

# Rig Intake Report

# **Borgland Dolphin**

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Rig Intake Report Borgland Dolphin

Doc. ref.: SCHW-WLSLY-D-RA-0612

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Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



## **CONTENTS**

1	In	trodu	ction	5
	1.1	Pu	rpose	5
	1.2	Sco	ope	5
	1.3	Ab	breviations and definitions	5
	1.4	Re	gulatory basis and requirements for the Rig Intake	7
	1.	4.1	Regulations and standards	
	1.	4.2	Wellesley	7
2	Su	ımma	ry of findings	ç
3	OI	RGAN	ISATION	11
4	Αι	udit ve	erification selection and method	12
	4.1	Ge	neral	12
	4.2	Re	view of Prior Audits, VERIFICATIONS, and Inspections	13
	4.3		E Management	
	4.	3.1	Quality Management system	14
	4.	3.2	HSESQ Program	
	4.4	Ris	sk, Operations and Barriers	16
	4.	4.1	Risk Management	16
	4.	4.2	Barrier management	17
	4.5	Ac	knowledgement of compliance (AoC)	17
	4.6	No	on-conformances	18
	4.7	Me	edical Preparedness. Health and Hygiene	18
	4.8	Wo	orking Environment	18
	4.9	Em	nergency Preparedness	19
	4.10	Ext	ternal Environment	19
	4.11	Dr	opped Object Prevention	20
5	TE	CHNI	CAL / OPERATIONAL	22
	5.1	Ma	aintenance	22
	5.2	We	ell Control	24
	5.3	Мо	poring Equipment and Station Keeping	24
	5.4	ESI	D for Critical Well Scenarios	25
	5.5	Lift	ting Operations / Lifting Appliances (Incl. Drillfloor)	25
	5.6	Ele	ektro instrument and safety systems	25
	5.7	Со	mmunication	25
	5.8	Cri	itical Spares and Alignment with Critical Spares List and Philosophy	25
	5.9	Ma	anual checks of all rig interfaces including crossovers, running tools etc. Fishing package	
	inspe	ection	1	26

## Doc. No. SCHW-WLSLY-D-RA-0612





	5.10	Capping stack interface and support systems	26
	5.11	Marine Surveillance	26
	5.12	Structural Integrity - Air Gap and Wave Loading	27
	5.13	Tight Rig	27
	5.14	Emergency Escape Routes	27
	5.15	Fire Stations	27
	5.16	Working at Height	27
	5.17	Markings and quality of signs	28
	5.18	Drilling Related Equipment	28
	5.19	Lighting	28
	5.20	Bulk storage and transfer (including cement silos)	28
	5.21	Heave compensation and tension system	28
	5.22	Service companies	29
6	Refe	erences	30
7	Арр	endices	31
	Appen	dix A – Rig intake follow up register	31

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



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<sup>(\*)</sup> E = Electronic (.pdf)

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 1 INTRODUCTION

Wellesley Petroleum AS (Wellesley) is planning to drill the well 6204/11-3 Schweinsteiger in production license (PL) 829 using Dolphin Drilling's semi-submersible drilling unit Borgland Dolphin. Well Expertise AS (WE) are providing well management and rig intake for Wellesley.

Wellesley will use the Borgland again in 2021 to drill a second firm well called Hemispheres and have two slot options for other possible wells in 2021. This rig intake of Borgland will therefore also be the foundation to build on for the well specific assessments that will be done in 2021.

#### 1.1 PURPOSE

This report summarizes the work and processes by Wellesley to ensure the contracted rig, Borgland Dolphin (BD), can fulfil selected requirements for the Acceptance and Commencement of MODU's for operations on the Norwegian Continental Shelf and in particular the Schweinsteiger well.

#### 1.2 SCOPE

The Rig Intake Team (RIT) has coordinated the verification activities. Wellesley technical and HSE personnel have been involved in executing the scope of work. All involved personnel from Wellesley are members of the respective well delivery teams, in that way ensuring detailed well knowledge has been considered and incorporated in the rig intake activities.

The Rig Intake is based on Wellesley's' and Well Expertise's governing documents listed under chapter 1.4 and has been expanded to cover Norwegian MODU regulations.

Progress on the rig intake has been reported in weekly operational meetings with Wellesley. Actions have been and will continue to be followed up in the "Rig Intake Follow Up Register", Appendix A.

This report summarizes the activities and findings of the rig intake process. The final evaluation and decision for acceptance of the rig to commence drilling activities lies with the Wellesley Operations and HSE Manager.

#### 1.3 ABBREVIATIONS AND DEFINITIONS

The following abbreviations and definitions are used in this document:

Abbreviations/Definitions	Term
AfC	Application for Consent
AIS	Automatic Identification System
AoC	Acknowledgement of Compliance
ARPA	Automatic Radar Plotting Aid
BD	Borgland Dolphin
ВОР	Blowout Preventer
BSR	Blind Shear Ram
СРА	Closest Point of Approach
CWO	Corrective Word Orders

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



Abbreviations/Definitions	Term
DDM	Top Drive
DDAS	Dolphin Drilling AS
DDMS	Dolphin Drilling Management System
DOP	Detailed Operational Procedure
DP	Drill Pipe
DSV	Drilling Supervisor
EPA	Emergency Preparedness Analysis
ESD	Emergency Shutdown
EX	Explosive Proof
GOMO	Guidelines for Offshore Marine Operation
HSE	Health, Safety and Environment
HSEQ	Health, Safety, Environment and Quality
HWDP	Heavyweight Drill Pipe
ISM	International Safety Management
KPI	Key Performance Indicators
LED	Light-emitting diodes
LGA	Lower Guiding Arm
LMRP	Lower Marine Riser Package
LTE	Long-Term Evolution (Wireless Broadband)
LWD/MWD	Logging/Measuring while Drilling
MH	Marine Hydraulics
MODU	Mobile Offshore Drilling Unit
MoM	Minutes of Meeting
MSC	Marine Surveillance Center
MWM	Maritime Waste Management
NCS	Norwegian Continental Shelf
NMD	Norwegian Maritime Directorate
Non-Conformity (NC)	A non-conformity is an inconsistency between actual conditions and
1, ( 2,	specified requirements e.g. in form of legislation, contracts or conditions
	specified in Dolphins Management System. Any Non-conformity found
	during the verification requires written corrective actions from Dolphin.
NOROG	Norwegian Oil and Gas Association
NORSOK	Norsk Sokkels Konkurranseposisjon
Observation (O)	An observation is not a non-conformance, but something that could lead
	to a non-conformance, if allowed to continue uncorrected; or an existing
	condition without adequate supporting evidence to verify that it
	constitutes a non-conformance. Observations found during the
	verification require written comments from Dolphin with actions taken.
OFFB	Operatørenes forening for beredskap (Wellesley's Emergency Response
	org.)
OIM	Offshore Installation Manager
OPA	Operational Risk Assessments
PM	Preventative Maintenance
POB	Personnel on board
PL	Production Licence
ProArc	Management Software
PSA	Petroleum Safety Authority (Petroleumstilsynet)
PSW	Petroleum Support West

