



# Safe Work Procedure

Diamond Drilling

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Lucky Drilling Ltd. (Lucky Drilling) operates a Discovery 1 and a Discovery 2 drill rig. There is the potential during site construction and mobilization for use of an excavator, bulldozer and water truck. Each piece of equipment and task has a different procedure and safety practice. This safety practice will outline the safe work procedures for diamond drilling.

#### Safety Equipment on or by Drill

- Fire extinguisher
- Level 1 or 2 First aid kit
- Climbing protection with full body harness
- Functional emergency engine kill switch
- Respirator

#### Personal Protective Equipment

Each employee will have the following personal protective equipment:

- Safety glasses
- Hard hat
- Safety toed shoes or boots
- Hearing protection
- Gloves
- Proper high-visibility clothing (close fitting, long pants and shirts with sleeves or coveralls)

#### Site Preparation and Start-up

Prior to moving on the drill pad, adequate site clearing and leveling will be performed. Check the site for ground stability, overhead obstructions such as power lines or danger trees, and ensure underground utility clearance has taken place if needed. Before raising the mast, the drill must be stabilized with leveling jacks and/or solid cribbing. The drill should be re-leveled if it settles after initial set up. Have a crew member watch the mast as it is raised to observe for caught cables, hoses or other problems. Only operate the drill with the mast locked in position with stiff legs.

Before operating the drill, the driller or helper must check all fluids, hoses and general condition of all operating parts and record in the logbook checklist completed at the beginning of each shift. All employees should be instructed to “stand clear” of the rig and in the operators sight immediately prior to starting the engine. Make sure all gear boxes are in neutral and all hydraulic levers are in non-actuating positions.



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## Drilling Operations

- Never attempt to operate the drill unless you are fully trained in its use.
- Do not allow unqualified persons to operate the drill, unless fully supervised as part of a training program.
- Never consume alcohol or drugs prior to or while on the job. If taking over the counter medication, use the type that does not cause drowsiness.
- Always operate the drill from the operator's station. The driller should never leave the controls while the drill is in operation. Keep the operator's platform clear of debris.
- Do not operate the controls with oily or greasy hands.
- Ensure the drive and feed controls are in neutral when leaving the control platform and shut down the engine if leaving the area.
- Position the drill so it is impossible for any portion of the equipment to come within the minimum required safe distance to energized lines. Maintain at least 10 meters clearance of lines carrying up to 132,000 volts. 20 meter clearance is required for lines above 132,000 volts. If you do not know line voltage, ask the electric utility. All overhead lines should be considered energized. Never operate the drill during electrical storms or high wind conditions.
- Clean mud and grease from your boots before mounting the operator's platform or climbing on the deck. Always use handholds and railings. Watch for slippery or uneven ground when dismounting.
- Wrench jaws should be inspected and periodically replaced if necessary. If a string of drill rod or core barrel is accidentally released into the hole, do not attempt to grab the falling rod or wire line with your hands or a wrench.
- Do not use your hands to clean mud or drill fluid from the drill rod. A rag or rod wiper should be used.
- Know all pinch points including break out wrench, drive head and core barrels. Pinch points will be discussed with all new employees.
- Mud pits should be fenced or taped off with CAUTION tape.
- Watch your footing to prevent slips and avoid stepping between pipes to prevent smashed ankles.
- Inspect and grease water swivel when not in operation.
- Make sure foot clamp jaws are in place. Keep tools and materials away from foot clamp. Always shut down the engine before servicing foot clamp. Keep bolts and nuts tightened and all moving parts lubricated.
- Make sure the water supply hose to swivel is not twisted or kinked.
- Keep away from rods when spinning.
- Ensure overshot is locked onto tube backend before it is lifted out of rods to the helper.
- When lowering multi-shot tool or any other device down rods with overshot, ensure it is locked to prevent unwanted unlatch.



### Wire Line Safety

- Always inspect wire line for frays, pinch points to avoid possible breaks.
- Stay clear of line when in operation, up or down.
- Always wear gloves when handling line.
- Keep line lubricated and clean.
- When working close to the wire line ensure the driller is aware or the drill is off.
- Only use the wire line winch for drill operations

### Travel, Loading and Unloading

- When loading or unloading the drill, use ramps of adequate design to carry the weight.
- Always load or unload on even ground.
- Use a spotter on the ground during loading and unloading. Maintain sight of your spotter at all times.
- Secure all tools and equipment prior to travel.
- Secure the mast properly in the rest.
- Never over tension the wire line, or damage can result.
- Ensure the weight of the drill is distributed to the centerline of the trailer and so some of the load is transferred to the pulling vehicle. Secure the unit with adequate load binders or chains.
- When traveling off-road, first walk the route of travel inspecting for depressions, stumps, gullies, ruts or other obstacles.

### Maintenance

- Maintenance will be performed before and after each job and throughout when required.
- A logbook checklist will be completed at the beginning of each shift and reviewed by the site supervisor (or Lucky Drilling employee in charge).
- Any deficiency in the checklist or other will be dealt with prior to operation.