เอกสารแนบที่ 30

เอกสารข้อมูลความปลอดภัยของสารเคมีที่ใช้ขุดเจาะ

waste disposal No: 07 01 99.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated

New Zealand hazard classification	Not classified
HSNO approval no.	Not required
Group number	Not required

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC)

No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].
National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].
National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)
International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	21/Jul/2014
Revision date	06/Feb/2017
Version	4
This SDS has been revised in the following section(s)	1, 2, 3, 4, 6, 8, 11, 15, 16 No changes with regard to classification have been made.

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

*A mark of M-I L.L.C., a Schlumberger Company

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation.

Personal protective equipment

Eye protection	Use eye protection according to EN 166, designed to protect against powders and dusts. Tightly fitting safety goggles. Safety glasses with side-shields.
Hand protection	Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene Frequent change is advisable
Respiratory protection	No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143).
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odour	Slight
Colour	Red brown
Odour threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting / freezing point	No information available	
Boiling point/range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not applicable	
Flammability Limit in Air		

Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapour pressure	No information available	
Vapour density	No information available	
Specific gravity	1.5 g/cm³	20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
log Pow	No information available	

Explosive properties	Not applicable
Oxidising properties	None known

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity	
Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not applicable.
Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	Not applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish

This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC Waste Disposal No	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific Waste codes should be assigned by the user based on the application for which the product was used The following Waste Codes are only suggestions: EWC

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Safety Data Sheet
VINSEAL® (All Grades)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name VINSEAL® (All Grades)
Product code 142024
Synonyms VINSEAL® Fine, VINSEAL® Medium, VINSEAL® Coarse
REACH Registration Name Exempt

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Lost circulation material. Plugging agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word

None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

-

Contains

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

3.2 Mixtures

Not applicable

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimise spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure Limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica (impurity)	No information available	No information available	No information available

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 99

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS)	Water endangering class = 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

New Zealand hazard classification	Not classified.
HSNO approval no.	Not required.
Group number	Not required.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Chemical Regulatory Compliance (GCRC) , Anne Karin (Anka) Fosse
Supercedes date	20/Nov/2014
Revision date	04/Dec/2014
Version	7
The following sections have been revised	3. Composition/information on Ingredients, 13. Disposal considerations, Section 16: Other information.

Text of R phrases mentioned in Section 3

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation

Full text of H-Statements referred to under sections 2 and 3

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

†A mark of M-I L.L.C.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Crystalline silica (impurity)	Not determined	Not determined	0.1 mg/m³ TWA	0.1mg/m³

Component	Finland	France	Germany	Hungary
Crystalline silica (impurity)	Not determined	0.1 mg/m³	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Crystalline silica (impurity)	0.2 mg/m³ TWA Known or presumed human carcinogen	Not determined	0.075 mg/m³	0.3 mg/m³ TWA total dust 0.1 mg/m³ TWA respirable dust Carcinogen

Component	Poland	Portugal	Romania	Russia
Crystalline silica (impurity)	2 mg/m³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m³ TWA >50% free crystalline silica respirable dust 4.0 mg/m³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m³ TWA respirable fraction	Not determined	1 mg/m³ MAC 3 mg/m³ STEL 1 mg/m³ TWA aerosol Fibrogenic substance

Component	Spain	Switzerland	Turkey	UK
Crystalline silica (impurity)	0.1 mg/m³ VLA-ED respirable fraction	0.15 mg/m³ MAK respirable	Not determined	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable

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VG-PLUS†
Safety data sheet number MI10459
Revision date 04/Dec/2014

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection Repeated or prolonged contact:, Use protective gloves made of:, Neoprene, Nitrile.

Respiratory protection Respirator must be worn if exposed to dust, Suitable mask with particle filter P3 (European Norm 143).

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	off-white
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate		

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Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	> = 0.05 g/l	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.4 - 1.8 sg	20 °C
Bulk density	528 kg/m³ (33 lb/ft3)	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	190 °C / 374 °F	
Decomposition temperature	200	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties No information available
Oxidizing properties No information available

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) No information available
Density VALUE No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

MI SWACO
A Schlumberger Company
VG-PLUS†
Safety data sheet number MI10459
Revision date 04/Dec/2014

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available

Sensitisation This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Inhalation. Ingestion.

Routes of entry Inhalation. Ingestion.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

MI SWACO
A Schlumberger Company

Safety Data Sheet
VG-PLUS†

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name VG-PLUS†
Product code MI10459
REACH Registration Name Exempt
Denmark Pr. no. 1928223

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Viscosifier.

Uses advised against None known.

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label Elements

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VG-PLUS†

Signal word
None

-

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
Crystalline silica (impurity)

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Component	EC-No.	CAS-No	Weight %-range	Classification (67/548)	Classification (Reg. (EC) 1272/2008)	REACH registration number
Crystalline silica (impurity)	238-878-4	14808-60-7	< 1	Xn; R48/20	STOT Rep. 2 - H373	No data available

3.2 Mixtures

Not Applicable

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

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A Schlumberger Company
VG-PLUS†

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

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Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Remove all sources of ignition. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Storage class Chemical storage.

2-methylpropan-1-ol	1120 - 1520 mg/L LC50 (Oncorhynchus mykiss) = 96 h 1370 - 1670 mg/L LC50 (Pimephales promelas) = 96 h 1480 - 1730 mg/L LC50 (Lepomis macrochirus) = 96 h 375 mg/L LC50 (Pimephales promelas) = 96 h	230 mg/L EC50 (Desmodesmus subspicatus) = 48 h	1300 mg/L EC50 (Daphnia magna) = 48 h 1070 - 1933 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04 Waste Code: 7152 Organic waste without halogen.

14. Transport information

14.1 UN number

UN/ID No. (ADR/RID/ADN/ADG) UN1212
UN No. (IMDG) UN1212
UN No. (ICAO) UN1212

14.2 Proper shipping name
ISOBUTANOL (ISOBUTYL ALCOHOL) mixture

14.3. Hazard class(es)
ADR/RID/ADN Hazard class 3
IMDG Hazard class 3
ICAO Hazard class/division 3

14.4 Packing group
ADR/RID/ADN Packing Group III
IMDG Packing group III
ICAO Packing group III

14.5 Environmental hazard
No

14.6 Special precautions
Hazard ID 30
EmS (IMDG) F-E, S-D
Emergency action code •3Y

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Complies
Australia (AICS)	Does not Comply
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

CAS Number 64742-47-8 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation. Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by Global Chemical Regulatory Compliance (GCRC) , Anne Karin (Anka) Fosse

Supercedes date 31/Aug/2011

Revision date 05/Nov/2014

Version 4

The following sections have been revised This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R10 - Flammable
R41 - Risk of serious damage to eyes
R43 - May cause sensitization by skin contact
R65 - Harmful: may cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking
R67 - Vapors may cause drowsiness and dizziness

R37/38 - Irritating to respiratory system and skin

Full text of H-Statements referred to under sections 2 and 3

H304 - May be fatal if swallowed and enters airways
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
EUH066 - Repeated exposure may cause skin dryness or cracking

†A mark of M-I L.L.C.

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Inhalation	14693 µg/m³
2-methylpropan-1-ol	
Inhalation	310 mg/m³

Short term exposure systemic effects

Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine

Dermal	33332 µg/kg
Inhalation	29386 µg/m³

Long term exposure systemic effects

Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine

Dermal	16666 µg/kg
Inhalation	14693 µg/m³

Predicted No Effect Concentration (PNEC)

Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine

Fresh Water	0.00217 mg/L
Sea Water	0.000217 mg/L
Fresh water sediment	180 mg/kg
Sea sediment	18 mg/kg
Soil	146 mg/kg
Impact on Sewage Treatment	1 mg/l
Intermittent release	0.0217 mg/l
2-methylpropan-1-ol	
Fresh Water	0.4 mg/l
Sea Water	0.04 mg/l
Fresh water sediment	1.52 mg/kg
Sea sediment	0.152 mg/kg
Soil	0.0699 mg/kg
Impact on Sewage Treatment	10 mg/l
Intermittent release	11 mg/l

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Use protective gloves made of:, Neoprene, Nitrile, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Characteristic
Colour	Dark brown
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	42.8 °C	Closed cup
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	0.844	@ 25°C.
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	18.5 cSt @ 40 °C	
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

FLAMMABLE LIQUID AND vapour.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid contact with heat, sparks, open flame, and static discharge.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapours in high concentration may cause irritation of respiratory system.
Eye contact	Causes serious eye damage.
Skin contact	May cause an allergic skin reaction. May be absorbed through the skin in harmful amounts. Repeated exposure may cause skin dryness or cracking.
Ingestion	May be fatal if swallowed and enters airways.

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No data available	No data available	No data available
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	No data available	No data available	No data available
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	LC50 oral > 5000 mg/kg (Rat)	LD50 Dermal >2000 mg/kg (Rabbit)	LC50 Inhalation >5.2 mg/l (4h) (Rat)
2-methylpropan-1-ol	= 2460 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 6.5 mg/L (Rat) 4 h

Sensitisation May cause sensitization by skin contact.

Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Skin contact. Eye contact. Ingestion. Inhalation.
Routes of entry	Skin contact. Eye contact. Ingestion. Inhalation.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	May be fatal if swallowed and enters airways.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No information available	No information available	No information available
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	No information available	No information available	No information available
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	Freshwater Fish 96h LC50 45 mg/l (flow through) Pimephales promelas; 96h LC50 2.2 mg/l (static) Lepomis macrochirus; 96h LC50 2.4 mg/l Oncorhynchus mykiss (static)	No information available	Water Flea 96h LC50 4720 mg/l Den-dronoreides heteropoda

4.1 Description of first-aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Seek immediate medical attention/advice.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Precautions against fire and explosion
flammable liquid. Vapors are heavier than air and may spread along floors.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7: Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Take precautionary measures against static discharges.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Use spark-proof tools and explosion-proof equipment.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid heat, flames and other sources of ignition. Oxidizing agents

Storage class Flammable liquid storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8: Exposure controls/personal protection

8.1 Control parameters

Exposure limits Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m³ and ST. EXP = 10mg/m³.

Component	EU OEL - Third List	Austria	Australia	Denmark
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
2-methylpropan-1-ol	Not determined	Not determined	50 ppm TWA; 152 mg/m³ TWA	50 ppm Ceiling Butanol, isomers 150 mg/m³ Ceiling Butanol, isomers Potential for cutaneous absorption (listed under Butanol, all isomers)

Component	Finland	France	Germany	Hungary
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
2-methylpropan-1-ol	Not determined	50 ppm 150 mg/m³	100 ppm MAK 310 mg/m³ MAK	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not Determined	Not determined	Not determined	Not determined
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	Not Determined	Not determined	Not determined	Not determined
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	Not Determined	Not determined	Not determined	Not determined
2-methylpropan-1-ol	50 ppm TWA 152 mg/m³ TWA	Not determined	Not determined	25 ppm Ceiling; 75 mg/m³ Ceiling Skin

Component	Poland	Portugal	Romania	Russia
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
2-methylpropan-1-ol	200 mg/m³ STEL Skin 100 mg/m³ TWA	50 ppm TWA	Not determined	10 mg/m³ MAC

Component	Spain	Switzerland	Turkey	UK
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
2-methylpropan-1-ol	50 ppm VLA-ED 154 mg/m³ VLA-ED	50 ppm STEL 15 min 150 mg/m³ STEL 15 min 50 ppm MAK 150 mg/m³ MAK	Not determined	75 ppm STEL 231 mg/m³ STEL 50 ppm TWA 154 mg/m³ TWA

Derived No Effect Level (DNEL)

Short term exposure local effects
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine
Dermal 1388 µg/cm²
Inhalation 14693 µg/m³

Long term exposure local effects
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine
Dermal 1388 µg/cm²

Revision date	12/Feb/2015
Version	9
The following sections have been revised:	This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R65 - Harmful: may cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking
R41 - Risk of serious damage to eyes

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation
H304 - May be fatal if swallowed and enters airways
H318 - Causes serious eye damage
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
EUH066 - Repeated exposure may cause skin dryness or cracking

†A mark of M-I L.L.C.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

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Safety Data Sheet
VERSACOAT† IC

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name VERSACOAT† IC
Product code MI14848

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Emulsifier

Uses advised against None known.

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Aspiration toxicity	Category 1
Serious eye damage/eye irritation	Category 1
Skin sensitisation	Category 1

Environmental hazards Not classified

Physical Hazards

Flammable Liquids	Category 3

2.2 Label Elements

Signal word
DANGER

Hazard statements
H304 - May be fatal if swallowed and enters airways
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H226 - Flammable liquid and vapor
EU specific hazard statements
EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU (§28, 1272/2008)
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P331 - Do NOT induce vomiting

Supplementary precautionary statements
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P363 - Wash contaminated clothing before re-use
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P501 - Dispose of contents/container in accordance with local regulations.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Flammable,
Xn - Harmful
Xi - Irritant

R-code(s)
R10, R41, R43, R65

Contains

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine

Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics

2-methylpropan-1-ol

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/Information on Ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No	Weight-% range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	926-141-6	*	30-60	Xn; R65, R66	Asp. Tox. 1 (H304) EUH066	01-2119456620-43-xxxx
Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	273-601-0	68990-47-6	30-60	Xi; R43	Skin Sens. 1 (H317)	01-2119496070-42-xxxx
Hydrocarbons, C13-C16, isoalkanes, cyclics, < 2% aromatics	918-973-3	*	5-10	Xn; R65, R66	Asp. Tox. 1 (H304) EUH066	01-2119456871-30-xxxx
2-methylpropan-1-ol	201-148-0	78-83-1	5-10	R10 Xi;R37/38-41 R67	Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT SE 3 (H335) STOT SE 3 (H336) Flam. Liq. 3 (H226)	01-2119484609-23-xxxx

Comments
*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

4. First aid measures

Acute toxicity

Inhalation Inhalation of vapours in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking. Components of the product may be absorbed into the body through the skin.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Barite (BaSO4))	> 15000 mg/kg (Rat)	No data available	No data available
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No data available	No data available	No data available
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No data available	No data available	No data available
Calcium carbonate	= 6450 mg/kg (Rat)	No data available	No data available
Calcium chloride	= 1000 mg/kg (Rat)	= 2630 mg/kg (Rat)	No data available
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available
Calcium hydroxide	= 7340 mg/kg (Rat)	No data available	No data available

Sensitisation This product does not contain any components suspected to be sensitizing >0.1%.

Mutagenic effects This product does not contain any known or suspected mutagens. Contains no ingredients above reportable quantities listed as a mutagenic.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Skin contact. Eye contact.

Routes of entry Skin contact.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard The viscosity of this product is high enough that it is not an aspiration risk and the R65/H304 phrase does not apply.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Barite (BaSO4))	No information available	No information available	No information available
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No information available	No information available	No information available
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No information available	No information available	No information available
Calcium carbonate	No information available	No information available	No information available
Calcium chloride	10650 mg/L LC50 (Lepomis macrochirus) = 96 h	No information available	2,400 mg/L EC50 (Daphnia magna) = 48 h
Crystalline silica (impurity)	No information available	No information available	No information available
Calcium hydroxide	160 mg/L LC50 (Gambusia affinis) = 96 h	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 05

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions

Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk. The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 1

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Does not Comply
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Does not Comply
Philippines (PICCS)	Does not Comply
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Does not Comply
Australia (AICS)	Does not Comply
Korea (KECL)	Does not Comply
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Does not Comply

Contact REACH@miswaco.slb.com for REACH information.

CAS Number 64742-47-8 (EC No 927-632-8, 926-141-6) can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by , Sarah Malone Global Regulatory Compliance - Chemicals (GRC - Chemicals)

Supercedes date 14/Mar/2012

Calcium chloride	Not determined	Not determined	Not determined	Not determined
Crystalline silica (impurity)	Not determined	Not determined	0.1 mg/m³ TWA	0.1mg/m³
Calcium hydroxide	Not determined	Not determined	5 mg/m³ TWA	5 mg/m³ TWA

Component	Malaysia	France	Germany	Hungary
Barite (Ba(SO4))	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Calcium carbonate	Not determined	10 mg/m³	Not determined	Not determined
Calcium chloride	Not determined	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.1 mg/m³	Not determined	Not determined
Calcium hydroxide	5 mg/m³ TWA	5 mg/m³	1 mg/m³ TWA	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Barite (Ba(SO4))	Not Determined	Not determined	Not determined	Not determined
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not Determined	Not determined	Not determined	Not determined
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not Determined	Not determined	Not determined	Not determined
Calcium carbonate	Not Determined	Not determined	Not determined	Not determined
Calcium chloride	Not Determined	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.2 mg/m³ TWA Known or presumed human carcinogen	Not determined	0.075 mg/m³	0.3 mg/m³ TWA total dust 0.1 mg/m³ TWA respirable dust 0.9 mg/m³ STEL total dust 0.3 mg/m³ STEL respirable dust Carcinogen
Calcium hydroxide	5 mg/m³ TWA	Not determined	5 mg/m³	5 mg/m³ TWA 10 mg/m³ STEL

Component	Poland	Portugal	Romania	Russia
Barite (Ba(SO4))	Not determined	Not determined	Not determined	6 mg/m³ TWA aerosol Fibrogenic substance
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Calcium carbonate	10 mg/m³ TWA <2% free crystalline silica total inhalable dust	10 mg/m³ TWA particulate matter containing no Asbestos and < 1% Crystalline silica	Not determined	Not determined
Calcium chloride	Not determined	Not determined	Not determined	2 mg/m³ MAC (aerosol)

Crystalline silica (impurity)	2 mg/m³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m³ TWA >50% free crystalline silica respirable dust 4.0 mg/m³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m³ TWA respirable fraction	Not determined	1 mg/m³ MAC 3 mg/m³ STEL 1 mg/m³ TWA aerosol Fibrogenic substance
Calcium hydroxide	2 mg/m³ TWA NDS	5 mg/m³ TWA indicative limit value	5 mg/m³ TWA	2 mg/m³ MAC Skin

Component	Spain	Switzerland	Turkey	UK
Barite (Ba(SO4))	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Calcium carbonate	10 mg/m³ VLA-ED	Not determined	Not determined	Not determined
Calcium chloride	Not determined	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ VLA-ED respirable fraction	0.15 mg/m³ MAK respirable	Not determined	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable
Calcium hydroxide	5 mg/m³ TWA VLA-ED	5 mg/m³ TWA MAK	5 mg/m³ TWA	15 mg/m³ STEL calculated 5 mg/m³ TWA

Derived No Effect Level (DNEL)

Short term exposure local effects

Calcium chloride
Inhalation 10 mg/m³

Calcium hydroxide
Inhalation 4 mg/m³

Long term exposure local effects

Calcium chloride
Inhalation 5 mg/m³

Calcium hydroxide
Inhalation 1 mg/m³

Predicted No Effect Concentration (PNEC)

Calcium hydroxide

Fresh Water	0.49 mg/L
Sea Water	0.32 mg/L
Soil	1080 mg/kg
Impact on Sewage Treatment	3 mg/L
Intermittent release	0.49 mg/L

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Local exhaust ventilation.

Personal protective equipment

Eye protection It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection Use protective gloves made of:, Neoprene, Nitrile, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Viscous
Odour	Hydrocarbon like
Colour	Dark Brown
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point	No information available	
Boiling point/range	> 180 °C	
Flash Point	> 75 °C	PMCC
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	

Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.5 - 2.3 sg	
Bulk density	No information available	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	>20.5 mm²/s	@ 40 °C
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties Not Applicable
Oxidizing properties None known.

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) None
Density VALUE No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No.	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Barite (Ba(SO4))	236-664-5	13462-86-7	30-60	236-664-5	Not classified	No data available
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	927-632-8	*	0-60	Xn; R65, R66	Asp. Tox. 1(H304) EUH066	01-2119457736-27-0001
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	926-141-6	*	0-60	Xn; R65, R66	Asp. Tox. 1 (H304) EUH066	01-2119456620-43-xxxx
Calcium carbonate	207-439-9	471-34-1	1-5	-	Not classified	No data available
Calcium chloride	233-140-8	10043-52-4	1-5	Xi; R36	Eye Irrit. 2 (H319)	01-2119494219-28-xxxx
Crystalline silica (impurity)	238-878-4	14808-60-7	1-5	Xn; R48/20	STOT Rep. 2 - H373	Exempt
Calcium hydroxide	215-137-3	1305-62-0	<3	Xi; R37/38 Xi; R41	Eye Dam. 1 (H318) Skin Irrit. 2 (H315) STOT SE 3 (H335)	01-2119475151-45-xxxx

Comments
Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

The viscosity of this product is high enough that it is not an aspiration risk and the R65/H304 phrase does not apply.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

The product contains other ingredients which do not contribute to the overall classification. CAS Number 61790-69-0 can be used to identify substance 1226892-43-8 in areas not subject to the REACH regulation.

4. First aid measures

4.1 First Aid

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye contact — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions — Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions — Keep containers tightly closed in a dry, cool and well-ventilated place.

Storage class — Chemical storage.

Packaging material — Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits — Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply. Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m³ and ST. EXP = 10mg/m³.

Component	EU OEL - Third List	Austria	Australia	Denmark
Barite (Ba(SO4))	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Calcium carbonate	Not determined	Not determined	10 mg/m³ TWA (containing no asbestos and <1% crystalline silica, inspirable dust)	Not determined

New Zealand hazard classification Classified

HSNO approval no. HSR002625; N.O.S. (Toxic [6.1, 6.7]) Group Standard 2006

Group number 6.1B, 6.1D, 6.5B

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code.

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

15.2 Chemical Safety Report

No information available

16. Other information

INFORMATION SOURCES - Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s).

Text of R phrases mentioned in Section 2 and 3
R22 - Harmful if swallowed
R23 - Toxic by inhalation
R34 - Causes burns
R41 - Risk of serious damage to eyes
R43 - May cause sensitization by skin contact
R38 - Irritating to skin

R48/23 - Toxic: danger of serious damage to health by prolonged exposure through inhalation
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled

DISCLAIMER

The information in this Data Sheet applies only to the products described herein and produced or supplied by us. It is based on our experience and on the data available to us at the time of its issue and is accurate to the best of our knowledge. The customer is strongly advised to observe and ensure that their employees, customers or users observe all information contained herein. However, no warranty is made or implied that the information is accurate or complete and we shall not be liable whatsoever arising out of the use of information or the products described herein. Where third party products are used in conjunction with or instead of products produced or supplied customers or users should themselves obtain all necessary technical, health and safety information about such products from third party.

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Safety data sheet number MI10107
Version 9
Revision date 12/Feb/2015
Supercedes date 14/Mar/2012

Mi SWACO
A Schlumberger Company

Safety Data Sheet
VERSACLEAN†

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name VERSACLEAN†
Product code MI10107

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Drilling fluid system.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label Elements

Mi SWACO
A Schlumberger Company
VERSACLEAN†

Safety data sheet number MI10107
Revision date 12/Feb/2015

Signal word
WARNING

Hazard statements
H319 - Causes serious eye irritation
EU specific hazard statements
EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/protective clothing and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P331 - Do NOT induce vomiting
P308 + P313 - IF exposed or concerned: Get medical advice/ attention
P264 - Wash face, hands and any exposed skin thoroughly after handling

Supplementary precautionary statements
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/ container to an approved waste disposal plant

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Xi - Irritant

R-code(s)
R36, R66

Contains

Barite (Ba(SO4))

Hydrocarbons, C14-C18, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Calcium carbonate

Calcium chloride

Crystalline silica (impurity)

Calcium hydroxide

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents. Nitrites. Strong acids.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product may contain or release trace amounts of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1carcinogen (limited evidence in humans, sufficient evidence in animals). Exposure to formaldehyde has been linked to adverse reproductive effects in some human and animal studies. In other reproductive studies, however, no adverse effects were noted. (Meditext). Formaldehyde may also cause skin sensitisation (allergic reaction).

Inhalation Fatal if inhaled. May cause damage to organs through prolonged or repeated exposure.

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation. May cause an allergic skin reaction. Components of the product may be absorbed into the body through the skin.

Ingestion Harmful if swallowed.

Acute toxicity

LD50 Oral > 1000 - <2000 mg/kg (rat)

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2'''',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	= 763 mg/kg (Rat)	> 2 g/kg (Rat)	No data available
Tetrasodium ethylenediaminetetraacetate	= 10 g/kg (Rat)	No data available	No data available
2-aminoethanol	= 1720 mg/kg (Rat)	= 1025 mg/kg (Rabbit) = 1 mL/kg (Rabbit)	No data available

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Sensitization	May cause sensitization by skin contact.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	None known.
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Routes of entry	Inhalation. Ingestion. Skin absorption.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (related exposure)	Category 1
Target organ effects	Respiratory system
Aspiration hazard	No hazard from product as supplied

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2,2'''',2''-(hexahydro-1,3,5-triazine-1, 3,5-triyl)triethanol	No information available	No information available	No information available
Tetrasodium ethylenediaminetetraacetate	41 mg/L LC50 (Lepomis macrochirus) = 96 h 59.8 mg/L LC50 (Pimephales promelas) = 96 h	1.01 mg/L EC50 (Desmodesmus subspicatus) = 72 h	610 mg/L EC50 (Daphnia magna) = 24 h

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2-aminoethanol	227 mg/L LC50 (Pimephales promelas) = 96 h 3684 mg/L LC50 (Brachydanio rerio) = 96 h 300 - 1000 mg/L LC50 (Lepomis macrochirus) =96h 114 - 196 mg/L LC50 (Oncorhynchus mykiss) = 96 h 200 mg/L LC50 (Oncorhynchus mykiss) = 96 h	15 mg/L EC50 (Desmodesmus subspicatus) = 72 h	65 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
The product is miscible with water. May spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

EWC Waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 04 01 Waste Code: 7111 - Pesticides without mercury

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14. Transport information

14.1 UN Number

UN/ID No. (ADR/RID/ADN/ADG)	UN2810
UN No. (IMDG)	UN2810
UN No. (ICAO)	UN2810

14.2 Proper shipping name
TOXIC LIQUID, ORGANIC, N.O.S. (2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol)

14.3 Hazard class(es)

ADR/RID/ADN Hazard class	6.1
IMDG Hazard class	6.1
ICAO Hazard class/division	6.1

14.4 Packing group

ADR/RID/ADN Packing Group	II
IMDG Packing group	II
ICAO Packing group	II

14.5 Environmental hazard
No

14.6 Special precautions

Hazard identification no (ADR)	60
EmS (IMDG)	F-A, S-A
Emergency action code	2X
Tunnel restriction code	(D/E)
Hazchem code ADG	2X

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-aminoethanol
Schedule 4
Schedule 6
Schedule 5

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4.2 Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependent of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, fog, mist, dry chemical, carbon dioxide or foam.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Vapours/gases/fumes of: Carbon monoxide (CO). Carbon dioxide (CO_2). Nitrous gases (NOx). Sulfurous gases (SOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
Self-contained breathing apparatus in positive pressure demand and full protective clothing must be worn in case of fire.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG
2X

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6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapors or spray mist. Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid prolonged exposure. Avoid spilling, skin and eye contact. Avoid inhalation of vapors and spray mists. When using do not smoke, eat or drink.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong acids.

Storage class Packaging

material 7.3 Specific end Use specially constructed

uses

See Section 1.2.

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8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Derived No Effect Level (DNEL)

Long term exposure local effects

2-aminoethanol	
Inhalation	3.3 mg/m³

Long term exposure systemic effects

2-aminoethanol	
Dermal	1 mg/kg

Predicted No Effect Concentration (PNEC)

2-aminoethanol	
Fresh water	0.085 mg/l
Sea water	0.0085 mg/l
Fresh water sediment	0.434 mg/kg
Sea sediment	0.0434 mg/kg
Soil	0.0367 mg/kg
Impact on sewage treatment	100 mg/l
Intermittent release	0.028 mg/l

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Provide adequate general and local exhaust ventilation in work areas. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment. Provide eyewash station and safety shower.

Personal protective equipment

Eye protection Wear splash-proof chemical safety goggles to prevent any possibility of eye contact. Face-shield

Hand protection Impervious gloves made of: Neoprene, Nitrile, Viton, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used, if there are conditions in which this triazine containing product produces a vapor, a chemical respirator with A1 + Formaldehyde and P2 particulate pre-filter combination would be required.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking. Remove and wash contaminated clothing before re-use.

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9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Odor	Characteristic
Color	Colorless - Pale yellow
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	9.5 - 11.5	@ 100g/l H_2O
Melting/freezing point	No information available	
Boiling point/range	> 100 °C	
Flash point	> 200 °C	
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	1.15 - 1.16	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	>200 °C	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	Not information available	
Log Pow	Not determined	
Explosive properties	Not Applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content (%)	None
Density	No information available

10. Stability and reactivity

10.1 Reactivity

Contact with strong acids develops formaldehyde.

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The following sections have been revised This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
Not classified

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.
Not classified

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name SOLACIDE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Biocide

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Solent Chemicals Private
Limited No. 12 New Industrial
Road #03-02A Morningstar
Centre Singapore 536202
T: +65 6383 0138 Fax:
+65 6383 5228
info@solentchem.com

1.4 Emergency Telephone Number

Emergency telephone - Singapore +65-63830138 (24 Hour)

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to (EC) No. 1272/2008

Health hazards	
Acute oral toxicity	Category 4
Acute inhalation toxicity - vapor	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
DANGER

Hazard statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P284 - Wear respiratory protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P362 - Take off contaminated clothing and wash before reuse
P501 - Dispose of contents/ container to an approved waste disposal plant

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
T - Toxic
Xn - Harmful
Xi - Irritant

R-code(s)
R22, R23, R38, R41 R43, R48/23

Contains

2,2''',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol

Tetrasodium ethylenediaminetetraacetate

2-aminoethanol

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances
Not Applicable

3.2 Mixtures

Component	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)
2,2''',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl) triethanol	255-208-0	4719-04-4	60-100	Xn; R22 T; R23 T;R48/23 R43	Acute Tox. 4 (H302) Acute Tox. 2(H330) Skin Sens. 1 (H317) STOT RE. 1(H372)
Tetrasodium ethylenediaminetetraacetate	200-573-9	64-02-8	1-5	Xn; R22 Xi; R41	Acute Tox. 4 (H302) Eye Dam. 1 (H318)
2-aminoethanol	205-483-3	141-43-5	1-5	Xn; R20/21/22 C; R34	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1B (H314)

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First-Aid Measures

Inhalation Move the exposed person to fresh air at once. Provide fresh air, warmth and rest, preferably in a comfortable upright sitting position. If not breathing, give artificial respiration; if breathing is difficult, give medical oxygen. Get medical attention immediately.

Ingestion Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water for at least 15 minutes. Get medical attention immediately.

Eye contact Make sure to remove any contact lenses from the eyes before rinsing. Flush immediately with plenty of water, holding the eyelids open. Continue to rinse for at least 15 minutes. Get medical attention immediately.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium chloride	= 3 g/kg (Rat)	> 10 g/kg (Rabbit)	> 42 g/m³ (Rat) 1 h

Sensitisation This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity None known.

Routes of exposure Inhalation. Eye contact.

Routes of entry No route of entry noted.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates

Sodium chloride	5560 - 6080 mg/L LC50 (Lepomis macrochirus) = 96 h 12946 mg/L LC50 (Lepomis macrochirus) = 96 h 4747 - 7824 mg/L LC50 (Oncorhynchus mykiss) = 96 h 7050 mg/L LC50 (Pimephales promelas) = 96 h 6420 - 6700 mg/L LC50 (Pimephales promelas) = 96 h 6020 - 7070 mg/L LC50 (Pimephales promelas) = 96 h	No information available	340.7 - 469.2 mg/L EC50 (Daphnia magna) = 48 h 1000 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
The product is water soluble, and may spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 03 14

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Hazardous to water/Class 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sarah Malone
Supercodes date	26/Mar/2014
Revision date	06/Feb/2015
Version	8

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong acids. Oxidizing agents Metals
Storage class	Chemical storage.
Packaging material	Use specially constructed containers only
Packaging materials to be avoided	Metal

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Sodium chloride	Not determined	Not determined	Not determined	Not determined

Component	Finland	France	Germany	Hungary
Sodium chloride	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Sodium chloride	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Sodium chloride	Not determined	Not determined	Not determined	5 mg/m³ MAC

Component	Spain	Switzerland	Turkey	UK
Sodium chloride	Not determined	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Local exhaust ventilation.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Use protective gloves made of:, Rubber or plastic gloves, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143).
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid powder
Appearance	Crystalline
Odour	Odourless
Colour	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	7	@1%
Melting/freezing point	801 °C	
Boiling point/range	1461 °C	
Flash Point	No information available	
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		Not applicable
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	1 mmHg	@ 865 °C
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	800 - 1600 kg/m³	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	

Decomposition temperature	No information available
Kinematic viscosity	
Viscosity, dynamic	No information available
Log Pow	Not determined
Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	58.44 g/mol
VOC content(%)	None
Density VALUE	2.1615 g/cm³

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation.

10.5 Incompatible materials

Strong acids. Oxidizing agents. Metals.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Chemical Regulatory Compliance (GCRC) , Anne Karin (Anka) Fosse
Supercedes date	21/Mar/2013
Revision date	12/Feb/2015
Version	5

Text of R phrases mentioned in Section 3
R36 - Irritating to eyes

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Mi SWACO
A Schlumberger Company

Safety Data Sheet
SODIUM CHLORIDE POWDER (SALT PVD or GRANUALR SALT)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	SODIUM CHLORIDE POWDER (SALT PVD or GRANUALR SALT)
Product code	MI11332
Synonyms	Sodium chloride, NaCl
Molecular weight	58.44 g/mol
REACH Registration Name	Exempt
Denmark Pr. no.	701625

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Additive in oilfield applications
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Norway	Poison information centre: +47 22 59 13 00

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
Not applicable

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
Sodium chloride

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Component	EC-No.	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Sodium chloride	231-598-3	7647-14-5	60-100	-	Not classified	No data available

3.2 Mixtures

Not Applicable

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye contact	Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Main symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
none.

Hazardous combustion products
Fire or high temperatures create:, Chlorine, chlorine oxides, hydrogen chloride.

5.3 Advice for firefighters

Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	2.53 sg	@ 20°C.
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 400°C (752°F)	
Kinematic viscosity	No information available	
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties Not Applicable
Oxidizing properties None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

Reacts violently with acids.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Oxidizing agents. Acids.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

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Inhalation	Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
Eye contact	Causes serious eye irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium carbonate	= 4090 mg/kg (Rat)	No data available	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Eye contact.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

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Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Sodium carbonate	300 mg/L LC50 (Lepomis macrochirus) = 96 h 310 - 1220 mg/L LC50 (Pimephales promelas) = 96 h	242 mg/L EC50 (Nitzschia) = 120 h	265 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

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EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 02 05 Waste Code: 7091

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3 Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Not Applicable

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx), Sodium oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Oxidizing agents Acids Protect from moisture

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits The product does not contain any hazardous materials with occupational exposure limits established.

Component	EU OEL - Third List	Austria	Australia	Denmark
Sodium carbonate	Not determined	Not determined	Not determined	Not determined

Component	Finland	France	Germany	Hungary
Sodium carbonate	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Sodium carbonate	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Sodium carbonate	Not determined	Not determined	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK
Sodium carbonate	Not determined	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection Repeated or prolonged contact:, Use protective gloves made of:, Neoprene, Rubber, Frequent change is advisable.

Respiratory protection No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking. Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	> 12	@ 10 g/l
Melting/freezing point	851 °C / 1564 °F	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	

New Zealand hazard classification Classified

HSNO approval no. HSR002625; N.O.S. (Toxic [6.1, 6.7]) Group Standard 2006

Group number 6.1B, 6.1D, 6.5B

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code.

International Inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

15.2 Chemical Safety Report

No information available

16. Other information

INFORMATION SOURCES - Safety Data Sheet, Misc. manufacturers. Product information provided by the commercial vendor(s).

Text of R phrases mentioned in Section 2 and 3
R22 - Harmful if swallowed
R23 - Toxic by inhalation
R34 - Causes burns
R41 - Risk of serious damage to eyes
R43 - May cause sensitization by skin contact
R38 - Irritating to skin

R48/23 - Toxic: danger of serious damage to health by prolonged exposure through inhalation
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed
H315 - Causes skin irritation

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H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled

DISCLAIMER

The information in this Data Sheet applies only to the products described herein and produced or supplied by us. It is based on our experience and on the data available to us at the time of its issue and is accurate to the best of our knowledge. The customer is strongly advised to observe and ensure that their employees, customers or users observe all information contained herein. However, no warranty is made or implied that the information is accurate or complete and we shall not be liable whatsoever arising out of the use of information or the products described herein. Where third party products are used in conjunction with or instead of products produced or supplied customers or users should themselves obtain all necessary technical, health and safety information about such products from third party.

Solent Chemicals Private Limited (Company Reg. No: 200914789R)
No. 12 New Industrial Road, #03-02A Morningstar Center, Singapore 536202
Tel: (65) 6383 0138 • Fax: (65) 6383 5228 | admin@solentchem.com

Safety data sheet number MI11693
Version 5
Revision date 12/Feb/2015
Supercedes date 21/Mar/2013

Mi SWACO
A Schlumberger Company

Safety Data Sheet
SODA ASH

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	SODA ASH
Product code	MI11693
Synonyms	SODIUM CARBONATE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	pH modifier
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

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SODA ASH

Signal word
WARNING

Hazard statements
H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Xi - Irritant

R-code(s)
R36

Contains
Sodium carbonate

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

3. Composition/information on ingredients

3.1 Substances

Component	EC-No.	CAS-No.	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Sodium carbonate	207-838-8	497-19-8	100	Xi; R36	Eye Irrit. 2 (H319)	No data available

3.2 Mixtures

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents. Nitrites. Strong acids.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product Information This product may contain or release trace amounts of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1carcinogen (limited evidence in humans, sufficient evidence in animals). Exposure to formaldehyde has been linked to adverse reproductive effects in some human and animal studies. In other reproductive studies, however, no adverse effects were noted. (Meditext). Formaldehyde may also cause skin sensitisation (allergic reaction).

Inhalation Fatal if inhaled. May cause damage to organs through prolonged or repeated exposure.

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation. May cause an allergic skin reaction. Components of the product may be absorbed into the body through the skin.

Ingestion Harmful if swallowed.

Acute toxicity

LD50 Oral > 1000 - <2000 mg/kg (rat)

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2,2'',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	= 763 mg/kg (Rat)	> 2 g/kg (Rat)	No data available
Tetrasodium ethylenediaminetetraacetate	= 10 g/kg (Rat)	No data available	No data available
2-aminoethanol	= 1720 mg/kg (Rat)	= 1025 mg/kg (Rabbit) = 1 mL/kg (Rabbit)	No data available

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Sensitization	May cause sensitization by skin contact.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	None known.
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Routes of entry	Inhalation. Ingestion. Skin absorption.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (related exposure)	Category 1
Target organ effects	Respiratory system
Aspiration hazard	No hazard from product as supplied

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
2,2'',2''-(hexahydro-1,3,5-triazine-1, 3,5-triyl)triethanol	No information available	No information available	No information available
Tetrasodium ethylenediaminetetraacetate	41 mg/L LC50 (Lepomis macrochirus) = 96 h 59.8 mg/L LC50 (Pimephales promelas) = 96 h	1.01 mg/L EC50 (Desmodesmus subspicatus) = 72 h	610 mg/L EC50 (Daphnia magna) = 24 h

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2-aminoethanol	227 mg/L LC50 (Pimephales promelas) = 96 h 3684 mg/L LC50 (Brachydanio rerio) = 96 h 300 - 1000 mg/L LC50 (Lepomis macrochirus) =96h 114 - 196 mg/L LC50 (Oncorhynchus mykiss) = 96 h 200 mg/L LC50 (Oncorhynchus mykiss) = 96 h	15 mg/L EC50 (Desmodesmus subspicatus) = 72 h	65 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
The product is miscible with water. May spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

EWC Waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 04 01 Waste Code: 7111 - Pesticides without mercury

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14. Transport information

14.1 UN Number

UN/ID No. (ADR/RID/ADN/ADG) UN2810
UN No. (IMDG) UN2810
UN No. (ICAO) UN2810

14.2 Proper shipping name
TOXIC LIQUID, ORGANIC, N.O.S. (2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol)

14.3 Hazard class(es)
ADR/RID/ADN Hazard class 6.1
IMDG Hazard class 6.1
ICAO Hazard class/division 6.1

14.4 Packing group
ADR/RID/ADN Packing Group II
IMDG Packing group II
ICAO Packing group II

14.5 Environmental hazard
No

14.6 Special precautions
Hazard identification no (ADR) 60
EmS (IMDG) F-A, S-A
Emergency action code 2X
Tunnel restriction code (D/E)
Hazchem code ADG 2X

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-aminoethanol
Schedule 4
Schedule 6
Schedule 5

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4.2 Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependent of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, fog, mist, dry chemical, carbon dioxide or foam.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create: Vapours/gases/fumes of: Carbon monoxide (CO). Carbon dioxide (CO2). Nitrous gases (NOx). Sulfurous gases (SOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
Self-contained breathing apparatus in positive pressure demand and full protective clothing must be worn in case of fire.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Hazchem code ADG
2X

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6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapors or spray mist. Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid prolonged exposure. Avoid spilling, skin and eye contact. Avoid inhalation of vapors and spray mists. When using do not smoke, eat or drink.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong acids.

Storage class Packaging

material 7.3 Specific end **uses** Use specially constructed

See Section 1.2.

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8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Derived No Effect Level (DNEL)

Long term exposure local effects

2-aminoethanol

Inhalation	3.3 mg/m³

Long term exposure systemic effects

2-aminoethanol

Dermal	1 mg/kg

Predicted No Effect Concentration (PNEC)

2-aminoethanol

Fresh water	0.085 mg/l
Sea water	0.0085 mg/l
Fresh water sediment	0.434 mg/kg
Sea sediment	0.0434 mg/kg
Soil	0.0367 mg/kg
Impact on sewage treatment	100 mg/l
Intermittent release	0.028 mg/l

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Provide adequate general and local exhaust ventilation in work areas. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment. Provide eyewash station and safety shower.

Personal protective equipment

Eye protection Wear splash-proof chemical safety goggles to prevent any possibility of eye contact. Face-shield

Hand protection Impervious gloves made of: Neoprene, Nitrile, Viton, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used, if there are conditions in which this triazine containing product produces a vapor, a chemical respirator with A1 + Formaldehyde and P2 particulate pre-filter combination would be required.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking. Remove and wash contaminated clothing before re-use.

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9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Odor	Characteristic
Color	Colorless - Pale yellow
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	9.5 - 11.5	@ 100g/l H_2O
Melting/freezing point	No information available	
Boiling point/range	> 100 °C	
Flash point	> 200 °C	
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	1.15 - 1.16	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	>200 °C	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	Not information available	
Log Pow	Not determined	
Explosive properties	Not Applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content (%)	None
Density	No information available

10. Stability and reactivity

10.1 Reactivity

Contact with strong acids develops formaldehyde.

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information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name SOLACIDE

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Biocide

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
Solent Chemicals Private
Limited No. 12 New Industrial
Road #03-02A Morningstar
Centre Singapore 536202
T: +65 6383 0138 Fax:
+65 6383 5228
info@solentchem.com

1.4 Emergency Telephone Number

Emergency telephone - Singapore +65-63830138 (24 Hour)

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to (EC) No. 1272/2008

Health hazards

Acute oral toxicity	Category 4
Acute inhalation toxicity - vapor	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 1

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
DANGER

Hazard statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary Statements - EU (§28, 1272/2008)
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P284 - Wear respiratory protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P362 - Take off contaminated clothing and wash before reuse
P501 - Dispose of contents/ container to an approved waste disposal plant

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
T - Toxic
Xn - Harmful
Xi - Irritant

R-code(s)
R22, R23, R38, R41 R43, R48/23

Contains

2,2'",2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol

Tetrasodium ethylenediaminetetraacetate

2-aminoethanol

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances
Not Applicable

3.2 Mixtures

Component	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)
2,2'",2"-(hexahydro-1,3,5-triazine-1,3,5-triyl) triethanol	255-208-0	4719-04-4	60-100	Xn; R22 T; R23 T;R48/23 R43	Acute Tox. 4 (H302) Acute Tox. 2(H330) Skin Sens. 1 (H317) STOT RE. 1(H372)
Tetrasodium ethylenediaminetetraacetate	200-573-9	64-02-8	1-5	Xn; R22 Xi; R41	Acute Tox. 4 (H302) Eye Dam. 1 (H318)
2-aminoethanol	205-483-3	141-43-5	1-5	Xn; R20/21/22 C; R34	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1B (H314)

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First-Aid Measures

Inhalation Move the exposed person to fresh air at once. Provide fresh air, warmth and rest, preferably in a comfortable upright sitting position. If not breathing, give artificial respiration; if breathing is difficult, give medical oxygen. Get medical attention immediately.

Ingestion Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water for at least 15 minutes. Get medical attention immediately.

Eye contact Make sure to remove any contact lenses from the eyes before rinsing. Flush immediately with plenty of water, holding the eyelids open. Continue to rinse for at least 15 minutes. Get medical attention immediately.

Routes of exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	Not Applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Calcium carbonate	No information available	No information available	No information available
Crystalline silica (impurity)	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 08 03 99.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS)	Water endangering class = nwg

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

New Zealand hazard classification	Not classified.
HSNO approval no.	Not required.
Group number	Not required.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)
International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	02/Apr/2014
Revision date	18/Feb/2016
Version	8
The following sections have been revised:	All sections, No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

*A mark of M-I L.L.C., a Schlumberger Company

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Calcium carbonate	Not determined	Not determined	10mg/m³TWAinhalable dust	Not determined
Crystalline silica (impurity)	Not determined	0.15 mg/m³ TWA alveolar dust, respirable fraction	0.1mg/m³TWArespirable dust	0.1mg/m³

Component	Malaysia	France	Germany	Hungary
Calcium carbonate	Not determined	10 mg/m³TWA	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.1 mg/m³TWA	Not determined	0.15mg/m³TWA

Component	New Zealand	Italy	Netherlands	Norway
Calcium carbonate	Not Determined	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.2 mg/m³ TWA Known or presumed human carcinogen	Not determined	0.075 mg/m³	0.3 mg/m³ TWA total dust 0.1 mg/m³ TWA respirable dust 0.3 mg/m³ STEL total dust 0.1 mg/m³ STEL respirable dust Carcinogen

Component	Poland	Portugal	Romania	Russia
Calcium carbonate	10 mg/m³ TWA <2% free crystalline silica total inhalable dust	10 mg/m³ TWA particulate matter containing no Asbestos and < 1% Crystalline silica	Not determined	Not determined
Crystalline silica (impurity)	2 mg/m³ TWA NDS >50% free crystalline silica 0.3 mg/m³ TWA NDS >50% free crystalline silica 4.0 mg/m³ TWA NDS 2% to 50% free crystalline silica 1.0 mg/m³ TWA NDS 2% to 50% free crystalline silica	0.025 mg/m³ TWA respirable fraction	0.1mg/m³TWArespirable fraction, dust	3 mg/m³ STEL disintegration aerosol 3 mg/m³ STEL aerosol 1 mg/m³ TWA disintegration aerosol 1 mg/m³ TWA aerosol Fibrogenic substance and with its content in dust 2-10% and 10-70% Amorphous and vitreous silicon dioxide; Crystalline silicon dioxide

Component	Spain	Switzerland	Turkey	UK
Calcium carbonate	10 mg/m³ VLA-ED	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.05 mg/m³ TWA VLA-ED	0.15 mg/m³ TWA MAK	Not determined	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Safety glasses with side-shields. Tightly fitting safety goggles.

Hand protection Repeated or prolonged contact:, Use protective gloves made of:, Nitrile, Neoprene, Frequent change is advisable.

Respiratory protection No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment. Suitable mask with particle filter P3 (European Norm 143). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	8.5 - 9.5	@ 100 g/l
Melting/freezing point	No information available	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	2.6 - 2.8	@ 20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	825 °C / 1517°F	
Kinematic viscosity	No information available	
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Calcium carbonate	= 6450 mg/kg (Rat)	No data available	No data available
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available

Sensitisation This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

MI SWACO
A Schlumberger Company

Safety Data Sheet
SAFE-CARB® (All Grades)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	SAFE-CARB® (All Grades)
Product code	PID1361
Synonyms	SAFE-CARB® 2, 10, 20, 25, 40,140, 250, 500, 600, 750, 1400, 2500
REACH Registration Name	With respect to minerals, Article 2 § 7(b) and Annex V point 7 explicitly exempt from registration and evaluation "minerals which occur in nature, if they are not chemically modified." This product is exempt from registration. Exempt Annex V ENTRY 7.
Denmark Pr. no.	2175905

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Lost circulation material. Weighting agent. Bridging material.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Norway	Poison information centre: +47 22 59 13 00

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

-

Contains
Calcium carbonate

Crystalline silica (impurity)

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Component(s)	EC-No.(s)	CAS-No.(s)	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Calcium carbonate	207-439-9	471-34-1	60-100	-	Not classified	Exempt
Crystalline silica (impurity)	238-878-4	14808-60-7	<1	Xn; R48/20	STOT Rep. 2 - H373	Exempt

3.2 Mixtures

Not Applicable

Comments
Naturally occuring mineral.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from

occupational sources causes cancer in humans. IARC Classification Group I.

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists.
Eye contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Main symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture
Storage class	Chemical storage.
Packaging material	Use specially constructed containers only

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Alcohols, C6-12, ethoxylated	No information available	No information available	No information available
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	No information available	No information available	No information available
2-butoxyethanol	2950 mg/L LC50 (Lepomis macrochirus) = 96 h 1490 mg/L LC50 (Lepomis macrochirus) = 96 h	No information available	= 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea)

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

Log Pow
<2

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04 Waste Code: 7152 Organic waste without halogen.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons

2-butoxyethanol
Schedule 6

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)
International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	13/Jun/2013

Revision date	22/Jul/2015
Version	7
The following sections have been revised:	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R22 - Harmful if swallowed
R41 - Risk of serious damage to eyes

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed
R36/38 - Irritating to eyes and skin

Full text of H-Statements referred to under sections 2 and 3

H318 - Causes serious eye damage
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

†A mark of M-I L.L.C.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

2-butoxyethanol	20 ppm TWA 96.7 mg/m³ TWA Skin notation	2 ppm 9.8 mg/m³	10 ppm MAK 49 mg/m³ MAK	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Alcohols, C6-12, ethoxylated	Not Determined	Not determined	Not determined	Not determined
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	Not Determined	Not determined	Not determined	Not determined
2-butoxyethanol	25 ppm TWA 121 mg/m³ TWA Possibility of significant uptake through the skin	Not determined	100 mg/m³ GW	10 ppm TWA 50 mg/m³ TWA 20 ppm STEL 75 mg/m³ STEL Skin

Component	Poland	Portugal	Romania	Russia
Alcohols, C6-12, ethoxylated	Not determined	Not determined	Not determined	Not determined
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	200 mg/m³ STEL Skin 98 mg/m³ TWA	20 ppm TWA	Not determined	5 mg/m³ MAC

Component	Spain	Switzerland	Turkey	UK
Alcohols, C6-12, ethoxylated	Not determined	Not determined	Not determined	Not determined
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	50 ppm VLA-EC 245 mg/m³ VLA-EC Skin 20 ppm VLA-ED indicative limit value 98 mg/m³ VLA-ED indicative limit value	20 ppm STEL 98 mg/m³ STEL Skin 10 ppm MAK 49 mg/m³ MAK	50 ppm STEL 246 mg/m³ STEL Skin 20 ppm TWA 98 mg/m³ TWA	50 ppm STEL 246 mg/m³ STEL Skin 25 ppm TWA 123 mg/m³ TWA

Derived No Effect Level (DNEL)

Short term exposure local effects
2-butoxyethanol
Inhalation 246 mg/m³

Short term exposure systemic effects
2-butoxyethanol
Dermal 89 mg/kg
Inhalation 1091 mg/m³

Long term exposure systemic effects
2-butoxyethanol
Dermal 125 mg/kg
Inhalation 98 mg/m³

Predicted No Effect Concentration (PNEC)
2-butoxyethanol
Fresh Water 8.8 mg/l

Sea Water 0.88 mg/l
Fresh water sediment 34.6 mg/kg
Sea sediment 3.46 mg/kg
Soil 2.33 mg/kg
Impact on Sewage Treatment 463 mg/l
Intermittent release 9.1 mg/l

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection It is good practice to wear Safety Glasses with Side-shields when handling any chemical.

Hand protection Use protective gloves made of:, Nitrile, Rubber, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Slight
Colour	Colourless
Odor threshold	Not applicable

Property	Values	Remarks
pH	8	
pH @ dilution		
Melting/freezing point	0 °C / 32 °F	
Boiling point/range	100 °C / 212 °F	

Flash Point	> 93 °C / > 199.4 °F	
Evaporation rate	negligible	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	1.0 sg	@ 20 °C.
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Viscosity, dynamic	No information available	
Log Pow	<2	

Explosive properties Not Applicable
Oxidizing properties None known.

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) None
Density VALUE No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid frost. Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Strong oxidising agents. Strong acids. Strong bases.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation May cause irritation of respiratory tract.

Eye contact Causes serious eye damage.

Skin contact Prolonged contact may cause redness and irritation. May be absorbed through the skin in harmful amounts.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Alcohols, C6-12, ethoxylated	No data available	No data available	No data available
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	No data available	No data available	No data available
2-butoxyethanol	= 470 mg/kg (Rat)	= 220 mg/kg (Rabbit) = 2270 mg/kg (Rat)	= 2.21 mg/L (Rat) 4 h = 450 ppm (Rat) 4 h

Sensitisation This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Eye contact. Skin contact.

Routes of entry Eye contact. Skin absorption.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

Signal word
DANGER

Hazard statements
H318 - Causes serious eye damage

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P501 - Dispose of contents/container in accordance with local regulations.

-

-

Contains

Alcohols, C6-12, ethoxylated

Fatty acids, coco, reaction products with ethanolamine, ethoxylated

2-butoxyethanol

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3: Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No	CAS-No	Weight %-range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number

Alcohols, C6-12, ethoxylated		68439-45-2	5-10	Xn;R22 Xi;R41	Acute Tox. 4 (H302) Eye Dam. 1 (H318)	No data available
Fatty acids, coco, reaction products with ethanolamine, ethoxylated		61791-08-0	5-10	Xi; R41	Eye Dam. 1 (H318)	No data available
2-butoxyethanol	203-905-0	111-76-2	1-5	Xn; R20/21/22 Xi; R36/38	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	01-2119475108-36-xxxx

Comments
The product contains other ingredients which do not contribute to the overall classification.

4: First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Seek medical attention at once.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7: Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Keep away from open flames, hot surfaces and sources of ignition.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Store above freezing temperature Avoid contact with: Strong acids. Strong bases Strong oxidising agents

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8: Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL - Third List	Austria	Australia	Denmark
Alcohols, C6-12, ethoxylated	Not determined	Not determined	Not determined	Not determined
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	Not determined	Not determined	Not determined	Not determined
2-butoxyethanol	20 ppm TWA 98 mg/m³ TWA 50 ppm STEL 246 mg/m³ STEL Possibility of significant uptake through the skin	Not determined	skin notation 20 ppm TWA; 96.9 mg/m³ TWA 50 ppm STEL; 242 mg/m³ STEL	20 ppm 98 mg/m³

Component	Malaysia	France	Germany	Hungary
Alcohols, C6-12, ethoxylated	Not determined	Not determined	Not determined	Not determined
Fatty acids, coco, reaction products with ethanolamine, ethoxylated	Not determined	Not determined	Not determined	Not determined

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects,

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04 Waste Code: 7152 Organic waste without halogen.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

CAS Number 64742-47-8 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

15.2 Chemical Safety Report

No information available

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam
Supercedes date	04/Mar/2013
Revision date	10/Jun/2015
Version	6
The following sections have been revised	Updated according to GHS/CLP, This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification.

Text of R phrases mentioned in Section 3
R10 - Flammable
R38 - Irritating to skin
R65 - Harmful: may cause lung damage if swallowed
R66 - Repeated exposure may cause skin dryness or cracking

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under sections 2 and 3

H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H226 - Flammable liquid and vapor
EUH066 - Repeated exposure may cause skin dryness or cracking

†A mark of M-I L.L.C.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number MI10114
Version 7
Revision date 22/Jul/2015
Supercedes date 13/Jun/2013

MI SWACO
A Schlumberger Company

Safety Data Sheet
SAFE-SURF† E

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	SAFE-SURF† E
Product code	MI10114
Denmark Pr. no.	1529863

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Displacement Chemical
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Serious eye damage/eye irritation	Category 1

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Component	New Zealand	Italy	Netherlands	Norway
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not Determined	Not determined	Not determined	Not determined
Terpenes and Terpenoids, sweet orange oil	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Terpenes and Terpenoids, sweet orange oil	Not determined	Not determined	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Terpenes and Terpenoids, sweet orange oil	Not determined	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

Personal protective equipment

Eye protection — It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection — Use protective gloves made of:, Nitrile, Neoprene, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection — In case of inadequate ventilation wear respiratory protection, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection — Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures — Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

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9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Sweet
Colour	Colourless
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point	< -20 °C / -4 °F	
Boiling point/range	173 °C / 343.4 °F	
Flash Point	65 °C / 149 °F	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	5	
Lower flammability limit	0.7	
Vapor pressure	~2 mmHg	@ 20 °C
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	0.81 sg	@ 20 °C.
Water solubility	Insoluble in water	
Solubility in other solvents	soluble organic solvents	
Autoignition temperature	230 °C / 446 °F	
Decomposition temperature	No information available	
Kinematic viscosity	<20.5 mm2/s	@ 40 °C
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

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10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Not known.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

Strong oxidising agents. Strong acids. Strong bases.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation — Inhalation of vapours in high concentration may cause irritation of respiratory system. May cause additional affects as listed under "Ingestion".

Eye contact — May cause irritation.

Skin contact — Causes skin irritation. Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

Ingestion — May be fatal if swallowed and enters airways. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Unknown acute toxicity — Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No data available	No data available	No data available
Terpenes and Terpenoids, sweet orange oil	= 4400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	No data available

Sensitisation — This product does not contain any components suspected to be sensitizing.

Mutagenic effects — This product does not contain any known or suspected mutagens.

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Carcinogenicity — This product does not contain any known or suspected carcinogens.

Reproductive toxicity — This product does not contain any known or suspected reproductive hazards.

Routes of exposure — Ingestion. Skin contact. Inhalation.

Routes of entry — Ingestion. Inhalation.

Specific target organ toxicity (single exposure) — Not classified

Specific target organ toxicity (repeated exposure) — Not classified.

Aspiration hazard — May be fatal if swallowed and enters airways.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No information available	No information available	No information available
Terpenes and Terpenoids, sweet orange oil	> 124 mg/L LC50 (Scophthalmus) = 96 h	> 450 mg/L EC50 (Skeletonema) = 72 h	> 100 mg/L LC50 (Acartia) = 48 h

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

Signal word
DANGER

Hazard statements
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
EU specific hazard statements
EUH066 - Repeated exposure may cause skin dryness or cracking

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

Supplementary precautionary statements
P264 - Wash face, hands and any exposed skin thoroughly after handling
P362 - Take off contaminated clothing and wash before re-use

-

Contains

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Terpenes and Terpenoids, sweet orange oil

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3: Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

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Component	EC-No.	CAS-No.	Weight % range	Classification (67/548)	Classification (Reg 1272/2008)	REACH registration number
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	926-141-6	*	60-100	Xn; R65, R66	Asp. Tox. 1 (H304) EUH066	01-2119456620-43-xxxx
Terpenes and Terpenoids, sweet orange oil	232-433-8	8028-48-6	10-30	F;R10 Xn;R65 Xi;R38 R52/53	Flam. Liq. 3 (H226) Asp Tox. 1 (H304) Skin Irrit. 2 (H315)	01-2119493353-35-xxxx

Comments
Terpenes and Terpenoids, sweet orange oil can also use CAS 68647-72-3.
*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

4: First aid measures

4.1 First Aid

Inhalation Move the exposed person to fresh air at once. If breathing has stopped, begin artificial respiration. Seek medical attention at once.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Seek medical attention.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

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Notes to physician Treat symptomatically.

5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, dry chemical, carbon dioxide (CO_2), or foam.

Extinguishing media which shall not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:. Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

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7: Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure Wash hands and face before breaks and immediately after handling the product. When using do not smoke, eat or drink. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidising agents Strong acids. Strong bases

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8: Exposure controls/personal protection

8.1 Control parameters

Exposure limits Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m³ and ST. EXP = 10mg/m³.

Component	EU OEL - Third List	Austria	Australia	Denmark
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Terpenes and Terpenoids, sweet orange oil	Not determined	Not determined	Not determined	Not determined

Component	Malaysia	France	Germany	Hungary
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Not determined	Not determined	Not determined	Not determined
Terpenes and Terpenoids, sweet orange oil	Not determined	Not determined	Not determined	Not determined

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 3

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies

Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16: Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	17/Oct/2014
Revision date	26/Nov/2015
Version	9
The following sections have been revised:	2,, 8,, 9,, No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R23 - Toxic by inhalation
R31 - Contact with acids liberates toxic gas
R34 - Causes burns
R36 - Irritating to eyes

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation
H280 - Contains gas under pressure; may explode if heated
H314 - Causes severe skin burns and eye damage
H331 - Toxic if inhaled
EUH031 - Contact with acids liberates toxic gas

†A mark of M-I L.L.C.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number MI10641
Version 6
Revision date 10/Jun/2015
Supercedes date 04/Mar/2013

MI SWACO
A Schlumberger Company

Safety Data Sheet
SAFE-SOLV E

1: Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	SAFE-SOLV E
Product code	MI10641

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Drilling fluid additive.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)

2: Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Aspiration toxicity	Category 1
Skin corrosion/irritation	Category 2

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Personal protective equipment

Eye protection	Safety glasses with side-shields.
Hand protection	Use protective gloves made of:, Butyl, Neoprene, Nitrile, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment, Chemical respirator with ammonia and amines cartridge (K/P2, green filter), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	pungent Sulfur
Colour	Colourless - Pale yellow
Odor threshold	Not applicable

Property	Values	Remarks
pH	4.5 - 5.5	@ 20 °C
pH @ dilution		
Melting/freezing point	No information available	
Boiling point/range	105 °C / 221 °F	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	18 mmHg	@ 20 °C
Vapor density	<1	(Air = 1.0)
Specific gravity	No information available	
Bulk density	No information available	
Relative density	1.27 - 1.39	@ 20 °C.
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties Not Applicable

Oxidizing properties None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

Reacts violently with oxidizers. Liberates poisonous sulfur dioxide gas on contact with acid.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Keep at temperatures between 5-30°C.

10.5 Incompatible materials

Strong oxidising agents. Acids. Alkalis.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information	Bisulfites may cause skin sensitization in sulfite sensitive persons. Bisulfites may also cause respiratory sensitization in asthmatics and sulfite sensitive persons.
Inhalation	Inhalation of vapours in high concentration may cause irritation of respiratory system.
Eye contact	Causes serious eye irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium hydrogensulfite	No data available	No data available	No data available
Sulfur dioxide	No data available	No data available	= 2500 ppm (Rat) 1 h

Sensitisation Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity None known.

Routes of exposure Eye contact. Inhalation.

Routes of entry Eye contact. Inhalation.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard Not Applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Ammonium hydrogensulfite	No information available	No information available	No information available

Sulfur dioxide	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
The product is miscible with water. May spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 01 99 Waste Code: 7131 Inorganic Acids

14. Transport information

14.1 UN number
Not regulated

Component	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg (272/2008))	REACH registration number
Ammonium hydrogensulfite	233-469-7	10192-30-0	30-60%	Xi; R36 R31	Eye Irrit.2 (H319) EUH031	01-2119537321-49-xxxx
Sulfur dioxide	231-195-2	7446-09-5	<1%	T; R23 C; R34	Acute Tox. 3 (H331) Skin Corr. 1B (H314) Liquefied Gas (H280)	01-2119485028-34-xxxx

Comments
The product contains other ingredients which do not contribute to the overall classification.
Sulfur dioxide is not present as a substance. It is formed during decomposition.