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



Abbreviations/Definitions	Term
QRA	Quantitative Risk Analysis
RIT	Rig Intake Team
ROV	Remotely Operated Vehicle
RUG	Risk exposed groups (Risikoutsatte groper)
SAP	Maintenance System
SBV	Stand-by Vessel
SDS	Safety Data Sheet
SCE	Safety Critical Element
SECE	Safety and Environmental Critical Element
SJA	Safe Job Analysis
SST	Stability Section Leader
Synergic	Reporting System
Sypol	Chemical database
ТаТо	Time-out for Safety
TBT	Toolbox talk
ТСРА	Time to Closest Point of Approach
VSAT	Very Small Aperture Terminal
WE	Well Expertise
WEAC	Working Environment Area Chart

#### 1.4 REGULATORY BASIS AND REQUIREMENTS FOR THE RIG INTAKE

Borgland Dolphin has Singapore flag state and has obtained the required marine certificates from the NMD and a drill-class notification from DNV. The rig has been evaluated and checked towards relevant requirement included in the sub chapters below.

## 1.4.1 Regulations and standards

- The PSA regulations
- The NMD regulations ("the red book")
- Relevant DNV Standards
- Relevant NORSOK standards
- API standards
- GOMO (Guidelines for Offshore Marine Operation)
- Norwegian Oil and Gas Association Guidelines

## 1.4.2 Wellesley

- WE-M-PDP-P-03 How WE Manage Rig Intake
- SCHW-WLSLY-D-TA-0609 Rig Intake Plan
- WE-S-QHSE-PL-02 Audit, review, and verification plan

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



- SCHW-WLSLY-S-TA-0602 HSE Plan
- 2020 Rig Contract Borgland Dolphin

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 2 SUMMARY OF FINDINGS

Borgland Dolphin is an Enhanced Aker H-3 4<sup>th</sup> generation semi-submersible drilling unit with a 5<sup>th</sup> generation Drilling Package, capable of operating in harsh environments and water depths up to 1500 feet and has a max. POB of 100. The unit was built in 1977 as a flotel, had a major upgrade and converted to a MODU in 1998/99, and operates under the flag of Bermuda from 21.08.20. An Acknowledgement of Compliance (AoC) certificate was issued by the Petroleum Safety Authorities (PSA), 30th September 2004.

The rig intake process for Wellesley has focused on rig status and documentation after the Shell rig intake. In addition to reviewing internal/external verifications, the rig intake scope and activities have been focused on aspects relevant for the respective upcoming Schweinsteiger well.

The main impressions/ findings from the rig intake are summarized below:

- There has been an open and good communication throughout the rig intake process. Documents have been sent on request without delay.
- Dolphin has good systems and practices regarding health, hygiene, medical emergency preparedness, and Covid-19 preventive measures.
- Still some corrective and planned maintenance work orders outstanding, however there are no safety critical elements overdue.
- According to Dolphins internal procedures a DROPS inspection shall be done every 6 months. A
  DROPS Inspection was carried out by Axess May 2019, all critical findings are closed. A new DROPS
  survey by the same company is currently being carried out. Findings will be followed up in the BiWeekly HSE meeting.
- A GAP-analysis and review process ref. /1/ has been performed based on Wellesley Companya Management System and a complete list of DDAS procedures. No "Major Gaps" were identified during the review process that required an application for exemption. Minor gaps are bridged in the "SCHW-WLSLY-Q-SA-0605 Operational Interface Document".
- A Rig Visit/verification ref. /3/ was carried out before spud and the impression was that BD have a high focus on HSE and the rig is run professionally by very competent crews. The verification team identified 31 findings, which included 3 non-conformance and 28 observations. None of the findings are considered critical for the Schweinsteiger operation.
- Environmental verification: Dolphin has been open-minded and has given the requested environmental information. The environmental management system is according to ISO14001 and, in overall; both the system and the written general practice are in compliance with Wellesley requirements. More detailed environmental requirements will be specified in the operational bridging document.
- Emergency preparedness: In general Dolphin have proved through both documentation and verification that their emergency response organisations and security measures are robust and found to be satisfying. In addition, Wellesley have the impression that Dolphin organisation emphasis learning between the different rigs.
- Wellesley has reviewed the 12 long term and 2 short term AoC exemptions, ref. /4/ listed for Borgland Dolphin with respect to the planned well operation in accordance with the Norwegian Oil and Gas Association Handbook for AoC update. The non-conformances with compensating measures were reviewed and found acceptable for the Schweinsteiger operation.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



## Based on completion of the scope of work specified in the rig intake plan, it is the RIT's recommendation that Borgland Dolphin is qualified to operate for Wellesley on their Schweinsteiger well.

The recommendation is based on familiarization with Dolphin's Management system, history of audits and verifications including the Shell rig intake, structure of on- and offshore organization as well as the emergency response organization, the rig's technical condition, evaluation of maintenance systems, operational requirements and conditions. The details regarding the verifications are described in chapter 4 and 5, and the status of the audits is summarized in "The Rig Intake Follow Up Register", ref. Appendix A.

After the rig was finished with the Shell operations, it was moved and anchored up in Fedafjorden while waiting on the Schweinsteiger well and will remain there until planned departure on 21<sup>st</sup> August.

The remaining actions from the Rig Intake process will continue to be followed up through the Rig Intake Follow Up Register, ref. Appendix A.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



## **3 ORGANISATION**

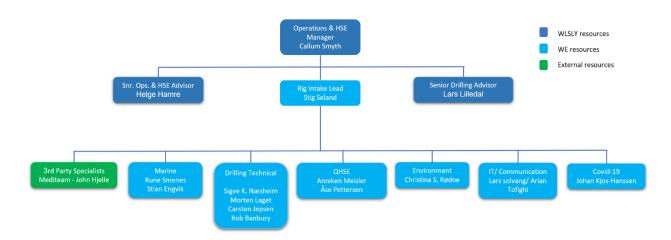


Figure 3-1 - Wellesley's Rig Intake Team

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 4 AUDIT VERIFICATION SELECTION AND METHOD

#### 4.1 GENERAL

The audit and verification program for the Wellesley Rig Intake was established by reviewing and assessing verifications carried out after the previous rig intake by Shell in May 2019, as well as internal verifications carried out by Dolphin. Overview over topics covered in the rig intake process are listed in Table 4-1 below.

