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TITLE:	<b>RIG MOVE &amp; TRANSPORTATION PROCEDURE</b>			





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## 1. POLICY

Rig move operations are a critical task in the oil and gas industry and moving a rig is a very complex process involving numerous concurrent/simultaneous operations and activities with a variety of other contractors present. Because of this level of activity, and the fact that different types of hazards, from those encountered during drilling operations, are present, preplanning, coordination and adequate supervision of the efforts of all personnel involved is essential to carry out a safe and efficient rig moving operation. It is Client policy that a Safety meeting shall be conducted prior to the start of each day's activities to review with all personnel involved, the operational goals for the day, the potential hazards that may be encountered and the necessary precautions required to control or eliminate the potential hazards.

## 2. PURPOSE

To provide a specific plan of action for personnel working on the Rigs when undertaking / conducting the rig down, rig transportation, and rig up stages of the rig move initial process. This procedure is not "set in stone" – it can be changed at any time if the equipment, personnel, available resources or procedures change or better ways of conducting a rig move are found. This document provides the general safety rules and guidelines for rig move operations, each specific task required to safely perform the specific job steps involved in performing the rig move operation must have a rig specific Job Safety Analysis (JSA) available at the rig site and must be reviewed by the supervisor in charge prior to the start of each task in a Safety Meeting or Toolbox Talk, to ensure that all personnel involved in the task understand their roles and responsibilities to perform the task in a safe and efficient manner.

## 3. APPLICATION

This document applies to all Client personnel employed at the rig and third party contractors, during the rig move activity. Similarly, it also applies to personnel who are hired specifically for this purpose. The responsibilities of the Toolpusher include proper planning for rig move, assessing and arranging the available resources for various jobs, coordinating with the MJEPS and assigning specific chores to key personnel.



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#### 4. DEFINITIONS

Several technical terms and drilling field terms have been used throughout this document, which would be difficult for a layman to understand, but is easily understood by those who deal in this field. Therefore, specific explanations are avoided at this stage. The specific stages start with the rig down procedure and finish with the rig up procedure at the new destination.

##### Critical loads

Rig loads that are essential to power up the rig and to spud the well, they must be moved during its specified schedule as other pieces of equipment rely on that particular piece to be in place for their assembly.

- |                    |                     |
|--------------------|---------------------|
| 1. Mud Pump Skid   | 3. Engine Skid      |
| 2. Mud Shaker Tank | 4. Sub base and Rig |

##### Non-essential loads

Rig loads, which can be moved at any convenient time during the rig move. Usually, those non-essential pieces of equipment that can be rearranged in a rig move plan in order to expedite the Rig Move process.

##### Pre-move loads

Rig loads that are not required for finishing/completing the well and which therefore can be moved to the new location prior to rig release, but after Location Inspection and Approval (e.g. mud chemicals, some pipe baskets, some mud- or pre-mix tanks).

##### Lift

A single piece of equipment or pieces of equipment that are bound together, which alone or combined can be lifted as a single unit by a winch truck, forklift and/or crane. Examples: mud tank, choke manifold, a master skid with 3 shakers (although the shakers are 3 individual pieces, they are bound together by the master skid which can be lifted as a single lift)



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### **Load**

Loads comprise any combination of lifts which when combined together by a physical means for the purpose of moving, do so simultaneously. Ex: any lifts combined together into a single truck, train, ship, and/or airplane are considered a load.

### **5. RESPONSIBILITIES**

#### **Supervisor responsibilities**

The Supervisor is responsible for planning and supervising all operations related to the rig move operation and ensuring that all work being performed during the rig move is done safely and efficiently in accordance with the MJEPS HSE Management System available at each head office. The Supervisor must also ensure that all safe work procedures and JSA's are adhered to, in order to prevent unnecessary incidents from occurring.

It is the responsibility of the Supervisor to ensure that all hazards associated to the rig move operation are minimized to as low as reasonably possible (ALARP) and that all employees wear the proper personal protective equipment and use all safety equipment provided to reduce the risk of injury while performing their assigned tasks.

The Supervisor shall perform a Survey of the New Worksite (Location). The survey should preferably be carried out before the worksite becomes occupied. If this is not possible, it should be done as soon as possible after occupation. The Toolpusher must ensure the appropriate actions are taken to address any HSE shortcomings found during the survey.

The Supervisor must check the condition of all access roads prior to moving rig onto location. Conditions to be checked include:

- a. – Designated rig move route
- b. – Identify obstructions (low overhead structures, power lines, etc.)
- c. – Identify road hazards (gates, condition of roads, shoulders, etc.)

The Supervisor must develop a rig route map to be followed during the course of the rig move, which identifies any potential hazards which may be encountered during the rig move process. The



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rig move map must be discussed with the company man of the client and the Truck Pusher in order to verify the proposed route of travel to be taken to the next location.

