



Department of **Energy, Mines,  
Industry Regulation and Safety**



GUIDE

# Inspections – Land-based drilling rigs

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## Reference

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# Foreword

Western Australia's work health and safety (WHS) legislation came into force in March 2022. This resulted in the amendment of the various petroleum Acts and the repeal of the associated regulations so that all onshore and offshore petroleum, pipeline and geothermal energy operations are now subject to the requirements of the:

- *Work Health and Safety Act 2020* (the WHS Act)
- Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022 (WHS PAGEO Regulations).

A key responsibility for the WorkSafe Group (WorkSafe) of the Department of Energy, Mines, Industry Regulation and Safety continues to be the ongoing risk management and safety requirements for the onshore and offshore petroleum, pipeline and geothermal energy operations. To support these requirements, the guides previously developed have been updated to assist operators to meet their commitments under the WHS Act and WHS PAGEO Regulations.

## Application

This Guide is a non-statutory document provided by WorkSafe to assist persons subject to duties under the WHS Act and requirements to conduct audits of the safety management system as prescribed by the WHS PAGEO Regulations.

It has been developed to provide advice and guidance to operators to meet the WHS Act and the WHS PAGEO Regulations requirements administered by the WorkSafe.

## Who should use this Guide?

You should use this Guide if you are:

- the operator of onshore or offshore petroleum, pipeline or geothermal energy operations under the WHS Act
- responsible for managing the inspection and maintenance of onshore drilling rigs.

## WHS legislation

Under the WHS Act, the WorkSafe Commissioner is responsible for performing the functions and exercising the powers of the regulator. Each safety document must be submitted for acceptance by the regulator.

WorkSafe assists the regulator in the administration of the WHS Act and the WHS PAGEO Regulations, including the provision of inspectors and other staff to oversee compliance with the legislation.

No petroleum or geothermal operations can be conducted on any onshore or offshore petroleum, pipeline or geothermal energy operations unless the facility has an operator registered in accordance with the requirements of WHS PAGEO Regulations.

The WHS PAGEO Regulations provided for transitional provisions in relation to facility operators and safety cases in place or submitted before the commencement of the WHS legislation.

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# 1 Introduction

## WHS Act s. 19(3)(b)

Primary duty of care – provision and maintenance of safe plant and structures

## WHS PAGEO Regulations r. 32(4)(g)

Safety management system – Inspection, testing and maintenance

This Guide has been developed to provide operators with assistance to meet their obligations for inspection, testing and maintenance of the equipment and hardware that are the physical control measures for risks to health and safety required under the WHS Act and WHS PAGEO Regulations. The focus of this Guide is on land-based drilling rigs. This Guide should be read in conjunction with the *Interpretive guideline: Development and submission of an onshore facility safety case – drilling operations*.

The safety case for a drilling rig is applicable at all times when the rig is on a licensed site conducting any petroleum and geothermal energy operations, including any maintenance to the drilling rig.

If the drilling rig is not on a licensed site but stacked up in the operator's workshop or storage yard, the safety case does not apply and any maintenance or service work conducted on the drill rig is covered by the Work Health and Safety (General) Regulations 2022.

For the purpose of this Guide, the term "safety case" is used to cover all of the safety documents referred to in the WHS PAGEO Regulations.

The term "facility" covers onshore facilities and pipelines, including above ground structures.

The objective is to provide clarity to industry on areas of the legislation which may be ambiguous or open to interpretation.

## 1.1 Aims of inspection and maintenance

Under the WHS PAGEO Regulations, the operator must provide evidence in the safety case that the plant and equipment installed are fit for purpose in normal operating conditions and in an emergency, by reference to the design standards, functional testing and the maintenance and testing regime.

An effective inspection and maintenance regime enables early identification and repair of potential break-downs or damage to machinery and equipment, thereby avoiding the likelihood of workarounds or substitutions that could arise in the event of machinery and equipment being offline for a lengthy period. It increases the likelihood of detecting and fixing small problems before they become a risk to the health and safety of workers and the operation itself, resulting in a reduction in the number, frequency and duration of safety incidents and occurrences.

[Appendix 2](#) contains a list of Australian and international standards that can assist with development of the inspection and maintenance regime for the drilling rigs.

## 1.2 Maintenance management system

An effective inspection and maintenance regime is best done through the development of a maintenance management system. This system should be described in the safety case to provide evidence to the regulator that an adequate system is in place which can ensure the integrity and reliability of the operations of the drilling rig. It should also list any required actions arising from related plans and schedules, such as the integrity management plan.

