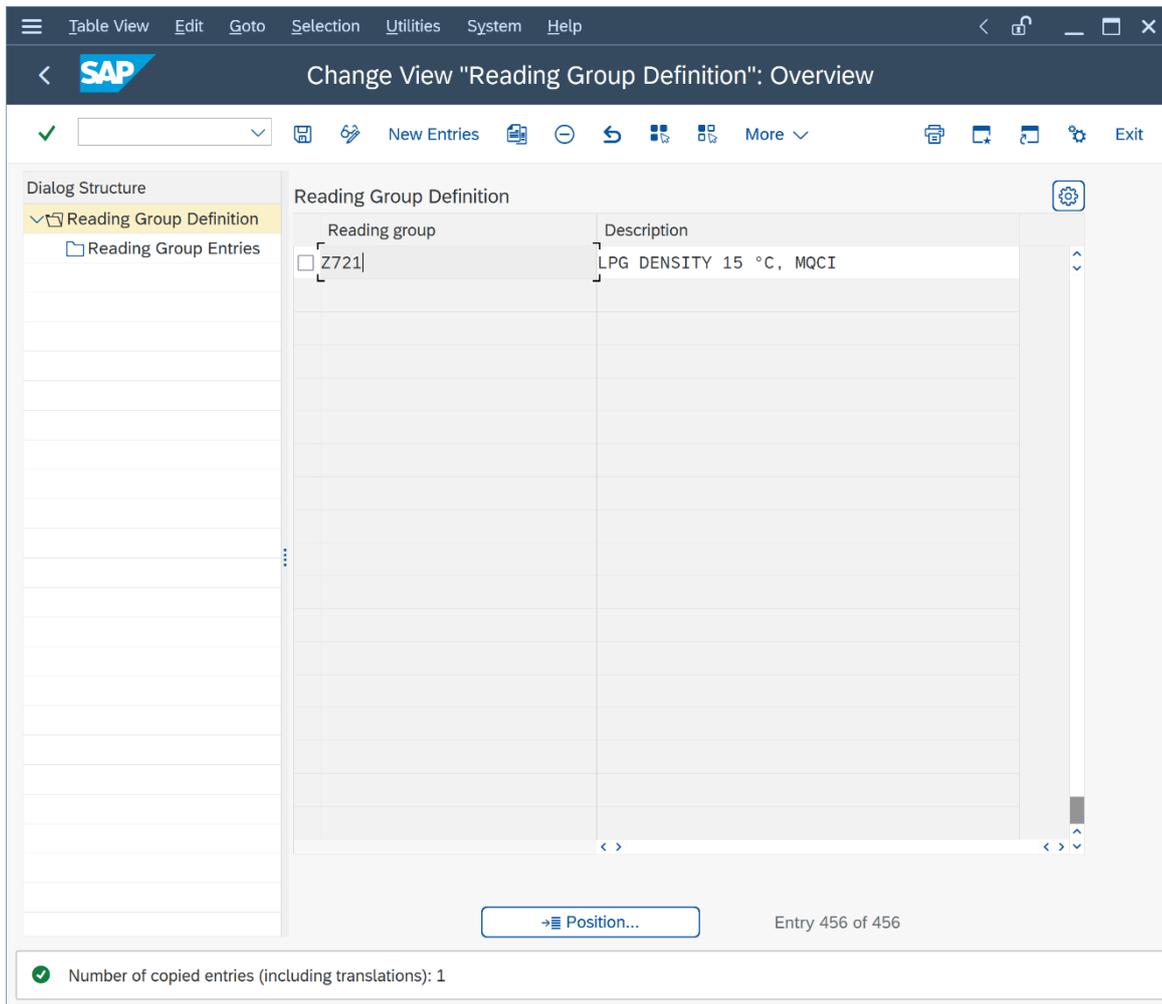
Repeat the copy procedure as described above for reading group Q721:



The screenshot shows the SAP 'Change View Reading Group Definition' dialog box. The 'Reading Group Entries' table is displayed with the following data:

| Reading group                            | Description                                |
|--|--|
| <input checked="" type="checkbox"/> Q721 | LPG DENSITY 15 °C, MQCI                    |
| <input type="checkbox"/> Q723            | LPG DENSITY 20 °C, MQCI                    |
| <input type="checkbox"/> Q725            | LPG REL. DENSITY, 60 °F, MQCI              |
| <input type="checkbox"/> Q72A            | LPG DENSITY & CPL 15 °C, MQCI              |
| <input type="checkbox"/> Q72B            | LPG DENSITY & CPL 20 °C, MQCI              |
| <input type="checkbox"/> Q72C            | LPG REL. DENSITY & CPL, 60 °F, MQCI        |
| <input type="checkbox"/> Q731            | LPG DENSITY 15 °C, MQCI, VAPOR SPACE       |
| <input type="checkbox"/> Q735            | LPG DENSITY 60 °F, MQCI, VAPOR SPACE       |
| <input type="checkbox"/> Q741            | MQCI LPG, ENTER DENSITY & HEATING VALUE    |
| <input type="checkbox"/> Q745            | MQCI LPG, ENTER DENSITY & HEAT. VAL. US    |
| <input type="checkbox"/> Q752            | MQCI LPG, COMPOSITION COMMERCIAL PROPANE   |
| <input type="checkbox"/> Q754            | MQCI LPG, COMP. COMMERCIAL PROPANE U.S.    |
| <input type="checkbox"/> Q761            | MQCI LPG, COMPOSITION COMMERCIAL PROPANE   |
| <input type="checkbox"/> Q765            | MQCI LPG, COMP. COMMERCIAL PROPANE U.S.    |
| <input type="checkbox"/> Q790            | LPG DENSITY T33/34 60 °F NO HYDRO CORR.    |
| <input type="checkbox"/> Q7A1            | LPG DENSITY 15 °C, MQCI MPMS CHAPTER 11.5  |
| <input type="checkbox"/> Q7A3            | LPG DENSITY 20 °C, MQCI MPMS CHAPTER 11.5  |
| <input type="checkbox"/> Q7A4            | MPMS 11.5.2 REL. DENS. 60 °F WEIGHT LB/GAL |

The 'New Entries' button is highlighted with a yellow box. The dialog box also shows a 'Dialog Structure' pane on the left and a 'Position...' button at the bottom.



Change View "Reading Group Definition": Overview

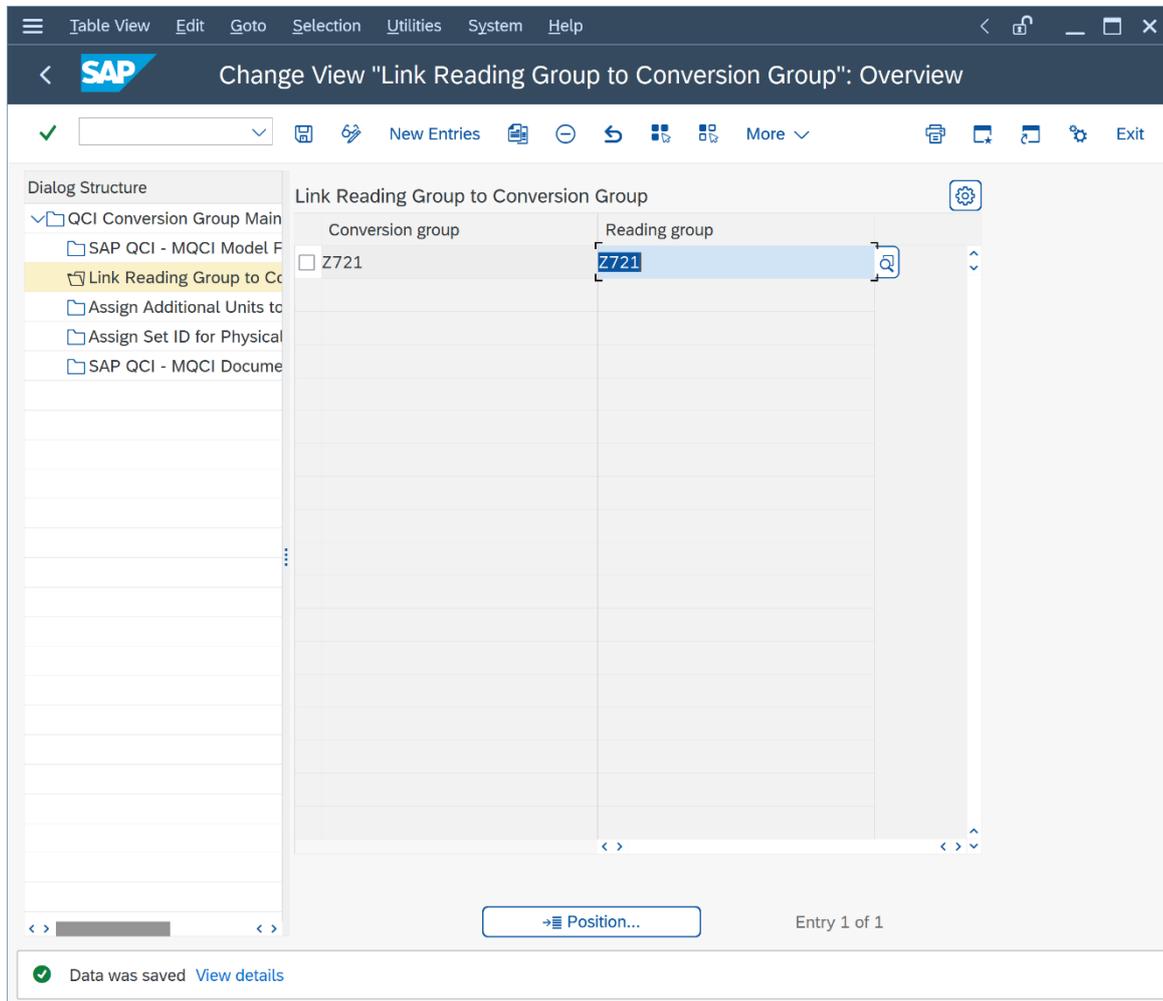
| Reading group                 | Description             |
|-------------------------------|-------------------------|
| <input type="checkbox"/> Z721 | LPG DENSITY 15 °C, MQCI |

Entry 456 of 456

Number of copied entries (including translations): 1

Save your copy actions and select an appropriate customizing transport.

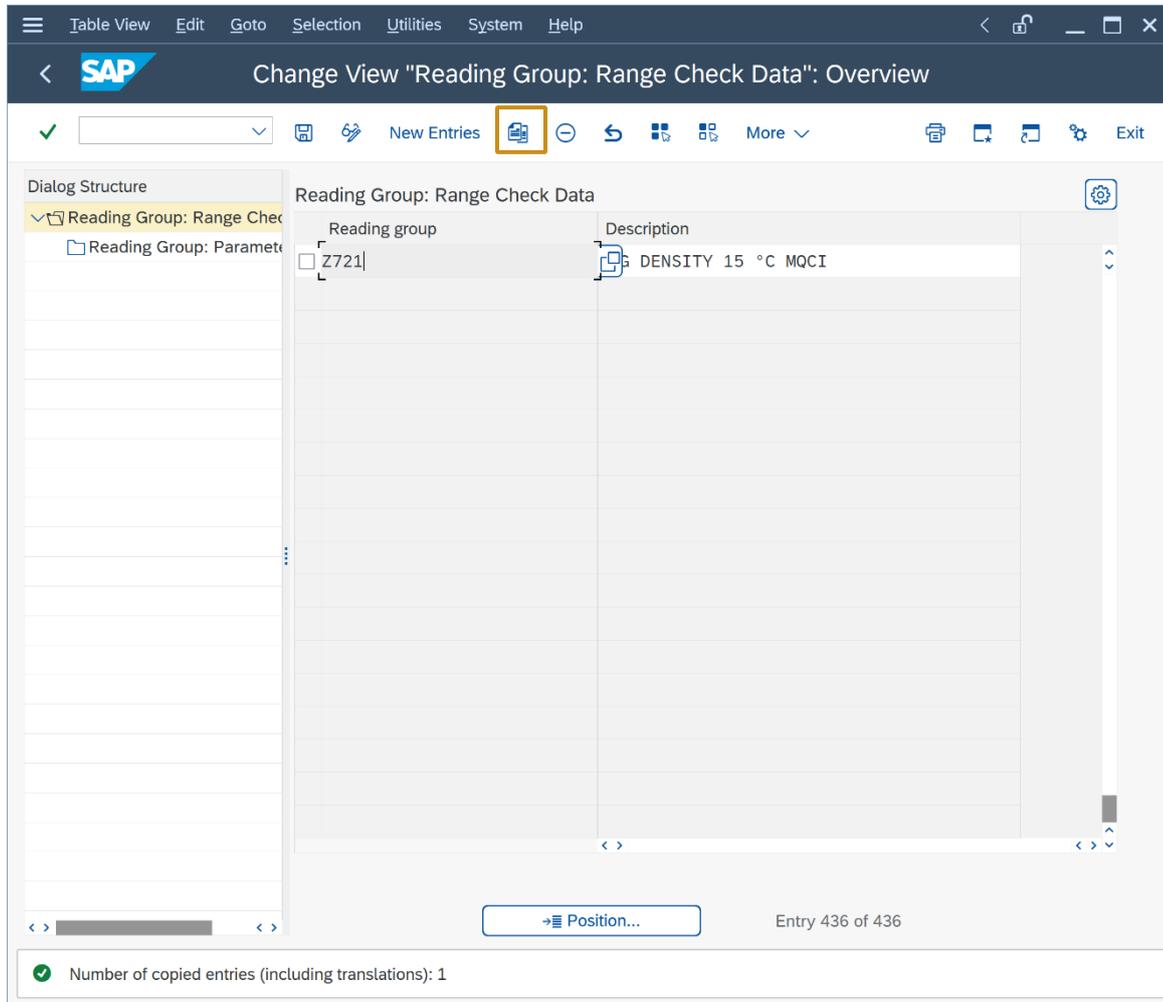
Finally, go back to the conversion group configuration via PMC menu path: Goto -> Conversion Groups and select "Link reading group to conversion group" for your new conversion group Z721:



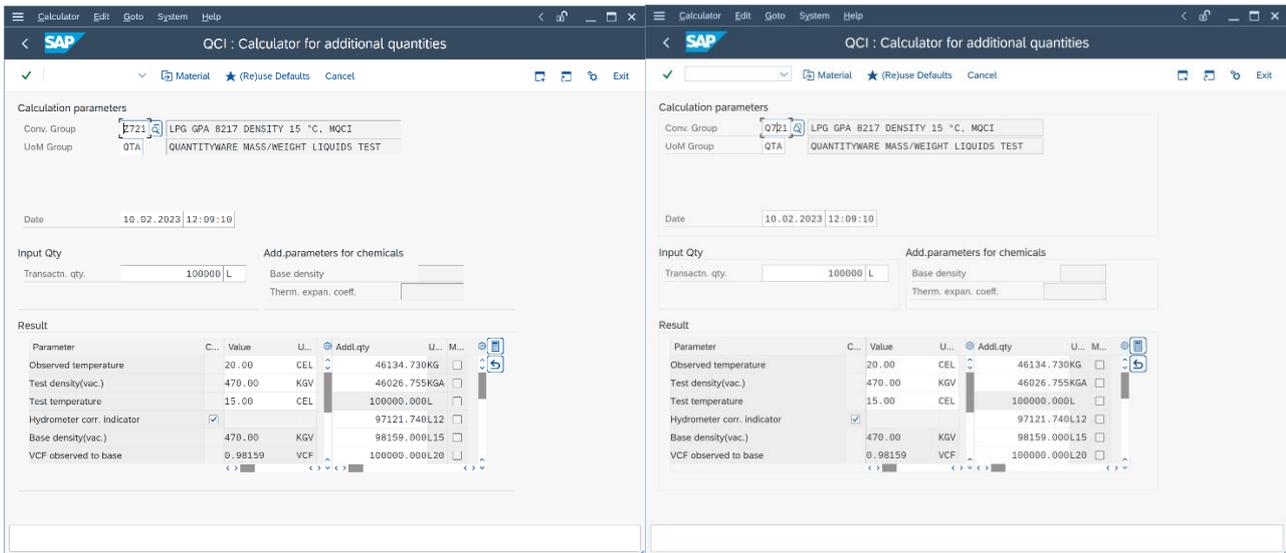
Change the assignment from Q721 to Z721. Save your actions and select an appropriate customizing transport.

Finally, you need to copy the range data from template conversion group Q721 to Z721:

**Goto -> Range Groups:**



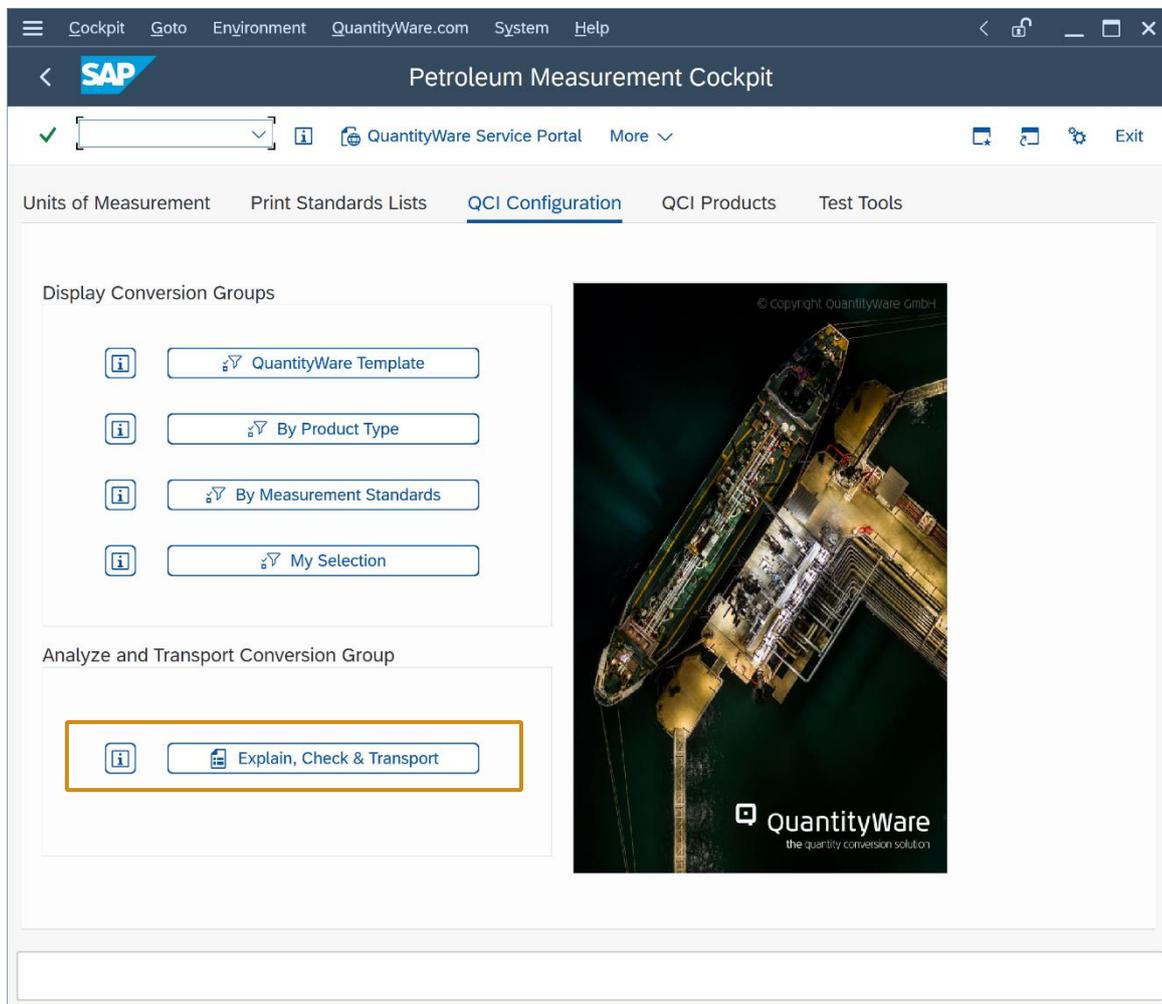
Now you have finished copying template conversion group Q721 to Z721. A test calculation (via the PMC push button “Oil & Gas Test Calculator”) should produce identical results when compared with the test calculation for conversion group Q721:

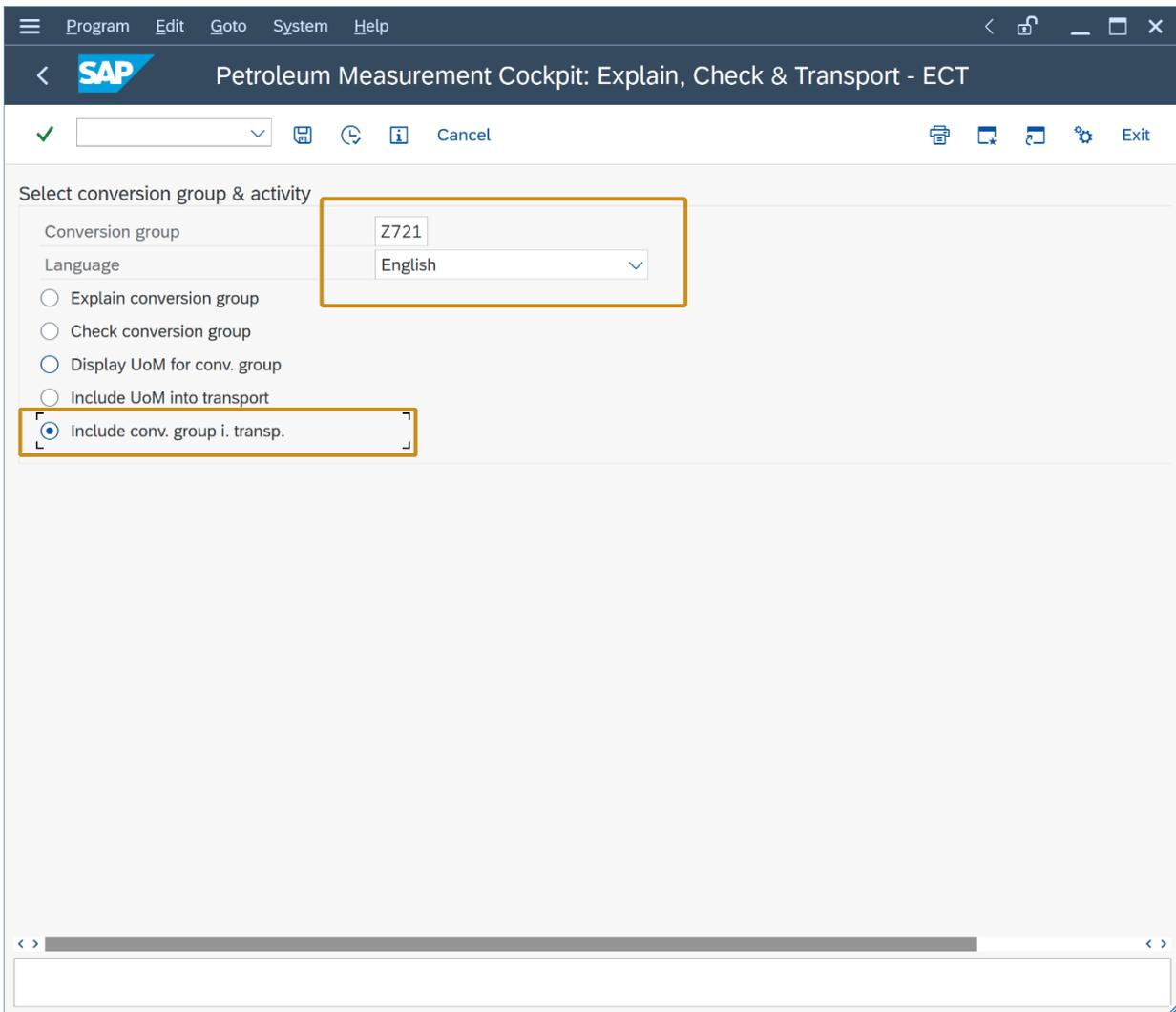


## 2.3. Test Case 03 – Build Transport for LPG Conversion Group - Template

**Estimated test case execution time: 10 minutes**

The PMC contains the “Explain, Check and Transport” Tool, which simplifies the collection of all relevant template configuration data for a conversion group. This is useful as a conversion group is a complex configuration object which may require additional data from many different tables - not only the ones you touched during test case 02 execution. Select the PMC “QCI Configuration” tab strip and select “Explain Check & Transport”.





☰
Enter Transport Request
✕

---

Request

SOIK902718

Customizing request

Short Description

BCP Test Manual - Transport to Development

✓
📄 Own Requests
✕

☰ Program Edit Goto System Help < 📄 \_ ☐ ✕

< SAP Petroleum Measurement Cockpit: Explain, Check & Transport - ECT

✓  📄 🔄 ⓘ Cancel 🖨️ 📄 ⚙️ Exit

Select conversion group & activity

Conversion group

Z721

🔍

Language

English

▼

- Explain conversion group
- Check conversion group
- Display UoM for conv. group
- Include UoM into transport
- Include conv. group i. transp.

✓ Transport SOIK902718 has been created/updated with all required objects for Z721

Enter your new Z721 conversion group and select "Include conv. group i. transp.". Select an empty/new customizing transport. **Follow your in-house procedures to have this transport imported into your development client.**



With the “Check, Explain and Transport” tool, you may also include all required UoM data for a conversion group into a single customizing transport. Since your development client typically contains previously configured UoM data, it is strongly recommended to **only copy UoM data for UoM that are NOT already present** into your development client from client 045 . Otherwise, you may overwrite your existing and (hopefully) validated UoM data in that client with the QuantityWare template UoM configuration, which is validated using [NIST SP 811](#).

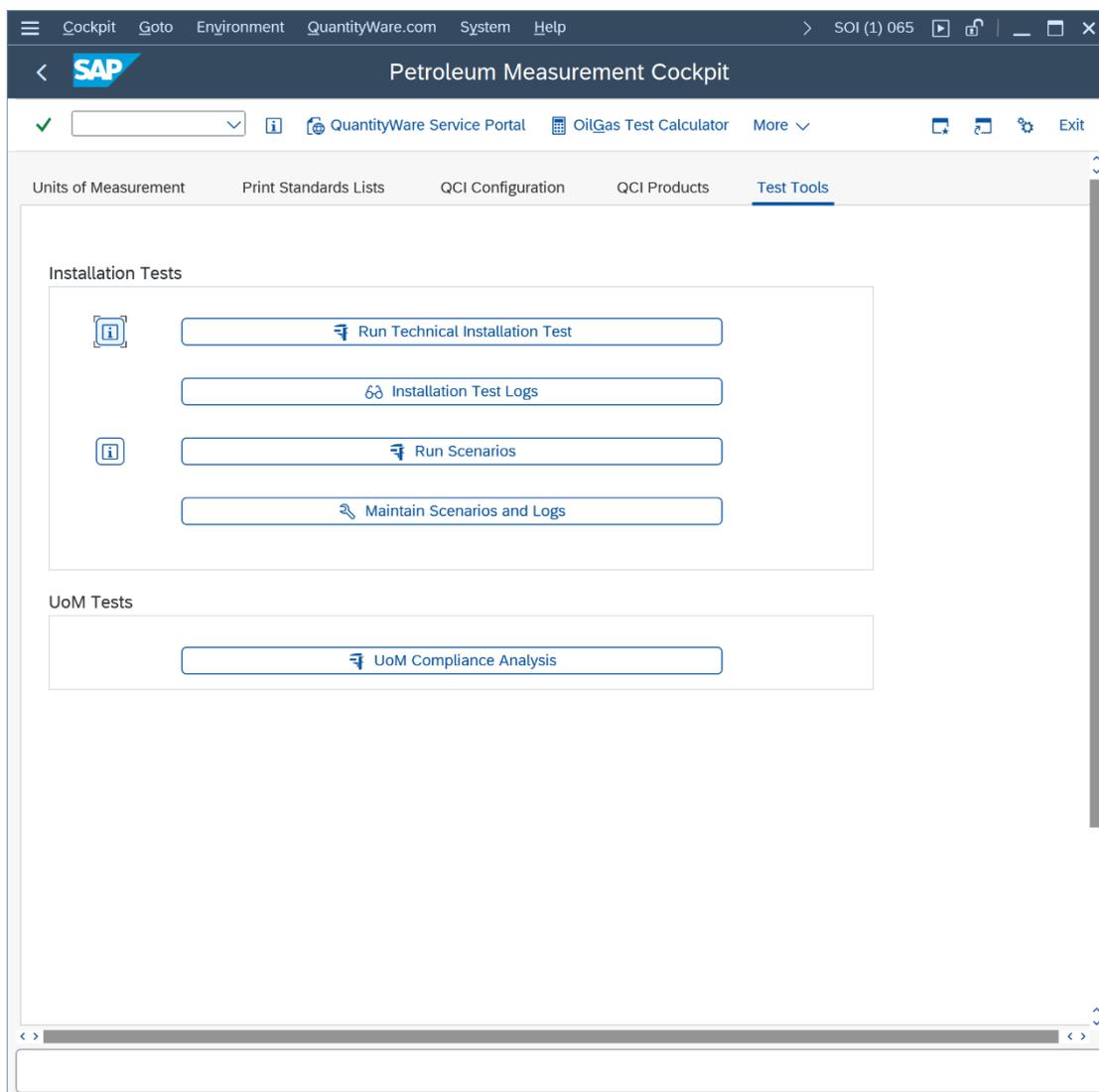


In the following test cases, your material and plant data definitions as well as available UoM groups/definitions may differ from those used in the screen shots

## 2.4. Test Case 04 – Test LPG Conversion Group - Development

**Estimated test case execution time: 15 minutes**

After your Z721 conversion group has been successfully transported to your development client, log on to that client and start the Petroleum Measurement Cockpit (PMC) using transaction /N/QTYW/COCKPIT. Note that in this client, the PMC will show less options than in client 045 (where the QuantityWare template is available):



**Part 1:** Go to the “Oil & Gas Test Calculator” and check if conversion group Z721 has been transported correctly to your development client, i.e. perform several trial calculations:

Calculator Edit Goto System Help

SAP QCI : Calculator for additional quantities

Material (Reuse Defaults) Cancel

Exit

**Calculation parameters**

Conv. Group: Z721 | LPG GPA 8217 DENSITY 15 °C, MQCI

UoM Group: BCP | BCP TRAINING UOM GROUP

Date: 15.05.2024 11:27:06

**Input Qty** | **Add.parameters for chemicals**

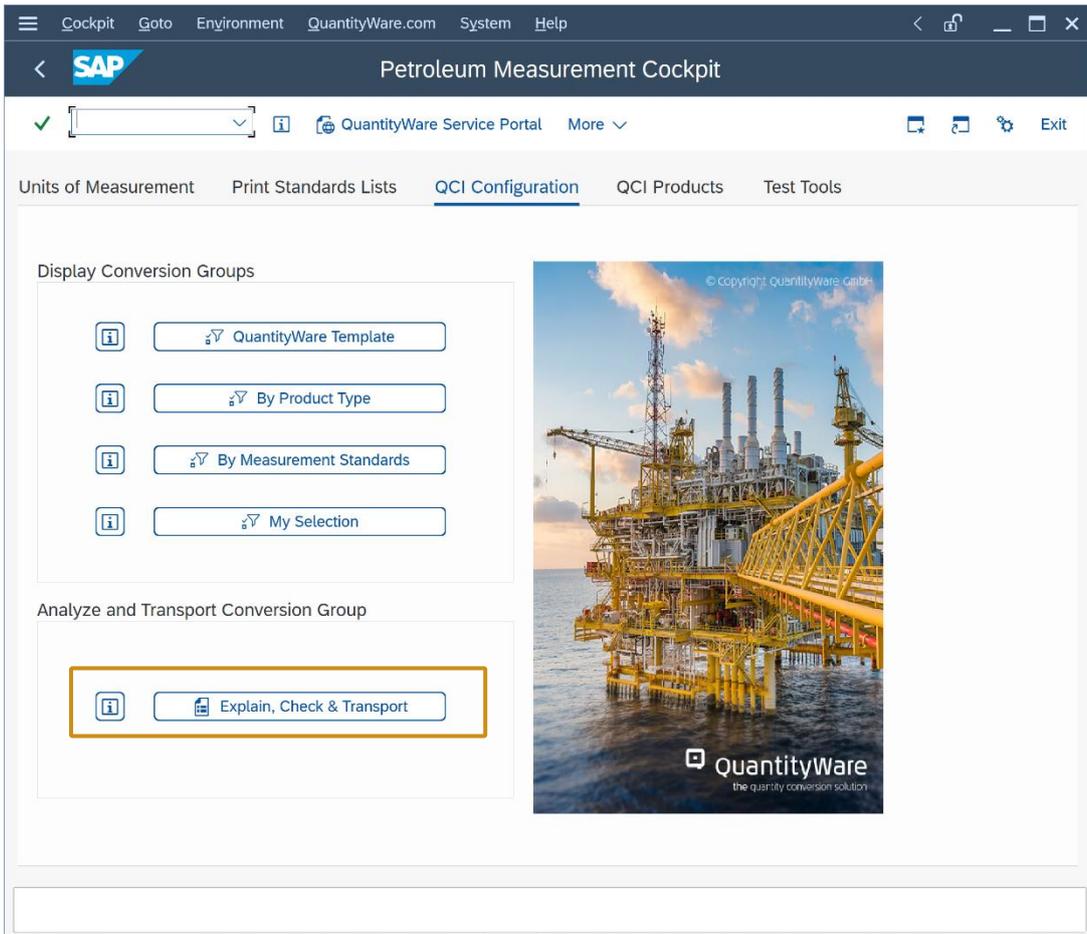
Transactn. qty. 10000 L | Base density | Therm. expan. coeff.

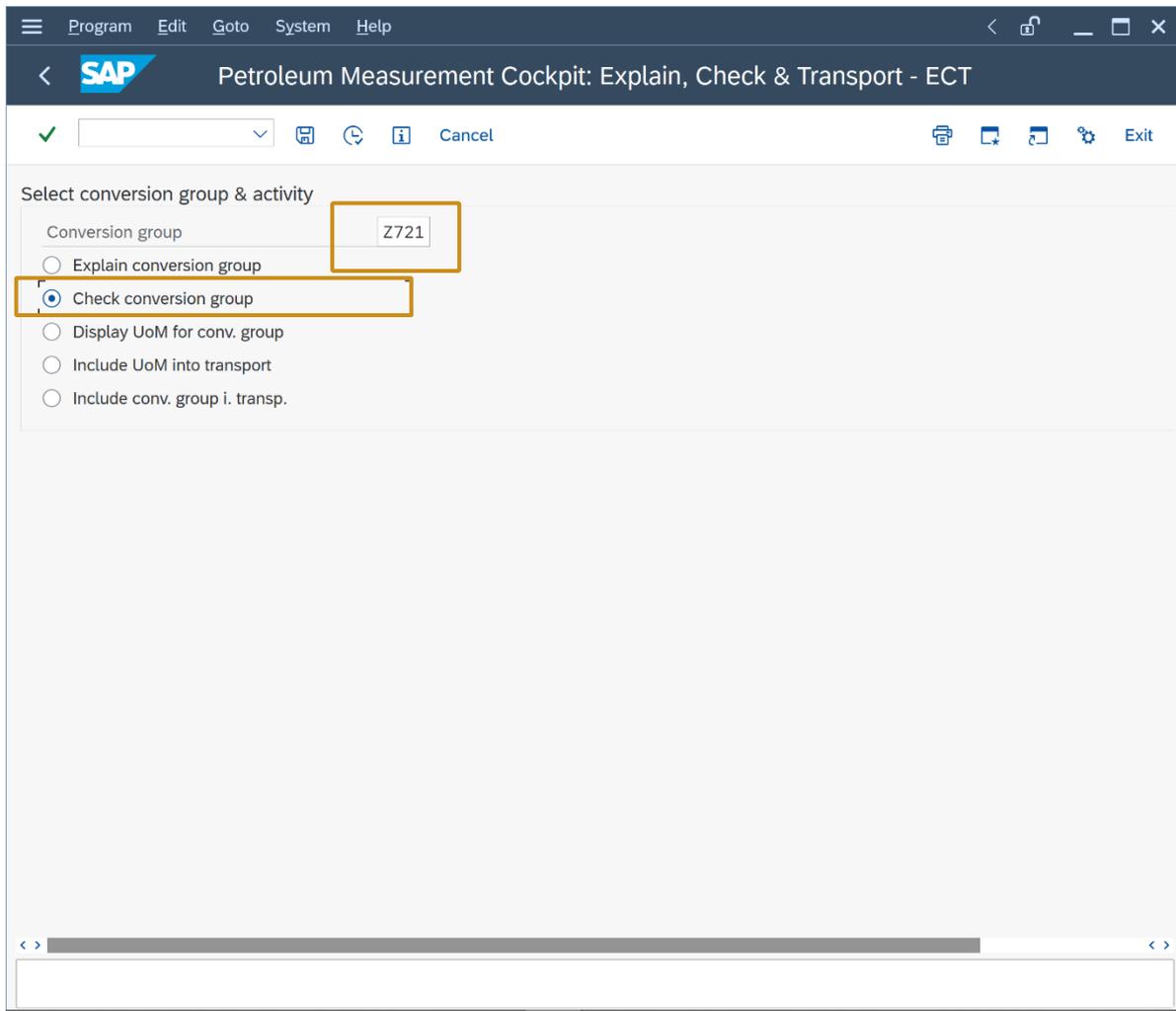
**Result**

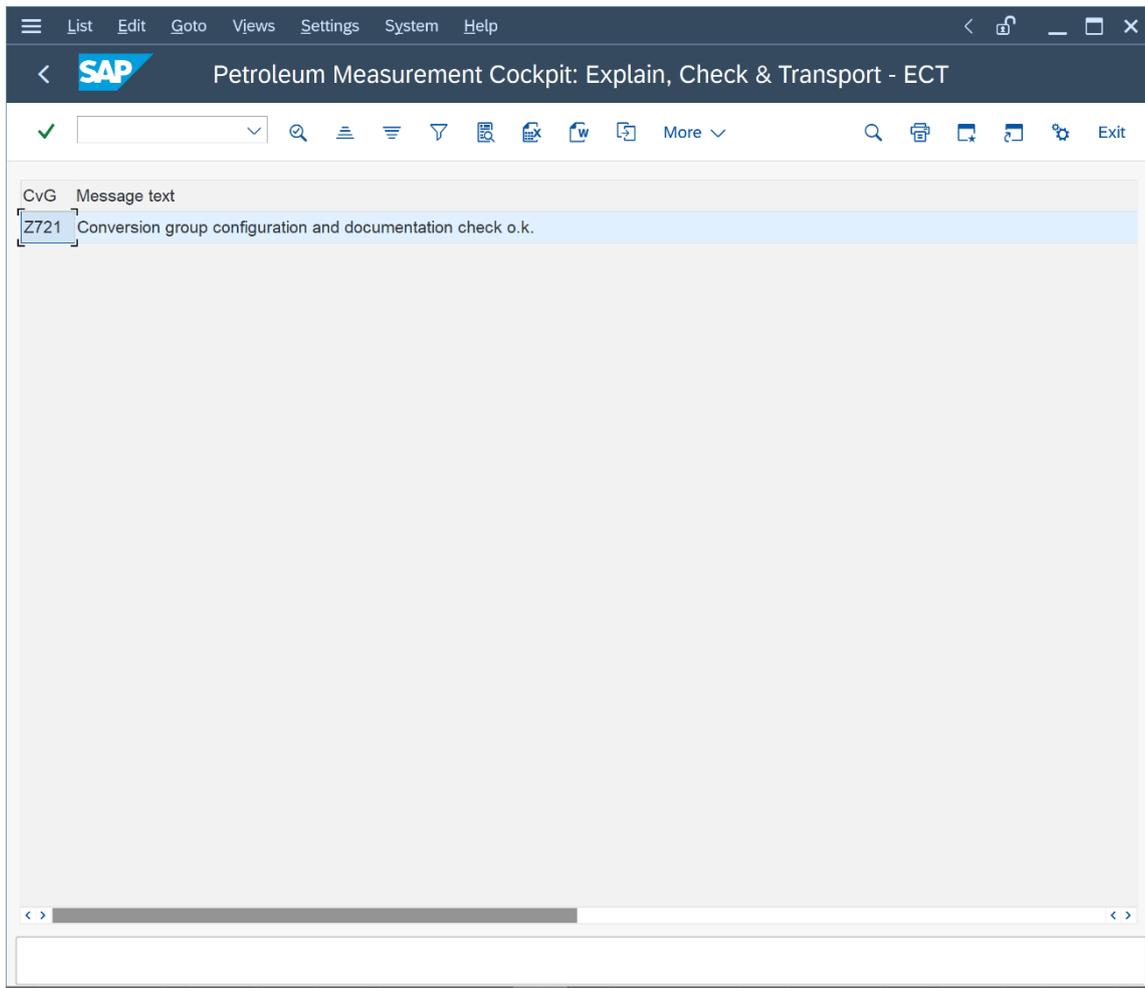
| Parameter                    | C...                                | Value   | U... | Add.qty       | U... | M...                     |
|------------------------------|-------------------------------------|---------|------|---------------|------|--------------------------|
| Actual temperature           |                                     | 20.00   | CEL  | 4995.116 KG   |      | <input type="checkbox"/> |
| Test density                 |                                     | 507.000 | KGV  | 4984.279 KGA  |      | <input type="checkbox"/> |
| Test temperature             |                                     | 15.00   | CEL  | 9852.300 L15  |      | <input type="checkbox"/> |
| Hydrometer corr. indicator   | <input checked="" type="checkbox"/> |         |      | 10000.000 L20 |      | <input type="checkbox"/> |
| Base density                 |                                     | 507.000 | KGV  | 10988.462 LBA |      | <input type="checkbox"/> |
| VCF observed to base (15 °C) |                                     | 0.98523 | VCF  | 10.000 M20    |      | <input type="checkbox"/> |

**Note** that we did not transport test UoM group QTA and are using a new UoM group BCP instead. The decimal display settings for some UoM may differ in this client.