It is also the responsibility of the Client Supervisor to ensure that pre-use inspections are performed on all lifting equipment and transportation equipment to be used during each shift such as cranes, forklifts, head trucks/trailers, slings etc. Daily equipment checklists can be found in the MJEPS Management System. All deficiencies must be corrected or eliminated prior to the equipment being placed into service each shift. If a deficiency cannot be eliminated than such deficiency must be reported immediately to the respective Rig Superintendent and a corrective action plan must be implemented prior to placing the equipment into service. NEVER use equipment which has defective safety devices.

#### **Employee Responsibilities**

It is the responsibility of every employee to work in a safe and efficient manner which will neither expose himself or his fellow workers to any undue risks. Employees will wear and use safety equipment and utilize tag lines to ensure safe working conditions for themselves and others.

Employees shall identify and eliminate hazards when they are observed and will utilize the BOC Program to identify and correct "at risk behaviors" immediately.

Employees shall report equipment deficiencies or unsuitable equipment immediately to their Supervisor to ensure that deficient or unsuitable equipment is not used during the rig move operation.

Employees shall ensure that they operate equipment in a safe and efficient manner in accordance with the safe working loads and capacities of the equipment they are operating and to only use approved lifting points where applicable.

Employees shall report any incident that occurs during the rig move operation no matter how small the injury or damage.

Employees shall ensure that they take adequate breaks to rehydrate during the course of the day to ensure to prevent dehydration which can cause heat exhaustion or heat stroke.



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### **MJEPS responsibilities**

The Truck Pusher must be advised of all hazards and conditions, and he is fully responsible to pass that information onto the truck drivers.

Have all the proper local and other government permits provided by rig supervisor.

Establish the correct routing after consultation with the operator and/or drilling contractor. Ensure that all drivers are aware that there is to be no deviation from the designated safe route of travel identified in the rig move plan.

Establish the location of all overhead obstructions along the route (power lines, telephone lines, overpasses and bridges).

Make sure that all loads will clear obstructions.

Ensure all loads are properly secured before moving.

Examine all loads before moving: mount flags, signs and warning lights on all over width and over length loads as appropriate and according to local regulations.

Lower all gin poles and booms to avoid contact with any obstructions.

Ensure that major components are marked with a weight and measurement tag which includes length, width, height and weight range (within a 10% variance). Whenever possible, indicate load centers with an arrow on, or just above, skid.

Whenever a highway crossing is involved during the move, ensure the presence of Local Police crews.

Ensure that suitable communication is provided and maintained by the pilot vehicles leading and following the convoy so that in the event of a breakdown or other emergency arising while travelling in convoy all vehicles can be easily stopped to investigate and correct the situation that has arisen.

## **6. PROCEDURE / IMPLEMENTATION**

### **New route plan and new location**

The Tool pusher, must check the condition of access roads prior to moving rig onto location.

Conditions to be checked include:

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- a. - Obstructions (low overhead structures, power lines, etc.)
- b. - Road hazards (gates, condition of roads, shoulders, etc.)

The Client should establish the correct routing after consultation with the Operator and/or Drilling Contractor. Where applicable, the Client should establish the location of all overhead obstructions along the route (power lines, telephone lines, overpasses and bridges) and make sure all loads will clear those obstructions.

Once the rig move route has been surveyed and approved the Client Company Man, Toolpusher and Truck Pusher shall hold a pre-move meeting. The minutes of this meeting shall be documented on a Safety Meeting Form and signed off. This meeting will include, but not be limited to the following topics:

- Load out sequence
- Specific travel routes
- Additional equipment needed for the move (i.e. – lifting equipment and their corresponding lift plans).
- Lessons learned from the last rig move.
- Any special inspections (i.e. – derrick) or repairs to be completed before next rig up.
- Any first time employees (Short Service Employees) with limited experience which may require “out of the way jobs” or additional supervision or other extra precautions.

### **Trucking arrangements**

Once the Rig Superintendent or the Toolpusher has received confirmation to start the initial move from the Operator and/or Company Man, arrangements must be made to make sure MJEPS personnel and all other resources required for rig move are mobilized.

### **Assignment of work**

The Toolpusher shall ensure that the employees have received adequate training and have knowledge of, and experience in, the application, use, and limitations of the equipment to make sure the use or operation of the equipment is done in a safe and efficient manner to rig down, rig



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move and rig up on the new worksite. The following topics are essential for a safe and efficient rig move:

- Daily planning – organizing and communicating to all personnel the rig move plan for each day.
- What to do first – sequential order of rigging out, loading and moving
- Delegation of tasks and what to do
- Work safe and effective – review the job specific JSA for each task with all those involved in the task

## 7. GENERAL SAFETY REQUIREMENTS

### Personnel safety

Safety of personnel is of the utmost importance. After all attempts have been made to minimize the hazards associated with rig moves, the supervisor should make sure the workers use the specific Personal Protective Equipment issued to and made available for the employees to use. It is the responsibility of every employee to work in a safe and efficient manner which will neither expose himself or his fellow workers to any undue risks. Employees will wear and use safety equipment and utilize tag lines to ensure safe working conditions for themselves and others.