The maintenance management system should include a list of all plant and equipment on the drilling rig and the scheduled maintenance requirements under the work program for the drilling rig. This should include all inspection, testing and periodic monitoring of the plant and equipment scheduled in order of priority, with the identified safety critical elements (SCEs) given the highest priority for on time completion within the system.

The maintenance management system should be able to create the required work orders to complete maintenance and repair work and be supported by work procedures and work instructions. The operator must ensure that workers familiar with the requirement of the machinery and equipment on the drilling rig are involved in the development and review of these work program documents.

Reports should be available from the maintenance management system showing details of:

- work orders completed and closed out in a timely manner (e.g. within five working days of the specified due date on the work order)
- work orders that are overdue for completion and the period of time they are overdue
- work orders scheduled for specific safety critical elements (SCEs) and their status – these are critical areas that should always be completed on time
- a general overview of the whole work program showing total number of work orders generated, closed on time, still open and also the priority allocated to each work order.

## 1.3 Linked guides

The following guides provide information to assist operators in developing and implementing effective maintenance and inspection procedures.

- *Risk assessment and management including operational risk assessment*
- *Identification of major accident events, control measures and performance standards*
- *Incident notification*
- *Records management including document control*
- *Human factors fundamentals for petroleum and major hazard facility operators*
- *Human factors self-assessment guide and tool for safety management systems at petroleum and major hazard facility operations*

These guides, together with this Guide, form an inter-related suite of information for effective hazard identification, risk assessment and management, including identification of major accident events (MAEs) and control measures which should be taken into account when planning maintenance and inspection regimes for drilling rigs.

## 1.4 Human factors

When identifying the hazards in operations and the workplace generally, it is important that the human factor is taken into account, assessed as to the risk applicable and appropriate controls put in place to manage the risk. This includes when establishing an inspection and maintenance routine.

When performing maintenance, inspection and testing activities even experienced, highly trained workers can make errors (e.g. returning equipment or systems to service in an unsafe state). Errors are normal, often identifiable and can be managed.

Common maintenance, inspection and testing failures due to human performance include incorrect reassembly, wrong specification of replacement items, omission of a task step, recommissioning errors, safety features left disconnected, instrument set-points incorrectly set and leaving tools inside plant.

Latent conditions can be introduced through maintenance activities (e.g. a fault in the plant which malfunctions at a later date). These type of conditions can be reduced by performing adequate inspection and testing, including independent verification. Independent verification of isolation of plant, equipment and hazardous chemical and energy sources is a safety-critical control and should be included as part of safety-critical tasks, including safety-critical maintenance activities.

Integrating human factors into safety management systems is important for achieving error-tolerant systems. It is important that the risk of human error is identified, assessed and controlled so far as is reasonably practicable (SFAIRP) during maintenance, inspection and testing activities to ensure effective safety performance.

Safety case documentation that does not demonstrate the consideration of human factors may not be sufficient to demonstrate the risks associated with hazards and MAEs have been reduced SFAIRP.

For further information, refer to the *Guide: Human factors fundamentals for petroleum and major hazard facility operators* and the *Human factors self-assessment guide and tool for safety management systems at petroleum and major hazard facility operations*.



## 1.5 Worker involvement

### **WHS Act s. 47**

Duty to consult workers

### **WHS Act. s. 48**

Nature of consultation

### **WHS PAGEO Regulations r. 38**

Involvement of workers

Workers who have previously been involved in the inspection and maintenance of drill rigs should be included in the consultation and development of procedures and processes for the drilling rig.

As well as including subject matter experts in the inspection and testing process, include workers with direct knowledge of the activities under consideration and the effectiveness of the controls that are being considered to reduce the level of risk. Workers who have firsthand experience with performing the work on a regular basis are best placed to be involved in the risk management process and hence the inspection and maintenance planning.

Workers involved in this phase can then provide feedback for the general workforce to ensure a better understanding of the need for planning inspection, maintenance and testing across the drill rig operations.

## 2 Inspection, testing and maintenance

### WHS PAGEO Regulations r. 32(4)(g)

Safety management system – inspection, testing and maintenance

### WHS PAGEO Regulations r. 41(2)

Machinery and equipment – fit for its function or use

Operators should have a detailed, documented process and procedures for the management of inspections, testing and monitoring of machinery, plant and equipment, especially those elements that have been classified as (SCEs) identified within the performance standards that have been developed for the drilling rig.