**Part 2:** Once you have manually validated that conversion group Z721 is running in your development client, perform the automated validation test. Select the PMC “QCI Configuration” tab strip and select “Explain Check & Transport”. Enter Z721 as conversion group, select “Check conversion group” and then “Execute” (F8):





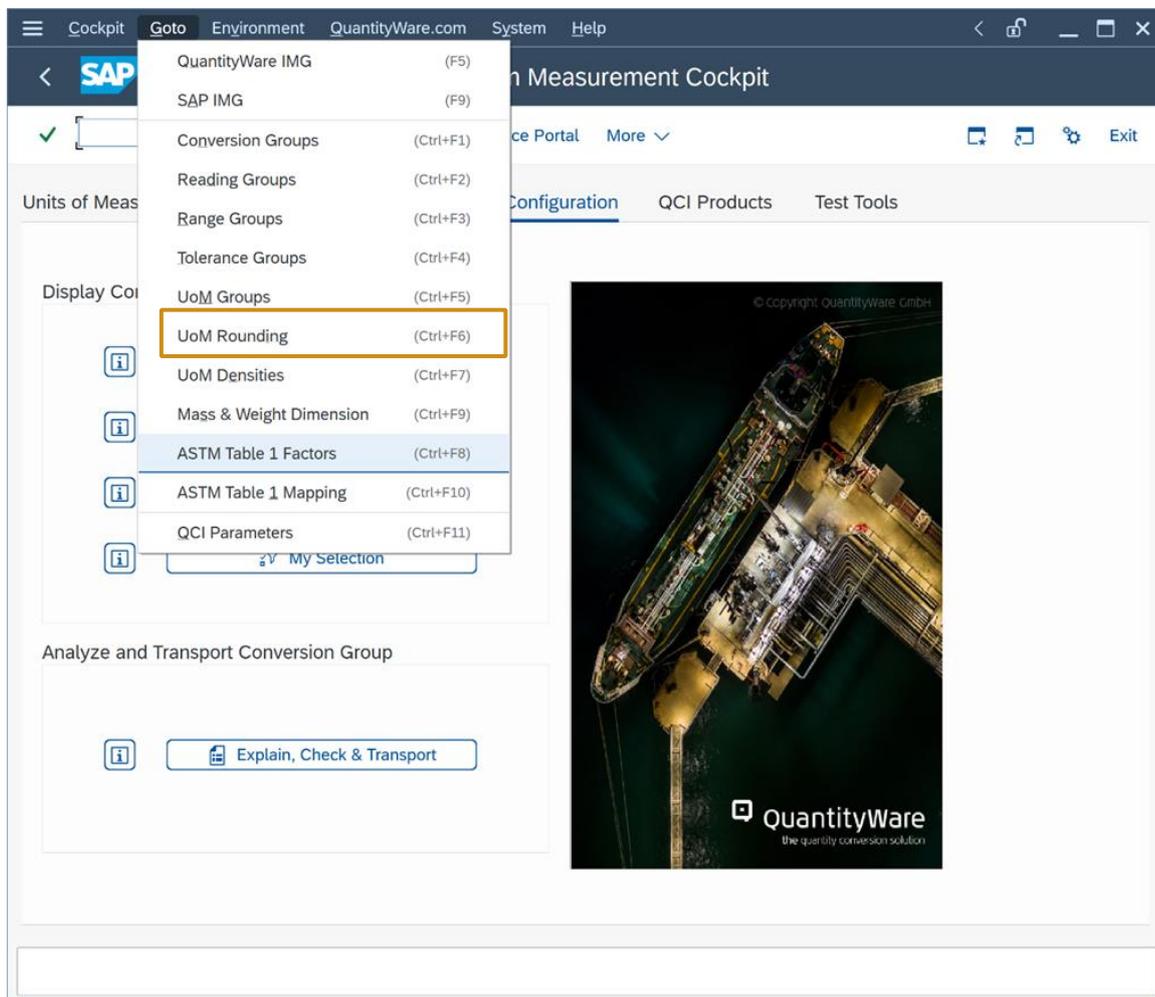


Ensure that no error or warning messages are present. This test should produce identical results when compared with the results for Z721 in client 045.

## 2.5. Test Case 05 – Define UoM Rounding - Development

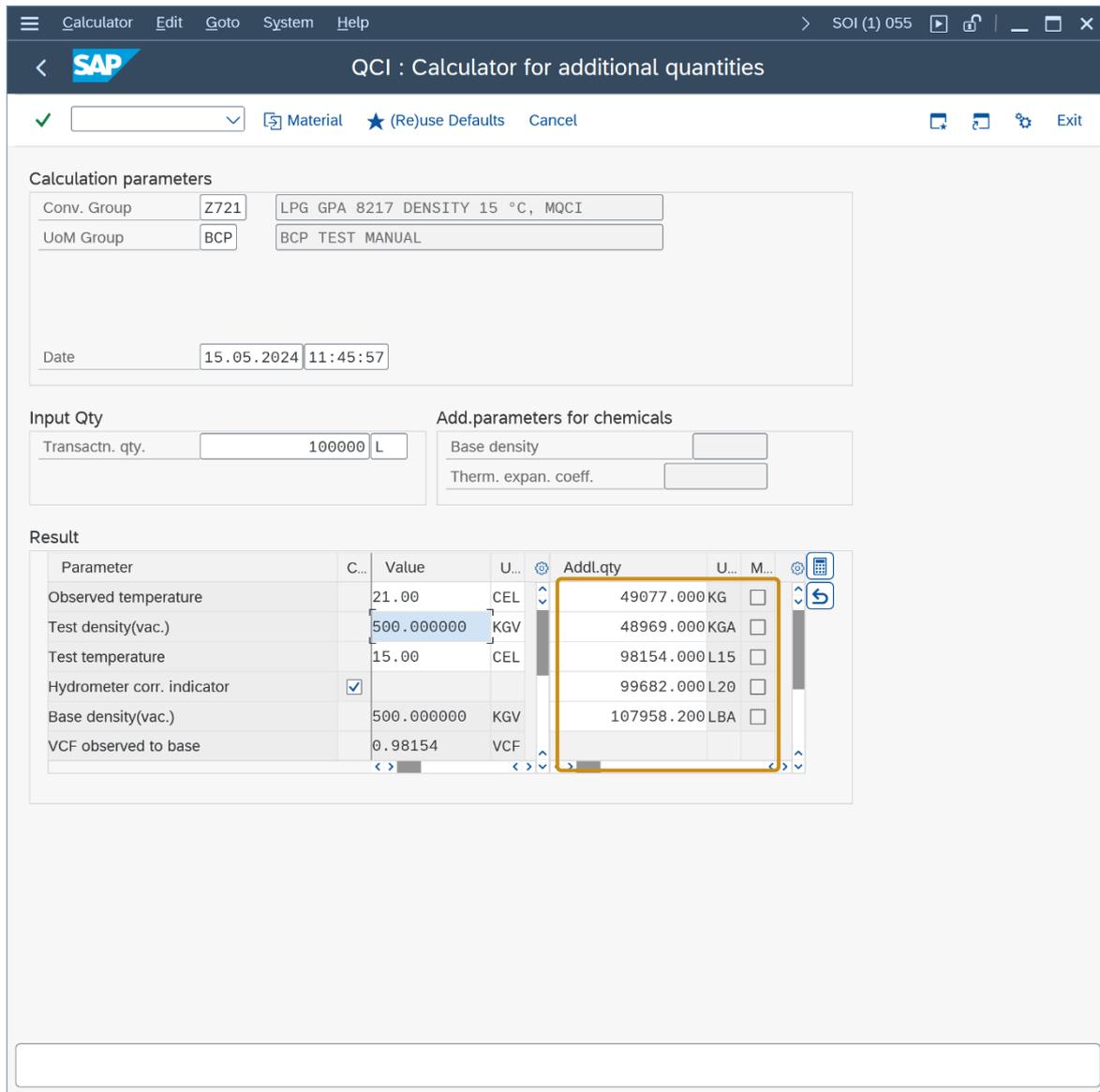
**Estimated test case execution time: 10 minutes**

In your development client, define the appropriate UoM rounding for your UoM group. From the PMC menu, select: Goto -> UoM Rounding and enter the UoM KG, KGA, L15 and L20 with 0 (Space) decimal places rounding:





Check that the rounding settings are working by performing another trial calculation (via PMC push button "Oil & Gas Test Calculator"):



The screenshot shows the SAP QCI Calculator interface. The title bar indicates the window is titled "QCI : Calculator for additional quantities". The interface includes a menu bar (Calculator, Edit, Goto, System, Help) and a status bar (Material, (Re)use Defaults, Cancel, Exit). The main area is divided into several sections:

- Calculation parameters:** Contains input fields for Conv. Group (Z721), UoM Group (BCP), and Date (15.05.2024 11:45:57).
- Input Qty:** Contains a field for Transactn. qty. (100000 L).
- Add.parameters for chemicals:** Contains fields for Base density and Therm. expan. coeff.
- Result:** A table displaying calculation results. The table has columns for Parameter, Value, U..., and Addl.qty. The Addl.qty column is highlighted with a yellow box.

| Parameter                  | Value                               | U... | Addl.qty   | U... | M...                     |
|----------------------------|-------------------------------------|------|------------|------|--------------------------|
| Observed temperature       | 21.00                               | CEL  | 49077.000  | KG   | <input type="checkbox"/> |
| Test density(vac.)         | 500.000000                          | KGV  | 48969.000  | KGA  | <input type="checkbox"/> |
| Test temperature           | 15.00                               | CEL  | 98154.000  | L15  | <input type="checkbox"/> |
| Hydrometer corr. indicator | <input checked="" type="checkbox"/> |      | 99682.000  | L20  | <input type="checkbox"/> |
| Base density(vac.)         | 500.000000                          | KGV  | 107958.200 | LBA  | <input type="checkbox"/> |
| VCF observed to base       | 0.98154                             | VCF  |            |      |                          |

NOTE: Via transaction CUNI, you may now also change the display decimal settings for all UoM, e.g. so that trailing zeros are no longer displayed.

## 2.6. Test Case 06 – Define Ranges for LPG Conversion Group - Development

**Estimated test case execution time: 15 minutes**

In your development client, define the appropriate range limits for your input parameters. From the PMC menu, select: Goto -> Range Groups and define range limits for the observed temperature, test density and test temperature:

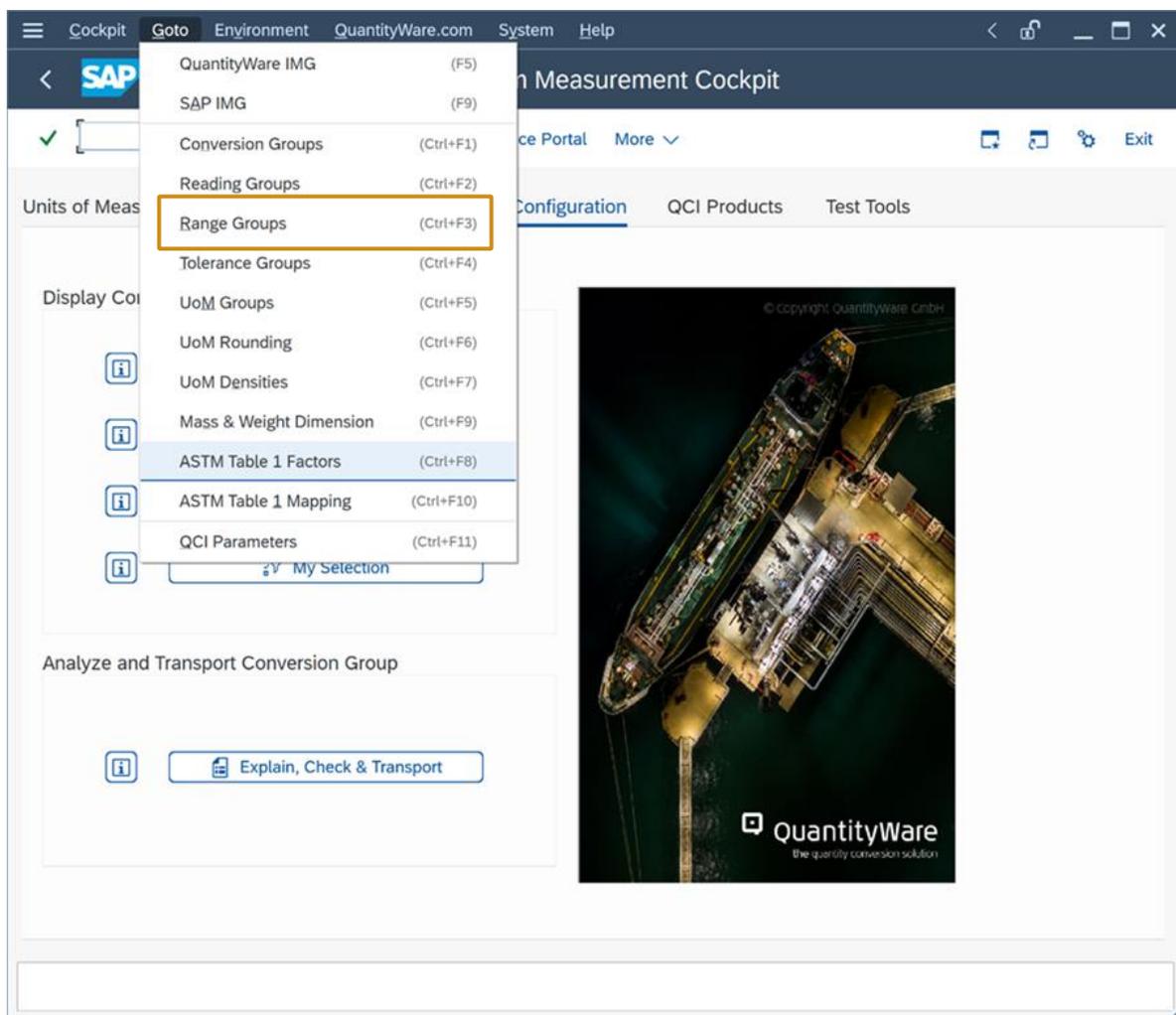


Table View Edit Goto Selection Utilities System Help

SAP Change View "Reading Group: Parameter Ranges": Overview

New Entries More

Dialog Structure

- Reading Group: Range Chec
- Reading Group: Paramete

Reading Group: Parameter Ranges

| Rdg. group                          | Parameter name  | Description                |
|-------------------------------------|-----------------|----------------------------|
| <input type="checkbox"/>            | Z721 HYDROCORR  | Hydrometer corr. indicator |
| <input checked="" type="checkbox"/> | Z721 OBSMTMETTP | Observed temperature       |
| <input checked="" type="checkbox"/> | Z721 OBSTSTDENS | Test density(vac.)         |
| <input checked="" type="checkbox"/> | Z721 STSTMETT   | Test temperature           |

Position... Entry 1 of 4

SAP Change View "Reading Group: Parameter Ranges": Details

Reading group: Z721  
 Parameter name: OBSMTMETTP

**Reading Group: Parameter Ranges**

Description: Observed temperature  
 Unit of measure: CEL

Error:high: 50.000000  
 Indicator: Non zero range limit

Warning: high: 45.000000  
 Indicator: Non zero range limit

Warning: low: 30.000000-  
 Indicator: Non zero range limit

Error:low: 40.000000-  
 Indicator: Non zero range limit

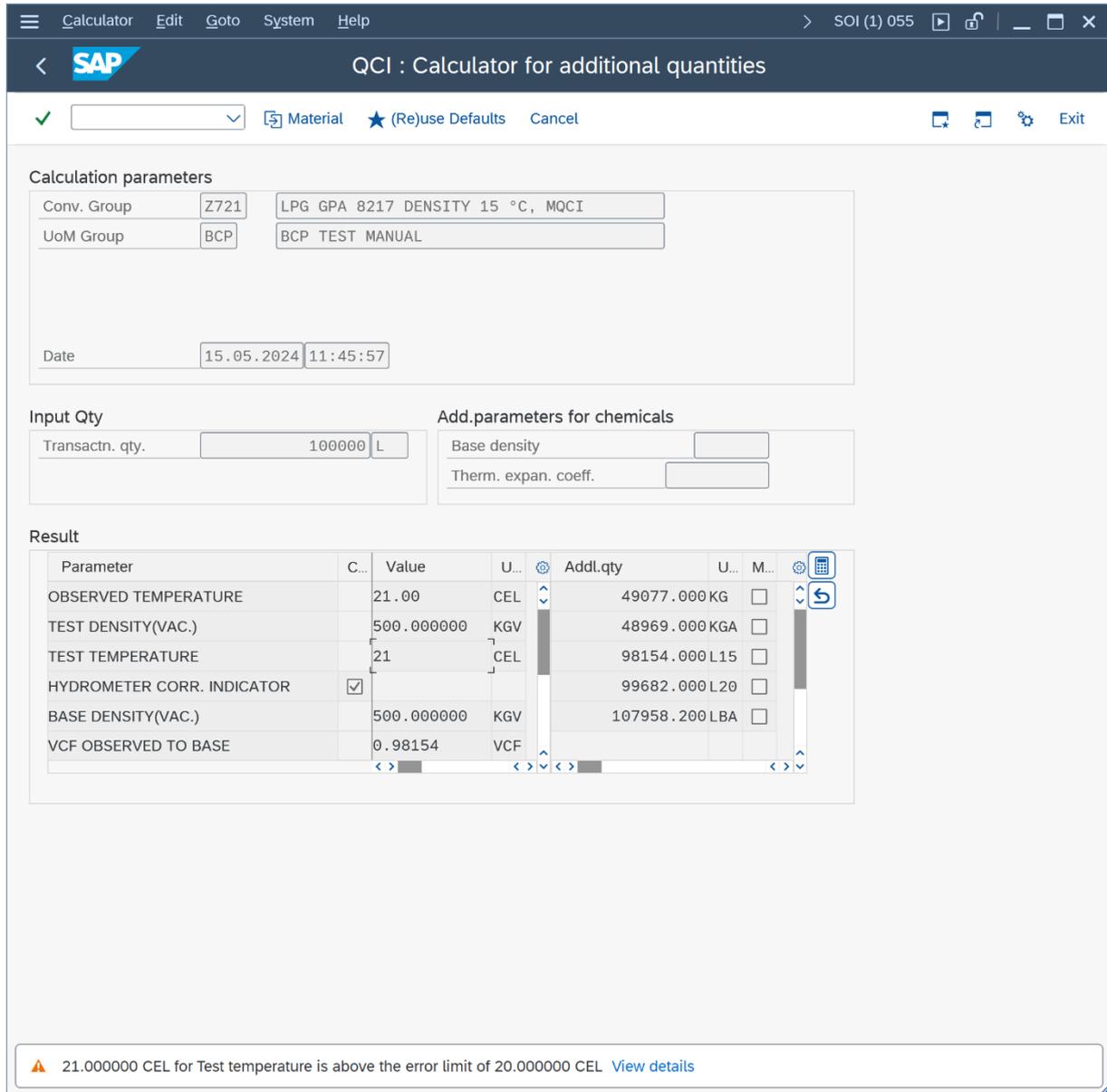
Param. (const.):  
 Comp. operator:

Parameter is a density or heating value  
 Parameter is a natural gas component  
 Parameter is a natural gas impurity





Once you have maintained the ranges and saved your work, perform trial conversions and test that the range limits are working:



**Calculation parameters**

Conv. Group: Z721    LPG GPA 8217 DENSITY 15 °C, MQCI  
 UoM Group: BCP    BCP TEST MANUAL

Date: 15.05.2024 11:45:57

**Input Qty**

Transactn. qty.: 100000 L

**Add.parameters for chemicals**

Base density:   
 Therm. expans. coeff.:

**Result**

| Parameter                  | C...                                | Value      | U... | Addl.qty   | U... | M...                     |
|----------------------------|-------------------------------------|------------|------|------------|------|--------------------------|
| OBSERVED TEMPERATURE       |                                     | 21.00      | CEL  | 49077.000  | KG   | <input type="checkbox"/> |
| TEST DENSITY(VAC.)         |                                     | 500.000000 | KGV  | 48969.000  | KGA  | <input type="checkbox"/> |
| TEST TEMPERATURE           |                                     | 21         | CEL  | 98154.000  | L15  | <input type="checkbox"/> |
| HYDROMETER CORR. INDICATOR | <input checked="" type="checkbox"/> |            |      | 99682.000  | L20  | <input type="checkbox"/> |
| BASE DENSITY(VAC.)         |                                     | 500.000000 | KGV  | 107958.200 | LBA  | <input type="checkbox"/> |
| VCF OBSERVED TO BASE       |                                     | 0.98154    | VCF  |            |      |                          |

**Warning:** 21.000000 CEL for Test temperature is above the error limit of 20.000000 CEL [View details](#)

Calculator Edit Goto System Help > SOI (1) 055

**SAP** QCI : Calculator for additional quantities

Material (Re)use Defaults Cancel

Conv. Group: Z721 LPG GPA 8217 DENSITY 15 °C, MQCI  
 UoM Group: BCP BCP TEST MANUAL

Date: 15.05.2024 11:45:57

Input Qty: Transactn. qty. 100000 L

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

Result

| Parameter                  | C...                                | Value      | U... | ⚙ | Addl.qty | U... | M...                     | ⚙ |
|----------------------------|-------------------------------------|------------|------|---|----------|------|--------------------------|---|
| Observed temperature       |                                     | 21.00      | CEL  | ⬆ | 0.000    | KG   | <input type="checkbox"/> | ⬆ |
| Test density(vac.)         |                                     | 500.000000 | KGV  | ⬆ | 0.000    | KGA  | <input type="checkbox"/> | ⬆ |
| Test temperature           |                                     | 21.00      | CEL  | ⬆ | 0.000    | L15  | <input type="checkbox"/> | ⬆ |
| Hydrometer corr. indicator | <input checked="" type="checkbox"/> |            |      |   | 0.000    | L20  | <input type="checkbox"/> | ⬆ |
| Base density(vac.)         |                                     | 500.000000 | KGV  | ⬆ | 0.000    | LBA  | <input type="checkbox"/> | ⬆ |
| VCF observed to base       |                                     | 0.98154    | VCF  | ⬆ |          |      |                          | ⬆ |

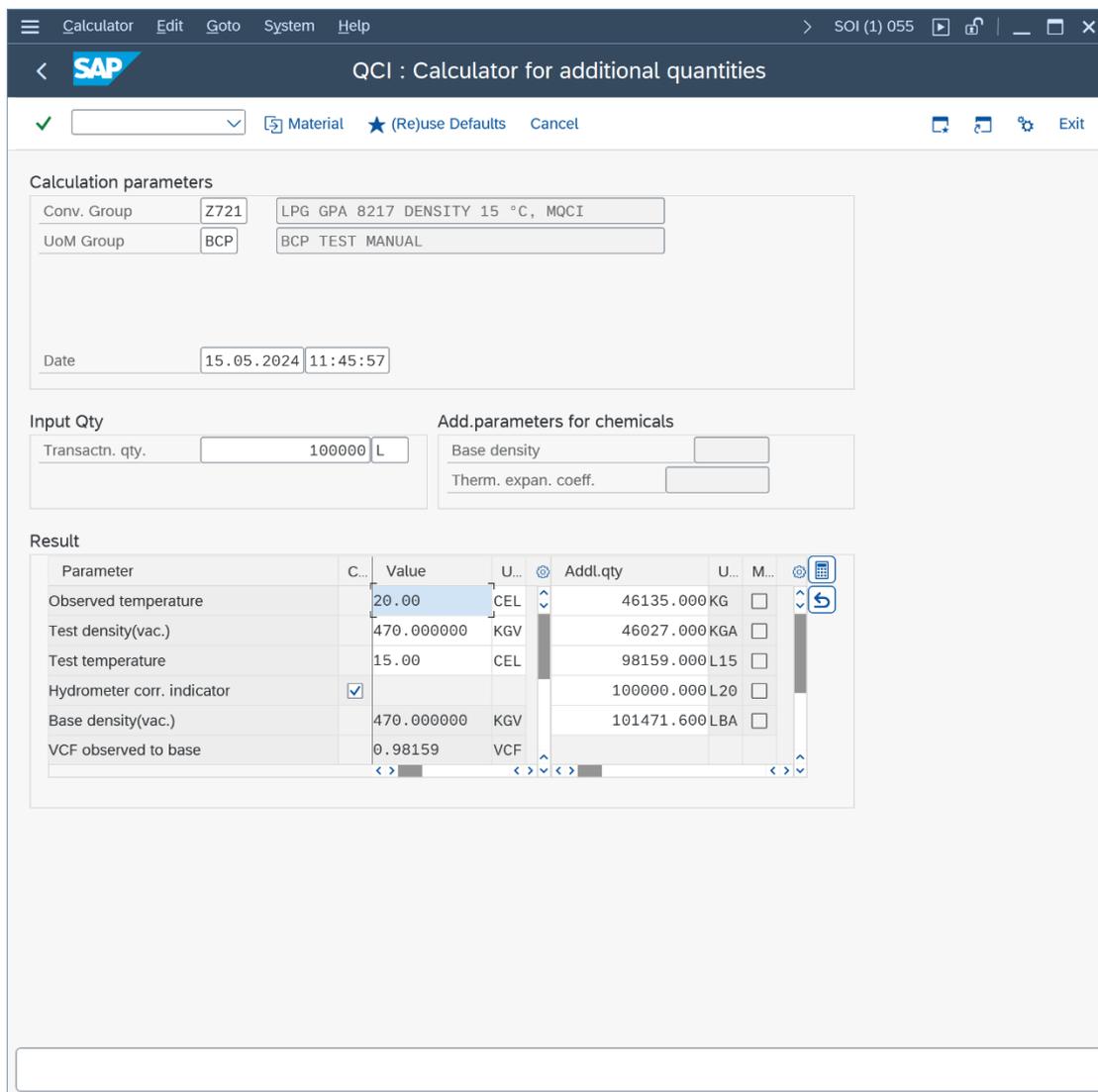


Good range data is vital to ensure good data quality e.g. for measurement values being passed from the field to the ERP system, as well as to prevent fraudulent via "open door (unrealistic) calculations".

## 2.7. Test Case 07 – Define Test Scenarios for LPG Conversion Group - Development

**Estimated test case execution time: 60 minutes**

Test scenarios are your insurance against manipulation and proof that that your quantity conversion configuration is running as designed and tested, in production. For this test case we assume that you have validated the calculations of conversion group Z721 (e.g. independent calculations in a spread sheet, typically done by certified BCP consultants). Let's take the following test calculation - PMC push button "Oil & Gas Test Calculator" - and transfer it into our first test scenario:



Calculator Edit Goto System Help > SOI (1) 055

SAP QCI : Calculator for additional quantities

Material (Re)use Defaults Cancel

Calculation parameters

Conv. Group: Z721 LPG GPA 8217 DENSITY 15 °C, MQCI

UoM Group: BCP BCP TEST MANUAL

Date: 15.05.2024 11:45:57

Input Qty: Transactn. qty. 100000 L

Add.parameters for chemicals

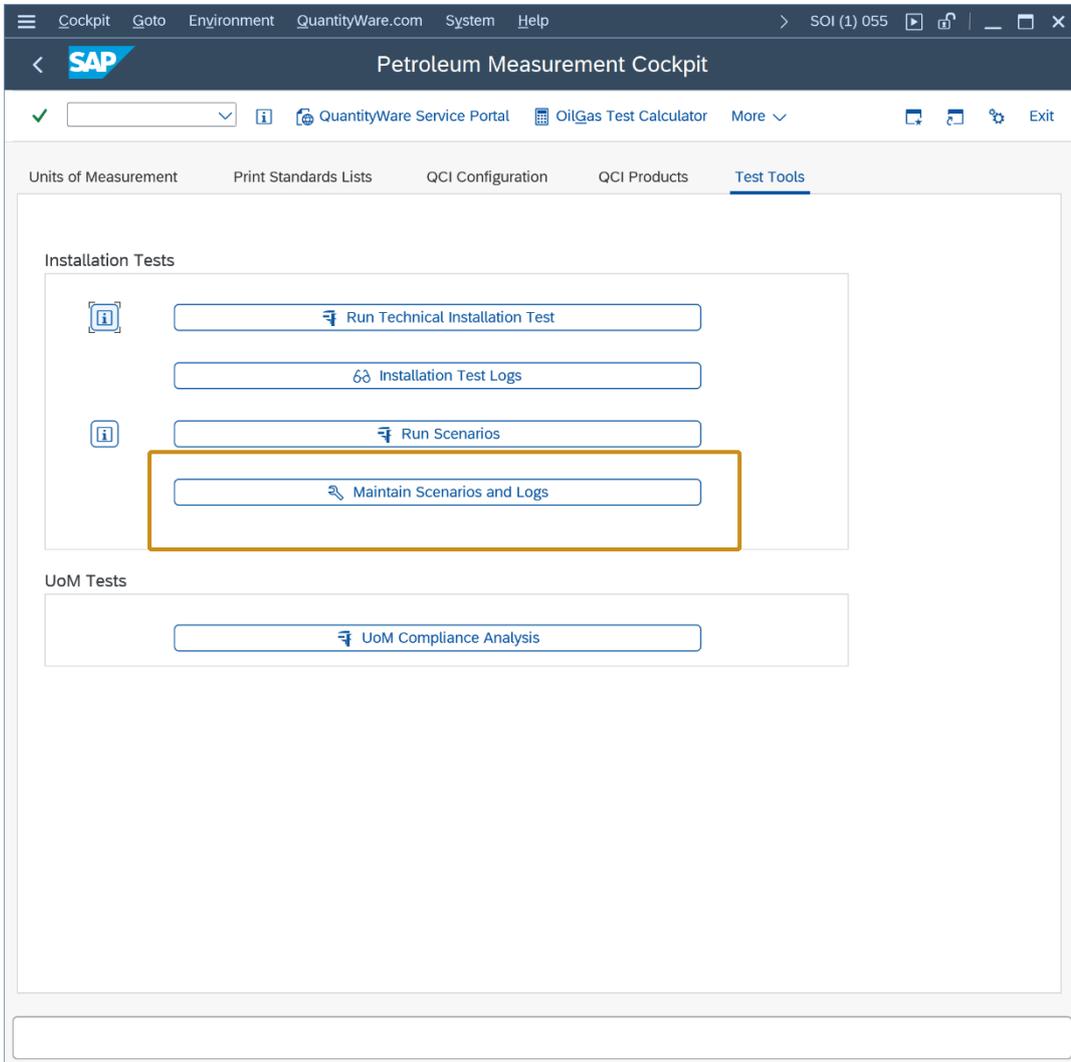
Base density

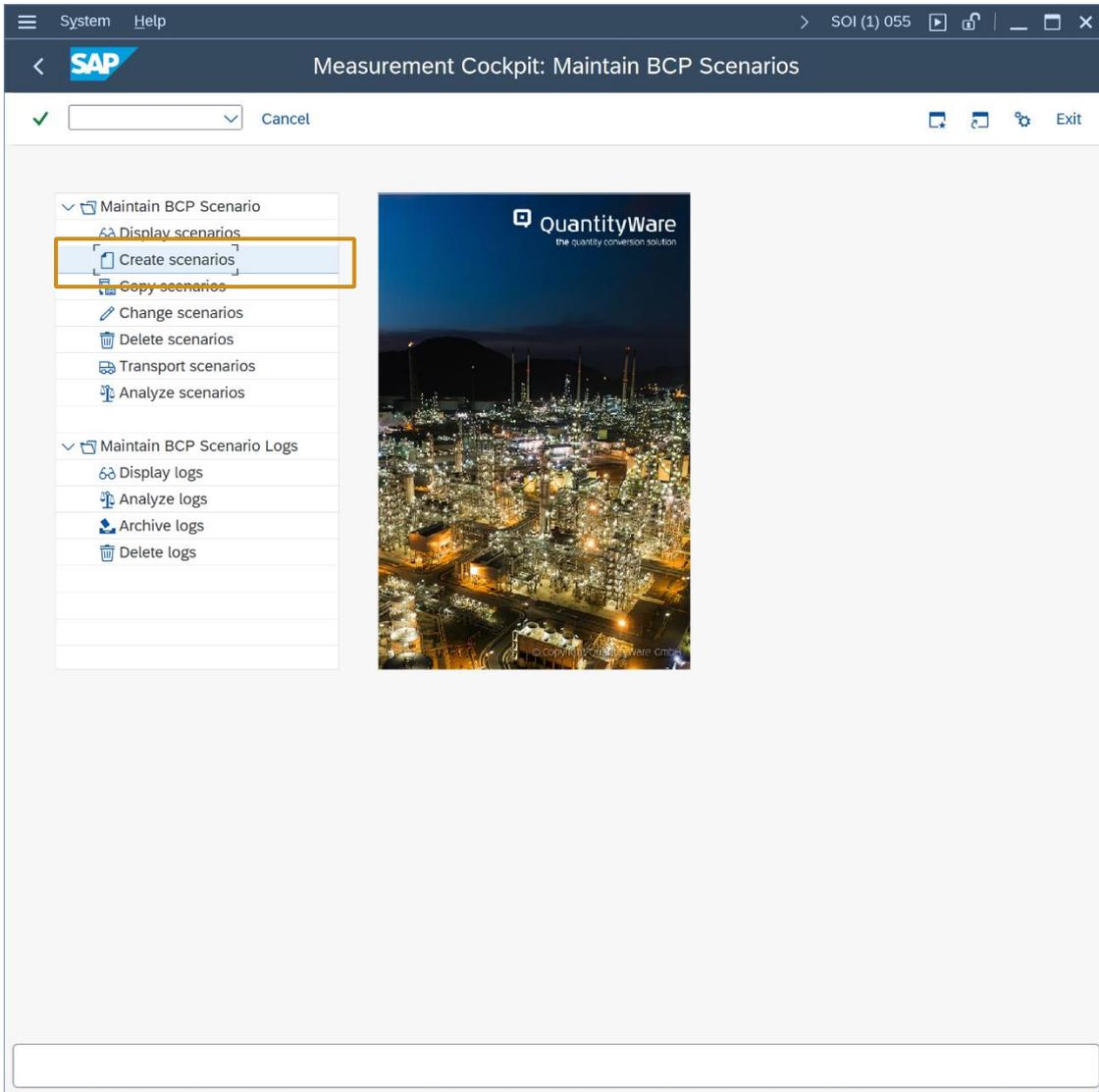
Therm. expan. coeff.

Result

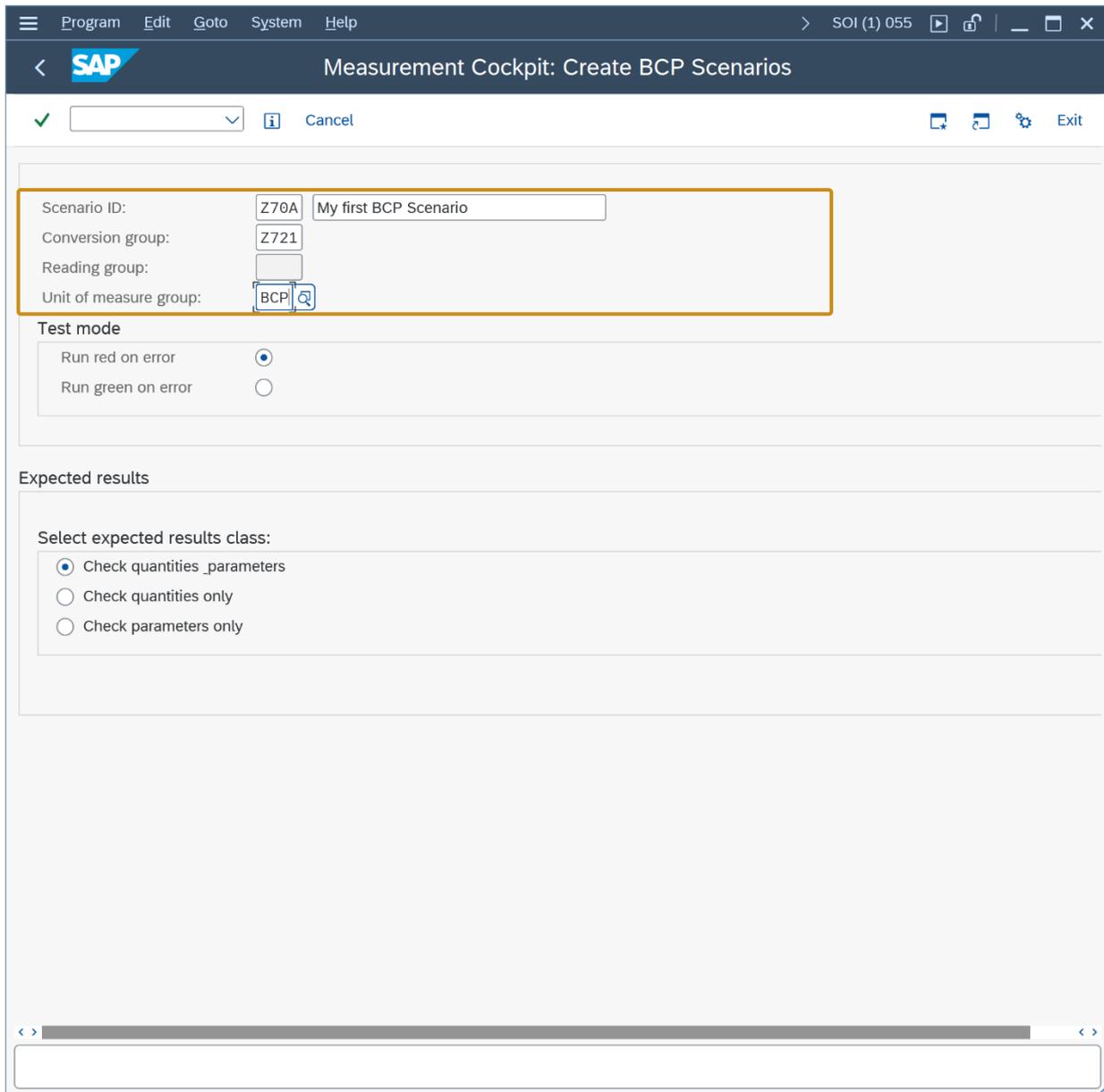
| Parameter                  | C...                                | Value      | U... | Addl.qty   | U... | M...                     |
|----------------------------|-------------------------------------|------------|------|------------|------|--------------------------|
| Observed temperature       |                                     | 20.00      | CEL  | 46135.000  | KG   | <input type="checkbox"/> |
| Test density(vac.)         |                                     | 470.000000 | KGV  | 46027.000  | KGA  | <input type="checkbox"/> |
| Test temperature           |                                     | 15.00      | CEL  | 98159.000  | L15  | <input type="checkbox"/> |
| Hydrometer corr. indicator | <input checked="" type="checkbox"/> |            |      | 100000.000 | L20  | <input type="checkbox"/> |
| Base density(vac.)         |                                     | 470.000000 | KGV  | 101471.600 | LBA  | <input type="checkbox"/> |
| VCF observed to base       |                                     | 0.98159    | VCF  |            |      |                          |

From the PMC tab strip “Test Tools” select “Maintain Scenarios and Logs”, then “Create scenarios”:





Enter the scenario ID (e.g. Z70A), a description, the conversion group Z721 and UoM group EU1 and press "Enter":



The screenshot shows the SAP Measurement Cockpit interface for creating BCP scenarios. The window title is "Measurement Cockpit: Create BCP Scenarios". The menu bar includes "Program", "Edit", "Goto", "System", and "Help". The status bar shows "SOI (1) 055".

The main form contains the following fields and options:

- Scenario ID:** A text input field containing "Z70A".
- Description:** A text input field containing "My first BCP Scenario".
- Conversion group:** A dropdown menu with "Z721" selected.
- Reading group:** An empty dropdown menu.
- Unit of measure group:** A dropdown menu with "BCP" selected.