### Pre – move safety meeting

Pre-move safety meetings will be held prior to initiating rig move activities. The meeting should be conducted by the Toolpusher

- Planned objectives for the rig move
- Emergency contingency plan – a written plan must be available for each rig move

### Access roads

Once the rig move route has been received, the Toolpusher, Truck Pusher, and the Company Man should survey the route. The route should be checked for all of the following:

- There should be sufficient clearance under all power lines and bridges for the tallest loads. If the route passes over a bridge, the bridge weight rating must be adequate to support the heaviest loads.



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- All corners or junctions in the road should be wide enough to accept the longest and largest loads. Particular care should be taken to ensure that the outside of the corner or junction is not damaged and can support the heaviest loads.
- If any wide loads are to be moved down busy or public roads, permission should be obtained in advance. Where ever possible, wide loads should be moved when the road is not busy. Avoid rush hours.
- Any damaged roads should be noted and arrangements made to have them repaired before the move starts. Avoid moves in foggy, rainy, and dusty weathers, where visibility is less than 100 meters.
- Any steep incline should be noted and arrangements made for additional prime, movers or bulldozers, if required, to safely manage the heavy loads over this section of the route.
- Once the route has been surveyed, the problems should be reported and arrangements made to correct the problem or arrange an alternate route. There must be no deviation from the finalized agreed route.

After the route has been surveyed and approved, a Pre-move meeting should be held on the Rig between the Toolpusher, Truck Pusher, and the Company Man, and where possible, an office based Drilling Contractor Representative.

During the move, a meeting will be held at the start of every day between the Toolpusher and the Truck pusher. The day's agenda will be decided (what loads to move on trucks based on the specific rig move plan).

#### **Travelling in Convoy Safety Requirements**

It is highly recommended that loads being moved to the new location be moved in a convoy of trucks, it is also recommended that whenever possible two truck pushers should be used when conducting a rig move. No rig moves are allowed during inclement weather such as: foggy, rainy or dusty conditions where visibility is less than 100 meters. It is the responsibility of the Toolpusher to ensure that weather conditions are favorable and that adequate visibility exists for the rig move otherwise he must delay the rig move until conditions improve.



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Night time rig moves must be avoided as much as possible. The Toolpusher has the responsibility and the authority to shut down any night move when in his opinion conditions make it unsafe to continue. Furthermore, loading and moving oversized loads is not permitted during night time hours or after dark.

Rig routes should be planned to avoid crossing any highways. If it is necessary to cross a highway, then only authorized crossing points are to be used.

All wide loads shall be moved in convoy with a lead escort vehicle and a following escort vehicle, these escort vehicles must have equipped with flashing orange rooftop lights to make other vehicles aware of an impending hazard approaching.

Escort vehicles must be equipped with an adequate and immediate means of communication so that the convoy can be stopped quickly in the event of an emergency or any other reason arising for stopping the convoy. This may require the provision of mobile phones or walkie talkies. If any vehicle in the convoy behind the lead escort vehicle stops for any reason the following escort vehicle must radio ahead to stop the remainder of the convoy.

When travelling in convoy each vehicle shall maintain a safe following distance away from the vehicle in front of him and be alert watching for tools or equipment falling from the vehicle ahead. In the event that something falls from the vehicle ahead the driver shall stop his vehicle and alert the following escort vehicle to communicate to the lead escort vehicle to stop the remainder of the convoy to pick up the fallen tool or equipment.

When conducting long distance rig moves in convoy, the Toolpusher/Truck Pusher shall designate an assigned schedule for the convoy to stop so that each driver in the convoy can conduct a walk around inspection of his truck and load to ensure that no new hazards have arisen and to let the tires cool off on the equipment to prevent the tires from bursting due to excessive heat. At this time each driver will ensure that all components of their loads are secured and have not come loose during the rig move. The recommended schedule for stop check inspections is:

Summer – the convoy will stop every five kilometers to conduct inspection

Winter – the convoy will stop every ten kilometers to conduct inspection.



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It is the responsibility of the lead escort vehicle to measure the distances travelled and stop the convoy appropriately when necessary.

When travelling in convoy or out of convoy, only the approved designated rig route shall be followed, **no deviations from the approved rig move route are permitted.**

When travelling in convoy, no vehicle shall attempt to overtake any of the vehicles in front of them!

If necessary to stop the vehicle in front of them due to an identified hazard the driver shall stop his vehicle and notify the following escort vehicle to communicate with the lead escort vehicle to stop the convoy, in order to correct the identified hazard.

