



# DROPS PREVENTIONS

ON

## PV DRILLING RIGS

(STATISTICS AND PREVENTION)

# PV DRILLING

## DROPS STATISTICS AND DROPS PREVENTION

### DROPPED OBJECTS STATISTIC FROM 2007 TO PRESENT DAY

No.	Date:	What Happened	Location on Rig.
1	19 Sept 2007	Clevis pin was physically dropped during BOP handling Ops	BOP area -Derrick Zone 1
2	21 Sept 2007	Metal block fell from inside ARC tool during making up BHA	Rig Floor -Derrick Zone 2
3	5 Aug 2008	Two 1" roller bearings fell from TDS cracked dolly roller.	Rig Floor -Derrick Zone 2
4	11 Oct 2008	Two pins fell from crane bearing failure at boom tip.	Port Crane
5	1 Oct 2009	Light fitting above bulk tank walkway dropped and was only held by cable	Bulk Storage Tanks
6	10 March 2010	Small aluminum ID plates fell off crane boom	Port Crane
7	11 March 2010	GPS Antenna fell from Accommodation Roof to main deck	Aft Accommodation
8	5 May 2010	Nut and bolt fell from service loop shackle to rig floor	Rig Floor -Derrick Zone 2

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### DROPPED OBJECTS STATISTIC FROM 2007 TO PRESENT DAY

No.	Date:	What Happened	Location on Rig.
9	11 May 2010	Broken retaining ring caused 3" Wedge segment fell from 1502 fitting from cement hose	Rig Floor -Derrick Zone 2
10	10 June 2010	During hammering of conductor 3 castle type nuts sheared off the hammer falling to rig floor	Rig Floor -Derrick Zone 2
11	27 June 2010	While removing 13 3/8" wellhead casing slips - slip segment fell	BOP area -Derrick Zone 1
12	29 Aug 2010	Anti collision light on crane damage when crane boom tip touch leg – suspended by cable.	Port Crane
13	1 Sept 2010	Solar panel from anti collision light on leg fell to deck (possible lighting strike)	Port Leg

**All the described incidents did not result in actual harm to our personnel but all had potential to do so.**

**All incidents investigated and appropriate action taken to prevent re-occurrence and shared within our fleet and our partner rigs.**

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### SOME PHOTOS OF ITEMS THAT HAVE FALLEN

13 3/8" X 20" FMC wellhead casing slip segment weighing 35kg



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### DROPPED OBJECTS PREVENTION

PVD Has a Dropped Object Prevention Policy (P1.04.18)

Developing the Site Specific Dropped Object Plan :

- Divide the facility into sections, known as a Zone.
- Each Crane will be considered as a zone. Other examples of zones may be External Living Quarters, Main Deck under Cantilever, Lower Machinery Spaces, Jacking Houses and gantry's, and any other areas deemed by OIM
- Each facility is different and should be sectioned off in a manner for easy identification of areas/zone.
- Identify and log all potential dropped objects in each zone.
- The log must include an item number, description of item, method of retention, and location.

### DROPPED OBJECTS PREVENTION

- All unnecessary items or equipment at height with potential falls shall be removed.
- Ensure all remaining items identified are secured properly for the prevention of dropped objects.
- Use pictures of properly secured items to support the log book.
- Routine inspection can eliminate the potential hazard of equipment and fixtures coming loose and falling.
- The specific inspection schedule is determined by the OIM/ Rig Manager, all MODU sections must be inspected quarterly and warehouse/yard facility sections inspected twice a year.

# PV DRILLING

## DROPS STATISTICS AND DROPS PREVENTION



### DROPPED OBJECTS PREVENTION

- The frequency & inspection may be brought forward at the discretion of the OIM/ Rig Manager in certain circumstances such as, jarring, drilling surface hole, rough drilling & severe weather conditions, anything that might increase the frequency/risk of a dropped object.
- OIM and Rig Managers will identify inspection responsibility for each zone/section.
- Inspectors are to utilize photos as reference to inspections along with the following: (sample below)
- **All unnecessary items or equipment at height with potential to fall shall be removed.**



Check All Bolts & Nuts for Security  
& are Lock Wired



Check Blower Housing is  
Secure

### DROPPED OBJECTS PREVENTION – IN THE DERRICK

Derrick Management Plan:

Identify the Derrick Zones: Divide the Derrick into small manageable sections to help identification, split into 5 zones:

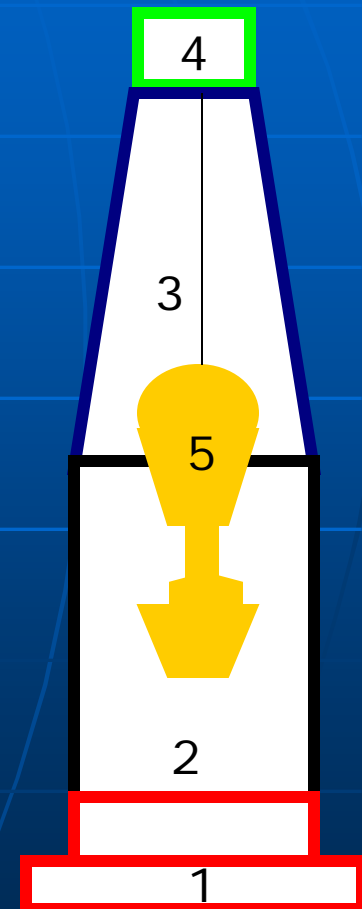
Zone 1: Lower Substructure and BOP deck

Zone 2: Drill Floor to Monkey Board

Zone 3: Monkey Board to Crown

Zone 4: Crown Section

Zone 5: All Traveling Equipment in Derrick





### DROPPED OBJECTS PREVENTION - IN THE DERRICK

A Derrick Management Plan must effectively control the use of temporary tools and equipment taken up the Derrick for maintenance or wireline work a log sheet will be used.

All tools and equipment must be itemized on the log to ensure all tools equipment are accounted for when work has finished and nothing left in Derrick.

This is the responsibility of the on tour Driller to ensure all tools and equipment are accounted for when job is complete and signed of by person carrying out the work.

### DROPPED OBJECTS PREVENTION – Methods of securing items.

#### **Securing Items for the Prevention of Dropped Objects**

This policy affects all equipment attached to the rig by any means other than securing by welding to the approved PVD welding specification.

This will include all lights, speakers, bolted inclined ladders, temporary walkways, bells, etc.

Any item which is mounted more than eight (8) feet (2.4 meters) above a continuous deck shall be secured by approved methods and protected against falling.

#### **By such methods as:**

- Safety Cables (stainless or galvanized)
- Double nuts with the threads dimpled.
- ANCO wire lock nuts, Nylon lock nuts or equal.
- Exposed bolt thread drilled with cotter key. (safety pin)
- All bolts made up into equipment where the threads are internal to the equipment shall have Lock-tite applied, or the heads of the bolts shall be drilled and tie-wired together to prevent backing off

### DROPPED OBJECTS PREVENTION – Additional measures.

Area Audits to ensure dropped prevention measure are followed.

Internal rig audit checklist also includes checking evidence of compliance with policy.

Annual Independent Third Party DROPS inspection conducted onboard.

Monthly / Weekly DROPS Preventive Maintenance inspections carried out on zoned areas and results logged in the system.

In house DROPS Awareness Training for the crews as per DROPS Train The Trainer presentations - done to be rig specific.

Poster Campaigns, also information run on the rig information channel.

# Introduction : OBJECTIVES *CÁC MỤC TIÊU*



- To understand and define what is a potential dropped object

*Để hiểu và định nghĩa một vật rơi tiềm ẩn là gì*

- To know how to identify a potential dropped object and the common causes

*Để biết cách nhận dạng vật rơi tiềm ẩn và các nguyên nhân phổ biến*

- To review methods for the control and prevention of potential dropped objects

*Để xem xét lại các phương thức kiểm soát và ngăn chặn các vật rơi tiềm ẩn.*

# WHAT CAUSES DROPPED OBJECTS?

- Inadequate Maintenance and Redundant / Neglected Equipment

Hoisting equipment

Structural deterioration

Crane hooks / safety latches

Lifting gear – wires, shackles, blocks etc

Lighting

Aerials / dishes



# CÁC NGUYÊN NHÂN NÀO GÂY RA VẬT RƠI?

- *Bảo dưỡng không đầy đủ và Thiết bị dư thừa/rườm rà*

*Thiết bị nâng*

*Sự hư hỏng kết cấu*

*Móc cầu/ chốt an toàn*

*Thiết bị nâng –dây cáp, mã lí, balan .v.v...*

*Thiết bị chiếu sáng*

*Dây/chảo thu tín hiệu*



# WHAT CAUSES DROPPED OBJECTS? **CÁC NGUYÊN NHÂN NÀO GÂY RA VẬT RƠI?**

- Failed Fixtures and Fittings **Lỗi các vật cố định và Lắp**

**đặt**  
Corrosion Failure **Lỗi do ăn mòn**

Inappropriate Fixings (primary & secondary retention)

**Thiết bị không thoả đáng (sự lưu giữ thiết yếu và thứ yếu)**

Vibration / Weathering **Rung động/ thời tiết**

Overloading **Quá tải**



# Questions?