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

MI SWACO
A Schlumberger Company
SAFE-SCAV† NA
Safety data sheet number PID1392
Revision date 26/Nov/2015

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Heating or fire can release toxic gas, Sulphur oxides, Nitrogen oxides (NOx), Oxides of:, Ammonia, Amines.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

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A Schlumberger Company
SAFE-SCAV† NA
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Handling
This product slowly releases sulphur dioxide in contact with air. Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong oxidising agents Acids Alkalis Keep at 5-30°C

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits Exposure limit noted is for decomposition product Sulfur dioxide.

Component	EU OEL - Third List	Austria	Australia	Denmark
Ammonium hydrogensulfite	Not determined	Not determined	Not determined	Not determined
Sulfur dioxide	Not determined	2ppmTWATMW 5mg/m³TWATMW 4ppmSTELKZW 10mg/m³STELKZW	5ppmSTEL 13mg/m³STEL 2ppmTWA 5.2mg/m³TWA	0.5 ppm TWA 1.3 mg/m³ TWA

Component	Malaysia	France	Germany	Hungary
Ammonium hydrogensulfite	Not determined	Not determined	Not determined	Not determined
Sulfur dioxide	2 ppm TWA 5.2 mg/m³ TWA	2 ppm 5 mg/m³	0.5 ppm MAK 1.3 mg/m³ MAK	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Ammonium hydrogensulfite	Not Determined	Not determined	Not determined	Not determined

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SAFE-SCAV† NA
Safety data sheet number PID1392
Revision date 26/Nov/2015

Sulfur dioxide	5 ppm STEL 13 mg/m³ STEL 2 ppm TWA 5.2 mg/m³ TWA	Not determined	0.7mg/m³STEL	0.8 ppm TWA 2 mg/m³ TWA 2.4 ppm STEL 4 mg/m³ STEL

Component	Poland	Portugal	Romania	Russia
Ammonium hydrogensulfite	Not determined	Not determined	Not determined	Not determined
Sulfur dioxide	2.7 mg/m³ STEL 1.3 mg/m³ TWA	5 ppm STEL 2 ppm TWA	4ppmSTEL 10mg/m³STEL 2ppmTWA 5mg/m³TWA 0.05mg/m³TWA	10 mg/m³ MAC Skin

Component	Spain	Switzerland	Turkey	UK
Ammonium hydrogensulfite	Not determined	Not determined	Not determined	Not determined
Sulfur dioxide	5 ppm VLA-EC 13 mg/m³ VLA-EC 2 ppm VLA-ED 5.3 mg/m³ VLA-ED	0.5 ppm STEL 15 min 1.3 mg/m³ STEL 15 min 0.5 ppm MAK 1.3 mg/m³ MAK	Not determined	Not determined

Derived No Effect Level (DNEL)

Short term exposure local effects
Sulfur dioxide
Inhalation 2.7 mg/m³
Long term exposure local effects
Sulfur dioxide
Inhalation 1.3 mg/m³
Long term exposure systemic effects

Ammonium hydrogensulfite
Inhalation 234 mg/m³
Predicted No Effect Concentration (PNEC)
Ammonium hydrogensulfite
Fresh Water 1.04 mg/l
Sea Water 0.1 mg/l
Impact on Sewage Treatment 78.6 mg/l

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16: Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	26/Feb/2013
Revision date	20/Jun/2015
Version	5
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number PID1392
Version 9
Revision date 26/Nov/2015
Supercedes date 17/Oct/2014

MI SWACO
A Schlumberger Company

Safety Data Sheet
SAFE-SCAV† NA

1: Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	SAFE-SCAV† NA
Product code	PID1392
Denmark Pr. no.	1244147

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Oxygen Scavenger.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)

2: Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
WARNING

Hazard statements
H319 - Causes serious eye irritation
EU specific hazard statements
EUH031 - Contact with acids liberates toxic gas

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

-

-

Contains

Ammonium hydrogensulfite

Sulfur dioxide

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3: Composition/Information on Ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Bulk density	No information available	
Relative density	1.98	@ 20 °C.
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Strong oxidising agents. Strong acids. Strong alkalies.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium chloride	= 2600 mg/kg (Rat)	No data available	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	None known.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Potassium chloride	750 - 1020 mg/L LC50 (Pimephales promelas) = 96 h 1060 mg/L LC50 (Lepomis macrochirus) = 96 h	2500 mg/L EC50 (Desmodesmus subspicatus) = 72 h	83 mg/L EC50 (Daphnia magna) = 48 h 825 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 03 99

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Hazardous to water/Class 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Potassium chloride
Schedule 4

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Chlorides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Wash thoroughly after handling.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong oxidising agents Strong acids. Strong alkalies. Protect from moisture

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component	EU OEL - Third List	Austria	Australia	Denmark
Potassium chloride	Not determined	Not determined	Not determined	Not determined

Component	Malaysia	France	Germany	Hungary
Potassium chloride	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Potassium chloride	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Potassium chloride	Not determined	Not determined	Not determined	5 mg/m³ MAC

Component	Spain	Switzerland	Turkey	UK
Potassium chloride	Not determined	Not determined	Not determined	Not determined

Derived No Effect Level (DNEL)

Short term exposure systemic effects

Potassium chloride	
Dermal	910 mg/kg
Inhalation	5320 mg/m³

Long term exposure systemic effects

Potassium chloride	
Dermal	303 mg/kg
Inhalation	1064 mg/m³

Predicted No Effect Concentration (PNEC)

Potassium chloride	
Fresh Water	0.1 mg/l
Sea Water	0.1 mg/l
Impact on Sewage Treatment	10 mg/L
Intermittent release	10 mg/L

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Safety glasses with side-shields.
Hand protection	Use protective gloves made of:, Rubber gloves, Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid Powder
Appearance	Dust
Odour	Odourless
Colour	White - light pink
Odor threshold	Not applicable

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	~7	@ 1%
Melting/freezing point	768-773 °C / 1414-1423 °F	
Boiling point/range	1406-1413 °C / 2562-2575 °F	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)
International Inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	02/Aug/2010
Revision date	30/Oct/2014
Version	5
The following sections have been revised:	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3

None

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.
Not classified

*A mark of M-I L.L.C., a Schlumberger Company

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number MI10857
Version 5
Revision date 20/Jun/2015
Supercedes date 26/Feb/2013

MI SWACO
A Schlumberger Company

Safety Data Sheet
POTASSIUM CHLORIDE

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	POTASSIUM CHLORIDE
Product code	MI10857
Synonyms	Potassium Chloride 88-99%
Denmark Pr. no.	336939

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Completion fluid additive. Drilling fluid additive.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier Identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

-

Contains
Potassium chloride

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/Information on Ingredients

3.1 Substances

Component	EC-No.	CAS-No.	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Potassium chloride	231-211-8	7447-40-7	60-100	-	Not classified	01-2119539416-36-xxxx

3.2 Mixtures

Not Applicable

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Odour	Odourless
Colour	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	4 - 6	@ 5 g/l
Melting/freezing point	No information available	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	641-737 kg/m³	
Relative density	1.25 - 1.40 sg	@ 20 °C.
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density VALUE	No information available

10: Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

Mi SWACO
A Schlumberger Company
POLY-PLUS' DRY
Safety data sheet number MI11010
Revision date 30/Oct/2014

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See also section 5.2.

11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity	
Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.
LD50 Oral	> 5000 mg/kg (rat)
Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

Mi SWACO
A Schlumberger Company
POLY-PLUS' DRY
Safety data sheet number MI11010
Revision date 30/Oct/2014

12: Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

12.2 Persistence and degradability

The product is not biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

Mi SWACO
A Schlumberger Company
POLY-PLUS' DRY
Safety data sheet number MI11010
Revision date 30/Oct/2014

13: Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 99

14: Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS)	Water endangering class = 2

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Not Applicable

Comments
No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye contact	Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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4.2 Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Main symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

6.2 Environmental precautions

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The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Remove all sources of ignition. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Oxidizing agents
Storage class	Chemical storage.
Packaging material	Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits	Contains no substances with occupational exposure limit values

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8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Repeated or prolonged contact:, Use protective gloves made of:, Rubber gloves.
Respiratory protection	Respirator must be worn if exposed to dust, Half mask with a particle filter P2 (BS EN 143).
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Granular
Appearance	Powder Dust

Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04 Waste Code: 7152 Organic waste without halogen.

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Does not Comply
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Does not Comply
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Chemical Regulatory Compliance (GCRC) , Anne Karin (Anka) Fosse
Supercedes date	28/Mar/2013
Revision date	10/Nov/2014
Version	6
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R43 - May cause sensitization by skin contact

Full text of H-Statements referred to under sections 2 and 3

H317 - May cause an allergic skin reaction

†A mark of M-I L.L.C.

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NOVATEC† F

Safety data sheet number MI10026
Revision date 10/Nov/2014

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Safety data sheet number MI11010
Version 5
Revision date 30/Oct/2014
Supercedes date 02/Aug/2010

MI SWACO
A Schlumberger Company

Safety Data Sheet
POLY-PLUS† DRY

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	POLY-PLUS† DRY
Product code	MI11010
REACH Registration Name	Exempt

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Shale stabilizer.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com
1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
None

Hazard statements

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Use protective gloves made of:, Rubber, Neoprene, PVC disposable gloves, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment. Use respirator with organic vapor protection (A, brown).
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Characteristic
Colour	Dark brown
Odor threshold	Not applicable

Property	**Values**	**Remarks**
pH	No information available	
pH @ dilution		
Melting/freezing point	-10 °C	
Boiling point/range	No information available	
Flash Point	> 75 °C	PMCC
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	

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Specific gravity	No information available	
Bulk density	No information available	
Relative density	0.980 - 1.050 sg	@ 20°C.
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidising agents. Strong reducing agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapours in high concentration may cause irritation of respiratory system.

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Eye contact May cause irritation.

Skin contact May cause an allergic skin reaction. May be absorbed through the skin in harmful amounts.

Ingestion Ingestion may cause stomach discomfort.

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
(2-methoxymethylethoxy)propanol	= 5230 mg/kg (Rat)	= 9500 mg/kg (Rabbit)	No data available
Rosin (impurity)	= 7600 mg/kg (Rat)	> 2500 mg/kg (Rabbit)	= 1.5 mg/L (Rat)4h

Sensitisation May cause sensitization by skin contact.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Skin contact, Inhalation.

Routes of entry Skin absorption.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

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Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
(2-methoxymethylethoxy)propanol	10000 mg/L LC50 (Pimephales promelas) = 96 h	No information available	1919 mg/L LC50 (Daphnia magna) = 48 h
Rosin (impurity)	No information available	400 mg/L EC50 (Desmodesmus subspicatus) = 72 h	3.8 - 5.4 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

3.2 Mixtures

Component %	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
(2-methoxymethylethoxy)propanol	252-104-2	34590-94-8	10-30	-	Not classified	01-2119450011-60-xxxx
Rosin (impurity)	232-475-7	8050-09-7	<10	Xi; R43	Skin Sens. 1 (H317)	No data available

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 Description of first-aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological information for further information.

Ingestion Please see Section 11. Toxicological information for further information.

Skin contact Please see Section 11. Toxicological information for further information.

Eye contact Please see Section 11. Toxicological information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water spray, Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Precautions against fire and explosion
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Persons susceptible to allergic reactions should not handle this product. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong oxidising agents Strong reducing agents.

Storage class Chemical storage.

Packaging material Use specially constructed containers only stainless steel Mild steel.

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL - Third List	Austria	Australia	Denmark
(2-methoxymethylethoxy)propanol	50 ppm TWA 308 mg/m³ TWA Possibility of significant uptake through the skin	Not determined	skin notation 50 ppm TWA; 308 mg/m³ TWA	50 ppm TWA 300 mg/m³ TWA Potential for cutaneous absorption
Rosin (impurity)	Not determined	Not determined	0.1 mg/m³ TWA (as formaldehyde)	Not determined

Component	Finland	France	Germany	Hungary
(2-methoxymethylethoxy)propanol	Not determined	50 ppm 308 mg/m³	50 ppm MAK 310 mg/m³ MAK	Not determined
Rosin (impurity)	Not determined	0.1 mg/m³	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway

(2-methoxymethylethoxy)propanol	150 ppm STEL 909 mg/m³ STEL 100 ppm TWA 606 mg/m³ TWA Possibility of significant uptake through the skin	Not determined	300 mg/m³	50 ppm TWA 300 mg/m³ TWA Skin
Rosin (impurity)	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
(2-methoxymethylethoxy)propanol	480 mg/m³ STEL 240 mg/m³ TWA	Skin 150 ppm STEL 100 ppm TWA	50 ppm TWA; 308 mg/m³ TWA	Not determined
Rosin (impurity)	Not determined	Not determined	Not determined	4 mg/m³ MAC Allergenic substance

Component	Spain	Switzerland	Turkey	UK
(2-methoxymethylethoxy)propanol	Skin 50 ppm VLA-ED indicative limit value 308 mg/m³ VLA-ED indicative limit value	50 ppm STEL 15 min 300 mg/m³ STEL 15 min 50 ppm MAK 300 mg/m³ MAK	Skin 50 ppm TWA 308 mg/m³ TWA	150 ppm STEL calculated 924 mg/m³ STEL calculated Skin 50 ppm TWA 308 mg/m³ TWA
Rosin (impurity)	Not determined	Not determined	Not determined	Not determined

Derived No Effect Level (DNEL)

Long term exposure systemic effects

(2-methoxymethylethoxy)propanol	
Dermal	283 mg/kg
Inhalation	308 mg/m³

Predicted No Effect Concentration (PNEC)

(2-methoxymethylethoxy)propanol	
Fresh Water	19 mg/l
Sea Water	1.9 mg/l
Fresh water sediment	70.2 mg/kg
Soil	2.74 mg/kg
Impact on Sewage Treatment	4168 mg/l
Intermittent release	190 mg/l
Rosin (impurity)	
Fresh Water	0.0016 mg/l
Sea Water	0.00016 mg/l
Fresh water sediment	0.007 mg/kg
Sea sediment	0.0007 mg/kg
Soil	0.00045 mg/kg
Impact on Sewage Treatment	1000 mg/l
Intermittent release	0.016 mg/l

8.2 Exposure controls

Not Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not Applicable

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International Inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies

Inventory - New Zealand - Inventory of Chemicals (NZIoC) Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals)
Supercedes date	13/Jun/2011
Revision date	07/May/2014
Version	6
The following sections have been revised:	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
Not classified

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.
Not classified

*A mark of M-I L.L.C., a Schlumberger Company

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number MI10026
Version 6
Revision date 10/Nov/2014
Supercedes date 28/Mar/2013

MI SWACO
A Schlumberger Company

Safety Data Sheet
NOVATEC† F

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	NOVATEC† F
Product code	MI10026
Norway Pr. no.	45608
Denmark Pr. no.	1113040

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Fluid loss reducer.
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Norway	Poison information centre: +47 22 59 13 00

2. Hazards Identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Skin sensitisation	Category 1

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
WARNING

Hazard statements
H317 - May cause an allergic skin reaction

Precautionary Statements - EU (§28, 1272/2008)
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

Supplementary precautionary statements
P363 - Wash contaminated clothing before re-use

-

Indication of danger
Xi - Irritant

R-code(s)
R-43

Contains

(2-methoxymethylethoxy)propanol

Rosin (impurity)

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Not Applicable

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Granules Powder
Odour	Odourless
Colour	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	6.5 - 9.5	@ 2% (20g/L)
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.5 - 1.6	@ 20 °C
Bulk density	400 - 800 kg/m³	
Relative density	No information available	
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	~ 250°C	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	None known
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	982.4 g/mol
VOC content(%)	No information available
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture. Keep away from direct sunlight.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity	
Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.
LD50 Oral	27000 mg/kg (rat)
LD50 Dermal	> 2000 mg/kg (rabbit)
LC50 Inhalation	> 5800 mg/m³ (rat, 4 hr)
Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This substance has no evidence of mutagenic properties.
Carcinogenicity	This substance has no evidence of carcinogenic properties.

Reproductive toxicity	None known.
Routes of exposure	None known.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
Not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
Not considered toxic.

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects,

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Not Applicable

Comments
No hazardous components

4. First aid measures

4.1 First Aid

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact — Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Prevent dust cloud. Sweep up and shovel into suitable containers for disposal. Material becomes slippery when wet. Use caution if wet.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Keep away from heat, sparks and open flame. No smoking.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions — Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions — Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight Protect from moisture Do not store and transport with oxidizers.

Storage class — Chemical storage.

Packaging material — Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits — NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection — It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection — Repeated or prolonged contact:, Use protective gloves made of:, Nitrile, Neoprene gloves.

Respiratory protection — No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143).

Skin and body protection — Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures — Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

SPILL CLEAN UP METHODS

Avoid generation and spreading of dust. Ventilate well. Collect in containers and seal securely. Remove containers and flush area with water.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Avoid spilling, skin and eye contact. Avoid handling which leads to dust formation. Do not use contact lenses.

STORAGE PRECAUTIONS

Store in tightly closed original container in a cool, dry well-ventilated place. Keep in original container.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
CALCIUM HYDROXIDE (LIME)	WEL		5 mg/m3		

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits

PROTECTIVE EQUIPMENT

ENGINEERING MEASURES

Provide sufficient ventilation for operations causing dust formation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Dust mask/respirator. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Impermeable material. Rubber, neoprene or PVC.

EYE PROTECTION

Contact lenses should not be worn when working with this chemical! Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station and safety shower.

HYGIENE MEASURES

Wash contaminated clothing before reuse.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Powder, dust		
COLOUR	White White / off-white		
ODOUR	Odourless		
SOLUBILITY	Slightly soluble in water.		
MOL. WEIGHT	74	MELTING POINT (°C)	580
RELATIVE DENSITY	2.34 @ 20 °c	BULK DENSITY	2.24 g/cm3
PARTICLE SIZE (Micron)	<500	pH-VALUE, CONC. SOLUTION	12.4
SOLUBILITY VALUE (g/100g H2O@ 20°C)	1.7		

10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid contact with: Water, moisture. and Creation of dust clouds.

MATERIALS TO AVOID

Acids, oxidising. Acids, non-oxidising. Acids - organic. Organic nitro compounds.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 7340 mg/kg (oral rat)

INHALATION

May cause irritation to the respiratory system. Symptoms may include sore throat, coughing, shortness of breath and difficulty breathing.

INGESTION

May cause burns in mucous membranes, throat, oesophagus and stomach.

SKIN CONTACT

Irritating to skin. Prolonged or repeated exposure may cause severe irritation.

EYE CONTACT

Irritating to eyes. Repeated exposure may cause chronic eye irritation. Extreme irritation of eyes and mucous membranes, including burning and tearing.

12 ECOLOGICAL INFORMATION

ECOTOXICITY

Contact M-I Swaco's QHSE Department for ecological information.

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

GENERAL The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15 REGULATORY INFORMATION

LABELLING

Irritant

RISK PHRASES

SAFETY PHRASES

R36/38	Irritating to eyes and skin.
S24/25	Avoid contact with skin and eyes.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37	Wear suitable gloves.

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

16 OTHER INFORMATION

GENERAL INFORMATION

HMIS Health - 2 HMIS Flammability - 0 HMIS Physical Hazard - 0

INFORMATION SOURCES

Micromedex. Material Safety Data Sheet, Misc. manufacturers. Sax's Dangerous Properties of Industrial Materials, 10th ed., Lewis, R.J. Sr., (ed.).

REVISION COMMENTS

The following sections have been revised: 2, 5, 6, 7, 8, 10, 14, 15 and 16. Revised by Bill Cameron

ISSUED BY

Sam Hoskin

REVISION DATE	12-10-05
REV. NO./REPL. SDS GENERATED	3
SDS NO.	10290

RISK PHRASES IN FULL

R36/38 Irritating to eyes and skin.

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

Safety data sheet number MI10871
Version 6
Revision date 07/May/2014
Supercedes date 13/Jun/2011

Mi SWACO
A Schlumberger Company

Safety Data Sheet
M-I PAC* (ALL GRADES)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product Identifier

Product name	M-I PAC* (ALL GRADES)
Product code	MI10871
Synonyms	M-I PAC ELV, M-I PAC R, M-I PAC SR, M-I PAC SUL, M-I PAC UL
Molecular weight	982.4 g/mol
REACH Registration Name	Exempt
Denmark Pr. no.	1463657

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Fluid loss reducer. Viscosifier.
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Norway	Poison information centre: +47 22 59 13 00

2. Hazards Identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex III of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 2

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

Mi SWACO
A Schlumberger Company
KLEEN UP'
Safety data sheet number PID859
Revision date 01/Aug/2016

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)
International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	17/Feb/2015
Revision date	01/Aug/2016
Version	4
The following sections have been revised:	The following sections have been revised:, 2,, 4,, 7,, 8,, 9,, 10,, 11,, 12,, 13,, 15,, 16, No changes with regard to classification have been made.

Text of R phrases mentioned in Section 3
R22 - Harmful if swallowed
R41 - Risk of serious damage to eyes

Mi SWACO
A Schlumberger Company
KLEEN UP'
Safety data sheet number PID859
Revision date 01/Aug/2016

Full text of H-Statements referred to under sections 2 and 3

H318 - Causes serious eye damage

H302 - Harmful if swallowed

*A mark of M-I L.L.C., a Schlumberger Company

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

REVISION DATE: 12-10-05

Mi SWACO

SAFETY DATA SHEET
LIME (CALCIUM HYDROXIDE)

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME	LIME (CALCIUM HYDROXIDE)
SYNONYMS, TRADE NAMES	CALCIUM HYDROXIDE
APPLICATION	pH modifier.
SUPPLIER	M-I Drilling Fluids UK Ltd, Pocra Quay, Footdee, Aberdeen. AB11 5DQ T +44 (0)1224-584336 F +44 (0)1224-576119
EMERGENCY TELEPHONE	+44(0)208 762 8322

2 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content	Classification
CALCIUM HYDROXIDE (LIME)	215-137-3	1305-62-0	60-100%	Xi;R36/38.

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS
The Data Shown is in accordance with the latest EC Directives.

3 HAZARDS IDENTIFICATION

Irritating to eyes and skin.
CLASSIFICATION Xi;R36/38.

4 FIRST-AID MEASURES

INHALATION
Move the exposed person to fresh air at once. For breathing difficulties oxygen may be necessary. Get medical attention.
INGESTION
DO NOT INDUCE VOMITING! Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Provide rest, warmth and fresh air. Get medical attention immediately!
SKIN CONTACT
Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.
EYE CONTACT
Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Use fire-extinguishing media appropriate for surrounding materials.
SPECIAL FIRE FIGHTING PROCEDURES
Keep run-off water out of sewers and water sources. Dike for water control.
UNUSUAL FIRE & EXPLOSION HAZARDS
High concentrations of dust may form explosive mixture with air.
PROTECTIVE MEASURES IN FIRE
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Wear protective clothing as described in Section 8 of this safety data sheet.
ENVIRONMENTAL PRECAUTIONS
Do not allow to enter drains, sewers or watercourses.

hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Safety glasses with side-shields. Tightly fitting safety goggles.
Hand protection	Use protective gloves made of:, Neoprene, Nitrile, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Slight
Colour	Off-white
Odour threshold	Not applicable

Property	Values	Remarks
pH	7.0 - 8.5	ASTM E70 (as supplied)
pH @ dilution		
Melting/freezing point	No information available	
Boiling point/range	~ 100 °C / ~ 212 °F	
Flash point	> 100 °C / > 212 °F	PMCC
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapour pressure	No information available	
Vapour density	No information available	
Specific gravity	~ 1.02 s.g	@ 20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Soluble in water	

Solubility in other solvents	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Log Pow	Not determined
Explosive properties	Not Applicable
Oxidising properties	None known

9.2 Other information

Pour point	</= 0°C
Molecular weight	No information available
VOC content(%)	No information available
Density	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Store at room temperature. Do not freeze.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapours in high concentration may cause irritation of respiratory system.
Eye contact	Causes serious eye damage.
Skin contact	Prolonged contact may cause redness and irritation.

Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.
LD50 Oral	> 2000 mg/kg (rat) (based on components)

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Alcohols, C11-14-iso-, C13-rich, ethoxylated	No data available	No data available	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Eye contact.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	Not Applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Alcohols, C11-14-iso-, C13-rich, ethoxylated	No information available	No information available	No information available

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04

Signal word
DANGER

Hazard statements
H318 - Causes serious eye damage

Precautionary Statements - EU (§28, 1272/2008)
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P501 - Dispose of contents/container in accordance with local regulations.

-

-

Contains
Alcohols, C11-14-iso-, C13-rich, ethoxylated

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No.	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Alcohols, C11-14-iso-, C13-rich, ethoxylated		78330-21-9	5 - < 25	Xn; R22 Xi; R41	Acute Tox. 4 (H302) Eye Dam. 1 (H318)	Polymer exempt

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Continue to rinse for at least 15 minutes. Seek medical attention at once.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dyke far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Store at room temperature Do not freeze Avoid contact with: Strong oxidising agents

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure Limits Contains no substances with occupational exposure limit values
No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Alcohols, C11-14-iso-, C13-rich, ethoxylated	Not determined	Not determined	Not determined	Not determined

Component	Malaysia	France	Germany	Hungary
Alcohols, C11-14-iso-, C13-rich, ethoxylated	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Alcohols, C11-14-iso-, C13-rich, ethoxylated	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Alcohols, C11-14-iso-, C13-rich, ethoxylated	Not determined	Not determined	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK
Alcohols, C11-14-iso-, C13-rich, ethoxylated	Not determined	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04 Waste Code: 7152 Organic waste without halogen.

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International Inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

CAS Number 68410-22-0 can be used to identify the substance mentioned in Section 3, under Comments, for the International Inventories. Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Chemical Regulatory Compliance (GCRC)
Supercedes date	25/Apr/2012
Revision date	23/Jul/2014
Version	4
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification, Updated according to GHS.

Text of R phrases mentioned in Section 3
R36 - Irritating to eyes
R38 - Irritating to skin
R41 - Risk of serious damage to eyes

Full text of H-Statements referred to under sections 2 and 3

H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation

†A mark of M-I L.L.C.

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Mi SWACO
A Schlumberger Company

Safety Data Sheet
KLEEN UP*

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	KLEEN UP*
Product code	PID859

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Detergent
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com
1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Serious eye damage/eye irritation	Category 1

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label elements

Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	Not Determined	Not determined	Not determined	Not determined
2-[2-(2-butoxyethoxy)ethoxy]ethanol	Not Determined	Not determined	Not determined	Not determined
4-methyl-1,3-dioxolan-2-one	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	Not determined	Not determined	Not determined	Not determined
2-[2-(2-butoxyethoxy)ethoxy]ethanol	Not determined	Not determined	Not determined	Not determined
4-methyl-1,3-dioxolan-2-one	Not determined	Not determined	Not determined	7 mg/m³ MAC

Component	Spain	Switzerland	Turkey	UK
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	Not determined	Not determined	Not determined	Not determined
2-[2-(2-butoxyethoxy)ethoxy]ethanol	Not determined	Not determined	Not determined	Not determined
4-methyl-1,3-dioxolan-2-one	Not determined	Not determined	Not determined	Not determined

Derived No Effect Level (DNEL)

Short term exposure local effects
4-methyl-1,3-dioxolan-2-one
Dermal — Long term systemic effects: 50 mg/kg
Inhalation — Long term systemic effects: 176 mg/m³; Long term local effects: 20 mg/m³

Long term exposure systemic effects
2-[2-(2-butoxyethoxy)ethoxy]ethanol
Dermal — 50 mg/kg
Inhalation — 195 mg/m³

Predicted No Effect Concentration (PNEC)
2-[2-(2-butoxyethoxy)ethoxy]ethanol
Fresh Water — 1.5 mg/l
Fresh water sediment — 5.77 mg/kg
Soil — 0.45 mg/kg
Impact on Sewage Treatment — 200 mg/l
Intermittent release — 5 mg/l
4-methyl-1,3-dioxolan-2-one
Fresh Water — 0.9mg/L

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation.

Personal protective equipment
Eye protection — It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection — Use protective gloves made of:, Rubber, Neoprene, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection — No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment. Use respirator with organic vapor protection (A, brown).
Skin and body protection — Wear suitable protective clothing, Provide eyewash station.

Hygiene measures — Wash hands before eating, drinking or smoking. Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Slight
Colour	Straw
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	8-9	(20 g/l IPA)
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	75 °C	PMCC
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.01 sg	
Bulk density	No information available	
Relative density	0.98 - 1.0 g/ml	@ 20°C.
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	2000 mPa s	@ 20 °C
Log Pow	Not determined	

Explosive properties — Not Applicable
Oxidizing properties — None known.

9.2 Other information
Pour point — 4°C / 40°F

Molecular weight — No information available
VOC content(%) — None
Density VALUE — No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation — Inhalation of vapours in high concentration may cause irritation of respiratory system.

Eye contact — Causes serious eye damage.

Skin contact — Causes skin irritation.

Ingestion — Ingestion may cause stomach discomfort.

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	No data available	No data available	No data available
2-[2-(2-butoxyethoxy)ethoxy]ethanol	= 5300 mg/kg (Rat)	= 3480 mg/kg (Rabbit)	No data available
4-methyl-1,3-dioxolan-2-one	= 29000 mg/kg (Rat)	> 20000 mg/kg (Rabbit)	No data available

Sensitisation — This product does not contain any components suspected to be sensitizing.

Mutagenic effects — This product does not contain any known or suspected mutagens.

Carcinogenicity — This product does not contain any known or suspected carcinogens.

Reproductive toxicity — None known.

Routes of exposure — Eyes. Skin contact.

Routes of entry — Eye contact.

Specific target organ toxicity (single exposure) — Not classified
Specific target organ toxicity (repeated exposure) — Not classified.

Aspiration hazard — No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	No information available	No information available	No information available
2-[2-(2-butoxyethoxy)ethoxy]ethanol	2200 - 4600 mg/L LC50 (Leuciscus idus) = 96 h 2400 mg/L LC50 (Pimephales promelas) = 96 h	500 mg/L EC50 (Desmodesmus subspicatus) = 72 h	500 mg/L EC50 (Daphnia magna) = 48 h
4-methyl-1,3-dioxolan-2-one	1000 mg/L LC50 (Cyprinus carpio) = 96 h 5300 mg/L LC50 (Leuciscus idus) = 96 h	500 mg/L EC50 (Desmodesmus subspicatus) = 72 h	500 mg/L EC50 (Daphnia magna) = 48 h

Signal word
DANGER

Hazard statements
H315 - Causes skin irritation
H318 - Causes serious eye damage

P280 - Wear protective gloves/protective clothing and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

P264 - Wash face, hands and any exposed skin thoroughly after handling
P362 - Take off contaminated clothing and wash before re-use

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Xi - Irritant

R-code(s)
R-38, 41

Contains

Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine

2-[2-(2-butoxyethoxy)ethoxy]ethanol

4-methyl-1,3-dioxolan-2-one

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	-	515861-19-5	30-60	Xi; R38-41	Skin Irrit. 2 (H315) Eye Dam. 1 (H318)	-
2-[2-(2-butoxyethoxy)ethoxy]ethanol	205-592-6	143-22-6	30-60	Xi; R41	Eye Dam. 1 (H318)	01-2119475107-38-XXXX
4-methyl-1,3-dioxolan-2-one	203-572-1	108-32-7	1-5	Xi; R36	Eye Irrit. 2 (H319)	01-2119537232-48-xxxx

Comments
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine can also use the CAS # 68410-22-0.

4. First aid measures

4.1 Description of first-aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Seek medical attention at once.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Precautions against fire and explosion
None known.

Hazardous combustion products
Heating or fire can release toxic gas.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Strong oxidising agents

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL - Third List	Austria	Australia	Denmark
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	Not determined	Not determined	Not determined	Not determined
2-[2-(2-butoxyethoxy)ethoxy]ethanol	Not determined	Not determined	Not determined	Not determined
4-methyl-1,3-dioxolan-2-one	Not determined	Not determined	Not determined	Not determined

Component	Finland	France	Germany	Hungary
Fatty acid, C18 unsatd. dimers, polymer with diethanolamine and diethylenetriamine	Not determined	Not determined	Not determined	Not determined
2-[2-(2-butoxyethoxy)ethoxy]ethanol	Not determined	Not determined	Not determined	Not determined
4-methyl-1,3-dioxolan-2-one	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 1

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)

The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)
International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	07/Feb/2011

Revision date	09/Oct/2015
Version	5
The following sections have been revised:	This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification. Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
R20 - Harmful by inhalation
R43 - May cause sensitization by skin contact
R68 - Possible risks of irreversible effects.

R36/37/38 - Irritating to eyes, respiratory system and skin

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H341 - Suspected of causing genetic defects
EUH208 - Contains (Glyoxal). May produce an allergic reaction

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number MI11031
Version 4
Revision date 23/Jul/2014
Supercedes date 25/Apr/2012

MI SWACO
A Schlumberger Company

Safety Data Sheet
HRP†

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	HRP†
Product code	MI11031

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Viscosifier.
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Safety glasses with side-shields.
Hand protection	Use protective gloves made of:, Rubber or plastic gloves, Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Effective dust mask, Half mask with a particle filter P2 (BS EN 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	off-white
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution	6.0-8.5	@ 2%
Melting/freezing point	No information available	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	No information available	

Lower flammability limit	30g/m³
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Bulk density	No information available
Relative density	1.3-1.4 g/cm3
Water solubility	Soluble in water
Solubility in other solvents	No information available
Autoignition temperature	460 °C / 860 °F
Decomposition temperature	> 250 °C / > 482 °F
Kinematic viscosity	
Viscosity, dynamic	No information available
Log Pow	No information available

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Heat, flames and sparks. Keep away from direct sunlight.

10.5 Incompatible materials

Oxidizing agents. Acids. Bases.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Glyoxal	= 200 mg/kg (Rat)	= 12700 mg/kg (Rabbit)	= 2410 mg/m³, 3-4 hrs

Sensitisation	EUH208 - Contains (Glyoxal). May produce an allergic reaction.
Mutagenic effects	Contains an known or suspected mutagen.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation. Eye contact.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	Not Applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Glyoxal	= 215 mg/L LC50 Pimephales promelas 96 h 460 - 680 mg/L LC50 Leuciscus idus 96 h	<= 348.59 mg/L EC50 Pseudokirchneriella subcapitata 96 h > 500 mg/L EC50 Desmodesmus subspicatus 96 h > 500 mg/L EC50 Desmodesmus subspicatus 72 h	= 404 mg/L EC50 Daphnia magna 48 h

12.2 Persistence and degradability

The product is expected to be slowly biodegradable.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.
EU specific hazard statements
EUH208 - Contains (Glyoxal). May produce an allergic reaction

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

-

Contains

Glyoxal

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No.	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Glyoxal	203-474-9	107-22-2	< 1	Xn; R20 Muta cat.3 R68 Xi; R36/37/38, R43	Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1B (H317) Muta. 2 (H341) STOT SE 3 (H335)	No data available

Comments
The product contains other ingredients which do not contribute to the overall classification.

Mi SWACO
A Schlumberger Company
HEC
Safety data sheet number PID763
Revision date 09/Oct/2015

4. First aid measures

4.1 First Aid

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact — Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx).

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Revision date 09/Oct/2015

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If spilled, take caution, as material can cause surfaces to become very slippery. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery. Persons susceptible to allergic reactions should not handle this product.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure Do not eat, drink or smoke during work. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions — Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions — Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid heat, flames and other sources of ignition. Keep away from direct sunlight Protect from moisture Avoid contact with: Oxidizing agents Acids Bases

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Revision date 09/Oct/2015

Storage class — Chemical storage.

Packaging material — Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits — NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Glyoxal	Not determined	Not determined	Not determined	0,2 ppm Ceiling 0,5 mg/m³ Ceiling

Component	Malaysia	France	Germany	Hungary
Glyoxal	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Glyoxal	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Glyoxal	Not determined	0.1 mg/m³ TWA inhalable fraction, aerosol and vapor	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK
Glyoxal	0.1 mg/m³ VLA-ED it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound inhalable fraction and vapor	Not determined	Not determined	Not determined

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : Distillates (petroleum), hydrotreated light - 64742-47-8

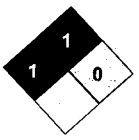
California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH : A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.
United States of America (USA) TSCA : On TSCA Inventory
Switzerland CH INV : Not in compliance with the inventory
Canada DSL : All components of this product are on the Canadian DSL
Australia AICS : On the inventory, or in compliance with the inventory
New Zealand NZIoC : Not in compliance with the inventory
Japan ENCS : Not in compliance with the inventory
Korea KECI : On the inventory, or in compliance with the inventory
Philippines PICCS : Not in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 1
Fire Hazard: 1
Reactivity Hazard: 0



Further information

Legacy SDS Number : 297870

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances In China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

Safety data sheet number PID763
Version 5
Revision date 09/Oct/2015
Supercedes date 07/Feb/2011

MI SWACO
A Schlumberger Company

Safety Data Sheet
HEC

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name HEC
Product code PID763
Denmark Pr. no. 1113016

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Viscosifier.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600
Denmark Poison Control Hotline (DK): +45 82 12 12 12

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label Elements

NOAEL Teratogenicity: >= 300 ppm
Information given is based on data obtained from similar substances.

Species: Rat
Application Route: Inhalation
Dose: 300, 900 ppm
Exposure time: GD 6-15
Number of exposures: 6 h/d
Method: OECD Guideline 414
NOAEL Teratogenicity: >= 900 ppm
NOAEL Maternal: >= 900 ppm
Information given is based on data obtained from similar substances.

Species: Rat
Application Route: oral gavage
Dose: 0, 500, 1000, 1500 mg/kg/d
Exposure time: GD 6-15
Number of exposures: Daily
Method: OECD Guideline 414
NOAEL Teratogenicity: 1,000 mg/kg
NOAEL Maternal: 500 mg/kg
Information given is based on data obtained from similar substances.

HEC Liquid Polymer
Aspiration toxicity : No aspiration toxicity classification.

CMR effects

C12-C14 Isoalkanes : Carcinogenicity: Limited evidence of carcinogenicity in animal studies
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., In vivo tests did not show mutagenic effects
Teratogenicity: Animal testing did not show any effects on fetal development.
Reproductive toxicity: No adverse effects expected

HEC Liquid Polymer
Further information : High concentration of vapors may cause irritation to eyes and respiratory system and produce narcotic effects. Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish

C12-C14 Isoalkanes : LL50: > 1,000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
semi-static test Method: OECD Test Guideline 203
Information given is based on data obtained from similar substances.

Polymerization bottoms LL50: > 1,000 mg/l

Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates

C12-C14 Isoalkanes : EL50: > 1,000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202
Information given is based on data obtained from similar substances.

Distillates (petroleum), hydrotreated light EL50: > 100 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202
Aquatic toxicity is unlikely due to low solubility.

Polymerization bottoms EL50: > 100 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: OECD Test Guideline 202

Toxicity to algae

C12-C14 Isoalkanes : EL50: > 1,000 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition Method: OECD Test Guideline 201
Information given is based on data obtained from similar substances.

Polymerization bottoms EL50: > 1,000 mg/l
Exposure time: 96 h
Species: Selenastrum capricornutum (green algae)

Toxicity to fish (Chronic toxicity)

C12-C14 Isoalkanes : NOELR: 0.316 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Polymerization bottoms : NOEC: 5 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
static renewal
Method: OECD Test Guideline 211

Elimination information (persistence and degradability)

Biodegradability : Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable

according to OECD classification.

Ecotoxicology Assessment

Results of PBT assessment
C12-C14 Isoalkanes : Non-classified PBT substance, Non-classified vPvB substance

Polymerization bottoms : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Testing (ASTM D4206) has shown product does not sustain combustion.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR

TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards : Fire Hazard

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO – KNOW

CERCLA Reportable Quantity : This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Ingredients : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

Chevron Phillips Chemical Company LP

Ingredients	Basis	Value	Control parameters	Note
C12-C14 Isoalkanes	Manufacturer	TWA	1,200 mg/m3	RCP.

RCP Reciprocal Calculation Procedure

US

Ingredients	Basis	Value	Control parameters	Note

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Flame-resistant clothing. Footwear protecting against chemicals.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state : Liquid
Color : Opaque

Odor : Hydrocarbon

Safety data

Flash point : 85 °C (185 °F)

Lower explosion limit : No data available

Upper explosion limit : No data available

Molecular formula : Mixture

Molecular weight : Not applicable

pH : Not applicable

Pour point : No data available

Boiling point/boiling range : 217 - 237 °C (423 - 459 °F)

Vapor pressure : No data available

Relative density : 0.97
at 15.6 °C (60.1 °F)

Water solubility : No data available

Partition coefficient: n-octanol/water : No data available

Viscosity, kinematic : 91937 cSt

Relative vapor density : No data available

Evaporation rate : No data available

SECTION 10: Stability and reactivity

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Conditions to avoid : Heat, flames and sparks.

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Acute oral toxicity

C12-C14 Isoalkanes : LD50: > 5000 milligram per kilogram
Species: Rat

Method: OECD Test Guideline 401
Information given is based on data obtained from similar substances.

Distillates (petroleum), hydrotreated light : No data available

Polymerization bottoms : LD50: > 5,000 mg/kg
Species: Rat

Acute inhalation toxicity

C12-C14 Isoalkanes : LC50: > 5.0milligram per literExposure time: 4 h
Species: Rat
Test atmosphere: vapor
Method: OECD Test Guideline 403
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Information given is based on data obtained from similar substances.

Distillates (petroleum), hydrotreated light : No data available

Acute dermal toxicity

Distillates (petroleum), hydrotreated light : No data available

Polymerization bottoms : LD50: > 2,000 mg/kg
Species: Rat

HEC Liquid Polymer
Skin irritation : No skin irritation

HEC Liquid Polymer
Eye irritation : No eye irritation

HEC Liquid Polymer
Sensitization : Not a skin sensitizer.

Repeated dose toxicity

C12-C14 Isoalkanes : Species: Monkey
Application Route: Inhalation
Dose: 0, 654 ppm
Exposure time: 4 wk
Number of exposures: 6 h/d, 3 d/wk
NOEL: > 654 ppm
Method: OECD Test Guideline 412

Species: Rat, male and female
Sex: male and female
Application Route: oral gavage
Dose: 0, 25, 150, 1000 mg/kg/d
Exposure time: 4 wk
Number of exposures: daily
NOEL: >= 1000 mg/kg/d
Method: OECD Guideline 422
Information given is based on data obtained from similar substances.

Polymerization bottoms : No adverse effects expected

Reproductive toxicity

C12-C14 Isoalkanes : Species: Rat
Sex: male
Application Route: oral gavage
Dose: 0, 750, 1500, 3000 mg/kg/bw/d
Number of exposures: daily
Test period: 90 d
Method: OECD Test Guideline 415
NOAEL Parent: >= 3000 mg/kg/bw/d
Information given is based on data obtained from similar substances.

Species: Rat
Sex: female
Application Route: oral gavage
Dose: 0, 750, 1500 mg/kg/bw/d
Number of exposures: daily
Test period: 90 d
Method: OECD Test Guideline 415
NOAEL Parent: >= 1500 mg/kg/bw/d
NOAEL F1: 750 mg/kg/bw/d
Information given is based on data obtained from similar substances.

Species: Rat
Sex: male and female
Application Route: inhalation (vapor)
Dose: 100, 300 ppm
Number of exposures: 6 h/d/5d/wk
Test period: 8 wk
Method: OECD Guideline 421
NOAEL Parent: >= 300 ppm
NOAEL F1: >= 300 ppm
Information given is based on data obtained from similar substances.

Polymerization bottoms : No adverse effects expected

Developmental Toxicity

C12-C14 Isoalkanes : Species: Rat
Application Route: Inhalation
Dose: 100, 300 ppm
Exposure time: GD 6-15
Number of exposures: 6 h/d

measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.
This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : HEC Liquid Polymer
Material : 1105037, 1101269, 1016918

Use : Drilling Fluid Additive

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132)
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification
: Flammable liquids, Category 4

Labeling

Signal Word : Warning

Hazard Statements : H227: Combustible liquid.

Precautionary Statements :
Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3: Composition/information on ingredients

Synonyms : Drilling Mud Additive
Liquid HEC Polymer

Molecular formula : Mixture

Component	CAS-No.	Weight %
C12-C14 Isoalkanes	68551-19-9	0 - 60
Distillates (petroleum), hydrotreated light	64742-47-8	0 - 60
Polymerization bottoms	64741-71-5	0 - 60

SECTION 4: First aid measures

General advice : No hazards which require special first aid measures.

If inhaled : Move to fresh air. If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : 85 °C (185 °F)

Suitable extinguishing media : Carbon dioxide (CO2).

Unsuitable extinguishing media : High volume water jet.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 6: Accidental release measures

Environmental precautions : Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Handling

Advice on safe handling : Avoid formation of aerosol. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : No smoking. Keep in a well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Dust may cause mechanical irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Graphite	No data available	No data available	No data available
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Contains a known or suspected carcinogen.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity - Single exposure Not classified

Specific target organ toxicity - Repeated exposure Not classified.

Aspiration hazard Not applicable.

Other information Key literature references and sources for data. See Section 16 for more information.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Graphite	No information available	No information available	No information available
Crystalline silica (impurity)	LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h	EC50: > 1000 mg/l 72h	LC50 Daphnia manga (Water flea): > 10000 mg/l 24h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility
Insoluble in water.

Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1. UN number
Not regulated

14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3 Hazard class(es)
ADR/RID/ADN/ADG Hazard class Not regulated
IMDG/ANTAQ Hazard class Not regulated
ICAO/ANAC Hazard class/division Not regulated

14.4 Packing group
ADR/RID/ADN/ADG Packing group Not regulated
IMDG/ANTAQ Packing group Not regulated
ICAO/ANAC Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not applicable

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code
Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No poisons schedule number allocated
New Zealand Hazard Classification Not classified

HSNO approval no. Not required.

Group number Not required.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)
The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)

International Inventories

USA (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not comply
Japan (ENCS)	Does not comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	19-Feb-2016
Revision date	08-Jul-2018
Version	5
This SDS has been revised in the following section(s)	All sections No changes with regard to classification have been made. Updated according to GHS/CLP.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

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Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on

Eye Contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Extinguishing media which must not be used for safety reasons
None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene Measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Avoid contact with: Oxidizing agents

Storage class Chemical storage.

Packaging materials Use specially constructed containers only.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component information

Chemical Name	Arabic	Australia	Egypt
Graphite	2 mg/m³ TWA	3mg/m³TWArespirable dust	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.1mg/m³TWArespirable dust	Not determined
Chemical Name	**India**	**Indonesian**	**Japan**
Graphite	Not determined	2 mg/m³ TWA	2 mg/m³ OEL 0.5 mg/m³ OEL
Crystalline silica (impurity)	Not determined	0.1 mg/m³ TWA	Not determined
Chemical Name	**Kazakhstan**	**Kuwait**	**New Zealand**

Graphite	Not determined	Not determined	3 mg/m³ TWA
Crystalline silica (impurity)	1 mg/m³ MAC	Not determined	0.1 mg/m³ TWA Confirmed carcinogen
Chemical Name	**Malaysia**	**Philippines**	**Russia**
Graphite	2 mg/m³ TWA	Not determined	Not determined
Crystalline silica (impurity)	0.1 mg/m³ TWA	Not determined	3 mg/m³ STEL 1 mg/m³ TWA Fibrogenic substance glass;regulated under Quartz 1123, 1124
Chemical Name	**Thailand**	**Vietnam**	**Turkey**
Graphite	Not determined	Not determined	Not determined
Crystalline silica (impurity)	0.025 mg/m³ TWA	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

Hand protection Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

8.2.3 Environmental exposure controls

Environmental exposure Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odor	Odorless
Color	Gray - Black
Odor threshold	Not applicable

Property	Values	Remarks
pH	6 - 8	
pH @ dilution	No information available	
Melting / freezing point	3652 °C / 6605.6 °F	
Boiling point/range	4827 °C / 8720.6 °F	
Flash point	No information available	
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not applicable	
Flammability Limit in Air		Not applicable
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.9 - 2.1	@ 20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	> 500 °C / >932 °F	
Decomposition temperature	> 400°C / >752°F	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
log Pow	Not determined	

Explosive properties Suspended dust may present a dust explosion hazard
Oxidizing properties None known.

9.2 Other Information

Pour point No information available
Molecular weight No information available
VOC content(%) None
Density No information available

Comments
The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Dust may form explosive mixture in air.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerization does not occur.

10.4 Conditions to avoid

Take precautionary measures against static charges. Avoid dust formation. Heat, flames and sparks.

10.5 Incompatible materials

Oxidizing agents.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Restricted for use in Europe until REACH assessed. Please contact REACH@miswaco.slb.com if intended for use in Europe.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	07/Dec/2010
Revision date	22/Jun/2015
Version	1
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification. Updated according to GHS/CLP.

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

†A mark of M-I L.L.C.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

MI SWACO
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Safety Data Sheet
G-SEAL® PLUS

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name	G-SEAL® PLUS
Product code	PID12351

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use	Plugging agent.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label elements

Signal word
None

Hazard Statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary statements
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Contains
Graphite

Crystalline silica (impurity)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
May cause slight irritation
Suspended dust may present a dust explosion hazard

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/Information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Graphite	231-955-3	7782-42-5	5-10
Crystalline silica (impurity)	238-878-4	14808-60-7	< 1

Comments
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

10.5 Incompatible materials

Oxidizing agents. Acids. Alkalis.

10.6 Hazardous decomposition products

Sulfur oxides. See also section 5.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Graphite	No data available	No data available	No data available

Sensitisation This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

MI SWACO
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G-SEAL† HRG FINE

Safety data sheet number MI13615
Revision date 22/Jun/2015

Carcinogenicity This product does not contain any known or suspected carcinogens.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Target organ effects None known.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Graphite	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

MI SWACO
A Schlumberger Company

G-SEAL† HRG FINE

Safety data sheet number MI13615
Revision date 22/Jun/2015

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 99 - wastes not otherwise specified

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

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14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage precautions	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid contact with: Oxidizing agents Acids Alkalis Protect from moisture
Storage class	Chemical storage.
Packaging material	Use specially constructed containers only

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7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Graphite	Not determined	Not determined	3 mg/m³ TWA (containing no asbestos and <1% crystalline silica, all forms except fibres, natural and synthetic, respirable dust)	2.5 mg/m³ TWA

Component	Malaysia	France	Germany	Hungary
Graphite	2 mg/m³ TWA	2 mg/m³	1.5 mg/m³ MAK 4 mg/m³ MAK	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Graphite	Not Determined	Not determined	Not determined	5 mg/m³ TWA total dust 2 mg/m³ TWA respirable dust 10 mg/m³ TWA total dust 4 mg/m³ TWA respirable dust 10 mg/m³ STEL total dust 4 mg/m³ STEL respirable dust 20 mg/m³ STEL total dust 8 mg/m³ STEL respirable dust

Component	Poland	Portugal	Romania	Russia
Graphite	4.0 mg/m³ TWA natural total inhalable dust 1.0 mg/m³ TWA natural respirable dust 6.0 mg/m³ TWA synthetic total inhalable dust	2 mg/m³ TWA respirable fraction	Not determined	Not determined

Component	Spain	Switzerland	Turkey	UK

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Graphite	2 mg/m³ VLA-ED dust	2.5 mg/m³ MAK respirable 5 mg/m³ MAK inhalable	Not determined	30 mg/m³ STEL calculated inhalable dust 12 mg/m³ STEL calculated respirable dust 10 mg/m³ TWA inhalable dust 4 mg/m³ TWA respirable dust

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	Safety glasses with side-shields.
Hand protection	Use protective gloves made of:, Neoprene, Nitrile, Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment, Suitable mask with particle filter P3 (European Norm 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

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G-SEAL† HRG FINE

Safety data sheet number MI13615
Revision date 22/Jun/2015

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	Gray
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point	No information available	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		Not applicable
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	2.25	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	No information available	
Explosive properties	Not Applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Safety Data Sheet
G-SEAL† HRG FINE

Quantity restrictions apply! Not to be used in quantities of 1 tonne or more within the EEA.

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name G-SEAL† HRG FINE
Product code MI13615

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Lost circulation material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

-

Contains
Graphite

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Component	EC-No.	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Graphite	Not Listed	Proprietary	60-100	-	Not classified	No data available

3.2 Mixtures

Not Applicable

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Wollastonite (Ca(SiO3))	No information available	No information available	No information available
Cellulose	No information available	No information available	No information available
Kaolin	No information available	No information available	No information available
Polyvinyl alcohol	No information available	No information available	No information available

12.2 Persistence and degradability

Not readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 99

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)
ADR/RID/ADN Hazard class Not regulated
IMDG Hazard class Not regulated
ICAO Hazard class/division Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group Not regulated
IMDG Packing group Not regulated
ICAO Packing group Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons
No Poisons Schedule number allocated

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Does not Comply
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	27/Feb/2014
Revision date	12/Feb/2015
Version	2
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
Not classified

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

†A mark of M-I L.L.C.

Cellulose	Not determined	Not determined	10 mg/m³ TWA (containing no asbestos and <1% crystalline silica, inspirable dust)	Not determined
Kaolin	Not determined	Not determined	10 mg/m³ TWA (containing no asbestos and <1% crystalline silica, inspirable dust)	2 mg/m³ TWA
Polyvinyl alcohol	Not determined	Not determined	Not determined	Not determined

Component	Finland	France	Germany	Hungary
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined	Not determined
Cellulose	Not determined	10 mg/m³	Not determined	Not determined
Kaolin	Not determined	10 mg/m³	Not determined	Not determined
Polyvinyl alcohol	Not determined	Not determined	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Wollastonite (Ca(SiO3))	Not Determined	Not determined	Not determined	Not determined
Cellulose	10 mg/m³ TWA	Not determined	Not determined	Not determined
Kaolin	10 mg/m³ TWA 2 mg/m³ TWA	Not determined	Not determined	Not determined
Polyvinyl alcohol	Not Determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined	Not determined
Cellulose	Not determined	10 mg/m³ TWA	Not determined	10 mg/m³ MAC
Kaolin	10.0 mg/m³ TWA <2% free crystalline silica and containing no asbestos total inhalable dust	2 mg/m³ TWA respirable fraction, particulate matter containing no Asbestos and < 1% Crystalline silica	Not determined	8 mg/m³ TWA aerosol Fibrogenic substance
Polyvinyl alcohol	Not determined	Not determined	Not determined	10 mg/m³ MAC

Component	Spain	Switzerland	Turkey	UK
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined	Not determined
Cellulose	10 mg/m³ VLA-ED	3 mg/m³ MAK respirable	Not determined	20 mg/m³ STEL inhalable dust 12 mg/m³ STEL calculated respirable dust 10 mg/m³ TWA inhalable dust 4 mg/m³ TWA respirable dust
Kaolin	2 mg/m³ VLA-ED this value is for the particulated matter that is free from Asbestos and contains less than 1% of Crystalline silica respirable fraction	3 mg/m³ MAK respirable	Not determined	6 mg/m³ STEL calculated respirable dust 2 mg/m³ TWA respirable dust
Polyvinyl alcohol	Not determined	Not determined	Not determined	Not determined

FORM-A-BLOK†
Safety data sheet number MI14015
Revision date 12/Feb/2015

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection — It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection — Use protective gloves made of:, Nitrile, Neoprene, Frequent change is advisable.

Respiratory protection — No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143).

Skin and body protection — Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures — Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	Light gray
Odor threshold	Not applicable

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Property	Values	Remarks
pH	No information available	
pH @ dilution		
Melting/freezing point		
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	1.98 sg	@ 20°C.
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	No information available	

Explosive properties	No information available
Oxidizing properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

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Protect from moisture. Avoid dust formation. Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Wollastonite (Ca(SiO3))	No data available	No data available	No data available
Cellulose	> 5 g/kg (Rat)	> 2 g/kg (Rabbit)	> 5800 mg/m³ (Rat) 4 h
Kaolin	No data available	No data available	No data available
Polyvinyl alcohol	> 20 g/kg (Rat)	No data available	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	None known.
Routes of entry	No route of entry noted.

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains

Wollastonite (Ca(SiO3))

Cellulose

Kaolin

Polyvinyl alcohol

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

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Safety data sheet number MI14015
Revision date 12/Feb/2015

Component	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg 1272/2008)	REACH registration number
Wollastonite (Ca(SiO3))	237-772-5	13983-17-0	30-60	-	Not classified	No data available
Cellulose	232-674-9	9004-34-6	10-30	-	Not classified	No data available
Kaolin	310-194-1	1332-58-7	5-10	-	Not classified	No data available
Polyvinyl alcohol	polymer	9002-89-5	5-10	-	Not classified	No data available

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First Aid

Inhalation — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact — Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact — Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation — Please see Section 11. Toxicological Information for further information.

Ingestion — Please see Section 11. Toxicological Information for further information.

Skin contact — Please see Section 11. Toxicological Information for further information.

Eye contact — Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician — Treat symptomatically.

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Safety data sheet number MI14015
Revision date 12/Feb/2015

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
Dust may form explosive mixture in air.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If spilled, take caution, as material can cause surfaces to become very slippery. Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

6.4 Reference to other sections

FORM-A-BLOK†
Safety data sheet number MI14015
Revision date 12/Feb/2015

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. Do no eat, drink or smoke when using this product. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions — Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Keep away from heat, sparks, and flame.

Storage — Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture Avoid contact with: Strong oxidising agents

Storage class — Chemical storage.

Packaging material — Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure limits — No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Wollastonite (Ca(SiO3))	Not determined	Not determined	Not determined	1 fiber/cm3 TWA

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY
Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity to aquatic organisms

PERSISTENCE AND DEGRADABILITY
Biodegradation:
Material -- Expected to be readily biodegradable.
Hydrolysis:
Material -- Transformation due to hydrolysis not expected to be significant.
Photolysis:
Material -- Transformation due to photolysis not expected to be significant.
Atmospheric Oxidation:
Material -- Expected to degrade rapidly in air

OTHER ECOLOGICAL INFORMATION
VOC: Yes

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 08 XX XX

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (ADR/RID) : Not Regulated for Land Transport

INLAND WATERWAYS (ADNR)
Proper Shipping Name: SUBSTANCES WITH 60°C < f.p.<= 100 °C
Hazard Class: 9
UN or ID Number: 9003
Packing Group: (N/A)
Label(s) / Mark(s): None
Transport Document Name: 9003, SUBSTANCES WITH 60°C < f.p.<= 100 °C, (Undecane and dodecane), 9

SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA) : Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

Material is dangerous as defined by the EU Dangerous Substances/Preparations Directives.

CLASSIFICATION: Harmful. The classification of this product is based all or in part on test data.

EU LABELING:
Symbol: Xn

Harmful.

Nature of Special Risk: R65; Harmful: may cause lung damage if swallowed. R66; Repeated exposure may cause skin dryness or cracking.

Safety Advice: S23; Do not breathe gas/fumes/vapour/spray S24; Avoid contact with skin. S62; If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Contains: Distillates (petroleum), hydrotreated light

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: AICS, IECSC, DSL, EINECS, ENCS, KECI, PICCS, TSCA

Applicable EU Directives and Regulations:
EU Directive:
1999/13/EC [...on the limitation of emissions of volatile organic compounds... directive and amendments thereto]

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable
KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):
R65; Harmful: may cause lung damage if swallowed.
R66; Repeated exposure may cause skin dryness or cracking.

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Revision Changes:
Section 07: Handling and Storage - Storage was modified.
Section 05: Hazardous Combustion Products was modified.
Section 08: Hand Protection was modified.
Section 08: Skin and Body Protection was modified.
Section 15: National Chemical Inventory Listing was modified.

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Internal Use Only
MHC: 1A, 0, 0, 0, 2, 0

DGN: 4402470HGB (1007468)

Safety data sheet number MI14015
Version 2
Revision date 12/Feb/2015
Supercedes date 27/Feb/2014

Alpine SPECIALTY CHEMICALS

Safety Data Sheet
FORM-A-BLOK†

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	FORM-A-BLOK†
Product code	MI14015
Denmark Pr. no.	2313300

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Lost circulation material.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I SWACO / ALPINE
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

Flash Point [Method]: >70C (158F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.6 UEL: 7.0
Autoignition Temperature: >200°C (392°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES
Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT
Land Spill: Stop leak if you can do so without risk. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so without risk. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS
Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING
Avoid contact with skin. Use proper bonding and/or earthing procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]
Transport Pressure: [Ambient]

Static Accumulator: This material is a static accumulator.

STORAGE
Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be earthed and bonded. Drums must be earthed and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

Storage Temperature: [Ambient]
Storage Pressure: [Ambient]

Suitable Containers/Packing: Barges; Drums; Tank Trucks; Railcars
Suitable Materials and Coatings: Carbon steel; Stainless steel; Polyester; Polyethylene; Polypropylene; Teflon
Unsuitable Materials and Coatings: Natural rubber; Butyl rubber; Ethylene-propylene-diene monomer (EPDM); Polystyrene

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard			Note	Source	Year
Distillates (petroleum), hydrotreated light	Vapour.	RCP - TWA	1200 mg/m3	165 ppm	Total Hydrocarbons	ExxonMobil	2008

Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s):
UK Health and Safety Executive (HSE)

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:
Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
Half-face filter respirator Type A filter material, European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use

conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
No protection is ordinarily required under normal conditions of use. Nitrile, CEN standards EN 420 and EN 374 provide general requirements and lists of glove types.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No protection is ordinarily required under normal conditions of use.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS
See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION
Physical State: Liquid
Form: clear
Colour: Colorless (may be dyed)
Odour: mild petroleum/solvent
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION
Relative Density (at 15 C): 0.804
Density (at 15 °C): 803 kg/m3 (6.7 lbs/gal, 0.8 kg/dm3)
Flash Point [Method]: >70C (158F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.6 UEL: 7.0
Autoignition Temperature: >200°C (392°F)
Boiling Point / Range: 192C (378F) - 245C (473F)
Vapour Density (Air = 1): > 1 at 101 kPa
Vapour Pressure: 0.03 kPa (0.23 mm Hg) at 20°C | 0.07 kPa (0.53 mm Hg) at 38C | 0.157 kPa (1.18 mm Hg) at 50C
Evaporation Rate (N-Butyl Acetate = 1): < 0.01
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 1.64 cSt (1.64 mm²/sec) at 40°C | 2.3 cSt (2.3 mm²/sec) at 25C
Oxidising properties: See Sections 3, 15, 16.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/D

Pour Point: < -20°C (-4°F)
Molecular Weight: 172
Hygroscopic: No
Coefficient of Thermal Expansion: 0.00092 V/V/DEG C

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity

Route of Exposure	Conclusion / Remarks
INHALATION	
Toxicity: Data available.	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Negligible hazard at ambient/normal handling temperatures. Based on test data for structurally similar materials.
INGESTION	
Toxicity: LD50 > 15000 mg/kg	Minimally Toxic. Based on test data for the material.
Skin	
Toxicity: LD50 > 3160 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Mildly irritating to skin with prolonged exposure. Based on test data for structurally similar materials.
Eye	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS
For the product itself:
Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Additional information is available by request.

SECTION 12 ECOLOGICAL INFORMATION

Target Organs
No specific target organs noted

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

12.1. Toxicity

Acute Fish Toxicity
Not considered toxic to fish.

12.2. Persistence and degradability

Degradability
There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential
No data available on bioaccumulation.

12.4. Mobility in soil

Mobility:
The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.
Waste Class
The definitive European Waste code for this product will depend upon the final use that is made of this material. EWC-code: 07 01 99.

SECTION 14: TRANSPORT INFORMATION

General The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant
No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable. Please contact MISDS@slb.com for info regarding transport in Bulk.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Uk Regulatory References
Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.
EU Legislation
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
National Regulations
In accordance with Dutch Mining Regulation 9.2 and ARBO regulation Chapter 4.
New Zealand Hazard Classification and HSNO Approval No.
Not Classified. HSNO Approval No. Not Required.
Name of Group Standard and Information on Conditions of Group Standard
Information such as HSNO number and group standard have been added to fulfill the requirements for NZ regulations. As this product conforms to current EU regulations, it contains the required information to comply with the conditions of the stated group standard.