A Rig Intake Plan (ref. /1/) was established covering audits and verifications related to HSE / Organisation / Administration as well as Technical / Operational/ Wells/ Rig and Location matters.

Table 4-1:Overview of topics covered through the rig intake process

HSE / Organisation/	Document Review, verification history and governing docs
Administration	HSE Management System, goals and plans 2020
	Audits and improvements
	Medical preparedness, Health and Hygiene
	Working Environment, employee involvement
	Emergency Preparedness
	External Environment
	Risk, operations and barriers
	Competence and training
	Dropped Objects
	Maintenance System
Technical / Operational	Well Control
	Station Keeping Capability
	ESD for Critical Well Scenarios
	Mooring System Review
	Lifting Operations / Lifting Appliances (Incl. Drillfloor)
	Communication
	Critical Spares and Alignment with Critical Spares List and Philosophy
	Manual checks of all rig interfaces including crossovers, running tools etc. Fishing package inspection and capping stack
	Capping stack interface and support systems.
	Marine monitoring competence and procedures in high collision risk areas. Interface with ER system
	Air gap and wave loading
	Working at height
	Markings and quality of signs
	Bulk storage and transfer (including cement silos)
	Fluid circulation and mixing system
	Heave compensation and tension system
	Structural integrity
	•

Based on the documented history of verifications, the extensive rig intake performed by Shell that Wellesley had access to, location specific conditions and Wellesley requirements, specialist competence was only required for the following verification:

Medical preparedness, Health and Hygiene performed by Company Doctor (Mediteam)

Addressing the different topics has been carried out through a mix of formal and working meetings with the Borgland Dolphin's onshore- and offshore rig team, through planning and dialogue with the involved

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



verification teams, as well as meetings with the rig management during the marine inspection and rig visits/Inspections. Experience transfer meetings with Shell, previous operator, have also been held as part of the process.

The following reports have been issued through the rig intake process:

- SCHW-WLSLY-D-RA-0610 Dolphin verification meetings report, ref. /2/
- SCHW-WLSLY-D-RA-0611 Borgland rig visit/verification report, ref. /3/
- SCHW-WLSLY-S-RA-0607 Borgland Dolphin AoC Exemption Review, ref. /4/
- PSW capping stack interface document, ref. /5/
- SCHW-WLSLY-S-RA-0608 Wellesley Review of Rig Owner's Risk and Emergency Preparedness Analysis, ref./6/
- MoM Competence review 04.08.2020, Ref./7/
- Marine report, 14.06.2020, ref. /8/
- MWM Waste Management visit 23.06.20, ref. /9/
- SCHW-WLSLY-Q-CA-0606 GAP Analysis between Wellesley Petroleum and Dolphin Drilling HSE Management Systems, ref. /10/

Summary and findings from these activities are documented in the rig intake report and the "Rig Intake Follow Up Register", ref. Appendix A.

#### 4.2 REVIEW OF PRIOR AUDITS, VERIFICATIONS, AND INSPECTIONS

The RIT has reviewed the history of relevant technical and HSE audits and verifications carried out by PSA, Shell, and internal audits carried out by Dolphin. The review includes status and follow up by spot checks.

Shell performed an extensive rig intake as part of accepting the rig in January 2019. Following Audits have been reviewed:

- Environmental Audit
- Health, hygiene, and Work Environment Audit
- Lifting and Hoisting Audit
- Helideck Audit
- Well control and BOP Audit
- Rig Start verification

PSA performed an audit related to the subject electrical installations and working environment in January 2020. 15 findings and improvement suggestions are still open. These will be followed up in the bi-weekly HSE and technical meeting with the rig during the well operation. Spots check will be taken offshore by the Environmental Coach and the DSV.

#### 4.3 HSE MANAGEMENT

Management of HSE has been addressed through reviewing the history of audits/verification reports as described above, review of steering documentation from the Dolphin/Borgland management system and verification meetings with the Borgland onshore and offshore organisation. A gap analysis between Wellesley and Dolphin HSE Management, ref. /10/ has been carried out, no major gaps identified.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 4.3.1 Quality Management system

MA-0028 HSE & QA MANUAL describes the management system utilised by Dolphin Drilling AS (DDAS) for the provision of services to satisfy drilling industry requirements, on the Norwegian Continental Shelf (NCS). The manual is supplemented by Dolphin Drilling Requirement Documents, which provide support as detailed back up information. The content of the manual is valid on all DDAS worksites, both onshore and offshore. The manual has been prepared to comply with Petroleum Regulations, ISO 9001:2008; ISO 14001:2004 and the International Safety Management (ISM) Code as far as the requirements affect Dolphin Drillings activities. DDAS Company Management System (DDMS) is divided in 4 levels:

- Level 1: Mission, Vision, Core Values and Policies What DDAS does now, what DDAS aspires to be, and the culture, beliefs and principles that support the Mission and Vision, as defined by the Core Values and Policies.
- Level 2: Requirement documents, manuals and Management Control Procedures are relevant for the overall operation of Dolphin Drilling. Requirement documents give a detailed description on how work processes are to be performed, who participates and personnel responsible for complying with Level 1 requirement documents.
- Level 3: STOPs are specific to a MOU or an activity onshore/offshore. Employees in Dolphin are
  responsible for ensuring they review any updated/new or revised document s relevant to their
  remit which are published in DDMS.
- Level 4: Forms and flowcharts which normally are attachments to the procedures.

Level 1	Level 2	Level 3	Level 4
Mission, Vision, Core Values and Policies	Requirements  Manuals and Procedures (MCP's)	Work instructions and guidelines/ STOP's	Forms and Flowcharts

Figure 4-1 Company Management System Levels

In addition to the hierarchical structure, the documents in the Management System are grouped in a regional and local structure.

ProArc is used for storage and control of normative documents in the company, it is used for all Dolphin Drillings activities globally. All personnel are trained in our DDMS by web-based E-learning.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 4.3.2 HSESQ Program

DDAS PR-900-0029 HSEQ Program is worked out based on:

- Status of HSEQ objectives for 2017-2018
- Identified risks
- Master's and Management Review
- · Feedback from clients
- Results of audits (internal and external)
- Authority focal areas
- Industry body guidelines

The HSEQ program for the MODU section defines the 2020 objectives and associated KPIs.

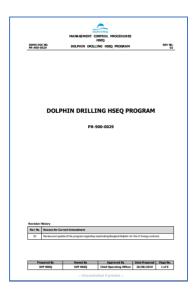


Figure 4-2: HSEQ Program 2020- 2021

The Program includes an action plan available in QlikView and followed up in SharePoint (the action plan is evaluated continuously, and changes may occur). A snip from QlikView is shown in Figure 4-3 below.

