Onshore Well Construction Interface Document

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1 Well Construction Interface Document (WCID) Information .................................................. 1
Introduction

The purpose of the well construction interface document (WCID) is to enhance the health and safety of the workers and protect the environment by facilitating communication between the lease operator and drilling contractor regarding well construction work (drilling, suspension, completion, testing, workover, and abandonment). The WCID should emphasize barrier plans and well control practices by integrating the drilling contractor’s operating guidelines with the lease operator’s well plan.

The WCID is intended to align the well construction processes by:

a) tying the safety critical well construction components/processes in the well plan documents to the drilling contractor’s safe work practices;

b) identifying risks associated with the proposed well work;

c) identifying roles/responsibilities and communication protocols between the operator and contractor to facilitate the safe execution of proposed well work;

d) communicating essential information about the lease operator’s well construction execution plans to the drilling contractor;

e) addressing areas of the safety management process that may include management of change, well control, lifting equipment, dropped objects, permit to work, and incident database guidelines;

f) addressing the well construction process within the context of the proposed well work—drilling, suspension, completion, testing, workover, and abandonment.

Specific focus areas include:

— supplements of traditional drilling contractor bridging information that aligns safety systems and ensures personal safety during the well execution;

— the design basis to characterize the specific well construction environment;

— barrier and casing design, including:
  1) identification of barrier requirements,
  2) establishment of barriers,
  3) testing and verification of barriers,
  4) operational measures taken to maintain barrier integrity (e.g. casing wear monitoring);

— overview of drilling and/or completions plan;

— management of change practices;

— use of stop work authority.
Onshore Well Construction Interface Document

1 Scope

1.1 This document provides guidance on information that is to be shared regarding well construction and rig-specific operating guidelines. It is intended to align the lease operator’s and drilling contractor’s safety and environmental management systems (SEMS).

1.2 The well construction interface document (WCID) is used to formalize the exchange of information as shown in Figure 1.

![Diagram of well construction interface document](image)

**Figure 1—Well Construction Interface Document (WCID) Information**

NOTE The WCID is not intended to duplicate or supersede existing bridging documents developed by the lease operator and the drilling contractor.

1.3 The WCID is a bridging document that includes the elements identified in API 75L within the context of well construction activities. It is understood that work processes vary between operators and contractors, which are addressed in the development of the WCID document.

1.4 The intent of the bridging document between the lease operator’s and drilling contractor’s SEMS is to provide:

a) an outline of responsibilities for the lease operator’s and drilling contractor’s personnel;

b) acknowledgement that management of change (MOC) and risk assessment processes should be used:
   — during well construction activities,
— to address personnel or organizational changes to ensure personnel skill level is sufficient for the applicable position;

c) a vehicle for the drilling contractor to be involved when operational changes or conditions are identified that could require a well activity risk assessment (e.g. change from overbalanced to underbalanced drilling or a change that affects a well barrier);

d) a method to align all parties with regard to drilling HSE standards and applicable regulatory requirements;

e) a method of communicating stop work authority.

2 Normative References

The following referenced document is indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Bulletin 75L, Guidance Document for the Development of a Safety and Environmental Management System for Onshore Oil and Natural Gas Production Operations and Associated Activities

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1 barrier
Component or practice that contributes to total system reliability by preventing formation fluid or gas flow.

3.1.3 drilling contractor
The company under contract with the lease operator to provide a rig, and associated rig personnel, needed to perform the well construction activities.

NOTE In some instances the rig may be provided by the lease operator; however, it is normally operated by a drilling contractor.

3.1.5 hazard
A source of potential harm.

NOTE Harm includes ill health and injury; damage to property, equipment, products or the environment; production losses, or increased liabilities.

3.1.6 hazard analysis
The application of one or more methodologies that aid in identifying and evaluating hazards.
3.1.7 lease operator
The individual, partnership, firm, or corporation having control or management of operations on the leased area or a portion thereof. The lease operator may be a lessee, designated agent of the lessee(s), or holder of operating rights under an approved operating agreement.

3.1.8 management of change
MOC
A change control process that is implemented to safely manage variation in people, organization, practices, procedure, equipment, operations, or materials in the approved plan or guideline.

NOTE A MOC process ensures that changes (and the resulting risks, if any) are reviewed, evaluated, approved, and documented by the responsible and accountable parties (prior to initiating or continuing the operation).

3.1.9 mitigation
To establish measures that limit the negative impact of undesirable events.

