



Queensland petroleum well regulation three year plan FY2020/21 to FY2022/23

Petroleum and Gas Inspectorate

1 July 2020 | Version 1

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Executive Summary

This document outlines the three year plan for the regulation of petroleum wells in Queensland. It details the focus of the work to be conducted by the Petroleum and Gas Inspectorate on all activities associated with petroleum wells over the next 3 financial years (FY2020/21 to FY2022/2023).

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1.0 Introduction

The following is a three year plan for the regulation of petroleum wells in Queensland. It outlines the focus of the work to be conducted by the Petroleum and Gas Inspectorate (PGI) on all activities associated with petroleum wells over the next 3 financial years (FY2020/21 to FY2022/2023). It incorporates all relevant stages of a well life cycle as depicted in Figure 1. The scope of the physical equipment covered is all downhole components of the well, all equipment on the well lease and any machinery used to construct or maintain the well (e.g. drill rig, workover rig, hydraulic fracturing spread, coil tubing unit). There is some cross over with facilities and pipeline regulation for equipment on the well lease. The plan covers all petroleum activities conducted in Queensland including the Surat Basin, Bowen Basin, Cooper/Eromanga Basin and Galilee Basin.

There are two main components to the regulatory work conducted by the PGI. These components are technical regulation and safety regulation. These are described below:

- *Technical regulation* entails ensuring compliance for well design, construction, operation and abandonment is met. The relevant legislation and technical standards provide the requirements for well technical regulation. In Queensland the pertinent sections of legislation are:
 - *Petroleum and Gas (Safety) Regulation 2018* especially sections 27, 35 and 36
 - *Construction and abandonment code of practice*
 - *Leak management code of practice*
- *Safety and health regulation* is comprised of ensuring work is conducted safely and ensuring the health of workers and the community. The key relevant reference is the *Petroleum and Gas Act 2004* section 674 **Requirement to have safety management system**.

As per the Resource Safety and Health compliance policy the PGI are a risk based regulator. This means the PGI apply their resources to the areas of greatest risk within the industry, and to the activities that will achieve the greatest safety and health outcomes.

2.0 PGI three year plan

The aim of the three year plan is to ensure that all relevant activities have appropriate regulation through proactive activities, with more focus on higher risk activities. Based on the well life cycle stages in Figure 1, a table of the relevant activities to be regulated was created. This is presented in Table 1. These activities have been ranked based on a risk rating and this was used to create a plan that is presented below. This plan takes into consideration the work that has been conducted by the Petroleum and Gas Inspectorate over the last 2 years in order to ensure that over a multi-year period the larger number of activities are adequately examined in proactive activities. If during operations specific issues emerge over the next three years the targeted activities may be adjusted. The plan will be reviewed prior to the start of each financial year as part of the annual Compliance Assurance Program. The audit numbers provided in the plan below are only a guide and firm numbers will be selected as part of the annual Compliance Assurance Program.

2.1 Summary

Proactive petroleum well regulation work conducted by the Petroleum and Gas Inspectorate over the last 2 years has been:

- 6 Well Integrity Management System (WIMS) audits and a portion of inspections conducted (approximately 8% in FY2019/20) requested well integrity records
- 12 well abandonment audits
- Activity focussed inspections (AFI) inspections including:
 - Type B
 - Well start up
- 2 qualitative silica level monitoring during hydraulic fracturing audits
- 4 qualitative rig health assessments
- 2 cementing audits – focusing on pressure and chemical management
- 3 inspections on silica dust monitoring during hydraulic fracturing
- activity focussed inspections – rigs
- electrical inspections – rigs
- working at heights inspections - rigs

Details for this work is discussed in other documents.

2.1.1 FY2020/21 outline

The planned work for FY2020/21 is:

Audits

- 1 WIMS audit
- 4 abandonment audits
- 2 drilling/completion component audits
- 3 audits of hydraulic fracturing activities
- 8 audits of leak management systems (In conjunction with Pipelines and Facilities category)
- 2 noise management audits (quantitative) – hydraulic fracturing/ cementing
- 2 fatigue management (qualitative) audits – cementing/wireline
- 3 critical control (pressure) audits – cementing & hydraulic fracturing
- 2 tenure operator SMS (Safety Management System) for wellsite operations
- 1 Iron roughneck controls audit

Inspections focused on:

- Cementing procedures/ chemical management
- Management of change (MOC) – drilling, wireline, hydraulic fracturing, cementing

