IOGP Lessons Learned

We monitor IOGP's 'Well Control Incident Lesson Sharing' which is a regular email that alerts the industry to recent incidents with the hope of sharing knowledge and preventing future well control incidents.

IOGP shared Well Control Incident Lesson 21-5 *New technologies (e.g. MPD) & human factors vs. well control basics* on 1 June 2021. This lesson learned relates to the potential risks when introducing new technology.

In this lesson, the well was successfully shut in but ineffective communication and lack of understanding of new technology resulted in a large influx. The following investigation showed problems relating to training and procedures associated with new types of technology.

The IWCF team have created a short explanation about how this lesson relates back to our Drilling Well Control and Well Intervention Pressure Control syllabi. Click here to view it on our website.

There has been several well control incidents similar to the one highlighted above. Due to this, in June 2021, IOGP released their info sheet '*Managing the introduction of new technology in well operations*'. It includes important considerations when introducing new technology, including:

- risk assessment
- developing a risk response plan

Appendix A of IOGP's info sheet contains a detailed list of 30 new oilfield technologies and suggests possible mitigations. You can download the info sheet here.

You can find this lesson and previous examples of IOGP's 'lessons shared' on the IWCF website.

Instructor Focus

This section of the newsletter contains information that may be relevant for instructors and their training material. If you have questions relating to the below information, please contact us.

Drilling Well Control

In recent months, our candidate review process has highlighted syllabus areas that candidates may need more support in.

Syllabus code and description	***Suggested areas for instructor focus***
DR-SF-EQP-05.02.02 **Factors to be considered during an inflow test.**	Feedback suggests candidates could benefit from: - an added focus on the principles of inflow testing - the procedures used for inflow testing, and - how to interpret test results. From feedback, we recommend that instructors clearly explain how to identify the difference between a leaking well barrier and thermal expansion from a given pressure profile.
DR-SF-PNP-11.02.02 **The importance of a successful cementing job and the risk of primary barrier failure**.	Feedback suggests that candidates require a better understanding of the immediate and long-term risks to well integrity resulting from incorrect casing placement and poorly performed cements jobs. Short-term issues can relate to insufficient kick tolerance for subsequent drilling and potential for loss of well control during installation of some designs of casing head.

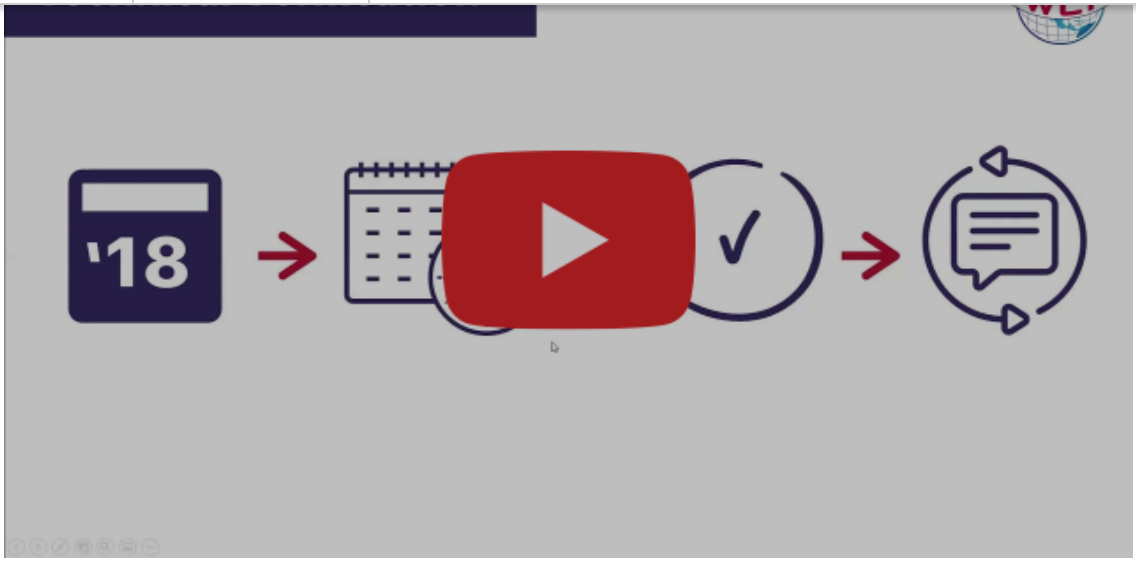
	relating to well abandonment and degradation of casing over time. The impact of poor cement jobs can result in formation fluid migration across barriers. This can impact both short and long-term well integrity. For given scenarios candidates should be able identify and differentiate between short and long-term risks to well integrity.
DR-SF-PNP-10.03.06 **Maintaining constant BHP when changing pump speed.**	Feedback indicates that from a given scenario, some candidates are unable to demonstrate how to change pump speed while maintaining constant bottomhole pressure (BHP). During a standard well kill operation, BHP should always be kept constant. When increasing the pump speed, candidates should understand that an increase in the casing pressure means BHP has also increased. The BHP will decrease when there is a decrease in casing pressure when pump speed is reduced. We recommend instructors make it clear to candidates the relationship between casing pressure and BHP when changing pump speed.