- → Lukke·PTIL·avvik¶
- → Foreta·yrkeshygienisk·inspeksjon¶
- → Tagge·alt·verktøy·i·hht.·mekaniske·vibrasjoner¶
- → Ledelsesbesøk·og·auditer·i·hht.·tilsynsplan¶
- → Substitusjon·av·kjemikalier¶
- → Ergonomi·kartlegging¶
- → ISO·50001:2018·Energy·Management·sertifisering¶
- → AMU·møter¶
- → Oppdatering·av·HMS&K·Manual¶
- → Oppdatering·av·kjemikalieproseduyre¶

Figure 4-3 Action plan from QlikView

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 4.4 RISK, OPERATIONS AND BARRIERS

#### 4.4.1 Risk Management

A review of the QRA was carried out as part of the rig intake, ref. /6/. The QRA was last updated in 2012 and it is a requirement to update this every 5 year. The QRA is currently being updated by a third-party provider. Assumptions and risk reducing measures related to the DFU's are reviewed in the Site-Specific Risk Assessment for Schweinsteiger, ref./11/. The analysis concluded that the risk associated with the operation at Schweinsteiger is below Wellesley Petroleum's risk acceptance criteria for loss of main safety functions and personnel risk for all accident scenarios other than ship impact.

#### Tools for use in daily assessment of risk during operations:

- Operational Risk Assessment (ORA), PR-900-0034
- Safe Job Analysis, PR-900-0045
- TaTo Risk Assessment & Conversation, PR-900-0048

#### **Operational Risk Assessment (ORA)**

Used to Manage risk that may compromise Safety, typically from;

- SECE impairment against Performance Standard
- Deviation from Procedure or Operating Parameters
- Deferred Maintenance
- Aimed at effective management of MAH barriers

#### Safe Job Analysis (SJA)

- An SJA is a systematic, step-by-step review of the potential risk ahead of a work activity or operation. It is carried out to identify and eliminate identified risks or to control these.
- The procedures explain the step-by step method.
- The SJA is used to risk assess scope of the STOPs

#### **TaTo Risk assessment & Conversation**

- The purpose is to ensure that risk assessment is part of the planning and execution of all tasks
- To provide an aid and means of documentation for the Toolbox Talk (TBT)/pre-job meeting
- TaTo Risk Assessments shall be performed and recorded for all tasks
- TaTo Risk Conversations shall be performed and recorded by Department Heads on a daily basis

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 4.4.2 Barrier management

Dolphin monitor procedure PR-01960099 Barrier Management describes how barriers against major accident hazard shall be established, maintained, and controlled. The BowTie methodology is used to identify necessary Barriers to counteract the identified hazards. Identified barriers are composed of Technical, Human and Organizational Barriers.

The identified barriers are then grouped into logical functional sets which become Performance Standards. Due to the commonality in operational scenarios that Dolphin Drilling MOUs are exposed to and Dolphin Drillings experience in such matters, a common set of Performance Standards has been developed to harmonize Barrier Management across the fleet and throughout the onshore organization. Key Performance Indicators (KPIs) are uses to monitor the general operational status of the respective barrier elements and degraded barriers are subject to the Operational Risk Assessment (ORA) process.

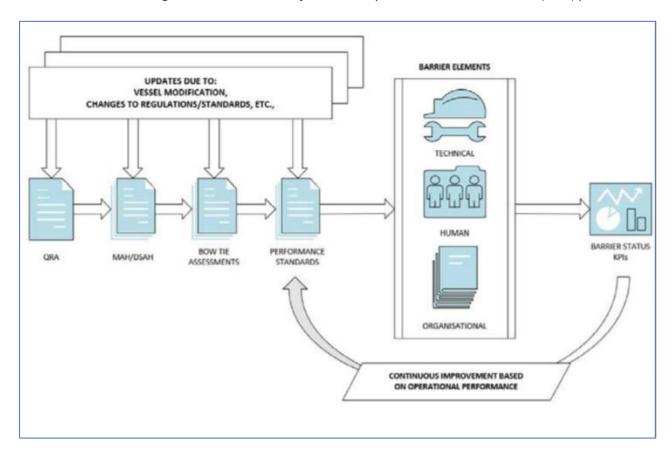


Figure 4-4 - General Overview of Barrier Process

### 4.5 ACKNOWLEDGEMENT OF COMPLIANCE (AOC)

As part of the Application for Consent (AfC) process, a review of the exemptions from the BD Acknowledgement of compliance (AoC) was carried out, ref. /4/. All short- and long-term exemptions, were presented. None considered critical to safe operations.

A total of 2 short term and 12 long term items were remaining at this date. See list of exemptions below:

Doc. No. SCHW-WLSLY-D-RA-0612

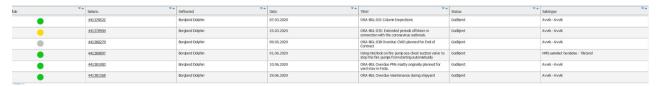
Rev. 01



No.	Title Title
441008144	450-03-811 (AoC - Long) The ventilation outlets from engine room ends in hazardous area.
441008170	450-03-816 (AoC - Long)) The upper fairleads have only 5 pockets.
441008178	450-03-818 (AoC - Long) Some fixed means of access, ladders and stairs outside the accommodation are below requirements with regards to height, width or inclination.
441008179	450-03-819 (AoC - Long) Some doors, corridors, and passages are below requirements with regards to height, width or inclination.
441008181	450-03-821 (AoC - Long) Clearance above manhole on top of mud pits (for access to pump room) is par obstructed by pipe crossing.
441008184	450-03-825 (AoC - Long) The unit is considered unfit for use in areas with environmental temperature below -10°C.
441008185	450-03-826 (AoC - Long) Bulk loading and unloading valves are mostly manual and not remotely operated. For pumping and circulating normal, some manual valves are fitted.
441008188	450-03-831 (AoC - Long) Emergency generator is located below the reserve buoyancy line (most unfavourable damage condition).
441008189	450-03-832 (AoC - Long) Several oil tanks in machinery spaces were not equipped with drip trays.
441008190	450-03-835 (AoC - Long) Capacity of starting air accumulators.
441073303	450-10-7336 (AoC - long) Dynamic brake function
441133753	450-12-8928 (AoC - long) Full-scale Emergency Release test to anchor winch not performed
441376574	(AoC Short) The recorder system for the deck cranes is not capable of containing data for at least 30 calendar days
441376580	(AoC Short) The hoisting winches used for the lifting of persons are not equipped with secondary motion limiters for the upper and lower position of the hook

#### 4.6 NON-CONFORMANCES

Five Internal Non-conformances were registered in Synergi for follow up.