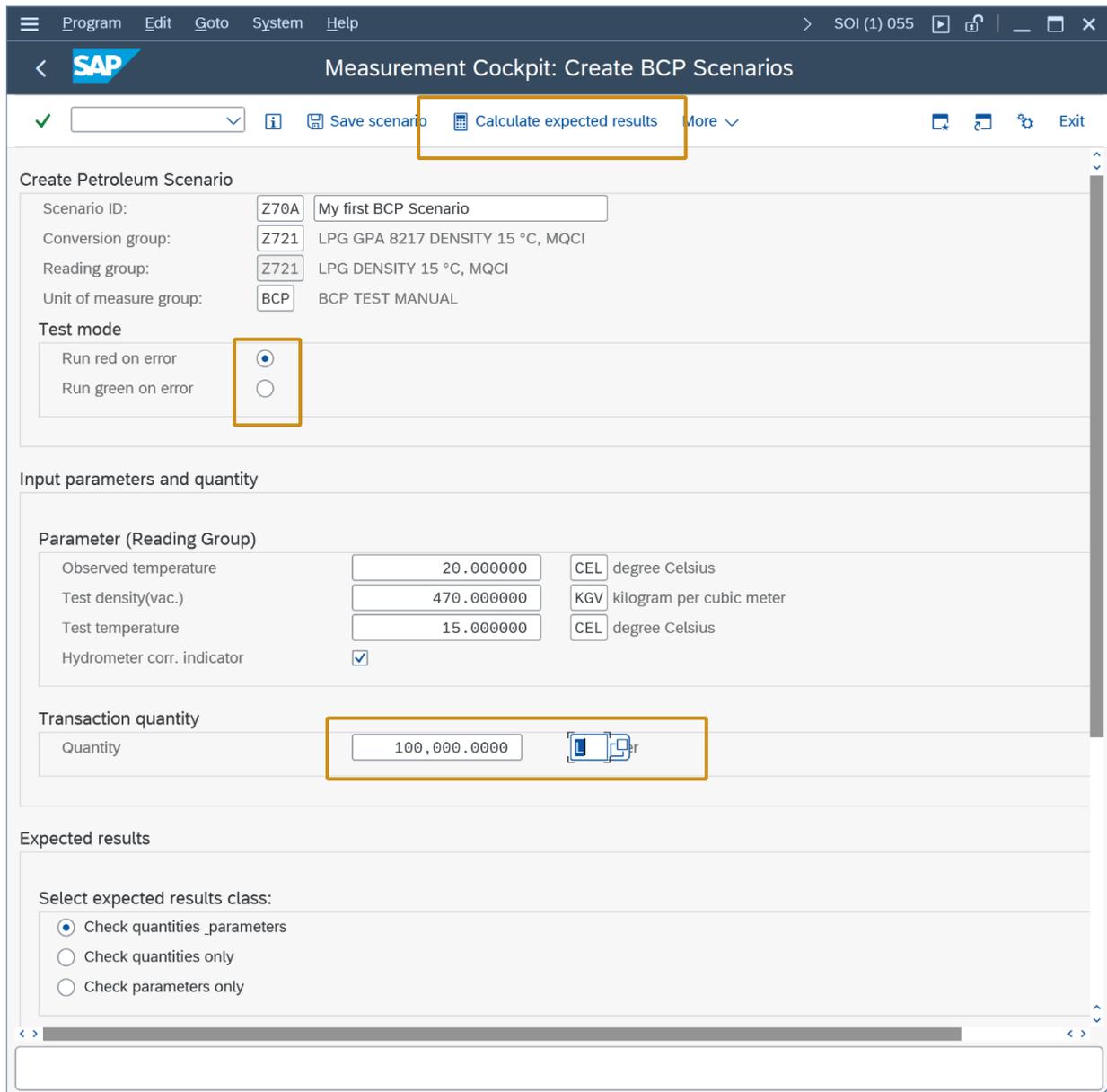
Below the input fields, there is a "Test mode" section with two radio buttons:

- Run red on error:** Selected (radio button is filled).
- Run green on error:** Not selected (radio button is empty).

At the bottom, there is an "Expected results" section with a label "Select expected results class:" and three radio buttons:

- Check quantities \_parameters:** Selected (radio button is filled).
- Check quantities only:** Not selected (radio button is empty).
- Check parameters only:** Not selected (radio button is empty).

In the details screen, the reading group values are defaulted as input parameters. Now enter the transaction quantity of 100,000.000 L and check that the “expected result class” radio button is set to “Check quantities and parameters”). Then select push button “Calculate expected results”, confirm the calculated values and then save your scenario, confirming all messages:



The screenshot shows the SAP Measurement Cockpit interface for creating BCP scenarios. The window title is "Measurement Cockpit: Create BCP Scenarios". The top navigation bar includes "Program", "Edit", "Goto", "System", and "Help". The main content area is divided into several sections:

- Create Petroleum Scenario:**
  - Scenario ID: Z70A, My first BCP Scenario
  - Conversion group: Z721, LPG GPA 8217 DENSITY 15 °C, MQCI
  - Reading group: Z721, LPG DENSITY 15 °C, MQCI
  - Unit of measure group: BCP, BCP TEST MANUAL
  - Test mode:**
    - Run red on error:  (highlighted with a red box)
    - Run green on error:
- Input parameters and quantity:**
  - Parameter (Reading Group):**
    - Observed temperature: 20.000000, CEL degree Celsius
    - Test density(vac.): 470.000000, KGV kilogram per cubic meter
    - Test temperature: 15.000000, CEL degree Celsius
    - Hydrometer corr. indicator:
  - Transaction quantity:**
    - Quantity: 100,000.0000 (highlighted with a red box)
- Expected results:**
  - Select expected results class:**
    - Check quantities \_parameters (highlighted with a red box)
    - Check quantities only
    - Check parameters only

At the top of the main content area, there are buttons for "Save scenario" and "Calculate expected results" (highlighted with a red box). The "Calculate expected results" button is highlighted with a red box. The "Run red on error" radio button is highlighted with a red box. The "Quantity" input field is highlighted with a red box. The "Check quantities \_parameters" radio button is highlighted with a red box.

Program Edit Goto System Help > SOI (1) 055

SAP Measurement Cockpit: Create BCP Scenarios

Save scenario Calculate expected results More

Exit

Create Petroleum Scenario

QuantityWare MQCI - Dialog box

Material data

Material

Plant

Storage Location

Batch

Transaction quantity 100000.000 L

Result

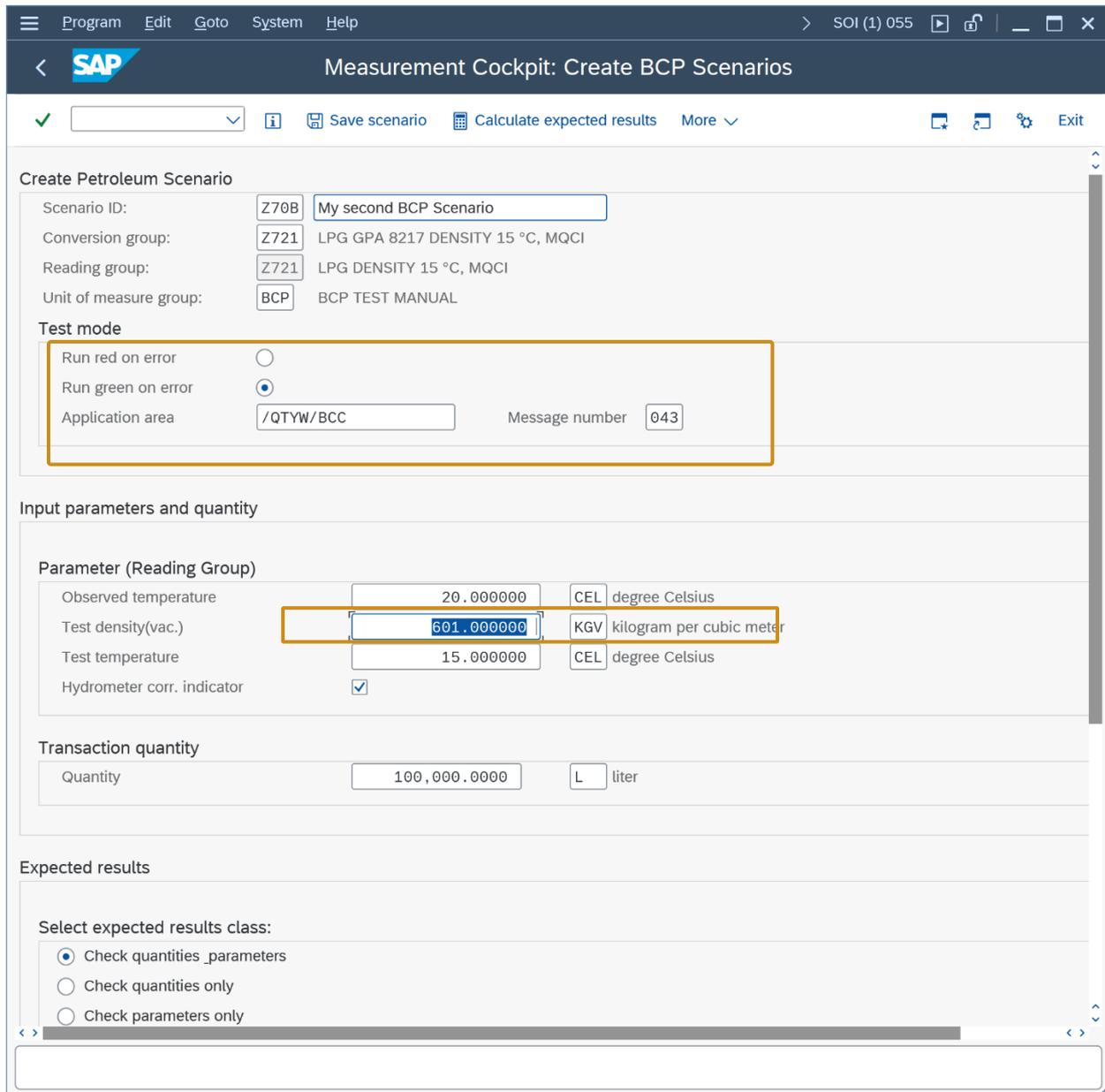
| Parameter                  | C...                                | Value      | U... | Addl.qty    | U... | M...                     |
|----------------------------|-------------------------------------|------------|------|-------------|------|--------------------------|
| Observed temperature       |                                     | 20.00      | CEL  | 46,135.000  | KG   | <input type="checkbox"/> |
| Test density(vac.)         |                                     | 470.000000 | KGV  | 98,159.000  | L15  | <input type="checkbox"/> |
| Test temperature           |                                     | 15.00      | CEL  | 100,000.000 | L20  | <input type="checkbox"/> |
| Hydrometer corr. indicator | <input checked="" type="checkbox"/> |            |      | 46,027.000  | KGA  | <input type="checkbox"/> |
| Base density(vac.)         |                                     | 470.000000 | KGV  | 101,471.600 | LBA  | <input type="checkbox"/> |
| VCF observed to base       |                                     | 0.98159    | VCF  |             |      |                          |

Expected results

Select expected results class:

- Check quantities \_parameters
- Check quantities only
- Check parameters only

For the second scenario, we want to ensure that the range check is always executed correctly (extremely important for production environments) - Thus we define the following scenario:



The screenshot shows the SAP Measurement Cockpit interface for creating a BCP scenario. The window title is "Measurement Cockpit: Create BCP Scenarios". The main content area is titled "Create Petroleum Scenario".

**Create Petroleum Scenario**

Scenario ID: Z70B My second BCP Scenario  
 Conversion group: Z721 LPG GPA 8217 DENSITY 15 °C, MQCI  
 Reading group: Z721 LPG DENSITY 15 °C, MQCI  
 Unit of measure group: BCP BCP TEST MANUAL

**Test mode**

Run red on error   
 Run green on error   
 Application area: /QTYW/BCC Message number: 043

**Input parameters and quantity**

**Parameter (Reading Group)**

|                            |                                     |     |                          |
|----------------------------|-------------------------------------|-----|--------------------------|
| Observed temperature       | 20.000000                           | CEL | degree Celsius           |
| Test density(vac.)         | 601.000000                          | KGV | kilogram per cubic meter |
| Test temperature           | 15.000000                           | CEL | degree Celsius           |
| Hydrometer corr. indicator | <input checked="" type="checkbox"/> |     |                          |

**Transaction quantity**

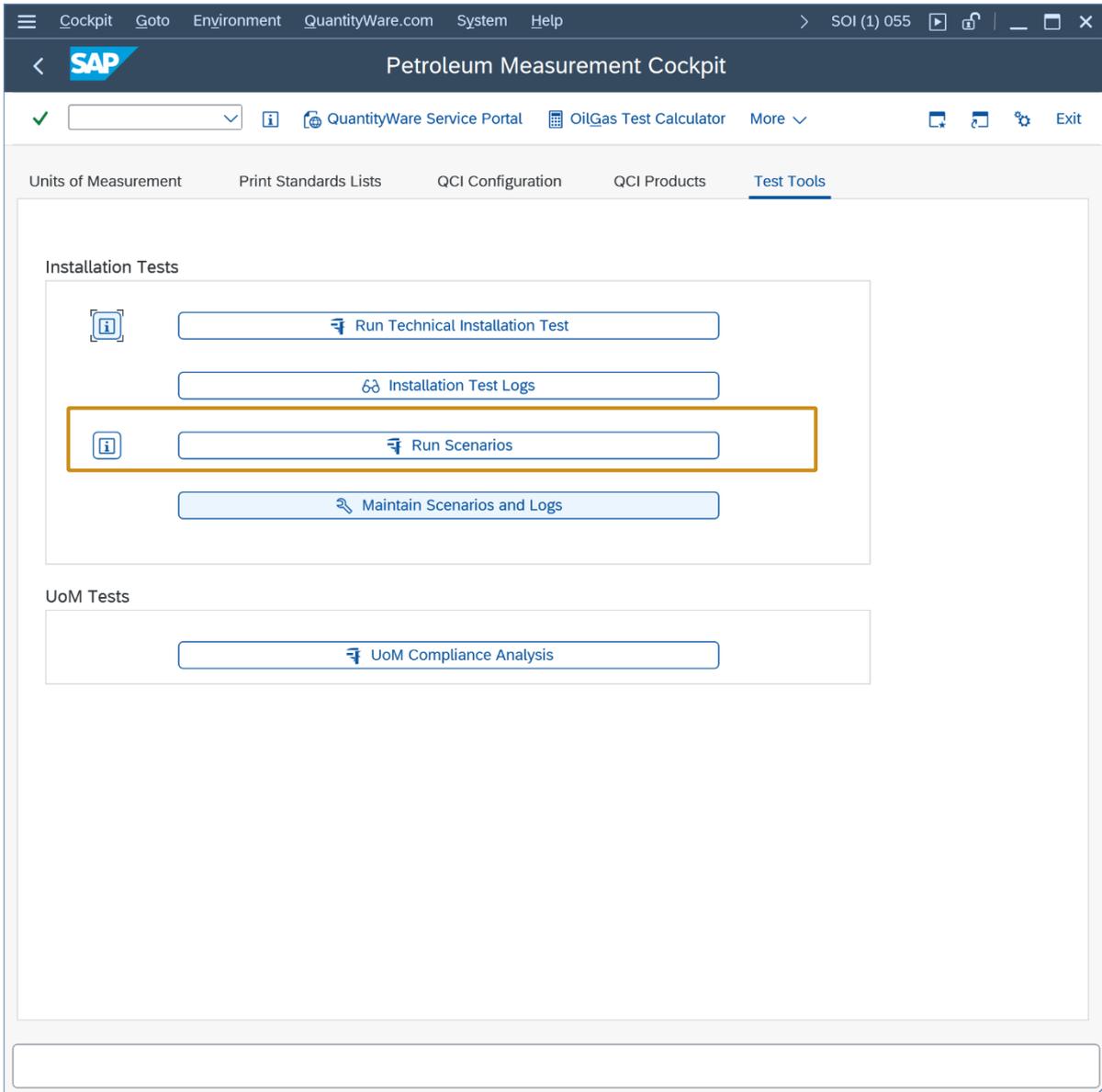
Quantity: 100,000.0000 L liter

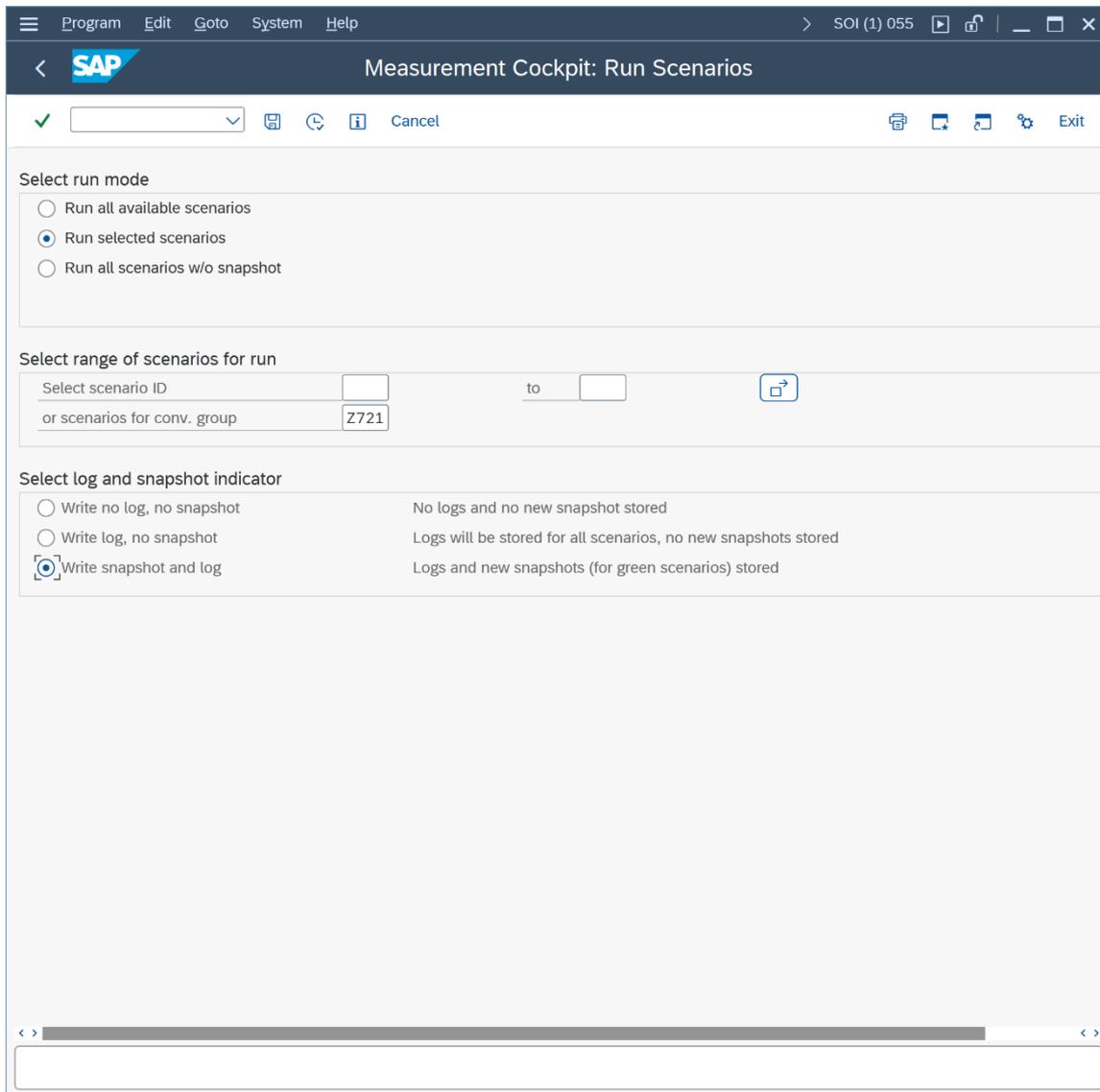
**Expected results**

Select expected results class:

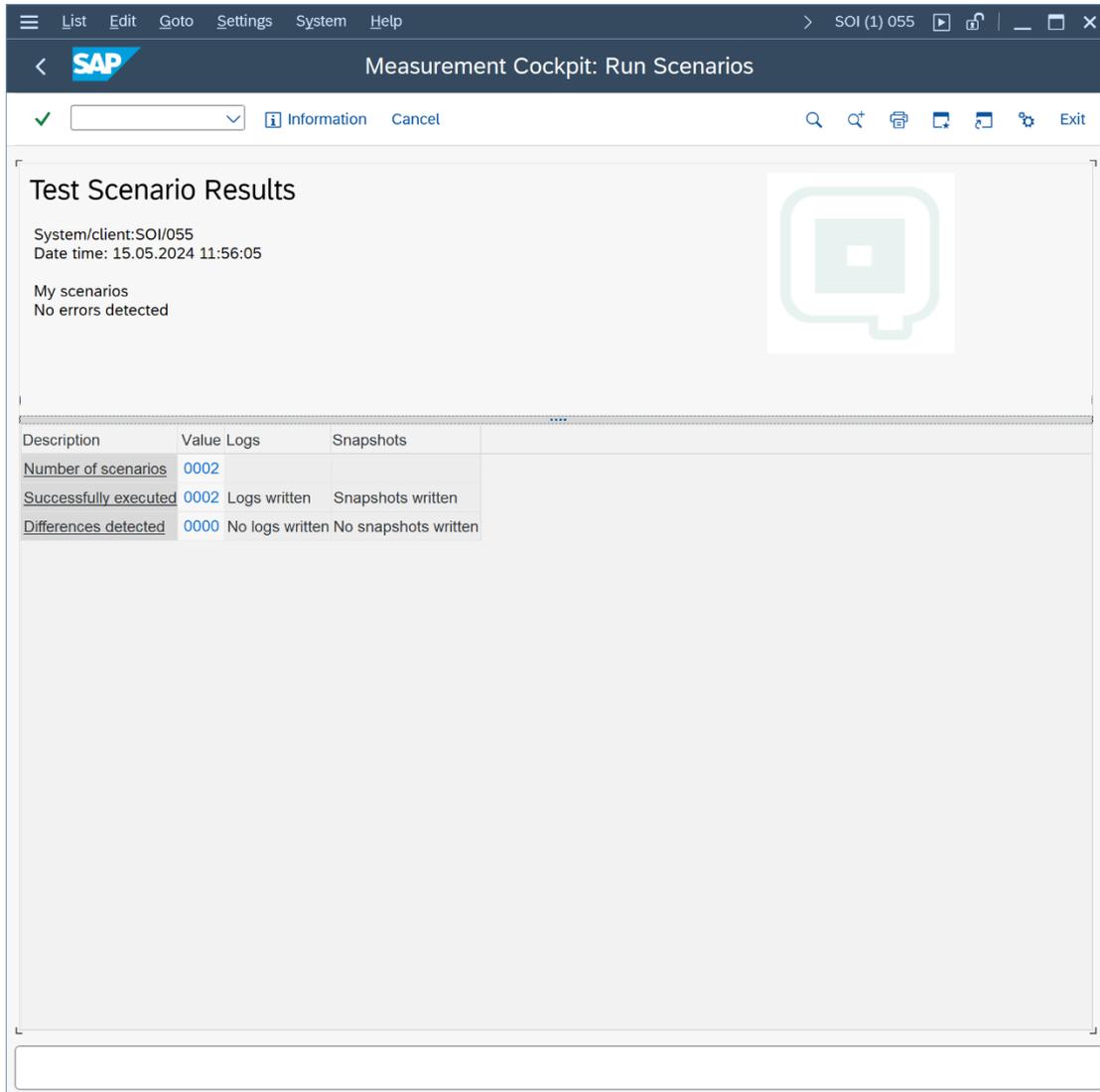
- Check quantities \_parameters
- Check quantities only
- Check parameters only

Now we go back to the PMC tab strip "Test Tools" and select "Run Scenarios". Then, select "Run selected scenarios" and enter your conversion group, and select "Write snapshot and log":





If you have maintained the two scenarios correctly, the following result will be displayed:



The screenshot shows the SAP Measurement Cockpit interface. The title bar reads "Measurement Cockpit: Run Scenarios". Below the title bar, there is a navigation bar with a back arrow, the SAP logo, and the text "Information Cancel". The main content area is titled "Test Scenario Results" and displays the following information:

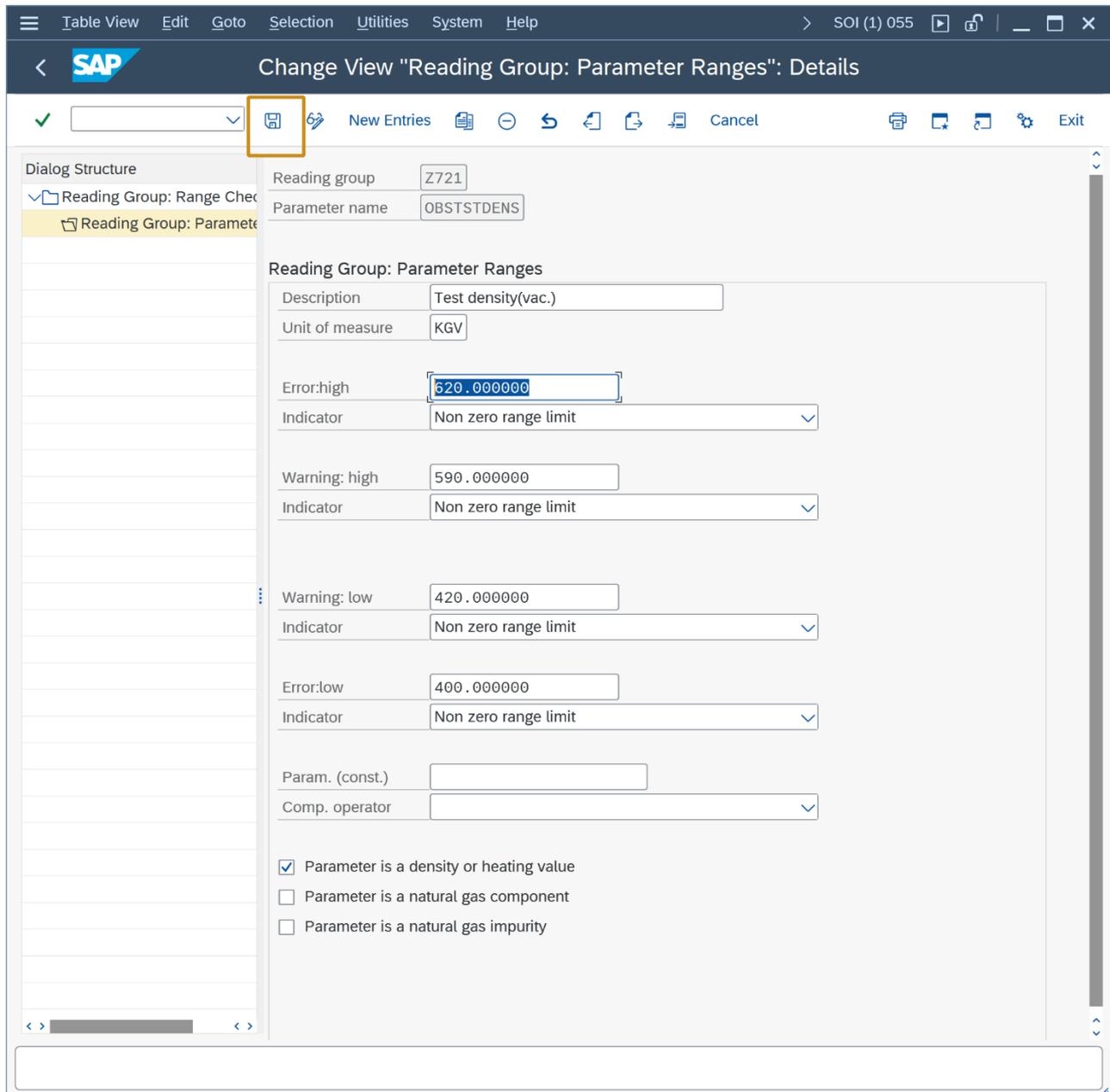
- System/client: SOI/055
- Date time: 15.05.2024 11:56:05
- My scenarios
- No errors detected

Below this information is a table with the following data:

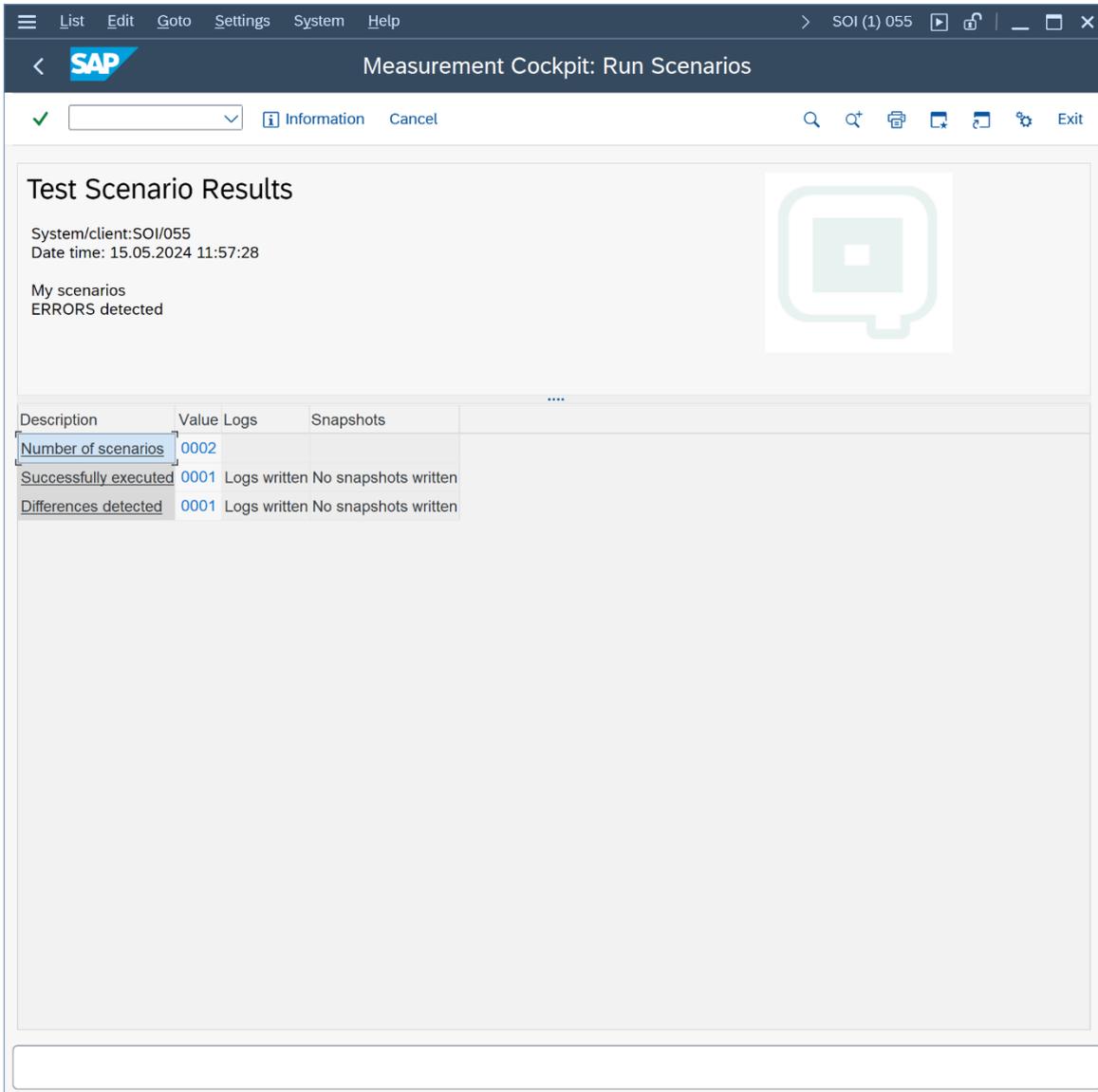
| Description           | Value | Logs            | Snapshots            |
|-----------------------|-------|-----------------|----------------------|
| Number of scenarios   | 0002  |                 |                      |
| Successfully executed | 0002  | Logs written    | Snapshots written    |
| Differences detected  | 0000  | No logs written | No snapshots written |

The system has performed a quantity conversion automatically and compares the actual results with the expected results defined in the scenarios.

In order to test this tool, let's go back to the range data for conversion group Z721 (see test case 06) and change the test density "high" error limit to 620 kg/m<sup>3</sup>:



If we now run the scenarios for conversion group Z721 again, one scenarios fails:



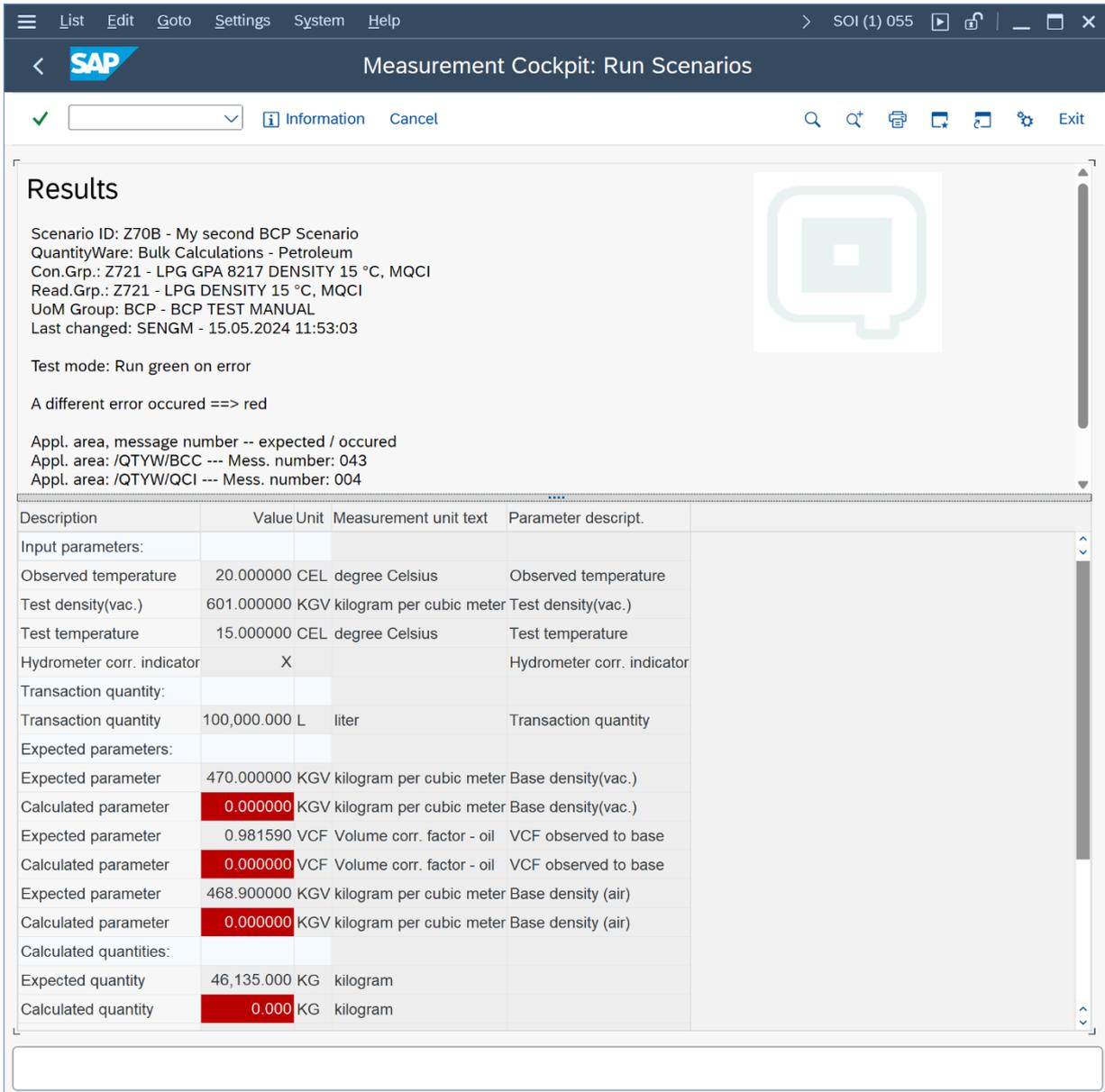
**Test Scenario Results**

System/client:SOI/055  
Date time: 15.05.2024 11:57:28

My scenarios  
ERRORS detected

| Description           | Value | Logs         | Snapshots            |
|-----------------------|-------|--------------|----------------------|
| Number of scenarios   | 0002  |              |                      |
| Successfully executed | 0001  | Logs written | No snapshots written |
| Differences detected  | 0001  | Logs written | No snapshots written |

The expected range error is not raised during the internal test run, which is displayed in the detail view for the scenario:



**Results**

Scenario ID: Z70B - My second BCP Scenario  
 QuantityWare: Bulk Calculations - Petroleum  
 Con.Grp.: Z721 - LPG GPA 8217 DENSITY 15 °C, MQCI  
 Read.Grp.: Z721 - LPG DENSITY 15 °C, MQCI  
 UoM Group: BCP - BCP TEST MANUAL  
 Last changed: SENGM - 15.05.2024 11:53:03