3.1.10 office-based personnel
Personnel who are organized and responsible to support rig operations but whose primary job location is not at the wellsite.

3.1.11 prevention
To establish measures that eliminate/reduce the probability of occurrence of undesired events.

3.1.12 rig-specific operating guidelines
Operating manuals and procedures that comprise part of the drilling contractor’s SEMS.

NOTE This can include equipment constraints (e.g. hook load), operating limits (e.g. combined loading) and well control practices (e.g. authority to shut-in the well).

3.1.13 risk
Effect of uncertainty on objectives.

<ISO 31000>

NOTE 1 An effect is a deviation from the expected—positive and/or negative.
NOTE 2 Objectives can have different aspects (such as health, safety, and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, and process).
NOTE 3 Risk is often characterized by reference to potential events and consequences, or a combination.
NOTE 4 Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated likelihood of occurrence.

3.1.14 risk management
Coordinated activities to direct and control an organization with regard to risk.
3.1.15 safety and environmental management system
SEMS
Structured set of interdependent doctrines, documents, and principles that are intended to ensure that the activities of an organization are directed, planned, and conducted safely as described in API 75L.

3.1.16 simultaneous operations
SIMOPS
Two or more independent operations (such as drilling, workover, wireline, construction, production operations, etc.) conducted under common operational control in which the activities of any one operation may impact the safety of personnel, equipment and/or the environment of the other(s).

NOTE Failure to coordinate can result in the potential clash of activities that can cause an undesired event or set of circumstances.

3.1.17 stop work authority
SWA
A program that provides all operator and contractor/service personnel, directly or indirectly involved with the operation, the responsibility and authority to cease work until a review of the activity can be concluded, and it has been found safe to resume such activity.

3.1.18 third-party services
Essential services other than those provided by the lease operator or drilling contractor that are required to execute well construction.

3.1.20 well construction
A set of operations to be directed by the lease operator employing the drilling contractor and third-party services equipment and personnel.

3.1.21 well construction interface document
WCID
Bridging document between the lease operator’s and drilling contractor’s SEMS.

3.1.22 well construction interface document–well plan
WCID-well plan
Summary of the well plan from lease operator to drilling contractor.

3.1.23 well plan
Lease operator’s documentation of the planned well construction activities.

3.1.24 wellsite-based personnel
Personnel who are organized and responsible for supporting well construction activities at the wellsite.

3.2 Acronyms and Abbreviations

BOP blowout preventer
4 Drilling Contractor’s and Lease Operator’s SEMS Interface

4.1 General

The following sections identify key elements to be addressed in order to develop alignment between the lease operator and drilling contractor programs. This should be done by demonstrating agreement or by resolving differences in their respective programs.

4.2 Management Principles and Organizational Structures

The interfaces between the drilling contractor’s and the lease operator’s SEMS should be agreed upon by both parties. The roles and responsibilities of the supervisory personnel at the wellsite and appropriate personnel as agreed between the lease operator and drilling contractor. For simultaneous operations, this should include all parties involved (i.e. operator, contractor, and third-party services), and an individual with the authority to oversee and coordinate activities on all involved parties shall be identified.

The interface of lease operator and drilling contractor principles and organizational structures should be developed in accordance with API 75L to promote safety and environmental protection. Specific management expectations should be defined. A WCID should not be a republication of each company’s SEMS; instead, it should be the interface between the two safety management systems intended to address well-specific issues and identify whose SEMS elements govern which activities. The intention of this document is to provide a mechanism for the lease operator and the drilling contractor to demonstrate agreement or resolve differences between each company’s SEMS elements.

The WCID should include the drilling contractor’s rig-specific operating guidelines and its site-specific assessment of critical well activities (e.g. BOP operations, shut-in procedures, etc.).

The drilling contractor and lease operator should specify the position(s) responsible for the safe and efficient operation of the rig in accordance with applicable regulations, including emergency situations. This includes the establishment of procedures for both internal and external communications of safety and environmental information. The description or link should include the following:

a) drilling contractor’s and lease operator’s key office-based personnel,

b) drilling contractor’s and lease operator’s key wellsite-based personnel.

The WCID should establish the exchange and alignment of safety and environmental management information prior to commencing work. Refer to Section 5.
4.3 Safety and Environmental Information

All of the required safety and environmental information for the rig and third-party equipment shall be identified and meet the requirements for the well to be drilled.