15.2. Chemical Safety Assessment

International Chemical Inventories
Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Australia (AICS), Canada (DSL / NDSL), China (IECSC), Europe (EINECS / ELINCS), Korea (TCCL / ECL), New Zealand (NZIoC), United States (TSCA).

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet
*a mark of M-I L.L.C.
General Information
HMIS Health -1 HMIS Flammability - 1 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator
Information Sources
Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).
Revision Comments
General revision. Updated according to REACH Annex II. Compiled or revised by Sandra McWilliam

Issued By	Sandra McWilliam
Revision Date	15-Mar-13
Revision	4
Supersedes date	23-Nov-10
SDS No.	11042
Safety Data Sheet Status	Approved.
Risk Phrases In Full	
NC	Not classified.

Disclaimer
MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to t product or to the data herein is made or incurred hereunder.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in the United Kingdom & Ireland.

PRODUCT
Product Name: **ESCAID 110**
Product Description: Dearomatised Hydrocarbons
Product Code:
Intended Use: Mining solvent, Solvent

COMPANY IDENTIFICATION
Supplier: **ExxonMobil Chemical Belgium**
A division of ExxonMobil Petroleum & Chemical c/o ExxonMobil Chemical Ltd.
MAILPOINT 88
CADLAND ROAD
HARDLEY, SOUTHAMPTON
SO45 3NP HAMPSHIRE
Great Britain

24 Hour Environmental / Health Emergency Telephone	023-8089-1558
Supplier General Contact	023-8089-3822 / 023-8089-5297
e-mail	SDS-UK@EXXONMOBIL.COM
Fax	023-8089-5324

SECTION 2 HAZARDS IDENTIFICATION

This material is dangerous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION: | Xn; R65 | R66 |

PHYSICAL / CHEMICAL HAZARDS
Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

HEALTH HAZARDS
Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking. May be irritating to the eyes, nose, throat, and lungs.

Note: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is regulated as a complex substance.

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	EINECS / ELINCS	Concentration *	Symbols/Risk Phrases
Distillates (petroleum), hydrotreated light	64742-47-8	265-149-8	100%	Xn;R65, R66, Note H

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4 FIRST AID MEASURES

INHALATION
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT
Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN
If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING
Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Combustible. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

M-I SWACO
A Schlumberger Company

SAFETY DATA SHEET
ECOTROL® RD

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name ECOTROL® RD

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Fluid loss reducer in invert emulsion drilling fluids.

1.3. Details of the supplier of the safety data sheet

Supplier

M-I SWACO
A Schlumberger Company
Woodlands Drive
Kirkhill Industrial Estate
Dyce, Aberdeen AB21 0GW
Scotland UK
T=+44(0)1224-246600
F=+11(0)1224-246699
Email - MISDS@slb.com

1.4. Emergency telephone number

(24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600.

National Emergency Telephone Number

+31 (0)30-2748888 Only for the purpose of informing medical personnel in cases of acute intoxications in the Netherlands.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Not classified.
Environment	Not classified.

Classification (1999/45/EEC) Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Label in Accordance With (EC) No. 1272/2008

No pictogram required.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

METHYLSTYRENE/ACRYLATE COPOLYMER 60-100%

Classification (EC 1272/2008)	Classification (67/548/EEC)
Not classified.	Not classified.

SYNTHETIC AMORPHOUS SILICA <2%

CAS-No.: 112926-00-8 EC No.: 601-214-2

Classification (EC 1272/2008)	Classification (67/548/EEC)
Not classified.	Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

The data shown is in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General information

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop as described the casualty should be transferred to hospital as soon as possible. For further information, please refer to section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Water spray, foam, dry powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

Fire or high temperatures create: Carbon monoxide (CO). Carbon dioxide (CO2).

Unusual Fire & Explosion Hazards

High concentrations of dust may form explosive mixture with air.

5.3. Advice for firefighters

Special Fire Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. In case of spills, beware of slippery floors and surfaces.

6.4. Reference to other sections

For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid inhalation of dust and contact with skin and eyes. Avoid handling which leads to dust formation. In case of spills, beware of slippery floors and surfaces.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

Storage Class

Chemical storage.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
SYNTHETIC AMORPHOUS SILICA	WEL		6 mg/m3			

WEL = Workplace Exposure Limit.

Ingredient Comments

NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

8.2. Exposure controls

Protective equipment

Process conditions

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures

Provide adequate general and local exhaust ventilation.

Respiratory equipment

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Dust filter P2 (for fine dust).

Hand protection

For prolonged or repeated skin contact use suitable protective gloves. Neoprene, or Rubber gloves are recommended.

Eye protection

Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Solid
Colour	White.
Odour	Odourless.
Solubility	Insoluble in water
Relative density	1.03 g/cm3 @ 20°C
Auto Ignition Temperature (°C)	400°C

9.2. Other information

Not relevant

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Not known.

10.4. Conditions to avoid

Avoid wet and humid conditions.

10.5. Incompatible materials

Materials To Avoid

Not known.

10.6. Hazardous decomposition products

Fire or high temperatures create: Carbon dioxide (CO2). Carbon monoxide (CO).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Aspiration hazard:

Not anticipated to present an aspiration hazard based on chemical structure.

Inhalation

Dust may irritate respiratory system or lungs.

Ingestion

May cause discomfort if swallowed.

Skin contact

Prolonged and frequent contact may cause redness and irritation.

Eye contact

Particles in the eyes may cause irritation and smarting.

Route of entry

No route of entry noted.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. In case of spills, beware of slippery floors and surfaces.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid inhalation of dust and contact with skin and eyes. Avoid handling which leads to dust formation.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
ETHANOL	WEL	1000 ppm	1920 mg/m3			

WEL = Workplace Exposure Limit.

Ingredient Comments

NUI = Nuisance dust, WEL TWA 4mg/m3 Respirable Dust, 10 mg/m3 Total Dust.

ETHANOL (CAS: 64-17-5)

DNEL			
Inhalation.	Short Term	Local Effects	1900 mg/m³
Dermal	Long Term	Systemic Effects	343 mg/kg
Inhalation.	Long Term	Systemic Effects	950 mg/m³
PNEC			
Freshwater	0.96 mg/L		
Marinewater	0.79 mg/L		
Intermittent release	2.75 mg/L		
STP	580 mg/L		
Sediment (Freshwater)	3.6 mg/kg		
Sediment (Marinewater)	2.9 mg/kg		
Soil	0.63 mg/kg		

8.2. Exposure controls

Protective equipment

Process conditions

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures

Provide adequate general and local exhaust ventilation.

Respiratory equipment

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Wear mask supplied with: Dust filter P2 (for fine dust).

Hand protection

For prolonged or repeated skin contact use suitable protective gloves. Nitrile, or Neoprene gloves are recommended.

Eye protection

Wear approved chemical safety goggles where eye exposure is reasonably probable.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Solid
Colour	White to Cream
Odour	Slight odour.
Solubility	Completely soluble in water Forms a viscous solution in water.
Relative density	1.5 s.g
Bulk Density	50 lb/cu.ft.

9.2. Other information

Not relevant

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Not known.

10.4. Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials To Avoid

Avoid contact with strong oxidisers.

10.6. Hazardous decomposition products

Fire or high temperatures create: Vapours/gases/fumes of: Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Aspiration hazard:

Not anticipated to present an aspiration hazard based on chemical structure.

Inhalation

Dust may irritate respiratory system or lungs.

Ingestion

May cause discomfort if swallowed.

Skin contact

Prolonged and frequent contact may cause redness and irritation.

Eye contact

Particles in the eyes may cause irritation and smarting.

Route of entry

No route of entry noted.

Target Organs

No specific target organs noted

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Contact M-I SWACO's QHSE Department for ecological information at env@miswaco.slb.com.

12.1. Toxicity

Acute Fish Toxicity

Not considered toxic to fish.

12.2. Persistence and degradability

Degradability

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

12.4. Mobility in soil

Mobility:

The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

General The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Uk Regulatory References

Chemicals (Hazard Information & Packaging) Regulations. Control of Substances Hazardous to Health Regulations 2002 (as amended) Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2. Chemical Safety Assessment

International Chemical Inventories

Contact REACH@miswaco.slb.com for REACH information. Complies with the following national/regional chemical inventory requirements: Australia (AICS), Canada (DSL / NDSL), China (IECSC), Europe (EINECS / ELINCS), Japan (METI / ENCS), Korea (TCCL / ECL), New Zealand (NZIoC), Phillipines (PICCS), United States (TSCA).

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet

*a mark of M-I L.L.C.

Information Sources

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. LOLI. European Chemicals Bureau - ESIS (European Chemical Substances Information).

Revision Comments

The following sections have been revised: 3, 15 Compiled or revised by Sandra McWilliam

Issued By	Bill Cameron
Revision Date	23-May-12
Revision	2
Supersedes date	15-May-12
SDS No.	12476

Risk Phrases In Full

R11	Highly flammable
NC	Not classified.

Hazard Statements in Full

H225	Highly flammable liquid and vapour.

Disclaimer

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Ethylene Glycol
Schedule 6
Schedule 5

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Does not Comply
Inventory - Japan - Existing and New Chemicals list	Does not Comply

China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Does not Comply

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16: Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	22/Mar/2011
Revision date	29/Feb/2012
Version	2
The following sections have been revised:	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3

R48/22 - Harmful: danger of serious damage to health by prolonged exposure if swallowed

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.
H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure if swallowed

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

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SAFETY DATA SHEET
DUO-TEC® NS

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name DUO-TEC® NS

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Drilling fluid additive

1.3. Details of the supplier of the safety data sheet

Supplier
M-I SWACO
A Schlumberger Company
Building 3, Oilphase Facility,
Woodlands Drive, Kirkhill Industrial Estate,
Dyce, Aberdeen AB21 0GW.
Scotland UK
T = +44 (0)1224-246600
F = +44 (0)1224-246699
E-mail = MBXMSDS-EH@miswaco.slb.com

1.4. Emergency telephone number

(24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (1999/45/EEC) Not classified.

2.2. Label elements

Risk Phrases

NC Not classified.

Safety Phrases

NC Not classified.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

XANTHAN GUM 80-100%

CAS-No.: 11138-66-2 **EC No.: 234-394-2**

Classification (EC 1272/2008)	Classification (67/548/EEC)
Not classified.	Not classified.

DUO-TEC® NS

ETHANOL 0-0.1%

CAS-No.: 64-17-5 **EC No.: 200-578-6**

Classification (EC 1272/2008)	Classification (67/548/EEC)
Flam. Liq. 2 - H225	F;R11

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments
The data shown is in accordance with the latest EC Directives.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation
Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

Ingestion
Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention if any discomfort continues.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact
Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation.
Irritation of nose, throat and airway.

Ingestion
May cause discomfort if swallowed.

Skin contact
Prolonged skin contact may cause redness and irritation.

Eye contact
May cause temporary eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Get medical attention if any discomfort continues.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products
Fire or high temperatures create: Vapours/gases/fumes of: Carbon monoxide (CO). Carbon dioxide (CO_2).

Unusual Fire & Explosion Hazards
High concentrations of dust may form explosive mixture with air.

5.3. Advice for firefighters

Special Fire Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

Protective equipment for fire-fighters
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	pungent
Colour	Colourless - Light yellow
Odor threshold	Not applicable

Property	Values	Remarks
pH	4.0 - 4.5	
pH @ dilution		
Melting/freezing point		
Boiling point/range	100 °C	
Flash Point	> 93 °C	
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.15	20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	-62°C (typical)
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

No materials to be especially mentioned. Strong acids. Strong alkalies. Formic acid may be formed.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of vapours in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethylene Glycol	4000 - 10200 mg/kg (Rat)	= 10600 mg/kg (Rat)	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.

Reproductive toxicity	None known.
Routes of exposure	None known.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Ethylene Glycol	40000 - 60000 mg/L LC50 (Pimephales promelas) = 96 h 40761 mg/L LC50 (Oncorhynchus mykiss) = 96 h 27540 mg/L LC50 (Lepomis macrochirus) = 96 h 14 - 18 mL/L LC50 (Oncorhynchus mykiss) = 96 h 16000 mg/L LC50 (Poecilia reticulata) = 96 h 41000 mg/L LC50 (Oncorhynchus mykiss) = 96 h	6500 - 13000 mg/L EC50 (Pseudokirchneriella subcapitata) = 96 h	46300 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Product is biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
The product is miscible with water. May spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 99.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Fog, Alcohol Foam, CO_2, Dry Chemical.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx), Formic acid.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

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D-STRUCTOR®
Safety data sheet number MI11228
Revision date 29/Feb/2012

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustable material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids. Strong alkalies.

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

Mi SWACO
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D-STRUCTOR®
Safety data sheet number MI11228
Revision date 29/Feb/2012

8.1 Control parameters

Component	EU OEL - Third List	Austria	Australia	Denmark
Ethylene Glycol	40 ppm STEL 104 mg/m³ STEL 20 ppm TWA 52 mg/m³ TWA Possibility of significant uptake through the skin	20 ppm STEL 52 mg/m³ STEL 10 ppm TWA 26 mg/m³ TWA	40ppmSTELvapour 104mg/m³STELvapour 10mg/m³TWAparticulate 20ppmTWAvapour 52mg/m³TWAvapour skin notation	10 ppm TWA 26 mg/m³ TWA 10 mg/m³ TWA Potential for cutaneous absorption

Component	Malaysia	France	Germany	Hungary
Ethylene Glycol	39.4 ppm Ceiling aerosol 100 mg/m³ Ceiling aerosol	40ppmSTEL 104mg/m³STEL 20 ppmTWA 52 mg/m³TWA	10 ppm TWA 26 mg/m³ TWA	52mg/m³TWA 104mg/m³STEL

Component	New Zealand	Italy	Netherlands	Norway
Ethylene Glycol	50 ppm Ceiling mist and vapour 127 mg/m³ Ceiling mist and vapour	Not determined	104mg/m³STEL 52 mg/m³ 10 mg/m³	10 mg/m³ TWA dust 20 ppm TWA total dust and vapor 52 mg/m³ TWA 104 mg/m³ STEL dust 40 ppm STEL 25 ppm Ceiling (vapor) Skin

Component	Poland	Portugal	Romania	Russia
Ethylene Glycol	50 mg/m³ STEL NDSCh 15 mg/m³ TWA NDS	Skin 40 ppm STEL VLE-CD 104 mg/m³ STEL VLE-CD 20 ppm TWA indicative limit value 52 mg/m³ TWA indicative limit value	40ppmSTEL 104mg/m³STEL 20ppmTWA 52mg/m³TWA	10 mg/m³ STEL aerosol and vapor 5 mg/m³ TWA aerosol and vapor

Component	Spain	Switzerland	Turkey	UK
Ethylene Glycol	40 ppm STEL 104 mg/m³ STEL Skin 20 ppm TWA VLA-ED 52 mg/m³ TWA VLA-ED	20 ppm STEL 52 mg/m³ STEL Skin 10 ppm TWA MAK 26 mg/m³ TWA MAK	40 ppm STEL 104 mg/m³ STEL Skin 20 ppm TWA 52 mg/m³ TWA	40 ppm STEL vapour 104 mg/m³ STEL vapour 30 mg/m³ STEL calculated particulate Skin 10 mg/m³ TWA particulates 20 ppm TWA vapour 52 mg/m³ TWA vapour

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Derived No Effect Level (DNEL)

Long term exposure local effects
Ethylene Glycol
Inhalation 35 mg/m³

Long term exposure systemic effects

Ethylene Glycol
Dermal 106 mg/kg

Predicted No Effect Concentration (PNEC)
Ethylene Glycol

Fresh Water	10 mg/l
Sea Water	1 mg/l
Fresh water sediment	37 mg/kg
Sea sediment	3.7 mg/kg
Soil	1.53 mg/kg
Impact on Sewage Treatment	199.5 mg/l
Intermittent release	10 mg/l

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection Repeated or prolonged contact:, Use protective gloves made of:, Neoprene, Nitrile, PVC, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown).

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

Schedule 6
Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by road or rail.

International Inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Does not Comply
Inventory - Japan - Existing and New Chemicals list	Does not Comply
China (IECSC)	Does not Comply
Australia (AICS)	Complies
Korea (KECL)	Does not Comply
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Does not Comply

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	26/Aug/2014
Revision date	17/Aug/2016
Version	3
The following sections have been	All sections, There have been changes with regard to classification.

revised:

Text of R phrases mentioned in Section 3
R22 - Harmful if swallowed
R34 - Causes burns
R36 - Irritating to eyes
R40 - Limited evidence of a carcinogenic effect

Full text of H-Statements referred to under sections 2 and 3

H315 - Causes skin irritation
H319 - Causes serious eye irritation

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H351 - Suspected of causing cancer

*A mark of M-I L.L.C., a Schlumberger Company

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Safety data sheet number MI11228
Version 2
Revision date 29/Feb/2012
Supercedes date 22/Mar/2011

Mi SWACO
A Schlumberger Company

Safety Data Sheet
D-STRUCTOR®

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product Identifier

Product name	D-STRUCTOR®
Product code	MI11228
Denmark Pr. no.	2311348

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Completion fluid additive.
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com
1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
None

Hazard statements

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
Ethylene Glycol

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	EC-No.	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Ethylene Glycol	203-473-3	107-21-1	1-5	Xn; R48/22	Acute Tox. 4 (H302) STOT Rep. Exp. Cat 2 (H373)	01-2119456816-28-xxxx

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Specific gravity	1.3	20 °C
Bulk density	No information available	
Relative density	1150 - 1380 kg/m³	
Water solubility	Miscible with water.	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Log Pow	<0	

Explosive properties	No information available
Oxidising properties	No information available

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation Inhalation of vapours in high concentration may cause irritation of respiratory system.

Eye contact	Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
N,N-Bis(carboxymethyl)-L-glutamic acid	No data available	No data available	No data available
Nitrilotriacetic acid	= 1100 mg/kg (Rat)	No data available	No data available
Glycolic acid (impurity)	= 1950 mg/kg (Rat)	No data available	= 7100 µg/m³ (Rat) 4 h

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	Contains a known or suspected carcinogen.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Skin contact. Eye contact.
Routes of entry	Skin contact. Eye contact.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	Not Applicable.

12. Ecological information

12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
N,N-Bis(carboxymethyl)-L-glutamic acid	No information available	No information available	No information available
Nitrilotriacetic acid	EC50: >100mg/l (24h, Daphnia magna)	No information available	No information available
Glycolic acid (impurity)	> 5000 mg/L LC50 Brachydanio rerio 96 h	No information available	No information available

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

Log Pow
<0

12.4 Mobility in soil

Mobility
The product is miscible with water. May spread in water systems.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used The following Waste Codes are only suggestions: EWC waste disposal No: 07 01 04 Waste Code: 7152 Organic waste without halogen.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Glycolic acid (impurity)

3.2 Mixtures

Component	EC-No.	CAS-No.	Weight % - range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
N,N-Bis(carboxymethyl)-L-glutamic acid	261-530-8	58976-65-1	10-30	Xi; R36	Eye Irrit. 2 (H319)	No data available
Nitrilotriacetic acid	205-355-7	139-13-9	<3	Xi; R36 Xn; R40	Eye Irrit 2A (H319) Carc. 2 (H351)	No data available
Glycolic acid (impurity)	201-180-5	79-14-1	<3	C;R34 Xn;R22	Skin Corr. 1B (H314) Acute Tox. 4 (H302)	No data available

Comments
The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation persists.

Eye contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dyke far ahead of liquid spill for later disposal.

Methods for cleaning up
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Exposure Limits No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
N,N-Bis(carboxymethyl)-L-glutamic acid	Not determined	Not determined	Not determined	Not determined
Nitrilotriacetic acid	Not determined	Not determined	Not determined	K
Glycolic acid (impurity)	Not determined	Not determined	Not determined	Not determined
Component	Malaysia	France	Germany	Hungary
N,N-Bis(carboxymethyl)-L-glutamic acid	Not determined	Not determined	Not determined	Not determined
Nitrilotriacetic acid	Not determined	Not determined	Not determined	Not determined
Glycolic acid (impurity)	Not determined	Not determined	Not determined	Not determined
Component	New Zealand	Italy	Netherlands	Norway
N,N-Bis(carboxymethyl)-L-glutamic acid	Not Determined	Not determined	Not determined	Not determined
Nitrilotriacetic acid	Not Determined	Not determined	Not determined	Not determined
Glycolic acid (impurity)	Not Determined	Not determined	Not determined	Not determined
Component	Poland	Portugal	Romania	Russia
N,N-Bis(carboxymethyl)-L-glutamic acid	Not determined	Not determined	Not determined	Not determined
Nitrilotriacetic acid	Not determined	Not determined	Not determined	Not determined
Glycolic acid (impurity)	Not determined	Not determined	Not determined	Not determined
Component	Spain	Switzerland	Turkey	UK
N,N-Bis(carboxymethyl)-L-glutamic acid	Not determined	Not determined	Not determined	Not determined
Nitrilotriacetic acid	Not determined	Not determined	Not determined	Not determined
Glycolic acid (impurity)	Not determined	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation.

Personal protective equipment

Eye protection Safety glasses with side-shields. Tightly fitting safety goggles.

Hand protection Use protective gloves made of:, Viton, Nitrile, Neoprene gloves, Be aware that liquid may penetrate the gloves. Frequent change is advisable.

Respiratory protection No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment, Use respirator with organic vapor protection (A, brown), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Slight Ammoniacal
Colour	Dark Amber - Clear Yellow
Odour threshold	Not applicable

Property	Values	Remarks
pH	3.4 - 3.8	
pH @ dilution		
Melting/freezing point	No information available	
Boiling point/range	No information available	
Flash point	Non-flammable	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapour pressure	No information available	
Vapour density	No information available	

12. ECOLOGICAL INFORMATION

Component Ecotoxicity Data: Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
2-Butoxyethanol	111-76-2	LC50 96H: 1490 mg/L (static) (Lepomis macrochirus) (bluegill); LC50 24H: 1650 mg/L (Carassius auratus) (goldfish); LC50 24H: 1720 mg/L (Daphnia magna) (water flea)
Petroleum distillate		LC50 96H flow-through: 45 mg/l (Pimephales promelas (fathead minnow)); LC50 96H static: 2.2 mg/l (Lepomis macrochirus (bluegill)); LC50 96H static: 2.4 mg/l (Oncorhynchus mykiss (rainbow trout)); LC50 96H static: 4720 mg/l (Dendronereides heteropodia (polychaete))

Product Ecotoxicity Data: Contact M-I Environmental Affairs Department for available product ecotoxicity data.
Biodegration: ND
Bioaccumulation: ND

13. DISPOSAL CONSIDERATIONS

Waste Classification: ND

Waste Management: Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

Disposal Method: Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

14. TRANSPORT INFORMATION

U.S. DOT
Shipping Description: Not regulated under TDG, IMDG, ICAO/IATA. Not regulated for U.S. ground transport in non-bulk containers (<119 gallons). When shipped through U.S. to port: NA1993, Combustible liquid, n.o.s., (contains citric distillate, 2-butoxyethanol), PG III.
Emergency Response Guide No.: 128
Canada TDG Shipping Description: See U.S. Shipping Description.
UN PIN No: Not regulated.
IMDG Shipping Description: See U.S. Shipping Description.
ICAO/IATA Shipping Description: See U.S. Shipping Description.

15. REGULATORY INFORMATION

U.S. Federal and State Regulations

SARA 311/312 Hazard Catagories: Fire hazard. Immediate (acute) health hazard.

SARA 302/304, 313; CERCLA RQ, California Proposition 65: Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
European Union EINECS/ELINCS - Components are listed or exempt from listing.
Japan METI ENCS - Contains a component that is not listed.
Korea TCCL ECL - Components are listed or exempt from listing.
New Zealand - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Class: B3 D2B

16. OTHER INFORMATION

The following sections have been revised: 1, 8, 14, 16. Format changes.

NA - Not Applicable, ND - Not Determined.

*A mark of M-I L.L.C.

Disclaimer:
MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

Safety data sheet number PID17208
Version 3
Revision date 17/Aug/2016
Supercedes date 26/Aug/2014

Mi SWACO
A Schlumberger Company

Safety Data Sheet
D-SOLVER* HD

1 Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name D-SOLVER* HD
Product code PID17208
Denmark Pr. no. 2311321

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Completion fluid additive.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424

MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12
Netherlands	National Poisons Information Centre (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poison information centre: +47 22 59 13 00

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements

Signal word
WARNING

Hazard statements
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing and eye/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

Supplementary precautionary statements
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P362 - Take off contaminated clothing and wash before reuse

Contains
N,N-Bis(carboxymethyl)-L-glutamic acid

Nitrilotriacetic acid

Glycolic acid (impurity)

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Not Applicable

Target Organs/Medical Conditions Aggravated by Overexposure: Eyes. Skin. Respiratory System. Central Nervous System (CNS). Blood.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
2-Butoxyethanol	111-76-2	10 - 30	No comments.
Citric distillate		10 - 30	No comments.
Petroleum distillate		10 - 30	No comments.
Alkyl ether of corn sugar		10 - 30	No comments.

Composition Comments: Component LD50 and LC50 values are provided in Section 11, if available.

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with large amounts of water. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Seek immediate medical attention.

Skin Contact: Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting. Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. Get immediate medical attention.

General notes: Persons seeking medical attention should carry a copy of this MSDS with them.

Notes To Physician: Aspiration may cause severe lung damage. Evacuate stomach in a way which avoids aspiration.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash Point: F (C): 143F (61C)
Flash Point Method: CC
Flammable Limits in Air - Lower (%): ND
Flammable Limits in Air - Upper (%): ND
Autoignition Temperature: F (C): ND
Explosion Data - Sensitivity to Mechanical Impact: NA
Explosion Data - Sensitivity to Static Discharge: If applicable, information is provided in Section 5 Special Fire-Fighting Procedures, Other Flammable Properties and Section 6 Spill Procedures.
Flammability Class: IIIA
Extinguishing Media: Water fog, carbon dioxide, foam, dry chemical.

Protection Of Fire-Fighters:

Special Fire-Fighting Procedures: Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.

Hazardous Combustion Products: Peroxides. Oxides of: Carbon.

Conditions of Flammability: Products are classified as flammable/combustible based on flash point as defined in the Health Canada Controlled Products Regulations, U.S. Occupational Health and Safety Administration Hazard Communication Standard and transportation regulations. See Sections 1, 2, 5, 14 and 15 for flammable/combustible classification information. Flammable/combustible materials may ignite and burn if exposed to a flame or other sources of ignition.

Other Flammable Properties: Porous combustible materials wetted with product may spontaneously ignite if exposed to air.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment identified in Section 8.

Spill Procedures: Evacuate the spill area with the exception of the spill response team. Keep personnel removed and upwind of spill. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Shut off leak if it can be done safely. Contain spilled material. Do not allow spilled material to enter sewers, storm drains or surface waters. Absorb in vermiculite, dry sand or earth. Place into containers for disposal. Use non-sparking or explosion proof means to transfer material to containers. Note that flammable/combustible vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited.

Environmental Precautions: Waste must be disposed of in accordance with federal, state and local laws. In the U.S., for products with reportable quanitity (RQ) components - if the RQ is exceeded, report to National Spill Response Office at 1 800 424 8802.

7. HANDLING AND STORAGE

Handling: Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Use only in a well ventilated area. Ground and bond containers when transferring material. Wash thoroughly after handling.

Storage: Store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
2-Butoxyethanol	111-76-2	10 - 30	20 ppm	50 ppm	700 ppm IDLH (NIOSH)	Skin.

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Citric distillate		10 - 30	NA	NA	NA	None
Petroleum distillate		10 - 30	NA	NA	NA	(3) Oil mist.
Alkyl ether of corn sugar		10 - 30	NA	NA	NA	None

Notes
Skin - Potential for cutaneous absorption.
(3) For Oil mist, mineral: ACGIH TLV 5 mg/m^3, STEL 10 mg/m^3; OSHA PEL 5 mg/m^3

Engineering Controls: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

Eye/Face Protection: Wear chemical safety goggles.

Skin Protection: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Butyl rubber.

Respiratory Protection: All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use an organic vapor cartridge with a P-95 pre-filter attached. In work environments containing oil mist/aerosol, use an organic vapor cartridge with a P-95 pre-filter attached.

If exposed to vapors from this product, use a NIOSH/MSHA-approved respirator with an organic vapor cartridge.

General Hygiene Considerations: Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Clear yellow to Tan
Odor: Citris
Physical State: Liquid
pH: ND
Specific Gravity (H2O = 1): 0.915 - 0.935 at 68F (20C)
Solubility (Water): Dispersible.
Flash Point: F (C): 143F (61C)
Melting/Freezing Point: -57.2F (-49.5C)
Boiling Point: ND
Pour Point: <-50F (-58C)
Vapor Pressure: ND
Vapor Density (Air=1): >1
Evaporation Rate: <1 (n-butyl acetate = 1)
Octanol/Water Partition Coefficient: ND
Odor Threshold(s): ND

10. STABILITY AND REACTIVITY

Chemical Stability: Stable
Conditions to Avoid: Keep away from heat, sparks and flame.
Materials to Avoid: Acids. Aluminum. Bases. Galvanized metals. Natural rubber. Neoprene. Nitrile. Oxidizers. Reducing agents. Viton.
Conditions of Reactivity: See Conditions and Materials to Avoid, if applicable.
Hazardous Decomposition Products: For thermal decomposition products, see Section 5.
Hazardous Polymerization Will not occur

11. TOXICOLOGICAL INFORMATION

Acute Exposure Effects, Irritation and Sensitization: See Section 2.
Chronic, Carcinogenicity, Reproductive Toxicity, Teratogenicity, Embryotoxicity, Mutagenicity Effects: See Component Toxicological Summary and Product Toxicological Information, if available.
Synergistic Products/Effects: ND

Component Toxicological Data: Any adverse component toxicological effects and acute toxicity values (LD50s, LC50s) are listed below. If no effects or acute values are listed for components, no such data were identified.

Ingredient	CAS No.	Acute Data
2-Butoxyethanol	111-76-2	Oral LD50: 470 - 917 mg/kg (rat), 1.4 g/kg (guinea pig) Dermal LD50: 220 - 400 mg/kg (rat), >2 g/kg (guinea pig) Inhalation LD50: 450 ppm/4H (rat), 290 mg/m^3/7H (rat), >633 ppm/1H (guinea pig) Guinea pig acute data expected to be more relevant to humans. (Vendor MSDS)
Petroleum distillate		Oral LD50: >5000 mg/kg (rat); Dermal LD50: >2000 mg/kg (rabbit); Inhalation LC50: >5.2 mg/l/4H (rat)

Ingredient	Component Toxicological Summary
2-Butoxyethanol	2-Butoxyethanol is acutely toxic to animals via skin absorption and inhalation. This toxicity is primarily due to the hemolytic effects (destruction of red blood cells) of a metabolite of 2BE (2-butoxy acetic acid). Based on human studies, man is much less susceptible to this acute toxic effect. (ACGIH) The National Toxicology Program (NTP, 1998) has conducted lifetime inhalation bioassays in rats and mice at concentrations up to 125 ppm and 250 ppm 2-butoxyethanol, respectively. NTP found no evidence of carcinogenic activity in male rats, equivocal (inconclusive) evidence in female rats based on adrenal tumors and some evidence in males and female mice based on liver and forestomach tumors. NTP concluded that the potential of 2-butoxyethanol to cause cancer in humans cannot be determined at this time. Inhalation of 2-butoxyethanol by pregnant rabbits caused some deaths at 200 ppm. No effects to the pregnant rabbits were noted at 100 ppm and below. In another inhalation study in pregnant rats, irritancy was noted in the rats and a related fetoxicity was observed at 100 and 200 ppm. There were no effects observed at 50 ppm and below. Birth defects were not noted in either study. Exposure of rats by inhalation to 2-butoxyethanol caused hemoloysis (destruction of red blood cells), blood in the urine and a slight increase in liver weight. Other species, including man, seem much less sensitive to the hemolytic effects. (Vendor MSDS)

Product Toxicological Information: No toxicological data is available for this product.

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Soluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal Considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13 Waste Code: 7091 Inorganic salts and other solids.

14. Transport Information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)
Hazard class Not regulated

14.4 Packing group
Packing group Not regulated

14.5 Environmental hazard
No

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Safety data sheet number MI10432
Revision date 01/Apr/2014

14.6 Special precautions

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = 1

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International Inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

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15.2 Chemical Safety Report

No information available

16. Other Information

Prepared by	Global Chemical Regulatory Compliance (GCRC)
Supercedes date	15/Nov/2010

MI SWACO
A Schlumberger Company
CALCIUM CHLORIDE (ALL GRADES)
Safety data sheet number MI10432
Revision date 01/Apr/2014

Revision date	01/Apr/2014
Version	5
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to CLP.

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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MATERIAL SAFETY DATA SHEET

MSDS No. 13495 **Trade Name:** DEEPCLEAN* **Revision Date:** 05/27/2011

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name:	DEEPCLEAN*
Chemical Family:	Mixture
Product Use:	Completion fluid additive.
Supplied by:	M-I L.L.C. P.O. Box 42842 Houston, TX 77242 www.miswaco.slb.com
Telephone Number:	281-561-1512
Emergency Telephone (24 hr.):	281-561-1600
Prepared by:	Product Safety Group
Revision No.	2

HMIS Rating
Health: 2 **Flammability:** 2 **Physical Hazard:** 0 **PPE:** J

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

2. HAZARDS IDENTIFICATION

Emergency Overview: Warning! Combustible liquid and vapor. May cause severe eye and skin irritation. Prolonged contact may damage eye. May be harmful if absorbed through skin. May cause skin sensitization, an allergic reaction, on repeated exposure. Vapors or mists may cause central nervous system (CNS) effects or irritation if inhaled.

Canadian Classification:
UN PIN No: Not regulated. **WHMIS Class:** B3 D2B

Physical State: Liquid **Color:** Clear yellow to Tan **Odor:** Citris

Potential Health Effects:
Acute Effects

Eye Contact:	May cause severe eye irritation. Prolonged contact may damage eye.
Skin Contact:	May cause severe skin irritation. May be harmful if absorbed through skin. May cause skin sensitization, an allergic reaction, on repeated exposure. Prolonged or repeated contact may cause defatting of the skin and/or dermatitis (inflammation).
Inhalation:	Vapors or mists may be irritating to the respiratory tract. May cause central nervous system (CNS) effects.
Ingestion:	May cause gastric distress, nausea and vomiting if ingested. Aspiration can be a hazard if this material is swallowed.
Carcinogenicity & Chronic Effects:	See Section 11 - Toxicological Information.
Routes of Exposure:	Eyes. Dermal (skin) contact. Dermal (skin) absorption. Inhalation.

See also Section 1.2.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limits NUI = Nuisance dust, WEL TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

Component	EU OEL - Third List	Austria	Australia	Denmark
Calcium chloride	Not determined	Not determined	Not determined	Not determined

Component	Finland	France	Germany	Hungary
Calcium chloride	Not determined	Not determined	Not determined	Not determined

Component	Ireland	Italy	Netherlands	Norway
Calcium chloride	Not determined	Not determined	Not determined	Not determined

Component	Poland	Portugal	Romania	Russia
Calcium chloride	Not determined	Not determined	Not determined	2 mg/m³ MAC (aerosol)

Component	Spain	Switzerland	Turkey	UK
Calcium chloride	Not determined	Not determined	Not determined	Not determined

Component	ACGIH TLV	TWA / C
Calcium chloride 10043-52-4 (60-100)	Not Determined	Not Determined

Derived No Effect Level (DNEL)

Short term exposure local effects
Calcium chloride
Inhalation 10 mg/m³

Long term exposure local effects
Calcium chloride
Inhalation 5 mg/m³

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation.

Personal protective equipment

Eye protection It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection Repeated or prolonged contact:, Use protective gloves made of:, Nitrile, Neoprene gloves, Rubber gloves.

Respiratory protection No personal respiratory protective equipment normally required. In case of insufficient ventilation wear suitable respiratory equipment, Half mask with a particle filter P2 (BS EN 143).

Skin and body protection Wear suitable protective clothing, Provide eyewash station.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	off-white
Odor threshold	Not applicable

Property	Values	Remarks
pH	Not applicable	
pH regulating agent	7 - 10	5% sol
Melting/freezing point	772 °C	
Boiling point/range	> 1600 °C	
Flash Point	No information available	
Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	No information available	
Relative density	2.1 g/cm³	@ 20°C.
Water solubility	Soluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	111
VOC content(%)	None
Density VALUE	No information available

10. Stability and Reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid contact with water and moist air - product is hygroscopic.

10.5 Incompatible materials

Metals. Strong oxidising agents. Strong acids.

10.6 Hazardous decomposition products

May release hydrogen gas (explosive) on contact with metals. See also section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.
Eye contact	Causes serious eye irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Acute toxicity	.

Component	LD50 Oral	LD50 Dermal	LD50 Inhalation
Calcium chloride	= 1000 mg/kg (Rat)	= 2630 mg/kg (Rat)	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This substance has no evidence of mutagenic properties.
carcinogenicity	This substance has no evidence of carcinogenic properties.
Reproductive toxicity	None known.
Routes of exposure	Eye contact.
Routes of entry	No route of entry noted.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological Information

12.1 Toxicity

Ecotoxicity effects
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR.

Toxicity to algae
See component information below.

Toxicity to fish
See component information below.

Toxicity to daphnia and other aquatic invertebrates
See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Calcium chloride	10650 mg/L LC50 (Lepomis macrochirus) = 96 h	No information available	62 mg/L EC50 (Daphnia magna) = 48 h

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

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Safety Data Sheet
CALCIUM CHLORIDE (ALL GRADES)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product Identifier

Product name CALCIUM CHLORIDE (ALL GRADES)
Product code MI10432
Molecular weight 111
Norway Pr. no. 46238
Denmark Pr. no. 988590

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Weighting agent.

Uses advised against None known.

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards

Serious eye damage/eye irritation	Category 2

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label Elements

Signal word
WARNING

Hazard statements
H319 - Causes serious eye irritation

Precautionary Statements - EU (28, 1272/2008)
P280 - Wear protective gloves/protective clothing and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P501 - Dispose of contents/container in accordance with local regulations.

-

Contains
Calcium chloride

-

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Component	EC-No	CAS-No	Weight % - range	Classification (67/548)	Classification (Reg 1272/2008)	REACH registration number
Calcium chloride	233-140-8	10043-52-4	60-100	Xi; R36	Eye Irrit. 2 (H319)	01-2119494219-28-xxxx

3.2 Mixtures

4. First aid measures

4.1 Description of first-aid measures

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Eye contact Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Precautions against fire and explosion
Contact with metals may evolve flammable hydrogen gas.

Hazardous combustion products
Fire or high temperatures create:, Chlorine, May release hydrogen gas (explosive) on contact with metals.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling
Avoid contact with skin and eyes. Avoid dust formation.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture Avoid contact with: Strong oxidising agents Strong acids.

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica (impurity)	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 06 03 99.

14. Transport information

14.1 UN number
Not regulated

14.2 Proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS)	Water endangering class = nwg

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	09/Apr/2014
Revision date	25/Jun/2015
Version	7
The following sections have been revised	All sections, No changes with regard to classification have been made, Updated according to GHS/CLP.

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL - Third List	Austria	Australia	Denmark
Crystalline silica (impurity)	Not determined	Not determined	0.1 mg/m³ TWA	0.1mg/m³

Component	Malaysia	France	Germany	Hungary
Crystalline silica (impurity)	0.1 mg/m³ TWA	0.1 mg/m³	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Crystalline silica (impurity)	0.2 mg/m³ TWA Known or presumed human carcinogen	Not determined	0.075 mg/m³	0.3 mg/m³ TWA total dust 0.1 mg/m³ TWA respirable dust 0.9 mg/m³ STEL total dust 0.3 mg/m³ STEL respirable dust Carcinogen

Component	Poland	Portugal	Romania	Russia
Crystalline silica (impurity)	2 mg/m³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m³ TWA >50% free crystalline silica respirable dust 4.0 mg/m³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m³ TWA respirable fraction	Not determined	1 mg/m³ MAC 3 mg/m³ STEL 1 mg/m³ TWA aerosol Fibrogenic substance

Component	Spain	Switzerland	Turkey	UK
Crystalline silica (impurity)	0.1 mg/m³ VLA-ED respirable fraction	0.15 mg/m³ MAK respirable	Not determined	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable

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A Schlumberger Company
CALCIUM CARBONATE (All Grades)
Safety data sheet number MI11214
Revision date 25/Jun/2015

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	It is good practice to wear Safety Glasses with Side-shields when handling any chemical.
Hand protection	Repeated or prolonged contact, Use protective gloves made of:, Nitrile, Neoprene, Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment, Suitable mask with particle filter P3 (European Norm 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.
Hygiene measures	Wash hands before eating, drinking or smoking. Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder Dust
Odour	Odourless
Colour	White
Odor threshold	Not applicable

Property	Values	Remarks
pH	Not applicable	
pH @ dilution	8.0 - 10.0	@ 10%
Melting/freezing point	> 700 °C / > 1292 °F	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	

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Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	2.7 - 2.8	@ 20 °C
Bulk density	No information available	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Protect from moisture.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See also section 5.2.

11. Toxicological information

Mi SWACO
A Schlumberger Company
CALCIUM CARBONATE (All Grades)
Safety data sheet number MI11214
Revision date 25/Jun/2015

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	Dust may cause mechanical irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.
Unknown acute toxicity	Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

Mi SWACO
A Schlumberger Company

Safety Data Sheet
CALCIUM CARBONATE (All Grades)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product Identifier

Product name CALCIUM CARBONATE (All Grades)
Product code MI11214
Synonyms CALCIUM CARBONATE (F) FINE, CALCIUM CARBONATE (M) MEDIUM, CALCIUM CARBONATE (C) COARSE
REACH Registration Name Exempt
Denmark Pr. no. 1097482

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Lost circulation material. Weighting agent. Bridging material.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

Denmark	Poison Control Hotline (DK): +45 82 12 12 12

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards Not classified

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Contains
Crystalline silica (impurity)

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Component	EC-No	CAS-No	Weight % range	Classification (67/548)	Classification (Reg 1272/2008)	REACH registration number
Crystalline silica (impurity)	238-878-4	14808-60-7	<1	Xn; R48/20	STOT Rep. 2 - H373	Exempt

3.2 Mixtures

Not Applicable

Comments
Naturally occuring mineral.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First aid measures

4.1 First Aid

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin contact Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

Eye contact Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Main symptoms

Inhalation Please see Section 11. Toxicological Information for further information.

Ingestion Please see Section 11. Toxicological Information for further information.

Skin contact Please see Section 11. Toxicological Information for further information.

Eye contact Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Fire or high temperatures create:, Carbon oxides (COx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.
EWC waste disposal No.	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 99

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS)	Water endangering class = nwg

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	06/Aug/2013
Revision date	18/Feb/2015
Version	7
The following sections have been revised	This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3
Not classified

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

†A mark of M-I L.L.C.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8. Exposure controls/personal protection

8.1 Control parameters

Component	EU OEL - Third List	Austria	Australia	Denmark
Crystalline silica	Not determined	Not determined	0.1 mg/m³ TWA	0.3 mg/m³ TWA 0.1 mg/m³ TWA K

Component	Finland	France	Germany	Hungary
Crystalline silica	Not determined	0.1 mg/m³	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Crystalline silica	0.2 mg/m³ TWA Known or presumed human carcinogen	0.05 mg/m³	0.075 mg/m³ GW	0.1mg/m³

Component	Poland	Portugal	Romania	Russia
Crystalline silica	2 mg/m³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m³ TWA >50% free crystalline silica respirable dust 4.0 mg/m³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m³ TWA respirable fraction	Not determined	1 mg/m³ MAC 3 mg/m³ STEL 1 mg/m³ TWA aerosol Fibrogenic substance

Component	Spain	Switzerland	Turkey	UK
Crystalline silica	0.1 mg/m³ VLA-ED respirable fraction	0.15 mg/m³ MAK respirable	Not determined	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Repeated or prolonged contact:, Use protective gloves made of:, Neoprene, Nitrile, Frequent change is advisable.
Respiratory protection	In case of insufficient ventilation wear suitable respiratory equipment. Suitable mask with particle filter P3 (European Norm 143), At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.
Skin and body protection	Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odour	Odourless
Colour	cream - Gray
Odor threshold	Not applicable

Property	Values	Remarks
pH	9-10	
pH @ dilution		
Melting/freezing point	> 450 °C / 842 °F	
Boiling point/range	No information available	
Flash Point	No information available	

Evaporation rate		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		Not applicable
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	2.3 - 2.6	20 °C
Bulk density	750 – 950 kg/m³	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	> 500 °C / 932°F	
Kinematic viscosity		
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties	Not Applicable
Oxidizing properties	None known.

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density VALUE	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid wet and humid conditions. Avoid dust formation.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See also section 5.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information	This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.
Inhalation	Inhalation of dust in high concentration may cause irritation of respiratory system.
Eye contact	May cause slight irritation.
Skin contact	Prolonged contact may cause redness and irritation.
Ingestion	Ingestion may cause stomach discomfort.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica	= 500 mg/kg (Rat)	No data available	No data available

Sensitisation	This product does not contain any components suspected to be sensitizing.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation.
Routes of entry	Inhalation.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

Mi SWACO
A Schlumberger Company

Safety Data Sheet
BENTONITE

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	BENTONITE
Product code	MI11209
Synonyms	API BENTONITE, OCMA BENTONITE, WYOMING BENTONITE
REACH Registration Name	Exempt Annex V ENTRY 7.
Denmark Pr. no.	OCMA Bentonite: PR.No.: 1900124

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Viscosifier.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
Crystalline silica

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

3. Composition/information on ingredients

3.1 Substances

Component	EC-No.	CAS-No.	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Crystalline silica	238-878-4	14808-60-7	1-5	Xn; R48/20	STOT REP. 2(H373)	No data available

3.2 Mixtures

Not Applicable

Comments
Naturally occuring mineral.
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye contact	Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Main symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid wet and humid conditions.
Storage class	Chemical storage.

Target organ effects Lungs.

Aspiration hazard No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

Listed on PLONOR list of OSPAR

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to algae
This product is not considered toxic to algae.

Toxicity to fish
This product is not considered toxic to fish.

Toxicity to daphnia and other aquatic invertebrates
This product is not considered toxic to invertebrates.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Crystalline silica (impurity)	No information available	No information available	No information available

12.2 Persistence and degradability

The product is not biodegradable.

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

Mobility
Insoluble in water.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

EWC waste disposal No. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. The following Waste Codes are only suggestions: EWC waste disposal No: 01 05 07

14. Transport information

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA,ADR/RID/ADG).

14.1 UN number
Not regulated

14.2 Proper shipping name
Not regulated

14.3. Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated

14.5 Environmental hazard
No

14.6 Special precautions
Not Applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Please contact MISDS@slb.com for info regarding transport in Bulk.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Germany, Water Endangering Classes (VwVwS) Water endangering class = nwg

New Zealand hazard classification Not classified.

HSNO approval no. Not required.

Group number Not required.

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

This safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008.

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].

National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].

National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].

Safe Work Australia.

Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

ADG Code – Australian Dangerous Goods Code.

Dutch Mining Regulations: In accordance with Mining Regulations 9.2 and Chapter 4 of the Working Conditions Decree.

International inventories

USA, Toxic Substances Control Act Inventory (TSCA)	Complies
European Union - EINECS and ELINCS	Complies
Canada, Domestic Substance List (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies

Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

Contact REACH@miswaco.slb.com for REACH information.

15.2 Chemical Safety Report

No information available

16. Other information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supercedes date	17/Nov/2014
Revision date	19/Mar/2015
Version	10
The following sections have been revised	2,, 3,, 16, Updated according to GHS/CLP.

Text of R phrases mentioned in Section 3

R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation

Full text of H-Statements referred to under sections 2 and 3

This product is not classified as hazardous therefore no (H) hazard statements assigned.
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Disclaimer
The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

Storage class Chemical storage.

Packaging material Use specially constructed containers only

7.3 Specific end uses

See also Section 1.2.

8: Exposure controls/personal protection

8.1 Control parameters

Exposure limits No biological limit allocated

Component	EU OEL - Third List	Austria	Australia	Denmark
Crystalline silica (impurity)	Not determined	Not determined	0.1 mg/m³ TWA	0.1mg/m³

Component	Finland	France	Germany	Hungary
Crystalline silica (impurity)	Not determined	0.1 mg/m³	Not determined	Not determined

Component	New Zealand	Italy	Netherlands	Norway
Crystalline silica (impurity)	0.2 mg/m³ TWA Known or presumed human carcinogen	Not determined	0.075 mg/m³	0.3 mg/m³ TWA total dust 0.1 mg/m³ TWA respirable dust 0.9 mg/m³ STEL total dust 0.3 mg/m³ STEL respirable dust Carcinogen

Component	Poland	Portugal	Romania	Russia
Crystalline silica (impurity)	2 mg/m³ TWA >50% free crystalline silica total inhalable dust 0.3 mg/m³ TWA >50% free crystalline silica respirable dust 4.0 mg/m³ TWA 2% to 50% free crystalline silica total inhalable dust 1.0 mg/m³ TWA 2% to 50% free crystalline silica respirable dust	0.025 mg/m³ TWA respirable fraction	Not determined	1 mg/m³ MAC 3 mg/m³ STEL 1 mg/m³ TWA aerosol Fibrogenic substance

Component	Spain	Switzerland	Turkey	UK
Crystalline silica (impurity)	0.1 mg/m³ VLA-ED respirable fraction	0.15 mg/m³ MAK respirable	Not determined	0.3 mg/m³ STEL calculated respirable 0.1 mg/m³ TWA respirable

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure
Ensure adequate ventilation. Mechanical ventilation or local exhaust ventilation is required.

Personal protective equipment

Eye protection It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.

Hand protection Use protective gloves made of:, Frequent change is advisable, Neoprene, PVC, Nitrile.

Respiratory protection Respirator must be worn if exposed to dust. Suitable mask with particle filter P3 (European Norm 143).

Skin and body protection Wear suitable protective clothing, Eye wash and emergency shower must be available at the work place.

Hygiene measures Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Powder
Odour	Odourless
Colour	tan - Gray
Odor threshold	Not applicable

Property	Values	Remarks
pH	No information available	

pH @ dilution		
Melting/freezing point	1580 °C	
Boiling point/range	No information available	
Flash Point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability Limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	No information available	
Bulk density	1920 - 2400 kg/m³	
Relative density	4.10 - 4.25	@ 20°C.
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Viscosity, dynamic	No information available	
Log Pow	Not determined	

Explosive properties Not Applicable
Oxidizing properties None known.

9.2 Other information

Pour point No information available
Molecular weight No information available
VOC content(%) None
Density VALUE No information available

10: Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization
Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation. Avoid wet and humid conditions.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

See also section 5.2.

11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product information This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Respirable quartz <0.3% . Report number: N0600517.

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact May cause slight irritation.

Skin contact Prolonged contact may cause redness and irritation.

Ingestion Ingestion may cause stomach discomfort.

Unknown acute toxicity Not Applicable.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica (impurity)	= 500 mg/kg (Rat)	No data available	No data available

Sensitisation This product does not contain any components suspected to be sensitizing.

Mutagenic effects This product does not contain any known or suspected mutagens.

Carcinogenicity Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Routes of exposure Inhalation.

Routes of entry Inhalation.

Specific target organ toxicity (single exposure) Not classified

Specific target organ toxicity (repeated exposure) Not classified.

Mi SWACO
A Schlumberger Company

Safety Data Sheet
BARITE (ALL GRADES)

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name	BARITE (ALL GRADES)
Product code	MI11207
REACH Registration Name	Exempt Annex V ENTRY 7.
Denmark Pr. no.	1154758

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Weighting agent.
Uses advised against	Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier identification
M-I Drilling Fluids UK Limited
C/O Schlumberger
Enterprise Drive
Westhill Industrial Estate
Westhill, AB32 6TQ
Scotland UK
+47 51577424
MISDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Health hazards	Not classified
Environmental hazards	Not classified
Physical Hazards	Not classified

2.2 Label Elements

Signal word
None

Hazard statements
This product is not classified as hazardous therefore no (H) hazard statements assigned.

Precautionary Statements - EU (§28, 1272/2008)
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Indication of danger
Not classified

Contains
Crystalline silica (impurity)

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.3 Other data

Not classified as PBT/vPvB by current EU criteria

Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

3. Composition/information on ingredients

3.1 Substances

Component	EC-No.	CAS-No.	Weight % range	Classification (67/548)	Classification (Reg. 1272/2008)	REACH registration number
Crystalline silica (impurity)	238-878-4	14808-60-7	1-5	Xn; R48/20	STOT Rep. 2 - H373	Exempt

3.2 Mixtures

Not Applicable

Comments
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

4. First aid measures

4.1 First Aid

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye contact	Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
Main symptoms	
Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons
None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards
None known.

Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures
Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Do not breathe dust.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and materials for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Avoid generating or breathing dust. Product is slippery if wet.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

Hygiene measures
Use good work and personal hygiene practices to avoid exposure. Do no eat, drink or smoke when using this product. Wash thoroughly after handling. Remove contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions	Ensure adequate ventilation. Keep airborne concentrations below exposure limits.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Avoid wet and humid conditions.

เอกสารแนบที่ 31

Cuttings Treatment & Solids Control Daily Evaluation

Baker Hughes

valeura energy

Cuttings Treatment & Solids Control Daily Evaluation

Operator:	VALEURA ENERGY (Gulf of Thailand) Ltd	Date:	3-Apr-24	Hole size (in):	8 1/2	Report No :	4
Report For:	Wirapan S. / Pornchai L.	Well #:	Niramai-4	Prev. Mid Depth (ft):	1191	ACTIVITY	OBM
Rig Name:	Borr Mist	Description:	Exploration	Midnight Depth (ft):	3230	Drilling Time (hr)	16
Contractor	Borr DRILLING	Location:	Thailand Offshore	Daily feet:	2039	Circulating time (hr)	
				Volume drilled (bbl)	172	ROP (ft/hr)	127
				cutting expantion factor		1.20	
				Well gauge ratio		1.00	

Shaker Screen Sizes							Mud active and recovery Equipment	Daily Hours
Daily Hrs Run							CSI 1854 S/N 1835700307	14
Shaker No.	Top	Front deck	Middle deck#1	Middle deck#2	Discharge deck	Daily Hrs Run	CSI 1854 S/N 1836231007	14
1# DP600	10x16	140x2	170x2	170x2		20	Cutting Dryer WSM04 #1 S/N 06-134	14
2# DP600	10x16	140x2	170x2	170x2		20	Screw Conveyor Solids Feed. Dryer #1	14
3# DP600	10x16	140x2	170x2	170x2		20	Additional feed pump(Cut Back) No 1	
4# DP600	10x16	140x2	170x2	170x2		20	Additional feed pump(Cut Back) No 2	
							Additional Diaphragm Pump #1	14
							Additional Diaphragm Pump #2	14
							High Pressure washer# 247551	14
							Portable Mud Vacumm unit No 1	
							Portable Mud Vacumm unit No 2	
							Holding Tank (Vacuum reated skips x 3 units)	

Retorts Data						SHAKER SCREEN DAILY CONSUMPTION		QTY
Shale Shaker's Cutting		Dryer's Cutting		Recovered fluid		TOP Scalper API 10	SP600UR-A10	
Weight PPG	15.0	Weight PPG	14.7	Weight PPG	10.2	Primary API 100	PMD600DX-API-100	
% Oil	26.15	% Oil	5.10	% Oil	63	Primary API 120	PMD600DX-API-120	
% Water	15	% Water	7	% Water	22.2	Primary API 140	PMD600DX-API-140	
% Solids	59	% Solids	88	% Solids	15	Primary API 170	PMD600DX-API-170	2
Dryer Centrifuge (CSI 1854) Retorts						Primary API 200	PMD600DX-API-200	
Fluid in		Fluid out		Solids Discharge		Primary API 230	PMD600DF-API-230	
Weight PPG	10.2	Weight PPG	8.7	Weight PPG	17.5	Cutting Dryer #1 Parameters		
% Oil	63	% Oil	72	% Oil	19	Screen Size		0.015
% Water	22	% Water	19	% Water	17	Speed (RPM)		958
% Solids	15	% Solids	9	% Solids	64	Differential Speed (rpm)		30

Active Centrifuge System and VG Centrifuge System(Support For Active and Cutback)				Dryer System	Daily Hrs Run		14
Parameter	Centrifuge #1			Centrifuge #2 Dryer	Cumm. Hrs run for well		14
Barite recovery Y / (N)	N			N	Cutting Dryer Consumable		
Bowl Speed (RPM)	2500			2500	Dryer screen Chrome 0.015"	325-2-015	0 set
Hours run	14			14	Dryer screen Chrome 0.020"	325-2-020	0 set
Flow rate (Gallon/Min)	60			60	Dryer FLITES set of 8	330-10	0 set
Weight Mud in PPG	9.2			10.2			
Weight Mud out PPG	8.3			8.7			
Solids weight PPG	17.66			17.48	Dryer Recovery Fluid Parameter		
Wet solids "dis" (BBL/day)	79.72			28.13	Weight PPG		10.20
% Oil on solids discharge	19.54			19.41	% Oil of Recovery mud		63.00
% Water on solids discharge	16.04			17.04	% Water of Recovery mud		22.20
% Solids on solids discharge	64.42			63.55	% Solids of Recovery mud		14.80
ASG Solids on solids discharge	2.72			2.71	%LGS of Recovery mud		4.81
%LGS of solids discharged	36.76			44.69	%HGS of Recovery mud		8.28
%HGS of solids discharged	63.24			55.31	% CaCl by weight of Recovery mud		24.60
% Oil of liquid return	75.60			71.80	% Salt of Recovery mud		1.71
% Water of liquid retun	16.50			19.00			
% Solids of liquid return	7.90			9.20			
%LGS of liquid return	2.96			3.08			
%HGS of liquid return	3.67			4.66			
% CaCl by weight of liquid return	24.60			24.60			
% Salt of liquid return	1.27			1.46	Shaker and Dryer Wet solid discharge		

Oil On Cuttings			Dryer System Daily Mud Recovered bbl			Shaker Wet solids "dis" (m3)	31.93
Location	g/Kg	%	Hole Section	Mud	Base Oil	VG dryer Wet solids "dis"(m3)	31.80
Shakers	140.50	11.32					
Verti-G dryer	23.99	2.25				Equipment Dowtime Records	
Dryer Centrifuge	85.24	7.22				Equipment / Break down Hrs / Efficiency	
Active Centrifuge#1	84.35	7.19				Cutting Dryer / 0 / 100.0	
			Daily	16.0	10.7	CSI 1854 # 1 / 0 / 100.0	
			Previus cumulative			CSI 1854 # 2 / 0 / 100.0	
OOC Daily Avg. Cut Drying System	60.71	6.07	Total for well	16.0	10.7		
Mud recovery meter readings			Cumulative				100.0

Additional data from mud report			
% synthetic	67	Corr. Solid	7
% water	24	Mud % LGS	3.13
% Solids	9	Correction Factor	1.08
CL mg/ltr	300450	Sg of Brine Phase	1.23
Mud Wt	9.200	Mud Ending Volume	1314.45

Baker Hughes

valeura energy

Cuttings Treatment & Solids Control Daily Evaluation

Operator:	VALEURA ENERGY (Gulf of Thailand) Ltd	Date:	4-Apr-24	Hole size (in):	8 1/2	Report No :	5
Report For:	Thanit V. / Pornchai L.	Well #:	Niramai-4	Prev. Mid Depth (ft):	3230	ACTIVITY	OBM
Rig Name:	Borr Mist	Description:	Exploration	Midnight Depth (ft):	5781	Drilling Time (hr)	24
Contractor	Borr DRILLING	Location:	Thailand Offshore	Daily feet:	2551	Circulating time (hr)	
				Volume drilled (bbl)	215	ROP (ft/hr)	106
				cutting expantion factor		1.20	
				Well gauge ratio		1.00	

Shaker Screen Sizes							Mud active and recovery Equipment	Daily Hours
Daily Hrs Run							CSI 1854 S/N 1835700307	24
Shaker No.	Top	Front deck	Middle deck#1	Middle deck#2	Discharge deck	Daily Hrs Run	CSI 1854 S/N 1836231007	24
1# DP600	10x16	140x2	170x2	200x2		24	Cutting Dryer WSM04 #1 S/N 06-134	24
2# DP600	10x16	140x2	170x2	200x2		24	Screw Conveyor Solids Feed. Dryer #1	24
3# DP600	10x16	140x2	170x2	200x2		24	Additional feed pump(Cut Back) No 1	
4# DP600	10x16	140x2	170x2	170x2		24	Additional feed pump(Cut Back) No 2	
							Additional Diaphragm Pump #1	24
							Additional Diaphragm Pump #2	24
							High Pressure washer# 247551	24
							Portable Mud Vacumm unit No 1	
							Portable Mud Vacumm unit No 2	
							Holding Tank (Vacuum reated skips x 3 units)	

Retorts Data						SHAKER SCREEN DAILY CONSUMPTION		QTY
Shale Shaker's Cutting		Dryer's Cutting		Recovered fluid		TOP Scalper API 10	SP600UR-A10	
Weight PPG	15.0	Weight PPG	14.8	Weight PPG	10.2	Primary API 100	PMD600DX-API-100	
% Oil	26.15	% Oil	5.10	% Oil	63	Primary API 120	PMD600DX-API-120	
% Water	15	% Water	7	% Water	22.2	Primary API 140	PMD600DX-API-140	
% Solids	59	% Solids	88	% Solids	15	Primary API 170	PMD600DX-API-170	
Dryer Centrifuge (CSI 1854) Retorts						Primary API 200	PMD600DX-API-200	4
Fluid in		Fluid out		Solids Discharge		Primary API 230	PMD600DF-API-230	
Weight PPG	10.2	Weight PPG	8.7	Weight PPG	17.4	Cutting Dryer #1 Parameters		
% Oil	63	% Oil	72	% Oil	19	Screen Size		0.015
% Water	22	% Water	19	% Water	17	Speed (RPM)		958
% Solids	15	% Solids	9	% Solids	64	Differential Speed (rpm)		30

Active Centrifuge System and VG Centrifuge System(Support For Active and Cutback)				Dryer System	Daily Hrs Run		24
Parameter	Centrifuge #1			Centrifuge #2 Dryer	Cumm. Hrs run for well		38
Barite recovery Y / (N)	N			N	Cutting Dryer Consumable		
Bowl Speed (RPM)	2500			2500	Dryer screen Chrome 0.015"	325-2-015	0 set
Hours run	24			24	Dryer screen Chrome 0.020"	325-2-020	0 set
Flow rate (Gallon/Min)	60			60	Dryer FLITES set of 8	330-10	0 set
Weight Mud in PPG	9.2			10.2			
Weight Mud out PPG	8.3			8.7			
Solids weight PPG	17.66			17.44	Dryer Recovery Fluid Parameter		
Wet solids "dis" (BBL/day)	136.66			47.86	Weight PPG		10.18
% Oil on solids discharge	19.56			19.41	% Oil of Recovery mud		63.00
% Water on solids discharge	16.02			17.04	% Water of Recovery mud		22.20
% Solids on solids discharge	64.42			63.55	% Solids of Recovery mud		14.80
ASG Solids on solids discharge	2.72			2.70	%LGS of Recovery mud		4.93
%LGS of solids discharged	37.14			48.42	%HGS of Recovery mud		8.16
%HGS of solids discharged	62.86			51.58	% CaCl by weight of Recovery mud		24.60
% Oil of liquid return	75.74			71.80	% Salt of Recovery mud		1.71
% Water of liquid retun	16.46			19.04			
% Solids of liquid return	7.80			9.16			
%LGS of liquid return	2.74			3.00			
%HGS of liquid return	3.80			4.69			
% CaCl by weight of liquid return	24.60			24.60			
% Salt of liquid return	1.27			1.47	Shaker and Dryer Wet solid discharge		

Oil On Cuttings			Dryer System Daily Mud Recovered bbl			Shaker Wet solids "dis" (m3)	39.84
Location	g/Kg	%	Hole Section	Mud	Base Oil	VG dryer Wet solids "dis"(m3)	39.68
Shakers	140.69	11.33					
Verti-G dryer	23.95	2.25				Equipment Dowtime Records	
Dryer Centrifuge	85.43	7.23				Equipment / Break down Hrs / Efficiency	
Active Centrifuge#1	84.46	7.20				Cutting Dryer / 0 / 100.0	
			Daily	20.0	13.6	CSI 1854 # 1 / 0 / 100.0	
			Previus cumulative	16.0	10.7	CSI 1854 # 2 / 0 / 100.0	
OOC Daily Avg. Cut Drying System	63.30	6.33	Total for well	36.0	24.3		
Mud recovery meter readings			Cumulative				100.0

Additional data from mud report			
% synthetic	68	Corr. Solid	7
% water	23	Mud % LGS	3.43
% Solids	9	Correction Factor	1.09
CL mg/ltr	300926	Sg of Brine Phase	1.23
Mud Wt	9.200	Mud Ending Volume	1234.64

เอกสารแนบที่ 32

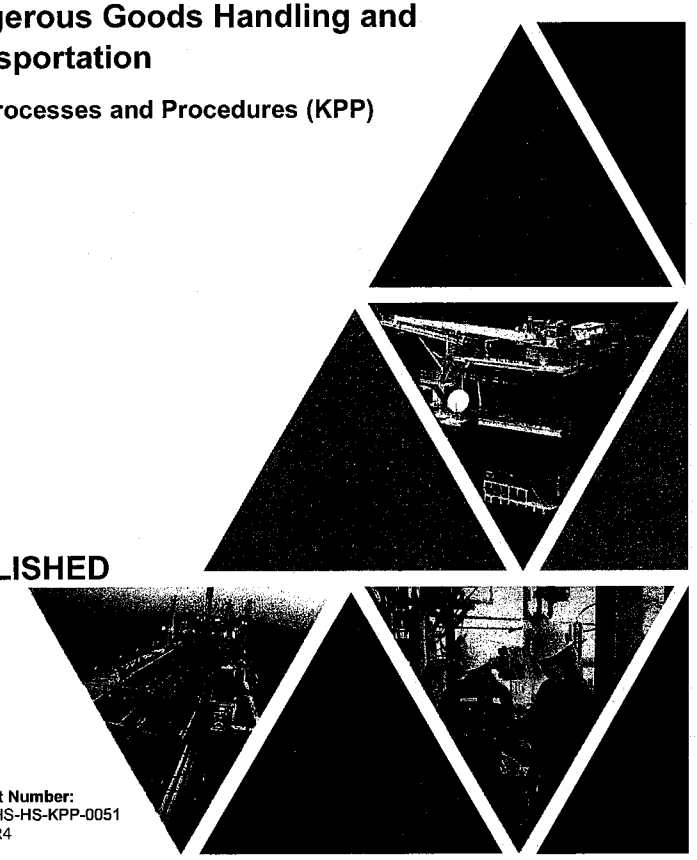
คู่มือการจัดเก็บสารเคมีในพื้นที่ปฏิบัติงาน

valeura energy

Thailand – Health, Safety, Security and Environment

Dangerous Goods Handling and Transportation

Key Processes and Procedures (KPP)



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Revision R4

Thailand – Health, Safety, Security and Environment

Dangerous Goods Handling and Transportation

Key Processes and Procedures (KPP)

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R0	9 Dec 09		For Approval
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1 Introduction

1.1 Intent

The procedure is to outline the organizations requirements to manage hazardous substances, including the handling of chemicals to heighten awareness and reduce potential exposures to substances hazardous to health through suitable and sufficient control measures.