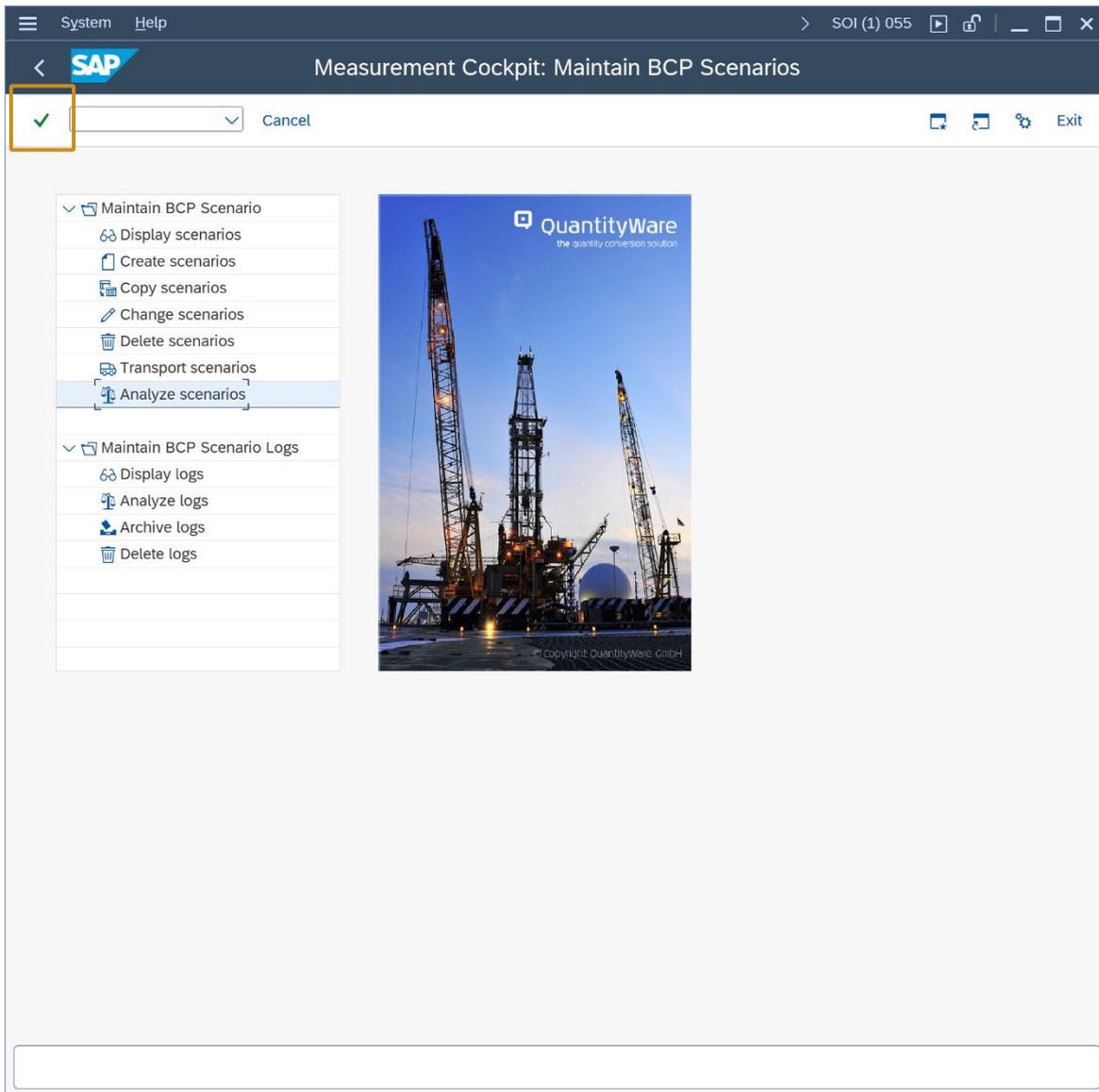
Test mode: Run green on error

A different error occurred ==> red

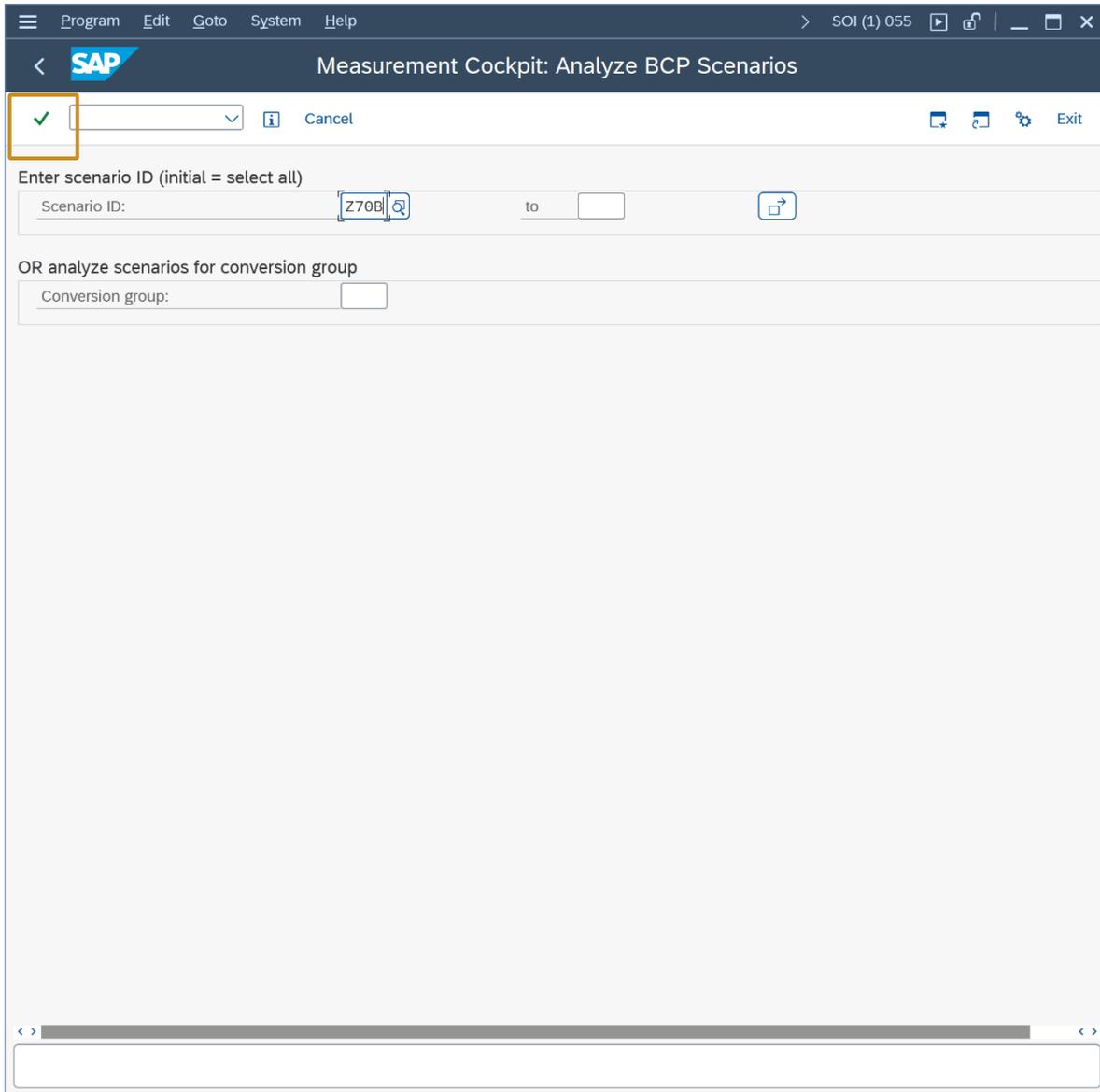
Appl. area, message number -- expected / occurred  
 Appl. area: /QTYW/BCC --- Mess. number: 043  
 Appl. area: /QTYW/QCI --- Mess. number: 004

| Description                | Value       | Unit | Measurement unit text     | Parameter descript.        |
|----------------------------|-------------|------|---------------------------|----------------------------|
| Input parameters:          |             |      |                           |                            |
| Observed temperature       | 20.000000   | CEL  | degree Celsius            | Observed temperature       |
| Test density(vac.)         | 601.000000  | KGV  | kilogram per cubic meter  | Test density(vac.)         |
| Test temperature           | 15.000000   | CEL  | degree Celsius            | Test temperature           |
| Hydrometer corr. indicator | X           |      |                           | Hydrometer corr. indicator |
| Transaction quantity:      |             |      |                           |                            |
| Transaction quantity       | 100,000.000 | L    | liter                     | Transaction quantity       |
| Expected parameters:       |             |      |                           |                            |
| Expected parameter         | 470.000000  | KGV  | kilogram per cubic meter  | Base density(vac.)         |
| Calculated parameter       | 0.000000    | KGV  | kilogram per cubic meter  | Base density(vac.)         |
| Expected parameter         | 0.981590    | VCF  | Volume corr. factor - oil | VCF observed to base       |
| Calculated parameter       | 0.000000    | VCF  | Volume corr. factor - oil | VCF observed to base       |
| Expected parameter         | 468.900000  | KGV  | kilogram per cubic meter  | Base density (air)         |
| Calculated parameter       | 0.000000    | KGV  | kilogram per cubic meter  | Base density (air)         |
| Calculated quantities:     |             |      |                           |                            |
| Expected quantity          | 46,135.000  | KG   | kilogram                  |                            |
| Calculated quantity        | 0.000       | KG   | kilogram                  |                            |

Go back to the PMC tab strip “Test Tools” and select “Maintain my test”. Now select the “Analyze scenarios” option, where we can compare the snapshot data with the current configuration data:



Enter the scenario ID Z70B and select “Enter” to display the snapshot header data:



SAP Measurement Cockpit: Analyze BCP Scenarios

✓ [Dropdown] Information Cancel

### Test Scenario List for Analysis

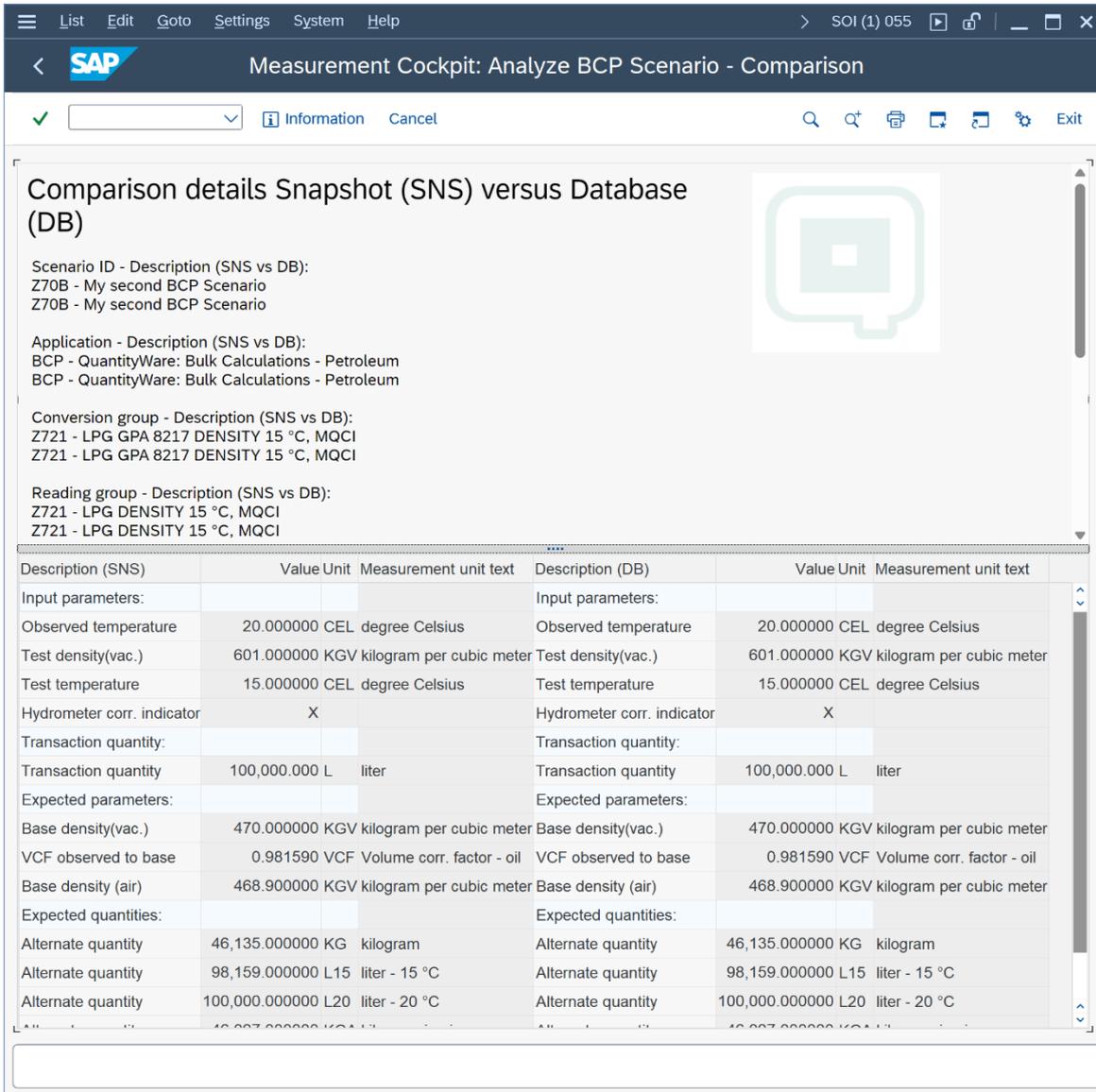
Snapshot database  
 Number of snapshots: 1

Choose "Scenario" to Compare Scenario (Snapshot versus DB)  
 Choose "Application" to Analyze Scenario Configuration



| Scenario | Appl. | Run date   | Run time | Run by | CvG  | UoMG | Mod. by | Mod. date  | Time     |
|----------|-------|------------|----------|--------|------|------|---------|------------|----------|
| Z70B     | BCP   | 15.05.2024 | 11:56:02 | SENGM  | Z721 | BCP  | SENGM   | 15.05.2024 | 11:53:03 |

If you click the Scenario ID, the comparison of the snapshot data for the scenario and the actual scenario (running in the system) is displayed:



**Comparison details Snapshot (SNS) versus Database (DB)**

Scenario ID - Description (SNS vs DB):  
 Z70B - My second BCP Scenario  
 Z70B - My second BCP Scenario

Application - Description (SNS vs DB):  
 BCP - QuantityWare: Bulk Calculations - Petroleum  
 BCP - QuantityWare: Bulk Calculations - Petroleum

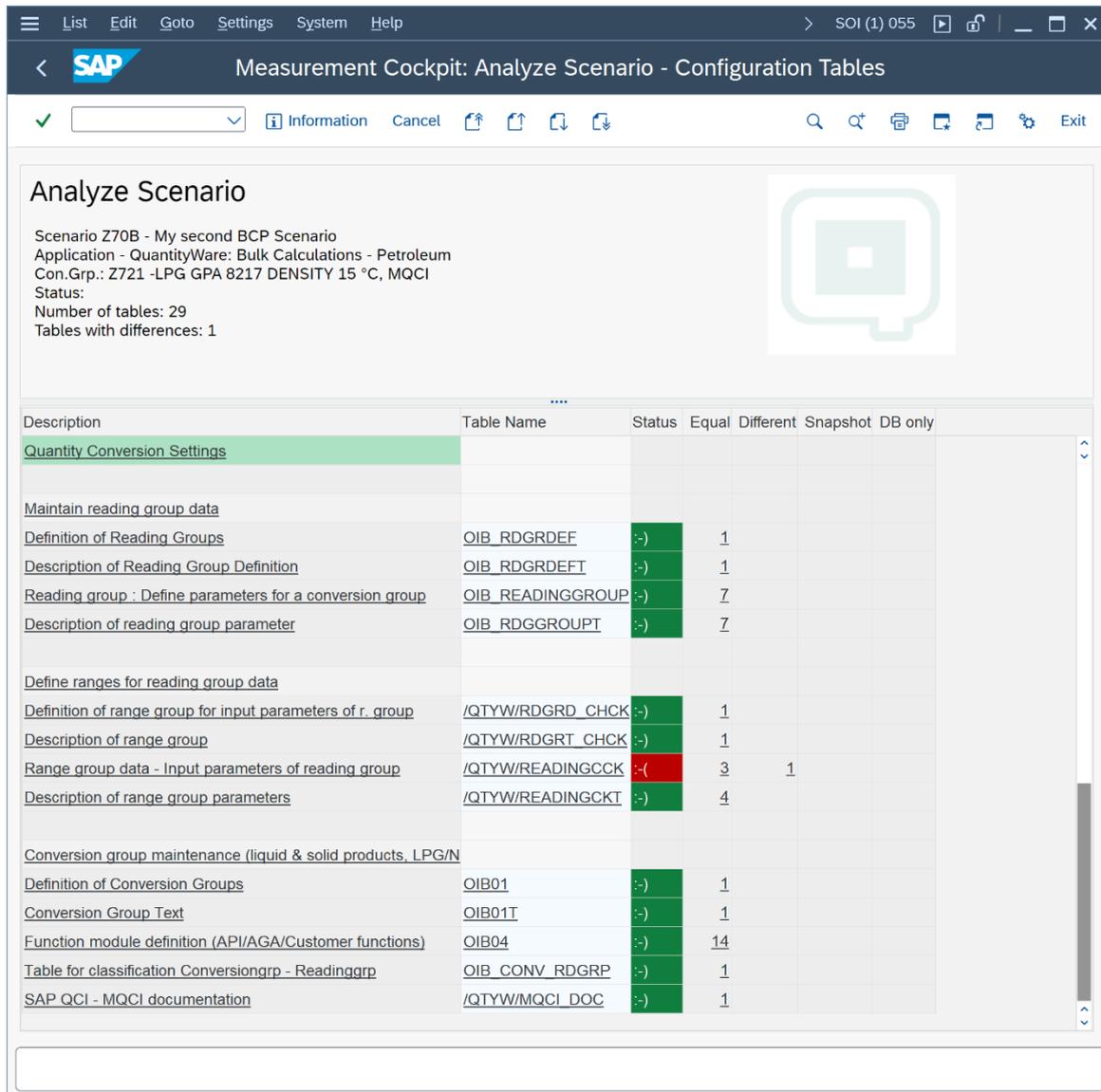
Conversion group - Description (SNS vs DB):  
 Z721 - LPG GPA 8217 DENSITY 15 °C, MQCI  
 Z721 - LPG GPA 8217 DENSITY 15 °C, MQCI

Reading group - Description (SNS vs DB):  
 Z721 - LPG DENSITY 15 °C, MQCI  
 Z721 - LPG DENSITY 15 °C, MQCI

| Description (SNS)          | Value Unit     | Measurement unit text         | Description (DB)           | Value Unit     | Measurement unit text         |
|----------------------------|----------------|-------------------------------|----------------------------|----------------|-------------------------------|
| Input parameters:          |                |                               |                            |                |                               |
| Observed temperature       | 20.000000      | CEL degree Celsius            | Observed temperature       | 20.000000      | CEL degree Celsius            |
| Test density(vac.)         | 601.000000     | KGV kilogram per cubic meter  | Test density(vac.)         | 601.000000     | KGV kilogram per cubic meter  |
| Test temperature           | 15.000000      | CEL degree Celsius            | Test temperature           | 15.000000      | CEL degree Celsius            |
| Hydrometer corr. indicator | X              |                               | Hydrometer corr. indicator | X              |                               |
| Transaction quantity:      |                |                               |                            |                |                               |
| Transaction quantity       | 100,000.000    | L liter                       | Transaction quantity       | 100,000.000    | L liter                       |
| Expected parameters:       |                |                               |                            |                |                               |
| Base density(vac.)         | 470.000000     | KGV kilogram per cubic meter  | Base density(vac.)         | 470.000000     | KGV kilogram per cubic meter  |
| VCF observed to base       | 0.981590       | VCF Volume corr. factor - oil | VCF observed to base       | 0.981590       | VCF Volume corr. factor - oil |
| Base density (air)         | 468.900000     | KGV kilogram per cubic meter  | Base density (air)         | 468.900000     | KGV kilogram per cubic meter  |
| Expected quantities:       |                |                               |                            |                |                               |
| Alternate quantity         | 46,135.000000  | KG kilogram                   | Alternate quantity         | 46,135.000000  | KG kilogram                   |
| Alternate quantity         | 98,159.000000  | L15 liter - 15 °C             | Alternate quantity         | 98,159.000000  | L15 liter - 15 °C             |
| Alternate quantity         | 100,000.000000 | L20 liter - 20 °C             | Alternate quantity         | 100,000.000000 | L20 liter - 20 °C             |

Apparently, there are no differences, thus the scenario has not been changed (which could also be the cause of the error).

If you click the application (BCP), the configuration data is displayed and compared with the current system data:

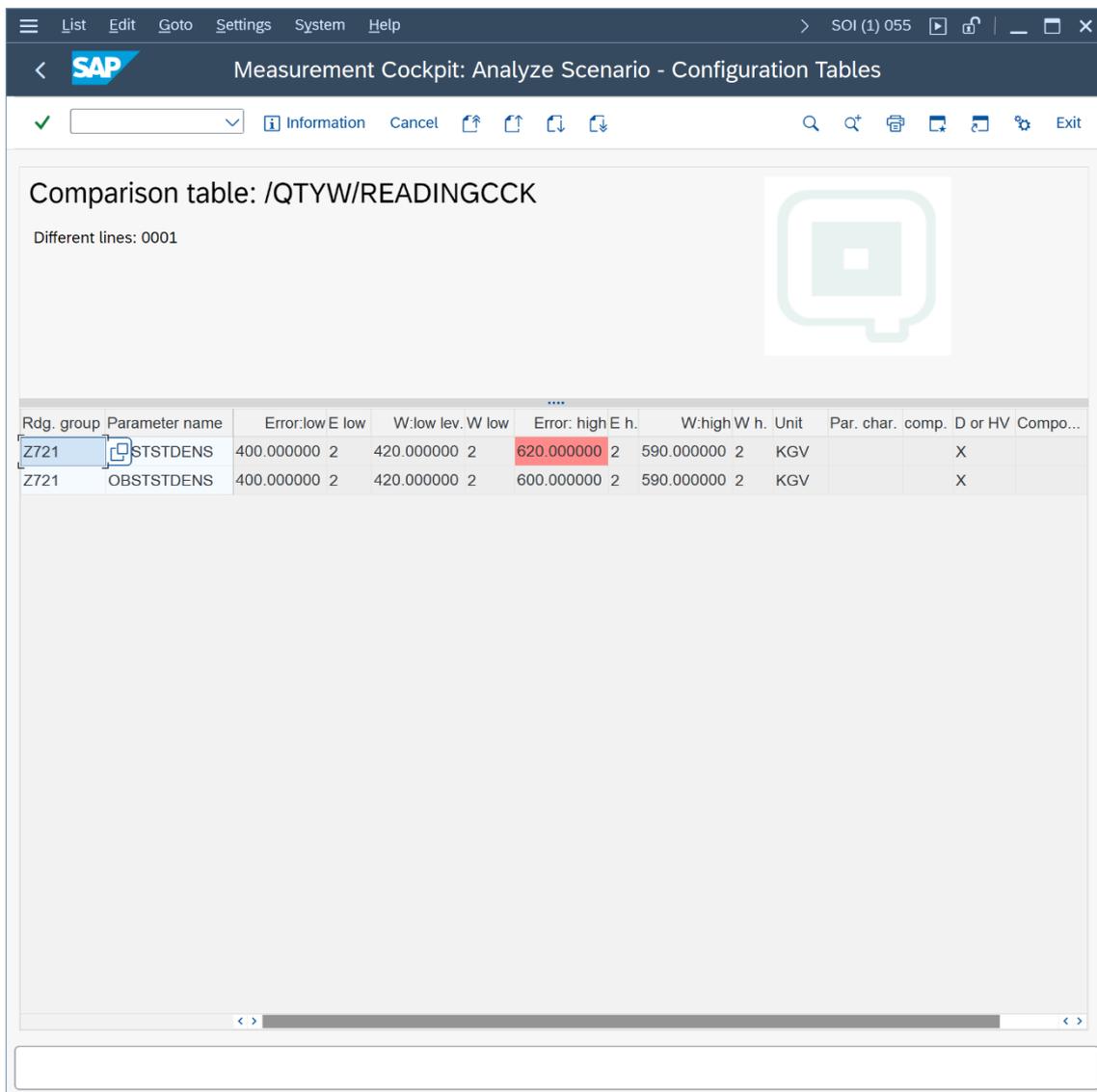


**Analyze Scenario**

Scenario Z70B - My second BCP Scenario  
 Application - QuantityWare: Bulk Calculations - Petroleum  
 Con.Grp.: Z721 -LPG GPA 8217 DENSITY 15 °C, MQCI  
 Status:  
 Number of tables: 29  
 Tables with differences: 1

| Description   | Table Name        | Status | Equal | Different | Snapshot | DB only |
|---|-------------------|--------|-------|-----------|----------|---------|
| <u>Quantity Conversion Settings</u>                                     |                   |        |       |           |          |         |
| <u>Maintain reading group data</u>                                      |                   |        |       |           |          |         |
| <u>Definition of Reading Groups</u>                                     | OIB_RDGRDEF       | -)     | 1     |           |          |         |
| <u>Description of Reading Group Definition</u>                          | OIB_RDGRDEFT      | -)     | 1     |           |          |         |
| <u>Reading group : Define parameters for a conversion group</u>         | OIB_READINGGROUP  | -)     | 7     |           |          |         |
| <u>Description of reading group parameter</u>                           | OIB_RDGGROUPT     | -)     | 7     |           |          |         |
| <u>Define ranges for reading group data</u>                             |                   |        |       |           |          |         |
| <u>Definition of range group for input parameters of r. group</u>       | /QTYW/RDGRD_CHK   | -)     | 1     |           |          |         |
| <u>Description of range group</u>                                       | /QTYW/RDGRD_CHK   | -)     | 1     |           |          |         |
| <u>Range group data - Input parameters of reading group</u>             | /QTYW/READINGCCK  | -)     | 3     | 1         |          |         |
| <u>Description of range group parameters</u>                            | /QTYW/READINGCCKT | -)     | 4     |           |          |         |
| <u>Conversion group maintenance (liquid &amp; solid products, LPG/N</u> |                   |        |       |           |          |         |
| <u>Definition of Conversion Groups</u>                                  | OIB01             | -)     | 1     |           |          |         |
| <u>Conversion Group Text</u>  | OIB01T            | -)     | 1     |           |          |         |
| <u>Function module definition (API/AGA/Customer functions)</u>          | OIB04             | -)     | 14    |           |          |         |
| <u>Table for classification Conversiongrp - Readinggrp</u>              | OIB_CONV_RDGRP    | -)     | 1     |           |          |         |
| <u>SAP QCI - MQCI documentation</u>                                     | /QTYW/MQCI_DOC    | -)     | 1     |           |          |         |