The rig-specific operating guidelines provide a basis for implementing SEMS elements. Rig description and supporting information can include mudflow management equipment (i.e. mud gas separators, diverter system, etc.). Equipment required to maintain and monitor barriers can include alarm systems, [gas detectors, pit volume totalizer (PVT), flow meters,] and well control systems. Third-party equipment interfaces with the rig’s systems that may need to be addressed include water, rig air, and electrical power.

For simultaneous operations, the possibility that the functionality or operability of critical equipment or systems can be compromised should be considered.

4.4 Hazards Analyses

The areas of responsibility between the lease operator and drilling contractor shall be established for hazards analyses (risk management processes) for well construction and the verification of rig capacity and capability. The hazard analyses should include third-party equipment and procedures.

The lease operator and the drilling contractor should each have defined risk management processes. The following examples typically govern the processes.

a) For hazards analyses associated with the well plan or well construction, the lease operator’s risk management process applies. The drilling contractor is included in the process.

b) For hazards analyses associated with the rig operation and capability of the rig, the drilling contractor’s risk management process applies. The lease operator is included in the process.

c) For hazards analyses associated with simultaneous operations, the lease operator’s risk management process applies. The drilling contractor and third party services are included in the process.

d) For job safety analysis (JSA) at the operations/task level, the drilling contractor’s process applies in most cases.

4.5 Management of Change (MOC)

The responsibilities for initiating and leading MOC processes in common situations shall be established. The level of approvals required should be appropriate for the changes.

The responsibilities for the MOC process regarding changes to well design, equipment (including third party), procedures, personnel, materials, operating conditions, etc. are shown in the following.

a) Lease operator shall notify the drilling contractor of a change in well design/well plan. The lease operator MOC process applies, and the drilling contractor shall be consulted in the process and may participate in the associated hazard analysis.

   — Lease operator should involve the drilling contractor for changes to the well plan that require regulatory approval or internal lease operator approval.

   — The well plan may be amended and reissued, or alternatively, a MOC completed and issued.
— Lease operator’s representative shall be authorized at all times to take immediate actions necessary to make the well safe. However, the lease operator’s representative shall not be authorized to continue subsequent operations until a MOC is approved.

b) Drilling contractor shall notify the lease operator for changes associated with the operation and capability of the rig that affect execution of the well plan or have potential HSE consequences. The drilling contractor’s MOC process shall apply. The lease operator shall be consulted in the process and may participate in any associated hazard analysis.

c) Drilling contractor shall notify the lease operator and conversely, the lease operator shall notify the drilling contractor of change of material, organization, products, equipment, procedures, maintenance, or personnel that affect execution of the well plan or have potential HSE consequences. In these types of scenarios, the operator’s, the contractor’s, or both MOC processes may apply.

d) For changes associated with the well plan that involve third-party services, the drilling contractor or lease operator may initiate a MOC. Service providers may be included in the MOC process as applicable.

e) MOC procedures for simultaneous operations require special consideration and should be coordinated by the individual appointed by the lease holder to oversee and coordinate the combined operation. In these types of scenarios, the operator’s, the contractor’s, or both MOC processes may apply.

4.6 Operating Procedures

4.6.1 General

The purpose of this section is to identify, address, and resolve differences or gaps in operational philosophies and instructions between the lease operator and drilling contractor (and third parties, as applicable) such that operating instructions provided to the workforce are clear. Operating procedures for simultaneous operations require special consideration to account for the possible interaction of the facilities and their operations.

4.6.2 Well Control Procedures

A process shall be established to address how differences between lease operator and drilling contractor’s well control procedures and practices are to be managed.

The well control procedures to be used during well operations shall be identified. Any procedural modifications should be implemented prior to commencing operations. All agreed changes to existing procedures should be documented in a well control procedure bridging document.

EXAMPLE 1 During normal well operations, the drilling contractor’s well control procedures apply. The lease operator is included in the process.

EXAMPLE 2 In the event of emergency well control situations where people, rig, or the environment are at risk from an uncontrolled flow, the drilling contractor’s processes apply, and the lease operator is included in the process once personnel safety is assured.

EXAMPLE 3 When the well is shut-in, recovery procedures are to be mutually agreed on by the lease operator and drilling contractor.
4.6.3 Simultaneous Operations (SIMOPS)

Each company involved should evaluate the workplace hazards and risks and develop and implement specific components to mitigate identified risks.

Prior to commencing simultaneous operations, the responsible personnel shall meet with the involved parties to verify the aspects of the operation, confirm emergency procedures, and identify any constraints, limitations, or conflicting activities.