#### 4.7 MEDICAL PREPAREDNESS. HEALTH AND HYGIENE.

Wellesley Company Doctor carried out a verification of working environment, health, medical preparedness, and hygienic conditions on the rig. Company doctor's overall impression is that the rig Borgland Dolphin has good systems and practices regarding health, hygiene, medical emergency preparedness, and Covid-19 preventive measures. Nine observations and two improvements suggestions were disclosed. None of the findings are considered critical ("showstoppers") for the upcoming operation for Wellesley.

#### 4.8 WORKING ENVIRONMENT

Status on current working environment issues on the rig (WEAC/RUG mapping):

- Performed oil and mist measurements on the shaker
- New noise measurements performed
- Marking of equipment HAVS
- Work environment survey catering (postponed due to Corona)
- New solution for welding shop

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



Main focus areas going forward in 2020:

- Risk exposed groups (Mechanic)
- Closure of PSA findings

#### 4.9 EMERGENCY PREPAREDNESS

Borgland Dolphin Emergency Preparedness Manual, MA-0148 (1-Line) gives a description of BD preparedness established, including procedures, to combat situations of hazard or accident that may arise on board "Borgland Dolphin". The emergency preparedness plan also gives detailed descriptions of responsibilities for the crew on board in the event of defined situations of hazard/accident having arisen. The Action Plans are listed up in MA-0147 Action Plans and is used as a guideline for the exercises.

Dolphins Procedure for Crisis & Emergency Management PR-0088 describes the level 2 and 3 organisation and duties for 3 line. Level 2 is outsourced to Resq with support from Dolphin operations.

Emergency Preparedness Training is governed by Safety Drill & Training Procedure (PR-0067), based on Borgland Dolphin Action Plans (MA0147) and managed through Plan for emergency drills and training matrix (SPL-10733). All Safety drills and trainings are registered in Rig Manager, 3 party personnel are included and registered.

The procedure: "ST-450-0086 Well Control drills" describes requirement for well control drills and is referring to NORSOK D-010 rev. 4. The drills shall be logged in Daily Drilling Reports, Drill log form FO-1010009 and loaded up to Report Hub. The well control response team is logged by names in «Rig Manager».

Dolphin 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Line Emergency preparedness organization participated in an Emergency Response Tabletop the 12<sup>th</sup> August 2020. Training scope for the tabletop were Covid 19 and Ship on collision course. An exercise for ship on collision course is planned 9 September with OFFB as facilitator.

A review of the Emergency preparedness analysis was carried out, ref. /6/. The only finding was that the EPA was prepared in 2013 and should be reviewed every 5 year. The EPA is currently on review by a third-party provider.

#### 4.10 EXTERNAL ENVIRONMENT

Environment was part of the onshore rig intake verification. Focus was Dolphin's follow-up and status of incidents related to external environmental, chemical-, waste-, and energy management.

Two minor spills to sea had occurred before the onshore verification was conducted. A leakage of 50 litres OBM from the marine riser was observed after the verification took place. A new complete subsea flex joint with new booster kick-in sub has been installed so this will not impact the Schweinsteiger operation, but this is followed up to avoid issues during operations in 2021. Wellesley encourages Dolphin to have a continuous focus on limiting spills to sea as the next wells will be drilled close to shore.

During the onshore verification, the verification team suggested to make an operation specific waste management plan as according to NOROG 093. Wellesley have generated this waste management plan for Schweinsteiger, and it has been verified by Maritime Waste Management (MWM). This plan can be edited to a general waste management plan and used for all upcoming operations on Borgland.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



Borgland was lacking a chemical substitution plan. Three chemicals shall be substituted in 20020 according to internal goals in DD. Wellesley have suggested to implement RF1-AG to the substitution list as this is a more environmentally friendly product, can be mixed in with other RE-HEALING products, and the manufacturer will stop producing other RE-HEALING products.

The scope during the rig visit (30<sup>th</sup> June-1<sup>st</sup> July) was to see to that Dolphin operates according to answers given in the onshore verification and prevailing legislation. The general impression was that the rig operates in a safe way with focus on environmental best practice.

Chemicals onboard Borgland are registered in Sypol and cannot be purchased in SAP without approval in Sypol. Routines for updating SDS's are satisfactory and hard copies are available in relevant work areas, storage areas, in hospital and online in Sypol. Relevant personnel knew how to use Sypol. It was suggested to implement routines for checking chemicals in between operators to ensure that the rig is operating according to the discharge permit. An environmental poster will be made for all Wellesley operations. The poster gives an overview over chemicals planned used and waste management and is a good tool to ensure adherent to the discharge permit. This should be distributed and put up at relevant places before start-up of operation. One non-conformance and three observation were noted during the rig visit related to chemical management. All findings have been closed, except the recommendation to implement routine to check chemicals between operators. This finding is not critical but will be followed up.

MWM was onboard the rig to conduct a survey on waste management and to guide relevant personnel on waste handling and declaration. There were no major findings from the visit. A separate report has been sent to OIM and Rig Manager with recommended actions to improve waste sorting on the rig.

Borgland is rig with low emissions to air. The rig uses however diesel forklift, and this was pointed out as an observation as electrical forklift as commonly used on other rigs to reduce emissions (NOROG 044). Dolphin will evaluate to change to electrical forklift when its due for replacement. Observation is categorized as low. Dolphin is considering getting ISO 50001 certified.

#### 4.11 DROPPED OBJECT PREVENTION

Dolphin have introduced several initiatives to prevent dropped objects:

- Handbook for safe securing are implemented on the rig.
- Handbook for safe securing used as requirement in all PO's to vendors
- Red Zone on drillfloor and cellardeck
- Risk assessments SJA/TaTo
- DROPS focal point tool planner on the rig
- DROPS part of training programme
- PMs in SAP for inspections
- Proactive searches for DROPS registered in synergy
- All equipment for working in height in height lockers on drill floor and cellar deck
- HSE inspections
- HSE meetings on the rig

A third part company carried out a DROPS inspection in May 2019, a total of 1839 findings were identified and 222 failed to pass. All critical findings are corrected. A new DROPS inspection is ongoing, and findings will be followed up during operation. Critical findings from the inspection shall be closed before spud.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



Sea fastening procedures were checked during the rig visit and spot checks were made on rig and found to be complying.