Well Intervention Pressure Control

IWCF are currently in the final stages of preparing to release the new WIPC question bank.

We plan to gradually introduce new content into the question bank while retiring old questions. IWCF will communicate with all WIPC instructors before every phase of release to ensure they are supported and feel prepared.

We are also planning other ways to support centres and instructors during the transition. This will include additional guidance documentation and resources. The first WIPC guidance document and video was recently sent out to all WIPC instructors. The video can be viewed below.



This WIPC guidance video was created to discuss the main syllabus changes, their importance and relevance to improving the overall WIPC programme.

You can still join our WIPC instructor group on LinkedIn. The aim of this group is to collaborate and share knowledge, learnings and information with fellow instructors. We will post all new resources into this group so you'll be notified instantly of any updates.

Compliance Update

This section of the instructor and assessor newsletter focuses on common findings from audits carried out by the Compliance Team. This edition focuses on well design.

During an audit, the auditor reviews well designs programmed on the centre's simulator against the requirements of the IWCF Well Design Rules (AC-0049) and the Practical Assessor Handbook (AC-0018). The auditor also reviews kill sheets from previous candidate records, as these give valuable information about wells used for assessments.

The following issues are commonly seen during the audit process.

- Incorrect number of well designs available
- Well designs not meeting the requirements of IWCF Well Design Rules (AC-0049).

Specifically:

- Cased hole depth greater than 70% of measured depth (MD). The length of the cased hole section must not be more than 70% of the measured depth of the well.

- No surface line volume given, or the volume is too low. The minimum value should be 10 bbl.
- Fracture gradient value is higher than the leak off gradient. The fracture should be set to occur at the leak off/maximum allowable annular surface pressure (MAASP) value. This keeps the assessment process simple when dealing with instant failures.
- Safety margin between MAASP and shut-in casing pressure (SICP) is either too high or too low. The safety margin should be between 500-700 psi for a 10 bbl influx. For example, MAASP:1250psi, SICP: 700psi with a 10 bbl influx.
- Various settings are inactive. For example, secondary kick, casing shoe fracture and delay between casing and drill pipe gauge should all be active.

Requirements

- Practical Assessor Handbook (AC-0018) requires three separate wells for assessment and resit purposes that meet the well design rules. These must not be used for training.
- The Practical Assessor Handbook also requires one separate well available for training and practice purposes. This does not need to meet the well design rules.
- Virtual simulators must have six wells available for assessment purposes and one for training.

The IWCF Well Design Rules (AC-0049) explains the requirements for assessment wells. This can be downloaded from the Members Login Area.

Examples of good practice

The following points highlight areas where centres have clear and effective methods of managing the well designs on simulators.

- The wells clearly named to identify purpose, for example assessment or training.
- Additional wells are saved in a shut-in condition. This assists with instant failures or simulator problems.
- Centres recording all well data on a separate spreadsheet.
- Assessors having an in-depth knowledge of the IWCF Well Design Rules (AC-0049)
- Programming identical wells into separate simulators (where centres have more than one simulator).

Please contact us if you have any feedback, queries or suggestions for future editions!