All overhead cables are to be approached with caution. Each truck has to stop then proceed slowly under the cables to avoid any excessive movement of the Truck suspension.

The following is a table to determine whether the Rig can pass safely under the overhead cables.

<b>Nominal phase to phase voltage in kilovolts [kV]</b>	<b>Minimum safe distance OR approach distance to be kept in centimeters [cm]</b>	<b>Minimum safe distance OR approach distance to be kept in inches</b>
2.4, 4.6 or 13.8	122	48
34.5	153	60
69	153	60
115	183	72
230	244	96



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If the above clearance is insufficient, then;

- a) The Operator will build an alternate route to give the necessary clearance or
- b) If an alternate route cannot be constructed, the Operator will arrange with the local Power Company to cut the power off, lift or remove the cables for the rig move. The Rig Superintendent or the Toolpusher will communicate the rig move date and time to the local Power Company.

#### **Highway and railway crossing flagging crews**

For railway crossings, the Rig Superintendent, Toolpusher or the Truck Pusher will contact the Drilling Contractor to schedule a crew to open the gates at authorized railway crossing points, making sure they are aware of the train's scheduled crossing at that point and also provide one (1) signal-man with the proper communication device (walkie-talkie and flags) on each side of the crossing to alert if a train is coming before allowing the convoy to cross the railway crossing.

For highway crossings, the Truck pusher will contact the Operations Department at rig to schedule a fully equipped crew to be at the approved highway crossing to stop traffic and allow the convoy to cross the aforementioned highway. Whenever deemed necessary Client will request the intervention of the Local Traffic Police.

#### **Personal Protective Equipment (PPE)**

The minimum required Personal Protective Equipment during a rig move consists of the following and will be worn at all times and when applicable:

- Steel toed safety boots
- Hard hats
- Safety glasses
- Gloves
- Coverall with light reflective striping
- If no light reflective striping, fluorescent vests (day and night)
- Full body safety harness with lanyards, if working 2 meters (6 ft) above work surface
- Flash lights for personnel working after dark



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### **Job safety analysis (JSA)**

A job safety analysis must be used to help identify unsafe acts and unsafe conditions prior to a job being performed in order to make it safer.

The Tool pusher must make sure a JSA is performed just before a planned activity is performed. Also, must sign off on the JSA when completed and ensure that the JSA is filed in the JSA Workbook for future reference.

The Tool pusher must lead the JSA and make sure the crew members involved in the operation are present. Also, must follow the JSA procedure and ensure a complete understanding of the JSA by the crew performing the job.

The crew members must participate in the JSA and provide the Toolpusher with information of specific tasks involved with the job. Also, the crew must comply with the JSA steps.

### **Work permits**

It is an established assessment method to ensure all hazards associated with specific operations are evaluated, known and communicated by a formal system to minimize potential risks and control hazards associated with the performance of these specific tasks.

Work permits will be required prior to commencing the rig move operations. The work permits are available at the Rig HSE office on location. The work permit will identify site-specific concerns, address safety concerns and cover general rig move policies.

### **Drinking water**

It is the responsibility of the Toolpusher to make sure there is a sufficient quantity of drinking water at their work place. This specially applies to personnel working or proceeding to the new location.

### **Hours worked by personnel**

The hours worked by any personnel will not exceed 12 continuous hours at any time.

Heavy load truck drivers working hours as per MJEPS standard.



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At no time is the above statement optional and shall be strictly enforced by all Senior Management involved in this operation.

#### **Communication**

When travelling in convoy formation with multiple trucks, each escort vehicle will be equipped with a cellular phone or where necessary walkie talkies.

#### **Qualified supervision**

Competent (qualified, trained and experienced) supervision will be required at all times at the level that is set forth in this document. At no time will any operation proceed without the minimum level of supervision required to safely perform a given task. The Toolpusher and Truck Pusher are to ensure that JSAs are followed and reviewed in the Daily Rig Move Planning and Safety Meeting.

The Tool pusher and Truck Pusher must ensure that all equipment operators, designated swamper and drivers are competent and capable to perform their assigned tasks. At no time shall any Client Employee operate equipment or vehicles unless previously assigned by the MJEPS Management to do so.

### **8. RIG MOVE SAFETY GUIDELINES**

#### **Precautions at the well site**

While operating bed trucks and gin pole trucks, the driver must ensure that the swammer is in view of the driver AT ALL TIMES to signal hazards and that all personnel are clear of moving trucks.

Use a bed truck to tailboard loads on soft surfaces.

When operating tractor trailer units, the driver must ALWAYS know the position of the swamper and the rig crew before backing up. Drivers are not permitted to back any vehicle on site without the use of a swammer.

Use a relay signaler to give signals when the driver's view of the primary signaler is obstructed.

The driver should ensure that the ground is solid, before shifting loads to the rear axles, to avoid upsets.