#### 4.12 PIPEHANDLING

Borgland Dolphins pipehandling matrix is last updated in January 2020 and according to Norwegian Oil and Gas Association recommended guidelines 081 for remote pipe handling operations. A hazid was carried out in July 2020. It has been focused on the identified pipe handling operations involving manual handling.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



## 5 TECHNICAL / OPERATIONAL

#### 5.1 MAINTENANCE

Maintenance has been a focus area for Wellesley during the rig intake process. This was communicated in the initial verification meeting of the Dolphin onshore organisation as well as during the rig visit/verification meetings at Feda.

At the time of finalising the Rig Intake Report, the following maintenance status was provided (rig visit/verification numbers in brackets):

- Total Open Non-Safety Critical Elements (SCE) Corrective Work Orders (CWO) = 179 (205)
- Total Open Planned Non-SCE WO = 291 (480)
- Total Open SCE CWO= 69 (85)
- Total Open SCE Planned Work Orders (WO) = 96 (131)
- Total Overdue SCE CWO = 0 (25)
- Total Overdue SCE Planned WO = 0 (18)
- 5 (5) x Modification WO's (Non-Safety Critical)

Operational Risk Assessments (ORA's) have been carried out and Synergi cases created for:

- ORA-BGL-043 Overdue Planned Maintenance SCE (Synergi Case 441381083)
- ORA-BGL-045 Overdue Planned Maintenance SCE (Synergi Case 441382352)

Time consuming jobs and jobs requiring service personnel will preferably be done when the rig is back in Feda end of September.

Findings (Observation #15 and #16) related to maintenance from the rig visit/verification are all closed out. Ref Synergi case 441381786.

Dolphin are currently using SAP maintenance system; however, they are planning to move to IFS sometime after the Schweinsteiger well. Normal practice is that Dolphin shall not have any overdue PM's/CM's work orders on SECE outstanding. If they do have overdue PM's/CM's work orders on SECE this will trigger an operational risk assessment process. After completing the ORA process the impairment/deviation will be registered as a Non-Conformity in Synergi with all attachments. All corrective mitigating measures will be registered as actions in Synergi.

Maintenance status is tracked in "SAP"

For 3<sup>rd</sup> party equipment registered in SAP the MOU's planned maintenance system shall generate a monthly work order to capture the checks on the third party equipment and ensure that the equipment is being correctly maintained by the supplier of the equipment. It is 3<sup>rd</sup> party responsibility to execute and report to Dolphin for close out.

NPT related to Dolphin during the last year is 266 hrs. Main contributors are listed below:

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



- Seawater ingress into booster line: 179 hrs
- Modification on retractable arms for acoustic transponders on BOP: 56 hrs

See under list of high priority maintenance jobs, requiring more than 6 hours per job.

Main work center	Planned Date	Order	MaintActivityT ype	Work center	Operation short text		Unit for work
ASSTSL						22,0	HR
CRANEOP	28.09.2020		SCE		12M Dual Agent Unit, C.V.C/Test	14,0	
CRANEOP						50,0	HR
CRO						30,0	HR
DRILLING	28.08.2020	500092194	SCE		1M Burner Boom, C.V.C	8,0	HR
DRILLING	28.09.2020		SCE		1M Burner Boom, C.V.C		HR
DRILLING						51,0	HR
ELEC	31.08.2020	500092223	SCE		12M Smoke Detector, C.V.C	11,5	HR
ELEC	31.08.2020	500092224	SCE		12M HC Gas Detectors, C.V.C/Test	6,0	HR
ELEC	30.09.2020		SCE		12M Smoke Detector, C.V.C	11,0	HR
ELEC	30.09.2020		SCE		12M Smoke Detector, C.V.C	9,0	HR
ELEC						71,9	HR
ENGINEER						11,0	HR
MARINE	23.08.2020		SCE		1W Bilge Emg. Valves, Function Test	10,0	HR
MARINE	30.08.2020		SCE		1W Bilge Emg. Valves, Function Test	10,0	HR
MARINE	01.09.2020	500092230	SCE		3M Fire Hydrants, C.V.C	6,0	HR
MARINE	01.09.2020	500092336	SCE		3M Firewater System, Function Test	8,0	HR
MARINE	06.09.2020		SCE		1W Bilge Emg. Valves, Function Test	10,0	HR
MARINE	13.09.2020		SCE		1W Bilge Emg. Valves, Function Test	10,0	HR
MARINE	20.09.2020		SCE		1W Bilge Emg. Valves, Function Test	10,0	HR
MARINE	27.09.2020		SCE		1W Bilge Emg. Valves, Function Test	10,0	HR
MARINE						154,1	HR
SUBSEA	23.08.2020	500092434	SCE		1W Subsea BOP, Functional Test	6,0	HR
SUBSEA	30.08.2020		SCE		1W Subsea BOP, Functional Test	6,0	HR
SUBSEA	04.09.2020		SCE		2W Choke & Kill Manifold, Press test	10,0	HR
SUBSEA	04.09.2020	500091898	SCE		6M BOP Nitrogen Accumulator, C.V.C	32,0	HR
SUBSEA	06.09.2020		SCE		1W Subsea BOP, Functional Test	6,0	HR
SUBSEA	13.09.2020		SCE		1W Subsea BOP, Functional Test	6,0	HR
SUBSEA	18.09.2020		SCE		2W Choke & Kill Manifold, Press test	10,0	HR
SUBSEA	20.09.2020		SCE		1W Subsea BOP, Functional Test	6,0	HR
SUBSEA	27.09.2020		SCE		1W Subsea BOP, Functional Test		HR
SUBSEA						98,0	HR
SUBSINT	16.09.2020		SCE		12M Riser/Pup Joint, C.V.C/Replace/NDT	15,0	
SUBSINT						15,0	HR
TECH	29.08.2020		SCE		1M HVAC Pressure Switch, FT - PS32	8,0	HR
TECH	29.09.2020		SCE		1M HVAC Pressure Switch, FT - PS32		HR
TECH						20,0	
						529,0	HR

Figure 5-1 - High priority maintenance jobs, requiring more than 6 hours per job

Status on maintenance will be followed up offshore in bi-weekly meetings between Chief Engineer and DSV. A status report will be written and communicated with the onshore organization. This maintenance meeting will also cover 3rd party service companies that have equipment on the rig for longer periods such as i.e. Oceaneering and Halliburton cement.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 5.2 WELL CONTROL

Borgland has an 18 ¾" NOV Shaffer 15 kpsi NXT BOP (5 ram cavity, dual annular) that was installed in 2015. BOP ram configuration has been reviewed and communicated to Dolphin. 9 5/8" casing ram has been replaced by a BSR (Blind Shear Ram). A check has been performed confirming that all three BOP panels display the correct BOP configuration. One issue to mention is that NOV recently was onboard the rig and performed a cavity dimensional check on the BOP. It was discovered that the bottom guides in both BSR ram cavities had to be replaced. This work, in addition to body test of the full stack, will be done prior to sailing from Feda. DSV onboard are following up status.