Demonstration should be provided on how the maintenance management system satisfactorily manages SCEs by ensuring they are regularly inspected and tested to monitor their application in the event of an emergency. The process used to determine the frequency of the inspection, testing and monitoring the SCEs identified within the plant and equipment at the drilling rig should be fully documented.

*The Guide: Identification of major accident events, control measures and performance standards* may provide assistance and guidance with this requirement.

As part of the inspection, testing and maintenance requirements, operators should also have in place an integrity management plan for the drill rigs so that a documented process is in place for the maintenance and possible replacement of ageing assets is factored in to maintain the fit-for-purpose status of plant and equipment and reduce the risk of accidents and incidents which may result in injury to workers. Section 4 of this Guide covers this requirement in more detail.

### 2.1 Routine inspections

Routine inspections are the daily, weekly and monthly checks of the drilling rig conducted by workers on the rig. These inspections should be supported by a documented procedure and inspection checklists covering the relevant period of the inspection. Provision should be made on the checklist for the identification of the drilling rig being inspected, the date and time of the inspection and the name of the worker or workers performing the inspections.

The checklist should also have provision for comments on areas which are not fully compliant or are damaged, identifying the issues found during the inspection and recommendations for rectification or repair.

Completed checklists should be passed to the maintenance manager or appropriate supervisor so that identified issues can be assessed as to their urgency for rectification and a work order raised to address the problem by the agreed due date on the work order.

Examples of the different categories of hoisting equipment inspection are provided in *API RP 8B – Recommended Practice for Procedures for Inspections, Maintenance, Repair, and Remanufacture of Hoisting Equipment (Section 5.3)*. Operators should refer to this and other appropriate standards when developing their own inspection procedures.

### 2.1.1 Routine inspection reports

Completed inspection reports should be reviewed and signed off by the relevant manager or supervisor. Arrangements should be made to track any identified actions or work orders raised against inspections to ensure they are completed and closed out by the due date.

Once all required actions and work orders have been closed out, the inspection reports should be filed and retained as records in accordance with the retention schedule set out in the records management system.

For further information, refer to the *Guide: Records management including document control*.

## 2.2 Safety critical elements

Safety critical elements (SCEs) identified as controls within the drilling rig performance standards should be listed in the maintenance management system at the highest level of importance. They should be monitored to ensure the work orders raised for the inspection and testing of these SCEs are completed within 7 days of the due date shown on the work order.

This area should be closely monitored and be included in the health and safety performance leading and lagging indicator reports that are completed monthly for management review.

Evidence should be provided on how the maintenance management system satisfactorily manages SCEs by ensuring they are regularly inspected and tested to monitor their application in the event of an emergency. The process used to determine the frequency of the inspection, testing and monitoring the SCEs identified within the plant and equipment at the drilling rig should be fully documented.

Where it is identified that an SCE is either damaged or does not function as required, this should be reported immediately and, if the failure limits the ability of the SCE to prevent or mitigate a MAE, it becomes a notifiable occurrence under the WHS legislation.

For further information, see the *Guide: Identification of major accident events, control measures and performance standards* and the *Interpretive guideline: Incident notification*.

## 2.3 Pre-spud inspections

Pre-spud inspections are generally arranged between the drill rig operator and the lease/licence holder where the drilling is to take place.

The aim of these inspections is to satisfy the lease/licence holder that the drilling rig is in good condition and has had regular inspection and maintenance performed, with records available as evidence of this.

[Appendix 3](#) of this document includes a sample drilling rig inspection checklist which may be used by the drill rig operator to develop their own standard checklist which may be adjusted to suit the requirements of a lease/licence holder.

Once completed, the drilling rig operator should ensure the inspection reports are filed and retained as records in accordance with the retention schedule required by the records management system.

For further information, refer to the *Guide: Records management including document control*.

## 3 Rig condition surveys

A rig condition survey is required to be conducted on drilling rigs by an independent and competent assessor to ensure the rig remains fit for purpose and is not likely to adversely impact the health and safety of workers. As best industry practice it is expected that the survey would be carried out every two years depending on the operational status of the drilling rig.

These surveys may be commissioned by either the lease/licence holder or the drilling rig operator. If the operator arranges the survey, they provide a copy of the survey report to the relevant lease/licence holder when moving from site to site.