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**Rigging up and rigging down – general**

Rig directional signs shall be placed on the rig access road before the start of rig-up operations in the event it is necessary for an emergency vehicle to locate the rig site.

Until all equipment has been spotted in place, operations should not be restricted to daylight hours.

Before a mast is raised or lowered, a complete visual inspection of all its parts shall be made by the Toolpusher or some other qualified person designated by the Company using the Mast Inspection Report (F1010).

The mast (derrick) stand shall be free of bends, cracks, or other physical defects, and shall be equipped with a ladder for workers to use in gaining access to the mast during rig-up operations.

The Toolpusher or some other qualified person designated by the Company shall be in charge of and be present during the raising or lowering the mast.

Except for the operator of the controls, no Company personnel shall be required or permitted to be on or beneath a mast during raising or lowering operations.

No loose tools, equipment, or materials shall be kept in a mast while it is being raised, lowered, or operated.

High voltage lines shall be no closer than 125' (38 m) to the center of the hole and in no case closer than a distance than the mast would clear plus 6 feet (2m) if it were to overturn.

Road clearance for all high voltage lines shall be at least 10' (3m) above the highest point of the load passing underneath.

Provisions shall be made to prevent the mast from overturning or collapsing as a result of wind velocity. This shall be accomplished by the use of guide lines, constructing the mast foundations in such a manner as to resist overturning (within the specifications of the manufacturer), or by a combination of both guying and foundation.



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### Forklifts

When a forklift is required, the following safety procedures will be followed:

Only trained and competent personnel will be allowed to operate the forklift. The assigned driver must be fully aware of all safety procedures contained in procedure HSE-15.6 Forklift Safety found in the MJEPS HSE Management System available at Head Office.

Prior to using the forklift at the start of each shift the Forklift Operator must perform an inspection of the forklift.

Absolutely no personnel are allowed to ride on the forklift other than the driver and no worker shall be allowed to use the bucket or forks as an at height working platform.

The forklift will have a back-up alarm and rotating beacon light on top.

When loading or unloading tubular goods, the operator of the forklift will ensure that no one is within a 20 foot (6m) radius of the forklift or the truck.

When a forklift is left unattended, the load will be fully lowered, the controls will be neutralized, the power shall be shut off, and brakes set.

When the forklift operator is unable to see his forks, then he will receive instructions from the signaler before proceeding.

The forklift shall not be driven forward when carrying a load so high or wide as to obstruct the view of the driver.

The forklift shall not be driven forward while the lift prongs are raised higher than 12 inches (300mm) off the ground.

The forklift shall be parked, and secured when weather conditions deteriorate and the vehicle cannot operate safely.

All personnel working around the forklift must remain alert to the vehicle's presence and remain out of its path of travel.



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Surfaces where the vehicle is to travel must be kept as dry as possible. The vehicle will be parked when the surface becomes too slick for safe operation.

The forklift must have an overhead guard to protect the operator from being hit by falling objects; the guard must not block visibility.

Holes shall not be burned or drilled in the ends of the lift forks to attach chains, wire rope, or other devices for lifting purposes.

The forklift operator must remain alert and aware to the presence of other traffic around the worksite, pressure vessels, pressure and fuel lines, or fuel compartments, and exercise caution while maneuvering the vehicle in such areas.

The forklift shall travel with loads lowered as close to the driving surface as feasible.

When driving backwards and rounding corners, the forklift shall be slowed down and the horn sounded as a warning. The reverse alarm shall not be disabled or removed from the vehicle. A flashing light on the cab, or other warning device required by host country regulations, must be working at all times.

The forklift shall not be used to pull or drag equipment, material, etc. Its primary function is to lift loads.

The forklift shall not be driven fast. Care should be exercised while carrying a load, or when turning corners.

The forklift must not be parked in an enclosed room or confined area with the engine running.

The forklift shall be fitted with a spark arresting muffler.

The load capacity rating will be clearly labeled on the forklift and must be adhered to at all times by the Forklift Operator.

The forklift must be fitted with a seatbelt and drivers are required to buckle up when operating the forklift.

Use of P.P.E. (Personal Protective Equipment) is mandatory when operating the Forklift (i.e. seat belt, hard hat, eye protection)



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### Cranes

Only trained and competent personnel will be allowed to operate a crane during rig move operations. The assigned Crane Operator must be fully aware of all safety procedures contained in procedure Crane Operation Safety found in the MJEPS Management System available at Head Office.

Prior to using any crane, at the start of each shift the Crane Operator must perform an inspection of the crane.

Lift plans for every critical load must be developed before the loading starts. A safety meeting will be held and critical load data sheets will be elaborated to ensure the safe handling of the loads.