During simultaneous operations, responsible personnel should reevaluate the operations if conditions vary from the original scope of work.

4.6.4 Environmental and Occupational Safety and Health Considerations

A process shall be established to prevent environmental damage and personnel exposure to hazards.

Review and agree upon control measures, special hazards, housekeeping, and precautions to be taken.

Items to be addressed should include, but are not limited to the following:

a) lease operator and drilling contractor environmental management systems;

b) spill preparedness and response plans;

c) communicating areas of environmental concern;

d) regulatory requirements and reporting noncompliance; information shall be exchanged to allow the parties involved to understand their individual and collective responsibilities under the conditions of the lease, permits, and regulations that are applicable to the operation.

4.7 Safe Work Practices

The safe work practices within the WCID to be implemented by the lease operator and the drilling contractor shall be established.

The WCID should identify the safe work practices as agreed upon between the lease operator and the drilling contractor.

Examples of safe work practices include:

a) permit to work system;

b) third-party equipment acceptance procedures;

c) site-specific safety orientation;

d) site-specific emergency response plan.

4.8 Training

All personnel shall be trained to perform their specific job function to work safely and be aware of process safety and environmental considerations. Additionally, any specific training or qualifications required for the operating area or well program shall be established.
Key personnel for the drilling contractor, the lease operator, and their respective third-party services shall have the knowledge and expertise to meet the requirements of their position.

NOTE Training can include operating procedures (i.e. well control training), safe work practices, MOC procedures, and emergency response measures.

4.9 Assurance of Quality and Integrity of Critical Equipment

The lease operator and drilling contractors shall confirm that operating and maintenance procedures are in place on assets under their control to ensure integrity and performance of equipment used to prevent or mitigate uncontrolled release of materials that can cause environmental or safety consequences.

Preventative maintenance and quality control programs shall be established by the equipment owner or provider to ensure the integrity of critical equipment and systems as identified and mutually agreed upon by the lease operator and drilling contractor. Inspection findings concerning the integrity or performance of critical equipment shall be communicated to all relevant parties prior to commencing operations.

For simultaneous operations, preventative maintenance and quality control programs shall be established by the lease operator to maintain the integrity and performance of critical equipment and systems managed by the lease operators (e.g. pipelines crossing such locations).

4.10 Pre-startup Review

Planned rig operations should be discussed with wellsite-based personnel in connection with the drilling, completion, construction, or well servicing program prior to commencing operations.

NOTE For a drilling, completion, construction, or well service project the pre-startup review is analogous to a pre-spud meeting.

Potential hazards/risks and other operational uncertainties should be discussed prior to execution of the operation.

The lease operator should assess the severity of any outstanding issues and review potential hazard prevention and mitigation measures with the contractor before commencing operations.

4.11 Emergency Response

There shall be alignment between the lease operator and contractor for roles, responsibilities, and procedures in emergency situations.

A description or reference to the emergency response plans and procedures agreed to by the operator and contractor should be developed. These procedures should clearly identify specific roles and responsibilities, set training and drill schedules, include necessary contact information, and be readily accessed by all personnel. Procedures should also include lines of communication and appropriate notifications per applicable regulations.

Special consideration may be necessary for hazards analyses associated with the interaction of two or more locations during simultaneous operations. For example, harmonization, interconnection of alarms, etc.
Examples for emergency response can include the following:

a) emergency evacuation plan:
   - medical evacuation, and
   - fire response;

b) muster list;

c) security threat;

d) severe weather.

4.12 Investigation of Incidents

The incident investigation and analysis process to be used by the lease operator and the drilling contractor shall be implemented with clearly identified roles and responsibilities.

This process should be used for the investigation of an incident that put personnel safety at risk, caused environmental damage, or major sustained equipment damage. Identify the process by which incident investigations are to be conducted, documented, and findings distributed to appropriate personnel. For incidents that can impact other facilities or populated areas, the operator, contractor, or both should communicate the information/lessons learned to other operators, contractors, and third parties.

4.13 Audit of Safety and Environmental Management Program

Audit programs shall be established in accordance with API 75L. The audit program should evaluate if the program elements have been properly implemented and maintained.

4.14 Records and Documentation

A document control system shall be established to maintain records and documents in a manner sufficient to implement the management system and satisfy applicable regulations.

4.15 Stop Work Authority

A stop work authority (SWA) program shall be established and used by all personnel directly or indirectly involved with the operation.