- Supervision/competency – drilling, wireline, hydraulic fracturing, cementing
- Risk Management- drilling, wireline, hydraulic fracturing, cementing
- Leak management
- Well abandonment
- Hazardous area requirements
- Well integrity
- Downhole gauge connections and installation. Work is being done in conjunction with the ESO (Electrical Safety Office).
- Unannounced and limited notice

2.1.2 FY2021/22 outline

The planned work for FY2021/22 is:

Audits

- 1 WIMS audit
- 2 abandonment audits
- 3 audits of hydraulic fracturing activities
- 2 audits of leak management systems
- 3 drilling/completion component audits
- 2 SIMOPS (Simultaneous Operations) audits on drilling/hydraulic fracturing sites
- 2 logging/wireline SMS audits
- 2 noise management audits- drilling
- 2 critical control (pressure) audits
- 2 tenure operator SMS for wellsite operations
- 2 fatigue management – drilling/hydraulic fracturing

Inspections focused on:

- MOC – drilling, wireline, hydraulic fracturing, cementing
- Running casing inspections – casing technical specs/running procedures
- Cementing procedures/ chemical management
- Bacteria management – drilling/workover/wells
- Leak management
- Well abandonment
- Well integrity
- Unannounced and limited notice

2.1.3 FY2022/23

The planned work for FY2022/23 is:

Audits

- 1 WIMS audit
- 2 abandonment audits
- 2 audits of hydraulic fracturing activities
- 2 audits of leak management systems
- 8 drilling/completion component audits
- 1 bacteria management
- 2 tenure operator SMS for wellsite operations
- 2 electrical audits – hazardous zones, earthing, electrical work

Inspections focused on:

- Running casing inspections – casing technical specs/running procedures
- Bacteria management – drilling/workover/wells
- Leak management
- Well abandonment
- Well integrity
- Respirable dust/Silica
- Noise management
- Critical controls
- SIMOPS
- Unannounced and limited notice

Note: the plan is subject to change based on operational priorities and other factors