Cranes are critical for operations during rig-up and rig down. A catastrophic crane failure could result in serious injury to either the crane operator or personnel involved in working around the crane. In order to minimize the potential for such injury, the following will be observed:

Only authorized personnel who have been trained in the safe use and operation of cranes will be permitted to operate the crane.

The crane operator shall be responsible for those operations under his direct control. Whenever there is any doubt as to safety, the crane operator shall have the authority to stop the operation, re-plan the details, and continue as safety dictates.

When handling loads, the crane operator shall never start machine movement unless the load is within his range of vision and he has been given the appropriate signal. The Crane Operator shall ensure that he operates the equipment at a safe and controlled speed to ensure that the task is performed safely and efficiently without incident.

The crane operator shall respond to the signals only from the appointed signal person but should obey an emergency stop signal at any time no matter who gives the signal. Hand signals will be in accordance with those shown on the crane hand signals chart posted on the crane and around the rig (refer to Appendix 4).

The qualified person directing the lift shall determine that the load is secured and properly balanced in the sling or lifting device before it is lifted and that the lift and swing paths are clear of obstructions and personnel.



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No external forces shall be applied to suspended loads which will result in side loading of the boom.

Care shall be taken when swinging the crane so as to minimize the pendulum action of the hook and suspended load.

When two or more cranes are used to lift one load, one qualified person shall be responsible for the operation. The responsible person must analyze the operations and instruct all personnel involved in the proper positioning, rigging of the load and the movements to be made.

All safety equipment on the crane must be present and functional including tag lines, fire extinguisher, back-up beeper, load charts, load limiter and boom angle indicator.

Tag lines will be attached to each load for the safe positioning of the load. See tag lines paragraph further in this section.

Cranes can be dangerous machines in the wrong hands and, as such, require skilled persons to operate them. As well as the actual Crane Operator, at least one more important and essential member is required to make up the team. It is the Rigger/ Crane Helper/ Slinger and his duties include:

- a) Ensure that both he and the Crane Operator are familiar with the method of Signaling to be used.
- b) Be aware of the wind speed and direction.
- c) Know the weight of the load.
- d) Be familiar with the line capacities of the crane in use.
- e) Check that the lifting gear being used is in good condition, certified for use, Correctly color coded and of sufficient capacity to carry out the lift.
- f) Ensure that taglines are attached to any long or awkward loads to facilitate easier Handling.
- g) Be aware of any obstructions within the crane's radius and working area.
- h) Check that the area around the load to be lifted is clear and that the load is not Attached to the deck, transportation cradle, or adjacent equipment.



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- i) Ensure his hands are free from lifting gear and stand clear before the crane takes the strain.
- j) If using hand signals, stand in a position where the Crane Operator can clearly see you and you can maintain visual contact with the load.
- k) Always use clear and distinct signals (either by hand or by radio) to control lifting operations. In poor light conditions, exaggerate all hand signals.
- l) When lifting, stop the load just clear of the deck to check the balance and security of the load. This will also give the Crane Operator the opportunity to check the function of his hoist brake.
- m) Make it clear to the Crane Operator where the load has to be moved to and placed. If possible, precede each load to its destination.
- n) Warn other personnel in the area of the movement of the load.
- o) Keep a check on other activities within the crane's operating area to avoid the development of unforeseen hazards.

### **Bed loading**

#### **Position of crew**

- a) Scampers and rig crew must be visible to drivers and crane operators AT ALL TIMES.
- b) NEVER stand or work between a vehicle and a load until the supervisor signals to proceed.
- c) Use hand-over-hand grip procedures when handling winch lines. DO NOT let the line slip through your grip. Keep work area clear of all personnel except those essential for performing the procedure.
- d) Keep work area clear of all personnel when winching tall structural members.



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**Pins**

- a) Use cold-roll steel pins cut to a length appropriate for the load (because they will Bend, not break).
- b) Swamper must be visible to drivers AT ALL TIMES, especially when removing And replacing pins.
- c) DO NOT remove pins while other work is in progress.
- d) Use four long pins for hauling pipe.
- e) Use four pins on skid loads, two pins by live roll, and two pins at center of load.

**Signaling**

- a) Signalers must ALWAYS be visible to drivers.
- b) Drivers and crane operators must always obey the signaler.
- c) There should be only ONE signaler unless a relay is required
- d) Drivers and crane operators, when using signaler or swamper, must NOT winch Or move truck unless signaled.

**Hand signals**

- a) Signalers must always be visible to crane/fork/truck etc. operators.
- b) There should be only one signaler unless a relay is required.
- c) The signaler must stand where the operator can see him clearly, yet he must not Position himself in the path of the load.
- d) Use correct hand signals and display them properly. There should be no doubt in The Operator's mind as to what to do.



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### Care and handling of line

#### Slings

Check for the following: broken or kinked strands, wickers, flat spots, loose eyes, condition of wedge knot, proper color coding, and inspection tags.