1.2 Scope

This procedure applies to all personnel, clients and third parties working on Borr Drilling installations or within their facilities worldwide. This procedure supplements but does not superseded local, state or government regulations.

1.3 Responsibility

Region QHSE Manager: Ensuring that the regional legal requirements related to chemical management are identified, detailed within a regional procedure, and implemented. Where there are no region-specific legal requirements, they shall ensure that this corporate procedure is complied with. Reviews requests to order new chemicals and provides guidance on what is acceptable to purchase.

Supply Chain Department: Shall seek guidance and advice from the regional QHSE Department prior to the ordering of any new chemicals.

Rig Manager: Responsible for budgeting and effective implementation of the requirements stated in this procedure on his/her designated Rigs/vessels.

OIM/PIC: Responsible for ensuring full compliance, implementation and enforcing the requirements of this procedure and ensuring that an up-to-date chemical inventory list is available at all times.

Area Responsible Person: Shall ensure that all chemicals within their areas are accounted for, managed, and controlled correctly. Are responsible for maintaining the chemical inventory list for their areas.

Worksite Supervisor: Where there are hazardous substances involved in the tasks, ensure that the chemical related hazards are effectively managed through the appropriate risk assessment and control of work process.

Safety Performance Coach (SPC): Responsible for ensuring all personnel including Third Parties are informed and understand the content of this procedure upon arrival. Periodically inspects the SDS files and departmental chemical inventory list to verify it is up to date.

Materials Co-ordinator: Communicates information regarding all new hazardous substances, including quantities and SDSs to the Area Responsible Persons. Coordinates removal or refuses receipt of any hazardous substance without the correct documentation. Ensures that appropriate IMDG and local regulations are followed during the transport of hazardous substances from the installation or facility.

All Personnel: Are to meet the requirements of this procedure ensure that suitable and sufficient control measures are utilized for the handling and use of hazardous substances for the task at hand.

Chemical Management (Hazardous Substances)		
COR-PRO-0535	Corporate – Hazardous Materials and Substances	Ver: 3
Owner: Corporate QHSE Manager	Approver: QHSE Director	

1.4 Definitions

Global Harmonized System of Classification and Labelling of Chemicals (GHS): Addresses classification of chemicals by types of hazards and proposes harmonized hazard communication elements, including labels and safety data sheets (SDSs).

Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR): The current legislation regulating international cooperation on environmental protection from dumping waste at sea and land-based sources of marine pollution in the North-East Atlantic.

Safety Data Sheet (SDS): A GHS document containing details about hazards and risks relevant to a hazardous chemical, substance, or mixture; requirements for its safe handling; and actions to be taken in the event of fire, spill, or overexposure.

Pictogram: A composition that may include a symbol and other graphic elements, such as a border, background pattern, or color, that is intended to convey specific information about the hazards of a material.

Hazardous Substance: Any material that is harmful to health either directly or indirectly.

Hazard Statement: A statement assigned to a hazard class and category describing the nature of the hazard(s) of a substance, including, where appropriate, the degree of hazard.

2 Requirements for Hazardous Substances

2.1 Procurement of Hazardous Substances

Prior to ordering any hazardous substances, the Area Responsible Person shall obtain the most up to date SDS and any other supporting information. Such information is typically available from the manufacturer's website, unless there is a specific chemical management software in place, due to regulatory requirements.

No chemical shall be ordered by an installation or facility prior to obtaining the SDS and reviewing the information detailed within. Prior to ordering any new chemical, the rig department head or PIC shall send the SDS form along with the filled in Chemical Usage Information form (COR-FRM-0315) to the Regional HSE Manager to seek approval. Regional HSE Manager shall review the SDS, and the usage information provided to decide on approval.

Chemicals of high hazard, e.g., carcinogenic, or potentially carcinogenic, should not be ordered and a greener / less harmful to people and environment, alternative should be sought. If an alternative is not available, the regional QHSE Department shall be contacted who shall liaise with Supply Chain and any occupational health support through the medical provider on alternative products.

All procured substances, regardless of size or amount shall contain:

- Name, address, and telephone number of the chemical manufacturer
- Product identifier
- Signal word
- Hazard statement(s)
- Precautionary statement(s)
- Pictograms

Note: examples of pictograms can be seen within Appendix 2.0 – GHS Pictograms.

Figure 1.0 – Example labelling.

2.2 Risk Assessment for Substance Use

2.2.1 Company Procured Substances

Where there is no requirement to have a specific Substance Risk Assessment in place, the usage of hazardous substances shall be incorporated into the relevant risk assessment. The risk assessment shall contain all relevant control measures that are specified on the substances SDS, such as PPE, ventilation, and recovery methods if there is contact with the person.

Other aspects to consider, as presented on the SDS, are:

- Health hazards associated with the substance.
- Ventilation requirements.
- Time exposure to the substance.
- Special PPE requirements.
- Environmental protection precautions.
- Spill contingency plans, including the potential of reactivity with non-compatible materials and clean up procedures.
- Firefighting equipment.

2.2.2 Third-Party Substances

Upon arrival to the installation or facility, Third Parties shall be made aware of the requirements to effectively manage and control all substances that they are mobilizing to the installation. All Third Parties must provide an up-to-date SDS and the relevant risk assessment to the Area Responsible Person to review and approval upon arrival. Their substances shall then be correctly stored onboard, and the substances inventory updated to reflect the new inventory.

***Note:** Substances that mobilize without the above documentation shall not be permitted for use and must be quarantined until such time that the documentation is sourced and agreed.

Chemical Management (Hazardous Substances)		
COR-PRO-0535	Corporate – Hazardous Materials and Substances	Ver: 3
Owner: Corporate QHSE Manager	Approver: QHSE Director	

2.3 Hazardous Substance Storage

To ensure the safety for people and the environment, and higher efficiency of operations, suitable designated storage facilities for the storage of hazardous substances shall be created onboard the rig or facility according to this procedure.

The storage areas shall fulfil the requirements specific to any Classification, SOLAS, IMDG Code and/or Coastal State Regulations, local, state or other government requirements.

Hazardous substances that are either to be placed in dedicated tanks or stored in designated standard storage areas, out of elements such as rain, sun etc. will not be stowed outside of their designated storage areas.

If the drum is required at a specific location, it shall only remain outside of designated stowage area for a duration necessary to complete the task (i.e, Adding oil to equipment/tank or transferring chemicals to equipment or designated container). Once the task is completed the drum must be disposed of or returned to stowage area.

Where storage tanks are available, contents of the drum will be emptied in the storage tanks within three days of receipt on the rig or facility. Use proper drum dollies when manually moving drums from one location to another location on rig.

Oils may be stored in fixed tanks. Some substances may be stored in dedicated vessels or containers for operational reasons (e.g., an automatic dosing system). In these circumstances, an SDS will be posted next to the tank and container and at the tanks decanting points.

Each substance storage area shall have a copy of all SDS's readily available nearby and with a hard copy stored with the Rig Medic or PIC.

***Note:** Where there is a fire hazard, the SDS's shall be stored outside of the storage area in a suitable cabinet.

2.4 Storage Area Identification and Segregation

All hazardous substance storage areas shall be identified using hazard identification pictogram and marked with orange / black tape (or paint).

Storage areas are to have hazard warning labels associated with the products stored in the area. The SDS for the typical substances stored in an area shall be reviewed and corresponding substance warning stickers used.

Tanks shall be marked with the Hazard pictogram and tape outline.

Materials shall be stored according to segregation as stated in Appendix 3.0, materials that may react when mixed shall not be stored together. Different classes shall have different storage locations. If for practical reasons different classes must be stored in a single compartment, ways of segregation must be incorporated, i.e., by vertical partitions, lockers, etc. Refer to the chemical's SDS to determine its reactivity.

2.5 Ventilating Hazardous Substance Storage Areas

Closed systems or suitable processing and handling methods should be the first method to eliminate or minimize the release of dangerous substances.

Local exhaust ventilation (LEV) should be provided as an engineering solution for processes where there is an unavoidable release of a dangerous substance as a by-product of use, such as fumes and vapours. Where this is not possible, RPE shall be considered as another form of control.

Locating plant and storage facilities in the open air normally ensures the best possible dispersion of dangerous substances. This will limit the formation and extent of hazardous explosive atmospheres.

Ventilate indoor plant and storage facilities to limit the formation and extent of hazardous explosive atmospheres.

2.5.1 Maintenance, examination, and Testing of Control Measures

All Local Exhaust Ventilation (LEV) systems require to be thoroughly inspected and examined by a competent person at least once every 14 months which should be included in the appropriate maintenance management system.

All Respiratory Protective Equipment (RPE) as well as normal PPE utilized as a control will be examined and tested before use and non-disposable equipment shall be inspected and maintained as per the maintenance system requirements.

Damaged or faulty control measures such as LEV, RPE and PPE shall be reported to a line supervisor and removed from services at the earliest opportunity.

2.5.2 Management of Hazardous Substance Cabinets

The purpose of a hazardous chemical locker is to restrict access to substances used in the workplace which may be a hazard to health. This is done using a designated highly visible and identifiable lockable steel cabinet.

The storage of such hazardous substances within a controlled locker allows for their use to be monitored and access to them restricted. It also identifies that hazardous substances are stored within the locker.

Each installation shall have a rig specific document that details Hazardous substance locker access, key control and who is responsible for each locker. This will include the requirement to sign in/out chemicals from the locker.

If a chemical is used and the container requires to be discarded, then the log for signing back in the used-up chemical will be documented a 'MT'.

The Lockers onboard the installation or facility shall be locked with access managed by the applicable Area Responsible Person. Access to lockers shall be granted by the Area Responsible Person upon review of the risk assessment and SDS for the task which requires use of the chemical.

In the event locks are damaged or keys are lost, the department head shall inform the OIM/PIC and replace with a suitable lock to ensure the Lockers remains secure and controlled.

Hazardous Substance Lockers shall be purpose made and designed to meet the requirements of local legislation. The locker must be capable of safely storing containers of hazardous substances and in the event of a stored container being damaged, contain 110% of the contents of the largest container store in the cupboard to contain spillages.

Each locker shall be clearly marked with the appropriate warning label, in addition to SDS records for all chemicals and substances stored within the locker.

Chemical Management (Hazardous Substances)		
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2.6 Hazardous Substance Inventory List

Where there is no substance management software in place, installations shall utilize the COR-FRM-0837 Chemical Inventory Form within the Management System. This form is typically divided into the following areas; however, it shall be determined by the OIM/PIC on the most suitable method to divide the areas onboard to complete the inventory.

- Sack store chemical storage area and bulk silos.
- Paint Locker.
- Storekeeper Locker(s) (for consumables)
- Drilling Department Store (e.g., for pipe dopes)
- Mechanical Department Stores
- Electrical Department Locker
- Living Quarters

Each month, an inspection of each chemical storage area shall be carried out by the Area Responsible Person or their designee.

This will consist of a verification that all chemicals in the storage area are listed on the Inventory and that valid SDS are presented at the storage area.

The Sickbay on the rig is required to have printed SDSs for each chemical on the rig. The Medic shall review and update the SDS folder monthly using the department monthly chemical inventory. The Monthly Chemical inventory used for the review shall be printed and become the first page in the folder, to act as a reference.

All Third Parties shall provide the Medic with the SDS for the chemicals they use on board. These documents should remain onsite with Medic, for easy access and/or review.

2.7 Environmental Stewardship

2.7.1 Monitoring usage and discharges

The monitoring and management of chemicals which are discharged to the environment under the convention for the protection of the Marine Environment of the North-East Atlantic (OSPAR) shall be managed with use of the Environmental Monitoring – Operational Chemicals Form (COR-FRM-0330) from the Management System.

The term 'Operational Chemicals' refers to chemicals which as part of normal operations are permitted to be discharged overboard. Typical Drilling controlled chemicals for consideration are:

- Rig wash
- BOP Hydraulic Fluid
- Glycol
- Pipe Dope
- Jacking Grease

In order to limit the impact on the environment, only suitable approved chemicals shall be used as Operations Chemicals. The UK's Centre for Environment, Fisheries & Aquaculture Science (CEFAS) manages the Offshore Chemical Notification Scheme (OCNS). CEFAS's classification scheme is based on OSPAR's Harmonized Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals.

To comply with Borr Drilling's Environmental and Sustainability Policy of procurement of environmentally friendly alternative materials, the following standard should be the target:

Areas where OSPAR requirement are applicable, the minimum Borr standard is Gold (HQ Banding) or E (OCNS). For all other areas Borr will strive to use the most environmentally friendly operational chemical as identified above.

Usage of the chemicals on board will be recorded to enable monitoring of quantities (Environmental Monitoring – Operational Chemicals).

2.8 Management of Spills

2.8.1 Spill Reporting

Any spills of chemicals to sea shall be reported in accordance with the company's incident reporting routines and Oil Record Book, (ORB).

The client shall inform the company of any special environmental constraints due to the discharge permit or the site-specific requirements. Additional pollution prevention measures may include but are not limited to:

- Monitoring the external environment
- Review environmental impacts and aspects of the Installation with all personnel.
- The client may conduct an area specific oil spill exercise to review conformance with emergency response procedures.
- Conduct an environmental hazard hunt and monitoring of barrier status.
- Have additional task -specific pollution prevention tasks.
- F-gas recording

2.8.2 Managing Spills

The below shall be followed in relation to the definition of reportable vs. non-reportable spills.

Task related spill containment – Risk Assessment inclusion of spill containment planning

The preparation for a task that involves the usage of chemicals and oils should incorporate the consideration of the potential for a loss of containment of the substance, and subsequent clean-up.

Part of the Risk Assessment and the Toolbox Talk should involve a review of the product's Safety Data Sheet for information on the appropriate clean up material and method, and disposal requirements.

Non-task related spill containment

All chemical and oil loss of containment encountered shall be reported immediately to the area supervisor. Efforts should be made to determine the source of the leak and prepare for clean-up. The product's SDS shall be made available and consulted prior to commencing spill clean-up.

2.8.3 Spill Kits

Spill Kits are required on the rigs and facility yards/workshops at necessary locations. A risk-based approach should be used to determine their location and content, considering areas where chemicals are most often used or where there is the potential for a spill.

Chemical Management (Hazardous Substances)		
COR-PRO-0535	Corporate – Hazardous Materials and Substances	Ver: 3
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2.8.4 Spill Drills and Training

Training for personnel on how to use the spill kit equipment is required. This is generally incorporated into Environmental Drills which are led by the Barge Engineer or PIC of the facility. The completion of a spill drill shall be logged within the drill reporting dashboard.

Each installation or applicable facility shall complete two (2) overboard drills/spill drills which are to be recorded within the dashboard, EHS Insights and SOPEP as applicable (each OIM completing one per year or more frequent if determined by local regulation).

2.9 Shipping of Chemicals

All chemical materials shall be labelled for shipping as per IMDG Code and coastal state requirements or. The onboard Materials Coordinator will ensure all shipments of hazardous materials include proper shipping manifests and SDS.

2.10 Disposal of Chemicals

All disposal reporting requirements of the regulatory authority shall be adhered to.

SDS and risk assessments shall be reviewed for guidance when disposing of chemicals and chemical contaminated material.

***Note:** When chemicals are mobilized or removed from the installation or facility, the Materials Coordinator or PIC shall liaise with the Area Responsible Persons to ensure chemical inventories remain up to date.

Appendices

- Appendix 1.0 – Instructions for labelling chemical storage areas
- Appendix 2.0 – GHS Pictograms
- Appendix 3.0 – Chemical Storage Segregation

Reference Documents

- COR-FRM-0315 Chemical Usage Information Form
- COR-FRM-0330 Environmental Monitoring – Operational Chemicals Form
- COR-FRM-0837 Chemical Inventory Form
- COR-PRO-0567 Emergency drills and exercises
- COR-PRO-0722 Recording of Operations in the Oil Record Book
- COR-PRO-0733 Risk Assessment Procedure
- Rig Specific Oil Record Book

Chemical Management (Hazardous Substances)		
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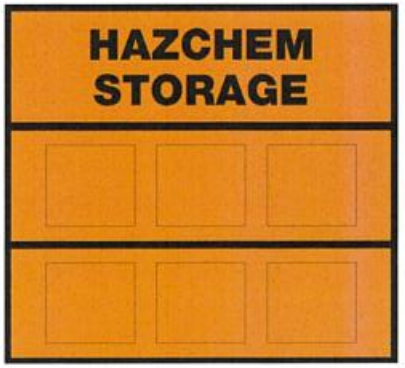
Owner: Corporate QHSE Manager	Approver: QHSE Director	

Appendix 1.0 - Instructions for Labelling Chemical Storage Areas

Storage Areas shall have the 'HAZCHEM STORAGE' label and orang/black boarder marking. The exception is for a locker that has been specifically designed to store substances and is painted yellow.

The hazard pictograms from the SDS shall considered and corresponding Chemical Warning Stickers, as per Appendix II, shall be added.

The 'Hazardous Chemicals' label should be used as a minimum.



Example: Blank Hazchem storage sticker, onto which suitable Chemical warning stickers can be added.

Storage area boarder

Example of Hazchem Storage sticker with Chemical Warning Sticker.

Appendix 2.0 – GHS Pictograms

Warning signs on Hazardous Substance Storage Area should use the following pictograms.

Appendix 3.0 - Chemical Storage Segregation

The following chart shows the chemical segregation in accordance with HSG71 for general warehousing, however, this shall be utilized for general segregation, even for when storing small quantities.

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1 Introduction

1.1 *Intent*

The purpose of this document is to define and communicate Borr's expectations, values, directions and performance standards in regard to warehousing, storage facilities, yard & office management.

This standard is to be adopted by all Logistics teams globally. Borr's Logistics management aims to establish a consistent minimum performance standard with an ultimate objective to effectively monitor our results and improve our overall performance.

The purpose of this policy is to:

- Define Borr's receipt, storage and dispatch procedures
- Provide guidelines for compliance and safety
- Establish a framework for storage logistics activities
- Provide guidelines and expectations for management of Third Party's provided storage and warehousing service

Warehouse Yard Storage Management			
COR-PRO-0635	Corporate - Logistics & Customs	Ver: 2.02	Issued: 15/04/2024
Owner: VP Supply Chain	Approver: VP Supply Chain		
Risk classification:	Information classification:		

1.2 *Scope*

This standard applies to all warehousing, yard and storage activities of owned or managed items/goods by Borr Drilling. These activities can be either performed, internally managed or outsourced via logistics agreements to external services providers. These agreements can be global or local and the services include:

- Storage
- Inventory database management.
- Equipment utilization like cranes.
- Logistics requirements
- Import customs clearance and delivery to warehouse or yard
- Packing
- Dangerous Goods handling

Variance of contractual responsibility in yard / warehouse facilities ranging from:
Fully managed by Borr Drilling to fully Third Party(s) managed storage facilities and services.
Where part or full Third Party(s) management applies; this standard is to be used a guide and expectation of standards and procedures to be in place.
This procedure refers to "Managing Party" as addressing the applicable party in direct control.

As mentioned above, this standard applies to warehousing and storage activities of items/goods "medium- and long-term storage & local cross docking", opposite to COR-PRO-0627 & COR-PRO-0630 referencing Hub Management where items are stored and managed for quick consolidation and shipment (crossdocking) via assigned 3PL party(s).

1.3 *Responsibility*

The overall responsibility of warehousing & yard storage procedures rests with applicable Corporate and Regional Supply Chain Manager who reports to the Director of Supply Chain who in turn has the overall responsibility to for an efficient and compliant Supply Chain department.

The Supply Chain Director is the designated owner of this documents and is responsible for its content as well as implementation on global level.

Warehouses and Yard's utilized are either under the management responsibility of the Corporate Supply Chain Manager or Regional Supply Chain Manager. Assignment is in line with Budget assignment. By default, > 50% of stored items ownership (Fleet spares or Rigs spares) determines the annual management ownership assignment.

Where part of whole management is under direct control of Borr Drilling, Borr's relevant procedures and policies are applicable to the managed extend.

Where part of whole facility or services provision is with Third Party(s); it is the responsibility of the assigned Supply Chain Manager or his designee to assure minimum expected standards as outlined in this procedure are adhered too by the relevant Third Party(s).

Assigned / contracted Third Party(s) are responsible to operate according to local required standards.

2 Goods Receipts and Import & Export clearance

All shipments arriving into & out of the storage facility shall be compliant with applicable customs regulations and all import documents shall be submitted on time. Assigned agency or logistic providers is to inform in advance for any importation permits.

Local or International Goods Receipt (delivery note) and dispatch documentation (manifest / CIPL) and Import & export documentation is to be retained in original and or photocopy or electronically (per local laws) for the duration of time specified by local laws in the country of import, but for no less than a period of 5 years from the date of import & export as per Borr's internal requirements. These documents must be properly filed in a controlled and secure safe place, such that they are easily retrievable at short notice for statutory or internal audit purposes.

If Warehouse / Yard facilities are discontinued, above and inventory register records are to be provided to Borr or Borr's representative.

Goods will be coming either from or send to Rigs or other dispatch/receipt facilities and locations. The Country Shipping Profile where the storage facility is located is to be followed for shipment preparation.

The party managing the storage facility will perform a quality check of the documents to ensure smooth clearance upon arrival

In case of presence of hazardous materials, the managing party is to arrange necessary licenses and manage their renewals if needed.

The assigned managing party or Borr entity will act as importer /exporter of record.

3 Movement into & out of the storage facility

The managing party will identify & arrange necessary lifting equipment like cranes, forklifts etc, to facilitate offloading/loading of the cargo. If this special lifting, handling or storage entails equipment or arrangements not covered under set contract(s); the managing party is to obtain necessary approvals from Borr prior commencement.

In case of presence of hazardous materials, the managing party is to arrange Dangerous Goods-certified drivers and vehicles to transfer material from port/airport into/out of the Facility based on documentation and declaration submitted by shipper at time of acceptance of cargo.

Warehouse Yard Storage Management			
COR-PRO-0635	Corporate - Logistics & Customs	Ver: 2.02	Issued: 15/04/2024
Owner: VP Supply Chain	Approver: VP Supply Chain		
Risk classification:	Information classification:		

If the pickup from port/airport or facility is for units/oversized equipment, the managing party is to perform necessary review with Borr Logistics team to choose the most economical option

All movements of equipment from a rig to an onshore storage location should be documented and the storage facility advised prior to shipping. A Material Movement Record (MMR) is to be completed with all relevant equipment detail, quantity, condition, adequately prepared/preserved for storage confirmation, customs status, weights & dimensions and any other storage instructions.

On completion of the MMR one copy should be retained on file on board the Rig, a copy sent to the receiving facility and one retained along with relevant Cargo Manifest.

The Storage Request Form acts as an equipment quality check, authorisation, and documented tracking tool and gives the receiving shore base storage facility pre notification of receipt equipment. This enables suitable storage location/ arrangements to be made and ensures the correct transport and lifting equipment is avail at the receipt point.

4 Physical reception

Yard / Warehouse staff will pull out the cargo & offload it in its respective staging area followed by inbound receipt label placement.

Upon physical reception of cargo at the storage facility, the responsible party will do a two-way match by checking the physical freight received against the accompanying documents:

- Part Number, Serial number
- Check if arrived with missing or incorrect documentation
- Check if arrived with missing or incorrect label
- Documentation provides full compliance information
- Quantity / line-item check
- Weights and dimensions
- Damages / quality check

If everything was delivered as per the documents and without damages the managing party signs a clean Proof of Delivery form / Keeps record of receipt. In case of missing items or damages this needs to be mentioned on the Proof of Delivery and Borr Drilling to be notified within 24 hours maximum by "discrepancy & damage" report.

The managing party is legally obliged to ensure that a proof of delivery is signed at all times and shared with Borr Drilling whenever required.

All stored items shall receive Yard / Warehouse location specific labelling or durable marking as to ensure items can remain to be identified throughout it's storage period.

Such labelling shall be:

- Durable (weatherproof)
- Unique ID's used that can be related to Location or and global Registers

Items as Drilling Tubulars will not receive individual tags but be stored in dedicated and registered storage locations & track record kept.

Cargo to be deconsolidated and stored in staging areas as per Borr requirements and instructions, example: segregated by Rigs in dedicated staging areas.

See COR-PRO-0623 Cargo Handling – Stevedoring and Storage.

5 Warehouse / Yard & Office management

Warehouse / Yard premises shall be outfitted and maintained as per local requirements. Hazardous substance handling and storage may impose additional local requirements.

Warehouse / Yard premises shall be barriered and secured in line with local requirements with the objective that items or personnel/visitors do not enter of leave the premises un-attended.

Warehouses, offices and yards are to be lockable and left secured closed during hours of closure. Pending local required (to be assessed) security level, security alarms or/and guards are to be in place as applicable.

Normally manned premises:

QHSE minimum requirements:

- Fire Fighting equipment in place and certified as per local regulations
- Emergency procedures in place covering:
  - Management and escalation plan and contacts
  - Fire plans
  - Muster Points
  - First Aid kit
  - Eye wash station
  - AED available (> 10 pax present)
  - Spill prevention and management in place
- Waste management collection system and disposal procedures are in place
- Warehouse / yard storage racking is maintained, free from defects and inspected in line with local legislation.
- Warehouse / yard safety area's & walkways are clearly marked & kept free from obstructions.

Operational:

Warehouse Yard Storage Management			
COR-PRO-0635	Corporate - Logistics & Customs	Ver: 2.02	Issued: 15/04/2024
Owner: VP Supply Chain	Approver: VP Supply Chain		
Risk classification:	Information classification:		

- Newly assigned personnel receive safety and operational introduction. Register of introduction and competency is maintained.
- Fixed and loose lifting equipment is maintained and certified as per local requirements. If local requirements absent; and as a minimum lifting equipment to be inspected annual per Borr standard.
  Lifting equipment not inspected or found with defects is to be held in a bonded area or isolated.
- Forklifts, fixed and mobile crane(s) are operated by trained personnel. Register of training / certification is maintained or providing Third Party can show evidence.
- PPE is available and suitable for tasks. Minimum PPE available:
  - Safety boots or Shoes
  - Hard Hat
  - Safety Glasses
  - Gloves
  - Hi-viz vests
  - Protective clothing for yard / warehouse workers
  - Applicable safety wear available for visitors
  - Designated area for PPE & facilities for change / personal hygiene in place
- Warehouse and yard areas are maintained clean and tidy, free of obstacles
- Yard, warehouse and office lights and power distribution systems are effectively employed and in working order
- Electrical outfitting is meeting professional (regional) standards
- Weight scales are checked for accuracy min every 3 years.
- Inventory is maintained and register – data updated to Borr representatives as per agreed schedules. Register data to contain:
  - Warehouse / yard specific ID reference (that is also placed on item)
  - Date of receipt
  - Origin & origin details
  - Marking details and own ID's
  - Quantities
  - Dimensions and weights
  - If bonded goods
  - Record when dispatched and destination are maintained
- Minimum annual an inventory review is conducted, and update provided to Borr Drilling representative.

Offices (either part of warehouse / yard or rig – regional):

  - Emergency evacuation / fire plan procedures in place
  - Fire detection system in place
  - Fire extinguishers in place & maintained

Sustainability:

- Were possible power is obtained from a renewable source
- Lights, heating, and power is switch off or consumption reduced when not required

6 Dangerous Goods management

The managing party is to comply with all applicable international or domestic transportation and storage regulations for materials deemed Dangerous Goods.

The managing party will maintain or have access to duly trained and certified staff handling cargo at Warehouse and applicable Mode of Transportation for Dangerous Goods materials.

Based on the classification, MSDS or Dangerous Goods documents provided by Borr Drilling or Borr's supplier, or the managing party / Service Provider is responsible for packaging, labeling of Dangerous Goods and issuing Shipper's Declaration or any other applicable Dangerous documents for the applicable mode of transportation.

The managing party will dispatch Dangerous Goods-certified drivers and vehicles to transfer material from port/airport to the storage facility based on documentation and declaration submitted by shipper/supplier at time of acceptance of cargo.

7 Dispatch, Export and Shipment

Upon instruction, warehouse/yard staff will collect stored equipment and prepare for dispatch.

Consolidation of material will be performed as per Borr instructions and shipping destination.
The warehouse team will arrange for all loading arrangements: equipment hire, lashing/strapping equipment, wood dunnage etc.

Packing will be performed to ensure complete safety of material & standards conforming to various destinations or mode of transport.
Packages will be labelled with outbound references to maintain a record in all systems

Physical preparation is to be executed in line with requirements suiting it's intended modes of transport and in line with See COR-PRO-0623 Cargo Handling – Stevedoring and Storage.

Transport and dispatch documents are prepared and processed.
Copy of dispatch documents is retained at the warehouse / yard location or in a central storage location.

Warehouse / yard storage records are updated when items have left the premises

The assigned managing party or Borr entity will act as exporter of record

Attachments

None

References

- COR-PRO-0630 - Hub Logistics Management Standard
- COR-PRO-0623 - Cargo Handling – Stevedoring and Storage

Warehouse Yard Storage Management			
COR-PRO-0635	Corporate - Logistics & Customs	Ver: 2.02	Issued: 15/04/2024
Owner: VP Supply Chain	Approver: VP Supply Chain		
Risk classification:	Information classification:		

- COR-FRM-0680_Material Movement Record (MMF)

7.36 IMDG AND CHEMICALS

7.36.1 APPLICATION AND DEFINITIONS

This procedure defines the controls and activities required to ensure that all components of the IMDGS and CHEMICAL storage, handling and operation are carried out in accordance with industry best practices and safe working practices involving deck cargo handling.

Reference to be made to MPO Procedure for Carriage of DG Manual

1. **Hazardous Chemical**, according to the Occupational Safety and Health Administration (OSHA) means any chemical which is a physical hazard or a health hazard.

2. **Physical Hazard** means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

3. **Health Hazard** means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed individuals. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins

4. **Combustible Liquid**. A liquid having a closed cup flash point at or above 100o F (38oC). C

5. **Flammable Liquid.** A liquid having a closed cup flash point below 100o F (38oC).

6. **Highly Toxic.** A material which produces a lethal dose or lethal concentration that falls within any of the following categories:

    - Ingestion.
    - Absorption
    - Inhalation

7. **Oxidizer**. A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials. Examples of other oxidizing gases include bromine, chlorine and fluorine.

8. **Water-reactive material.** A material that explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause self-ignition or ignition of nearby combustibles upon exposure to water or moisture.

MARCO POLO MARINE

MP OFFSHORE PTE. LTD.

SHIPBOARD HSSEQ MANUAL | SM Doc No. 007
SHIPBOARD OPERATIONS | Sec 7.36

7.36.2 GENERAL GUIDELINES

1. The master should not accept the loading of any cargo which is not safe for cargo handling, not adequately packed, not properly marked or not properly documented.
2. The Master should ensure that as much cargo as possible is containerized to allow safer stowage and securing on deck. Where different container sizes are used, the need for safe securing should be considered when planning the stowage.
3. Caustics and acids must receive special attention in storage, handling and use, because with few exceptions they can cause immediate harm to personnel. They are corrosive and severely irritating to the skin, eyes and respiratory tract. Often significant injury may occur even before first aid can be applied. This standard should serve as a reminder to exercise the utmost caution and care when possible exposure to caustics and acids exist. Material Safety Data Sheets (MSDS) to be posted on container or store room and ***(SM 004-004)*** Health Risk Assessment (HRA) to be consulted.
4. Following precautions / procedures to be observed in handling of chemicals:
    i. Eye protection is required. A face shield and goggles provide good protection to the face.
    ii. Hands must be protected by the use of chemical resistant gloves.
    iii. Body protection shall consist of chemical resistant aprons and rubber boots.
    iv. Rooms in which concentrated acids are used must be open or well ventilated.
    v. Containers must have suitable means to allow extracting the material in a safe manner to minimize risk of spillage and splashing.
    vi. Wear protective equipment when opening containers, because of the possibility of internal pressure, which may cause spraying.
    vii. When diluting an acid, pour the acid into the water, stirring constantly. Never pour water into a strong acid.
    viii. When mixing caustic, always add the caustic to the water, slowly, to minimize risk of splashing. Never add water to caustics.
    ix. Always follow any mixing direction that may be on the container.
    x. Empty containers should be flushed and washed thoroughly to eliminate any residue that might subsequently cause harm.
    xi. If acids or caustics come into contact with the body, flush the affected parts for 15 to 20 minutes with clean water.

5. **MSDS**
   Material Safety Data Sheets (MSDS) will be required for all hazardous material brought aboard, and the Master will need the MSDS forms at loading.

6. **Spill Kit**
   The science party must supply spill kits for large amounts and unique Hazardous Materials.

7. **Personal Protective Equipment**
   The science party must bring the proper safety equipment required for the hazardous material. This includes items such as safety glasses, lab coats, gloves, etc.

7.36.3. STORAGE OF DANGEROUS GOODS, CHEMICALS AND MATERIALS

The importance of the proper storage of Dangerous Goods, Chemicals and Materials on board ship should not be underestimated. If the dangerous goods are subject to the provisions of the IMDG Code, the stowage provisions of chapter 7.1 of the IMDG Code apply. However, a wide variety of chemicals (materials), not subject to the provisions of the IMDG Code, which are commonly used in the marine industry, can react violently together should the packaging become damaged or involved in a fire. Their safe storage should be subject to a risk assessment. The following points should be considered:

1. Storage areas – Are designated and controlled areas for portable machinery and equipment containing chemicals, materials, waste, flammable substances e.g. foam plastics, flammable liquids and gases such as propane and hazardous substances e.g. pesticides and timber treatment chemicals; such areas should be arranged so that in the event of a spillage or leakage the substance concerned is contained locally and does not react violently with any nearby substances or materials.

2. Accommodation – Storage areas should not be located in or close to accommodation areas;

3. Access routes – Corridors and other walkways should not be used as storage areas. Do not store materials where they obstruct access routes or where they could interfere with emergency escape routes

4. Segregation – Store incompatible materials in separate areas; flammable materials will usually need to be stored away from other materials and protected from accidental ignition;

5. Safe stowage/Storage at height – All stores should be securely stowed, if materials are stored at height (e.g. on shelving) make sure necessary guard rails are in place - 2 - to stop items falling and, if the storage area if fitted with a fixed sprinkler system, ensure that the maximum stowage height limit is adhered to at all times.

6. Tidiness - Keep all storage areas tidy, whether in designated stores areas or at a workstation on board the ship;

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SHIPBOARD HSSEQ MANUAL | SM Doc No. 007
SHIPBOARD OPERATIONS | Sec 7.36

7. Stock control - Plan deliveries to keep the amount of hazardous materials on board to a minimum, taking into account the operating pattern of the vessel.

7.36.4 CLASS 7 – RADIOACTIVE MATERIALS

1. Nuclear/radioactive cargoes (IMDG class 7) are not included in the ship's document of compliance (DOC) for dangerous cargo.

2. In addition to the general requirements for traditional class 7 products, ships transporting INF Code cargoes must also meet the provisions of the INF2 Code and hold a certificate to that effect: An International Certificate of Fitness for the Carriage of INF Cargo.

3. Class 7 is a designation for one group of products with hazardous properties. It is possible to divide them into 2 sub-categories according to their radioactive properties:
   - Materials that it is in general possible for all ships to carry (traditional class 7 products) and
   - irradiated nuclear fuel, plutonium and high-level radioactive waste (INF Code products) that must be carried by ships that are especially designed and operated for this purpose and subject to a separate approval scheme.

4. Traditional class 7 products
   Typically, these are products with low radioactivity, for example smoke detectors, medical equipment, process control equipment, measuring equipment, etc.

   In addition to the general requirements for ships' safety stipulated in the International Convention for the Safety of Life at Sea (SOLAS), ships are not required to be separately certified for the carriage of these products and the only requirement is that the cargo holds in which the goods are to be located are fitted with a fixed fire-extinguishing system

5. INF Code products

   Typically, these are high-level radioactive products,1 including:
   a) Irradiated nuclear fuel; i.e. materials containing uranium, thorium and/or plutonium isotopes that have been used to maintain a self-sustaining nuclear chain reaction, and
   b) plutonium (plutonium isotopes) extracted from irradiated nuclear fuel by means of reprocessing, and
   c) high-level radioactive solid or liquid waste extracted in a system for reprocessing irradiated fuel.

7.36.5 EMERGENCY RESPONSE

1. In the event of a package of dangerous cargo, chemical and/or radioactive materials suffering breakage or leakage during transport, or becoming involved in a collision, wreck or fire, the master of the vessel shall prioritize the following:

   - The affected place is to be isolated to prevent contact of any individual with any loose material and, when practicable, posting and fencing is made;
   - No individual is allowed to enter or remain within the isolated place until qualified personnel are available to check hazards and supervise the handling or salvage;
   - In the event of a fire, everything should be done to prevent the spread of the fire to containers which contain class 1 goods. If it is not possible to prevent the spread of the fire, all personnel should immediately withdraw from the area.
   - If a leak is discovered, the hazards associated with that leak should be ascertained immediately. In cases involving leaks of flammable liquids or flammable gases (class 3 and class 2.1 labels respectively), the crew should withdraw to a well-protected position. Air-vapour and air-gas mixtures are liable to explode and such an explosion may injure crew members and damage the ship.
   - The charterers the DPA and all appropriate authorities are notified immediately; and
   - Any place, equipment, or part thereof, which has become contaminated as a result of the accident is decontaminated as soon as possible by qualified personnel.

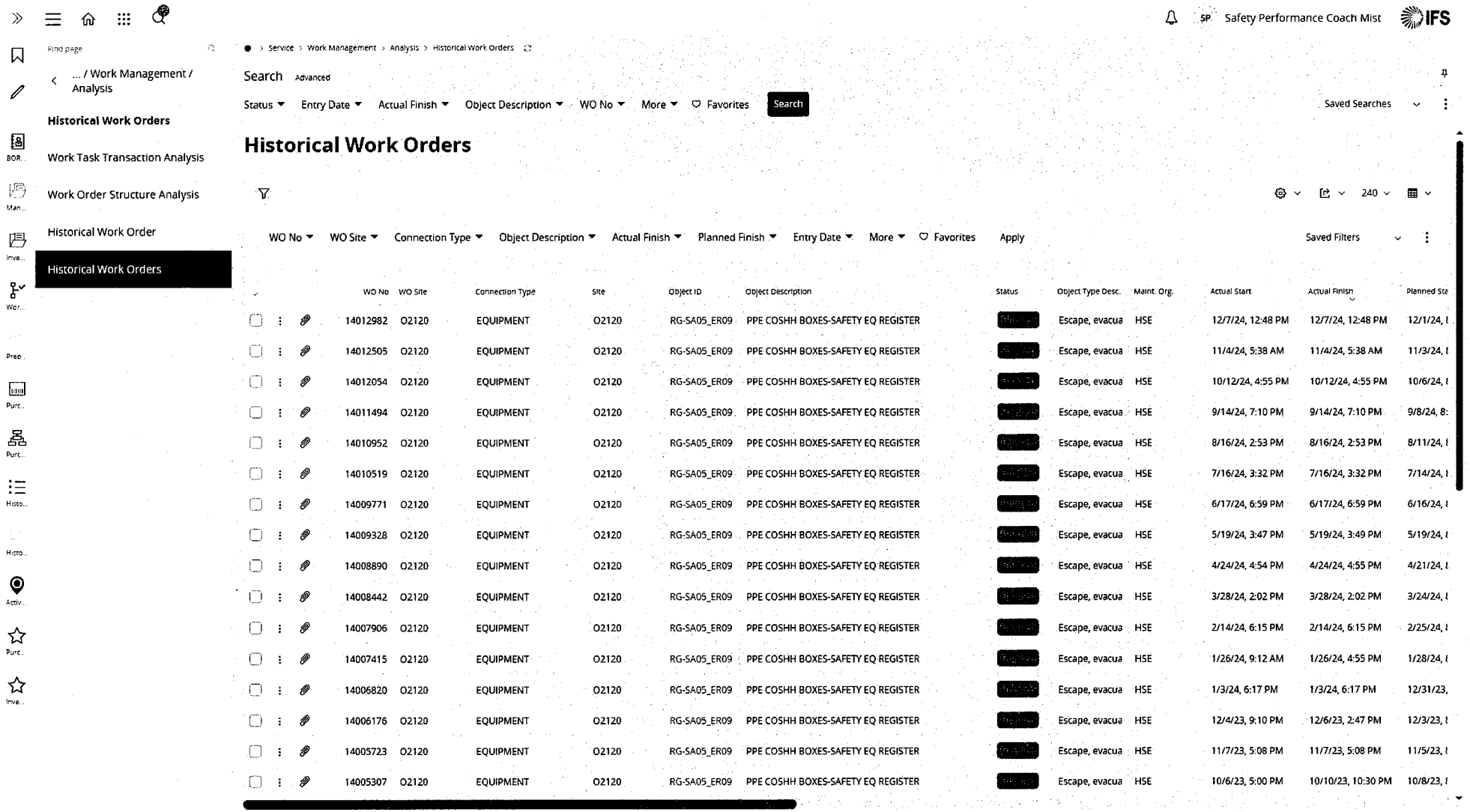
2. Identification of the dangerous good(s) involved
   It is essential to identify the dangerous good(s) involved in the fire in order that the specific FIRE SCHEDULE(S) for the cargo(es) may be consulted and appropriate action taken. This is important because some dangerous goods are incompatible with some fire-fighting media and could exacerbate the situation.

3. Seek advice
   Expert advice should be sought irrespective of how insignificant the fire may seem to be when dealing with dangerous goods fires. The DPA will contact the relevant agency to seek advice:
   i. Professional responders;
   ii. Port State authorities;
   iii. Coastguard;
   iv. Fire brigades;
   v. Manufacturers of the products.

เอกสารแนบที่ 33

ตัวอย่างรายการจัดเก็บอุปกรณ์ป้องกันความปลอดภัยส่วนบุคคล

MIST - PPE Boxes monthly inspection record in IFS program in 2024



MARCO POLO MARINE

PPE INVENTORY

MP PRESTIGE **21-Dec-24**

No	Descriptions	Remain	Unit	Remarks
1	BOILER SUIT SIZE 2XL	16	PCS	PPE Store
2	BOILER SUIT SIZE XL	13	PCS	PPE Store
3	BOILER SUIT SIZE L	15	PCS	PPE Store
4	BOILER SUIT SIZE M	14	PCS	PPE Store
5	LIGHT MECHANICAL GLOVES SIZE L	0	PAIRS	PPE Store
6	HEAVY MECHANICAL GLOVES (KONG GLOVES) SIZE XL	3	PAIRS	CO cabin
7	HEAVY MECHANICAL GLOVES (KONG GLOVES) SIZE L	3	PAIRS	CO cabin
8	HEAVY MECHANICAL GLOVES (KONG GLOVES) SIZE M	0	PAIRS	
9	HEAVY MECHANICAL GLOVES (KONG GLOVES) SIZE 2XL	1	PAIRS	CO cabin
10	RUBBER GLOVE	10	PAIRS	PPE Store
11	OVEN GLOVE	1	PAIRS	In use
12	RUBBER SAFETY BOOTS SIZE 10	2	PAIRS	PPE Store
13	RUBBER SAFETY BOOTS SIZE 9	1	PAIRS	PPE Store
14	EAR PLUG	30	PCS	PPE Store
15	LIFEVEST FOR RESCUE BOAT	1	PCS	PPE Store
16	SAFETY GLASS (BLACK)	14	PCS	PPE Store
17	SAFETY GLASS (Light)	12	PCS	PPE Store
18	SAFETY HELMET C/W CHIN STRAP	5	PCS	PPE Store
19	SAFETY SHOES (KRUSHERS) SIZE 13	2	PAIRS	PPE Store
20	SAFETY SHOES SIZE 10	2	PAIRS	PPE Store
21	SAFETY SHOES SIZE 9	6	PAIRS	PPE Store
22	SAFETY SHOES SIZE 8	8	PAIRS	PPE Store
23	SAFETY SHOES SIZE 7	5	PAIRS	PPE Store
24	SAFETY SHOES SIZE 6	4	PAIRS	PPE Store
25	RAIN COAT	7	SET	Linen store

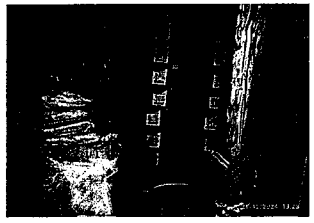
Checked By;

AB

Acknowledged By;

AHTS MP PRESTIGE
DPS - 2
PORT OF REG : SINGAPORE

Chief Officer



MARCO POLO MARINE

RESCUE BOAT EQUIPMENT

MP. PRESTIGE **30-Dec-24**

1	Paddle	2	In Boat
2	Buoyant Rescue Quoits	2	In Boat
3	Boat Hooks	2	In Boat
4	Bailer	1	In Boat
5	Buoyant Line	1	In Boat
6	Sea Anchor	1	In Boat
7	Painter	2	In Boat
8	Search Light	1	In Boat
9	Water Tight Thermal Protective Aid	2	In Boat
10	Compass	1	In Boat
11	Radar Reflector	1	In Boat
12	First Aid Outfit	1 Box	In Boat(Exp: 12.2025)
13	Whistle	1	In Boat
14	Torch light	1	In Boat
15	Portable Fire Extinguisher	1	In Boat
16	Ladder	1	In Boat
17	Rocket Parachute Signal	4	Bridge / Jun-27
18	Red hand flare	6	Bridge / Jun-27
19	Bouyant smoke signal	2	Bridge / Jun-27

Verified by

AHTS MP PRESTIGE
DPS - 2
PORT OF REG : SINGAPORE
SIGN : 9V3290
NRT : 2562/768
KW : 8160/6084

Master

MARCO POLO MARINE

LSA equipment

30-Dec-24

MP PRESTIGE

No	Equipment	Qty	Location	Manufacturer	Expiry Date	Remarks
1	MOB smoke/light signal	1	STBD Side Bridge	GOOD BROTHER	May-26	
2	MOB smoke/light signal	1	PORT Side Bridge	GOOD BROTHER	May-26	
3	Rocket Parachute Signal	12	Bridge Locker	NINGBO ZHENHUA	Jun-27	
4	Red hand flare	6	Bridge Locker	HUAHAI MARINE	Jun-27	
5	Bouyant smoke signal	2	Bridge Locker	HUAHAI MARINE	Jan-27	
6	Line throwing App	4	Bridge Locker	NINGBO ZHENHUA	Jun-27	
7	Lifebuoy with Light	2	Deck House Deck		Mar-26	
8	Lifebuoy with Line 30 m	2	Forecastle Deck FWD			
9	Lifebuoy with Line 30 m	2	Main Deck AFT PORT			
10	Lifebuoy with Line 30 m	2	Main Deck AFT STBD			
11	Life jackets	50	inside Accomodation		Dec-26	

Verified by

AHTS MP PRESTIGE
DPS - 2
PORT OF REG : SINGAPORE
IMO NO : 9768849
: 9V3290
: 2562/768
: 8160/6084

M

MARCO POLO MARINE

LIFERAFT

MP. PRESTIGE

30-Dec-24

NO.	1	2	3
LOCATION	Forecastle Deck, STBD	Forecastle Deck, STBD	Forecastle Deck, STBD
MANUFACTURER	VIKING	VIKING	VIKING
CAPACITY	20 PERSONS	20 PERSONS	20 PERSONS
SL. NO	10208455	11996331	10952448
LAST SERVICED	16 Aug 2024	16 Aug 2024	16 Aug 2024
NEXT SERVICE	16 Aug 2025	16 Aug 2025	16 Aug 2025
HRU EXPIRY	Aug-27	Aug-27	Aug-27
REMARK			

NO.	1	2	3
LOCATION	Forecastle Deck, PORT	Forecastle Deck, PORT	Forecastle Deck, PORT
MANUFACTURER	VIKING	VIKING	VIKING
CAPACITY	20 PERSONS	20 PERSONS	20 PERSONS
SL. NO	11023790	12011415	10966486
LAST SERVICED	16 Aug 2024	16 Aug 2024	16 Aug 2024
NEXT SERVICE	16 Aug 2025	16 Aug 2025	16 Aug 2025
HRU EXPIRY	Aug-27	Aug-27	Aug-27
REMARK			

Verified by

AHTS MP PRESTIGE
DPS - 2
PORT OF REG : SINGAPORE
: 9768849
: 9V3290
: 2562/768
: 8160/6084

M

MARCO POLO MARINE

EEBD LIST

MP PRESTIGE

30-Dec-24

NO	LOCATION	MODEL	SERIAL NO	MFG DATE	LIFE DATE	REMARKS
1	Bridge	M20.2 / OCENCO	M648475	Jun-14	Jun-29	Next ser: Aug 25
2	Bridge	M20.2 / OCENCO	X295443	Mar-23	Mar-38	Next ser: Aug 25
3	Bridge	M20.2 / OCENCO	M648474	Jun-14	Jun-29	Next ser: Aug 25
4	Forecastle Deck STBD	M20.2 / OCENCO	M648203	Jun-14	Jun-29	Next ser: Aug 25
5	Mess Room	M20.2 / OCENCO	M648513	Jun-14	Jun-29	Next ser: Aug 25
6	Crew Lounge	M20.2 / OCENCO	M648435	Jun-14	Jun-29	Next ser: Aug 25
7	Front ECR	M20.2 / OCENCO	M647648	Jun-14	Jun-29	Next ser: Aug 25
8	Engine Control Room	M20.2 / OCENCO	M648499	Jun-14	Jun-29	Next ser: Aug 25
9	Between Main engine	M20.2 / OCENCO	M648001	Jun-14	Jun-29	Next ser: Aug 25
10	Bow Thruster Compt	-	1815726	Nov-18	-	Next ser: Aug 25

Verified by

Master Capt.

AHTS MP PRESTIGE
DPS-2
PORT OF REG : SINGAPORE
IMO NO : 9768849
CALL SIGN : 9V3290
GRT/NRT : 2562/768
BHP/KW : 8160/6084

Fire Fighting & Life Saving Appliances				Periodical Based Maintenance			
Item	Equipment	Sub Equipment	Maintenance Description	Interval (Days)	Last Done	Next Due	Status
1	FFA	Dry Powder Extinguisher (6kg)	Inspect for damage/leaks	7	21-Dec-24	28-Dec-24	
		Dry Powder Extinguisher (6kg)	Annual examination and service	365	16-Aug-24	16-Aug-25	
		Dry Powder Extinguisher (6kg)	10-yearly pressure test	3650	10-Mar-16	8-Mar-26	
2		CO2 Extinguisher (5kg)	Inspect for damage/leaks	7	21-Dec-24	28-Dec-24	
		CO2 Extinguisher (5kg)	Annual examination and service	365	16-Aug-24	16-Aug-25	
		CO2 Extinguisher (5kg)	10-yearly pressure test	3650	10-Mar-16	8-Mar-26	
3		Foam Extinguisher (9ltrs)	Inspect for damage/leaks	7	21-Dec-24	28-Dec-24	
		Foam Extinguisher (9ltrs)	Annual examination and service	365	16-Aug-24	16-Aug-25	
		Foam Extinguisher (9ltrs)	10-yearly pressure test	3650	10-Mar-16	8-Mar-26	
4		Portable Foam Applicators (20ltrs)	Inspect for damage/leaks	7	21-Dec-24	28-Dec-24	
		Portable Foam Applicators (20ltrs)	Foam sample test	365	26-Feb-24	25-Feb-25	
5		Non-portable extinguisher Foam (45ltrs)	Inspect for damage/leaks	7	21-Dec-24	28-Dec-24	
		Non-portable extinguisher Foam (45ltrs)	Foam sample test	365	16-Aug-24	16-Aug-25	
6		Fire Hydrants	Inspect for damage/leaks & ease/grease valve	7	21-Dec-24	28-Dec-24	
7		Fire Hoses	Inspect/Pressure test	40	20-Dec-24	29-Jan-25	
8		Fireman's suit	Inspect	7	21-Dec-24	28-Dec-24	
9		Fire blanket	Inspect	7	21-Dec-24	28-Dec-24	
10		SCBA	Inspect for damage/leaks, Test function	7	21-Dec-24	28-Dec-24	
		SCBA	5-yearly pressure test	1825	24-Aug-23	22-Aug-28	
1	LSA	SART	Inspect condition	7	21-Dec-24	28-Dec-24	
2		EPIRB	Inspect condition & carry out self test	7	21-Dec-24	28-Dec-24	
		EPIRB	Yearly Servicing	365	26-Sep-24	26-Sep-25	
3		GMDSS walkie talkies	Check condition & carry out function test	7	21-Dec-24	28-Dec-24	
4		Liferafts	Inspect condition & check HRU expiry date	7	21-Dec-24	28-Dec-24	
		Liferafts	Yearly Servicing	365	16-Aug-24	16-Aug-25	
5		Lifebouy with bouyant smoke signal	Inspect condition	7	21-Dec-24	28-Dec-24	
6		Lifebouy with light	Inspect condition	7	21-Dec-24	28-Dec-24	
7		Lifebouy with line	Inspect condition	7	21-Dec-24	28-Dec-24	
8		Lifejackets	Inspect condition	7	21-Dec-24	28-Dec-24	
9		Signal pyrotechnics	Inspect condition	7	21-Dec-24	28-Dec-24	
10		Line throwing apparatus	Inspect condition	7	21-Dec-24	28-Dec-24	
11		Immersion suits & Thermal protective aid	Inspect condition	7			
		Immersion suits	3-yearly leak test	1095			
12		EEBD	Inspect condition/check for leaks	7	21-Dec-24	28-Dec-24	
13		Oxygen resuscitator	Inspect condition	7	21-Dec-24	28-Dec-24	
14		Stretcher	Inspect condition	7	21-Dec-24	28-Dec-24	
15		Fire blanket	Inspect condition	7	21-Dec-24	28-Dec-24	
16		Breathing air compressor	Check condition & carry out function test	7	21-Dec-24	28-Dec-24	

MARCO POLO MARINE

PPE Inventory

MP PROSPER Updated : 31-Dec-24

No	Description	UOM	ROB	Remark
1	SAFETY SHOES	PAIRS	0	UK 6 / EUR 40
		PAIRS	0	UK 7 / EUR 41
		PAIRS	3	UK 8 / EUR 42
		PAIRS	1	UK 9 / EUR 43
		PAIRS	2	UK 10 / EUR 44
2	COVERALL WITH COMPANY LOGO (Yellow)	PCE	4	SIZE M
		PCE	0	SIZE L
		PCE	7	SIZE XL
		PCE	3	SIZE 2XL
	COVERALL WITH COMPANY LOGO (Orange)	PCE	7	SISE XL
3	SAFETY HELMETS	PCE	5	White Colours (NEW)
			5	White Colours (OLD)
4	KONG GLOVE SIZE M	PCE	1	
	KONG GLOVE SIZE L	PCE	1	
	KONG GLOVE SIZE XL	PCE	0	
	MECHANICAL GLOVE SIZE L	PCE	0	
	MECHANICAL GLOVE SIZE XL	PCE	0	
	Rubber grove (Orange)	PCE	11	
5	WORK VEST (NEW)	PCE	4	
6	BODY HARNESS	PCE	2	
7	SAFETY GLASSES (AMBER)	PCE	2	
	SAFETY GLASSES (CLEAR)	PCE	1	
	SAFETY GLASSES (BLACK)	PCE	42	
	SAFETY EYEWEAR (CLEAR)	PCE	2	

Checked By;

MP PROSPER
FLAG :SINGAPORE
IMO NO. :9796248
CALL SIGN :9V8823
GRT /NRT :2562 / 768
BHP :8160

Ukrit Kruaboonma
Chief Officer

MARCO POLO MARINE

LIFE SAVING EQUIPMENT

MP. PROSPER

Dec-24

NO.	EQUIPMENT	QTY	LOCATION	EXPIRE	REMARKS
1	MOB Smoke & Light Signal	1	Bridge Stbd Side (Ningbo)	Feb 2027	Good
		1	Bridge Port Side (Ningbo)	Feb 2027	Good
2	Rocket Parachute Signal	12	Bridge (HUAHAI)	Jan 2027	Good
3	Red Hand Flare	18	Bridge (HUAHAI)	Jun 2027	Good
4	Bouyant Smoke signal	2	Bridge (HUAHAI)	Jun 2027	Good
5	Line Throwing App	4	Bridge	Jun 2027	Good
6	Lifebuoy With Light	2	Deck House Deck		Good
7	Lifebuoy With Line	2	Forecastle Deck Forward		Good
		4	Main Deck		Good
8	Liferaft 20 Person Capacity	3	Forecastle Deck Stbd side	Jul 25	Good
9	Liferaft 20 Person Capacity	3	Forecastle Deck Port Side	Jul 25	Good
10	Liferaft hydro Static Release	3	Forecastle Deck Stbd side	Jul 25	Good
11	Liferaft hydro Static Release	3	Forecastle Deck Port Side	Jul 25	Good
12	Life Jackets Inside Accomodation	50	Inside Accomodation	Nov-27	Good
13	Life Jackets Inside Box	32	Forcastle Deck Muster Station		Good
14	Aldis Lamp	1	Bridge		Good
15	Stretchers	2	Hospital		Good

Checked By : 2nd Officer
Name : Alhafis Jehmusor

Acknowledge By : Master
Name : Capt. Krisda Weshprecha

MP PROSPER
FLAG :SINGAPORE
IMO NO. :9796248
CALL SIGN :9V8823
GRT /NRT :2562 / 768
BHP :8160

เอกสารแนบที่ 34

Medical Evacuation

โดย บริษัท International SOS Services (Thailand) Limited

MEDICAL EVACUATION RESPONSE PLAN (MERP)

Client: Valeura Energy (Gulf of Thailand) Ltd.

MOPU Ingenium

Project Membership No.: 03APAA095659

Location:

Wassana field, Offshore Gulf of Thailand

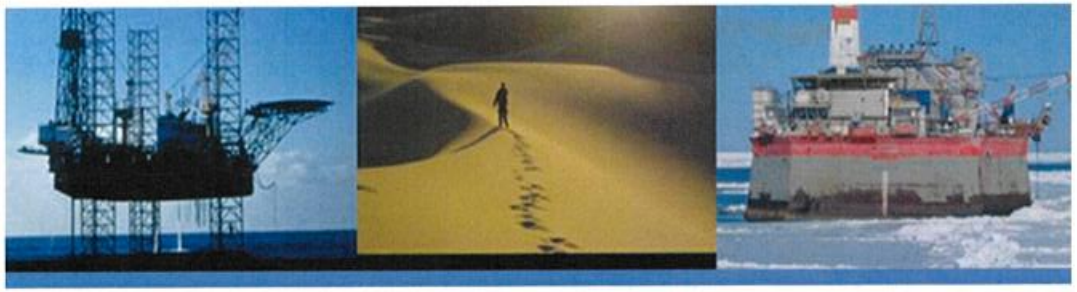
Latitude: 07 56'33 N

Longitude: 101 22' 50 E

Created Date: 06.05.2015

Updated Date: 18th October, 2024

Version: 6.7



WORLDWIDE REACH. HUMAN TOUCH.

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This document contains information related to emergency response planning and actions for onshore projects.

This Medical Evacuation Response Plan is subject to change in light of experience and feedback and it is the responsibility of all potential users, including but not only any Medic or Physician deployed, to review the plan on arrival on board and contact Intl.SOS if any difficulties seem likely in making use of the plan.

This is not a First Phase Evacuation plan and does not include responsibilities for all necessary activities related to onshore incident management whether or not patients and casualties are involved (e.g. H_2S emergency, riot / insurrection, man overboard, epidemic quarantine, etc.).

Author

This document was prepared by the Project Access team, Consulting Knowledge Centre.

