Well Integrity for Life

The Well integrity discipline began evolving in the 1990’s as regulatory agencies identified concerns and began raising awareness. It was determined that a robust well integrity process begins with well design and carries through to abandonment, i.e. cradle to grave. Due to the life cycle span, well integrity involves several stakeholders including location construction, well construction, completion, production, workovers, well surveillance/interventions, management and in some organizations, a well integrity department.

Depending on the hydrocarbon composition, well complexity, construction era, regulatory oversight, and company approach, there is considerable variance around the world in how well integrity management systems (WIMS) have been implemented.

A developed WIMS can provide significant benefits such as:
- Improve HS&E
- Extend well life and production
- Reduce workover and intervention costs
- Enhance risk management and engineering productivity
- Protect a company’s right to operate, reputation/brand, and assets
- Improve documentation quality & cross organizational communication
- Provide assurance that production is not halted due neglected well integrity issues
The current environment has impacted operating budgets and requires prioritization of critical value adding activities. A developed well integrity assurance can significantly enhance operations and reduced the likelihood and severity of unplanned events. To meet the varying needs of our clients, Wild Well Control has developed several well integrity solutions that allow clients to select items that target specific needs.

**Tailored for Your Well**

**Gap assessment:** For many, the first step is a well integrity gap assessment to develop a clear path forward with targeted programs that address critical issues early. The Well Integrity Gap Assessment tool will review the current system with applicable industry standards and identified industry best practices. Additionally, it will provide insight into other industry standards such as ISO/TS 16530-2, NORSOK D-10, DNVGL- RP 002, UK Oil & Gas, and API. This allows each client the opportunity to identify and determine if other practices should be adopted in their area of operations.

After reviewing the system’s robustness, the level of implementation can be reviewed for coverage, compliance, effectiveness, understanding, and personnel competence.

**Engineering:** The Well Integrity Specialist and engineers can then develop / strengthen specific targeted areas to bolster the Well Integrity Program. This activity may include investigations into:

- Well integrity risk assessments
- Basis of Design (BoD)
- Barrier element and envelope schematics
- Well operating limits and MAASP
- Annular casing pressure management
- Well integrity system development
- Well integrity training
- Plume & dispersion models with WWC
- Advanced Engineering
- Technical Support for Surveillance, WO, HWO and P&A programs

**Surface Equipment Reviews:** Wellhead surveys should be conducted periodically as part of the ongoing well integrity program, when onboarding wells from M&A activity, and after an event where damage may have occurred. A typical wellhead survey includes:

- Inspection of the wellhead
- Annular pressure
- Schematic
- Photos
- Identification & ranking of concerns
- Optional – Seal Pressure Tests
- Optional – 3rd party radiography or ultrasound

**Wellhead surveys provide the operator with data to:**

- Understand to quantify their risks and potential liabilities
- Categorize the status of their wells
- Develop and prioritize additional surface intervention
- Update schematics to validate well records

**Surface Intervention:** An intervention program can be prepared focusing on prioritization of wells based on safety, production contribution, criticality, etc. This work may include activity such as valve drilling, hot taps, freeze jobs, re-heading, etc. In the event that zonal isolation is required to address annular casing pressure, resin applications may be required.

**Surveillance:** Review by specialist of diagnostics such as bond logs, corrosion logs and casing inspection logs using the client’s existing cased-hole logging contract; creation of forward plan through collaboration between client and specialist; specialist may also assist in development of well diagnostics and repair procedures for annular corrosion.

**Subsurface Intervention:** After completing the surface interventions and surveillance activity, there will be well candidates that require further work either rig-less or with a rig (Workover or Hydraulic Workover). Technical support can be provided to help define and manage these projects.

For over 40 years, Wild Well Control and its subsidiaries have dealt with well integrity issues. We can review the well stock, identify and diagnose the problems, and help resolve the issues. Through the Technical Service approach, our Well Integrity Specialists will assist clients in evaluating their well integrity issues and develop a forward plan. The specific scope of work will be tailored to meet the client’s requirement for the field and can be delivered in phases to meet budgetary concerns.

For additional information, please contact: technicalservices@wildwell.com

+1.281.784.4700 // wildwell.com