The SWA shall be a “nonreprisal” program to empower personnel to freely express their concerns and interrupt operations perceived to be at risk. If both the lease operator and drilling contractor have a SWA program, a clear direction on which program is to be used shall be established.

The SWA shall provide all lease operator and drilling contractor/service personnel directly or indirectly involved with the operation the responsibility and authority to pause operations until the activity can be reviewed appropriately. This may include a management of change approval to resume activities after determination that the imminent risk or danger does not exist or no longer exists.
5  Well Plan Interface (WCID Plan)

5.1  General

5.1.1  The WCID should ensure that all well construction work is carried out in a manner that protects the safety and health of all workers as well as the environment. It should emphasize barrier plans and well control practices by integrating the drilling contractor’s rig-specific operating guidelines with the lease operator’s well plan. The drilling contractor, and other affected parties, can comment on the well plan.

5.1.2  The WCID-well plan contains the following elements (shown in Figure 1):

a)  well design:
   -  location and environment,
   -  geological and geophysical;

b)  well barrier plan risk identification;

c)  well execution plan.

5.1.3  To enhance safe operations, the well plan provides a basis for discussion of well construction equipment, barriers, risks, and the mitigations for those risks.

EXAMPLE  Drilling contractor rig-specific operating guideline examples:

a)  well control practices:
   -  shut-in procedures,
   -  blowout preventer (BOP) configuration;

b)  equipment constraints:
   -  rig capacity;

c)  well-specific operating guidelines:
   -  barriers;
   -  wait times for flow verification and cement setup.

The WCID plan contains information about the location and environment, geological and geophysical data, well design, well barriers, well plan, and well activity risks. Risk prevention and mitigation plans should be aligned with and agreed upon by the drilling contractor.

NOTE  Other methods of alignment can be addressed with bridging documents.

The WCID is developed by the lease operator with input from the drilling contractor with respect to the rig’s operational capabilities and constraints that could affect the well plan. The intent is alignment, not duplication.

NOTE  Well plans can include drilling, completions, workovers, and plugging and abandonments (P&As).
5.2 Location and Operating Environment

5.2.1 General

The WCID should include the proposed well location and expected range of environmental operating conditions to maintain well barriers and well control.

5.2.2 Geographical Location Description

Information should include, but is not limited to, the following:

a) proposed well’s surface and bottomhole location with respect to lease lines and adjacent wells;

b) depth of the water table for the proposed well;

c) proximity to environmentally sensitive areas;

d) proximity to dwellings or other permanent structures occupied or used by the public;

e) power lines and pipelines;

f) topography.

5.2.3 Location Hazards and Conditions

The lease operator should provide personal property, infrastructure, and topography information relative to the proposed well in regard to maintaining well control, well barriers, personnel safety, and reducing environmental impact.

5.3 Geologic and Geophysical

5.3.1 General

A high-level geologic overview should be developed to communicate hazards/uncertainties, pore pressure, fracture gradient, and overburden gradients for the well, in regard to maintaining well control and well barriers.

5.3.2 Geologic and Geophysical Overview

The overview should include a relevant geologic description including stratigraphic column, depths of major faults, pertinent formation tops, and any geologic uncertainties.

5.3.3 Shallow Hazards

The shallow hazard assessment survey should address, but is not limited to, shallow gas or water flow, hydrates, and major faults. Induced hazards from injection wells (i.e. water floods, steam floods, CO₂ and saltwater disposal wells) should be evaluated.
5.3.4 Well Pore Pressure, Fracture, and Temperature Gradient Prediction

Provide the predictions, assumptions, and uncertainties as well as a plot containing the formation pore pressure, fracture gradient, proposed drilling fluid weights, overburden gradients, and temperature gradients.

5.4 Well Design

5.4.1 General

In regard to maintaining well barriers and well control, well design details should be included in the interface document (i.e. fluids program, cementing program, casing depth selection, casing design criteria, wellhead system, and all tubulars utilized).

5.4.2 Wellbore Schematic

The relevant wellbore schematic drawing displays key elements of the well design in a single diagram. These elements can include water table depth, wellbore geometry, wellhead details, formation tops, casing specifications and setting depths, leak-off test (LOT), formation integrity test (FIT), mud and cementing details, and geological evaluation.