Reviewers

This document was issued for review to:

Name	Date
BKK MERP Team	20 November 2023

Correspondence

All correspondence regarding this report should be directed to:

	Business Development Manager
International SOS Tel: +6681 376 4882	E-mail: -

www.internationalsos.com

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Acronyms and Definitions

AP	**Authorised Person:** The representative identified to act on behalf of a company if a medical emergency involving one of its employees occurs on-site. We recommend that the company nominates several employees to act on its behalf. International SOS must be able to contact one of your company's APs at all times. The AP is always called for financial authorisation prior to International SOS performing a billable service. Throughout the course of the case, we will provide routine updates to keep the AP fully informed of the status and progress of events. We may also contact him/her for advice on how your company would like a case to be handled.
BDM	**Business Development Manager:** International SOS' sales staff who liaises with the client for business and account maintenance issues.
RCD	**Response Centre Doctor:** International SOS' duty physician rostered for 24 hours to take medical calls.
Definitive Care Facility	**Hospital/Clinic** where patients can be admitted for specialised and comprehensive medical care, with the ultimate aim of providing final medical treatment for the patient's condition.
First Phase Evacuation	**First Phase Evacuation:** A plan that is developed and managed by Valeura Energy (Gulf of Thailand) Ltd. , and entails the movement of the patient from the MOPU Ingenium (Mobile Offshore Production Unit) to a patient handover point.
In-Transit Care Facility	**Hospital/Clinic** where patients can be admitted for stabilisation prior to onward movement to the nearest level of upgraded care or the definitive care facility.
MD	**Medical Director:** International SOS' on-duty physician rostered 24 hours to oversee medical assistance, and to be notified of all potential or impending medical transports and disembarkations.
Patient Handover Point	**Patient Handover Point:** A pre-identified location from where the patient will be entrusted to International SOS, for future care, treatment and case monitoring. This pre-identified location is mutually agreed upon by the client and International SOS, prior to MERP mobilisation.
ROMIF	**Release of Medical Information Form:** This form is used for 2 purposes: 1. It enables a medical professional to release medical data to International SOS. 2. It allows International SOS to release medical data to certain identified third parties to assist the patient. Appendix 3: Release of Medical Information Form
Second Phase Evacuation	**Second Phase Evacuation:** This plan is developed and managed by International SOS, and entails the movement of the patient from the patient handover point to the nearest level of upgraded care or the definitive care facility.

1. Objectives of this Document

A Medical Evacuation Response Plan (MERP) explains the Second Phase Evacuation plan, i.e. the movement of the ill/injured employee from the patient handover point to the nearest level of upgraded care or the definitive care facility. It also includes references to the First Phase Evacuation plan that Valeura Energy (Gulf of Thailand) Ltd. has on-site.

This document is colour coded to clearly explain who does what, i.e.:

	Valeura Energy (Gulf of Thailand) Ltd. to verify First Phase Evacuation data in the MERP on a regular basis and update International SOS.
	Remote site medical services contracted by International SOS for MOPU Ingenium, to be provided by Intl.SOS and authorised by **Valeura Energy (Gulf of Thailand) Ltd.**
	International SOS to document, verify, retain and update Second Phase Evacuation data in the MERP.

Disclaimer: *This document addresses only medical emergencies. It does not cover other types of emergency planning, such as fires, security breaches or threats, disaster response, environmental issues, etc. Planning for medical emergencies should be integrated with these other types of planning as part of a master global emergency response plan.*

2. Summary of MERP

Mobile Offshore Production Unit (MOPU) Ingenium is the processing facility, which is currently located offshore of Songkhla, Thailand for carrying out offshore operational activities at Wassana field, Offshore Gulf of Thailand. There 50 personnel present on-board. In addition, **Intl.SOS has deployed two medics on-board.**

For **First Phase of Evacuation**, patient will be transferred from MOPU Ingenium location to the Songkhla port or Songkhla Navy Airport (patient handover point) via support vessel or helicopter, activated by Wassana Field Manager.

Valeura Energy (Gulf of Thailand) Ltd is responsible for the first phase evacuation including the helicopter activation.

The medical escort team is based in Bangkok Hospital Hatyai. For incidents where patients have to be transferred via helicopter, International SOS Bangkok Assistance Centre will activate, brief and coordinate the medical escort team. Please refer to Escort medic activation flowchart, as below, for detailed process.

Travel time from project location to Songkhla port via support vessel is approximately 10-12 hrs.
Flying time from project location to Songkhla airport via helicopter is 45 minutes

There is stretcher on board, which can be winched.

For second phase of evacuation, Intl.SOS will transfer the patient from Songkhla port to an in-transit medical facility in Songkhla. If and when required, patient will be transferred to a definitive care facility in Bangkok or Singapore using an air ambulance or commercial airlines as recommended by Intl.SOS. The movement will occur via the transport provider identified by International SOS as most suitable. Further repatriation can also be organised, if required.

Medical Escort Activation Flowchart for Bangkok Hospital Hatyai

โรงพยาบาลกรุงเทพ
BANGKOK HOSPITAL
หาดใหญ่ • HATYAI

INTERNATIONAL SOS

Medical Escort Activation Flowchart for Bangkok Hospital Hatyai

Intl.SOS to contacts Nurse Supervisor via dedicated phone number 24/7 (Mobile phone +66 (0) 74 272 834 or +66 (0) 74 272 807) to activate the medical escort and provided medical information to Nurse Supervisor.

↓

Nurse Supervisor notify the case to Emergency doctor on duty and activates medical escort (s) and equipment within 10 minutes after receives the first call from Intl.SOS

↓

Intl.SOS to provide Nurse Supervisor contact detail (point of contact) to Valeuraenergy.

Khun Malai Marchan, Passenger/Flight coordinator Songkhla Base
Tel : +66 (0) 92 260 2390
Email : TH.SKL-Hangar@valeuraenergy.com

↓

Intl.SOS to provide contact detail of Khun Malai Marchan to Nurse Supervisor to contact of the arrangement to meet the helicopter.

↓

Medical escort teams from BKK Hatyai Hospital are ready to serve at
- Bangkok Hospital Hatyai's helipad within 30 minutes
- Songkhla Hanga heli-base within 60 minutes

3. Responsibilities for First and Second Phase Evacuations

On-Site International SOS Medical Staff – On-Site Response

1. Stabilise and provide initial treatment to the patient according to employer's protocols, and assess further needs.
2. Contact International SOS Bangkok Assistance Centre and discuss the case with the coordinating doctor (CD); also inform the on-duty site manager of the incident and recommendation.
3. Provide patient particulars (including name, nationality, passport details, insurance details, etc.) to the Bangkok Assistance Centre.
4. Forward the completed Medsite Medical Escalation Report, provided in appendix 2.
5. Obtain patient's consent for International SOS to access patient medical records. Forward the completed and signed Release of Medical Information Form (ROMIF), provided in appendix 3.
6. Follow up the first phone call with verbal and written updates, including patient movement.
7. Provide patient escort, if necessary.

Valeura Energy (Gulf of Thailand) Ltd. –First Phase Evacuation

1. Make pre-identified local transport assets and/or local transport providers under company's control available for First Phase Evacuation, according to section 6.
2. It is the responsibility of Valeura Energy (Gulf of Thailand) Ltd. to ensure International SOS is in possession of the latest information related to First Phase Evacuation plan.
3. Manage and implement the First Phase Evacuation plan.
4. Prepare patient's travel necessities, including passport, other travel documents, clothes, etc.
5. Escalate internally, as appropriate.
6. Inform patient's next of kin, as appropriate.
7. Based on appropriate medical verbal/written communication from International SOS, Valeura Energy (Gulf of Thailand) Ltd. to authorise International SOS to activate necessary resources for repatriation or evacuation and/or guarantee medical expenses, as required.

International SOS – Medical Monitoring and Second Phase Evacuation

1. Give medical advice and guidance on diagnosis and treatment to the on-board medic.
2. Assistance Centre doctor to recommend whether the patient should be treated on location or at an in-transit care facility.
3. Assistance Centre doctor to also recommend patient movement considering Valeura Energy (Gulf of Thailand) Ltd.'s logistics and First Phase Evacuation plan.
4. Contact the designated AP and discuss the case medically, while highlighting any need for a Second Phase Evacuation.
5. Implement and manage the Second Phase Evacuation plan.
6. Organise admission at an appropriate medical facility for Second Phase Evacuation.
7. Organise onward repatriation, if required and requested, beyond Second Phase Evacuation.
8. Keep APs and Valeura Energy (Gulf of Thailand) Ltd. management updated on the case.

4. Key Information

4.1 International SOS Assistance Centre

4.2 Authorised Person Details

4.3 Case Management Instructions

Notification of Case:	[redacted]
Insurance Details:	Liberty Insurance Pte. Ltd
Delegated Authority:	N/A
Special Instructions / Comments, if any:	N/A
Other Client (Contractors) on MOPU:	N/A
Other Non-Client (Contractors) on MOPU	MOPU: CRAT, DACON, Viking, LS, METROCAT, SODEXO, and Intl.SOS

4.4 Client Contact Details

MOPU Ingenium Tel: +66 2 766 9952 / +66 2 026 5787 **SAT Phone Number:** +870 7761 15114

[redacted]

4.5 Offshore Authority Details

[redacted]

4.6 Intl.SOS Medical Staff

[redacted]

5. Location Geography

5.1 MOPU Details

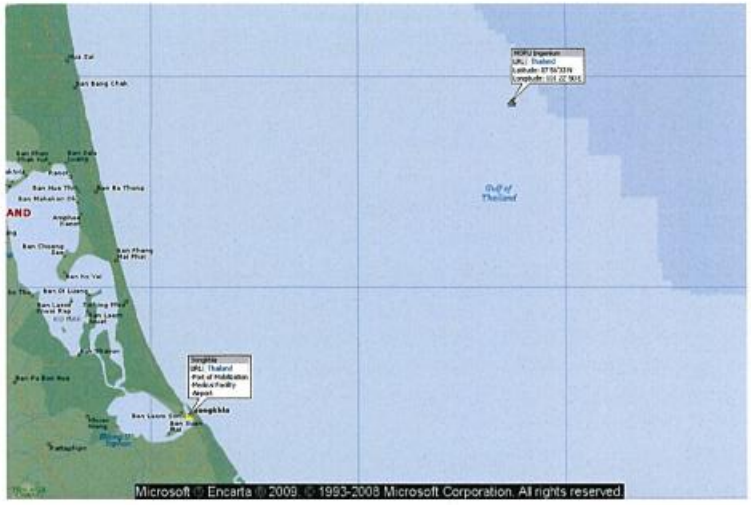
MOPU Ingenium Population:	Approx. 50 personnel
MOPU Ingenium Coordinates:	Wassana field, Offshore Gulf of Thailand Latitude: 07 56'33 N Longitude: 101 22' 50 E
Patient Handover Point:	Songkhla Port / Songkhla Navy Airport
Distance to the Patient Handover Point:	~110 km

5.2 MOPU Description

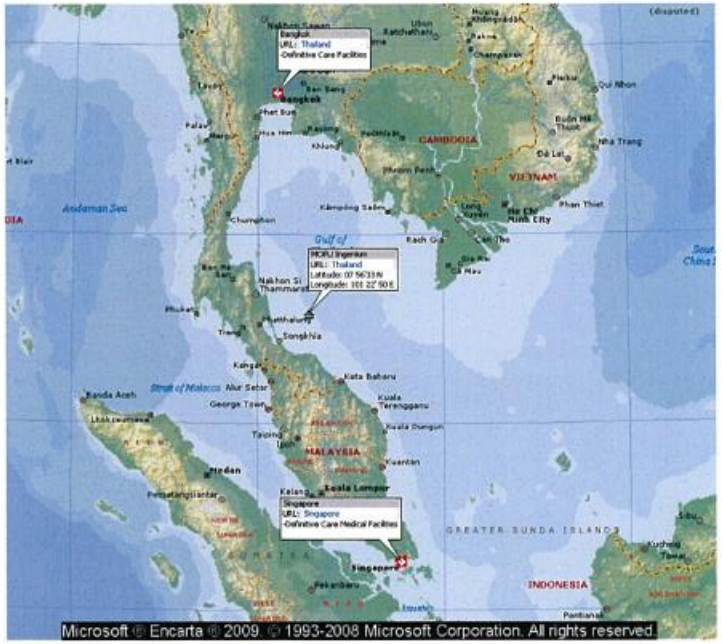
Mobile Offshore Production Unit (**MOPU**) **Ingenium** is the processing facility, which is currently located offshore of Songkhla, Thailand for carrying out offshore operational activities at Wassana field, Offshore Gulf of Thailand. There are Approx. 50 personnel present on-board. Intl.SOS has deployed two medics on-board.

5.3 Maps

Local view



Regional view:



6. First Phase Evacuation Details

First Phase Evacuation

For **First Phase of Evacuation**, patient will be transferred from MOPU Ingenium location to the Songkhla port or Songkhla Navy Airport (patient handover point) via support vessel or helicopter, activated by Wassana Field Manager.

Valeura Energy (Gulf of Thailand) Ltd is responsible for the first phase evacuation including the helicopter activation.

The medical escort team is based in Bangkok Hospital Hatyai. For incidents where patients have to be transferred via helicopter, International SOS Bangkok Assistance Centre will activate, brief and coordinate the medical escort team. Please refer to Escort medic activation flowchart, as below, for detailed process.

Travel time from project location to Songkhla port via support vessel is approximately 10-12 hrs.
Flying time from project location to Songkhla airport via helicopter is 45 minutes

There is stretcher on board, which can be winched.

Evacuation Support Logistics *(For MRCC/SAR information, refer section 4.5)*

Support Vessel Information	
Support Vessel Type:	**SC Galaxy (main support) and SC Summer**
Location:	Sawat Jetty
[redacted]	
Travel Time to Patient Handover Point:	10-12 hrs
Availability:	24 hours

Helipad information	
Night landing:	Yes
Dimensions:	17 m
Max load:	7.0 t
Aviation navigational beacon and operating frequency:	TBC

Helipad information	
Capabilities:	Helideck designed per CAP 437 requirements

Helicopter	
Type:	Agusta Westland AW139
Location:	Songkhla
Provider:	UOA
[redacted]	
Activation Time:	1 hour notice generally
Travel Time to airport:	1 hour 10 minutes
Medical Configuration	TBC
Availability:	24/7
Night Flight:	Yes, only if medevac call

Airport Information
[redacted]

7. Second Phase Evacuation Details

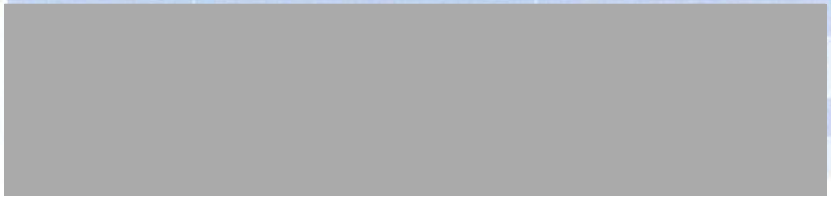
Second Phase Evacuation

For second phase of evacuation, Intl.SOS will transfer the patient from Songkhla port to an in-transit medical facility in Songkhla. If and when required, patient will be transferred to a definitive care facility in Bangkok or Singapore using an air ambulance or commercial airlines as recommended by Intl.SOS. The movement will occur via the transport provider identified by International SOS as most suitable. Further repatriation can also be organised, if required.

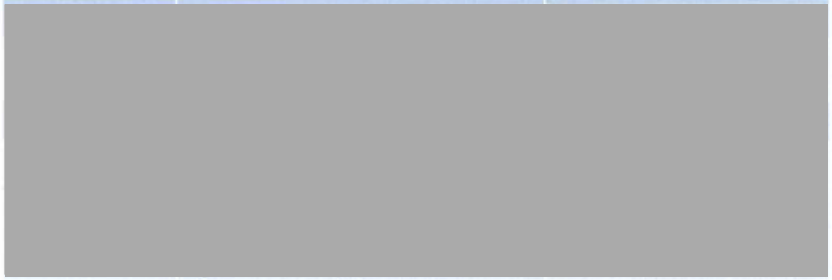
Evacuation Support Logistics

Location: Songkhla, Thailand

Ground Transport and In-transit Care Facility



Airport Information



Notes on In-transit Care Facilities:

- The in-transit care facility must be mutually pre-agreed upon by International SOS and Valeura Energy (Gulf of Thailand) Ltd.
- The in-transit care facility may not be – and in remote areas usually will not be – the medical facility best suited for the patient's definitive treatment.
- Intl.SOS may have administrative agreements with these hospitals and providers to assist with the admission of patients and guarantee payments; however, this does not mean that these hospitals/providers have been credentialed by Intl.SOS as being up to the international standards. Intl.SOS is in no position to direct local hospitals/providers regarding the treatment and management of the patient, but will make all efforts to secure understanding and cooperation from the local medical team.
- Medical facilities recommended only for initial admission and stabilisation prior to onward transfer for more serious cases may be appropriate for definitive care of less serious cases, but in any case these only represent the best locally available option. Onward referral to a regional definitive care facility will be recommended on a case-by-case basis by the International SOS medical team.

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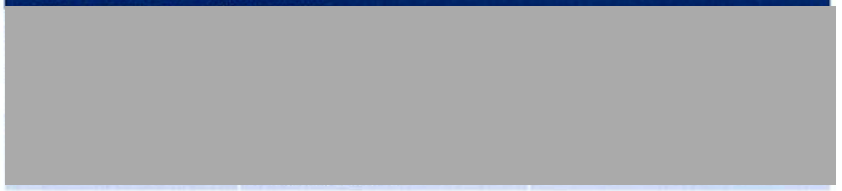
Definitive Care Medical Facilities: Bangkok

Ground Ambulance at Bangkok, Thailand



Definitive Care Facilities in Bangkok

Airport Information for Bangkok, Thailand

Definitive Care Medical Facilities: Singapore

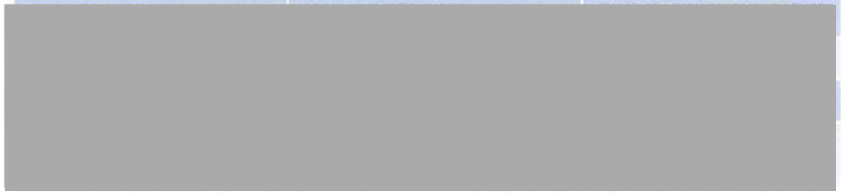
Ground Ambulance at Singapore

Definitive Care Facilities In Singapore

Airport Information for Singapore

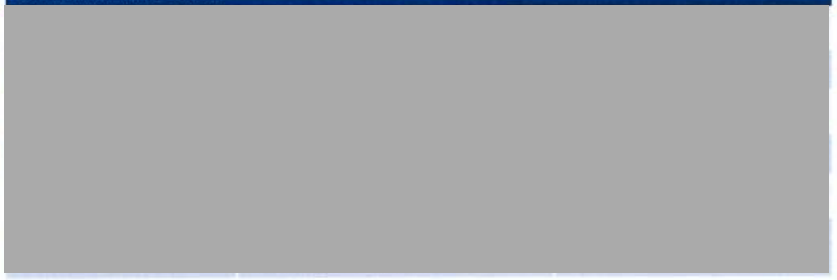
Air Ambulance Options

Air Ambulance Option 1: Based at Bangkok



Air Ambulance Option 2: Based at Singapore

Commercial Airline Options



Noteworthy Points to Consider for Evacuations and Repatriations

- Cross-border travel without passport and entry/exit visa is not permitted by immigration authorities, and this must be present with the patient (or a caretaker, if incapacitated) at all times. Even in a medical emergency, a country may not allow a patient entry if the country immigration regulations do not grant emergency visas for certain nationalities.
- All emergency responses are on a reasonable effort basis; unavoidable delays may occur for several reasons, including aircraft availability, weather conditions or other factors affecting the safety of a flight, or unscheduled airport closures.
- Patient suffering from an infectious disease may not be allowed to travel by health authorities either locally, regionally or internationally.
- Second Phase Evacuation to a place where the patient's language is spoken or where he is culturally more comfortable can be arranged upon request, if this is considered medically safe. Repatriation following an initial evacuation to a centre of medical excellence depends on the patient's fitness to fly, as well as the medical clearance of the patient by the commercial airline's medical department.

Appendix 1: Description of International SOS Services On-Site

Description and qualifications of staff on-site: The MOPU is staffed by International SOS medics.

Description of on-site medical facility: A clinic has been set up at the MOPU (Operation and Accommodation is at the same facility).

Description of medical equipment on-site:

GENERIC NAME/DESCRIPTION	Quantity
Bag valve mask, silicone, adult, reusable	3
Laryngoscope set, Macintosh Blades, reusable	1
Nebuliser	3
Oxygen cylinder, size D approx. 400L	2
Oxygen cylinder, size F approx. 1360L	2
Oxygen cylinder, approx. 7600L	2
Oxygen regulator, pin index, clamp, click flow meter fitting	2
Oxygen Resuscitator Set Adult	3
Suction unit, hand held manual	1
Suction unit, electric, portable with reusable canister	1
Glucometer Machine	3
Pulse oximeter, portable	1
Sphygmomanometer, portable	1
Stethoscope, adult	1
Patella hammer	3
Otoscope/Ophthalmoscope, Diagnostic set, portable	1
Chart Snellen, 3m	1
Thermometer, infrared	2
Torch	1
Weight scales, adult	1
Cardiac monitor defibrillator, biphasic	1
AED, Automated External Defibrillator, basic	1
Collar, rigid, adjustable	1
Head Immobiliser	1
Vacuum mattress	1
Vacuum Splint Set	1
Intravenous stand, stainless steel, mobile, basic	2
Tourniquet, self applicating	1
Couch, examination with cot sides	1
Light, examination, mobile	1
Crash cart	1
Controlled drugs cabinet, lockable	1
Dressing trolley, single draw, large	1
Waste bin, medical, approx 50L	2
Bedpan, adult	2
Refrigerator, pharmacy	1
Thermometer, fridge	1
Register, Controlled drug	1
Eye Magnet	1
Scissors Dressing B/B Curved	1
Scissors, Tuff cut	1
Ring cutter	1
Stretcher, basket	2
Stretcher, basket, restraint straps	2
Stretcher, scoop, metal	1
Spinal Board	1
Spider harness	1
Extrication Device Kendrick	1

International SOS Support Contacts	
Intl.SOS BDM/PAM: Punyaroj Nidhidatipong, Business Development Manager	Tel: +6681 376 4882 E-mail: Punyaroj.nid1@internationalsos.com

Appendix 2: Medsite Medical Escalation Report

Valeura Energy (Gulf of Thailand) Ltd Email: Bangkok@internationalsos.com

1. Call Details, Site Details, Request for Assistance

Case Number:

Date of Patient Presentation:		**Time of Presentation:**		
Name of Client, Project and Project Membership number:				
Intl SOS Membership detail and number to be used for this case if not the above:				
Name of Vessel/Rig/Site:				
Name and Qualification of Site Medical Staff:				
Site phone number:	Mobile		Other	
Notification Type:	*FIRST NOTIFICATION*			
Reason For Escalation:	Medical Advice/Topside Support		Non Urgent Referral	
	Urgent Referral		Other	
Request For Assistance::				

2. Patient Details

Full Name of Patient:			
Date of Birth:			
Contact Details: Mobile Number:			
Email Address:			
Job Position:			
Name of Patient Employer:			
Passport Number:		Nationality	
Location of Passport:			
Date Of Arrival On Site (If relevant):		**Departure date (If relevant):**	
Has patient consented to release to employer/signed ROMIF:	Yes/No		

3. Other Information (To be completed if patient is not assisted under Intl SOS Project Membership or other Intl SOS Membership)

Employer Point of Contact/Patient Manager:	
Contact Number:	
Name of Assistance Company/Insurer managing the case:	
Please confirm Employer has Activated the above Assistance Company/Insurer:	Yes/No

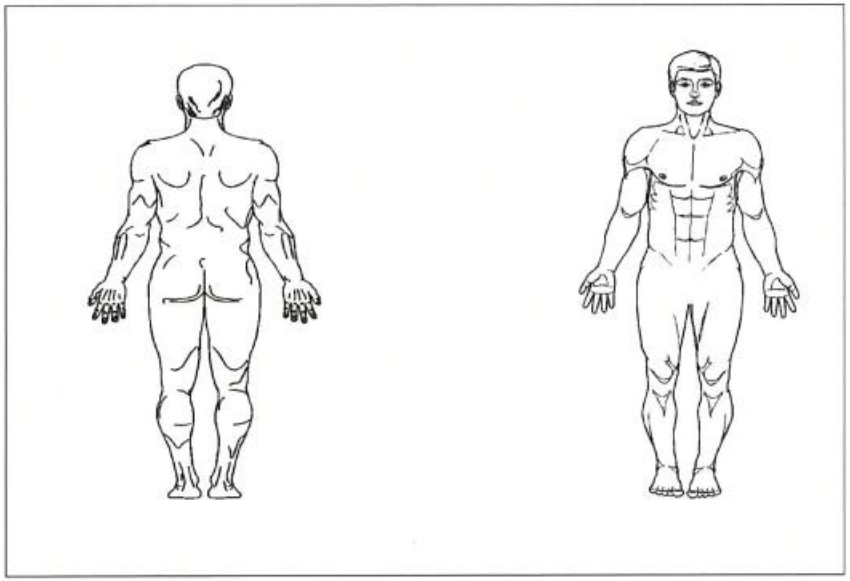
4. Medical Information

Select the relevant Box:	Accident		Illness		Was patient on duty	Yes/No
Known Allergies:				**Relevant Vaccinations:** *(eg.Last dose of Tetanus)*		
Chronic Medication:						
History & Chronology of Events and Chief Complaint:						

Examination: A: B: C: General Appearance: Head and Neck: Chest/Back: Abdomen/Back and Perineum: Limbs and Periphery: Neurological Findings:	**GCS**	
	BP	
	Pulse	
	RR	
	TEMP	
	SATS	
	HGT	
	OTHER	

Investigations:

Urine General Appearance:	**URINE DIP STICK RESULTS**	**Leukocytes**	
		Nitrite	
		Urobilinogen	
		Protein	
		pH	
		Blood	
		Specific Gravity	
		Ketone	
		Bilirubin	
		Glucose	
Malaria Rapid Test Result	**Trop T Test Result**	**Other Test Result**	
Provisional Diagnosis:			
Treatment Plan Initiated On Site:			



PLEASE SEND SUPPORTING PICTURES ON ALL CASES WITH PATIENT CONSENT

For Assistance Centre Use Only	
Escalated to MD on Duty:	***Yes / No***
Time of Call:	
Coordinating Doctor's Name:	
International SOS' Case Number:	
Medical Assistance Centre Recommendations: Escorted / Unescorted: Receiving Facility:	
Name of MOPU Manager Contacted:	
MOPU Manager's Instructions:	
International SOS to Arrange Ground Transfer:	***Yes / No***
International SOS to Place Guarantee of Medical Expenses:	***Yes / No***
No Assistance Required:	***Yes / No***

Appendix 3: Release of Medical Information Form

International SOS Bangkok Assistance Centre
Tel: +66 2 205 7848
Email: Bangkok@internationalsos.com

AC/CLINIC

AUTHORISATION FOR RELEASE OF MEDICAL INFORMATION

PATIENT INFORMATION

Print Name:			
	First	Last (surname)	
Birth Date:		Case #:	
	Day/Month/Year		

TREATING PHYSICIAN IN COUNTRY OF ORIGIN: *(please fill in name, address, e-mail address and telephone number)*	TREATING PHYSICIAN IN CURRENT LOCATION: *(please fill in name, address, e-mail address and telephone number)*

PURPOSE

This authorisation is to authorise the collection, release, use, storage, processing, amendment and transferring of medical, travel and other personal data for the purpose(s) of providing assistance to me, including arranging medical treatment, assessing and paying and/or obtaining payment for that treatment and assistance; running International SOS' normal business and operations, and to comply with legal obligations and respond to emergencies such as those relating to public health ("Data Collection Purposes").

AUTHORISATION OF DISCLOSURE

I hereby authorise any organisation or person who has or may have information concerning me or my health to furnish **International SOS Bangkok**, including the International SOS Group of Companies and/or their respective representatives and/or agents ("International SOS"), who are acting on behalf of **[Valeura Energy (Gulf of Thailand) Ltd.]**, with:

(a) all relevant medical information pertaining to my medical history (including any condition for which medical advice or treatment was sought, any form of consultation, investigation, prescription or treatment), it being understood that such disclosure must be compliant with applicable local rules, if any (which may where applicable restrict release to medical professionals only);

(b) all relevant information pertaining to my employment history;

(c) a medical certificate completed by any health provider which International SOS may require; and

(d) travel information including all itineraries, ticket information and proof of payment documentation.

(collectively known as "Personal Data")

I understand that information related to sexually transmitted diseases, acquired immunodeficiency syndrome (AIDS), human immunodeficiency virus (HIV), genetic test results, behavioral or mental health services, and treatment for alcohol and drug abuse, shall not be disclosed unless: (i) required by law or (ii) I specifically authorise International SOS to make such disclosure by initialing here. ☐

CONSENT TO USE MEDICAL INFORMATION

I consent to International SOS:

(a) Collecting by using telephone recordings, electronic, paper or other means, processing and using my Personal Data for the Data Collection Purposes;

(b) Subject to local legal requirements (which may where applicable prevent disclosure to non-medical personnel and/or restrict release to medical professionals only) disclosing my Personal Data to :

(i) entities of **[Valeura Energy (Gulf of Thailand) Ltd.]**, and/or of other International SOS entities or their respective representatives and/or agents, my personal representatives or family member involved in my care;

(ii) the insurer or other entities which will be directly or indirectly responsible for or involved in payment of relevant medical and other costs,

(c) Transferring my Personal Data outside **[Thailand]**, to and from my doctors in my country of origin, and to and from the doctors where I am currently being treated and to other territories that may not have the same level of personal data protection.

AGREED AND ACCEPTED

I understand and agree that :

(a) A copy of International SOS' Customer Personal Data Privacy Statement including information about my rights and instructions on how to fill a complaint and access, correct, restrict access to or delete my Personal Data may be obtained by writing to: Director of Assistance, **International SOS** or may be accessed through the International SOS website at www.internationalsos.com

(b) I have the right to refuse to sign this authorisation, and that if I do refuse, International SOS may be prevented from or limited in providing the services described above and may not be able to assist me.

(c) This authorisation expires one (1) year from the date of signature below.

(d) If I sign this authorisation, I will have the right to withdraw/ revoke it at any time, except to the extent that action has been taken prior to receipt of the withdrawal/ revocation. If I wish to withdraw/ revoke this authorisation, I can write to the Privacy Officer at dpo@internationalsos.com.

(e) This authorisation and my Personal Data will be kept no longer than is desirable for the purposes they were collected and, subject to applicable local law, will be destroyed in accordance with the periods set out in International SOS' policy on data retention (published at https://www.internationalsos.com/privacy).

(f) A copy, including photostat, electronic or fax copy of this authorisation, shall be considered as effective and valid as the original and I have specifically authorised its use as such.

Signature of Patient/Legal Representative/ Guardian	Printed Name
Date	Relationship with Patient

Appendix 4: Condition of offshore medical evacuation that requiring medical escorts

Type of Offshore Case Management	1. EMERGENCY MEDEVAC	2. NON EMERGENCY MEDEVAC	3. MEDICAL REFERRAL END OF HITCH	4. TREATMENT ON BOARD
Component of medical escorts	One escort doctor AND/ one or two nurses	One doctor and/or one nurse	Non-medical escort, unescorted	No medical escort required.
Mode of Movement	Emergency evacuation of sick or injured person(s) requiring urgent medical attention at a hospital using unscheduled flight or marine journey. The casualty shall reach hospital within the response time of 4 hours usually via dedicated or diverted Chopper or Boat.	Non urgent evacuation of cases for medical attention using the next available option of flight or boat e.g. unscheduled flight the next day light, crew change chopper or boat.	All others that does not fit the definition of 1 & 2 as recommended by topside remote health support	Medical conditions that medication, facility and room are sufficient and capable for treating the patients onboard.
	CONDITION : THE RECOMMENDATION BY TOPSIDE CD IS TOTALLY BASED ON THE CRITICALITY OF THE CASE			
	Threatening to Life, Limbs and Eyes Casualties required immediate evacuation to Tertiary Hospital Care (requiring ICU hospitalization) Time critical/sensitive and evacuation should take whether it is day or night Mandatory for Medical Escort to accompany patient	There is no immediate threatening to Life or Limbs. However delay beyond a window of 24 hour will put the casualty at risk of danger to Life or Limbs or affect the health of others on board. (e.g. communicable diseases). Patient would most likely require in-patient treatment on arrival	There is no threatening to Life or Limbs. Casualty can remain on board and receive treatment However casualty should be disembark on scheduled crew change transport or at the end of hitch. No need for any medical escort medic to accompany casualty Casualty expected to receive outpatient treatment	There is no threatening to Life or Limbs. Enough medicine, monitor and room for treatment

Type of Offshore Case Management	1. EMERGENCY MEDEVAC	2. NON EMERGENCY MEDEVAC	3. MEDICAL REFERRAL END OF HITCH	4. TREATMENT ON BOARD
	Example of cases			
	• **Shock** (Cardiogenic shock, Hypovolaemic shock, Anaphylactic shock, Septic Shock, Spinal Shock) • Acute Myocardial Infarction (heart attack) • Cerebral Vascular Accident (stroke) • Hypertensive emergencies • Sudden hypoxia (could be Pulmonary Embolism) • Sepsis / Septic Shock • Multiple Trauma • Limb/digit Amputations • **Epilepsy (Status Epilepticus)** • **Spinal injury with neurological impairment** • Penetrating Eye Injury • Head Injury, deteriorating GCS • Pelvic Fracture associated with deteriorating vital signs • Severe Burns on the face, hands, feet, and genitalia as well as Major burns (> 9%) in other areas of the body and those associated with inhalational injury are often referred to burn centers for specialized expertise	• Acute Abdomen: rebound Tenderness, guarding ? appendicitis, gastritis • Acute exacerbation of Bronchial asthma unresponsive to treatment • Open fractures • Corneal Injury • Closed fractures of limbs but clinically stable & no neurovascular compromise • Pneumonia (not on O2) • Symptomatic Uncontrolled Diabetes, • Symptomatic Uncontrolled Hypertension • Conjunctivitis • Renal Colic • Unilateral leg swelling with normal SpO2, ECG and no breathing issues • Painful scrotal swelling • Altered behaviour (need to rule out organic cause) , escort medic is needed in the event patient needs sedation during transfer	• Sprained joints ((responding to first aid category treatment) • Back pain (responding to first aid category treatment) • Recurring headache • Toothache / dental caries / gingivitis • Acute Contact Dermatitis (Irritant or Allergic): Generalised • Bronchial Asthma (responding to treatment) • Cellulitis • Asymptomatic Hypertension (BP normalized with initial treatment) • Chickenpox, Measles	• COVID-19 infection (5 day isolation) • Influenza infection (5 day isolation)

Revision History							
Version	**Rev. Date**	**Description**	**Prepared By**	**Reviewed By**	**Date**	**Approved By**	**Date**
1.1	06.05.2015	Draft	GKSC	BKK MERP team	08 05.2015	Dr. Akiko Nomura	08 05.2015
				MERP-MOPU Ingenium-Offshore Songkhla, Thailand-May'15 - v1.1			
1.2	26.05.2015	Updated	GKSC	--	--	--	--
1.3	29.01.2016	Update	GKSC	--	--	--	--
1.4	01.02.2016	Client details	GKSC	--	--	--	--
1.5	02.03.2016	Client details	GKSC	--	--	--	--
1.6	11.03.2016	Medical staffing updates	GKSC	--	--	--	--
1.7	10.03.2017	First phase evacuation	GKSC	--	--	Dr. Yann ROUAUD	10.03.2017
1.8	14.03.2017	Medic Details	GKSC	--	--	--	--
1.9	15.03.2017	AP1 Mobile no. & POC for Supply vessel	GKSC	--	--	--	--
2.0	10.06.2017	AP1 Alternative Mobile No.	GKSC	--	--	--	--
2.1	22.09.2018	Update : AP2 details	GKSC	--	--	--	--
2.2	29.09.2018	Update : AP2 details	GKSC	--	--	--	--
2.3	30.09.2018	Update : NOC Details	GKSC	--	--	--	--
2.4	27.02.2019	Update: AP2 + OIM	PA Support Team, GKSC	--	--	--	--
2.5	01.03.2019	Update: OIM addition	PA Support Team, GKSC	--	--	--	--

Revision History							
2.6	02.07.2019	Update: Notification	PA Support Team, GKSC	--	--	--	--
2.7	26.07.2019	Update: Flowchart	PA Support Team, GKSC	--	--	--	--
2.8	06.12.2019	Update: Client Contact Details	PA Support Team, GKSC	--	--	--	--
2.9	26.06.2020	Update: no medical staffing, APs details	PA Support Team, GKSC	BKK MERP team	25.06.2020	Dr. Jamon Ngoencharee	25.06.2020
3.0	01.07.2020	Update: First Phase Evacuation & Client Contact Details	PA Support Team, GKSC				
3.1	03.07.2020	Update: AP details	PA Support Team, GKSC	--	--	--	--
3.2	25.01.2021	Nurse contact details	PA Support Team, GKSC	--	--	--	--
3.3	07.06.2022	Update: BDM, AP,Client contact etc	PA Support Team, GKSC	--	--	--	--
3.4	15.06.2022	Update: Intl.SOS Medical staff	PA Support Team, GKSC	--	--	--	--
3.5	23.06.2022	Update: Escort Medic details	PA Support Team, GKSC	--	--	--	--
3.6			PA Support Team, GKSC	--	--	--	--
3.7	12 July 2022	Update: client name, logo	PA Support Team, GKSC	--	--	--	--
3.8	13 July 2022	Update: E-mail ID	PA Support Team, GKSC	--	--	--	--
3.9	14 July 2022	Client contact	PA Support Team, GKSC	--	--	--	--

Revision History							
4.0	17 August 2022	Update: Medic	PA Support Team, GKSC	--	--	--	--
4.1	06 December 2022	Update: Logo	PA Support Team, GKSC	--	--	--	--
4.2	07 December 2022	Client Contact	PA Support Team, GKSC	--	--	--	--
4.3	25 July 2023	Updates	PA Support Team, GKSC	BKK MERP team	Dr. Jamon Ngoencharee Aukarin SURIYA		25 July 2023
4.4	08 September 2023	Updates	PA Support Team, GKSC	BKK MERP team	Dr. Jamon Ngoencharee Aukarin SURIYA		08 September 2023
4.5	21 September 2023	Updates: Location	PA Support Team, CKC				
4.6	20 November 2023	Updates: First phase evacuation, client contact, flowchart	PA Support Team, CKC	BKK MERP team	Dr. Jamon Ngoencharee Aukarin SURIYA		20 November 2023
4.7	6th December 2023	Updates: AP1 details + client contact + medical staff details	PA Support Team, CKC	--	--		--
4.8	11th Dec 2023	Updates: client contact	PA Support Team, CKC	--	--		--
4.9	20 December 2023	Update: First phase evacuation	PA Support Team, CKC	--	--		--
5.0	26 December 2023	Update: First phase evacuation & client contact details	PA Support Team, CKC	--	--		--
5.1	05 January 2024	AP2 update	PA Support Team, CKC	--	--		--
5.2	08 January 2024	AP2 update	PA Support Team, CKC	--	--		--
5.3	30 January 2024	Update: AP3 details	PA Support Team, CKC	--	--		--

Revision History							
5.4	31 January 2024	Update: Medic details	PA Support Team, CKC	--	--	--	
5.5	23 Feb, 2024	Update: 1st Phase+Borr DSV added	PA Support Team, CKC	--	--	--	
5.6	27th Mar, 2024	Update: 1st Phase	PA Support Team, CKC				
5.7	28th Mar, 2024	Update: 1st Phase	PA Support Team, CKC				
5.8	09 May 2024	Update: AP	PA Support Team, CKC				
5.9	13th May, 2024	Update: AP details	PA Support Team, CKC				
6.0	12 June 2024	Update: AP details	PA Support Team, CKC				
6.1	4th July 2024	Update: sec 2 & 6 details + 4.3 (NOC) + 4.4	PA Support Team, CKC				
6.2	19th July, 2024	Update: First phase evac	PA Support Team, CKC				
6.3	26th July, 2024	Update: First Phase Evac	PA Support Team, CKC				
6.4	01st Aug, 2024	Update: Heli POC	PA Support Team, CKC				
6.5	01 Oct, 2024	Update: Flowchart and supply vessel info	PA Support Team, CKC				
6.6	14th Oct, 2024	Update: AP2	PA Support Team, CKC				
6.7	18th October, 2024	Update: Thailand Emergency Duty Roster contact list removed	PA Support Team, CKC				

Medical Evacuation Response Plan

By providing my signature to this document, I commit that I have read, understood and will comply with the instructions provided within this document.

Staff Name	Role / Position	Signature	Date

MEDICAL EVACUATION RESPONSE SUMMARY - Valeura Energy (Gulf of Thailand) Ltd./ MOPU Ingenium/ 03APAA095659/ v 6.7

valeura energy

RESPONSIBILITIES

On-Site Intl.SOS Medical Staff - MOPU- Offshore Response

1. Stabilise and provide initial treatment to the patient according to employer's protocols, and assess further needs.
2. Contact International SOS Bangkok Assistance Centre and discuss the case with CDI/ RCD ;also inform the on-duty site manager of the incident & recommendation.
3. Provide patient particulars (including name, nationality, passport details, insurance details, etc.) to the Assistance Centre.
4. Forward the completed Medsite Medical Escalation Report, provided in appendix 2 of MERP.
5. Obtain patients consent for Intl.SOS to access patient medical records. Forward the completed and signed Release of Medical Information Form (ROMIF), provided in appendix 3 of MERP.
6. Follow up the first phone call with verbal and written updates including patient movement.
7. Provide patient escort, if necessary.

Valeura Energy (Gulf of Thailand) Ltd - First Phase Evacuation

1. Make pre-identified local transport assets and/or local transport providers under company's control available for the first phase evacuation.
2. It is the responsibility of Valeura Energy (Gulf of Thailand) Ltd. to ensure International SOS is in possession of the latest information related to First Phase Evacuation plan.
3. Manage and implement the First Phase Evacuation plan.
4. Prepare patient's travel necessities including passport, other travel documents, clothes, etc.
5. Escalate internally, as appropriate.
6. Inform patient's next of kin, as appropriate.
7. Based on appropriate medical verbal/written communication from International SOS, Valeura Energy (Gulf of Thailand) Ltd. to authorise International SOS to activate necessary resources for repatriation or evacuation and/or guarantee medical expenses, as required.

International SOS – Medical Monitoring and Second Phase Evacuation

1. Give medical advice and guidance on diagnosis and treatment to the on-site medic.
2. Assistance Centre doctor to recommend whether the patient should be treated on location or at an in-transit care facility.
3. Assistance Centre to also recommend patient movement considering Valeura Energy (Gulf of Thailand) Ltd.'s logistics and First Phase Evacuation plan.
4. Contact the designated AP and discuss the case medically, while highlighting any need for a Second Phase Evacuation.
5. Implement and manage the Second Phase Evacuation Plan.
6. Organise admission at an appropriate definitive care facility for Second Phase Evacuation.
7. Organise onward repatriation, if required and requested, beyond Second Phase Evacuation.
8. Keep APs and Valeura Energy (Gulf of Thailand) Ltd. management updated on the case.

KEY INFORMATION

International SOS Assistance Centre

Client Contact Details – To be Available 24X7 for Authorisation

Project Details

Medical Support on-board

FIRST PHASE EVACUATION SUMMARY

Supply Vessel

Helicopter

SECOND PHASE EVACUATION SUMMARY

Ground ambulance and In-transit Care Facility

Airport Information

SECOND PHASE EVACUATION SUMMARY

Air Ambulance

Definitive Care Facilities

Case Management Instructions

Please refer to section 4.3 in the MERP document.

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Note: This document is to be used in conjunction with the MERP. Please read the MERP in detail, prior to commencement of project activities, in order to gain a comprehensive understanding of the Medical Evacuation Response Plan. This knowledge is essential to ensure timely action in case of a medical emergency on-site.

Note: This document has been clearly color coded to express who does what, i.e.,
- Valeura Energy (Gulf of Thailand) Ltd.to verify First Phase Evacuation data in the MERP on a regular basis and update International SOS.
- Remote site medical services contracted by Intl.SOS for MOPU Ingenium, to be provided by Intl.SOS and authorised by Valeura Energy (Gulf of Thailand) Ltd..
- International SOS to document, verify, retain and update Second Phase Evacuation data in the MERP.

MP OFFSHORE PTE. LTD.		
TRAINING REPORT	Form Ref:	SM Sec 5.
	No.	SM 005-009

Ship: MP PROSPER	Date: **03 Jan 2025**	Time: from 1130 Hrs till 1150 Hrs

Type of Training

☐ Video viewing	☒ Lecture	☐ Demonstration
☐ On the Job Training	☐ Others	

Topic of the Training

Medical Evacuation

Details of the Training

- Give CPR or mouth to mouth or resuscitator
- Medical advice by radio or satellite communication.
- Medevac procedure
- Medical response flowchart
- Contingency plan

Comments

- All crews interest and understand of the topics.

Attendance *(Name & Rank)*

- See below attendance sheet

Conducted by *(Name & Rank/Designation)*

- [redacted] / Chief Officer

MP OFFSHORE PTE. LTD.		
TRAINING REPORT	Form Ref:	SM Sec 5.
	No.	SM 005-009

NO.	NAME	RANK	VESSEL	SIGNATURE
1.	[redacted]	Master	MP Prosper	[redacted]
2.		C/O	MP Prosper	
3.		2/O	MP Prosper	
4.		C/E	MP Prosper	
5.		2/E	MP Prosper	
6.		3/E	MP Prosper	
7.		ETO	MP Prosper	
8.		Bosun	MP Prosper	
9.		AB	MP Prosper	
10.		AB	MP Prosper	
11.		AB	MP Prosper	
12.		AB	MP Prosper	
13.		Oiler	MP Prosper	
14.		Oiler	MP Prosper	
15.		Cook	MP Prosper	

MP PROSPER
FLAG :SINGAPORE
IMO NO. :9796248
CALL SIGN :9V3823
GRT /NRT :2562 / 768
BHP :8160

Verified by [redacted]

Signature
Name : [redacted]
Position : Master

Signature
Name :
Position :

เอกสารแนบที่ 35

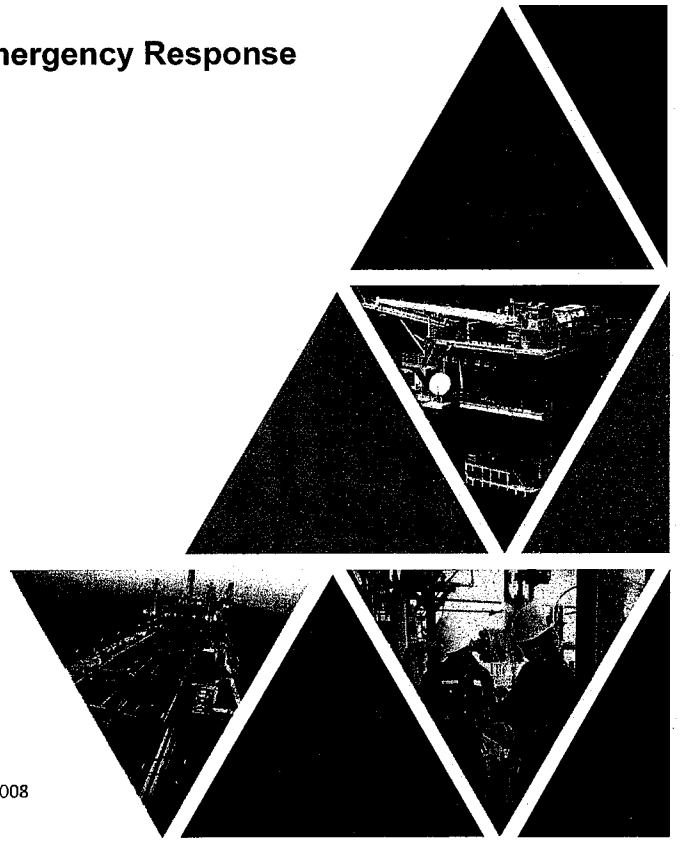
Emergency Response Manual

valeura energy

Thailand – Health, Safety, Security and Environment

Thailand Emergency Response

Manual (MAN)



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Revision R11

valeura energy

Thailand – Health, Safety, Security and Environment

Thailand Emergency Response

Manual (MAN)

Electronic Version is Current—Uncontrolled Hard Copy Valid Only at the Time of Printing

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Approved on	08-Dec-2023
Additional Comments	

CHANGE SHEET

All major changes to the document at this current revision are recorded below.

(Does not include correction of typos or formatting changes)

Revision:	Date:	Originator:	Description of Change:
R0	May 11		- Issued for approval
R0	Aug 14		- Change Pearl Oil (Thailand) Ltd. To The Company (Thailand) Ltd. And MODEC to Petrofac - Add fire and explosion, hydrocarbon gas release into offshore emergency response - Add Appendix 10 Jasmine/ Manora/ Nongyao locations
R1	Sep 14		- Review as ISO requirement - Format to EDMS template
	Sep 15		• Page10, modify emergency decision flow chart • Page 11, add Angela to the comms. call list • Page 21, add call out tree • Page 59, add vessel fire scenario Add Appendix 11 Pre-Incident Plan form • Add Appendix 12 Station Bill • Add some requirements from Resilience Standard
R2	Dec 17		• Added appendix 12 : Guideline for SRT drill • Page 24, add paragraph Appendix 12 is providing a guideline for SRT drill and exercise scenarios.
R3	Jan 19		• Update telephone numbers • ECC Layout
R4	Jun 19		• Revise Role and Responsibility
R5	Oct 19		• Section 1.6: Revised from Head of Drilling and/or Head of Operations to "Operation Manager; Jasmine, Manora and NongYao.
R6	Jan 21		• Amend ERP flowchart to show a BC connectivity with the emergency response

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Document Title: Thailand Emergency Response

Revision:	Date:	Originator:	Description of Change:
R7	May 21		• Added requirement from new resilience standard
R8	18 Apr 2022		• Added Communication Team number in ERP room
R9	Apr 2023		• Reviewed for approval
R10	Oct 2023		• Reviewed for Wassana field • Update SRT chart • Update Wassana satellite phone number • Updated GOT map • Added G10/48 map

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MIS-PRO-0001	Mist - Emergency Response	Ver: 3
Owner: Safety Performance Coach	Approver: Rig Manger	

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MARCO POLO MARINE

SHIPBOARD EMERGENCY MANUAL

< SEM >

Emergency Contact Number
+65 8699 8622

Safety Does Not Take a Day off

MARCO POLO MARINE	MP OFFSHORE PTE. LTD.
	APPROVAL

SHIP BOARD EMERGENCY MANUAL

< SEM >

Originator	Approver	Date
[redacted]	[redacted]	1 Feb 2023
DPA / HSE Manager	Chief Executive Officer	

Date	Section No. Form No.	Page	Rev. No.	Revision Summary
01 Apr 2019	1.2.2	1	0.0	Guideline For Contact
01 Apr 2019	1.2.3	2	0.0	Emergency Organisation & Station Muster List
01 Apr 2019	1.10	1	0.0	Death, Serious Injury, Sickness And Medivac
01 Apr 2019	1.10.4	5	0.0	Medical Response Flow Chart
01 Apr 2019	1.14	1	0.0	Rescue From Enclosed Space
01 Apr 2019	1.26	1 & 2	0.0	Loss Of Stability And Watertight Integrity
4 Aug 2021	1.10.3	2	1.0	Included guidance for infectious disease
1 Mar 2022	All	All	0.0	Change of company logo and rename to edition 2022
06 Jun 2022	SEM 001-002	All	1.0	Change in Emergency Contacts
15 Aug 2022	SEM 001-002	All	2.0	Change in Emergency Contacts
21 Oct 2022	1.0	All	1.0	Insert Annex A
31 Jan 2023	SEM 001-016	All	0.0	Inserted SEM 001-016 (Man Overboard Muster Station)
31 Jan 2023	Sec 1.28	All	1.0	Inserted SEM 001-016 (Man Overboard Muster Station)
31 Jan 2023	Sec 1.11	All	1.0	Inserted SEM 001-016 (Man Overboard Muster Station)
31 Jan 2023	SEM 001-015	All	1.0	Amended SEM 001-015 (Emergency Drill Schedule Record)
31 Jan 2023	Sec 1.9	All	1.0	Inserted Cyber Security (Computer) Failure
31 Jan 2023	TOC	All	1.0	Inserted Cyber Security (Computer) Failure
1 Feb 2023	All	All	0.0	Edition 2023 released
27 Mar 2023	SEM 001-017	All	0.0	New Medical Report Form inserted
27 Mar 2023	Sec 1.10	All	1.0	Instructed how to use SEM 001-017

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SHIPBOARD EMERGENCY MANUAL (SEM)

REVISION RECORD

27 Mar 2023	Sec 1.28	All	1.0	Updated appendices
27 Mar 2023	Sec 1.0	All	1.0	Updated contents page
31 Mar 2023	SEM 001-002	All	1.0	Updated MP Offshore Emergency Reporting Chart
12 Jul 2023	SEM 001-004	All	1.0	Updated incident report
28 Feb 2024	Sec 1.1	All	1.0	Introduction includes frequency of review and to review following after drill and actual emergency

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DISTRIBUTION LIST

CONTROLLED COPY NO.	ASSIGNED TO	VESSEL INITIAL	LOCATION
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006	MP Prospect	PRS	Bridge
007	MP Prosper	PRO	Bridge
008	MP Pride	PRD	Bridge
009	MP Endurance	END	Bridge
010	MP Prowess	PWS	Bridge
011	MP Perkasa	PKS	Bridge
012	MP Kesatria	KST	Bridge
013	MP Prestige	PST	Bridge
014	MP Lagenda	LAG	Bridge

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READING RECORD

Form Ref: No. Form General

Office / Vessel : _____ Manual Name: _____

Name	Designation	Date Joined	Date Read	Initial	Verified by

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MARCO POLO MARINE

MP OFFSHORE PTE. LTD.

1.1. INTRODUCTION

1.1.1. PURPOSE

1. The purpose of this procedure is to identify, describe and respond to potential emergency shipboard situations and to establish programs for drills and exercises to prepare for emergency actions. The procedures ensure that the Company's organization can respond at any time to hazards, accidents and emergency situations.
2. Emergency response plans are reviewed at least annually to reflect changes in legislation, contact details, vessel equipment and changes in company procedures.
3. They are additionally reviewed following any incident or drill where the emergency response plans have been used.

1.1.2. APPLICATION

1. This Emergency Preparedness section provides information to Master and describes the procedures to be followed when the vessel confronted with a perilous situation. (Peril is considered to exist when there is a threat to the Ship, Personnel or Cargo or where there is a Risk of Pollution).

1.1.3. EMERGENCY PREPAREDNESS POLICY

1. Actions to counter potential emergency situations should be practiced in drills. Emergency drills should be carried out regularly to develop and maintain the confidence and proficiency on board.
2. The Emergency Preparedness Drills and exercises are conducted so that ship staff understands their roles and responsibilities, thereby improving emergency response capabilities in the event of an incident.
3. Avoidance of accidents and successful response to an emergency situation and safety culture are entirely dependent on the level of training achieved ashore and on board.
4. Vessel emergency response plans are reviewed at least annually to reflect changes in legislation, contact details, vessel equipment and changes in company procedures. They are additionally reviewed following any incident or drill where the emergency response plans have been used.

IN ALL CASES WHERE HUMAN LIFE IS IN PERIL OR WHERE THE VESSEL OR CARGO IS THREATENED WITH DAMAGE, LOSS OR RISK OF POLLUTION, THE MASTER MUST TAKE ALL PRECAUTIONS IMMEDIATELY, WITHOUT RESTRAINT.

1.1.4. RESPONSIBILITY

1 The Master shall ensure that the Officers and Crew are familiar with their duties by means of updated muster lists and drills onboard. The Master is also responsible for ensuring that the vessel is at all times prepared for contingencies and that the required information is promptly reported according to the relevant procedures in the

SMS.

2 The Master is to take immediate measures to prevent accidents, or reduce the effect. The Head Office response team shall offer advice to the Master and co-ordinate with authorities. Every casualty is unique and should be evaluated individually.

3 The Officer of the Watch should be fully conversant with the emergency procedures summarized in these emergency procedures. When time permits, whether the action taken is routine or emergency, the appropriate check list should be consulted in order to ensure that all necessary steps are and have been taken.

เอกสารแนบที่ 36

HSE Policy and HSE Management System ของแท่นเจาะ

Borr Drilling

Environmental and Sustainability Policy

Borr Drilling is strongly committed to conducting our business fairly, ethically and in compliance with all relevant laws and regulations. We are committed to protecting our social and natural environment in the areas in which we operate.

Borr Drilling commits to:

Environment:

- Establishing environmental and sustainability goals and objectives, and continuously monitoring our performance.
- Prevention of pollution and reporting and investigating all environmental spills including effective implementation of drainage and discharge system management plans.
- Responsible waste management through segregation, reuse, recycling, and waste minimization efforts.
- Energy management and greenhouse gas emission reduction through the use of energy-efficient equipment and practices.

Social

- Respecting human rights and operating in strict compliance to applicable regulatory frameworks and best business practices.
- Facilitating equal opportunities and a non-discriminating working environment.

Governance

- Complying with internal protocols, applicable laws and regulations, while promoting internal practices that enhance our performance.
- Developing and continually improving our environmental management system.
- Ensuring assets operate as intended and maintaining operational integrity and standard of performance.
- Transparency in the reporting of our sustainability performance and initiatives.
- Sustainable supply chain practices through ethical procurement of products and services, and sustainability assessment of suppliers.
- Raising awareness of our personnel on environmental and sustainability through training and other internal communications.

CEO | Borr Drilling
9th August 2024

MARCO POLO MARINE

HEALTH, SAFETY, SECURITY, ENVIRONMENT PROTECTION & QUALITY POLICY

MP OFFSHORE places the highest priority on individual safety, security, customer satisfaction, and environmental stewardship. The MP OFFSHORE HSSEQ Management System provides a framework to implement a safe and healthy workplace; security for our people, vessels, and facilities; quality service to our customers and protection of our environment. The Management System is critical to MP OFFSHORE's commitment of operational excellence and is the responsibility of all employees.

MP OFFSHORE also aims to eliminate work-related injuries and illnesses and to achieve high standards of security and environmental protection.

TO FULFILL OUR COMMITMENT, WE WILL

- Operate our vessels and manage our employees in compliance with mandatory rules and regulations, and ensure that applicable codes, guidelines and standards recommended by the Organization, Administrations, classification societies and maritime industry organizations and taken into account.
- Promote safe practices in ship operation and equipment handling. Provide safe working facilities and environment for all our employees, contractors and customers.
- Establish safeguards against all identified risks and establish STOP WORK Policy
- Develop and achieve safety, security, quality, and environmental objectives and targets.
- Continuously review, improve and expand our Management System.
- Continuously improve safety management skills of personnel ashore and aboard ships, including preparing for emergencies related both to safety, environmental and Security protection
- Provide safe and quality services to our customers.
- Preventing pollution and protecting the environment
- Conserving resources and adopting green practises
- Reduce carbon emission and waste to minimise ecological effect to the environment

AT MP OFFSHORE, OUR PRIORITY IS TO ACHIEVE

- **ZERO Harm to People**
- **ZERO Damage to the Environment**
- **ZERO Damage to the Equipment**
- **ZERO Security Incident**
- **Satisfactions of all the requirements from our clients**

Chief Executive Officer
MP Offshore Pte Ltd
Date: 24 July 2024

** This policy will be made available to interested parties on requested and will be posted in Company premises and on board vessels.*

เอกสารแนบที่ 37

ตัวอย่าง Work Permit

1 Introduction

1.1 *Intent*

The Permit to Work System ensures that authorized personnel, knowledgeable of the hazardous operation to be performed, have planned the work, inspected the work site, identified the hazards and communicated the suitable control measures to be taken to prevent the occurrence of an incident.

- Ensure that proper authorization is given to carry out specific work at a certain time and place.
- Ensure that personnel carrying out the work clearly understand the nature of the job, the hazards involved and the limitations on the work and the time.
- Specify the precautions to be taken before starting the work, during the work and after completion of the work.
- Ensure the OIM and Work Site Supervisor are fully aware of and approve the work to be done.
- Provide a record showing the type of work and that a responsible person is assigned.
- Provide a procedure for times when work must be suspended.

1.2 *Scope*

This procedure covers all Borr Drilling offshore installations. This procedure applicable to all Borr and third party service personnel on board a Borr Drilling installations.

1.3 *Responsibility*

Director of QHSE is responsible for the content of this document and it is approved by the COO.

All supervisors and managers are to ensure that the requirements herein are complied with within their area of responsibility.

1.4 *Definitions*

Competent Person:	For the purpose of this procedure, a Competent Person is defined as a person who the OIM has assessed and is confident in their abilities and knowledge of the rig and the Permit To Work procedure and process onboard their rig.
Qualified:	A person who has been designated as per the below table and deemed competent by the OIM through training and/or experience to carry out their role within the Permit To Work Process.
Verified:	To demonstrate that (something) is true, accurate, or justified.

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

2 Procedure

All offshore installations will have a Permit to Work system in place for potentially hazardous / dangerous/ non-routine operations.

All personnel will be appropriately trained prior to using the Permit to Work System.

During the process to open a Permit to Work, the condition of the workplace will be verified to ensure all hazards are identified and , and all involved in the job understand the hazards and risks.

At any time the job can be stopped by any employee to verify the necessity to analyze the potential risks and shall involve all personnel who are involved in the task.

2.1 *Activities requiring a Permit To Work*

Non-Routine Work

Work Permits shall be used whenever it is intended to carry out dangerous, potentially hazardous, or non-routine activities that may affect the safety of personnel, the rig, or the environment. They are not normally used for routine operations.

When the need for a work permit is in question, the OIM shall decide when an operation is routine or non-routine for himself and his crew.

A work permit shall be completed any time an activity is covered by an active certificate (refer to Table 3.b) and any time additional controls and planning could benefit the safety of an operation.

Hot Work

- Hot Work includes welding and oxygen / acetylene cutting, electrical work during which a spark could be generated, grinding (fixed and portable), needle gunning and all other types of ignition sources.
- Use of non-ex electronic devices, including a digital camera, outside of accommodation areas.
- Refer to Hot Work Procedure

Confined Space Entry

- Confined Spaces include, but are not limited to; structural tanks, voids, storage tanks, mud pits, trip tanks, process vessels, sewer systems, ducts, manholes, pipelines, pits or areas which may contain toxic, corrosive, flammable or oxygen deficient (less than 19.5%) atmospheres.
- Refer to Confined Space Entry Procedure.

Work Over Water

- All work carried out over open water, outside the handrails and anywhere there is danger of falling into the sea.
- Refer to Working over Water Procedure

Use of Explosives

- Anytime explosives are removed from their certified shipping containers.
- Refer to Use of Explosives Procedure

Working with Radioactive Materials

- Anytime radioactive materials are removed from their certified shipping containers.
- Refer to Working with Radioactive materials Procedure

Energy Systems

- Any work on a system that contains stored energy. If applicable, stored energy pneumatic / hydraulic systems should (if possible) have two (2) independent isolations on each path between the work area and any remaining stored energy sources in the system. A vent path to the work area should also be provided whenever any portion of the affected system retains stored energy.
- Refer to Isolations Procedure

Maintenance of Critical Safety Systems

- Work which affects the state of the readiness of the installations safety systems such as the isolation of a gas alarm system or work on firefighting systems, halon (if applicable), CO_2, alarm signals and other lifesaving equipment.

Critical Lifts (Rigging and Lifting Manual)

- Lifts are identified as critical by the weight of the load, weather conditions, importance of the cargo to operation, or any personnel lift.
- Critical Lifts are defined as:
  - Any lift involving personnel.
  - The load exceeding 80% of the SWL/Capacity at any boom angle.
  - Any lift exceeding 20 tons or 40,000 lbs.
  - Any piece of equipment that if lost or damaged could shut down the rig.
  - Extreme or harsh weather conditions.
  - Non-routine lift.
  - The use of Synthetic Fiber slings.
  - Using two or more lifting appliances in tandem for one lift
  - Operator under training or new to the asset (for at least a few shifts for familiarization)
  - Lifting over- or in sensitive areas – active or energized hydrocarbon – containing equipment

- Critical Lifts are subject to a Critical Lift Permit-To-Work and other measures as outlined in the Rigging and Lifting Manual Section.

Man-Riding

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

- It is required that prior to embarking into any Man-Riding tasks, that all possible alternatives to avoid Man-Riding will be assessed and considered. If Man-Riding cannot be avoided with an alternative method, then it must be understood by all involved in the Man-Riding tasks, that Man-Riding has inherent risks and those risks must all be identified and mitigated to As Low As Reasonably Practicable (ALARP) prior to starting the Man-Riding tasks.
- Only personnel who have completed the Man-Rider Winch Competency Checklist will be Authorised as Competent by the OIM to conduct Man-Riding Operations.
- Refer to Man Riding Procedure

Environmental Sensitive Valves

- A Cold Work Permit is required to open Environmental Sensitive Valve.

