

# OLF 117 Quiz.

WIF Workshop 06.06.2012

# Question 1

- Name at least 5 of the recommended subjects for well integrity fundamentals training.

# Question 2

- What data should a well handover contain?

# Question 3

- Does OLF117 require actual MD/TVDs depths to be shown in a Well Barrier Schematic.

# Question 4

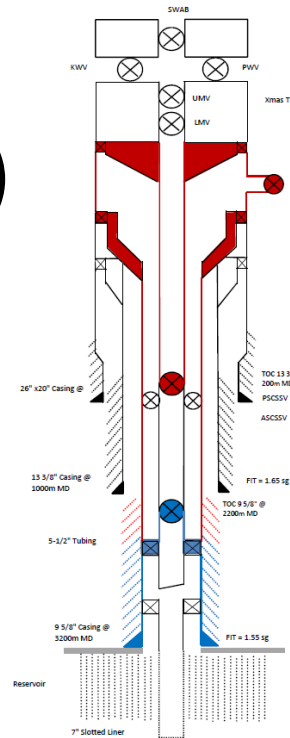
- What 4 colours does the Well Integrity Well Categorization use?

# Question 5

- What is the main principle behind each colour?

# Question 6

- What colour is this well?  
(see last page of handout)



Well Information	Example Field	Completed Date	31.12.2000
Installation/Field	Example Field	Completed Date	31.12.2000
Well no.	X-250	Design Pressure (bar)	241
Well type	Producer	Maximum THP (bar)	241
Well status	Temporary Abandoned	Maximum A-Ann. CHP (bar)	200
Revision no.	0	Maximum B-Ann. CHP (bar)	30
Prepared Date	01.07.2010	Maximum C-Ann. CHP (bar)	0
Prepared By	ABC	Max Production Rate (bbbl/d)	20000
Verified/Approved	XYZ		
Well Barrier Elements	Verification of Barrier Elements	Monitoring of barrier elements	
<b>PRIMARY</b>			
Formation / Casing Shoe	FIT 1.60 sg EMW with 1.35 sg fluid Date: XX.XX.2005	N/A After initial verification	
9 5/8" Production Casing Cement	FIT 1.60 sg EMW with 1.35 sg fluid Date: XX.XX.2005	N/A After initial verification	
9 5/8" Production Casing	PT: 241 bar with 1.52 sg fluid Date: XX.XX.2005	N/A After initial verification	
Production Packer	PT: 241 bar with 1.30 sg fluid Date: XXX.XX.2005	Monitoring of annulus pressure between tubing and 9-5/8" casing	
Production Tubing	PT: 241 bar with 1.30 sg fluid Date: XX.XX.2005	Monitoring of annulus pressure between tubing and 9-5/8" casing	
Bridge Plug	Bridge plug set at 2000m MDRT (1900m TVD) PT: 241 bar with 1.035G Date: 15.12.2009	Monitoring of annulus pressure between tubing and 9-5/8" casing	
<b>SECONDARY</b>			
Formation / Casing Shoe	FIT 1.60 sg EMW with 1.35 sg fluid Date: XX.XX.2005	N/A After initial verification	
9 5/8" Production Casing Cement	FIT 1.60 sg EMW with 1.35 sg fluid Date: XX.XX.2005	N/A After initial verification	
9 5/8" Production Casing	PT: 241 bar with 1.52 sg fluid Date: XX.XX.2005	N/A After initial verification	
9 5/8" Casing hanger with Seal Assembly	PT: 245 bar with 1.30 sg fluid Date: XX.XX.2005	Pressure Monitoring of 9-5/8" by 13-3/8" Annulus	
Wellhead/A-Annulus valve(s)	PT: 252 bar with 1.48 sg fluid Date: XXX.XX.2000	Pressure Monitoring of 9-5/8" by 13-3/8" Annulus	
Tubing Hanger with Seals	PT: 245 bar with 1.30 sg fluid Date: XX.XX.2000	Pressure Monitoring of 9-5/8" by 13-3/8" Annulus	
SCSSV	Inflow tested to 200 bar Date: XX.XX.2000	Pressure Monitoring of 9-5/8" by 13-3/8" Annulus	
<b>Notes</b>			
1. Well Temporary Abandoned on 15.12.2005 with 3.0" Baker Plug			
2. Last Measured BHP of 182bar at 2700m MDRT (2050m TVD)			
3. KII weight fluid in Tubing			
4. KII weight fluid in casing			
5. TAC test on 04.02.2007, No TAC Detected, 57 Bar Differential			
UMV, SWAB, KVV and PWV also closed.			