5.4.3 Fluids

The proposed drilling and completion fluid types, volumes, and properties for the well are described by hole section. The fluids program should describe how the fluids are to be used as a physical barrier to control the formation pressure in the well. Underbalanced or managed pressure drilling operations that are planned to be conducted should be identified prior to conducting operations. Training, equipment, and operational procedures should be in place prior to conducting these operations. Unplanned operations with fluid densities less than that to balance the well shall be managed through operator and contractor MOC approvals.

5.4.4 Cement

Cement properties, cement volumes, and placement methods for each cement job should be designed in accordance with API 65-2, API 10F, and applicable regulations to assure proper establishment of well barriers.

5.4.5 Well Directional Plan

In the well directional plan, a plot showing the proposed well’s vertical section, plan view, and survey coordinates are included as appropriate. Separation plots with closest proximity and depths should be identified in order to provide anti-collision assurance as appropriate for the area.

5.4.6 Drilling and Production Casing Loads

Casing specifications and load designs for selected tubulars are included for the planned well operations. Emphasis should be on design limits such as maximum allowable pressures, maximum overpull and slackoff, maximum rotating torques (if rotation planned or possible), etc. Material limits with regard to exposure to corrosive fluids and/or environments should be noted. Consideration should be given for updating these design limits in the event there are significant differences between the original design basis and the as-installed configurations.
5.4.7 Drill String and Tubing String, Design

Drill string and work string, specifications/design information should be provided for each hole section. These plans should describe the properties of each string and the intended use. Inspection documentation should be available to provide assurance that these strings have appropriate mechanical, dimensional, and metallurgical properties. Shearability and mill certificate documentation should be available as applicable.

5.4.8 Tubular Running Requirements

Requirements for tubular running should be documented for each string. When shear rams are installed, any non-shearable considerations (size, weight, handling procedures, space out considerations) should be documented. Sufficient information should be provided to assure that tubular running loads are within rig and running equipment limits.

For running of corrosion resistant materials, which can be susceptible to strain hardening damage, consideration should be given to special handling equipment such as low or nonmarking dies. Additional precautions should be considered to avoid high impacts when handling such materials.

5.4.9 Wellhead System

The limitations of the planned wellhead system and tubulars in regard to their capacity as well barriers should be described in the WCID plan.

5.5 Well Barriers

The lease operator’s well barrier plan for each well construction operation (i.e. drilling, completion, workover, tubular running, cementing, well abandonment/suspension, and special operations such as fishing, wireline, and well testing) should be included in the WCID plan.

The barrier plan includes the number, type, installation, and verification criteria of each well barrier.

a) Well operations (drilling/completion/workover).

b) Tubular running.

c) Casing or liner cementing.

d) Well control equipment requirements.

1) Pressure rating of the BOP system necessary to contain the maximum anticipated surface pressure (MASP) (in accordance with API Standard 53).

   — Number and types of rams required.

   — Diverter system function test interval during drilling operations where applicable.

   — BOP’s shearing and sealing requirement where applicable.

2) Well abandonment or suspension.

   — A verification plan and environmental constraints should be provided to ensure the barrier plan is achieved and to allow safe removal of the BOP system.
— Fluid displacement procedures should be identified.

3) Well completion other operations (fishing, wireline, well testing, etc.)

5.6 Well Plan

5.6.1 General

The well plan for the proposed well design, in regard to maintaining well control and well barriers should be included in the WCID plan.

5.6.2 Drilling Phase

The drilling execution plan should be included as an integral part of the well plan.

5.6.3 Completion Phase

The completion execution plan, inclusive of transitioning from drilling to completion fluid, should be identified and documented in the well plan.

5.7 Well Activity Risk Management

The risks associated with implementation of the planned well construction activities should be identified. Prevention and mitigation plans should be established for identified risks to reduce the possibility as low as reasonably practical.

Well activity risk management includes a thorough review of well construction risks and prevention/mitigation plans. These risks and prevention/mitigations shall be communicated to all affected personnel for both drilling contractor and lease operator.

6 WCID Acknowledgement

Upon completion of a WCID, both the lease operator and drilling contractor should sign and retain documentation acknowledging the exchange of information.
Bibliography


[6] API Recommended Practice 51R, *Environmental Protection for Onshore Oil and Gas Production Operations and Leases*


[8] API Recommended Practice 54, *Occupational Safety and Health for Oil and Gas Well Drilling and Servicing Operations*

[9] API Recommended Practice 100-1, *Hydraulic Fracturing—Well Integrity and Fracture Containment*

[10] API Recommended Practice 100-2, *Managing Environmental Aspects Associated with Exploration and Production Operations Including Hydraulic Fracturing*