  Refer to Drainage and Discharge Procedure

Other

- Other work not covered by the above where any supervisor or any risk assessment identifies the requirement of a Permit to Work to control risks.

2.2 *Implementation of the PTW system onboard the Installation*

2.2.1 *Permit To Work Administration*

The rig shall establish a dedicated PTW administration site (accessible 24 hours a day).

All blank copies of permit forms and Supplementary Certificates are to be made available.

- Permit Pads: Hot Work, Cold Work, Critical Lift, Man-Riding.
- Supplementary Certificates: Electrical and Mechanical Isolation Certificates, Work Over the Side, Confined Space Entry and Gas Test.

The PTW administration site is responsible for ensuring the PTW Register is maintained.

The following information will be made available:

- Instruction on how to compile your permit
- List of approved Work Site Supervisors (Table 2 of this procedure)
- List of approved Competent Persons (Isolation)
- List of qualified authorised Gas Testers
- Permit to Work Log Refer to (COR-FRM-0365)

The SPC is responsible for the implementation and monitoring of the PTW Administration Site to ensure the administration process is compliant with this procedure.

2.2.2 *Permit To Work Board*

Situated in a central location close to the OIM / Drilling office.

This magnetic board contains a schematic plan of all rig locations and a colour code of magnets are used to represent different permit types and isolations which are active in a location.

There are three duplicate copies to each Permit and Supplementary Certificate, each copy is to be posted as highlighted below:

- Original (OIM copy) PTW Administration Board.
- Work Site Supervisor.
- Work Site Supervisor shall have a dedicated location to retain active permits.
- Person Performing the Work (worksite copy).

All associated documentation accompanying the approved permit (worksite copy must also retain the Work Instruction or Job Safety Analysis (JSA), rescue plan, lifting plan etc.) must remain with the worksite copy for review.

2.3 *Terminated Permits*

Terminated Permits are to be collected from the designated location (OIM office / Permit Administration Site) filed and retained by the SPC, as per Record Retention Procedure.

2.4 *Roles and Requirements within the PTW Process*

Table 1 below outlines the various roles and responsibilities utilized within the PTW Process.

Table 1: Permit To Work Personnel Roles and Responsibilities

Role	Designated Title	Requirements
Permit Administrator	As designated by OIM	Permit Registration, assist with issuing of associated documentation and maintaining Permit To Work files
Originator	Competent Person	Person requiring the job to be done.
Person Performing the Work	Competent Person within the proposed task	Person working under the terms of the permit.
Work Site Supervisor	Area / Department / Technical Authority. Refer to Table 2 for list of applicable functions and work areas.	Person in control of the location where the work is to be carried out Borr Drilling Supervisor only.
Permit Approval Authority	OIM / Designee (Night Toolpusher)	Person authorizing approval of the permit for issue
Client onboard Representative	Client Representative	Acknowledgement of been aware of the permitted task

2.4.1 *Further Role Requirements*

Person(s) conducting job under a Permit to Work

It is the duty of the person(s) to whom the Work Permit has been issued to assure the work area and equipment complies with Work Permit details and requirements before, during, and after performing the job.

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

OIM

The OIM will:

- Review and approve Work Permits.
- Where applicable, inform the Client Representative on location of work to be performed under the Permit to Work System, and obtain approval signature on the permit form.
- Ensure personnel conducting the work are trained for the type of work they are performing.
- Ensure all third-party service personnel work under the Borr Drilling Permit to Work System and are supervised by Borr Drilling personnel.
- The rig management team and supervisors conduct regular worksite permit reviews.
- The OIM may choose to require permits for operations not listed routinely.

Toolpusher

The Toolpusher is responsible for ensuring a thorough review of safety precautions is conducted and where applicable, written instructions are provided to all personnel prior to commencement of the permitted work.

The OIM may designate the Toolpusher on nights as authority to approve Work Permits other than Hot Work and Man-riding.

In circumstances where there are two ToolPushers on nights, the OIM will designate only one as Permit Approval Authority.

Work Site Supervisor

A Work Site Supervisor must be a Borr Drilling employee who, through training and/or experience, is deemed to be qualified to oversee the particular job to be completed under the permit.

The Work Site Supervisor will:

- Inspect the work site before signing the permit.
- Determine:
  - The hazards associated with the task
  - Safety Equipment necessary for task.
  - Safety Procedures to be followed in doing the task.
  - If atmosphere is safe to conduct the task.
- Review and complete the relevant section of the Permit to Work form.
- Discuss it with the Person Performing the Work and crew who will be involved in the task.
- Once reviewed add their Signature giving the authorization to carry on the task.
- The Person in Charge (OIM or their appointed designee on nights) will review and sign their approval, and if applicable the Client Representative will also indorse with their signature.

- Approved PTW is issued to the Person Performing the Work who will post all copies as highlighted in section 2.2 of this procedure.
- Oversee the job to ensure Person Performing the Work and crew follow the permit.
- Stop the job if it is determined that the job is unsafe to continue.
- Review the work site with the Person Performing the Work, add signature to the Completion of Work section of the Permit and return the permit to the Person in Charge (OIM / Designee).

The Work Site Supervisor can vary depending on the work being performed and the equipment being worked on. Table 2 lists the Work Site Supervisors for each work area.

Table 2: Work Site Supervisors for Permit To Work

Area / System / Equipment	Work Site Supervisor
Rig Floor, Derrick and Associated Equipment	ToolPusher or Driller
Engine Room / Generator Room	Rig Maintenance Supervisor, Mechanic
Pipe Rack, Pipe Deck and Catwalk, Gantry Crane, and Riser Gantry Crane	Crane Operator, Deck Pusher, Barge Master
BOP Stack Area	Toolpusher, Driller,
SCR / Electrical Room	Electrician, Rig Maintenance Supervisor or Electronics Technician
Mud Pump Room	Toolpusher, Driller, Assistant Driller
Marine Systems	Barge Master

2.5 *Permit Validity*

Work Permits will be valid for a maximum of 12 hours or until the end of the shift of the person performing the work (whichever comes first). Revalidation of the permit to the next shift will not be permitted. There is no extension period on the Permit. In case the Work Site Supervisor changes for any reason, the new Worksite Supervisor is required to endorse the present Permit to Work.

2.6 *Handover Process*

When permitted work is to be carried over to another shift, the Work Site Supervisor will ensure that the work is understood, and the control measures are in place. This will be achieved by closing the existing permit and completion of a new Work Permit.

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

2.7 *Suspension of Permits*

A permit will be suspended for any of the following reasons:

- Activation of the general alarm / fire alarm or instructions on the PA system. All copies of suspended permits will be returned to the Permit Administration Site.
- At any time, any person feels that the circumstances have or may change such that precautions in place are not adequate or other activities (i.e. weather) could cause additional hazards.

It is found that the precautions in place are inadequate. There is no section for suspension / re-instatement of the Permit, therefore if the work is suspended, the Permit must be deemed terminated, and a new one raised for continuation of the work.

2.8 *Permit to Work Form and Certificates*

The Permit to Work System comprises of Four Permit Forms and Five Supplementary Certificates.

Table 3a: Types of Permits

Permit Type	Description	Associated Procedure
Cold Work	Required for non-routine work including confined space entry which does not involve spark potential or other types of ignition sources.	This procedure BMS – Various
Hot Work	Hot Work includes welding and oxygen / acetylene cutting, electrical work during which a spark could be generated, grinding (fixed and portable), needle gunning and all other types of ignition sources.	COR-PRO-0580 - Hot Work COR-PRO-0524 - Atmospheric Testing and Analysis COR-FRM-0333 Fire Watch Checklist
Man-Riding	Man Riding is defined as the raising/lowering of a person using a certified man riding winch, with the person wearing an approved full body harness that is directly connected to a hoist with a triple action carabiner.	COR-PRO-0590 - Man Riding COR-FRM-0363 - Man Riding Winch Permit to Work Form COR-FRM-0347 - Man Rider Quiz COR-FRM-0341 - Man Riding Competent Persons Register Form COR-FRM-0350 - Record of Man-Riding Operations Form COR-FRM-0365 - Rescue Plan Check Sheet COR-FRM-0348 – Man Riding and Hoist Skill Verification

Critical Lift	Lifts are identified as critical by the weight of the load, weather conditions, importance of the cargo to operation, or any personnel lift.	COR-PRO-0713 - Rigging and Lifting Manual COR-PRO-0706 - Addendum to Rigging and Lifting Manual (North Sea Region) COR-FRM-0582 - Lift Plan COR-PRO-0599 - Personnel Transfer and Work Baskets

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

Table 3b: Supplementary Certificates (issued with the relevant Permit To Work Form)

Certificate Type	Description	Associated procedure
Gas Test Certificate	Gas test requirement for all hot work tasks, and tasks including Confined Space Entry where atmospheric testing is required.	COR-PRO-0580 - Hot Work COR-PRO-0524 - Atmospheric Testing and Analysis
Confined Space Entry Certificate	Confined Space Entry Certificate is required prior to the start of any job associated with being classified as a Confined Space.	COR-PRO-0537 - Confined Space Entry COR-PRO-0524 - Atmospheric Testing and Analysis
Over The Side Certificate	Working over Water, working over the side of the rig, or in a location were there is a potential to fall overboard.	COR-PRO-0476 - Working Over Water COR-PRO-0472 - Work Vests and Life Jackets COR-PRO-0475 - Working At Height
Electrical Isolation Certificate	Equipment /Systems/Processes shall be identified and surveyed to ensure that all Electrical sources of energy to the equipment can be locked out and removed.	COR-PRO-0574 – Isolations COR-PRO-0554 - Electrical Equipment COR-PRO-0482 - Stored Pressure COR-PRO-0596 - Permit To Work
Mechanical Isolation Certificate	Equipment /Systems/Processes shall be identified and surveyed to ensure that all sources of energy to the equipment can be locked out and removed.	COR-PRO-0574 - Isolations COR-PRO-0554 - Electrical Equipment COR-PRO-0482 - Stored Pressure

2.9 *Life Saving Rules*

A set of rules with key actions to be taken to prevent fatal injuries during higher-risk activities.

Life Saving Rules should be considered during all Task Planning.

Work Authorisation is more than just a person in charge signing a Permit to Work form: it is seeking and having authorisation to start, resume, or hand-over a task.

The person in charge of the work confirms that it is safe to start, that controls are in place and effective and the task can be performed as planned.

If anything changes during the work, stop and reassess. (Stop Work Authority).

Work Authorisation

Work with a valid permit when required

- I have confirmed if a permit is required
- I am authorised to perform the work
- I understand the permit
- I have confirmed that hazards are controlled and it is safe to start
- I stop and reassess if conditions change

2.10 *Simultaneous Activities*

Simultaneous activities are those tasks that are occurring at the same time and could create additional hazards/risks for each other. Follow the steps below to ensure risks from simultaneous activities are assessed and controlled to reduce risks to acceptable levels.

- Are there any simultaneous activities occurring that could impact or be impacted by the current task?
- Can the simultaneous activities by avoided? – Yes/No
- If yes, then execute task at different times
- If No, then ensure risk assessments have been carried out for the individual tasks and tasks have assessed for joint hazards / risks.
- Ensure controls are in place to reduce the individual and joint risks to acceptable levels prior to approving permit.

Permit approver shall ensure that risks from simultaneous activities have been reduced to acceptable levels and documented with the attached Pre-Job Review or JSA, prior to approving the Permit.

2.11 *Training*

The Safety Performance Coach (SPC) is responsible for providing necessary training to Supervisors, Employees, and third-party service personnel to ensure all personnel are competent in their ability to participate on their own with the PTW System.

All Borr Drilling personnel will be required to complete online Computer Based Training as per rig specific training matrix requirements.

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

2.12 *Cold and Hot Permit to Work Form Overview*

Outlined below is an overview of the PTW Form structure:

Section 1

The person requesting the permit, in conjunction with Work Site Supervisor completes section 1

Section 2

A Pre-job review /JSA shall be carried out and Isolation / supplementary certificates completed before the Permit is approved. The Pre-job review/ JSA to detail hazards/risks arising from simultaneous activities, if any, and control measures in place.

The Work Site Supervisor and Person Performing the Work complete and sign section 2 to confirm that all necessary precautions indicated by the Pre-job Review /JSA are taken.

Section 3

The Mechanic and / or Electrician completes section 3 where necessary.

Section 4

Where required, the Authorized Gas Tester completes and signs section 4. If the work involves entry into confined space, a Confined Space Entry Certificate and Gas Test Certificate must be completed and accompany the permit.

Section 5

After reviewing and ensuring validity of all associated documents, the OIM approves the Work Permit by completing and signing section 5.

Section 6

On completion of the task, all three copies are to be obtained and the Person Performing the Work will highlight completed or suspended and add signature accordingly The Worksite Supervisor will add their signature upon inspection and approval that the worksite has been left in a safe and satisfactory condition.

Section 7

Where applicable, Mechanic / Electrician will carry out de-isolation (s), complete and sign section 7.

Section 8

The OIM acknowledges termination of the permit by completing and signing section 8. The signed original, complete with any original associated documents shall then be filed.

There is no facility for suspension/ re-instatement of the Permit, therefore if work is suspended, the Permit must be deemed terminated, and a new one raised for continuation of work.

Permit to Work Forms Specifications:

All copies in each pad category are the same:

- Hot Work Permit copies are pink.
- Cold Work Permit is blue

- Certificates are yellow
- Critical lift Permit is green
- Over the side Work Permit certificate is white.

3 Permit to Work System Audits

As a minimum, the SPC shall complete one PTW System audit per hitch utilising the Permit To Work System Audit Checklist. Refer to Permit to Work System Audit Checklist (COR-FRM-0359).

The OIM is responsible for ensuring the rig management team and supervisors conduct regular worksite permit reviews, also utilizing the Permit To Work System Audit Checklist.

4 Records Retention

Completed Permit To Work Forms and Supplementary Certificates are required to be retained with all associated documentation for a period of five (5) years from the date of issue.

Attachments

Appendix 1 - Permit to Work Form Specifications

Reference Documents

- COR-PRO-0596 - Permit to Work
- COR-FRM-0354 - Permit to Work Log
- COR-FRM-0359 - Permit to Work System Audit Checklist
- COR-POL-0030 - Stop Work Authority Policy
- COR-POL-0031 - Life Saving Rules Policy
- COR-PRO-0580 - Hot Work
- COR-PRO-0524 - Atmospheric Testing and Analysis
- COR-PRO-0590 - Man Riding
- COR-PRO-0548 - Work Instruction/ Hazard Analysis
- COR-PRO-0543 - Job Safety Analysis
- COR-FRM-0318 - Job Safety Analysis Form
- COR-PRO-0574 - Isolations
- COR-PRO-0537 - Confined Space Entry
- COR-PRO-0476 - Work Over Water
- COR-PRO-0478 - Use of Explosives
- COR-PRO-0477 - Working with Radioactive Materials

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

- COR-FRM-0358 - Hot Permit to Work Form
- COR-FRM-0356 - Cold Permit to Work Form
- COR-FRM-0357 - Critical Lift Permit to Work Form
- COR-FRM-0363 - Man-Riding Winch Permit To Work Form
- COR-FRM-0351 - Mechanical Isolation Certificate
- COR-FRM-0324 - Confined Space Entry Certificate
- COR-FRM-0364 - Work Over the Side Certificate
- COR-FRM-0336 - Gas Test Certificate
- COR-PRO-0604 - Records Retention
- COR-FRM-0347 - Man Rider Quiz
- COR-FRM-0341 - Man Riding Competent Persons Register Form
- COR-FRM-0350 - Record of Man-Riding Operations Form
- COR-FRM-0365 - Rescue Plan Check Sheet
- COR-FRM-0348 - Man Riding and Hoist Skill Verification

Appendix 1 - Permit to Work Form Specifications

Forms	Specification	Number Series	Number	Colour
Cold Work Permit	Triplicate, footer to have Copy1 in first sheet, Copy 2 in Second sheet and Copy 3 in third sheet. Use NCR sheets so that when writing on Copy 1 it replicates on Copy 2 and Copy 3. All three copies in Blue.	Starts with 0001 for each rig and then continues	50 forms in each book Eg: 0001-0050	R - 213; G - 239; B - 255
Hot Work Permit	Triplicate, footer to have Copy1 in first sheet, Copy 2 in Second sheet and Copy 3 in third sheet. Use NCR sheets so that when writing on Copy 1 it replicates on Copy 2 and Copy 3. All three copies in Pink.	Starts with 0001 for each rig and then continues	50 forms in each book Eg: 0001-0050	R - 254; G - 214; B - 228
Critical Lift	Triplicate, footer to have Copy1 in first sheet, Copy 2 in Second sheet and Copy 3 in third sheet. Use NCR sheets so that when writing on Copy 1 it replicates on Copy 2 and Copy 3. All three copies in Green.	Starts with 0001 for each rig and then continues	50 forms in each book Eg: 0001-0050	R - 219; G - 235; B - 209
Man Riding	Triplicate, footer to have Copy1 in first sheet, Copy 2 in Second sheet and Copy 3 in third sheet. Use NCR sheets so that when writing on Copy 1 it replicates on Copy 2 and Copy 3. All three copies in White.	Starts with 0001 for each rig and then continues	50 forms in each book Eg: 0001-0050	WHITE

Permit to work			
COR-PRO-0596	Corporate - Control of Work	Ver: 6	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

PERMIT – TO – WORK

HOT Rig Name: _____ **PERMIT NO.** H000001-[Y][Y]

1. REQUEST

Location of Work:	Required Certificates	Mechanical Isolation ☐ #	
Nature of Work:		Electrical Isolation ☐ #	
		Gas Test ☐ #	
		Confined Space ☐ #	
		Work Over The Side ☐ #	
Requested by: (Person Performing Work)		From:	Date:
Raised by: (Work Site Supervisor)		To:	Date:

2. PRECAUTIONS

We, the above named persons in section 1, have discussed the work and agree to the work provided the following precautions are taken:

Isolation (Elec.)		Pre-Job Meeting	
Isolation (Mech.)		Pollution Prevention	
Protective Clothing		Standby Watch	
Eye Protection		Radio Communication	
Ear Protection		Standby Boat	
Hand Protection		Life Vest	
Fire (Watch)		Safety Harness	
Gas Test		Erect Barriers	
B.A. Set		P.A. Announcement	
Ventilation		Radio Silence	

WI Ref. # _____

Any simultaneous activity that impacts and/or could be impacted by this task? - Yes / No

Joint task risks identified and control measures in place and documented in Pre-Job Review/JSA? Yes / No

Others/Comments:

Signature: _____(Work Site Supervisor)

Signature: _____(Person Performing Work)

Signature: _____(Fire Watch)

3. ISOLATION

I certify that the required isolation measures specified on the attached isolation certificate have been carried out.

Signature: _____

Position: _____(Mech./Elec.)

Electrical Isolation Certificate Attached	Yes	No
Mechanical Isolation Attached	Yes	No

4. GAS TEST

I certify that gas tests have / will be carried out as per requirements of attached Gas Test Certificate.

Signature: _____(Authorized Gas Tester)

5. PERMIT-TO-WORK APPROVAL

Remarks:

This permit is issued to _____(Person Performing Work) to carry out the stated work in section 1 and follow the precautions in section 2.

Signature: _____(OIM) Time: _____ Date: _____

Signature: _____(Operator Rep) Time: _____ Date: _____

6. COMPLETION OF WORK

I declare the work carried out under this permit has been Completed / Suspended and all Persons / Equipment connected with the permit have been withdrawn from the worksite.

Signature: _____(Person Performing Work) Time: _____ Date: _____

I have checked the worksite and declare the work carried out in connection with this permit is complete and the Area / Equipment is safe for normal use.

Signature: _____(Work Site Supervisor) Time: _____ Date: _____

7. DE-ISOLATION

Permit to Work Hot			
COR-FRM-0358	Corporate - Control of Work	Ver: 2	Issued: 16/04/2021
Owner: VP QHSE	Approver: Chief Operating Officer		
Risk classification:	Information classification:		

I hereby certify that I have carried out the necessary de-isolations, replaced all guards and safety devices, and the equipment is safe for normal use.

Signature: _____(Mech. / Elec.) Time: _____ Date: _____

8. PERMIT-TO-WORK TERMINATION

I declare this "Permit-to-Work" terminated.

Signature: _____(OIM) Time: _____ Date: _____

1st Copy – OIM 2nd Copy – WORK SITE SUPERVISOR 3rd Copy – PERSON PERFORMING WORK

THIS PERMIT IS VALID FOR ONE SHIFT ONLY

Permit To Work – Hot Work
Form No.: SM 010-012

Vessel:	Date of Issue:	PTW Consecutive Number:
MP. PRESTIGE	23-SEP-2024	Associated JSA Number:

HOT WORK AUTHORISED

From *(Date and time permit starts)*:	23-SEP-2024 09:00 LT	To *(Date and time permit expires)*:	28-SEP-2024 18:00 LT

Description of equipment involved / work to be carried out: Welding & Repair FIFI SW. pipe for FIFI PUMP (P88)	Name(s) - Personnel performing task: [redacted]
	Name(s) – Watch / Firewatch: [redacted]

This Permit to Work is only valid / permission to carry out the work described is only granted when the following items have been positively confirmed and the PTW has been approved. If there are any doubts or concerns, the Master or OOW is to be informed immediately:

ITEM (To be checked by the Task Supervisor)	Checked
1. Pre-Task Planning inclusive of Risk Assessment / JSA and Toolbox Talk conducted and documented	✓
2. Personnel informed regarding the hot work in progress & arrangements made to inform those currently resting who may not be aware of the hot work.	✓
3. Working area and all adjacent areas and spaces are free from combustible material	✓
4. Working area and all adjacent areas and spaces are gas free (gas free certificate to be attached if applicable)	✓
5. Working area are free from thermally sensitive equipment and are adequately ventilated	✓
6. Fire detection loop(s) disconnected	✓
7. Fire precautions in place and fire fighting equipment provided at the work site	✓
8. Fire watches designated and posted. (Fire watch continuous inspection arrangements to be in place for a minimum of 2 hours after completion of the hot work)	✓
9. Adequate illumination and safe access provided	✓
10. Electric arc welding – cables, connections and electrode holder verified in good condition	✓
11. Oxy / acetylene equipment – regulators, gauges, hoses and connections verified in good order	✓
12. Flashback arrestors in place	✓
13. All involved personnel are properly equipped with the correct PPE for the tasks involved	✓
14. Special / Other precautions (specify):	✓

Permit To Work – Hot Work
Form No.: SM 010-012

Task Supervisor (Name / Position / Signature): [redacted]

This Checklist approved by Master / Designate (Name / Position / Signature): [redacted]

Does the PTW require Shore Management approval? (*Shore approval required for hazards with residual risk rating in the "HIGH" & "VERY HIGH" areas*). Yes ☐ No ☑

If "Yes" PTW approved by (Shore Management) _____ Name / Job Designation _____ Date / Time

CANCELLATION

Hot work is no longer required because (delete as necessary)

~~1. The work is suspended and the area is left in a safe condition~~

2. The work is completed and the area has been restored to operational condition.

Safety Officer / Designate (Signature)	Task Supervisor (Signature)
[redacted]	[redacted]

Before work starts, copies of this permit are to be posted at the work site, given to the OOW on the bridge, the Engineer OOW in the Engine Control Room and posted on the ship's notice board. When work is completed or suspended, or upon expiry of this permit, the person in charge of the work is to remove the posted and issued copies, then complete the bottom section of one original. This original is to be filed onboard for a period of 6 months.

The maximum duration of any Permit to Work is 12 hours.

REVISION: 0.0
DATE: 1 Feb 2023
APPROVED BY: Chief Executive Officer

EDITION 2022

Permit To Work – Hot Work

Form No.: SM 010-012

Vessel:	Date of Issue:	PTW Consecutive Number:
MP PROSPER	12 DEC 2024	PTW/241212/10
		Associated JSA Number: 26

HOT WORK AUTHORISED

From *(Date and time permit starts)*:	12 DEC 24 1435 HRS.	To *(Date and time permit expires)*:	12 DEC 24 2100 HRS.

Description of equipment involved / work to be carried out:	Name(s) - Personnel performing task:
CUTTING / GRINDING, UNINSTALL MVM SURVEY EQUIPMENTS. ON MAIN DECK	Name(s) – Watch / Firewatch: CHANON B / SIRIMSUK O.

This Permit to Work is only valid / permission to carry out the work described is only granted when the following items have been positively confirmed and the PTW has been approved. If there are any doubts or concerns, the Master or OOW is to be informed immediately:

1. Pre-Task Planning inclusive of Risk Assessment / JSA and Toolbox Talk conducted and documented	✓
2. Personnel informed regarding the hot work in progress & arrangements made to inform those currently resting who may not be aware of the hot work.	✓
3. Working area and all adjacent areas and spaces are free from combustible material	✓
4. Working area and all adjacent areas and spaces are gas free (gas free certificate to be attached if applicable)	✓
5. Working area are free from thermally sensitive equipment and are adequately ventilated	✓
6. Fire detection loop(s) disconnected	✓
7. Fire precautions in place and fire fighting equipment provided at the work site	✓
8. Fire watches designated and posted. (Fire watch continuous inspection arrangements to be in place for a minimum of 2 hours after completion of the hot work)	✓
9. Adequate illumination and safe access provided	✓
10. Electric arc welding – cables, connections and electrode holder verified in good condition	✓
11. Oxy / acetylene equipment – regulators, gauges, hoses and connections verified in good order	✓
12. Flashback arrestors in place	✓
13. All involved personnel are properly equipped with the correct PPE for the tasks involved	✓
14. Special / Other precautions (specify):	N/A

Permit To Work – Hot Work
Form No.: SM 010-012

Task Supervisor (Name / Position / Signature):

This Checklist approved by Master / Designate (Name / Position / Signature):

Does the PTW require Shore Management approval? (*Shore approval required for hazards with residual risk rating in the "HIGH" & "VERY HIGH" areas*). Yes ☐ No ☑

If "Yes" PTW approved by: (Shore Management) _____ Name / Job Designation _____ Date / Time

CANCELLATION

Hot work is no longer required because (delete as necessary)

~~1. The work is suspended and the area is left in a safe condition.~~

2. The work is completed and the area has been restored to operational condition. @ 1700 HRS.

Safety Officer / Designate (Signature)	Task Supervisor (Signature)

Before work starts, copies of this permit are to be posted at the work site, given to the OOW on the bridge, the Engineer OOW in the Engine Control Room and posted on the ship's notice board. When work is completed or suspended, or upon expiry of this permit, the person in charge of the work is to remove the posted and issued copies, then complete the bottom section of one original. This original is to be filed onboard for a period of 6 months.

The maximum duration of any Permit to Work is 12 hours.

- KAMPTON BYO-SMENA / SVP.
- LOYGLOW DEKONOG
- NOMBOG DARKSKA-KON

REVISION: 0.0
DATE: 1 Feb 2023
APPROVED BY: Chief Executive Officer

EDITION 2022

เอกสารแนบที่ 38

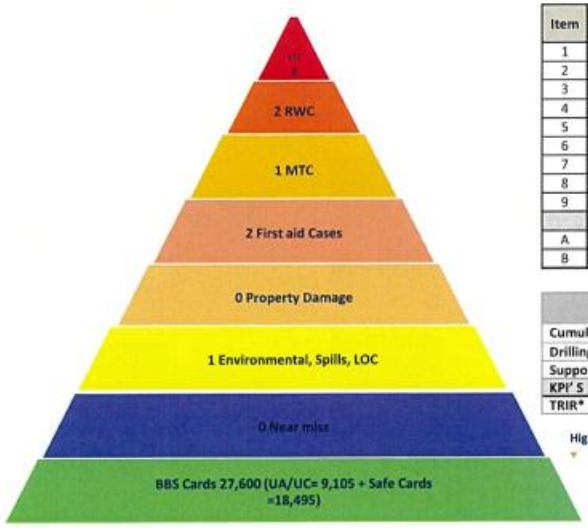
Drilling Rig HSSE Statistic

2024 Drilling & Workover Operation & HSSE Highlight

2024 Drilling Program (Duration = 1st January to 31st December which achieved significant milestone for all of us as Mist Rig Team, support vessels and all Business partners has reached 2 years without Lost Time Incident (LTI)

- **Safety:**
- **LTIR = Zero**
- **TRIR = 0.20 (Company KPIs) , Drilling & Workover is 0.86**
- **Hipo incident = No**
- **All rig moves and rig inspection with all safely.**
- **Mist Rig Open House**
- **Drilling & Wellservice team attended HSSE refresher training and team building meeting.**
- **CSR-VE Scholarship at Rayong**
- **27,600 BBS Cards submitted (UA/UC= 9,105 & Safe Cards =18,495)**
- **87 times emergency exercise conducted**
- **Project Delivered:**
- **New well delivery 23 wells in year 2024**
- **2024 Workover Summary, Total Workover = 10 wells (8 wells by HWU and 2 wells by Drilling Rig)**

Drilling & Workover HSSE Statistic 2024 Campaign



Item	Incident	Drilling 2024	Workover 2024
1	Fatalities (FAT)	0	0
2	Lost Time Injury (LTI)	0	0
3	Restricted Work-Day Case (RWC)	2	0
4	Medical Treatment (MTC)	1	0
5	First Aid Cases (FAC)	2	0
6	Occupational Illnesses (OI)	0	0
7	Environmental, Spills, LOC	1	0
8	Property damage/loss	0	0
9	Near miss	0	0
	Total	6	0
A	High Potential (HiPo)	0	0
B	Total BBS reports	26,757	843

Man-Hours Worked	Drilling	Workover
Cumulative Man-hour	653,592	41,964
Drilling Rig BORR Mist /Workover (HWO)	525,756	41,964
Support vessels (Prestige & Prosper)	127,836	None
KPI' S	Target	Up to date
TRIR* 2024 (Company KPIs 0.20)	Drilling & Workover is 0.86	

High Potential Incident (HiPo):
- No

Remark- Only MH activities of Well Service HWU 340K Q1-Q2/2024

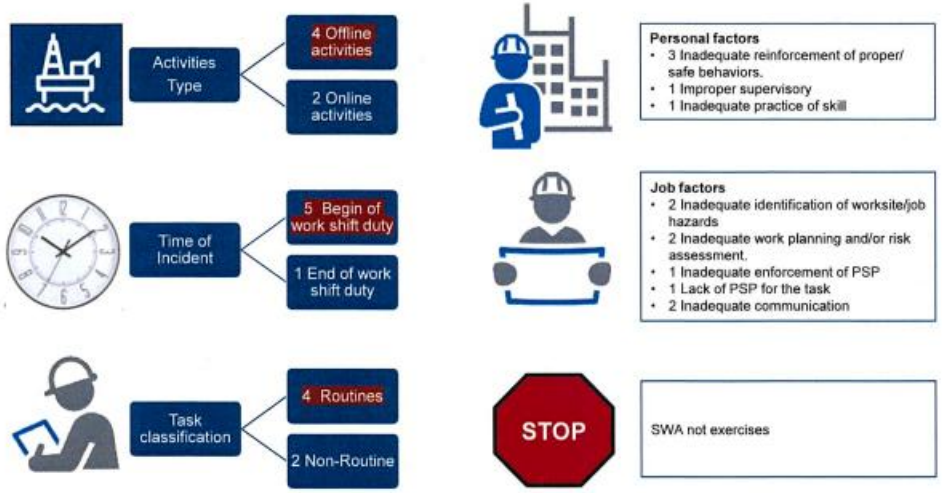
2024 Drilling & Workover Campaign

Table of Contents

- Drilling & Workover HSSE & Operations Highlights
- HSSE Statistics
- Drilling & Workover Incidents highlight
- BBS Card Awards & HSSE Champion of the Month
- HSSE Campaign & Engagement
- Monthly HSSE Highlight 2024

Incident root cause analysis

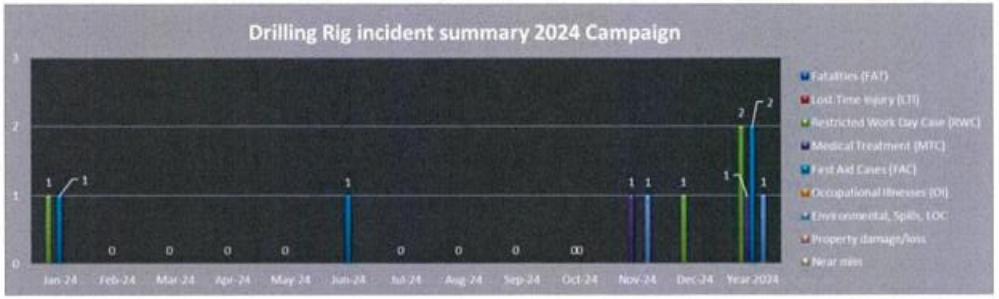
Summary 2024 rig incident root cause analysis



Drilling & Workover Incidents Summary 2024

Drilling Rig & Workover Incident summary 2024 Campaign

Incident Classification	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Year 2024
Fatalities (FAT)	0	0	0	0	0	0	0	0	0	0	0	0	0
Lost Time Injury (LTI)	0	0	0	0	0	0	0	0	0	0	0	0	0
Restricted Work-Day Case (RWC)	1	0	0	0	0	0	0	0	0	0	0	1	2
Medical Treatment (MTC)	0	0	0	0	0	0	0	0	0	0	1	0	1
First Aid Cases (FAC)	1	0	0	0	0	1	0	0	0	0	0	0	2
Occupational Illnesses (OI)	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental, Spills, LOC	0	0	0	0	0	0	0	0	0	0	1	0	1
Property damage/loss	0	0	0	0	0	0	0	0	0	0	0	0	0
Near miss	0	0	0	0	0	0	0	0	0	0	0	0	0



Incident information

08 Jan 2024 RWC-IP got lacerates on right middle finger while changing crane boom wire (Offline work)

On 08 Jan 2024 at 04:40 AM, Whilst changing out the boom wire on the Port Aft Crane, the IP was adjusting the sling securing the rope socket on the cantilever deck. Concurrently three (3) co-workers pulled on the boom wire rope to set the wire rope into the socket body.

This sudden movement pulled the IPs hand in toward the socket making contact with the square edge of the socket body causing the laceration and fractured fingertip. Work stopped and the IP contacted the Medic for treatment.

15 Jan 2024 FAC-IP receives laceration on chin while placing casing stabbing guide on stump.

On 15th January 2024 at 14:00hrs, the operation was running 7" casing in the hole. The IP who had only arrived back on the rig today, was assigned the task to install the casing stabbing guide on the casing stump secured in the rotary slips prior to making the connection.
Casing joint # 165 was ran in the hole and set in the rotary slips ready to make up to the next casing joint. The IP installed the stabbing guide as discussed in the JSA, however the IP's wrist came into contact with the latch mechanism as he was inserting the guide over the collar, which inadvertently opened the stabbing guide enough to slide over the casing collar and down over the stump. This resulted in the IP to slightly lose balance and his chin contacted the casing collar / coupling.

2024 Incidents highlight

Summary 2024 Drilling & Workover incident root cause analysis

Date	Time	Description	Immediate causes	Root cause- Personal factors	Root cause- Job factors
08 Jan 2024	04:40 AM	RWC-IP got lacerates on right middle finger while changing crane boom wire (Offline work) (non-routine)	• Failure to warn.	• Improper supervisory example • Inadequate reinforcement of proper/ safe behaviors.	• Inadequate vertical communication between supervisor and person. • Inadequate identification of worksite/job hazards
15 Jan 2024	02:00 PM	FAC-IP receives laceration on chin while placing casing stabbing guide on stump (Online work)	• Improper placement of tools, equipment, or materials. • Routine activity without thought.	• Inadequate practice of skill	• Lack of PSP for the task
19 Jun 2024	01:00 PM	FAC - IP Pinches Finger While Maneuvering Oil Drums (Offline work)	• Inattention for footing and surroundings • Defective tools	• Inadequate identification of proper/ safe behaviors or unsafe behaviors not confronted.	• Inadequate work planning and/or risk assessment. • Inadequate identification of worksite/job hazards. • Defective tools and equipment
23 Nov 2024	08:00 AM.	LOC- During working on X-Mass Tree and flowline. (Offline work) (non-routine)	• Under finalizing the root cause analysis		
26 Nov 2024	03:00 AM.	MTC–IP received well fluid splash into eye while performing P&A operations (Online work)	• Routine activity without thought. • Improperly prepared equipment.	• Inadequate reinforcement of proper/ safe behaviors	• Inadequate assessment of needs and risks. • Inadequate availability of tools and equipment. • Inadequate enforcement of PSP
19 Dec 2024	03:20 AM.	RWC-IP finger was caught between pipe spinner and basket at the end of lifting operation. (Offline work)	• Under finalizing the root cause analysis		

Drilling Rig HSSE Champaign of the Month

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HSSECQ CHAMPION OF THE MONTH

Drilling Rig BBS/Hazard Observation Card Award

Incident information

19 June 2024 FAC - IP Pinches Finger While Maneuvering Oil Drums (Offline work)

IP was maneuvering oil drums in a half height basket, then was preparing to use the drum lifter to hoist and stow onto the drum rack.

IP attempted to tilt the drum over enough to slide the drum lifter under, but due to the weight of the drum, the IP could not control the load and subsequently pinched his finger between the drum and another drum in the open top half height basket.

23 Nov 2024 LOC; During working on X-Mass Tree and flowline

On 23 November 2024 at 08:00 AM, The operation team proceeded with the process of isolation for well slots A2, A5 and A6. Required platform shutdown due to isolation valve of slot A6 passing. Process isolation is not start yet, OPT are depressurizing and draining liquid of all flowlines and there still pressure trapped in the line.

The rig crew proceeded to remove slot A6 flowline and found there were pressure and liquid trapped in the line. Some crude oil was splashed to the Mezzanine deck floor estimated 18 - 20 liters.

Manora Supervisor exercised SWA and explained the rig crew that the job was not allowed. He commenced safety standdown and notified to drilling supervisor for incident investigation process

Incident information

26 Nov 2024 MTC--IP received well fluid splash into eye while performing P&A operations (Online work)

On 26 Nov 2024 at 03:00 am., while conducting P&A operations, the tubing hanger was unseated, and ESP Packer released. Waited 30 minutes for the Packer to relax while monitoring the well on the Trip Tank. Confirmed well was static. After the packer relaxed the string started to flow with u-tubing well fluids due to a fluid weight imbalance in the well.

A crew member assisted to install a Fully Opening Safety Valve (FOSV) onto the tubing hanger retrieval string. After the FOSV was installed and closed, the u-tubing well fluids stopped flowing.

The crew member received fluid splash and was sent to the change room to change coveralls. While in the change room he reported to the Medic that he was experiencing irritation in both eyes. Medic irrigated both eyes with saline fluid, no foreign debris observed, and both eyes did not appear to have sustained any injury or adverse effects. Full PPE plus Tyvek suit was worn.

19 Dec 2024 RWC-IP finger was caught between pipe spinner and basket at the end of lifting operation.

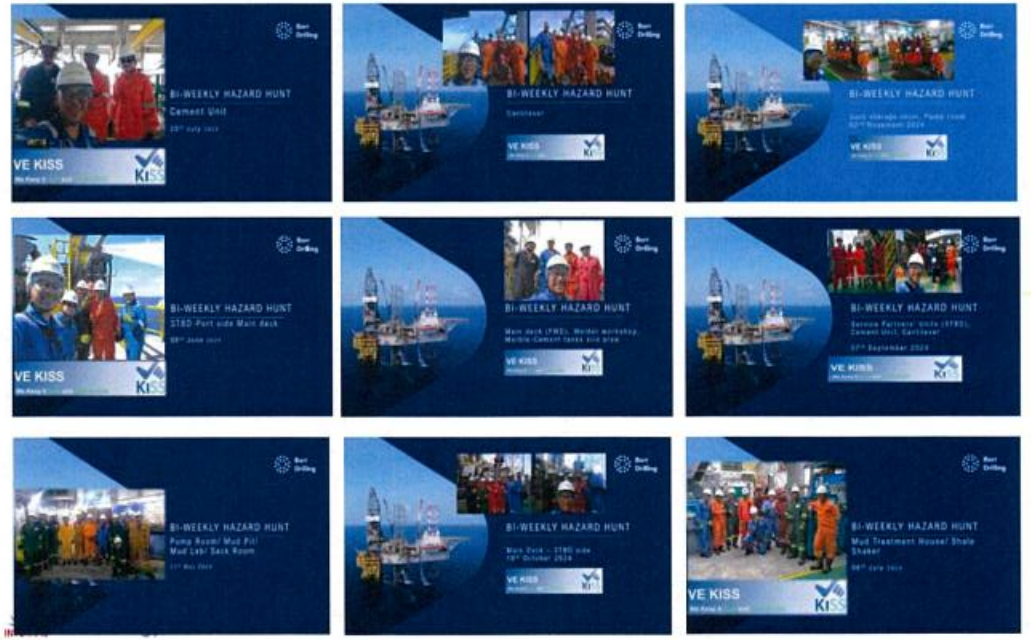
On 19 Dec 2024 at 03:30 am., During routine lifting operation, deck crew was preparing pipe spinner to backload by transferring from storage area to main deck. After load was landed on main deck, the IP went to disconnect crane stringer hook and laid on top of pipe spinner.

Meanwhile a banksman was giving signal to crane operator to lift stringer hook clear from the load, but due to slack of stringer wire the end hook was fell through the spinner handle and ferrule stringer entangled with pipe spinner operating handle with resulting the load was suddenly lift, flip over to opposite direction, and leaned onto the basket edge nearby.

However, at the same time IP stand in between basket and he placed left hand on the basket edge while removing lifting wire sling out from the load. Once the load was accidently lifted and flipped over toward to basket, the IP hand was caught between pipe spinner and basket resulting in left hand middle finger injury. The IP went clinic and onsite medic provided first aid treatment then consulted with ISOS doctor. There is recommend for non-emergency disembarkation and ground transportation to onshore hospital for further evaluation and treatment. Full PPE impact gloves is utilized

VE KISS : We Keep It Safe and Sustainable

HSSE Campaign & Engagement



Rig VE KISS In Action

HSSE Campaign & Engagement

HSSE Campaign & Engagement Well Service/Workover HWU 340K

2024 Highlight

- HWU 340K HSSE Pre-mobilization (induction & training and document review/unit inspection).
- VE team management site visit HWU 340K at EEST yard before loadout and mobilize to Manora field.
- Provided H2S Awareness refresher & chemical awareness training.
- Rolled out VE KISS campaign.
- Fully complied of VE safe system of work such as heavy lifting operation , PTW, Emergency response, Hygiene inspection, EEST PBED process.

HIGHLIGHT ACTIVITIES
EMERGENCY DRILL - H2S RELEASE AND MEDEVAC DRILLS

HIGHLIGHT ACTIVITIES
WEEKLY HYGIENE INSPECTION

HIGHLIGHT ACTIVITIES
PBED PROCESS (PLAN, BRIEF, EXECUTE & DEBRIEF)

HSSE Engagement Actions

SWA Engagement by HOD/Supervisors engage with junior crew/ business partner for each department. Execution by team at the activity on worksite, to discuss on hazards and mitigation control, Junior crew to perform SWA exercise and perform debrief for lesson learned

The basic process is as follows:
1) **Supervised:** Supervisor should supervise junior crews on-site, reviewing the overall tasks to be observed (refer to the attached plan).
2.) **Purpose of the Plan:** To empower and train individuals to stop work when identify unsafe conditions or behaviors.
3.) **Conditions for Stopping Work:** Remind everyone that you have the authority to stop work if unsafe behavior or conditions arise, and that this applies both ways—"You can stop me, I can stop you."
4.) **Communication:** Discuss the next steps, complete necessary paperwork, identify potential hazards, and conduct a dynamic risk assessment using the STOP-THINK-ACT-REVIEW approach, and any method that you want to.
5.) **Debrief:** Conduct a cross-functional review, sharing feedback and identifying areas for improvement.

Once completed, please report the results in the BBS card system for daily participation.

HSSE Campaign & Engagement Well Service/Workover HWU 340K

HIGHLIGHT ACTIVITIES
PBED PROCESS (PLAN, BRIEF, EXECUTE & DEBRIEF)

HSSE Engagement Actions

- Frontline supervisors/HOD/VE/Business partners to conduct daily HSSE engagement with crew working at the site, verify & validate safe system of work implementation, debrief lesson learn and team commitment/agreement to working safe.
- Supervisor/HOD enhancement "Planned to Stop" for any planning change, people change, or various steps or long operation. Execution by regroup, review risk , next action (specific prime times such as before/after break, on/off shift, new joiner, etc.,)

HSSE Highlight Feb 2024

- Rig manager, VE HSSE and SPC conducted visible HSSE engagement and intervention rig crew (floor man, marine crew, maintenance crew)
- Mist rig HSSE follow up meeting (Mist HSSE plan, HCC audit action update, IIR final report, etc.).
- Planning for2024 HSSE campaign & Engagement (H&F injury prevention and Line of fire -Onsite Visible Engagement/Intervention)
- Prepared HSSE presentation for Drilling & Well service Q3-Q4 2023 SQM meeting.
- Supported Helicopter OJT training for Wassana MOPU operation team.
- Mist rig HSSE committee meeting.
- Conducted integrate emergency exercise scenario "Medical Escort/Medevac" from MOPU to Drilling rig.
- Site visited MOPU, discussed with Wassana OIM on drilling operation and other HSSE concern.
- SIMOPs requirements for well handover document, clarify understanding with Wassana OIM and production Lead.
- Continue HSSE engagement with rig crew and business partners especially SSE onboard.
- Finalized and submitted monthly HSSE champion of the month Feb 2024.

HSSE Campaign & Engagement Well Service/Workover HWU 340K

HSSE Highlight Mar 2024

- SQM Q3-Q4 2023 meeting
- VE Lifting inspection and Color Code Campaign 2024 "YELLOW"
- Monthly health talk topic "Tuberculosis & Heat Stroke awareness"
- SIMOPs compliance review with MOPU team for well handover and isolation requirements.
- 2024 Mist rig workplace monitoring program.
- Roll out drilling rig 2024 safety campaign H&F prevention and line of fire awareness.
- Nong yao-13 Pre spud meeting & rig move operation meeting.
- Rig move operation from Wassana MOPU to Nong Yao-13 OWW location
- Performed drug random test for drilling rig personal 4 groups (all are NEGATIVE result.)
- Rig move operation from OWW Nong Yao-13 OWW to Niramai-4 location
- Continue HSSE engagement with rig crew and business partners especially SSE onboard.
- Finalized and submitted monthly HSSE champion of the month Mar 2024.

HSSE Highlight Jan 2024

- Management site visit drilling rig (VE drilling Manger, VE Drilling team-lead, Borr Rig Manager).
- 2024 Blessing/Merit ceremony on Mist rig with personnel onboard.
- Finalized Borr Mist HSSE plan 2024.
- Submitted Annual HSSE Performance and Statistic Report Drilling Campaign 2023.
- Site visited MOPU, discussed with Wassana OIM on drilling operation and other HSSE concern.
- SIMOPs requirements for well handover document, clarify understanding with Wassana OIM and production Lead.
- Mist rig HSSE follow up meeting (Mist HSSE plan, HCC audit action update, IIR final report, etc.).
- Managed case management on finger injury case (MTC as classified).
- Continue HSSE engagement with rig crew and business partners especially SSE onboard.
- Finalized and submitted monthly HSSE champion of the month Jan 2024.

HSSE Highlight Jun 2024

- Borr Mist Management team (Operation & Rig Manager) site visit Drilling rig.
- VE management team (COO, CM, Production Manager, HSSE Manager) visited MOPU while drilling rig on location.
- Integrate emergency exercise with MOPU for scenario MERP support by drilling rig.
- Submitted 1st draft HSSE presentation for TCM 2024 (Drilling & Well Service).
- Conducting incident investigation FAC - IP Pinches Finger While Maneuvering Oil drums.
- Verified high risks activities on the rig such as radiator changeout, scaffolding, jacking leg brake system inspections, rope access operation.
- Follow up with Borr Mist HSSE on pending action status from HSSE audit action tracking list.
- Promoted 2024 Health and drilling rig safety campaign H&F prevention & line of fire awareness.
- Promoted VE KISS campaign.
- SIMOPs compliance monitoring between production and drilling team.
- Finalized and submitted monthly HSSE champion of the month June 2024.

HSSE Highlight April 2024

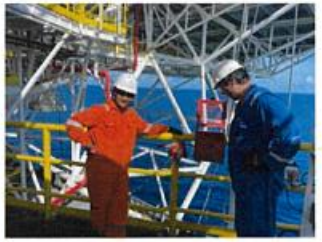
- Rig move from OWW NongYao13 to OWW Niramai 4.
- Rig move from OWW Niramai 4 to NYA platform.
- SIMOPs meeting NYA infill drilling campaign with production team.
- Rolled out VE KISS campaign and 2024 Health Campaign with drilling crew.
- Management team site visit drilling rig by Borr Rig Manager & VE Team Leader-Drilling Operations.
- HSSE follow up actions meeting with Borr Mist team.
- Platform ESD connection and function test with DSV, production team and final platform site survey with OIM, Barge engineer and SPC.
- SIMOPs compliance monitoring between production and drilling team.
- HSSE Site visited rig support vessels.
- Borr Mist Medical Emergency Response Plan (MERP) updated for NYA location.
- Finalized and submitted monthly HSSE champion of the month Apr 2024.

HSSE Highlight July 2024

- Borr Mist Management team (Rig Manager) site visit Drilling rig.
- Implemented VE KISS campaign on drilling support vessels (MP Prestige & MP Prosper)
- Communicated VE HSS & VE HSSECQ Safety Management System to rig support vessel crews.
- Follow up with Borr Mist HSSE on pending action status from HSSE audit action tracking list.
- Hygiene inspection on rig support vessels ((MP Prestige & MP Prosper).
- Coordinated with BORR HSSE team on rig MERP information update for new location Jasmine field.
- Promoted 2024 Health and drilling rig safety campaign H&F prevention & line of fire awareness.
- Maintained SIMOPs compliance monitoring between production and drilling team.
- MOPU site visit and site tour inspection with Nong Yao field manager.
- Verified high risks activities on the rig such as rope access & scaffolding & painting work under helideck.
- Finalized and submitted monthly HSSE champion of the month July 2024.

HSSE Highlight May 2024

- Rig move from NYA to NYC MOPU.
- Pre-spud meeting for NYC drilling campaign
- NYC SIMOPs meeting with T7 projective, MOPU O&M team, NY operation team, VE project rep.
- NYC initial inspection with rig SPC, verified MOPU life saving and fire fighting equipment.
- 4 ESD stations function test with rig OIM and DSV.
- Mist rig HSSE committee meeting.
- Promoted 2024 Health and drilling rig safety campaign H&F prevention & line of fire awareness.
- Promoted VE KISS campaign.
- SIMOPs compliance monitoring between production and drilling team.
- Sr.HSSE operation visited drilling rig and NYC MOPU.
- Borr Mist Medical Emergency Response Plan (MERP) updated for NYC location.
- Finalized and submitted monthly HSSE champion of the month May 2024.

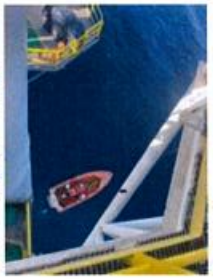


HSSE Highlight Oct 2024

- Sr.Management team site visited drilling rig.
- Implemented VE KISS in action campaign- VDO clip have been submitted from drilling team.
- Rolled out safety standup campaign "I see it I Own it" , implemented this campaign to crew.
- Rig move operation from chuksamet port to Jasmine WPD platform.
- SIMOPs operation meeting with production team.
- Initial platform WPD inspection and rig ESD function test follow SIMOPs requirement.
- Jasmine field supervisor (FM & operation supervisor) visit drilling rig.
- SIMOPs compliance monitoring with production team.
- Performed hazard hunt with business partner and rig team.
- Finalized and submitted monthly HSSE champion of the month Oct 2024.

HSSE Highlight Aug 2024

- Management site visit drilling rig (VE drilling Manger, VE Drilling team-lead, Borr Rig Manager).
- 2024 Blessing/Merit ceremony on Mist rig with personnel onboard.
- Finalized Borr Mist HSSE plan 2024.
- Submitted Annual HSSE Performance and Statistic Report Drilling Campaign 2023.
- Site visited MOPU, discussed with Wassana OIM on drilling operation and other HSSE concern.
- SIMOPs requirements for well handover document, clarify understanding with Wassana OIM and production Lead.
- Mist rig HSSE follow up meeting (Mist HSSE plan, HCC audit action update, IIR final report, etc.).
- Managed case management on finger injury case (MTC as classified).
- Continue HSSE engagement with rig crew and business partners especially SSE onboard.
- Finalized and submitted monthly HSSE champion of the month Jan 2024.



HSSE Highlight Nov 2024

- Completed JSD infill drilling campaign 2024, 3 wells are delivered to production team.
- Communicated 2024 Typhoon Evacuation Guideline & Management visit report to crew.
- Rig move operation from Jasmine field to Manora field.
- Implemented safety standup campaign "I see it I Own it" , implemented this campaign to crew.
- SIMOPs operation meeting with Manora production team via MS.
- Initial Manora platform inspection and rig ESD function test follow SIMOPs requirement.
- H2S Equipment installation by Rutledge engineer to prepare for Manora drilling campaign.
- Conducting incident investigation-MTC- IP received well fluid splash into eye while performing P&A operations.
- Conducted 2024 HCC audit -Baker Hughes Drilling Fluid, Solid Control and Downhole Tools Services.
- Finalized and submitted monthly HSSE champion of the month Nov 2024.

HSSE Highlight Sep 2024

- Completed JSA infill drilling campaign 2024 and rig move to Chuksamet port.
- Promoted 2024 Health and drilling rig safety campaign H&F prevention & line of fire awareness.
- Maintained SIMOPs compliance monitoring between production and drilling team.
- Communicated VE HSS & VE HSSECQ Safety Management System – real working case study to crews.
- Rig open house knowledge sharing at Chuksamet port.
- Drilling rig maintenance period in shipyard (Chuksamet port).
- Rig move operation meeting (move from ChukSamet port to Jasmine-WPD)
- 2024 Drilling & Well service offshore supervisors meeting.
- Finalized name list of drilling & Well service team to attend 2024 HSSE refresher training.
- Finalized and submitted monthly HSSE champion of the month Sep 2024.

HSSE Highlight Dec 2024

- HCC Annual HSSE audit drilling rig Borr Mist on 16-19 Dec 2024
- Conducted onsite incident investigation-finger injury case, support DSV on incident notification report.
- Conducted safety stand down follow finger incident on the rig.
- SIMOPs requirements revisit & discussion with Manora FM, OS, safety tech for the standardize practices.
- Engaged SWA & Safety Culture reinforcement/improvement action with crew and business partner onboard drilling rig.
- H2S refresher training & emergency exercise with new arrival crew.
- Implemented SWA engagement with rig crew, business partners, provide coaching and mentoring team,.
- 2024 EIA Compliance Report (Drilling rig & support vessel) information request and preparation.
- Pre job meeting for MVM Geophysical operation, work planned at WPC Jasmine field.
- Finalized drilling rig HSSE champion of the month end of Dec 2024.

Thank You

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Management of Change Procedure

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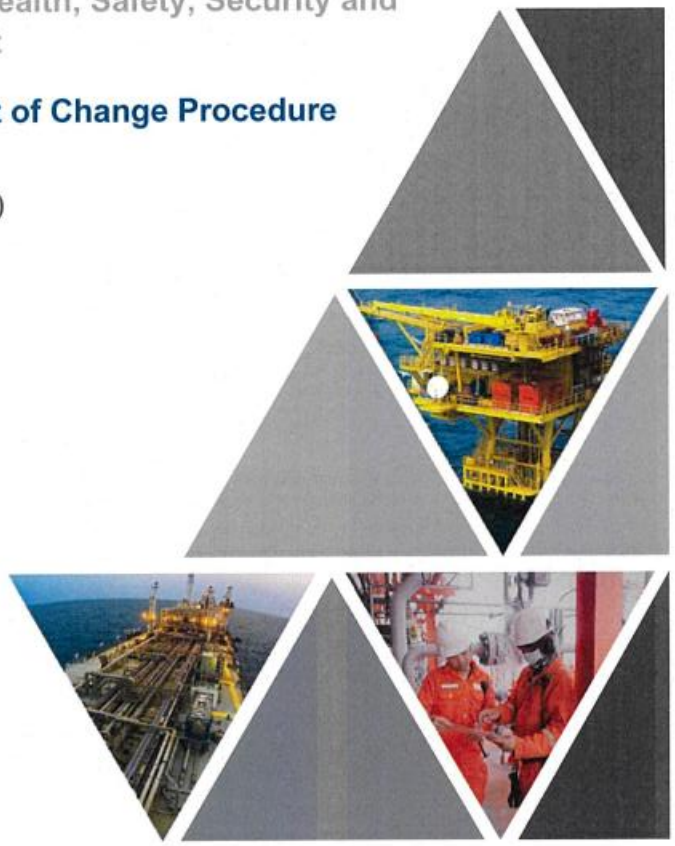
Thailand – Health, Safety, Security and Environment

Management of Change Procedure

Procedure (PRC)



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Revision R5

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Thailand – Health, Safety, Security and Environment

Management of Change Procedure

Procedure (PRC)

Electronic Version is Current—Uncontrolled Hard Copy Valid Only at the Time of Printing

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		5.8	Bullet 2: Additional text added at end.	A. Mackenzie
		App. B	Company added, POTL removed	A. Mackenzie
		App. C	Bullet 2. – removed and references to company standards added.	S. Elcox
R3 (cont'd)	25-09-12	App. E	Additional text added on "Example 4"	A. Mackenzie
		App. H	Additional steps added under "Executor" on flowchart	A. Mackenzie
		APP. I	Matrix Changed and Assessment of potential benefits changed.	A. Mackenzie
		App. J	MoC Type: "Organisation Change" – Note added	S. Elcox
R4	30-10-16	4.2	Type of controlled change	Mittrapa T.
		5	Add Work Request and also fist screening process by Production Support Team	Mittrapa T.
		6	Modify MoC work process: all works will be tacking in system including Project and Engineering work.	Mittrapa T.
		7	Update Role & Responsibility	Mittrapa T.
		App. G	Update with the numbering convention for Project and Engineering work	Mittrapa T.
		App. H	Update workflow	Mittrapa T.
		App. I	Revise on the risk assessment matrix Add more score for Safety & Health risk assessment	Mittrapa T.
		App. J	Guideline for Reviewer List	Mittrapa T.
R5	31-07-19		Function of Chemical treatment related	Krissanapong W.
		6.1	Risk screening guideline	Mittrapa T.
			Revised workflow	Suwitcha R.
			Updated logo, cover, header and replaced company name to 'company'	Alisa J.

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Management of Change			
COR-PRO-0538	Corporate - Management of Change	Ver: 19	Issued: 02/08/2024
Owner: Corporate QHSE Manager	Approver: VP QHSE		
Risk classification:	Information classification:		

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1 Introduction

1.1 *Intent*

Provide a formalized method for processing changes related to technical modifications, management system document changes, deviations from requirements for both internal and external processes, and deviations from training requirements.

This process involves:

- identifying the risks associated with the change and control measures to be taken to ensure that risks remain at an acceptable level, and
- getting approval from the right level of authority.

1.2 *Scope*

This document applies to all Borr Drilling Offices and rigs.

1.3 *Responsibility*

Safety Performance Coach (SPC):
Review HSE Risk Assessments related to the MOC.

Offshore Installation Manager (OIM):
Responsible for ensuring adherence to the requirements herein.

Rig Manager and Onshore Head of Department
Responsible for ensuring that the Management of Change Process is adhered to. Review & approval of MOC.

Regional QHSE Managers:
Responsible for supporting the Management of Change Process as per the requirements stated herein.

Region Operations Managers:
Responsible for reviewing and approving Management of Change for their Region as per the requirements.

Technical Department:
Responsible for overview and supervision of the Engineering Management of Change process. Review of the MOC form, both engineering and applicable operational MOCs and associated documents including risk assessments.

MOC Administrators:
Responsible for the assignment of numbers to all incoming Management of Change documents, forwarding them to the proper Authorizing Entity (AE) for final approval (as per requirement within each type of MOC), communicating to the originator the outcome, when necessary, and processing the administrative work after final approval and closure of MOCs.

Authorizing Entities (AE)
Final approval authority responsible for authorizing the change after a review of the hazards involved and risk mitigation measures.

Management of Change			
COR-PRO-0538	Corporate - Management of Change	Ver: 19	Issued: 02/08/2024
Owner: Corporate QHSE Manager		Approver: VP QHSE	
Risk classification:		Information classification:	

Requirement Owner
Owner of respective Corporate / Rig Procedures for Internal requirements. Flag State, Client, Regulatory bodies etc. for External Requirements.

2 MOC Categories

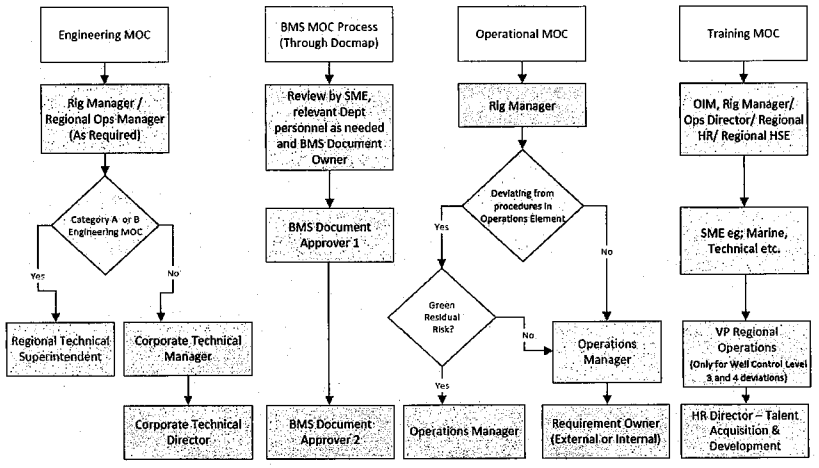
For this procedure, change will be divided into four categories, each of which will be addressed by specific guidance, stated individually in the following sections of this document:

1. Engineering MOC.
2. Operational MOC.
3. Borr Management System (BMS) MOC.
4. Training MOC.

3 General Requirements

3.1 *Approval Levels and Authorizing Entity*

See below chart for the various approval levels and Authorizing entities for each type of MOC.



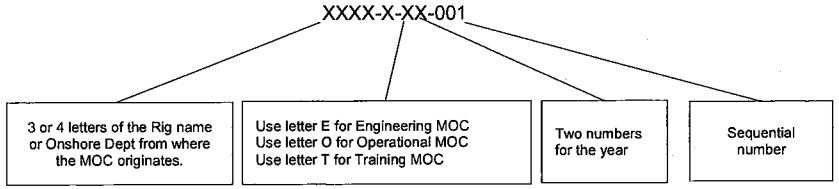
3.2 *Mode of Approval*

Approvals shall be indicated by signing (physically or through E-Sign) on the MOC form for Engineering, Operational, and Training MOC forms.

If at any time an immediate signature approval is not obtainable, an email approval is acceptable.

3.3 *MOC Number Assignment:*

The MOCs shall be numbered as follows:



4 Engineering MOC

4.1 *Purpose of Engineering MOC's:*

- To allow the onshore technical department to review all proposed changes.
- To provide input into all engineering aspects of the proposed change, including but not limited to; regulatory compliance issues, equipment standards, engineering calculation support (if required), engineering and installation standards, requisite documentation updates, and the use of good marine practice.
- To provide records of the engineering changes executed on every rig.
- To enable best practices and lessons learned to be shared among the fleet, and to support a consistent approach on all rigs.

It is recommended to contact the Regional Technical Superintendent, or the Technical Manager, if there is any doubt whether an Engineering MOC is required or not.

Note: Engineering MOC's must be submitted prior to the purchase of any equipment or the start of any work on board to effect the change.