The aim of these surveys is to provide the operator of the drilling rig with a full condition and performance review of the critical equipment on the drilling rig and verify that the systems are in place for the rig to perform safely during a drilling campaign. The drill rig operator, together with relevant workers, should meet with the assessor to develop a plan for the survey to be completed within an agreed time frame.

The drill rig operator should request that the assessor includes details of the various standards being referenced in the survey plan and check that all relevant areas of the drill rig are covered in the survey. The list of Australian and international standards listed in Appendix 2 should assist with this requirement.

Upon completion of the survey, the report should include details of any findings with recommendations for action to be taken by the operator. The operator should have a system in place that enables corrective actions to be raised, assigned to appropriate workers and monitored through to effective completion and closure prior to drilling commencing on site.

## 4 Integrity management

The safety management system of the safety case should include a description of the operator's integrity management plan for the various drilling rigs under their control.

The operator should describe the integrity management plan linked with the maintenance management system to provide an ongoing review of the management and monitoring of the integrity of the drilling rigs under their control. This should also demonstrate how the machinery and equipment is deemed to be fit-for-purpose to perform on both a day to day basis and during an emergency.

This section should include details of the periodic review of the integrity management plan, actions to be taken as a result of the various condition surveys and assessments that may have been conducted on the drilling rigs as well as any other activities that consider the condition of the drilling rigs particularly those related to managing aging drill rigs, or specific items of equipment related to operating the drilling rigs. The integrity management plans should include details of future planning to manage the performance of aging equipment and the progressive replacement to ensure continuing efficient drilling programs can be completed without undue delays caused by extensive overhaul requirements to replace parts.

The requirements identified as needing to be performed to ensure the ongoing safe operation of the drilling rigs can be added to the maintenance management system to ensure work orders are raised at the appropriate time to complete the identified actions that will meet the integrity requirements.

The inclusion of additional management of aging parts and equipment, including increased testing and inspection, allows the forecasting of possible parts replacement or major overhauls which can be scheduled into the operational activities for particular drilling rigs so that they continue to operate safely.

This section should reference the integrity management plan document number and full title.

# Appendix 1 Glossary

The following terms are defined for the purposes of this Guide.

Key terms	Meaning
Competent person	A person who has acquired through training, qualification or experience the knowledge and skills to carry out the task. The definition of 'competent person' in the Work Health and Safety (General) Regulations prescribes specific requirements for some types of work such as diving.
Facility	<p><b>Geothermal energy facility</b> – a place at which geothermal energy operations are carried out and includes any fixture, fitting, plant or structure at the place</p> <p><b>Petroleum facility</b> – a place at which petroleum operations are carried out and includes any fixture, fitting, plant or structure at the place</p> <p><b>Mobile facility</b> – includes an onshore drilling rig</p> <p>The term facility has been adopted throughout this document to cover offshore and onshore facilities and pipelines including aboveground structures associated with onshore pipelines.</p>
Geothermal energy operation	<p>Means an operation to:</p> <ul style="list-style-type: none"> <li>• explore for geothermal energy resources</li> <li>• drill for geothermal energy resources</li> <li>• recover geothermal energy</li> <li>• or is any other kind of operation that is prescribed by the regulations to be a geothermal energy operation for the purpose of this definition</li> </ul> <p>and carry on of such operations and the execution of such works as are necessary for that purpose.</p>
Major accident event (MAE)	An event connected with a facility, including a natural event, having the potential to cause multiple fatalities of persons at or near the facility.
Operator	A person who has, or will have, the day-to-day management and control of operations at a facility and is registered as the operator of the facility under r.22(3).
Performance standard	A standard established by the operator defining the performance required for a safety critical element typically defining the functionality, availability, reliability, survivability and interdependency of the safety critical element.