# Question 7

- Can a well with Sustained Casing Pressure (SCP) fall into the green category?



# Question 8

- What would a well with confirmed uncontrolled crossflow, with no potential of breach to surface, be categorized as?

# Question 9

- A well with recordable and reportable uncontrolled leak to surface should fall within the what Category?

# Question 10

- Can a well with a tubing string leak above the DHSV fall in the green category?

# Question 11

- State the 5 elements of a Well Integrity Management System, as recommended in OLF117.

# Question 12

- What does OLF117 Chapter 5 recommend to do if you have common Well Barrier Elements?

# Question 13

- What is the definition of Sustained Casing Pressure (SCP) according to OLF117?

# Question 14

- Provided you have Sustained Casing Pressure (SCP) in a well, what evaluation should be undertaken, according to OLF117?

# Answers on the Next Page



# Question 1

- Name at least 5 of the recommended subjects for well integrity fundamentals training.
  - 1. Roles and Responsibilities for Well Integrity
  - 2. Basic Wellbore Physics
  - 3. Basic Well Construction with Emphasis on Barriers
  - 4. Basic Well Control Requirements
  - 5. Well Integrity Hazards
  - 6. Annulus Bleed-Down
  - 7. Wellhead Maintenance
  - 8. Handover of Wells
  - 9. Documentation

# Question 2

- What data should a well handover contain?
  - Well Schematic / Well Barrier Schematic
  - Wellhead data with schematic
  - Xmas tree data with schematic
  - Casing program (depths, sizes)
  - Casing and tubing data, including test pressures
  - Cement data
  - Fluid status, tubing and all annuli
  - Wellhead pressure tests
  - Tree pressure tests
  - Completion component tests
  - Perforating details
  - Equipment details such as identification or serial numbers
  - Valve Status
  - Pressure/Fluid Status

# Question 3

- Does OLF117 require actual MD/TVDs depths to be shown in a Well Barrier Schematic.
  - No, depths only need to be shown *relatively* correct according to each barrier element. p16.

# Question 4

- What 4 colours does the Well Integrity Well Categorization use?
  - Green
  - Yellow
  - Orange
  - Red

# Question 5

- What is the main principle behind each colour?

The principles and colour designations for the different categories are as follows:

Category	Principle
Red	One barrier failure and the other is degraded/not verified, or leak to surface
Orange	One barrier failure and the other is intact, or a single failure may lead to leak to surface
Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue

Table 0-1: Overview of category principles

# Question 6

- What colour is this well?
  - Green

# Question 7

- Can a well with Sustained Casing Pressure (SCP) fall into the green category?
  - A well with **sustained casing pressure** can fall within the Green category: if there are no leaks through both established primary and secondary barriers; no hydrocarbons in the annuli (unless intentionally placed there); annuli pressures are below the defined pressure limits; and, the leak rate into the annuli is within acceptance criteria.

# Question 8

- What would a well with confirmed uncontrolled crossflow, with no potential of breach to surface, be categorized as?
  - Orange



# Question 9

- A well with recordable and reportable uncontrolled leak to surface should fall within the what Category?
  - Red

# Question 10

- Can a well with a tubing string leak above the DHSV fall in the green category?
  - A well with a completion string leak above the DHSV can fall within the Green category if the tubing above the DHSV is not a part of the barrier envelope and the leak is not effecting or leading to degradation of any WBE. Additional mitigating measures may also be required (e.g. increased test frequency).

# Question 11

- State the 5 elements of a Well Integrity Management System, as recommended in OLF117.
  - Organisation
  - Design
  - Operational Procedures
  - Data System
  - Analysis

# Question 12

- What does OLF117 Chapter 5 recommend to do if you have common Well Barrier Elements?
  - If common elements exist, a risk analysis shall be performed and risk reducing/mitigation measures applied to reduce the risk ALARP.

From 5.2.2

# Question 13

- What is the definition of Sustained Casing Pressure (SCP) according to OLF117?
  - Sustained casing pressure (SCP) is defined as pressure in any well annulus that is measurable at the wellhead and rebuilds when bled down, not caused solely by temperature fluctuations or imposed by the operator.

# Question 14

- Provided you have Sustained Casing Pressure (SCP) in a well, what evaluations should be undertaken, according to OLF117?
  - 4.2.1 Evaluation of source, mechanism and location
  - 4.2.2 Leak rate evaluation
  - 4.2.3 Annulus pressure evaluation
  - 4.2.4 Hydrocarbon gas volume and mass evaluation
  - 4.2.5 Escalation potential evaluation