Shearability calculations has been performed by NOV for the relevant DP used on Borgland. The results from these calculations confirms that there should be no issues shearing the drill pipe.

It is the blind shear (LFS-5) that cuts wire line and seals. Shear ability will be addressed for all tubular in the relevant detailed operational procedures (DOP's). Dolphin's policy is that all pipe in the string below HWDP is unshearable.

It was also confirmed by both Halliburton and Dolphin that in an emergency situation the cement unit could be used as backup for the mud pumps.

Training related to well control exercises are covered in ST-450-0086, but this procedure did not require logging/documentation of participants and that datalogger/cementer shall participate. Wellesley therefore suggested that Dolphin looked into the practice on this. After this recommendation, Dolphin has updated section 10 of the well control manual as well as ST-450-0086 and form FO-101-0009. These updates now ensure 3<sup>rd</sup> party participation in well control drills.

#### 5.3 MOORING EQUIPMENT AND STATION KEEPING

Senior Marine Advisor with Well Expertise performed a Marine Verification onboard Borgland on the 14<sup>th</sup> of June 2020. An interview with SSL and OIM was performed and below are the topics that were covered:

- General
- Safety Management System
- Crew Qualification
- Lifesaving Arrangement
- Navigation
- Radio Equipment
- Mooring Equipment
- Propulsion / Thrusters

A verification of the mooring systems to be according to "Ankringsforskriften" and procedures related to competence, procedures and equipment was performed onboard the rig on 14<sup>th</sup> of June. It was verified that the station keeping procedures were followed and the associated riser angles and tensions from the mooring analysis was applied. The verification discovered 5 findings that were transferred into the Rig Intake Follow Up Register. Status on these findings are that two are completed and the remaining three will be completed prior to spud.

For more details related to this verification please refer to the Rig Marine Verification Report, ref. /4/.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 5.4 ESD FOR CRITICAL WELL SCENARIOS

The ESD philosophy on Borgland was reviewed and found appropriate for the Schweinsteiger well. A full ESD test is performed once a year and the most recent (ESD 1 &2) was performed prior to rig handover. DNV witnessed the test and found it acceptable (the rig was back up and running after 2 hours). ESD 3 is planned to be performed after the Schweinsteiger operation.

#### 5.5 LIFTING OPERATIONS / LIFTING APPLIANCES (INCL. DRILLFLOOR)

No reported issues with lifting operations. All lifting operations on Borgland are planned. These plans are recorded in a database and maintained by the rig. Blind lifts are not considered a major problem. Dolphin has a procedure in place documenting how communication when lifting shall be performed in addition to who has the responsibility during lifting operations.

Axess performed a yearly inspection of lifting appliances in May/June, 2020. The report has not been released yet. Wellesley has asked to have a copy of this report once released and findings from this inspection will be followed up during the Schweinsteiger operation.

During the rig visit/ verification Wellesley pointed out that the marking of the "Rigger Loft" and "Quarantine Box" were not properly marked. These markings were checked during the follow up trip and both markings has been fixed by Dolphin.

All man rider winch wires were replaced during the idle period in Fedafjorden.

Yearly colour for lifting appliances is blue.

#### 5.6 ELEKTRO INSTRUMENT AND SAFETY SYSTEMS

Main focus has been to follow up the PSA audit It was confirmed that there were no major issues with the electrical instruments on Borgland. Status on the PSA audit follow-up prior to taking over the rig is 85 % complete. Dolphin has a plan in place to close the remaining 15% within deadline approved by PSA. The remaining findings pose no major risk to the Schweinsteiger well; however they will be followed up during the Schweinsteiger operations.

#### 5.7 COMMUNICATION

A decision was made to use 4G/LTE and link up to Telia and Telenor. There are 4 x 4G/LTE antennas installed on the rig. The system is using 2 Telenor sim cards and 2 Telia sim cards. The backup system will be VSAT with 2 Mbit bandwidth shared with Dolphin. The VSAT can be upgraded to 8-10 Mbps within 12-24 hours if required. The rig is equipped with two independent VSAT antenna systems which has been tested and found OK. In addition, Fleet 77 is set up towards VSAT and Inmarsat in case VSAT or Inmarsat goes down so that venders can log on to any of these systems and try to fix problem remotely.

#### 5.8 CRITICAL SPARES AND ALIGNMENT WITH CRITICAL SPARES LIST AND PHILOSOPHY

Evaluation of required spare parts on the rig is performed by gathering OEM recommendation for spare parts (assurance and operation) for one year in operation and evaluated by experienced personnel per discipline and adjusted based on operational mode/area/redundancy and experience as per engineer

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



method. Approx. 25-30 % of the critical spares are stored onboard Borgland. This is equivalent to 80 % of the day-to-day need.

Spare parts are stored in several places such as on the rig (most critical spares), onshore at Dolphin facility in Dusavik and in Aberdeen (both NorSea facilities), and from another rig such as Bideford. In addition, some spare parts are kept at OEM.

## 5.9 MANUAL CHECKS OF ALL RIG INTERFACES INCLUDING CROSSOVERS, RUNNING TOOLS ETC. FISHING PACKAGE INSPECTION

Fishing package has arrived on the rig and been checked by the DSV. It is found acceptable and in good condition.

Tubulars have arrived on the rig after being onshore for re-certification. The plan is to use the following tubulars:

- Drill Pipe 5 7/8" Range 3 (14m) DS 55,
- HWDP 5 7/8" Range 2 (9m) XT57
- Cement stinger 3 ½" Range2 NC38

Rig interfaces including crossovers and running tools etc. has all been reviewed as part of the DOP's process.

#### 5.10 CAPPING STACK INTERFACE AND SUPPORT SYSTEMS.

PSW Capping stack interface document, ref. /5/, revealed an interface issue with guideposts on the lower BOP stack. In extended position, these guideposts will interfere with a potential capping stack installation. The guidepost on the Borgland Dolphin BOP will therefore have to be cut by the ROV. The specification of the guideposts has been forwarded to Oceaneering and two solutions to cutting equipment has been identified. This equipment will be ready on shelf and mobilized together with the capping stack and associated equipment according to Schweinsteiger Relief Well and Capping Plan ref. /8/.

All support systems are in place through Wellesley contract.

#### 5.11 MARINE SURVEILLANCE.

Well Expertise's Marine Surveillance Centre (MSC) will conduct 24/7 AIS and Radar monitoring for the PL 829 Schweinsteiger location.