Key terms	Meaning
Person conducting a business or undertaking (PCBU)	A PCBU is an umbrella concept capturing all types of working arrangements or relationships. A PCBU includes a company, unincorporated body or association and sole trader or self-employed person. Individuals who are in a partnership that is conducting a business will individually and collectively be a PCBU. A reference to a PCBU includes reference to the operator of a facility.
Petroleum operation	Means an activity that is carried out in an area in respect of which a petroleum title is in force, or that is carried out in an adjacent area, for the purpose of any of the following: <ul style="list-style-type: none"> <li>• exploring for petroleum</li> <li>• drilling or servicing a well for petroleum</li> <li>• extracting or recovering petroleum</li> <li>• injecting petroleum into a natural underground reservoir</li> <li>• processing petroleum</li> <li>• handling or storing petroleum</li> <li>• the piped conveyance or offloading of petroleum.</li> </ul>
Regulator	The WorkSafe Commissioner is the regulator under the <i>Work Health and Safety Act 2020</i> .
Safety case	Documented provisions related to the health and safety of people at or in the vicinity of a facility, including identification of hazards and assessment of risks; control measures to eliminate or manage hazards and risks; monitoring, audit review and continual improvement
Safety critical element (SCE)	Any item of equipment, system, process, procedure or other control measure the failure of which can contribute to an MAE.
SFAIRP	So far as is reasonably practicable
SME	Subject matter expert
SMS	Safety management system
WHS Act	<i>Work Health and Safety Act 2020</i>
WHS PAGEO Regulations	Work Health and Safety (Petroleum and Geothermal Energy Operations) Regulations 2022
Worker	Any person who carries out work for a person conducting a business or undertaking, including work as an employee, contractor or subcontractor (or their employee), self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company placed with a 'host employer' or a volunteer

# Appendix 2 Further information

## Petroleum safety guidance

### Interpretive guidelines

- *Development and submission of a diving safety management system*
- *Development and submission of a safety case*
- *Development and submission of an onshore facility safety case – drilling operations*

### Guides

- *Audits, review and continual improvement*
- *Bridging documents and simultaneous operations (SIMOPS)*
- *Dangerous goods and hazardous chemicals in petroleum, pipeline and geothermal energy operations*
- *Decommissioning and management of ageing assets*
- *Demonstration of risk reduction so far as is reasonably practicable (SFAIRP)*
- *Diving start-up notices*
- *Emergency response planning*
- *Facility design case*
- *Hazard identification*
- *Health and safety leading and lagging performance indicators*
- *Human factors fundamentals for petroleum and major hazard facility operators*
- *Human factors self-assessment guide and tool for safety management systems at petroleum and major hazard facility operations*
- *Identification of major accident events, control measures and performance standards*
- *Inspections – Land-based drilling rigs*
- *Involvement of workers*
- *Management of change*
- *Nomination of an operator*
- *Records management including document control*
- *Risk assessment and management including operational risk assessment*
- *Validation requirements*



## Australian and international standards

- API RP 4G *Operation, Inspection, Maintenance and Repair of Drilling and Well Servicing Structures*
- API RP 7C-11F (R2008) *Recommended Practice for Installation, Maintenance and Operation of Internal-Combustion Engines*
- API RP 7G *Recommended Practice for Drill Stem Design and Operating Limits*
- API RP 7L *Procedures for inspection, maintenance, repair and remanufacture of drilling equipment*
- API RP 8B *Recommended Practice for Procedures for Inspections, maintenance, repair and remanufacture of hoisting equipment*
- API RP 9B *Application, Care, and Use of Wire Rope for Oil Field Service*
- API RP 54 *Occupational Safety and Health for Oil and Gas Well Drilling and Servicing Operations*
- API RP 505 *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2*
- API RP 576 *Inspection of Pressure-relieving Devices*
- API SPEC 16 RCD – *Rotating Control Devices*
- API SPEC 4F *Specification for Drilling and Well Servicing Structures*
- API SPEC 6A *Specification for Wellhead and Tree Equipment*
- API SPEC 7F *Oil Field Chain and Sprockets*
- API SPEC 7K *Drilling and Well Servicing Equipment*
- API SPEC 8A *Drilling and Production Hoisting Equipment*
- API SPEC 8C *Drilling and Production Hoisting Equipment (PSL 1 and PSL 2)*
- API SPEC 9A *Specification for Wire Rope*
- API SPEC 16A *Specification for Drill-through Equipment*
- API SPEC 16C *Choke and Kill Equipment*
- API SPEC 16D *Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment*
- API SPEC Q1 *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*
- API STD 53 *Well Control Equipment Systems for Drilling Wells*
- API STD 64 *Diverter Equipment Systems*
- AS 1940:2017 *The storage and handling of flammable and combustible liquids*
- AS IEC 61511 *Functional safety – Safety instrumented systems for the process industry sector*
- AS/NZS 2293.1:2018 *Emergency lighting and exit signs for buildings. Part 1: System design, installation and operation*
- AS/NZS 2293.2:2019 *Emergency lighting and exit signs for buildings. Part 2: Routine service and maintenance*
- AS/NZS 2293.3:2018 *Emergency lighting and exit signs for buildings – Part 3: Emergency luminaires and exit signs*
- AS/NZS ISO 9001 *Quality management systems – Requirements*
- AS/NZS ISO 19011 *Guidelines for auditing management systems*
- AS/NZS ISO 31000 *Risk management – Guidelines*