Figure 1: Petroleum well life cycle

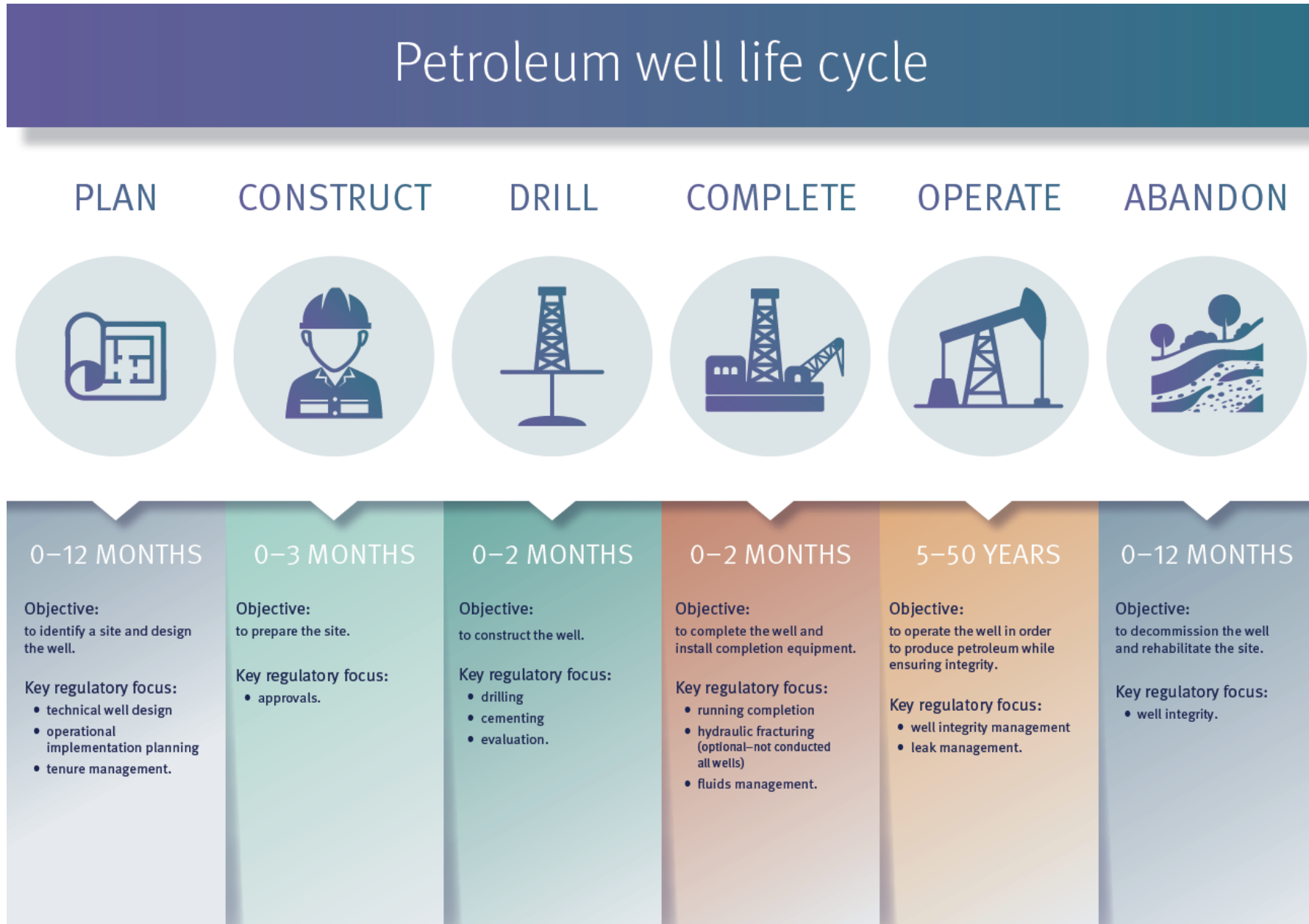


Table 1: Regulatory activities

Technical Regulation		
Stage	Activity	Risk ranking
Plan and design	Technical	High
Plan and design	Operational	Medium
Plan and design	Tenure management	N/A
Construct	Doesn't fall under the P&G Act	N/A
Drill	Program	High
Drill	Drilling	High
Drill	Logging/wireline	Low
Drill	Running casing - casing technical specs - running procedues	Medium
Drill	Cementing	High
Evaluation	Cement evaluation	Medium/High
Complete	Planning	High
Complete	Complete	High
Complete	Milling	Low
Complete	Cleaning out	Low
Complete	Perforating	Low
Complete	Hydraulic fracture - operational setup and implementation - technical implementation - technical design	High
Complete	Running completion	Low
Complete	Bacteria management	Medium
Operate	Well integrity management	High
Operate	Leak management	High
Operate	Bacteria management	Medium/High
Operate	Chemical management	Medium/High
Operate	Fluids management	Medium/High
Operate	Solids management	Medium
Suspension		Medium
Abandon		High

Safety Regulation		
Stage	Activity	Risk ranking
Construct	Doesn't fall under the P&G Act	N/A
Drill	Drilling - Noise - Chemical management - Lighting	High High Medium/High Low
Drill	Logging/wireline	Medium
Drill	Running casing - casing technical specs - running procedues	High
Drill	Cementing	High
Complete	Complete - Noise - Chemical management - Lighting	High High Medium/High Low
Complete	Milling	Low
Complete	Cleaning out	Low
Complete	Perforating	Combined
Complete	Hydraulic fracture - operational setup and implementation - technical implementation - technical design	High
Complete	Running completion	High
Complete	Bacteria management	Medium/high
Drill and Complete	SIMOPS	High
Operate	Well integrity management	High
Operate	Leak management	High
Operate	Bacteria management	Medium/high
Operate	Chemical management	Medium/high
Operate	Fluids management	Medium/high
Operate	Solids management	Low
Suspension		High
Abandon		High

Table 1: Abbreviations and terminology

Abbreviation/Term	Definition
Abandonment or “plugged and abandoned”	The process through which a petroleum well is decommissioned
AFI	Activity focussed inspection
Construction and abandonment code	The document called ‘Code of practice for the construction and abandonment of petroleum wells and associated bores in Queensland’, published on a Queensland Government website and current version 2 dated 16 December 2019
ESO	Electrical safety office
Leak management code	The document called ‘Code of practice for leak management, detection and reporting for petroleum operating plant’, published on a Queensland Government website and current version 4 dated 1 September 2018
MOC	Management of change
PGI	Petroleum and Gas Inspectorate
SIMOPS	Simultaneous operations
SMS	Safety management system
WIMS	Well integrity management system