- The rig has 2 ARPA radars and 1 AIS
- SBV has according to GOMO and IMO COLREG's duty to watch traffic 24/7. SBV's has 2 ARPA radars, 1 OSD Radar and 1 AIS
- MSC AIS data is received from Norwegian Costal Administration
- MSC system is setup to log all vessel movements around the rig if a vessel is passing closer than 5
  nautical miles.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



MSC system is set up to log and send notification if a vessel has a CPA (Closest Point of Approach)
 closer than 1 nautical mile and TCPA less than 60min

#### 5.12 STRUCTURAL INTEGRITY - AIR GAP AND WAVE LOADING

Borgland's structural integrity, air gap and wave loading were assessed during the rig intake process. No issues were discovered, and Dolphin also confirmed that there are no issues with these subjects.

#### 5.13 TIGHT RIG

Dolphin has a closed rig philosophy. Status on drains and pipework is covered by PM's in SAP. The same goes for drip/spill trays. Crane operator has the responsibility to check status of the drip/spill trays. Dolphin informed that there is a strict control of the drains system and that this control is managed by the control room operator. Spot check of drip trays around anchor winches was performed and found OK.

Relevant bulk hoses were sent onshore and re-certified prior to the rig handover. In addition, Dolphin has replaced all overboard hydraulic hoses on lifeboat davits as well as on the underhull guiding system.

A separate "tight rig verification" is planned to be performed during the Schweinsteiger operation.

#### **5.14 EMERGENCY ESCAPE ROUTES**

During the follow-up trip to the rig visit/ verification a spot check of the escape routes outside on the rig was performed and found OK. It was also checked if there would be any objects falling over escape routes in the event the rig would be tilted. Nothing was alarming.

#### **5.15 FIRE STATIONS**

A spot check on the fire stations revealed no major issues. Inventory lists are in place and correct, and fire equipment are nicely stored. Ample amount of breathing air bottles is available. Findings from the rig visit/verification are all closed apart from replacing the container for safety plans. Dolphin will replace same once the container is onboard. After evaluating the RIT's suggestion to position fire protective clothing so that it is easy to put on in an emergency, Dolphin found it more practical and easier to continue with the way it in done in the past.

Fire equipment has been checked and recertified by BSS during the idle period in Fedafjorden.

#### **5.16 WORKING AT HEIGHT**

A spot check of the working at height cabinets and logging of tools used at height was performed during the rig visit/ verification. The cabinets are kept very tidy and no unconventional tools were found. The inventory check is being performed regularly, but the logging of equipment in and out could be improved. It is therefore recommended to have focus on this topic during the Schweinsteiger well.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### 5.17 MARKINGS AND QUALITY OF SIGNS

Sign and labels are changed regularly when needed on Borgland. A Planned Maintenance (PM) job in SAP requires the safety officer to check signs on a monthly basis.

#### 5.18 DRILLING RELATED EQUIPMENT

Overall impression is that the drilling related equipment are in OK condition. Maritime Hydraulics (MH) completed the following work during the idle period in Fedafjorden:

- Verification on the anti-collision system on the DDM
- Implemented a software for gear oil pressure reading and changed the logic for the cooling fan
- Replaced a wire sensor and looked at the logic on anti-collision on the Lower Guiding Arm (LGA)

In addition, Dolphin had performed the following work after the rig visit/verification:

- Changed rollers on the DDM
- Re-painted the red zone on drillfloor
- Properly secured hoses underneath the drillers cabin
- Fixed bullseye reading on flexjoint, LMRP and BOP (This was a finding from Shell operations)

#### 5.19 LIGHTING

Lighting on Borgland is in general very good. LED lighting is in the process of being implemented on the rig and spot checks were performed to see if second securing were in place. This was confirmed all OK.

#### 5.20 BULK STORAGE AND TRANSFER (INCLUDING CEMENT SILOS)

There are no known issues on Borgland with regards to transferring of fluids. There are two transfer pumps with a capacity of 70 m3/h that can transfer mud from tanks to a manifold above the pits. Transfer lines are typically 150mm. Transfer procedures are in place.

#### **5.21 HEAVE COMPENSATION AND TENSION SYSTEM**

Borgland has Ram rig compensation, so no crown mounted compensators. There are no known issues related to compensation and tensioning systems on Borgland.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



#### **5.22 SERVICE COMPANIES**

Status on 3<sup>rd</sup> party installations has been, and will continue to be followed up, by the DSV that has been stationed on the rig as part of the rig intake process. Below is the current status:

- Schlumberger LWD/MWD interface completed
- Halliburton mud logging to install gas trap in active pit To be completed before sail away
- Schlumberger wireline spread rigged up and tested
- Soiltech installation crash frame and grating panel installation completed
  - All Soiltech units have been seafastened
- Oceaneering ROV: 1 ea electrician onboard for EX maintenance will be completed before sail away
  - Oceaneering to replace low pressure flushing hose on ROV prior to operation
- Halliburton cement unit purge air issue on electric drive motors issue not related to cmt unit
  - Software set-up in rigs power management system now know how to line up power management to allow start of cmt. unit
  - Dolphin working om permanent solution
- Schlumberger fluid: mud lab ready
  - At the time of the report only one hopper is operational. Plan is to have the second hopper fixed prior to sailing. This will be followed up by the DSV onboard.
  - Valves have been moved often and mixer pumps have been used for transfer of slop water during idle period.

Doc. No. SCHW-WLSLY-D-RA-0612

Rev. 01



## **6 REFERENCES**

No.	Document reference					
1	SCHW-WLSLY-D-TA-0609 Rig Intake Plan					
2	SCHW-WLSLY-D-RA-0610 Dolphin verification meetings report					
3	SCHW-WLSLY-D-RA-0611 Borgland Rig Visit/verification report					
4	SCHW-WLSLY-S-RA-0607 Borgland Dolphin AoC Exemption Review					
5	6151 PSW Capping Stack Interface Document					
6	SCHW-WLSLY-S-RA-0608 Wellesley Review of Rig Owner's Risk and Emergency Preparedness Analysis					
7	Wellesley MoM - Competence review 04.08.2020					
8	SCHW-WLSLY-D-KA-0607 Relief Well and Capping Plan					
9	MWM Waste Management Audit 23.06.20					
10	SCHW-WLSLY-Q-CA-0606 GAP Analysis between Wellesley Petroleum and Dolphin Drilling HSE Management Systems					
11	SAFETECH; ST-15343-1 Site Specific Risk and Emergency Preparedness Analysis					

Rig Visit Verification Report - Borgland Dolphin

Doc. No. SCHW-WLSLY-D-RA-0611

Rev. 00



## **7 APPENDICES**

## **APPENDIX A – RIG INTAKE FOLLOW UP REGISTER**

Link