- AS/NZS ISO 45001:2018 *Occupational health and safety management systems – Requirements with guidance for use*
- IADC – *HSE case guidelines for land drilling units*
- ISO 13534 *Petroleum and natural gas industries – drilling and production equipment, inspection, maintenance, repair and re-manufacture of hoisting equipment*
- NACE MR0175/ISO 15156-1:2009/CIR. 1:2014 – *Petroleum and Natural Gas industries - Materials for use in H2S-containing environments in oil and gas production – Part 2: Cracking-resistant carbon and low alloy steels and the use of cast irons and Part 1: Cracking-resistant CRAs (corrosion-resistant alloys) and other alloys Circular 1*
- NACE MR0175/ISO 15156-2:2009/CIR. 2:2014 *Petroleum and Natural Gas industries – Materials for use in H2S-containing environments in oil and gas production – Part 2: Cracking-resistant carbon and low alloy steels, and the use of cast irons and Part 2: Cracking-resistant CRAs (corrosion-resistant alloys) and other alloys Circular 2*
- NACE MR0175/ISO 15156-3:2009/CIR. 3:2014 *Petroleum and Natural Gas industries - Materials for use in H2S-containing environments in oil and gas production – Part 2: Cracking-resistant carbon and low alloy steels, and the use of cast irons and Part 3: Cracking-resistant CRAs (corrosion-resistant alloys) and other alloys Circular 3*
- NACE MR0175/ISO 15156-3:2009/CIR. 4:2014 *Petroleum and Natural Gas industries – Materials for use in H2S-containing environments in oil and gas production – Part 2: Cracking-resistant carbon and low alloy steels, and the use of cast irons and Part 3: Cracking-resistant CRAs (corrosion-resistant alloys) and other alloys Circular 4*
- NACE MR0175-2015 / ISO 15156 SERIES – *Petroleum and natural gas industries – Materials for use in H2S-containing environments in oil and gas production (Identical to ISO 15156-1:2015, ISO 15156-2:2015, ISO 15156-3:2015)*

## Codes of practice

- [\*Mentally healthy workplaces for fly-in fly-out workers in the construction and resources sector\*](#)
- [\*Psychosocial hazards in the workplace\*](#)
- [\*Workplace behaviour\*](#)

See the WorkSafe website for [approved codes of practice](#) on a range of related topics such as *Managing the risks of hazardous chemicals in the workplace*, *Confined spaces*, *Managing the risk of falls at workplaces*, *Managing risks of plant in the workplace* and *Managing the work environment and facilities*.

## Other resources

### WorkSafe WA

- [\*Discriminatory, coercive and misleading conduct – Interpretive guideline\*](#)
- [\*How to determine what is reasonably practicable to meet a health and safety duty – Interpretive guideline\*](#)
- [\*Incident notification – Interpretive guideline\*](#)
- [\*The health and safety duty of an officer – Interpretive guideline\*](#)
- [\*The meaning of ‘person conducting a business or undertaking’ \(PCBU\) – Interpretive guideline\*](#)

# Appendix 3 Example of land-based drilling rig inspection checklist

## Land-based drilling rig inspection checklist

Rig Company:		Rig No.:			Rig Mgr.:
Operating Company:		Company Representative:			
Inspected by (Name/ Position):		Date:			Time:
<p>Please indicate whether Adequate (A), Inadequate (I) or N/A (not applicable).          Any inadequate areas must have an explanation and be corrected.</p>					
A. Fuel/Water Tanks		A	I	N/A	Comments
1.	No leaks				
2.	Pumps guarded				
3.	Signs				
	• no smoking sign posted				
	• all tanks identified				
	• dangerous goods placard posted (needed for transportation).				
B. Generator Building		A	I	N/A	Comments
4.	Generator/motor control centre, condition of				
5.	Receptacles/circuit breakers identified				
6.	Properly grounded (2 grd. Rods 3 metres apart)				
7.	Wiring guarded or off the ground and properly secured				
8.	No clothing/storage				
9.	Fans and belts guarded				
10.	No fuel or oil leaks				
11.	Compressor belts guarded				
12.	Fire extinguisher				
13.	All lights protected				
14.	Housekeeping				
15.	Signs				
	• auto start sign posted				
	• hearing protection sign posted				
	• electrical/high voltage signs posted				
	• water hose caution sign posted				
	• lockout and procedures				
16.	Wiring/electrical fixtures, condition of				