- a) Replace worn slings or damaged slings.
- b) Always hook slings to the proper pick-up points or centering points. Use proper Method of attaching slings to prevent any accident.
- c) DO NOT use chains for loading or lifting.
- d) DO NOT drag slings on the ground.
- e) Coil or hang slings properly when not in use (cool, dry storage).
- f) Use separate slings for towing and loading.
- g) Never handle wire rope slings without gloves and always handle with a hand over Hand motion to prevent being injured by unforeseen wickers.
- h) Only use properly rated sling for the lifting weight required.

#### Tail Chains

- a) Check that the knot in the winch line has not slipped or begun to fray.
- b) Hook tail chains to shackle or winch line.
- c) Hook tail chains with hook openings AWAY (out) from the truck.
- d) Replace tail chain when links start to become stretched.

#### Winch Lines

- a) Check for the following: broken or kinked strands, wickers, flat spots, condition of Wedge or knots.
- b) Ensure all equipment is in good working order and of the proper size.



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- c) Use hand-over-hand grip procedures when handling winch lines. DO NOT let the line slip through your grip.
- d) Ensure even lays in spool line on winch drum.
- e) Ensure that the winch line is securely anchored to winch drum.

#### **Snatch Blocks**

- a) Check for excessive wear at the pins.
- b) Ensure all equipment is in good working order and of the proper size. A heavy duty snatch block (10-20ton capacity) is required for most operations.
- c) Keep hands and clothing away from moving snatch blocks.
- d) Lubricate snatch block with grease when required.
- e) Ensure that the loading sling is long enough so that the snatch block is picked up on the trailer before the load starts to come up.
- f) Use double line procedure on heavy loads.

For further rigging and slinging information refer to Lifting Equipment Inspection Program found in the MJEPS HSE Management System available at Head office.

#### **Suspended loads**

Never stand under a suspended load.

Use tag lines to control and position suspended loads.

When working around suspended loads, maintain a sufficient distance between yourself and the load in case a sling, winch line, etc. fails causing the suspended load to fall or shift. To reduce the risk of being crushed, NEVER stand between a suspended load and a stationary object (e.g., another building).

#### **Matting boards**

It is not possible to describe completely all of the safe procedures for handling matting boards due to variances in manufacturer's hook-up design and drilling contractor's size requirements.



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Use four-legged sling of sufficient length. DO NOT use tie-down chains to lift mats NEVER crawl or walk under suspended loads. Turn the matting board over and lay it down BEFORE cleaning mud which is stuck to the bottom. Keep matting boards close to the ground (12-14 inches [30-40 cm]) when swinging them to be loaded or unloaded. Swampers working on this procedure are to use tag lines to control the matting board's position.

### **Tag lines**

Procedures for using tag lines:

Tag lines will be used to control all suspended loads. If tag lines are impractical during final positioning of the load, caution should be taken to ensure that no part of the person's body guiding the load be between the load and any stationary object.

Hand-held tag lines will be constructed of a non-conductive material such as ½ inch rope or a 1-inch nylon strap. Chains or steel cables are not acceptable.

Never attempt to guide a load with the tag-line wrapped around your hand or waist.

Never use a tag line with a knot in the end.

A tag line should be of sufficient length to insure that no part of the person guiding the load be under the load at any time.

The person holding the tag line should never position themselves between a suspended load and a stationary object.

### **Power line safety**

When practical, power lines shall be de-energized for any work where contractor employees or equipment could approach within 10 feet (3.3m) of the power line (e.g., the boom swing of a crane). All power lines shall be considered energized unless proper measures have been taken for de-energizing.

When conducting work near energized overhead power lines, any part of the crane, boom, mast, gin poles, or machinery shall not be permitted within 10 feet (3.3m) of any power lines.



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When in transit with no load and the boom, mast, gin poles, etc. lowered and cradled, the equipment or load clearance shall be a minimum of 10 feet (3.3m) from any power lines.

When the mast is raised or lowered, it shall clear all energized power lines by a minimum of 20 feet (6.6m).

Portable cranes and portable light towers used in rig up and rig down operations shall be operated to keep the boom at least 25 feet from energized power lines by the client.

Never allow anyone to ride on a load to lift power lines. Call the power company.

If vehicle or load comes in contact with a power line, stay in the vehicle and attempt to move the vehicle away from the power line if not hooked. Never allow anyone near the truck, load, and trailer body when it comes in contact with a power line. If it is necessary to leave the truck, jump as far from the vehicle as possible. Land with both feet together and hop away. Never allow your body, truck and ground to be in contact at the same time.

Drivers should notify the power company for escort service or assistance for any load over 17 feet, six inches (5.6m) high.

#### **Swampier operations safety**

Never stand between any vehicle and load until the vehicle comes to a complete stop, the emergency brakes are applied, and the driver signals to proceed.

Pay attention to the location of all vehicles.