4.2 *When is an Engineering MOC required:*

IF IN DOUBT, CONTACT THE REGIONAL TECHNICAL SUPERINTENDENT, OR THE TECHNICAL MANAGER.

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Risk classification:	Information classification:		

An Engineering MOC is generally not required when proposed changes to a rig are "identical" or "like for like" equipment, structure, outfitting, piping, or cabling. Some examples of "identical" or "like for like" are provided below.

In all these cases an MOC is not usually required.

- A section of structure, plating, or supporting member must be returned to its original state and condition via a straightforward crop-and-renew approach. For small areas of repair a thickness increase of 25% or less due to material availability will be considered as "like for like".
- A platform or stairway is to be returned to its original state or condition by replacement material.
- A worn out or defective piece of equipment, such as a pump, is to be replaced by the same model number, size, and type as the existing piece of equipment.
- An electrical cable is replaced by a cable of the same size and type.
- A section of pipe is to be replaced with a new section of the same size, material specification, and configuration as the existing pipe.
- When crane cables are changed out with the exact sizes and types as the old ones that were removed.
- When software updates are required and performed by the software application license key holder/OEM (Original Equipment Manufacturer). Refer to COR-PRO-0636 Critical Software Storage and Management.

An Engineering MOC is required in all other cases.

4.3 *Engineering MOC Category*

Engineering MOCs are divided into two categories dependent on the level of approval required:

- Category A – minor changes such as third-party tie-ins, simple piping changes / connections etc. shall be approved at regional level.
- Category B – major changes such as modifications requiring Class or Flag approvals, changes to primary drilling, well control, or safety equipment etc. shall be approved at the corporate level.

Some common examples are listed below, but crews / Rig Managers are encouraged to contact the Regional Technical Superintendent, or the Technical Manager, at the earliest opportunity to discuss the potential change. NOTE: there is no distinction between temporary and permanent equipment / installations.

These lists are not exclusive, and it may be necessary to change the category if deemed appropriate.

An Engineering MOC can be revised at any time, even if the change is underway or completed. The Technical Department should be contacted to verify this requirement prior to submitting a revised Engineering MOC form.

4.3.1 Category A

- Projects that involve production or process tie-ins to existing facilities.

- When a new piece of equipment, such as a pump, is to replace a worn-out pump and the new pump is identical in terms of pump type, pipe connection sizes, flow and head characteristics, and material specifications, but is made by a different manufacturer.
- Creation / fabrication of new tie-ins for third-party equipment to the rig systems e.g., air, water, electricity, F&G, ESD etc. This includes simple structural tie-ins e.g. sea-fastenings or guide posts. Any welding work that requires Class approval shall be a Category B. NOTE: An Engineering MOC is not required if connecting like-for-like third party equipment to existing rig tie-ins.
- New electrical equipment / cabling / control systems for non-SECE critical equipment or modifications to existing electrical equipment/cabling/control systems for non-SECE critical equipment.
- Any change to piping that would require a change to the as-built P&ID.
- Bypass connections around equipment that is normally in service.
- Hoisting equipment, when it is repaired or overhauled, and generic parts or OEM furnished non-original parts are used.

4.3.2 Category B

- All modifications or changes where approval is required from the Classification Society.
- All new construction works.
- All structural changes requiring Class approval including, but not limited to, new walkways, access platforms and load bearing structures.
- New electrical equipment / cabling / control systems for Safety and Environmental Critical Elements (SECE), or modifications to existing electrical equipment / cabling / control systems for critical equipment.
- When a new component with its associated systems is to be installed on the rig for
- the first time.
- All changes that affect the general arrangement drawings or fire and safety plans.
- All changes to well control equipment, including the diverter system.
- All changes to primary drilling equipment i.e., top drives, draw works, HP mud pumps etc.
- All changes to cranes and lifting / hoisting equipment.
- All proposals to utilise equipment outside of its design parameters.

Note, see COR-PRO-0646 Asset Criticality for definitions of critical equipment.

4.4 *Engineering MOC Request Process*

Crews and Rig Managers are encouraged to contact the Regional Technical Superintendent or the Corporate Technical Department at the earliest opportunity to discuss the potential change in order to prevent delays.

4.4.1 Register the MOC in the Engineering MOC App located in SharePoint.

Carefully complete all sections of the Engineering MOC form ensuring that the Engineering MOC Category is chosen appropriately to enable the correct approval matrix to be applied.

It's vitally important that the form is populated with useful information.

DO:

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- Describe the change in detail and in the simplest terms possible.
- Include red line/amended drawings to illustrate the changes.
- Include photographs or presentations or sketches that clearly demonstrate what is being proposed, and where.
- Highlight the drawings and documents that will need to be amended e.g. P&ID, light ship record of changes, Ex registers etc.
- Include quotes and engineering assessments if you already have these to hand.
- Refer to the same change/MOC that has been completed on other rigs in the Borr fleet (if you have this information to hand or have received it from the onshore technical team).

Note that incomplete or poor-quality information will cause delays in the approval process and potentially a rejection of the Engineering MOC request.

DO NOT:

- Begin any modifications without an approved Engineering MOC.
- Send a form that is poorly completed or has insufficient information to enable the onshore team to assess all aspects of the change.
- Assume the person reading the form knows the equipment or the rig intimately.

4.4.2 Perform all assessments.

- Impact Assessment.
- Technical Considerations.
- Documents Updates.
- Schedule & Finance.

4.4.3 Obtain all necessary approvals to proceed:

1st – OIM.

2nd – Rig Manager.

3rd – Regional Operations Manager (or equivalent).

If there are conditions to acceptance, any approver is to denote those in the Comments with Acceptance Section.

If the Engineering MOC is rejected it requires justification for the rejection in the Justification for Rejection Section.

NOTE: It is expected that the persons involved with approval shall verify the content of the Engineering MOC form, and any supplementary documents required before initiating the next step of the process.

4.4.4 Step 2 – Detailed Engineering Review & Approval:

Dependent on the Engineering Review routing chosen on creation of the Engineering MOC, the final approval shall come from the Regional Technical Superintendent or the Corporate Technical Department.

The process for approval is similar regardless of the approval route.

1. Upon receipt of approved Engineering MOC (regional level), confirm Engineering MOC submission content and approval level in line with procedure.
2. Follow the approval process as follows:

- ***Category A***
  - Technical Review and Approval – Regional Technical Superintendent

  Or

- ***Category B***
  - Subject Matter Expert Review – Technical Superintendent
  - Initial Technical Approval – Technical Manager
  - Final Technical Approval – Technical Director

If approved, the Engineering MOC proceeds to Execution Stage and the Originator is notified of approval to execute Engineering MOC.

If rejected, the Originator shall be informed of the rejection with associated justification.

4.4.5 Step 3 – Execution:

The Engineering MOC shall be executed in accordance with approved proposal as stated in the Engineering MOC approval. All conditions, requests etc. noted in the approval comments shall be met.

- No deviation from the original plan shall be made unless approval has been sought from all parties included within the original approval.
- All supporting documentations including manuals, updated drawings etc shall be uploaded to the Engineering MOC App.

On completion, proceed to close out the Engineering MOC.

4.4.6 Step 4 – Close Out:

Ensure that all received documentation is acceptable and complete.

Complete all final details within the Engineering MOC and close.

Ensure that all existing documentation is updated within the rig files (by rig team) and onshore files (by Document Control) to ensure records are current.

5 Operational MOC

An Operational MOC Form is needed for:

- Any temporary waiver from policy/procedure(s) or temporary adjustment to meet operational/Client/Regulatory needs.
- Operations outside the scope of procedures located within BMS documents.
- Modifications to processes in order to meet special circumstances or HAZOPs.

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Risk classification:	Information classification:		

- Temporarily removing from service or the substitution of Safety and Environmental Critical Equipment (SECE), unless covered by a Permit to Work (PTW) – which may be consecutive in place for max duration of 24 hours.
- Unavailability of a SECE:

SECE equipment is identified as, but not limited to:

- Life Saving Appliances (incl. lifeboats)
- Fire Mains and Related Fire Fighting Equipment
- Fire/Smoke/Gas Detection Devices (Any type)
- Fire Dampeners
- Emergency Shutdown Devices (ESDs)
- Any item on Rig Safety and Environmental Critical Equipment Log

MOCs relating to SECEs are also known as "Operational Risk Assessments", or ORAs. These items may require additional notification to the Flag State or Class Society, for more information contact the corporate Marine Manager.

5.1 *Operational MOC Validity*

All Operational MOC's must state a duration period of validity subject to business needs. If a definitive end date is not available, a forecasted date will suffice and if this forecasted date lapses, then a new MOC will need to be resubmitted. If the MOC was accompanied by a Risk Assessment, the Risk Assessment Form will also have to be resubmitted. All Operational MOC's shall have a limited validity period of up to 12 months.

5.2 *MOC Request Process:*

1. Step 1- Preparation and Rig Level Approval

1. Obtain an MOC number from your respective Regional QHSE Manager.
2. Fill in the Operational MOC form COR-FRM-0316 and Risk Assessment Form COR-FRM-0828
3. Define the scope, justification and validity of the waiver. State the BMS Procedure or the external requirement document details that is being deviated from.
4. Perform all necessary risk assessments:
   - Regulatory compliance.
   - Operational productivity impact.
   - Financial impact.
   - Occupational Health & Safety Risk.
   - Environmental Risk.
5. Risks to be populated in Risk Assessment Form. Based on the level of risk, various levels of approval will be required. All departments affected by this deviation should be consulted while evaluating the risks and developing mitigating measures.
6. Send MOC form along with the Risk Assessment (RA) form and other relevant supporting documents to OIM and Rig Manager (for rig MOCs) or department head (Onshore MOCs) for approval.
7. Rig Manager shall, if required, review the RA form with Regional HSE.

2. **Step 2: Requirement Owner and Operations Manager Approval**

1. Once done, RM (For Rig MOCs) / Dept Head (For Onshore MOCs) shall forward the MOC to the requirement Owner (External or Corporate) for approval.
2. Once approved, Rig Manager shall seek Regional Operations Manager approval.
3. Approved MOC form and associate documents shall be sent to the Regional QHSE Manager.

Please note that for all MOCs related to Operations procedures that has a risk assessment with a residual risk of green, the respective Regional Operations Managers will be the final approver or authorizing entity. All Operational MOC related to Operations procedures that has a risk assessment with residual risk of Yellow or Red the COO shall be the final approver or authorizing entity.

Step 3: Filing and Raising of CAPAs (As required)

1. The Regional QHSE Manager shall:
   - review the presented documentation to verify that documentation is in order.
   - update the MOC register and file the approved MOC form and associated RA Form and other documents into to the Operational MOC folder.

2. CAPAs will be raised by the MOC originator for any actions arising out of such MOCs as required.

Typical kind of actions include:

Corrective Action: Action taken to mitigate the risk arising out of operating in a state of deviation or non-compliance

Remedial Action: Action taken to eliminate the cause of deviation

Step 5: Close Out or Extension of Validity

1. Once the MOC has reached its validity or fulfilled its purpose, the originator or OIM to send a notification to Regional HSE manager to confirm closure.
2. Extension of validity can be requested by raising a new MOC form and seeking approval.

Please refer to Operational MOC Process Map for step by step process flow.

6 BMS MOC

Any update to the management system documentation whether it is adding new documentation or revising existing documents will be handled through automated workflows set up within BMS.

Any document that needs to be added or revised in terms of content, category, ownership in BMS will be done by creating a revision of the document and obtaining 2 levels of approval through Docmap application.

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For details on owners and approvers of documents in BMS please refer to the BMS Document Control procedure.

Modification to an existing BMS procedures such as but not limited to:

- Process change
- Requirement change

will require an assessment to be carried out by the procedure owner to identify whether such change involves any change to:

- Equipment requirements
- Resource requirements

Or any impact on:

- Critical suppliers
- Cost
- Other internal processes

The applicable impact shall be mentioned in the approval message sent to the approver through Docmap.

7 Training MOC

7.1 *Training Deviations*

Level 0 Pre-boarding Training Requirements

Requirements as per Borr Training Matrix will be considered the minimum training necessary to board the rig for the employee's position. The employee will not normally be allowed to board the rig until the verification of all Level 0 pre-boarding training requirements have been confirmed in the Training Management System (Skills VX).

However, there are circumstances where an employee may be allowed to board the rig without completing all Level 0 training requirements.

Examples of these circumstances are:

- At the Region's discretion, a "warm stacked" training matrix may be implemented, which will reduce the minimum training for those rigs not currently operating.
- Personnel changes are in progress, such as promotions, demotions, and transfers between rigs, resulting in new and different training matrix requirements.

This requires approval of a temporary deviation from several authority levels, using the Training and MOC Form found in BMS.

If the training MOC has an operational impact, then in such cases a Risk Assessment form must be completed prior to commencing the approval chain, to ensure all risk mitigation has been assessed.

IWCF Well Control Level 3 & 4

NOTE: It is a mandatory requirement that all personnel who are responsible for well control aboard Borr Drilling rigs, are in possession of a valid IWCF Well Control Certificate (suitable for BOP in use).

In all cases of Level 3 & 4 deviations, an additional approval of MOC is required from the Regional VP Operations prior to the approval by HR Director – Talent Acquisition & Development.

Minimum Safe Manning (MSM)

NOTE: It is a Borr Drilling and Flag state regulatory requirement to ensure each operating rig is 100% compliant at all times while on station and underway, and an MOC cannot replace the regulatory requirement.

Any deviation from Minimum Safe Manning Training Requirements as per Borr rig specific training matrix held in Skills VX will require a Management Of Change (MOC) e.g. if the Radio Operator does not have an endorsed GMDSS License when on the POB as the Job Position holder as detailed on the Training Matrix, but the Barge Engineer does, this would require an approved MOC to be completed prior to embarking the rig.

7.2 *Training MOCs Request Process:*

1. Obtain an MOC number by sending a request to Training.moc@borrdrilling.com.
2. Access the Management of Change Section of BMS and utilize Training.

   MOC Form. Fill out all information-required fields. Provide a clear summary of the change.
3. Attach necessary information in terms of impact on Regulatory compliance, Operational productivity, Occupational Health & Safety Risk as applicable.
4. Obtain all necessary approvals to proceed:
   - OIM
   - Rig Manager
   - Regional HR Manager
   - Regional QHSE Manager
   - Regional Operations Manager
5. Forward Training MOC form with the regional approvals to the Training administrator at training.moc@borrdrilling.com for further processing.
6. Training administrator reviews form and requests necessary corporate approval from:
   - Subject Matter Expert (SME) - ie MSM MOC requires Marine Director approval, COMPEX deviations would require Technical Director approval.
   - HR Director – Talent Acquisition & Development.
7. Training Administrator to send approved or rejected Training and MOC to Originator
8. Training administrator to file the MOC

Please refer to the Training Process Map for step-by-step process flow.

*For Offshore Corporate roles, refer to Corporate Training department.

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Attachments

None

Reference Documents

COR-PMA-0119 - Engineering MOC Process

COR-PMA-0206 - Operational MOC Process

COR-PMA-0205 - BMS MOC Process

COR-PMA-0139 - Training and Pre -Hire MOC Process

COR-FRM-0316 - Operational MOC Form

COR-FRM-0828 – Risk Assessment Form

COR-FRM-0320 - BMS MOC Form

COR-FRM-0464 - Engineering MOC Form

COR-FRM-0436 - Recruitment and Selection Procedure

COR-FRM-0474 - Training MOC Form

COR-PRO-0636 - Critical Software Storage and Management.

COR-PRO-0646 – Asset Criticality

เอกสารแนบที่ 40

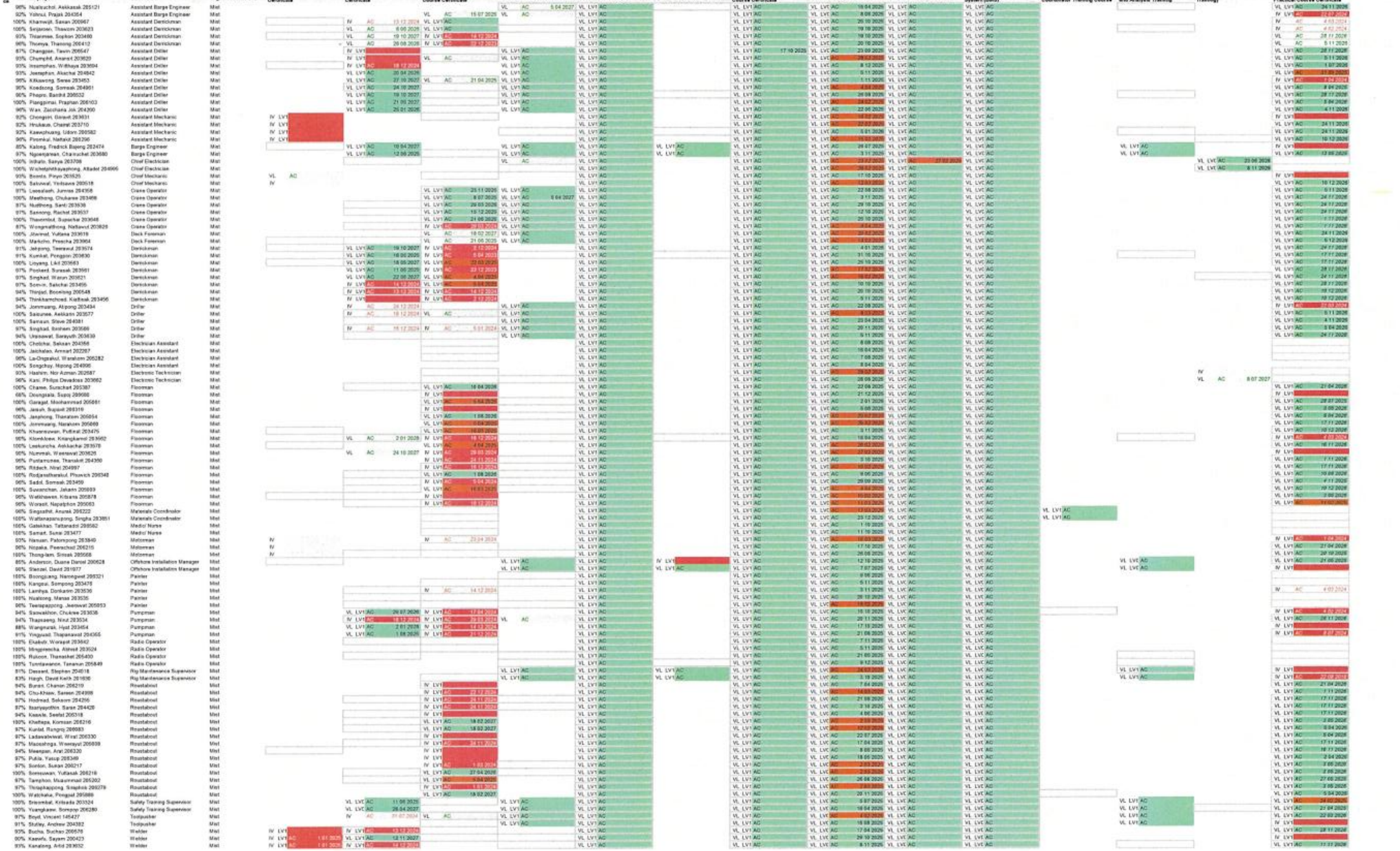
ตัวอย่าง Emergency Drill and Exercise

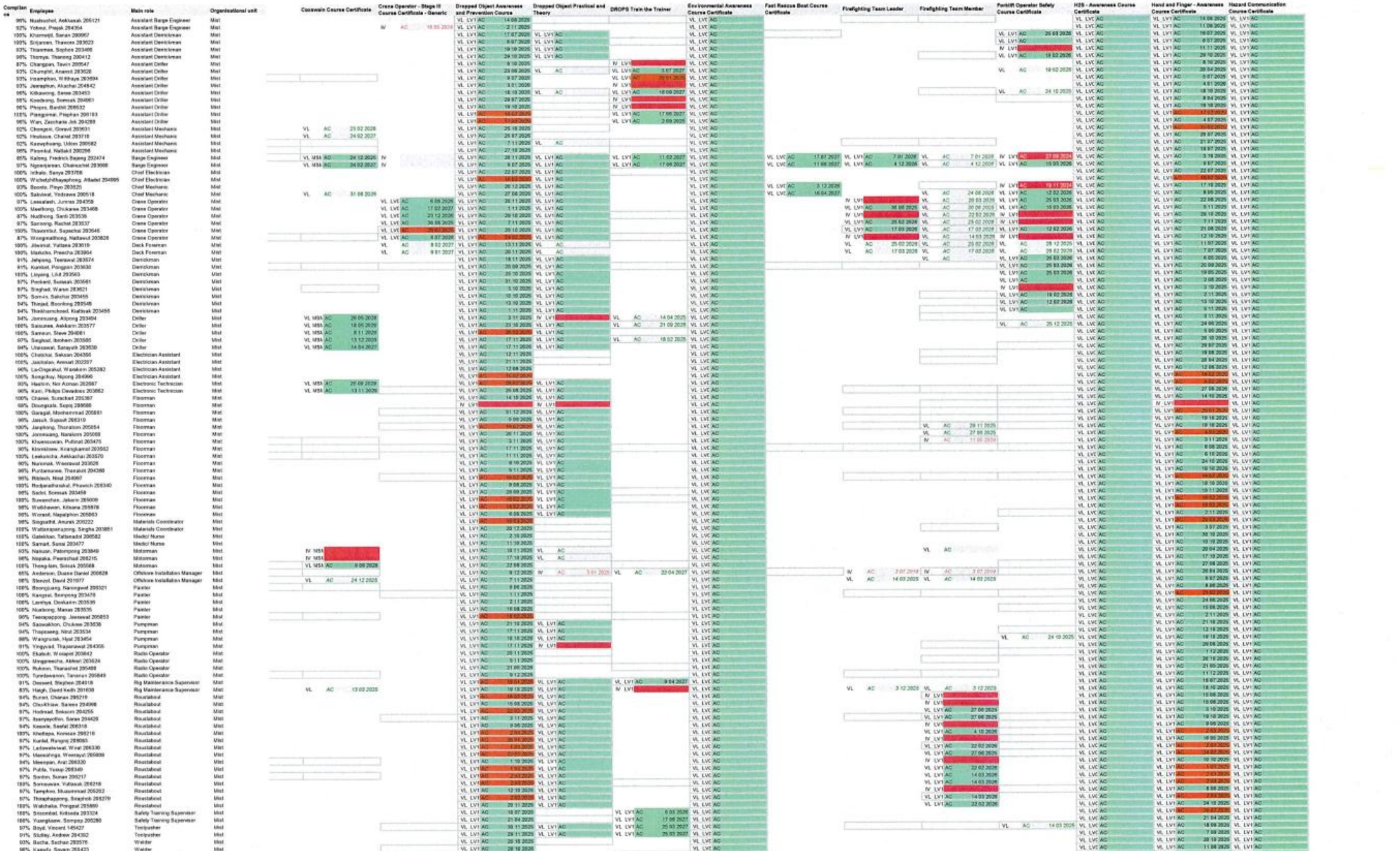
Borr Drilling

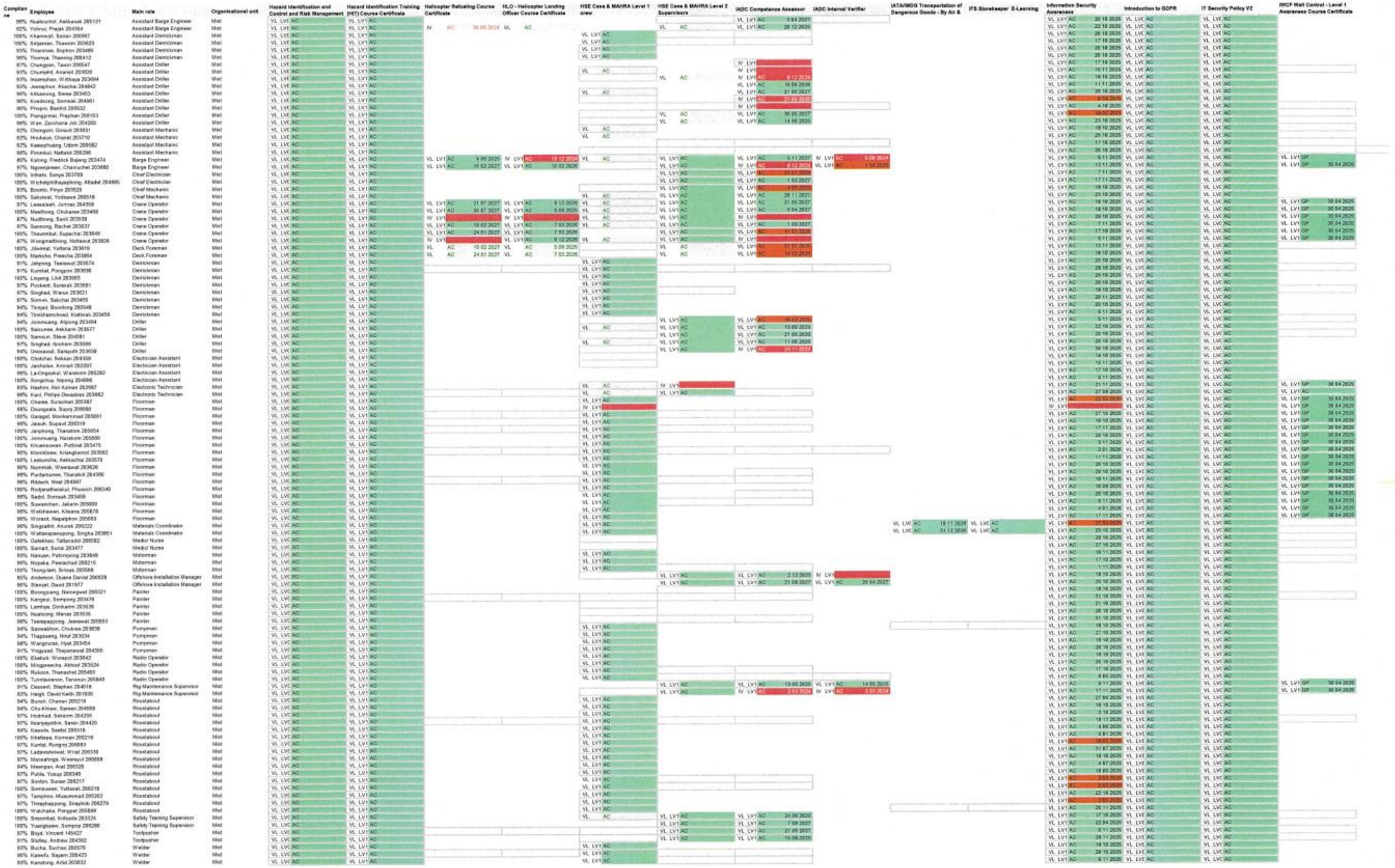
Approved Corporate Minimum Standard Offshore Training Matrix

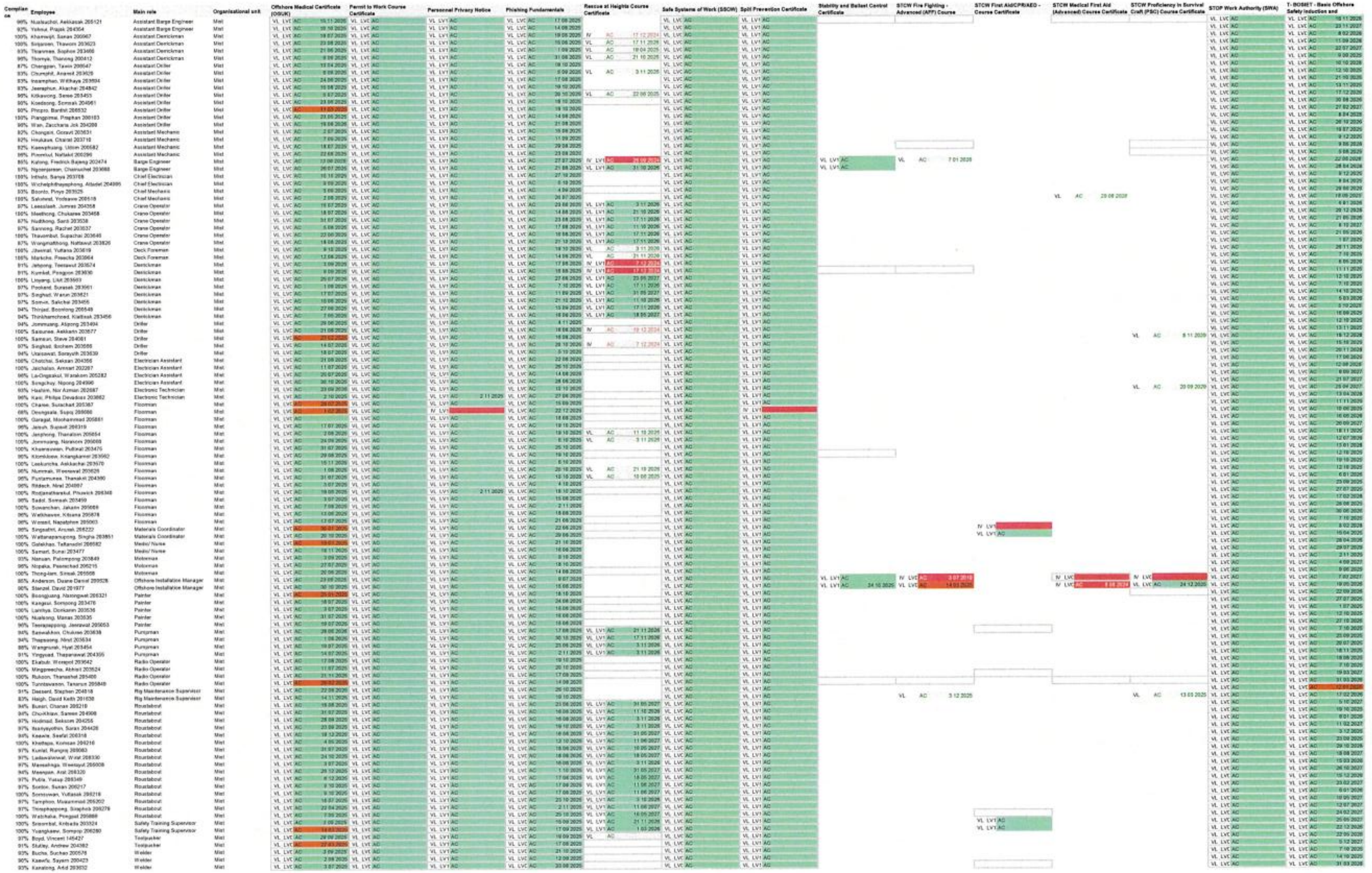
Revision:10a Revision Date: 28.05.24

| Training Level | | |









MARCO POLO MARINE

MP OFFSHORE PTE. LTD.

EMERGENCY DRILL SCHEDULE & RECORD

Form Ref:	SEM Sec 1.4..1.13.4
No.	SEM 001-015

	Drill Details	Scenarios (*Master may choose different scenarios listedbelow for each drill, but does not limit the Master from improvising to create scenarios or combine few other emergency situation during the drill*)	Frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Abandon ship (Life raft)	Abandon Ship due to Fire / Explosion / Grounding / Flooding / Collision / ExcessiveList / In Heavy Weather etc.	1 M	05,17	08	09	06	05	03	07	06,29	10	12	12	06
	Rescue Boats Waterborne FRC must be swung, lower to the water without crew and stowed back.		1 M	25	-	10	-	12	-	30	22	28	12	12	06
2	Fire / Explosion	Fire in Galley / ER / Accommodation / Rescue CrewMember Trapped in Fire etc. Tank Fire & Explosion (Tank)	1 M	05,17	08	09	06	05	03	07	06,29	10	12	12	06
3	Oil / Chemical / Bulk Cargo Pollution	Operational Spills / Pipeline Leakage / Tank Overflow / Hull Failure / Containment Failure / Spill Resulting fromCasualities / Dangerous Cargo Spill	1 M	14	08	09	06	05	03	07	22	24	20	23	06
4	Emergency Steering	Within 500m Zone / DP Operation / Personnel Transfer / Cargo Operation / Anchor Handling / Towing / EnteringPort / Shallow and Congested Water etc.	3 M	14			07			17			20		
5	ISPS	Sabotage / Vandalism / Hijacking / Cidatel Training /Stowaway / Smuggling / Piracy Attack / Bomb Threatetc.	3 M	As Per Ship Security Plan											
6	ME / Aux Engine Failure and restart procedure for ME and AE Electrical and Power Failure (Blackout Recovery)	Power Failure within 500m Zone / DP Operation / Personnel Transfer / Cargo Operation / Anchor Handling / Towing / Actual Simulation of Black Out.	6 M		09						29				
7	Rescue from Enclosed Space	Use of Forward Store Hatch and All Tank Rescue Equipment including Harness and Gas Detectors shallbe put to use	2 M	17		10		12		17		10		23	
8	Medical / Injury drill	CPR / AED / Choking / Bleeding / Burns and Scalds / Electric Shock / Poisoning / Eye Injuries / Hypothermia /Fractures and Dislocations / Shock / Sprains and Strains / Bites and Stings etc.	2 M		09		07		19		22		20		08

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9	Helicopter Winching Operations	Evacuation of personnel via helicopter winching	6 M					18						23	
10	Man Overboard (SAR). Lower rescue boat and FRC in the water & Recovery of person from water	MOB / Crew missing for one or more days / On-scene command and rescuing people from wateretc.	3 M			10			19			28			08
11	Collision / Flooding / Grounding / Structural Failure	Collision with installation / grounding at shallow reef /anchor drag resulting in collision in anchorage	6 M	18						20					
12	Toxic Vapor Release	H2S / Dangerous cargo vapor release	6 M		09						22				
13	Heavy Weather Damage	Cargo damage / Cargo Securing	6 M					18						23	
14	DP Failure Drill (Loss of Ship Control during DP ops)	Loss of one thruster / Simulate strong current / Loss of position reference system / Loss of one controller / Loss of one busbar / Loss of feedback sensor etc.	3 M			11			23			10			07
15	Cyber Security Drill	System infected by Virus / System not under control	6 M				07						20		

AHTS MP PRESTIGE
DPS - 2
PORT OF REG : SINGAPORE
IMO NO : 9758549
CALL SIGN : 9V3290
GRT / NRT : 25627/7768
BHP / KW : 8160/6084

Master/Name

1. Master must ensure that drills are conducted according to the above plan
2. C/O to fill up the actual date of the drill in the shaded box provided
3. Proper records to be made in the Deck Log Book and Official Log Book should drills are not able to be carried out
4. Result of drills, must be brought up and discussed during the monthly safety meeting
5. The drills can be done in combination, for example: Vessel involved in collision follow by an oil spill

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EMERGENCY DRILL SCHEDULE & RECORD

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MARCO POLO MARINE

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EMERGENCY DRILL SCHEDULE & RECORD

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9	Helicopter Winching Operations	Evacuation of personnel via helicopter winching	6 M					22						23	
10	Man Overboard (SAR) Lower rescue boat and FRC in the water & Recovery of person from water	MOB / Crew missing for one or more days / On-scene command and rescuing people from wateretc.	3 M			08			15			04			03
11	Collision / Flooding / Grounding / Structural Failure	Collision with installation / grounding at shallow reef /anchor drag resulting in collision in anchorage	6 M	21						04					
12	Toxic Vapor Release	H2S / Dangerous cargo vapor release	6 M		16						06				
13	Heavy Weather Damage	Cargo damage / Cargo Securing	6 M					22						23	
14	DP Failure Drill (Loss of Ship Control during DP ops)	Loss of one thruster / Simulate strong current / Loss of position reference system / Loss of one controller / Loss of one busbar / Loss of feedback sensor etc.	3 M			19			15			09			17
15	Cyber Security Drill	System infected by Virus / System not under control	6 M				11						16		

Master/Name

1. Master must ensure that drills are conducted according to the above plan
2. C/O to fill up the actual date of the drill in the shaded box provided
3. Proper records to be made in the Deck Log Book and Official Log Book should drills are not able to be carried out
4. Result of drills, must be brought up and discussed during the monthly safety meeting
5. The drills can be done in combination, for example: Vessel involved in collision follow by an oil spill

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SHIP DRILL REPORT

Office:	Date: 06.08.2024	from 11:30 to 12:00 hrs
Vessel: MP PROSPER	(or)	Location: Nongyao Field

Detail of the Drill/Exercise or Drill Scenario

Title: Toxic vapour release and medical drill

Assumed during opening the OBM tank No.2 for inspection, found toxic vapor shown in gas detector. They found an injury person (AB) from the toxic vapour.

Time Log

Time	Event
11:30	Alarm was sounded and this followed by PA system announcement – Toxic vapour release drill.
11:32	All crews assembled at the muster station. Chief officer conducted headcount and then reported to the bridge.
11:33	Master informed all crew clear from that area and emergency team to prepare the portable ventilation fan for ventilation and portable gas detector.
11:35	Emergency team brought the equipment to the area. They found an injury person (IP) from the toxic vapour.
11:36	The IP was rescued to safe area. The first aid team made examination and treatment to the IP.
11:37	Commenced blowing the tank and area. Chief officer monitored gas detector in the area and inside OBM tank until free from toxic vapor.
11:39	Explained dangerous of toxic vapor, how to observed physical symptom of patient exposure toxic vapor, how to give medical first aid and how to MEDIVAC.
12:00	Drill dismissed.

Equipment / systems (including communication) tested

- General Alarm and PA system.
- Portable ventilation fan and portable gas detector.

Note: Steering Gear drill

1. Emergency Steering Function Indicate time movement of rudder using Emergency Function from 15 port to 15 stb. (not more than 60s)
2. Main steering function (hard to port to hard to starboard not more than 28s

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SHIP DRILL REPORT

Instruction given on location and use of Equipment/System

(Instruction shall be given during abandonship, fire & pollution drills and shall cover all LSA, FFA & Pollution Response Equipment).

Topics

- Operation of portable gas detector.
- How to Use of Medical CPR equipment / Oxygen Resuscitator
- How to use stretcher
- How to give medical first aid and how to MEDIVAC.

Lesson learned / Corrective action taken or recommended/Remarks

1. Regularly safety round all accommodation
2. Crew to increase the speed action while emergency alarm sounded
3. Explained dangerous of toxic vapor, how to observed physical symptom of patient exposure toxic vapor

Assessment of personnel

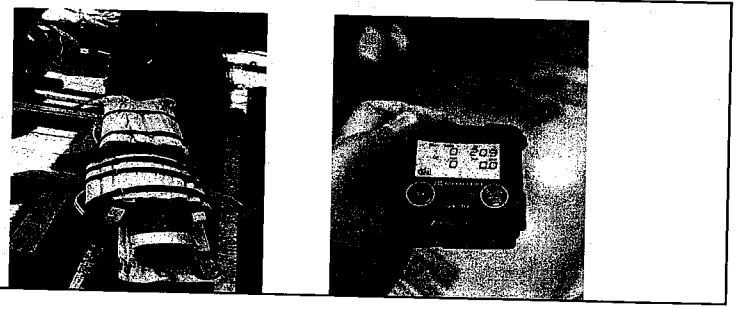
-Crew Quick respond and understood also showing good performance

Absent crew (if any)

(Crew shall not be considered absent when on duty in E/R as per muster list)

- Nil

Photo (Note: Fire, Abandon Ship and Rescue boat waterborne drill be attached a minimum of 2 Photo)



Drill/Exercise Recorded in - Official Log ☒ Deck Log ☒ Engine Log ☒

(Abandonship, Fire & Emergency steering drills must be recorded in Official Log. All drills and exercises shall be recorded in Deck & Engine Log. Lesson learned, assessment of the personnel must be discussed in the safety meeting.)

Attendees / Participants list to be attached.

Master

Name

MP PROSPER
FLAG :SINGAPORE
IMO NO. :9796248
CALL SIGN :9V3823
GRT /NRT :2562 / 768
BHP :8160

MARCO POLO MARINE

MP OFFSHORE PTE. LTD.

SHIP DRILL REPORT

SUBJECT: **Toxic vapor release and medical drill**

NO.	NAME	RANK	SIGNATURE
1.		Master	
2.		C/O	
3.		2/O	
4.		C/E	
5.		2/E	
6.		3/E	
7.		ETO	
8.		Bosun	
9.		AB	
10.		AB	
11.		AB	
12.		AB	
13.		Oiler	
14.		Cook	

Verified by

MP PROSPER
FLAG :SINGAPORE
IMO NO. :9796248
CALL SIGN :9V3823
GRT /NRT :2562 / 768
BHP :8160

Name Capt.

MARCO POLO MARINE

MP OFFSHORE PTE. LTD.

TRAINING REPORT

Form Ref: *SM Sec 5.*
No. SM 005-009

Ship: MP PROSPER	Date: **18 Dec 2024**	Time: from 1146 Hrs till 1200 Hrs

Type of Training

☐ Video viewing ☒ Lecture ☐ Demonstration
☐ On the Job Training ☐ Others

Topic of the Training

Risk Management

Details of the Training

- Explain SMS Section 4 – Risk Assessment and MOC.

Comments

- All crews interest and understand, satisfactory.

Attendance *(Name & Rank)*

- See below attendance sheet

Conducted by *(Name & Rank/Designation)*

- Krisda Weshprecha / Master
- Ukrit Kruaboonma / Chief Officer

NO.	NAME	RANK	VESSEL	SIGNATURE
1.		Master	MP Prosper	
2.		C/O	MP Prosper	
3.		2/O	MP Prosper	
4.		C/E	MP Prosper	
5.		2/E	MP Prosper	
6.		3/E	MP Prosper	
7.		ETO	MP Prosper	
8.		Bosun	MP Prosper	
9.		AB	MP Prosper	
10.		AB	MP Prosper	
11.		AB	MP Prosper	
12.		AB	MP Prosper	
13.		Oiler	MP Prosper	
14.		Oiler	MP Prosper	
15.		Cook	MP Prosper	

MP PROSPER
FLAG :SINGAPORE
IMO NO. :9796248
CALL SIGN :9V3823
GRT/NRT :2562 / 768
BHP :8160

Verified by

Signature
Name :
Position : Master

Signature
Name :
Position :

MARCO POLO MARINE

MP OFFSHORE PTE. LTD.

TRAINING REPORT | Form Ref: SM Sec 5. | No. SM 005-009

เอกสารแนบที่ 41

Country Oil Spill Response Plan

Thailand – Health, Safety, Security and Environment

Country Oil Spill Response Plan Part 1 (Exploration, Drilling, and Production Phases)

Manual (MAN)

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Thailand Typhoon Evacuation Guideline

valeura energy

Thailand – Health, Safety, Security and Environment

Thailand Typhoon Evacuation Guideline

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ตัวอย่างผลการตรวจสุขภาพของพนักงาน ประจำปี พ.ศ. 2567

เอกสารแนบที่ 44

ใบแจ้งรหัสทะเบียนเจ้าหน้าที่ด้านความปลอดภัย

รายงานข้อมูลการขึ้นทะเบียน เจ้าหน้าที่ความปลอดภัยในการทำงาน

สถานประกอบกิจการ บอร์ ซี โอเปอเรชั่นส์ อิ๊ง แท่นขุดเจาะ มิสต์ (MIST)

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** แสดงข้อมูลเฉพาะสถานประกอบกิจการที่สามารถเชื่อมโยงข้อมูลกับฐานข้อมูลทะเบียน จป. ของกรมได้ จากเลขทะเบียนนิติบุคคลและที่ตั้งที่สอดคล้องกัน หากไม่พบข้อมูล สามารถสอบถามเลขทะเบียน จป. ได้ที่ สำนักงานสวัสดิการและคุ้มครองแรงงานพื้นที่/จังหวัด ตามที่ตั้งของสถานประกอบกิจการ

วันที่พิมพ์รายงาน 05/01/2568

กรมสวัสดิการและคุ้มครองแรงงาน
*แรงงานสมานฉันท์ มั่นคง และปลอดภัย

รายงานข้อมูลการขึ้นทะเบียน เจ้าหน้าที่ความปลอดภัยในการทำงาน

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37		กสร.จป.ง 290-014404	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
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40		กสร.จป.ง 290-014401	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
41		กสร.จป.ง 290-014400	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	

** แสดงข้อมูลเฉพาะสถานประกอบกิจการที่สามารถเชื่อมโยงข้อมูลกับฐานข้อมูลทะเบียน จป. ของกรมได้ จากเลขทะเบียนนิติบุคคลและที่ตั้งที่สอดคล้องกัน หากไม่พบข้อมูล สามารถสอบถามเลขทะเบียน จป. ได้ที่ สำนักงานสวัสดิการและคุ้มครองแรงงานพื้นที่/จังหวัด ตามที่ตั้งของสถานประกอบกิจการ

วันที่พิมพ์รายงาน 05/01/2568

รายงานข้อมูลการขึ้นทะเบียน เจ้าหน้าที่ความปลอดภัยในการทำงาน

สถานประกอบกิจการ บอร์ ซี โอเปอเรชั่นส์ อิ๊ง แท่นขุดเจาะ สกัลด์ (SKALD)

55/4 หมู่1 ตำบลชิงโค อำเภอสิงหนคร จังหวัดสงขลา

ลำดับที่	ชื่อ - สกุล	เลขทะเบียน จป.	สถานะ จป.	ระดับ จป.	วันที่แต่งตั้ง	วันที่ยกเลิก
42		กสร.จป.ง 290-014399	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
43		กสร.จป.ง 290-014398	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
44		กสร.จป.ง 290-014397	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
45		กสร.จป.ง 290-014396	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
46		กสร.จป.ง 290-014395	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
47		กสร.จป.ง 290-014394	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
48		กสร.จป.ง 290-014393	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
49		กสร.จป.ง 290-014392	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
50		กสร.จป.ง 290-014391	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
51		กสร.จป.ง 290-014390	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
52		กสร.จป.ง 290-014389	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
53		กสร.จป.ง 290-014388	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
54		กสร.จป.ง 290-014387	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
55		กสร.จป.ง 290-014386	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
56		กสร.จป.ง 290-014385	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
57		กสร.จป.ง 290-014384	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
58		กสร.จป.ง 290-014383	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
59		กสร.จป.ง 290-014382	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
60		กสร.จป.ง 290-014381	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
61		กสร.จป.ง 290-014380	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
62		กสร.จป.ง 290-014379	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
63		กสร.จป.ง 290-014378	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	

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กรมสวัสดิการและคุ้มครองแรงงาน
*แรงงานสมานฉันท์ มั่นคง และปลอดภัย

รายงานข้อมูลการขึ้นทะเบียน เจ้าหน้าที่ความปลอดภัยในการทำงาน

สถานประกอบกิจการ บอร์ ซี โอเปอเรชั่นส์ อิ๊ง แท่นขุดเจาะ สกัลด์ (SKALD)

55/4 หมู่1 ตำบลชิงโค อำเภอสิงหนคร จังหวัดสงขลา

ลำดับที่	ชื่อ - สกุล	เลขทะเบียน จป.	สถานะ จป.	ระดับ จป.	วันที่แต่งตั้ง	วันที่ยกเลิก
64		กสร.จป.ง 290-014377	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
65		กสร.จป.ง 290-014376	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
66		กสร.จป.ง 290-014375	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
67		กสร.จป.ง 290-014374	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
68		กสร.จป.ง 290-014373	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
69		กสร.จป.ง 290-014372	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
70		กสร.จป.ง 290-014370	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
71		กสร.จป.ง 290-014369	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
72		กสร.จป.ง 290-014368	ลูกจ้าง	ระดับหัวหน้างาน	16/05/2565	
73		กสร.จป.บ 290-004128	ลูกจ้าง	ระดับบริหาร	03/08/2565	
74		กสร.จป.ว 290-000979	ลูกจ้าง	ระดับวิชาชีพ	18/10/2565	
75		05-290-2566-000001	ลูกจ้าง	ระดับวิชาชีพ	03/01/2566	
76		02-290-2567-000016	ลูกจ้าง	ระดับบริหาร	12/02/2567	
77		05-290-2567-000016	ลูกจ้าง	ระดับวิชาชีพ	12/02/2567	

สถานประกอบกิจการ บอร์ ซี โอเปอเรชั่นส์ อิ๊ง

555 รสาทาวเวอร์ เอ ชั้น 11 ยูนิต 1105 ถ.พหลโยธิน แขวงจตุจักร เขตจตุจักร จังหวัดกรุงเทพมหานคร

ลำดับที่	ชื่อ - สกุล	เลขทะเบียน จป.	สถานะ จป.	ระดับ จป.	วันที่แต่งตั้ง	วันที่ยกเลิก
78		กสร.จป.บ 102-011719	ลูกจ้าง	ระดับบริหาร	29/04/2565	
79		กสร.จป.บ 102-011717	ลูกจ้าง	ระดับบริหาร	29/04/2565	

สถานประกอบกิจการ บอร์ ซี โอเปอเรชั่นส์ อิ๊ง (แท่น Idun)

55/4 หมู่1 ตำบลชิงโค อำเภอสิงหนคร จังหวัดสงขลา

ลำดับที่	ชื่อ - สกุล	เลขทะเบียน จป.	สถานะ จป.	ระดับ จป.	วันที่แต่งตั้ง	วันที่ยกเลิก

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วันที่พิมพ์รายงาน 05/01/2568

กรมสวัสดิการและคุ้มครองแรงงาน
*แรงงานสมานฉันท์ มั่นคง และปลอดภัย

รายงานขอมูลการขึ้นทะเบียน เจ้าหน้าที่ความปลอดภัยในการทำงาน

สถานประกอบกิจการ บอร์ ซี โอเปอเรชั่นส์ อิ๊ง (แห่น Idun)

55/4 หมู่1 ตำบลชิงโค อำเภอสิงหนคร จังหวัดสงขลา

ลำดับที่	ชื่อ - สกุล	เลขทะเบียน จป.	สถานะ จป.	ระดับ จป.	วันที่แต่งตั้ง	วันที่ยกเลิก
80		05-290-2567-000072	ลูกจ้าง	ระดับวิชาชีพ	29/05/2567	
81		05-290-2567-000071	ลูกจ้าง	ระดับวิชาชีพ	29/05/2567	
82		05-290-2567-000070	ลูกจ้าง	ระดับวิชาชีพ	29/05/2567	

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วันที่พิมพ์รายงาน 05/01/2568

เอกสารแนบที่ 45

ตัวอย่างเอกสารการวิเคราะห์ความปลอดภัยในการทำงาน

Using Synthetic Fiber/Webbing slings for Crane lift or Other mechanical lifting

MIS-WIR-0035	Mist - Marine Operations	Ver: 1
Owner: Barge Engineer	Approver: OIM	

Overview of Task to be Completed:

Location of task on rig:	**General Areas**	**Safety and Environmental Critical Element (SECE) involved or impacted? (Yes/No)**	*No*
Personnel required for task:	Deck Pusher, Crane operator, Deck Crew	**Permit Number:**	
Equipment Required:	Web slings Shackles Deck Crane Chain Hoist Tag Lines Push Pull sticks	**Associated certificate Number:**	
PPE Required: **(In addition to the basic PPE):**	Impact gloves,hard hat,safety glasses,safety shoes and safety coverall.	**Lift Plan No.:**	

Toolbox Talk: *(Completed and signed once the task steps and risk assessment and approvals are in place)*

Comments / Variables and TBT Attendees: *(Names printed below confirms your commitment to working safely, following Borr Drilling procedures)*

-PERMIT MUST BE IN PLACE AND 5ft RULE ENFORCED FOR ALL CRANE OPERATIONS TO STAY CLEAR OF OBSTRUCTIONS.
-The use of synthetic fiber slings (including nylon) is to be avoided as much as possible.
-Prepare Critical Lift Work Permit and get approval from Rig Manager for Synthetic (Nylon) sling use.
-After approval is granted get the web sling from the locker container.
-Inspect the web sling to ensure no defects.
-Check weight of load and use sling with proper SWL.
-Review Work Instruction Manual with all personnel involved.
-Ensure two tag lines and stiffy tools are in place and ready to use for the lift.
-Have barriers in place to prevent access by un-authorized people and have a known route for all lifts.
Ensure personnel has an escape route.
- Take a Timeout for Safety! Report any negative findings to the supervisor and correct before commencement of the lift
- Weather checks to ensure safe for lifting operation.
- Route, landing load, and lifting area adequate lighting.

- ใบอนุญาตทำงาน (Permit) ต้องมีและกฎระเบียบ 5 ฟุตต้องบังคับใช้สำหรับการทำงานเครนทั้งหมดเพื่อหลีกเลี่ยงอุปสรรค**
- ควรหลีกเลี่ยงการใช้เชือกสังเคราะห์ (รวมถึงไนลอน) ให้มากที่สุดเท่าที่จะเป็นไปได้**
- จัดเตรียมใบอนุญาตทำงานสำหรับการยกที่สำคัญและขอการอนุมัติจากผู้จัดการงานเจาะ (Rig Manager) สำหรับการใช้เชือกสังเคราะห์ (ไนลอน)**
- หลังจากได้รับการอนุมัติแล้ว ให้หยิบเชือกเว็บ (web sling) จากตู้ล็อกเกอร์**
- ตรวจสอบเชือกเว็บเพื่อให้แน่ใจว่าไม่มีช้อบกพร่อง**

Using Synthetic Fiber/Webbing slings for Crane lift or Other mechanical lifting

MIS-WIR-0035	Mist - Marine Operations	Ver: 1
Owner: Barge Engineer	Approver: OIM	

- ตรวจสอบน้ำหนักของโหลดและใช้เชือกที่มี SWL (Safe Working Load) ที่เหมาะสม**
- ตรวจสอบคู่มือการปฏิบัติงาน (Work Instruction Manual) กับบุคลากรที่เกี่ยวข้องทั้งหมด**
- ตรวจสอบให้แน่ใจว่ามีสายช่วย (tag lines) และเครื่องมือเสริม (stiffy tools) พร้อมใช้งานสำหรับการยก**
- ติดตั้งสิ่งกีดขวางเพื่อป้องกันการเข้าถึงโดยบุคคลที่ไม่ได้รับอนุญาตและกำหนดเส้นทางที่รู้จักสำหรับการยกทั้งหมด**
- ตรวจสอบให้แน่ใจว่าบุคลากรมีเส้นทางหลบหนี**
- หยุดพักเพื่อความปลอดภัย! รายงานข้อค้นพบที่เป็นลบต่อหัวหน้างานและแก้ไขก่อนเริ่มการยก**
- ตรวจสอบสภาพอากาศเพื่อให้แน่ใจว่าปลอดภัยสำหรับการทำงานยก**
- ตรวจสอบเส้นทาง, พื้นที่ลงโหลด และพื้นที่ยกให้มีแสงสว่างเพียงพอ**

Supervisor Position and Name:		**Date:**	

1.		2.		3.				
4.		5.		6.				
7.		8.		9.				
10.		11.		12.				

If the task deviates from the agreed plan, The job must be stopped immediately and reassessed.

No.	Hazard Scenario, Impacts and Controls Measures			Initial or Current Risk Level			Additional Control Measures	Additional Control Residual Risk			Responsible Person(s)
	Task Steps	Hazard Impact and Effects	Existing Control Measures	C	L	R	Identify the controls needed to further reduce the risks	C	L	R	Who is responsible for these controls?
1	**JSA, WI, raise PTW and lift plan if required.** **Ensure pre check carried out on Nautilus hook to ensure the latch was close properly.**	Poor communication. Personnel not being aware of important job steps and potential hazards. การสื่อสารไม่ดี: บุคลากรไม่ทราบถึงขั้นตอนงาน	Be aware of crane latch and keeps hand away. No one is to touch the crane block at any times. Use stiffy stick to positions the block if needed. Use proper hand and body placement and wear impact gloves. Do not put yourself in the line of fire.	1	2	2					**Barge Engineer** **Deck Pusher** **Crane Operator** **Roustabouts**

	- ทำ JSA (Job Safety Analysis), WI (Work Instruction), และจัดทำใบอนุญาตทำงาน (PTW) และแผนการยก (Lift Plan) หากจำเป็น** - ตรวจสอบล่วงหน้าให้แน่ใจว่าหัวล็อค Nautilus ถูกปิดอย่างถูกต้อง**	ที่สำคัญและอันตรายที่อาจเกิดขึ้น	- ระวังหัวล็อคของเครนและหลีกเลี่ยงการสัมผัสด้วยมือ** - ห้ามบุคคลใดแตะต้องบล็อกของเครนในทุกกรณี** - ใช้ไม้เสริม (stiffy stick) เพื่อจัดตำแหน่งบล็อกหากจำเป็น** - ใช้ตำแหน่งมือและร่างกายอย่างถูกต้องและสวมถุงมือที่ทนแรงกระแทก** - อย่าวางตัวเองในเส้นทางอันตราย**							
2	Rig up synthetic (Nylon) slings to the load as per lift plan. Pre-Use Examination shall be in place as per Borr Directives as bellow Prior to using fiber slings they should be visually examined along their entire length and the following checks made. - ติดตั้งเชือกสลิงเคราะห์ (ไนลอน) เข้ากับโหลดตามแผนการยก** - ทำการตรวจสอบก่อนใช้งานตามข้อกำหนดของ Borr ตามที่ระบุด้านล่าง - ตรวจสอบเชือกสลิงเคราะห์อย่างละเอียดตลอดความยาวทั้งหมด**	Improper slinging or rigging Pinch Point Caught in between. Personnel Injury - การใช้เชือกหรือการติดตั้งที่ไม่เหมาะสม - จุดหนีบ (Pinch Point) หรือการติดขัดระหว่างการทำงาน - การบาดเจ็บของบุคลากร	Use proper hand and body placement Use correct rigging and slinging practices Use appropriate impact gloves Check correct selection of synthetic sling (SWL, Length, use for) SF Must be 7:1 The angle in the eye of the webbing should never exceed 20° when in use. - ใช้ตำแหน่งมือและร่างกายอย่างถูกต้อง - ใช้แนวทางการติดตั้งและการใช้เชือกที่ถูกต้อง - สวมถุงมือที่ทนแรงกระแทกที่เหมาะสม** - ตรวจสอบการเลือกใช้เชือกสลิงเคราะห์ให้ถูกต้อง (SWL, ความยาว, การใช้งาน) SF (Safety Factor) ต้องเป็น 7:1 - มุมที่เกิดในตาของเชือกเว็บ (webbing) ไม่ควรเกิน 20° เมื่อใช้งาน	2	3	6					**Banksman Roustabouts**

Using Synthetic Fiber/Webbing slings for Crane lift or Other mechanical lifting		
MIS-WIR-0035	Mist - Marine Operations	Ver: 1
Owner: Barge Engineer	Approver: OIM	

	- ตรวจสอบตามข้อกำหนดดังต่อไปนี้:										
3	**Crane Lift** Pick up load with the crane and move into position Other mechanical lifting devices (Chain Block) Pick up load and move into position - การยกด้วยเครน - ยกโหลดด้วยเครนและเคลื่อนที่ไปยังตำแหน่งที่ต้องการ - อุปกรณ์ยกกลไกอื่นๆ (เช่น บล็อกโซ่) - ยกโหลดและเคลื่อนที่ไปยังตำแหน่งที่ต้องการ	Struck by Pinch point Dropped object - Cut sling dropped object causing damage to equipment or injury to personnel. swinging load. Personnel injured between load and other structure / equipment.Load striking structures equipment - ถูกกระแทก (Struck by) - จุดหนีบ (Pinch Point) - สิ่งของตกหล่น (Dropped Object) - เชือกขาดทำให้สิ่งของตกหล่น ซึ่งอาจทำให้เกิดความเสียหายต่ออุปกรณ์หรือบาดเจ็บต่อบุคลากร - โหลดที่แกว่งไปมา - บุคลากรถูกบาดเจ็บระหว่างโหลดและโครงสร้าง/อุปกรณ์อื่น	Ensure the web slings are not rubbing against the sharp object, keep eye on it.Check the boom angle before lift the load. Ensure Block is centered over load prior to lifting. Use tag lines or push pull sticks to control load. Do not stand near or touch the load. - ตรวจสอบให้แน่ใจว่าเชือกเว็บ (web slings) ไม่ถูกเสียดสีหรือขัดข่วนกับวัตถุที่คม - ตรวจสอบมุมของบูมก่อนทำการยกโหลด - ตรวจสอบให้แน่ใจว่าบล็อกอยู่ในตำแหน่งที่ศูนย์เหนือโหลดก่อนการยก - ใช้สายช่วย (tag lines) หรือไม้ดัน/ดึง (push pull sticks) เพื่อควบคุมโหลด - อย่ายืนใกล้หรือสัมผัสโหลด	2	3	6					**Deck Pusher Crane Operator Banksman**

		- โหลดชนกับโครงสร้างหรืออุปกรณ์									
4	Lower the load onto the designated place. Unhook from the crane or other mechanical lifting devices - ลดโหลดลงบนตำแหน่งที่กำหนด - ถอดเชือกหรืออุปกรณ์ยกกลไกอื่นๆ ออกจากโหลด	Load tipping over Struck by Caught between - Personnel struck by load. Personnel caught between load and other structure / equipment. Multiple personnel giving signals to crane operator Load tipping over due to lying on uneven surface. - โหลดล้ม (Load Tipping Over) - ถูกกระแทก (Struck By) - ติดขัดระหว่าง (Caught Between) - บุคลากรถูกกระแทกโดยโหลด - บุคลากรถูกติดขัดระหว่างโหลดและโครงสร้าง/อุปกรณ์อื่น - บุคลากรหลายคนให้สัญญาณกับผู้ปฏิบัติการเครน - โหลดล้มเนื่องจากวางอยู่บนพื้นผิวที่ไม่เรียบ	Ensure that only the banksman (Except for all stop) is giving signals and is wearing the banksman vest.Use taglines or stiffy sticks to control load. Do not stand near or touch with hands.Have an escape route in case load swings. Do not stand under the suspended load. - ตรวจสอบให้แน่ใจว่าเฉพาะผู้ควบคุมสัญญาณ (Banksman) เท่านั้นที่ให้สัญญาณและสวมเสื้อแจ็คเก็ตของผู้ควบคุมสัญญาณ - ใช้สายช่วย (taglines) หรือไม้ดัน/ดึง (stiffy sticks) เพื่อควบคุมโหลด - อย่ายืนใกล้หรือสัมผัสโหลดด้วยมือ - จัดเตรียมเส้นทางหลบหนีในกรณีที่โหลดแกว่ง - อย่ายืนใต้โหลดที่แขวนอยู่	2	3	6					**Deck Pusher Crane Operator Banksman Roustabouts**
5	Post task	Untidy work area create slip/trip hazard	Log sheet to control issue out/in the Synthetic fiber sling.	1	2	2					**Barge Engineer Deck Pusher**

Using Synthetic Fiber/Webbing slings for Crane lift or Other mechanical lifting

MIS-WIR-0035	Mist - Marine Operations	Ver: 1
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	Remove the Synthetic fiber sling and return to storage locker at LG container. Sign off critical lift permit. Housekeeping and debrief. - หลังงานเสร็จสิ้น - ถอดเชือกสังเคราะห์ (Synthetic Fiber Sling) และคืนไปยังตู้เก็บที่ LG container - ลงนามในใบอนุญาตการยกที่สำคัญ (Critical Lift Permit) - ทำความสะอาดพื้นที่ทำงาน (Housekeeping) และจัดประชุมปิดท้าย (Debrief)	Equipment left at work site Personal injury during housekeeping - พื้นที่ทำงานที่ไม่เรียบร้อยสร้างความเสี่ยงจากการสิ่นสัมและสะดุด - อุปกรณ์ทิ้งไว้ที่พื้นที่ทำงาน - การบาดเจ็บของบุคลากรระหว่างการทำความสะอาด	Reinforce Debrief in place to share lesson learnt. Proper housekeeping after job completed. All synthetic fiber slings shall be properly stored (cool, dry, and dark) under lock and key in a secure quarantine area until a critical lift permit approves their issue and intended use. Report to the supervisor if the webbing sling found in bad condition. (Any defects found shall require the sling to be removed from service and destroyed immediately.) - บันทึกการควบคุมการออก/เข้าของเชือกสังเคราะห์ (Synthetic Fiber Sling) - เน้นการประชุมปิดท้าย (Debrief) เพื่อแบ่งปันบทเรียนที่ได้รับ - ทำความสะอาดพื้นที่ทำงานหลังจากเสร็จสิ้นงาน - เชือกสังเคราะห์ทั้งหมดจะต้องจัดเก็บอย่างเหมาะสม (ในที่เย็น, แห้ง, และมืด) โดยการล็อคและกุญแจในพื้นที่กักกันที่ปลอดภัยจนกว่าจะได้รับการอนุมัติจากใบอนุญาตการยกที่สำคัญ - รายงานไปยังหัวหน้างานหากพบว่าเชือกเว็บ (webbing sling) อยู่ในสภาพไม่ดี **(ข้อบกพร่องใด ๆ ที่พบจะต้องนำเชือกออกจากการใช้งานและทำลายทันที)**								**Crane Operator Roustabouts**

Supporting Information (Pictures / Illustrations)

Task Step No.		Task Step No.	