<b>C. Accumulator Building</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
17.	No leaks or spillage				
18.	N2 bottles (12500 kPa/1800 psi)				
19.	Housekeeping				
20.	Storage of compressed gas cylinders secured				
21.	Controls identified and accessible				
22.	Safety device blind/shear ram controls				
23.	Fire extinguisher				
24.	Compressor guarded				
25.	Signs				
	• auto start signs – compressor/ accumulator, pump				
	• dangerous goods placard				
26.	Accumulator reservoir vented outside of building/enclosure				
<b>D. Tool Shed</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
27.	No leaks or spillage				
28.	Housekeeping				
29.	Fire extinguisher				
30.	Grinder tool rest				
31.	Eye protection available				
32.	Eye protection sign posted				
<b>E. Mud Pump Area</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
33.	Pop valve (direction/pin/cover – flop over or hand tight)				
34.	Pop/bleed off lines secured and drained				
35.	Guards in place and in good repair				
36.	Hoses safely chained				
37.	Fire extinguisher				
38.	Housekeeping				
39.	Piping, valves and unions meet pressure rating				
40.	Pulsation dampers				
41.	Eyewash facility				
42.	Signs				
	• lockout procedure posted				
	• auto start sign posted				
	• hearing protection sign posted				
	• no smoking sign posted				
43.	Wiring/electrical fixtures, condition of				

<b>F. Mud Tank Area</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
44.	Mud degasser(s), size and placement				
45.	Shale shaker belts guarded (if exposed)				
46.	Handrails, walkways, condition of				
47.	Adequate ventilations				
48.	Adequate lighting				
49.	Personal protective equipment – eye protection, dust masks, rubber gloves/apron				
50.	Housekeeping				
51.	Tank level indicators operative				
52.	Trip tank level indicator tank location				
53.	Centrifuge (grounding/elect, handrails, etc.)				
54.	Mud van, stairs and lighting				
55.	Eyewash facility (must meet Australian Standards)				
56.	Signs				
	• eye protection signs at hoppers				
	• no smoking sign posted				
	• applicable labelling				
57.	Wiring and electrical fixtures, condition of				
<b>G. Substructure</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
58.	General, condition of				
59.	Matting, condition of				
60.	All pins installed, c/w safety pins				
61.	Spreaders in place				
62.	Ventilation				
63.	Illumination				
64.	Hydraulic control lines – fire guarded hoses, condition of				
65.	Flow nipple split				
66.	Scaffolding and ladder(s), condition of				
67.	Cellar area drained				
68.	Wiring and electrical fixtures, condition of				
69.	Housekeeping (oil leaks, etc.)				
<b>E. Mud Pump Area</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
70.	BOP and rig equipment conform to industry best practice and applicable standards				
71.	BOP secured properly (secured to sub)				
72.	Non-steel hydraulic lines fire sheathed				
73.	BOP pressure tests recorded and test procedures satisfactory				
74.	Manual ram locking wheels available				

<b>I. Doghouse</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
75.	Potential H2S level posted				
76.	Adequate exits (min. 2)				
77.	Housekeeping				
78.	Fire extinguisher				
79.	Eye and hearing protection available.				
80.	Standard eyewash available				
81.	First aid kit stocked and clean				
82.	Safety belts approved				
83.	Available hand tools, condition of				
84.	BOP controls, electrical, manual, air				
85.	Drilling licence posted (super's shack is adequate)				
86.	Emergency phone numbers posted				
87.	Signs				
	• hard hat sign posted				
	• hearing protection sign posted				
	• no smoking sign posted				
	• maximum allowable casing pressure (MACP) posted				
	• blowout procedure posted and readable				
	• SDS available				
88.	Wiring and electrical fixtures, condition of				
<b>J. Rig Floor</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
89.	Visibility of derrick person from driller's station				
90.	Mechanical lockouts on draw works				
91.	Draw works area guarded (no go zone)				
92.	Crown saver (check)				
93.	Spinning chain/winch lines				
94.	Kelly cock, condition of				
95.	Kelly hose, condition of				
96.	Kelly hose safety line – both ends				
97.	Line spooler/safety line				
98.	Backup posts, condition of				
99.	Tongs, condition of				
100.	Tong line and tong line clamps				
101.	Slips, condition of				
102.	Dog collar, condition of				
103.	Stabbing valve and handle and X/O subs				