Never crawl under a vehicle or a suspended load.

DO NOT climb onto or off of truck until it has come to a complete stop and driver signals to proceed. Be sure of footing while climbing or working on load and getting off of load. DO NOT jump off the load.

While working on a load, be sure that the driver knows where you are and what you are doing. Watch for pinch points. Stand to the side of an object being moved NOT in a direct line of the moving object.

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Ensure that all equipment is in good working order and is the proper size for the load. Chain the load securely. Check chains and boomer frequently during a move.

At least two workers are required to install or remove a gin pole cap and pull over a gin pole.

Be sure that all lines are properly strung before raising gin poles.

When loading or unloading extra-heavy or sensitive buildings (e.g., VFD house, Driller Cabin, etc.), it is recommended that the loading tractor double-line his winch and that a gin pole truck be placed on each side of the building to assist the winch tractor in loading and unloading.

VFD Units should be hauled at slower speeds over rough roads. VFD Units should not be bumped into position.

Use hand-over-hand grip procedures when working with winch lines. DO NOT let the line slip through your grip due to the danger of wickers.

Report damaged winch lines to truck pusher or Toolpusher.

Check the knot at the tail chain on winch line to ensure it will not pull through. Check the line to be sure it is not worn ahead of the knot.

Be sure that deck pins are put into slots with the long end down into the socket. DO NOT catch the top of the pin during loading or unloading. Install hair pins (keepers) in deck pins wherever possible.

Hold deck pins with thumb and forefinger ON THE SIDES (away from the load) when installing or removing.

Stay away from the pins and the load when loads are being winched or moved.

## 9. SPECIFIC ASSUMPTIONS FOR THIS RIG MOVE

This Rig Move Plan applies to a move within the same Area.

In order to perform a safe and expeditious Rig Move, the MJEPS will provide cranes 70 to 80 ton, forklift at each location and all the trucks (lowboys, high beds and Extended lowboys) necessary to transport the Rig to the new location.



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In case the resources before mentioned are not available, the MJEPS will provide other suitable equipment. The Rig Manager has to approve the alternate resources presented by the MJEPS.

If the Rig Move route requires crossing any major thoroughfare or passing of blacktop roads, the trucks with wide loads will have to move in convoys. Flag crews will be utilized when crossing highways.

MJEPS will provide the Rigs crane and front loader.

Equipment placement;

- |                     |                      |
|---------------------|----------------------|
| a. Current location | cranes, front loader |
| b. New location     | cranes, front loader |

## 10. EQUIPMENT POSITIONING IN CHRONOLOGICAL ORDER

This is the chronological order in which each Development Drilling Rig has to be rigged up.

As the equipment arrives to the new location it must be spotted as per the rig move schedule. The moment to move the Rig Site Camp and Warehouse buildings will be decided strictly on an agreement by the Toolpusher and KOC Company Man, who depending of locations distance, road survey results and well completion, will choose the right moment for moving.

The Mechanic and Electrician on site will notify the Toolpusher the best moment for them to move the mechanic/electrician workshop from the current location to the new one, making sure they have the proper tools to rig down and rig up activities.

A safety meeting must be held every day, 15 minutes before each shift and all personnel including other service companies' personnel must attend.

Also, a Job Safety Analysis meeting must be held just before conducting a potentially hazardous operation, Toolbox Talks must be utilized throughout the rig move operation to enhance communication during the operation.

String out new location



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Spot super sacks, chemical baskets, pipes and junk baskets, pre-mix cementing tanks and miscellaneous pre-moved equipment.

Spot shakers tank.

Spot intermediate tank.

Spot suction mud tank.

Spot the Sub base and Rig

Spot the mud pump skid

Spot the Engine Skid

Spot water tanks.

Spot the gas buster (poor boy).

Spot rig site diesel tank #1, #2 & #3.

Spot mechanic/electrician workshop.

Spot welder workshop.

Spot and rig up choke manifold.

Spot accumulator suitcases and elevator skid.

Spot and rig up accumulator.

Spot catwalk, v-door and pipe racks.

Mix spud mud.

Pre-spud acceptance inspection by KOC Company Man.

Spud new well.



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## 11. APPENDIX

### DAILY PRE-JOB MEETING CHECKLIST



Meeting Rooster.pdf

### Daily Crane inspection checklist



DAILY CRANE CHECK  
LIST.pdf

### Daily Forklift inspection checklist



DAILY FORKLIFT  
CHECKLIST.pdf

### Daily Truck Inspection checklist



DAILY TRUCK  
CHECKLIST.pdf

### PRE RIG MOVE PLAN CHECKLIST



PRE RIG MOVE PLAN  
CHECKLIST.pdf

### SAMPLE ROUTE SURVEY CHECKLIST (REFER 5.1.3)



Sample route survey  
checklist.pdf

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### CRANE SIGNAL