As expected, the change of the range data is marked in red and by clicking the "1" in the "Different" column, the change of the reading group range is displayed.



| Rdg. group | Parameter name | Error:low E low | W:low lev. W low | Error: high E h. | W:high W h.  | Unit | Par. char. | comp. | D or HV | Compo... |
|------------|----------------|-----------------|------------------|------------------|--------------|------|------------|-------|---------|----------|
| Z721       | STSTDENS       | 400.000000 2    | 420.000000 2     | 620.000000 2     | 590.000000 2 | KGV  |            |       | X       |          |
| Z721       | OBSTDENS       | 400.000000 2    | 420.000000 2     | 600.000000 2     | 590.000000 2 | KGV  |            |       | X       |          |

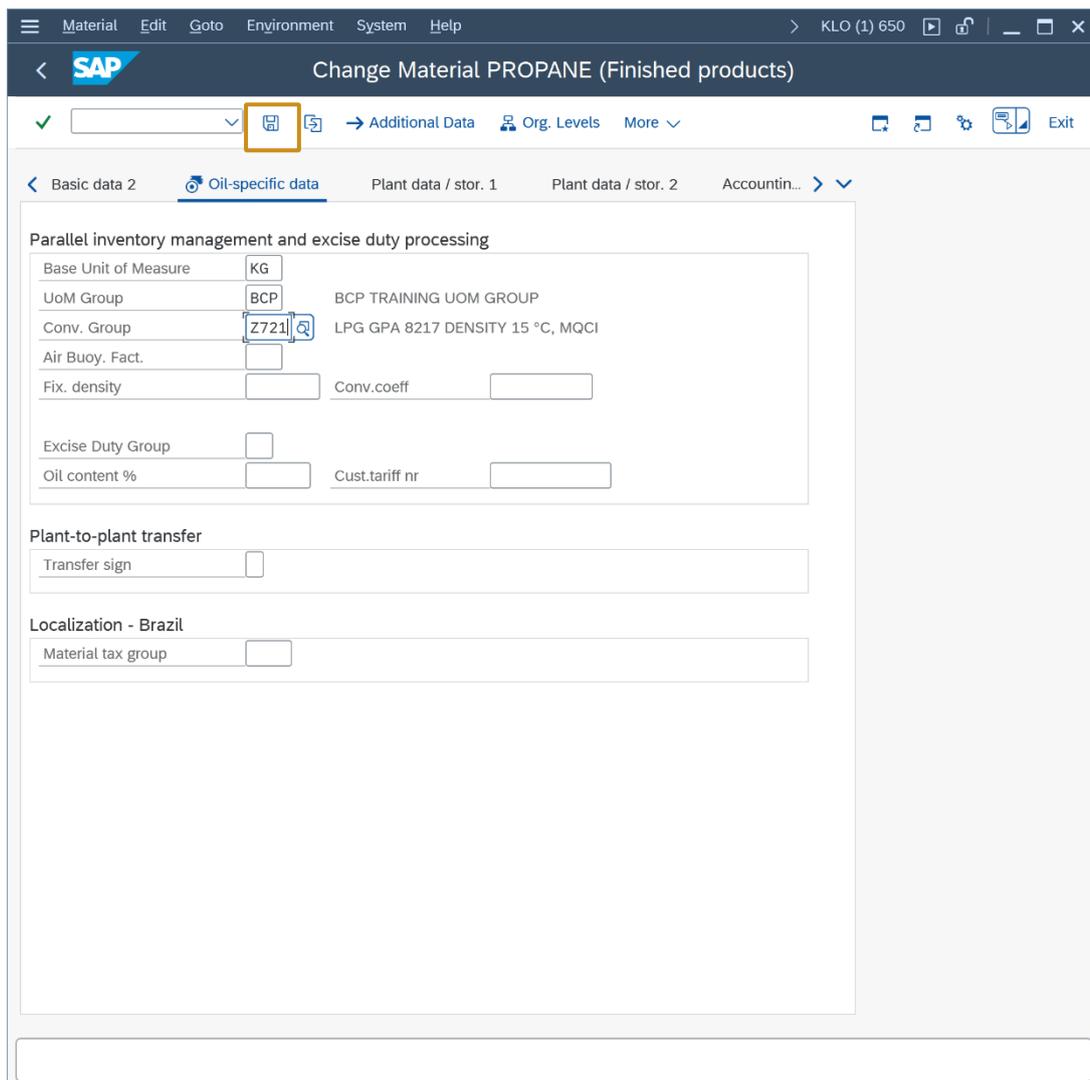
Practically seen from an application agents' perspective, this makes complex, laborious debugging of such issues a thing of the past! From a business management perspective, we have "raised the bar" in the areas of data integrity, security and process transparency as we have an easy-to-use automated "audit" check for the most important values in our ERP system – the quantity values.

## 2.8. Test Case 08 – Assign LPG Conversion Group to Material - Development

**Estimated test case execution time: 30 minutes**

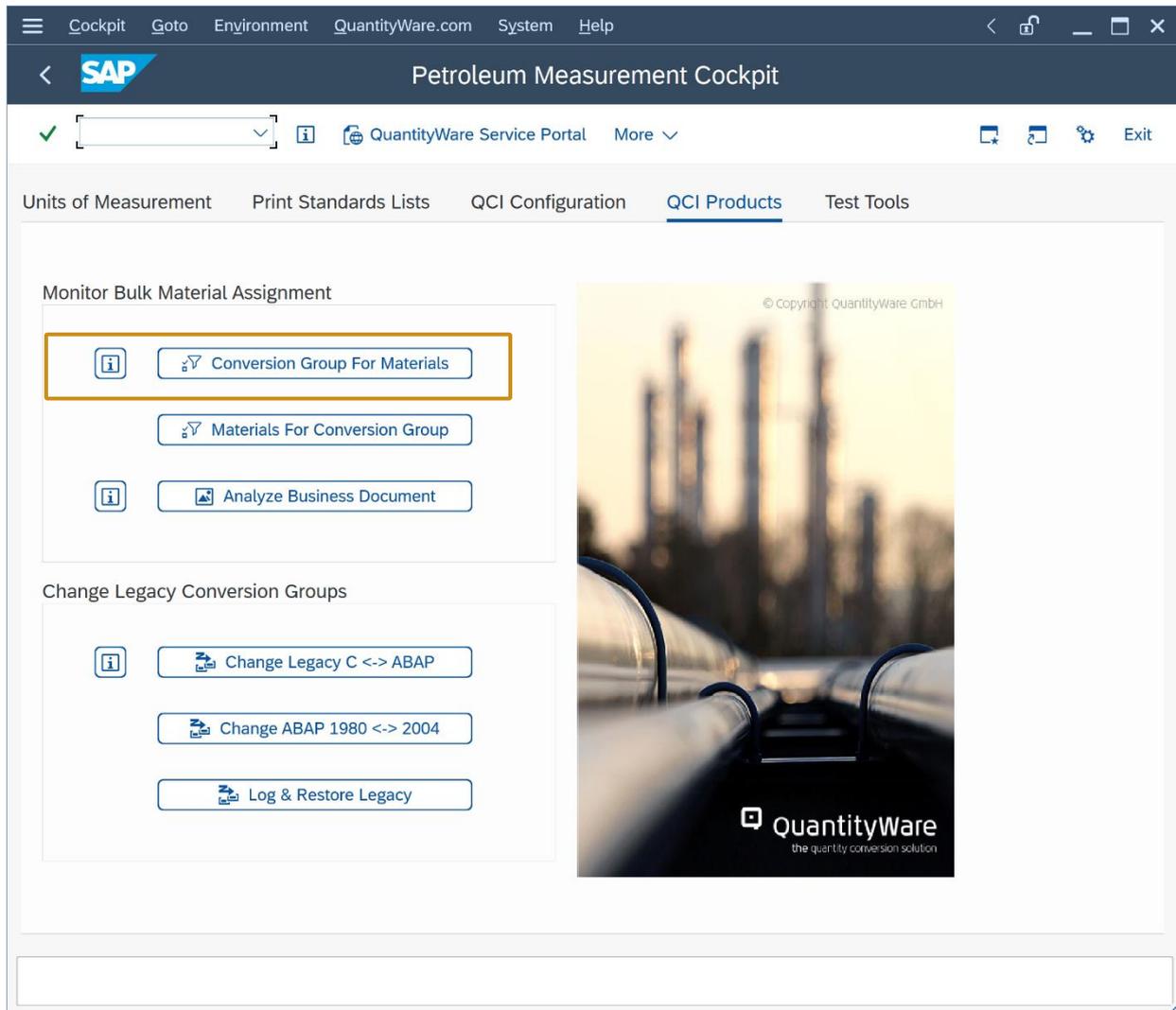
Now that we have a well-defined conversion group Z721 available, including automated test scenarios (QuantityWare recommends to defined **at least** 4 scenarios per conversion group), we assign the conversion group to a material in the material master at plant level (Oil specific data view).

In our example development client, we utilize transaction MM02 (Change Material) and a commercial propane / butane, for which no UoM group and conversion group assignment had been done before (We can always change the conversion group):

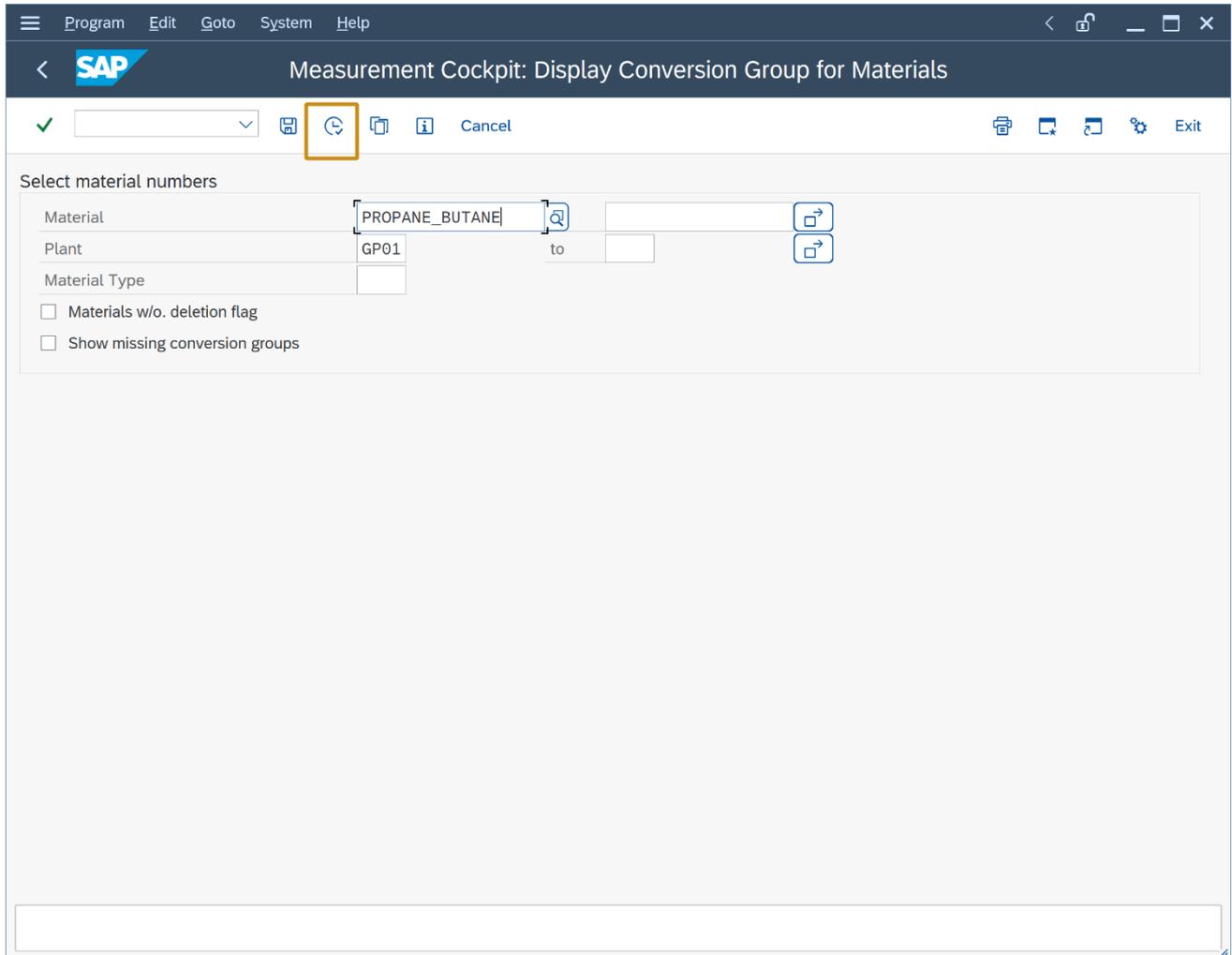


The screenshot shows the SAP MM02 'Change Material PROPANE (Finished products)' interface. The 'Oil-specific data' tab is active. The 'Conv. Group' field is highlighted with a yellow box and contains the value 'Z721'. The 'UoM Group' field contains 'BCP' and the 'Base Unit of Measure' field contains 'KG'. The 'Conv. Group' field description is 'LPG GPA 8217 DENSITY 15 °C, MQCI'. Other fields include 'Air Buoy. Fact.', 'Fix. density', 'Conv. coeff', 'Excise Duty Group', 'Oil content %', 'Cust. tariff nr', 'Transfer sign', and 'Material tax group'.

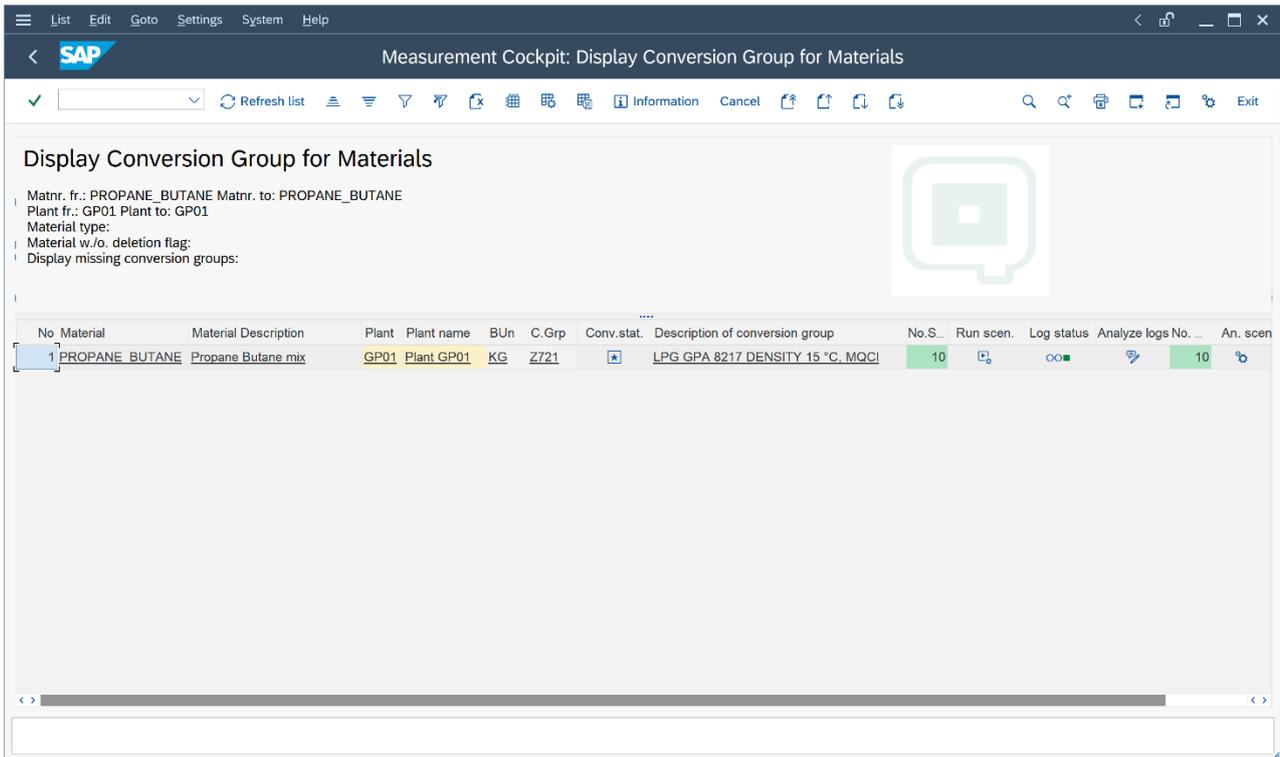
Let's go back to the Petroleum Measurement Cockpit, tab strip "QCI Products" and select "Conversion Group for Materials":



We enter e.g. the material code and plant and select "Execute" (F8):



From this central list, you can monitor the quantity conversion status for all materials in production, e.g. execute manual test scenario runs if errors have occurred, analyze the test scenario log status (typically the test scenarios should be executed via a periodic job in background) or perform a snapshot analysis:



The screenshot shows the SAP Measurement Cockpit interface for displaying conversion groups for materials. The title bar reads "Measurement Cockpit: Display Conversion Group for Materials". The main content area includes the following details:

- Matnr. fr.: PROPANE\_BUTANE Matnr. to: PROPANE\_BUTANE
- Plant fr.: GP01 Plant to: GP01
- Material type:
- Material w/o. deletion flag:
- Display missing conversion groups:

A table below displays the conversion group data:

| No. | Material       | Material Description | Plant | Plant name | BUn | C.Grp | Conv. stat. | Description of conversion group  | No.S... | Run scen. | Log status | Analyze logs No. ... | An. scen |
|-----|----------------|----------------------|-------|------------|-----|-------|-------------|----------------------------------|---------|-----------|------------|----------------------|----------|
| 1   | PROPANE_BUTANE | Propane Butane mix   | GP01  | Plant GP01 | KG  | Z721  |             | LPG GPA 8217 DENSITY 15 °C, MQCI | 10      |           |            | 10                   |          |

### 3. Summary

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The BCP Test Manual provides overview guidance for testing the QuantityWare BCP solution and obtaining a detailed overview on the BCP capabilities.

The eight (8) test cases described in this document provide a quick and goal-oriented way to define an LPG conversion group for production usage. In addition, the importance of automated test scenarios is emphasized which is, with respect to time, typically the major effort in an implementation project (see BCP PAIG documentation for further details). Test scenarios can and should be transported through your system landscape together with your conversion group configuration, once defined in your development client. If your organization attributes value to auditing and auditable processes, test scenarios must be created, distributed and used.

As noted in test case 02, one of the most challenging tasks is the correct assignment of a BCP template conversion group to your bulk materials. In addition, the test cases described in this document assume that no further configuration adjustments to a template conversion group is required, which is not always the case. E.g. many template conversion groups are equipped with configuration options for specific requirements - trained experts have to decide whether changes are required before moving a Z\*\*\* copy to production.



Thus, if you decide to purchase and implement QuantityWare BCP, careful inspection, validation and implementation of BCP [by certified BCP consultants](#) or staff is strongly recommended - to save time and effort, but also to ensure that the configuration of such a fundamental system area has been performed accurately and correctly.

## Legal Notices

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