104.	All machine guarding in place				
105.	Mud can, condition of				
106.	All controls are identified				
107.	Brake handle hold-down cable/chain				
108.	Non-skid material around rotary				
109.	Lighting operational, floor and motor area				
110.	Motors				
	• fans and belts guarded				
	• no fuel or oil leaks				
	• motor shutoff				
	• fire extinguisher				
	• exhaust system				
111.	Stairs (min. 3 exits) from rig floor				
112.	Warning horn working				
113.	Mobile boom/crane less than 7300 kg				
114.	Brakes, condition of				
115.	Tugger line, guards, condition of				
116.	V-door opening safety chained				
117.	Wiring and electrical fixtures, condition of				
<b>K. Derrick</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
118.	Block hanging line				
119.	Bumper blocks secured				
120.	Fingers straight				
121.	Fingers chained/cabled				
122.	Wind board installed				
123.	Ladder, condition of				
124.	Escape line installed, no blockage of line (i.e. tank or vehicle)				
125.	Escape buggy installed and accessible				
126.	Climbing device/cages				
127.	Derrick person's harness, condition of				
128.	Guy lines/outrigger				
129.	No loose tools, equipment cabled on derrick				
130.	All safety pins in place, secured				
131.	Lighting operational and safety cables/chains attached				
132.	Tong counterweight assembly, condition of				
133.	Wiring and electrical fixtures, condition of				
134.	Log book (digital info) current				

<b>L. Travelling Assembly</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
135.	Blocks or top drive				
136.	Bails/links				
137.	Elevators/latches				
138.	Weight indicator assembly				
139.	Weight indicator safety line				
140.	Automatic driller				
141.	Drilling line, condition of (slip/cut program)				
142.	Deadline anchor, condition of				
<b>M. Pipe Rack Area</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
143.	Racks butt firmly to each other and catwalk				
144.	Catwalk, condition of				
145.	Stairs, condition of				
146.	Pipe racks level/hydraulic stops in place				
147.	Pipe rack ends properly pinned				
148.	Spacer between racks sturdy and secure				
149.	Derrick stand, condition of				
150.	Housekeeping				
151.	V-door ramp, condition of				
152.	Catwalk, tugger or skate guarded				
153.	Lay down line and block, condition of				
154.	Layers of drill pipe or casing properly chocked				
155.	Adequate lighting				
156.	Pipe rack matting size and condition of (sinking)				
<b>N. Manifold House</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
157.	Valve handles installed				
158.	Proper gauges installed and positioned				
159.	Drill pipe pressure gauge installed				
160.	Unobstructed view to rig floor				
161.	Housekeeping				
162.	Flare lines properly secured				
163.	Lighting operational				
164.	Choke/valves open to degasser				
165.	Signs				
	• maximum allowable casing pressure (MACP) notice posted				
	• no smoking sign posted				



<b>O. Breathing Apparatus Inspection</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
166.	Number of packs available (min. 2)				
167.	Location of air packs				
168.	General condition of apparatus and case				
169.	Face piece, condition of				
170.	Nose cup, condition of				
171.	Cylinder pressure				
172.	Low pressure alarm operational				
173.	Cleanliness and storage				
174.	Positive pressure capability				
175.	Number and condition of spare cylinders (min. 2)				
176.	Spare cylinders properly stored				
177.	SCBA cylinders hydrostatic test dates current				
178.	Other				
<b>P. Lease Area</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
179.	Lease clean and neat				
180.	Distances				
	• well to flare pit/flare tank				
	• well to crude oil storage tank				
	• oil storage tank to pit				
181.	Adequate ditching and drainage				
182.	Rubbish bin				
183.	Sump fluids properly contained				
184.	Lease properly diked, if applicable				
185.	Overhead lines flagged				
186.	H2S warning signs, if applicable				
<b>Q. Tickets and Documents</b>		<b>A</b>	<b>I</b>	<b>N/A</b>	<b>Comments</b>
187.	BOP function tests daily, recorded				
188.	BOP drill with records signed by rig manager and drilling foreperson				
189.	Motor kills weekly with records				
190.	BOP tickets				
	• rig manager				
	• drilling foreperson				
	• drillers				
191.	First aid certificate (one per crew)				
192.	H2S training (all crew members)				
193.	Training (all crew members)				
194.	Slip and cut program recorded				
195.	New worker orientation training				







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