Debrief (Capturing Lessons Learned):

During the debrief, capture lessons learned which can be used to update the Work Instruction Risk Assessment:

During the de-brief for the task, we identified the following improvements:

To be filled in at worksite.

Updates to be made:

To be filled in at worksite.

Are the proposed changes suitable and capture further best practice? (Yes / No)		If no, provide reason:	

Using Synthetic Fiber/Webbing slings for Crane lift or Other mechanical lifting		
MIS-WIR-0035	Mist - Marine Operations	Ver: 1
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If Yes, confirm that the agreed changes have been added to the WIRA and the assessment has been updated within the management system:	Dept. Head Signature:

LIKELIHOOD

CONSEQUENCE

	People (P)	Environment (E)	Asset (A)	Information Security (S)	Reputation (R)	1	2	3	4	5
						Never heard of in the industry	Heard of in the industry but not within the company	Happened within the Company	Happened at the location or more than once per year in company	Happened more than once per year at the location
5	Multiple fatalities or permanent disabilities	Discharge of any fluid > 11,000 Liters	NPT > 28 days / Repair Cost > $10m	Complete compromise of all information with disastrous consequences for our customers	International Public Concern	5	10	15	20	25
4	Permanent Disability or Single Fatality	Discharge of any fluid > 2,200 and < 11,000 Liters	NPT > 7 days up to 28 days / Repair Cost > $1m and < £10m	Complete compromise of all information with severe consequences for our customers	National Attention	4	8	12	16	20
3	Severe Injury (LTI) or multiple minor injuries	Discharge of any fluid > 220 and < 2,200 Liters	NPT > 6 hours and up to 7 days / Repair Cost > $100,000 and < $1m	Compromise of a large set of sensitive information with noticeable consequences	Regional Interest	3	6	9	12	15
2	Minor Injury (Recordable) or health effect	Discharge of any fluid > 40 and < 220 Liters	NPT > 1 hour and up to 6 hours / Repair cost > $25,000 and < $100,000	Compromise of a small subset of sensitive information, minor breaches of law	Some local Media and / or Political Interest	2	4	6	8	10
1	Slight Injury (First Aid) or health effect	Discharge of any fluid 0 to 40 Liters	NPT less than one (1) hour / Repair cost up to $25,000	Insignificant compromise of sensitive information	Limited Local Media	1	2	3	4	5

Job Safety Analysis (JSA)

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Document no. TH-GEN-HS-FORM-029-R2

Facility/Platform	Rig Mist	Location: Manora Field	Issue Date:	18 Dec 2024	JSA No.	09
Activity:	Deck cargo operation					

Risk Assessment Matrix		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Very likely
Consequences	Catastrophic	MED	MED	HIGH	HIGH	HIGH
	Major	MED	MED	MED	HIGH	HIGH
	Moderate	LOW	MED	MED	MED	HIGH
	Minor	LOW	LOW	MED	MED	MED
	Negligible	LOW	LOW	LOW	MED	MED

Risk Level Rating	Approval Authority (By Position)
Low Risk:	Master
Medium Risk:	Base manager, Contact manager
High Risk	Not Approved

Assessed by *(At least 3 Assessors Required)*				Assessed by			
Name	Position	Signature	Date	Name	Position	Signature	Date
	Master		18 Dec 2024		C/E		18 Dec 2024
	C/O		18 Dec 2024		2/E		18 Dec 2024
	2/O		18 Dec 2024		AB		18 Dec 2024
	Bosun		18 Dec 2024		AB		18 Dec 2024
	AB		18 Dec 2024		AB		18 Dec 2024

Step Task Description	Hazards	Potential Consequences	Initial Risk *(without any control measures)*			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk *(After apply control measures)*		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
Cargo operation	Gravity, Motion	• Crane breakdown / falling of cargo block	Possible	Moderate	Medium	• Keep well clear of the cargo drop zone • Be aware movements of crane and vessel		Unlikely	Minor	Low

Step Task Description	Hazards	Potential Consequences	Initial Risk *(without any control measures)*			Control Measures to Minimize Risk	Additional Control Measures to Minimum Risk	Residual Risk *(After apply control measures)*		
			Likeli hood	Conse quence	Rating			Likeli hood (new)	Conse quence (new)	Rating (new)
	Motion	• Slippery / fall on deck or over board	Likely	Minor	Medium	• Adequate PPE, including work vest, non slippery boots. • All the tag lines must be placed on top of the cargoes • Be aware of vessel movement and swell state when working near stern.		Unlikely	Negligible	Low
	Motion	• Shifting of cargoes / Squeezed by cargoes	Possible	Moderate	Medium	• Be aware of sea / swell state. • Be aware of vessel movement. • Stay clear of cargo stowed on deck, to ensure NOT being squeezed by incoming waves on deck. • Stow and secure cargo adequately • Do not attempt to unhook the lift until lift is securely on deck.		Unlikely	Minor	Low
	Motion, Gravity	• Hit by swinging cargoes	Possible	Moderate	Medium	• Apply clear deck policy • Be aware movements of the cargo		Unlikely	Minor	Low
	Gravity	• Cargo falling on deck	Possible	Major	Medium	• Inspection of slings and shackles condition before connection. • Container Doors checked before connection to the hook. • Operator must check SWL of cargo and proper distribution of weight.		Unlikely	Minor	Low
	Gravity	• Potential drop object	Possible	Moderate	Medium	• Check potential drop object and remove before lifting • Inform crane operator to beware in case can't remove it • Keep well clear of the cargo drop zone • Be aware movements of the cargo		Unlikely	Minor	Low
	Motion	• Tangled with tag lines	Possible	Moderate	Medium	• Never hold onto the tagline if the cargo is swinging violently. • Never tie the tag lines to ship structure or other cargoes		Unlikely	Negligible	Low
	Motion	• In proper use of tag line	Possible	Moderate	Medium	• Make sure at least 2 tag lines for each load attached to opposite corners • Stay well clear of the cargo when handling tag lines • Ensure that tag line clear from crew prior lifting • Stay clear of the taglines once the cargo loaded • Do not attempt to use tagline until load is less than 2 metres from the deck.		Very Unlikely	Negligible	Low
	Motion	• Failure holding position of the vessel	Possible	Moderate	Medium	• Reassessment environmental impacts • Check efficiency of propulsion system		Unlikely	Minor	Low
	Motion	• Miscommunication	Unlikely	Minor	Low	• Effective communication must be established between Bridge, deck party, platform/rig and crane operator • Standard hand signals agreed upon. • Provide clear signals from the banksman to the crane operator.		Unlikely	Negligible	Low

เอกสารแนบที่ 46

Rig Move

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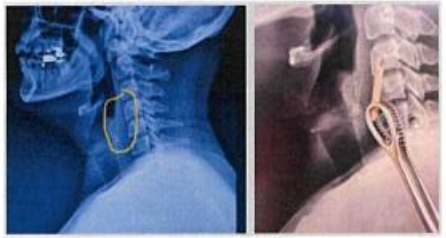
- Safety Moment -



How did it happen?

The patient had lunch (chicken coconut milk soup with bamboo shoot) when he accidentally ingested the 3-cm sharp piece of chicken bone hidden in the chicken meat and pierced his esophagus.

What was done correctly?	What was not done correctly?
He did self-first aid by trying to cough and drank plenty of water. Paramedic examined the throat and did not identify the chicken bone, indicating deeper dislodgement in the esophagus. International SOS medical team had closely monitored and informed to VE management team of a life-threatening condition. We learnt on red flag signs and symptoms that need emergency disembarkation.	3-cm sharp piece of chicken bone was in the chicken meat content.

Lessons Learned

- Consider to not include chicken bones in food ingredient and content on offshore site.
- Cutting the chicken carefully
- Chewing thoroughly
- Avoiding chewing the bones altogether

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VALUE GROWTH

RIG MOVE MEETING

NIRAMAI-4 TO NONG YAO-A

11 APR 2024

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1. **Rig Move Plan**
2. Location
3. Marine Vessels
4. Weather
5. Logistic Support
6. Open Discussion

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- Safety Moment -

1. Rig Move Plan
2. Location
3. Marine Vessels
4. Weather
5. Logistic Support
6. Open Discussion

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Rig Move Plan to Nong Yao-A

SUBJECT : RIG MOVE – Borr MIST from Niramai-4 to Nong Yao A Platform

Dear Sir/Mdm(s)

Please find within this document, the information that you will require with respect to the above referenced Rig Move.

1/ Nong Yao A Platform Location

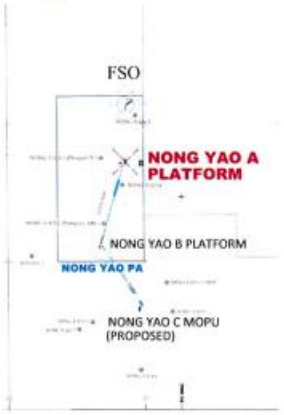
- The location of the **Nong Yao A Platform,** in the Indian 1975 Datum referenced to the Everest 1830 ellipsoid, UTM Zone 47 North (CM 99° East) projection is as follows:

Nong Yao A Platform	**Latitude**	**08° 14' 11.810" N**
	Longitude	**101° 47' 36.333" E**
	Easting	**807 729.16 m**
	Northing	**911 459.80 m**

- The desired final heading for the Borr Mist is 180.5° True or such that the OIM and Company Drilling Representative are satisfied.

2/ Location Range and Heading

- The Nong Yao A Platform location is approximately **49.09 Km** (26.50 Nm) Northeast (azimuth 60.8° True) of the Borr Mist's present location (Niramai-4, Block G10/48). Tow distance is approximately **49.14 km** (26.55 Nm). Based on an average speed of 3 Kt., a minimum estimated time of Tow of 9 hours is expected.
- Tow Master must confirm route suitability prior to rig move. The attached route is a suggestion only.



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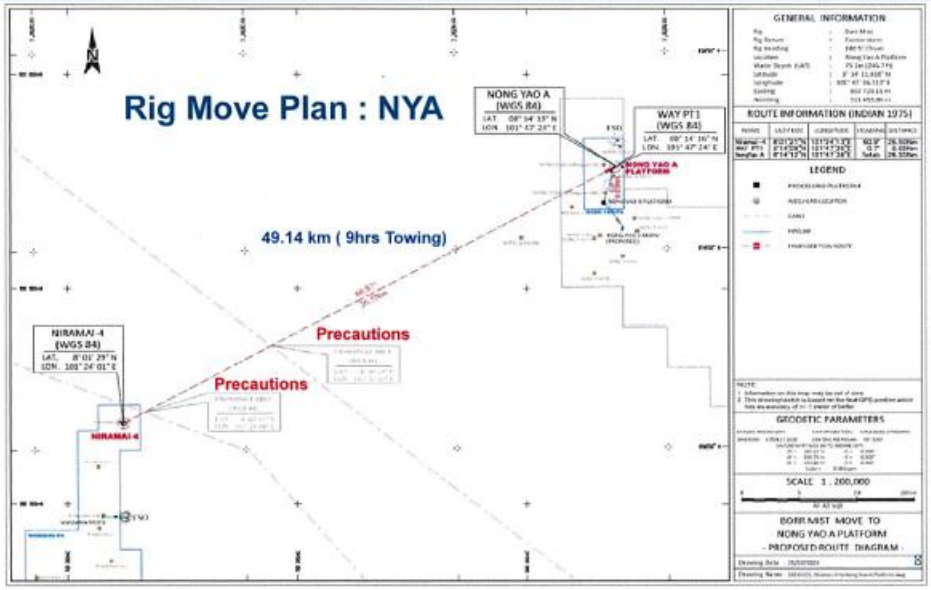
Rig Move Plan

Drilling Project



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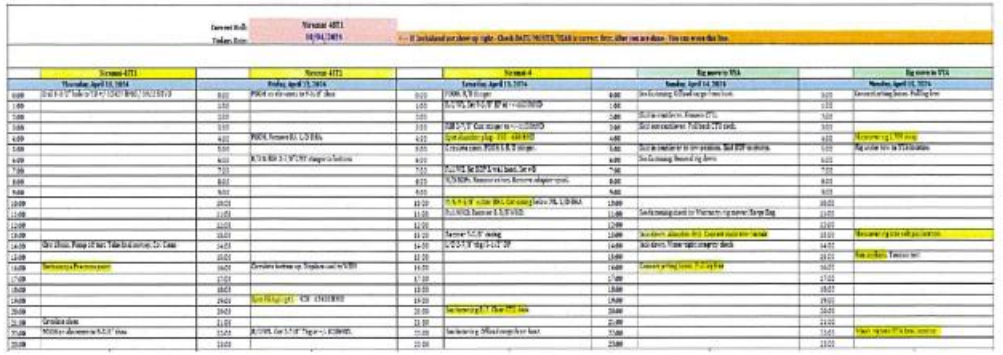
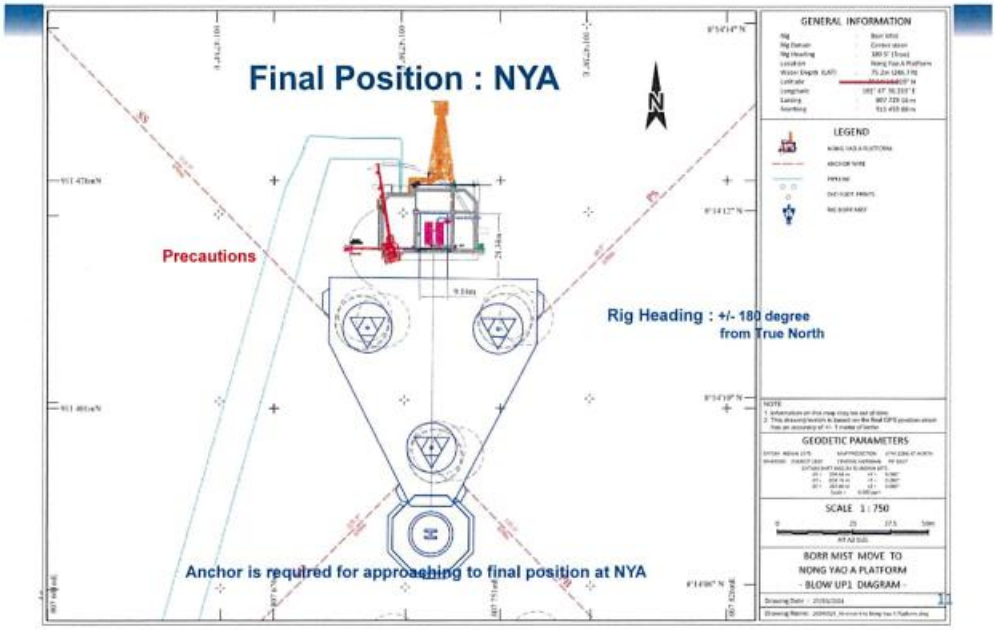
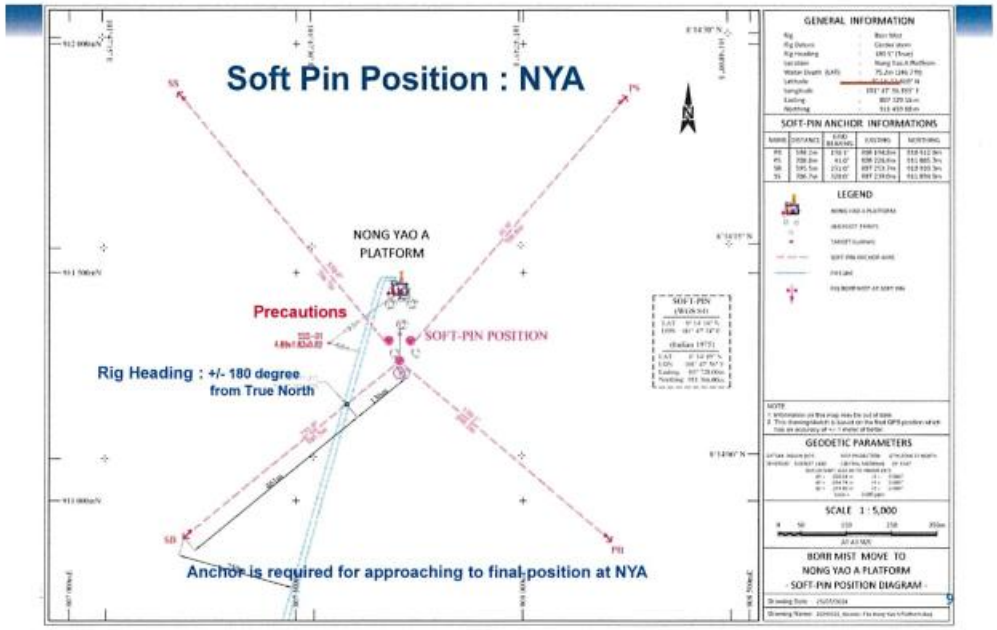
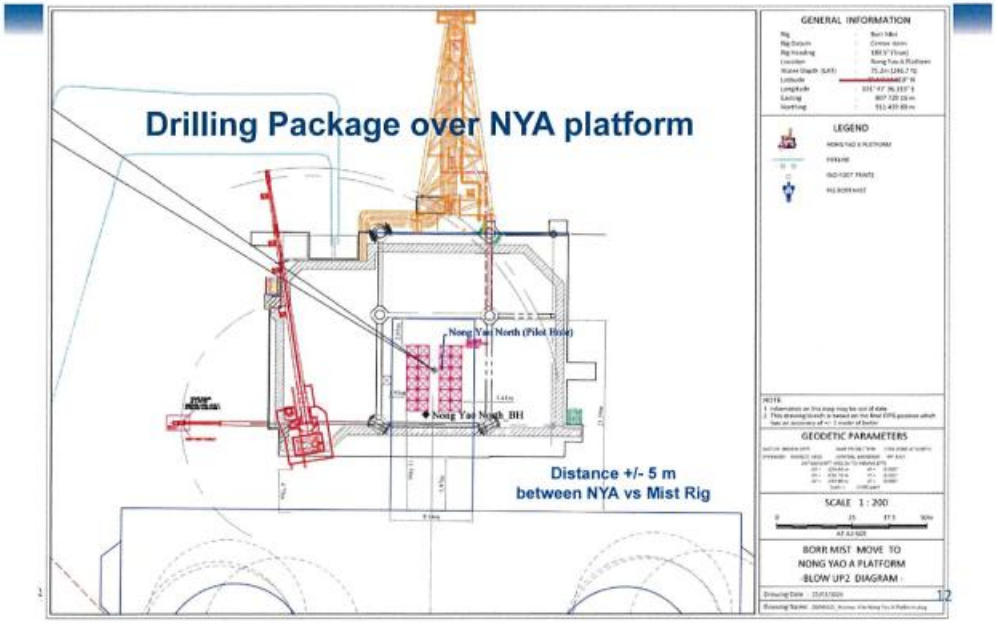
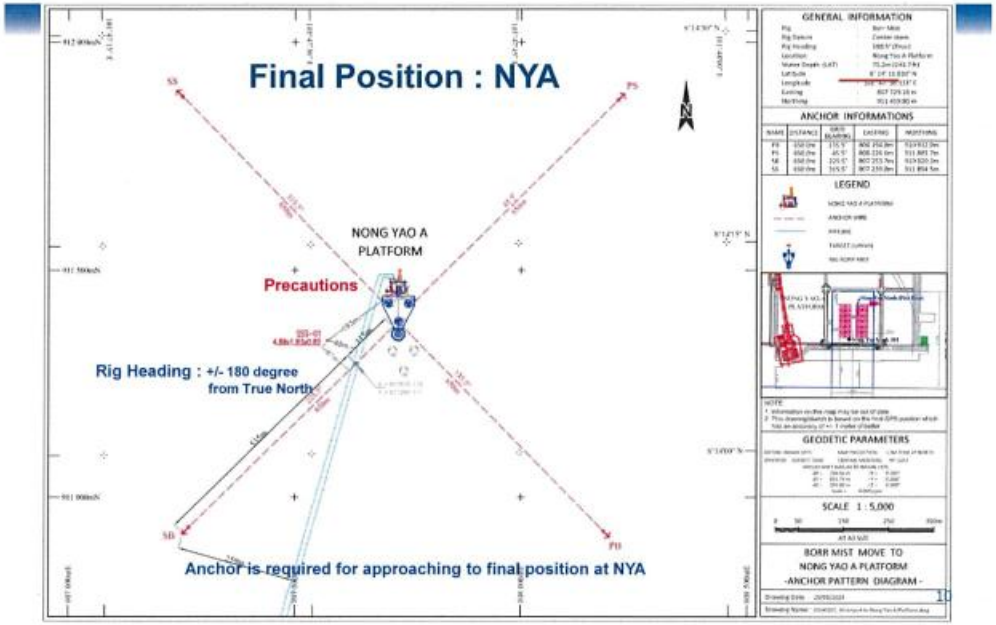
Borr Mist : Drilling Operations Status




Final Position : NYA
Precautions
Rig Heading : +/- 180 degree
from True North
Anchor is required for approaching to final position at NYA
GENERAL INFORMATION
LEGEND
GEODETIC PARAMETERS
SCALE 1 : 750
BORR MIST MOVE TO
NONG YAO A PLATFORM
- BLOW UP1 DIAGRAM -


Soft Pin Position : NYA
NONG YAO A
PLATFORM
Precautions
SOFT-PIN POSITION
Rig Heading : +/- 180 degree
from True North
Anchor is required for approaching to final position at NYA
GENERAL INFORMATION
SOFT-PIN ANCHOR INFORMATIONS
LEGEND
GEODETIC PARAMETERS
SCALE 1 : 5,000
BORR MIST MOVE TO
NONG YAO A PLATFORM
- SOFT-PIN POSITION DIAGRAM -


Drilling Package over NYA platform
Nong Yao North (Pilot Hole)
Nong Yao North_BH
Distance +/- 5 m
between NYA vs Mist Rig
GENERAL INFORMATION
LEGEND
GEODETIC PARAMETERS
SCALE 1 : 200
BORR MIST MOVE TO
NONG YAO A PLATFORM
-BLOW UP2 DIAGRAM -


Final Position : NYA
NONG YAO A
PLATFORM
Precautions
Rig Heading : +/- 180 degree
from True North
Anchor is required for approaching to final position at NYA
GENERAL INFORMATION
ANCHOR INFORMATIONS
LEGEND
GEODETIC PARAMETERS
SCALE 1 : 5,000
BORR MIST MOVE TO
NONG YAO A PLATFORM
-ANCHOR PATTERN DIAGRAM -

2. Location

MVM

DEBRIS SURVEY REPORT

NONG YAO A PLATFORM

Block G11/48
Report No. 2308D03_V

Date of Survey: 01 August 2023
Date of Report: 23 August 2023

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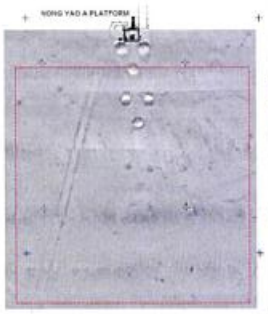
BUSRAKHAM G11 LIMITED

M.V.M. Surveys (Thailand) Co., Ltd.
120 Soi 4, Rangnakorn Road, Ladyao, Chatuchak, Bangkok, Thailand 10900
Tel: 662 591 6268 Fax: 662 591 6265



SIDESCAN SONAR

SEAFLOOR TEXTURE	
NATURAL HAZARDS:	No natural hazards are identified that would constrain rig placement.
SEAFLOOR TEXTURE WITHIN THE SURVEY AREA:	Based on knowledge obtained from the sidescan data, the seafloor likely consists of soft mud/clay throughout the survey area. Anchor scars are present throughout the site. Rig leg scars are present to the south of the platform, and have been identified on the Seabed Features Chart (Figure 3). Existing rig leg footprints (soft pin and final locations) are visible to the south side of the platform.
REMARKS: -	

SIGNIFICANT TARGETS					
TARGET ID	OFFSET FROM CENTER OF PLATFORM	SIZE (Meters)	COORDINATES OF TARGETS	UTM	GEOGS
SSS-01	193.5 m SW (234°)	4.9 x 1.8 x 0.8	E 807 572.56 m N 911 346.10 m	LAT 09° 14' 08.14" N LONG 101° 47' 31.15" E

REMARKS: One (1) significant target was observed. Please refer to Figures 4 - 6 for samples of the sidescan sonar data.

* Target position accuracy ±5 meters

PIPELINE(S)
Four (4) pipelines exist on this site. Two (2) pipelines extend from the northeast corner of the Nong Yao A platform heading north through the survey area. Two (2) pipelines extend from the northwest corner of the Nong Yao A platform heading southeast through the survey area. The pipelines are visible from the sidescan data. Please refer to Figure 2 (Sidescan Mosaic Images)

BATHYMETRY

BATHYMETRY			
NONG YAO A PLATFORM:		75.2m (246.7ft) Below LAT 75.6m (248.0ft) Below MSL	
MINIMUM WATER DEPTH WITHIN SURVEY AREA :	72.8m (238.8ft) Below LAT 73.2m (240.2ft) Below MSL	MAXIMUM WATER DEPTH WITHIN SURVEY AREA :	78.2m (256.6ft) Below LAT 78.6m (257.9ft) Below MSL
BATHYMETRY HAZARDS FOR RIG APPROACH :	No hazards relating to the bathymetry exist for this location.		

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WELL SLOT PLANNING
NYWPP-A

	A	B	C	D
1	NYA-19H (BQ)	NYA-13H (BO)	NYA-29H (EK) NYA-04H (AQ)	NYA-33H(EC) NYA-10H
2	NYA-18H (CM)	NYA-28H (EI) NYA-09H (AM)	NYA-35ST1H(HM) NYA-03H (AL)	NYA-30H (EL) NYA-15H (BP)
3	NYA-31H(AK) NYA-20H	NYA-37H(HQ) NYA-17H(CP)	NYA-32H(CQ) NYA-08H	NYA-11 (BM)
4	NYA-22ST2(CT) NYA-22(EE) NYA-22ST1(EG)	NYA-16 (CI)	NYA-01 (BC)	NYA-26H (CV)
5	NYA-25H (EH)	NYA-38H(HL) NYA-24H (CN)	NYA-34H(CF) NYA-05HST1H (AJ)	NYA-36H(FE) NYA-12H (AG)
6	NYA-23H (DY)	NYA-06 (AJ)	NYA-02/ST1H (AS/AT)	NYA-27H (DA) P&A NYA-14H (AY)

N W E S

Well slot

- Slot Recovery : NYA-17H , NYA-24H
- New Well Name : NYA-37H , NYA-38H

Note: NYA slot assignment to be finalised

2. Location

CONCLUSIONS

SUITABILITY OF THE SITE FOR JACK-UP RIG PLACEMENT

Nong Yao A Platform

There is one (1) significant target identified at a distance of 193.5m SW (234.0°) of Nong Yao A Platform location. This significant target should not pose a hazard to the rig placement.

No natural hazards are identified that would constrain the rig placement at the survey area.

Anchor scars are present throughout the survey area. Rig leg scars are present to the south of the platform.

Four (4) pipelines exist on this site. Two (2) pipelines extend from the northeast corner of the Nong Yao A platform heading north through the survey area. Two (2) pipelines extend from the northwest corner of the Nong Yao A platform heading southeast through the survey area. All are visible from the sidescan data.

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1. Rig Move Plan
2. Location
3. Marine Vessels
4. Weather
5. Logistic Support
6. Open Discussion

Borr – Location Approval : Nong Yao-A

GLOBAL MARITIME

CERTIFICATE OF APPROVAL

No. GM PR3117725 CA 001

BORR DRILLING
MWS SERVICES FOR RIG MOVE OF JACK-UP MIST
TO NONG YAO A LOCATION

LOCATION APPROVAL OF THE MIST AT NONG YAO A, GULF OF THAILAND

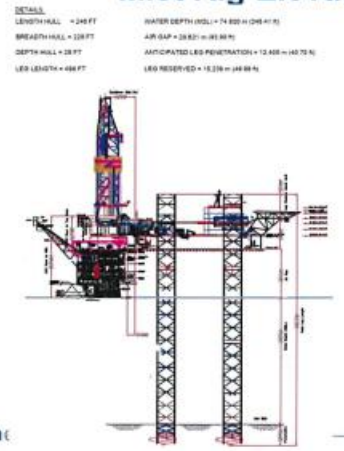
This is to certify that the office, acting on behalf of Global Maritime, has reviewed the information provided for water depth, metocean & seabed conditions and checked calculations relating to the location Approval of the Harsh MWS self-elevating drilling unit at NONG YAO A Platform, Gulf of Thailand. Subject to all recommendations given in report PR3117725-RP-001 Rev 0 being closed, the location is hereby approved for operations. It does not include the approval of the rig move operation.

This Certificate of Approval is issued subject to Global Maritime Terms and Conditions of Business current at the time of issue, without prejudice to the terms and conditions of any insurance policies in force relating to the vessel, its owners, managers or operators. The validity of this Certificate for operations shall be based on assessment and verification reviews and a visual inspection of the external condition of the vessel's machinery and installation equipment without removal, operation or testing of systems, components or structures. This certificate shall not be deemed a certificate of vessel fitness for the vessel, neither is responsibility assumed for the conduct of the operation, injury to personnel, pollution or property damage.

Name: IMRAN SIDDIQUI
Signed:
Location: NONG YAO A, Gulf of Thailand
Date: 11th April 2024
Time: 1400 Hours
Distribution:
Original: BORR DRILLING
Copy 1: GLOBAL MARITIME
Copy 2
Copy 3

GLOBAL MARITIME APPROVED

Mist Rig Elevation over NYA Platform



- RKB – MSL : +/- 165 ft
- Water Depth : +/- 246 ft

1. Rig Move Plan
2. Location
3. **Marine Vessels**
4. Weather
5. Logistic Support
6. Open Discussion

Borr Mist : Legs Penetrations Analysis at NYA

LOCATION ARRIVING		
Estimated Date of Move	April 2024	
Designation	Nong Yao A Location,	
Operator	VALEURA ENERGY (THAILAND) CO., LTD	
Co-ordinates (Platform)	008° 14' 11.811" N	101° 47' 36.333" E
Rig Heading	180.5° (T)	
Water Depth	75.00 m LAT	
Operation Airgap	28.60 m above LAT	
Soil Conditions	Very stiff CLAY overlying stiff to firm CLAY followed very stiff to stiff CLAY	
GM Geotechnical Report Ref.	GM-PR3116016-RP-001 Rev 0	
Expected Penetration	11.20 m – 13.80 m	

Analysis Case	Spudcan Tip Penetration (m)	
	Virgin Soil Conditions	Disturbed Soil Conditions
Maximum Penetration (LE- Lower estimate)	13.3	13.8
Minimum Penetration (HE- Higher estimate)	11.2	11.5

3. Marine Vessels

MP Prosper - SG (Bollard Pull 120 MT) – Assist Tow Vessel

SHIP'S PARTICULARS

Vessel Name	MP Prosper
Call Sign	9V3823
Port of Registry	Singapore
Flag	Singapore
Official Number	480483
IMO Number	9796248
MMSI Number	565 728 000
Classification Society	ABS
Class Number	16261634
Owner	Marco Polo Offshore (Vt) Pte Ltd 66 Kallang Pudding Road, #05-01 Hor Kew Business Centre, Singapore 349324
Ship ISM Manager	MP OFFSHORE PTE LTD
Email	ops.offshore@marcopolomarine.com.sg
Gross Tonnage	2582
Net Tonnage	768
Deadweight	2487.52
LOA	76.30 meters
LBP	68.30 meters
Breadth	16.60 meters
Depth Molded	8.80 meters
Max Draft / Air Draft	5.80 meters / 28.2 meters
Draft Designed	5.50 meters
Vessel Type	AHTS A1, AH, Offshore Support Vessel (PSV 1, Supply), TOW, AMS, ACCU, DPS-2
Builder's Hull No	H147
Place of Building	PT. Marco Polo Shipyard, Batam, Indonesia
Date of Keel Laying	13 December 2014
Date of Keel Launching	23 December 2015
Date of Delivery	19 March 2016
Bollard Pull	120 Metric Tonnes
Type of Generator/ Engine	MAK / 9M25
Output of Generator/ Engine	2 x 3000 = 6000 kW
Horse Power	8046 BHP
Type of main propulsion unit	2 x 4-bladed CPP type
Maker of main propulsion unit	Berg Propulsion
Email Address	mp_prosper@marcopolo.com
Vessel Contact Numbers	
FBB	+870 773 141 446

3. Marine Vessels

- **MP Prestige (Bollard Pull 118 MT / DP2) - SG Flag : Main Tow Vessel**
- **MP Prospers (Bollard Pull 120 MT / DP2) - SG Flag : Assist Tow Vessel**

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1. Rig Move Plan
2. Location
3. Marine Vessels
4. **Weather**
5. Logistic Support
6. Open Discussion

3. Marine Vessels

MP Prestige - SG (Bollard Pull 118 MT) – Main Tow Vessel

SHIP'S PARTICULARS

Vessel Name	MP Prestige
Call Sign	9V3290
Port of Registry	Singapore
Flag	Singapore
Official Number	580864
IMO Number	9768849
MMSI Number	566 114 000
Classification Society	ABS
Class Number	16254807
Owner	Marco Polo Offshore Pte Ltd 66 Kallang Pudding Road, #05-01 Hor Kew Business Centre, Singapore 349324
Ship ISM Manager	MP OFFSHORE PTE LTD
Email	ops.offshore@marcopolomarine.com.sg
Gross Tonnage	2582
Net Tonnage	768
Deadweight	2800
LOA	76.30 meters
LBP	68.30 meters
Breadth	16.60 meters
Depth Molded	9.80 meters
Max Draft / Air Draft	5.80 meters / 28.2 meters
Draft Designed	5.50 meters
Vessel Type	AHTS A1, AH, Offshore Support Vessel (PSV 1, Supply), TOW, AMS, ACCU, DPS-1
Builder's Hull No.	H142
Place of Building	PT. Marco Polo Shipyard, Batam, Indonesia
Date of Keel Laying	08 August 2014
Date of Keel Launching	09 December 2014
Date of Delivery	28 June 2016
Bollard Pull	120.05 Metric Tonnes
Type of Generator/ Engine	MAK / 8M32
Output of Generator/ Engine	2 x 3000 = 6000 kW
Horse Power	8046 BHP
Type of main propulsion unit	2 x 4-bladed CPP type
Maker of main propulsion unit	Berg Propulsion
Email Address	mp_prestige@marcopolo.com
Vessel Contact Numbers	
FBB	+870 773 141 080

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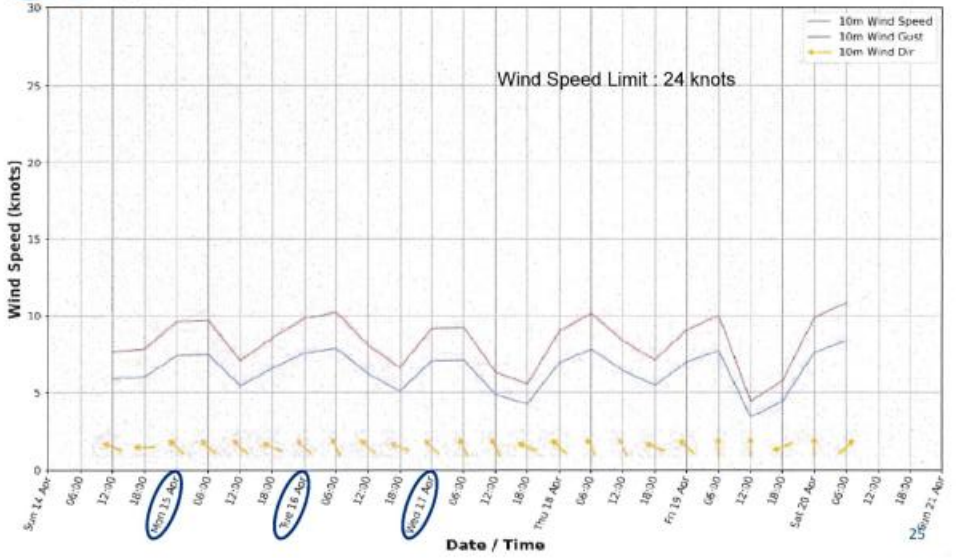
1. Rig Move Plan
2. Location
3. Marine Vessels
4. Weather
5. **Logistic Support**
6. Open Discussion

Wind



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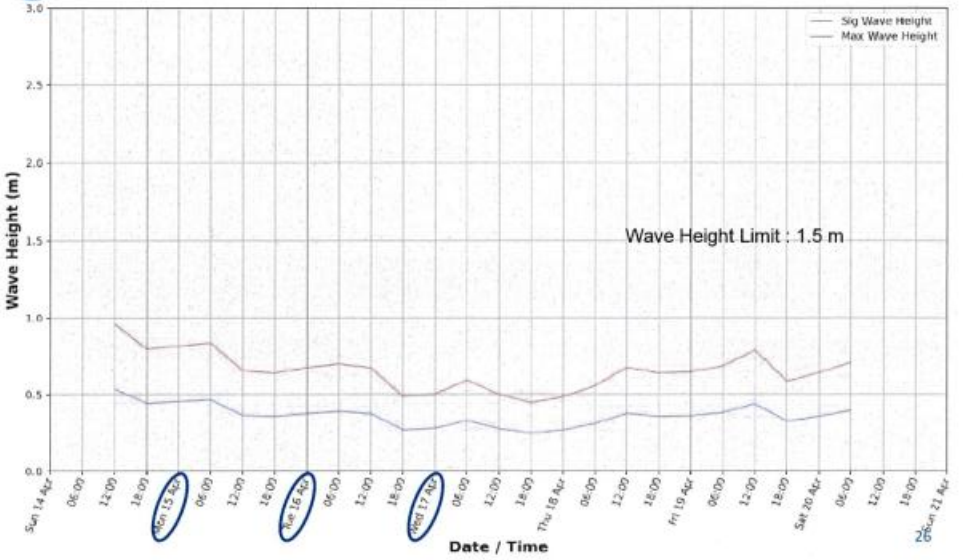
Logistic Support

Logistics Plan:

- **Helicopter Flights before Rig Move :** 11-Apr-2024
- **MP Prestige** shall be the main tow for this Rig Move : ETA MIST : 12-Apr-2024
- **MP Prospers** will be 1st release after arrive final location : 16-Apr-2024
- **Helicopter Flights after Rig Move** : 18-Apr-2024

Wave



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Logistic Support

Songkhla

Marine Transportation at PSB or Sawat Jetty, Songkhla

Aviation Support by United Offshore Aviation (UOA), Songkhla Navy Base

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Open Discussion

1. **Water Depth** to be confirm on final position, and update on every relevant report with the same reference.

2. Rig move Towing Route and anchoring operations should not affect field installation operations around NYC area.

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1. Rig Move Plan
2. Location
3. Marine Vessels
4. Weather
5. Logistic Support
6. **Open Discussion**

เอกสารแนบที่ 47

ขั้นตอนการปฏิบัติงานและการตรวจสอบอุปกรณ์ที่ใช้ในการยก

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Rigging and Lifting - General Lifting Equipment Operations			
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Risk classification:	Information classification:		

1 Introduction

1.1 Intent

Proper lifting operations and controls are crucial to a safe and efficient working environment. The intent of this procedure is to assist those involved with lifting operations in accomplishing the goal of zero accidents associated with lifting operations, thereby providing a safe working environment, and improving operational efficiency on Borr Drilling installations.

1.2 Scope

The policies set forth in this procedure apply to all personnel on Borr Drilling facilities worldwide. These polices communicate Borr Drilling's minimum standards for lifting operations. It is not the intent of this procedure to override or supersede local regulatory requirements. This corporate document shall be supported by divisional standard operating procedures whenever regulatory, or client requirements dictate a higher level of risk mitigation than outlined herein.

The lifting operations covered under this procedure are for the use of:

- General Lifting Equipment:
  - Lifting accessories (e.g., slings, hooks, shackles, eye bolts, etc.)
  - Lifting equipment (all lifting machines, e.g., hand chain hoists, winches, jacks, etc.)
  -

1.3 Responsibilities

Corporate Technical Manager is responsible for the content of this document, and it is approved by the Corporate Technical Director.

All supervisors and managers to ensure that the requirements herein are complied with within their area of responsibility.

The Offshore Installation Manager (OIM) shall be responsible to ensure that this procedure is followed. The OIM must be confident that the operation can be performed safely and with the equipment and personnel that are available to carry out the operation.

1.4 Code of Practice for the Safe Use of Lifting Equipment

The information contained in this procedure came forth from the Lifting Equipment Engineers Association (LEEA) Code of Practice for the Safe Use of Lifting Equipment (COPSULE) and Borr Drilling's legacy documentation.
Additional information and guidance can be found in the latest LEEA COPSULE (https://leeaint.com/copsule).

1.5 Definitions

For the purposes of this procedure the following definitions shall apply:

- **Competent Person** is a person with the necessary practical and theoretical knowledge, experience, training, skill, and ability to perform the specific duty to which the requirement refers. There can therefore be several 'Competent Persons', each with their own duties and responsibilities, i.e., competent for the purpose. The Competent Person should have the maturity to seek such specialist advice and assistance as may be required to enable them to make necessary judgements and be a sound judge of the extent to which he/she can accept the supporting opinions of other specialists.
- **Relevant Documents:**

  (I.) **Declaration of Conformity** (also known as the 'birth certificate') is a declaration made by the manufacturer, or his authorised representative, that the equipment described complies with the relevant Directive(s). It is the legal document enabling an item to be placed on the market and taken into service. The conformity should be retained as part of the lifting equipment records.

  (II.) **Report of Thorough Examination** (also known as a report of thorough inspection or report of periodic inspection) is a report issued by the Competent Person giving the results of the thorough examination, which will detail the defects found or include a statement that the item is fit for continued use. Where the Competent Person has carried out a test as part of the inspection/examination, the report will also contain details of the test.
- **Lifting Accessories** are items of work equipment that are used to connect the lifting machine to the load; examples are slings, shackles, eyebolts.
- **Lifting Equipment** is work equipment for the lifting or lowering of loads and this includes the attachments for the anchoring, fixing, or supporting of it. For example: a clamp that is attached onto an overhead beam onto which a chain or lever hoist is attached is lifting equipment.
- **Lifting Machinery** can be lifting equipment which is used to lift or lower a load; examples are a chain hoist, lever hoist, a crane, a winch, and a jack.
- **Operative** is a trained person using the equipment.
- **Portable Lifting Equipment** unlike fixed lifting equipment can be moved and used at different locations e.g., chain hoists, lever hoists, air hoists, beam clamps, slings, and shackles.
- **Rated Capacity** is the maximum gross load that a lifting appliance can lift for its specific configuration. It is generally used for lifting appliances in the same way as Working Load Limit is generally used for lifting accessories. It is not to be confused with Safe (Specific application) Working Load.
- **Safe Working Load (SWL)** is the maximum load (mass) as assessed by a Competent Person which an item of lifting equipment may raise, lower, or suspend under the service conditions.
- **Thorough Examination** also known as periodic inspection or thorough inspection, is a visual examination of the lifting equipment carried out by a Competent Person carefully and critically

Rigging and Lifting - General Lifting Equipment Operations			
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Owner: Technical Director	Approver: VP Asset Management		
Risk classification:	Information classification:		

and, where appropriate, supplemented by other means such as measurement and testing to check whether the equipment is safe to use.

- **Working Load Limit (WLL)** is the maximum load (mass) that an item of lifting equipment is designed to raise, lower, or suspend. In some standards and documents WLL is referred to as 'maximum SWL.' This term is more generally used for lifting accessories but lifting appliances could now commonly be marked with a rated capacity.

2 Principles for the Selection of Lifting Equipment

2.1 Verification

All lifting equipment should be of adequate strength, sound material, of good construction and suitable for the duty which it must perform. It should be verified in accordance with the requirements of the standard being worked to. New equipment should comply with the essential health and safety requirements stipulated in the applicable legislation, product standard where available, and issued with the required conformity documentation specified therein. This documentation is often combined with the results of the verification and together they form the 'birth certificate' which is an important legal document.

2.2 Factor of Safety (FOS)

Good practice requires that any lifting equipment shall have an adequate factor of safety incorporated in its design. Where appropriate in each of the separate sections, a minimum factor of safety for the specific item is recommended and this should not be reduced.

The purposes of a factor of safety are numerous, including allowance for wear, impact, dynamic loading, and accidental overloading. For example, chain slings are more robust, and defects can be more apparent than textile slings and therefore tend to have a lower factor of safety. However, it cannot be too highly stressed that such allowances are a contingency only and must never be purposely eroded. Care should always be taken to avoid circumstances which can overload (e.g., impact, shock) and care should also be taken in circumstances where inadvertent overload can occur (e.g., multi-point lifts). In extreme cases, where several adverse circumstances occur at the same time, the result may be failure even though the nominal load lifted does not exceed the SWL of the equipment. If such circumstances are likely to occur, reference should be made to a Competent Person who will advise whether it is necessary to use higher rated equipment to achieve a higher factor of safety.

2.3 Standards

Many items are covered by international standards and national standards.

2.4 Intended Use

Some lifting equipment (e.g., lifting beams) can be used in a variety of ways. It is, therefore, important that information on the specific intended use, including potential misuse, should be indicated to the manufacturer/supplier in such cases and the advice of a Competent Person sought before any change of use is authorised.

2.5 Compatibility

A final point to be considered when selecting equipment for a particular operation is compatibility between the various items required. Care must therefore be taken to ensure that each item of equipment seats correctly and aligns with its neighbour.

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3 Marking, Storage and Handling

3.1 Marking

Equipment should show the following markings as a minimum:

- the WLL/SWL or rated capacity, and
- an unambiguous means of identification to cross refer to the associated documentation, and
- such other marks as are required by the standard being worked to and by legislation.

Marking should be by suitable means, i.e., plate, metal tab, textile label, etc, permanently attached or hard stamped directly into the equipment.

Should any of the required marking become obliterated or illegible, the equipment should be withdrawn from service and referred to a Competent Person for re-marking or, if necessary, for re-verification and re-marking.

3.2 Storage and Handling

To reduce to a minimum, the risk of damage or deterioration which may affect the safety of equipment, it is essential to provide suitable storage for equipment not in use, and in many cases to prepare it for storage first.

The ideal storage requirements vary according to the nature of equipment and reference shall be made to manufacturers literature. However, in general the storage area should be dry, free from injurious pollution and not subject to extreme temperatures. Equipment embodying exposed threads or machined bearing surfaces (e.g., eyebolts, shackles) should be protected and handled with care. Equipment which is returned to stores wet or has been subject to other substances liable to cause deterioration should be treated with special care. It should be remembered that solutions of chemicals will become more concentrated as the solvent evaporates, e.g., weak acids will become strong acids. In these circumstances the general advice is to clean and dry the equipment into storage.

The area should be designated for the purpose and preferably controlled to restrict access of unauthorised persons.

Storage bins, racks, etc. should be provided and only the heavier, more robust, items allowed to lie on the floor.

4 Safe Use of Lifting Equipment

For the safe use of lifting equipment and accessories, refer to procedure **COR-PRO-0713-02** *Manual for Lifting Equipment and Accessories.*

4.1 General Procedure

The objective of good lifting practice is to ensure that the load is safe and, when lifted, is as secure in the air as it was on the ground. The following is a general procedure which can be adapted to any lifting operation irrespective of the type of lifting appliance or the method of attaching the load to the appliance.

There are two terms commonly used to describe the attaching of the load to the lifting appliance, 'slinging' and 'rigging', but for simplicity of the procedure below the term 'slinging' has been used throughout.

(1) Determine the weight of the load and the position of its centre of gravity in relation to the lifting (pick up) points. In all lifting operations, care should be taken to ensure that the load imposed on any item does not exceed its SWL. Where there is any uncertainty about the weight of the load or the load applied to a particular part of the equipment, it is recommended that load sensing devices be used.

(2) Decide upon the method of lifting and slinging the load. The equipment selected should only be used in accordance with the manufacturer's instructions and should not be used or adapted for any other purpose without the approval of the manufacturer or other competent design authority. The equipment and its method of use should be suitable for the load and the method of attachment of slings to the load and slings to the lifting appliance should be secure. No item of lifting equipment should be overloaded either by the weight of the load or the weight and method of slinging.

(3) The slinging method must ensure that the load is balanced, does not violently or unintentionally change its attitude when lifted and at all stages of the lift remains in a stable condition. In general, the load will swing and may be unstable if at any time the centre of gravity of the load is not vertically beneath the crane hook, or the centre of gravity of the load is higher than the point of attachment of the slings to the load.

(4) Care must also be taken to ensure that the load is not damaged by the lifting equipment and equally that the lifting equipment is not damaged by the load. Depending upon the slinging method chosen, packing may be required between the sling and the load.

(5) A pre-use inspection of the lifting equipment should be completed to check for obvious defects before use.

(6) If required by the risk assessment, taglines should be used to control the load once it is in the air. This is particularly recommended in the case of long loads where taglines should be attached at one or both ends so that rotational movement may be controlled. The tagline should be of such length that the operative(s) need not stand under the load during

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the lift. Under no circumstances must taglines be used to balance the load, or for any other purpose than controlling the rotation of the load.

(7) The lift plan shall consider any obstacles which may have to be avoided, such as overhead power lines, pipe work or other lifting operations for example.

(8) Before commencing the operation, a suitable landing site should be prepared. The site chosen must be of adequate size and capable of taking the weight of the load. The operative should be wary of any cellars, suspended floors, underground ducts, etc. which affect the load bearing capacity of the floor. In addition, it may be necessary to provide suitable landing pads, e.g., timber bearers, to enable the slings to be removed from under the load.

(9) Ensure that the load is free to be lifted and not restrained by fixing bolts, jigs, etc. Seals or joints, which may offer considerable resistance, should be separated by other means before the lift commences.

(10) Ensure that any loose parts of the load are adequately secured, either by the slinging method or by other means such as, containers, bindings, or secondary positive holding devices, or that they are removed.

(11) There must be a clear method of communication between all those with duties under the lift plan and involved in the lifting operations. Hand signals are preferred to voice communication particularly where noise might interfere. Examples of hand signals commonly used are shown in procedure **COR-PRO-0713-05** *Crane Operations*. If the operatives involved in the lifting operation have not worked together before they should check before starting that they have a common understanding of the signal system. If voice communication is used, there should be an agreed protocol to ensure that misunderstandings do not occur.

(12) Unless unavoidable, no-one should be allowed under a suspended load and as far as possible, all people should be kept clear of the area of operations. Where it is not possible measures shall be provided to protect persons in the danger zone, e.g., secondary load restraints to secure the load if the primary fails.

(13) With ALL lifting operations, the load should be lifted a nominal distance only in the first instance. This trial lift allows the operative to check and confirm the balance, stability, and general security of the load whilst it is in a relatively safe position. If any discrepancies are found, the load should be lowered, and the slinging revised within the limitations of use. The sequence of trial lift and adjustment should be repeated until the operative is satisfied that the load is balanced, stable and secure.

(14) When lowering the load, it should be brought to a halt a short distance above the landing site to allow the operative to steady it, check its position and the position of any landing pads, etc. and to ensure that all personnel are clear of the danger area. The load should then be carefully lowered down into position. Before slackening off the slings, check that the load is safe and stable. If not, it should be lifted slightly to allow the landing blocks, etc.

to be adjusted and lowered again. The trial landing procedure is very similar to the trial lift procedure and should be repeated until the operative is satisfied that the load is safely landed. THE LOAD SHOULD NOT BE LOWERED SO AS TO TRAP THE SLINGS AS THIS MAY RESULT IN SERIOUS DAMAGE TO THEM.

(15) The operative should always be careful when setting down to avoid injury. Having set the load down correctly, the sling legs should be manually withdrawn by the operative. The lifting appliance should never be used to drag a sling out from under a load.

(16) If, when the lifting operation is complete, the equipment is no longer required, it should be returned to proper storage.

(17) If slings are to be left on the lifting appliance for further lifts, the sling legs should be hooked back onto the upper terminal fitting to minimise the risk of inadvertently becoming hooked onto surrounding objects or striking someone.

4.2 Other Requirements

Other requirements to be considered are given to the following additional points:

(1) The Lifting & Hoisting Person in Charge (PIC) and all operatives shall be adequately trained in the methods and safe use of the equipment. This training and instruction should be documented. It is also a duty for operatives to use only equipment for which they have received training or instruction and to use it only in accordance with such training and instruction. It should be noted that in some countries this is a legal requirement.

(2) The Lifting & Hoisting Person in Charge (PIC) and all operatives shall be supplied with any operating instructions provided by the manufacturer or supplier and any current updates relating to the use of the equipment which the manufacturer or supplier may provide on a later date.

(3) Where an operation requires more than one operative, it is essential that communication between operatives is clear. Reference should be made to the appropriate standard for hand signals in procedure **COR-PRO-0713-05** *Crane Operations.*

(4) Where an operation requires more than one operative to handle the slings or guide the load, it is good practice that only one operative should give signals to the crane driver or person operating the lifting appliance. The exception to this rule is the emergency stop signal which any operative may give to override the previous signal. In the case of a complex operation involving multiple lifting appliances where the above is impractical, procedures should be laid down beforehand to ensure that drivers and appliance operators do not receive conflicting signals.

(5) If special circumstances indicate that the standard signals as shown in procedure **COR-PRO-0713-05** *Crane Operations* will not be adequate, then other methods of communication should be considered such as voice communication by radio or hard-wired systems. Whatever method of communication is decided upon, it is important that there should be no risk of signals being confused or being misunderstood.

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(6) When undertaking a multi-point lifting operation (i.e., where two or more lifting appliances are used together) steps must be taken to ensure that no item of equipment or lifting point is at any time subjected to a load more than its SWL. There are numerous ways of ensuring this according to the nature of the operation. For example, where total lifting capacity is not unduly limited, then each lifting point together with its associated lifting machine and tackle could be selected to be capable of sustaining the entire load. Where the capacity is limited, or there is any uncertainty regarding the lift, the use of load sensors will provide continuous guidance on individual lift-point equipment loadings as the operation proceeds. An alternative is to calculate the loads which will be imposed; but care must be taken to ensure that no false assumptions are made especially regarding the weight and the position of the centre of gravity. The load calculation should consider the weight of lifting accessories and attachments.

(7) Where it is reasonably practicable to do so when using cranes for multi-point lifting, the lifting appliances should be linked and controlled from a single control station and be fitted with load limiting and monitoring devices. This is to ensure the load on individual components is not exceeded during the lifting operation. Where this is not possible the lifting operation should be planned and executed with extreme care. The lifting medium, i.e., rope, should remain vertical to prevent side loading particularly when slewing. If one lifting appliance leads when lifting, lowering, slewing, or traversing, then the load magnitude can be transferred from one crane to another and therefore means should be provided to prevent overloading. The use of cranes of equal capacity, geometry and motion characteristics is recommended to minimise variation in the direction and magnitude of the applied forces acting on the lifting appliances. Unless load sensors or some other special method is used, the SWL of each lifting point and its associated equipment should be not less than 1.5 times the share of the load which it is intended to take. As the lift proceeds, a constant check should be kept on the various angles of the equipment and load as these provide an indication of the way the load is distributed. Instruments are available that can perform these checks and should be used. In the case of rigid loads lifted on more than two lifting points, then number of lifting points will bear the load at any time must be considered, as in practice most of the load may be taken on only two or at best three lifting points. In such cases, the SWL of each lifting point and its associated equipment should be not less than half the total load.

(8) Lifting equipment should not be altered or modified in any way without the approval of the manufacturer or other competent design authority and if so should be re-verified, examined, and certified before further use.

5 Procedure - General Lifting Operations

The purpose of this procedure is to ensure that when general lifting operations are carried out, that they are done in a safe and efficient manner. This procedure applies to all rigs and to all personnel onboard the rig involved in general lifting operations.

Control:

- All lifting operations, no matter how simple or routine, need to be planned by a person competent for the purpose who understands the principles involved, the equipment to be used, the nature of the load, the environment in which the lift is to be made and any other factors which may affect the operation. The person planning the lift should be appropriately trained and have the requisite knowledge and expertise of planning lifting operations.
- For the most basic repetitive lifting operation, planning the lifting operation will usually form a part of the considerations of the plant layout and the overall task to be performed. It will largely be a matter of the initial selection and installation of the lifting equipment, supported by training of operatives to follow a laid down work instruction.
- In the case of routine lifting operations, where simple loads are to be lifted and often transported to a new location, using a limited range of general-purpose lifting equipment, planning the operation will normally be a matter for the trained operative, e.g., slinger, who understands the safety procedures to be followed at the site. The operative will then follow standard procedures and practices laid down during his training and given in any specific instructions.
- More complex lifts, e.g., lifting unusual or dangerous loads; lifts performed in difficult locations or hazardous environments; lifts performed in unusual circumstances, lifts requiring more than one lifting appliance or lifts using special purpose lifting equipment, call for greater measures to be taken during the planning. The extent of the measures will depend on the complexity and nature of the operation and of the equipment used. Often this will be a matter of supervision, but in many situations a work instruction will need to be prepared.

  It is common for complex lifts to require more than one operative. All personnel involved in such an operation should be briefed, their individual duties and responsibilities defined, and the work instruction agreed and understood.

- In all cases, supervision is necessary to ensure that the lifting operation is being carried out safely and to monitor the need to amend procedures. The level of supervision will depend on the nature and extent of the operation, the experience and competence of the operatives and the risks involved. Basic repetitive lifting should be monitored to ensure operatives adhere to the work plan and do not adopt bad, or unapproved, practices. It may also be necessary to review the procedures from time to time. Operatives performing routine lifts should be similarly monitored to ensure that they maintain safe systems of work. Refresher training should also be considered to ensure that they remain up to date

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and this is essential if new equipment or safety procedures are introduced. Complex or unusual lifts call for close monitoring and supervision.

- There are four important matters to consider when planning a lifting operation:
  (1) The load
  (2) The task to be performed
  (3) The lifting equipment
  (4) The site

Required Documents:

- Job Safety Analysis
- Pre-Job Safety Meeting
- Work Instruction

6 Borr Drilling Principles

- **The use of 'home-made' lifting equipment is strictly prohibited.**
- Lifting equipment must be of adequate strength, sound material, of good construction and suitable for the duty, which it must perform.
- It must be tested in accordance with accepted methods and a test certificate must be issued with the equipment before it can be used.
- Where lifting equipment is under Borr Drillings control, all inspection data and current inspection certificates must be maintained for a minimum of three years on the installation.
- Where appropriate, lifting equipment must be marked with current colour code.
- Good practice requires that any lifting equipment must have an adequate factor of safety incorporated in its design.
- Care must be taken to avoid circumstances which can cause overload, e.g., impact, shock.
- It will be apparent when reading certain specific sections of this manual that reference is made to the angle at which the equipment is used e.g., the angle between the legs of a multi-leg sling.
- It is most important that an allowance is made for the variation in SWL, which will result from using the equipment at an angle.
- A final point to be considered when selecting equipment for a particular operation is compatibility between the various items required.
- Several different grades of material are used for lifting equipment and it will be found that hooks, links, rings, and shackles vary considerably in size for a given capacity according to the grade of material used.
- Care must also be taken to ensure that each item of equipment seats and aligns correctly with adjoining equipment.
- Where necessary an intermediate link or shackle must be used to ensure this takes place.

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6.1 Pre-Use Inspection & Examination of Lifting Equipment

6.1.1 Pre-Use Inspection

Lifting gear must be examined prior to use to ensure it is in good condition and suitable for the task to be carried out.

In addition, ensure the lifting gear is clearly marked with the following as a minimum:

- WLL, SWL or rated capacity
- Unique identification or serial number.
- The current colour code or inspection label/sticker.

The current colour code is prominently displayed at the worksite and can be confirmed by referring to the Crane Operator/Rigging Supervisor.

To ensure that all lifting equipment is well maintained and fit for its purpose, the following shall be applied:

- Each rig maintains a register of lifting equipment that contains the latest inspection data and valid inspection certificates of lifting equipment.
- All lifting equipment shall be colour coded to identify that the equipment is inspected / examined in accordance with the required inspection frequency.

To ensure that an inspection regime is maintained for all lifting equipment, lifting equipment shall be color-coded and the colour changed every six months upon inspection. As a minimum, inspections shall consist of an annual third-party inspection / recertification of all lifting gear and appliances (i.e., at least every second colour code change). All third-party vendors contracted to inspect lifting equipment shall be a "Borr Drilling approved" vendor for the scope of services undertaken. Vendor approvals shall be granted by the Corporate Vendor Negotiating Team.

The Offshore Installation Manager (OIM) shall ensure their rig follows the colour coding program established by their respective Division. The valid colour code shall be displayed in prominent areas throughout the rig.

The colour code **RED** shall be used to identify defective equipment.

6.1.2 Independent Examination of Lifting Appliances / Gear

Every lifting appliance and piece of lifting gear must be thoroughly examined and where necessary, tested:

- Before it is used for the first time.
- Annually at a minimum (apart from a six-monthly man-riding winch inspection)
- As dictated by local regulations

An independent competent person must carry out this examination and testing.

Lifting equipment shall be stored in designated areas.

Lifting equipment shall never be altered and repairs shall only be done by the manufacturer or authorized representative.

6.1.3 Marking of Lifting Appliances and Gear

Every lifting appliance and piece of lifting gear used as or forming part of the lifting equipment on an offshore installation shall be marked with its SWL, current colour code and unique I.D. number.

Lifting equipment shall never be used to lift a load exceeding its SWL.

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7 Selection of Equipment

The most important fact to establish prior to preparing for a lift is the weight of the item to be handled.

Once the weight has been established, the next consideration may be the available 'head-room' which could have a bearing on sling angles thus possibly increasing the actual tension in the sling legs.

The weight of the lifting gear must be added to the weight of the load to be lifted and the total weight considered when selecting the lifting equipment.

Check the compatibility of the various components as sizes vary according to grades of materials used in its manufacture.

Once the equipment is selected, it shall be examined prior to use.

If lifting equipment appears to be damaged or otherwise defective it must be withdrawn from service immediately, marked with red paint and quarantined to a secure locker or destroyed.

8 Misuse of Equipment

Personnel must never use lifting equipment beyond its SWL.

Personnel must never override or remove crane safety devices (i.e., boom stop) without obtaining approval from the Rig Manager via a Cold Work Permit. The only exception to this shall be when normal operating procedures for the crane require an override to be used to lower the boom into the boom rest. For this operation only, a permit shall not be required.

Particular attention must be given to avoiding:

- Overloading
- Incorrect slinging
- Trapping of slings between load(s) and / or the deck

Should lifting equipment become damaged or otherwise defective, report it to your Supervisor immediately, never attempt to repair any item of lifting equipment. Only the manufacturer or their authorized representative shall carry out repairs. Equipment must be tested and re-certified after repair by a Competent Person.

9 Training

9.1 Operative Training

All operatives are required to be trained in the use of the lifting equipment which they will be required to operate. Training shall be in accordance with the Corporate Minimum Standard Offshore Training Matrix (see **COR-PRO-0073**), and the Borr Competence Assurance Management System (BCAMS) (see **COR-PRO-0433**) for the relevant roles.

This procedure also imposes a duty on them to use only equipment for which they have received training or instruction and to use it only in the manner for which they have been trained or instructed. It is recommended that formal training be undertaken, and a record kept that the operative reached a satisfactory standard. The following lists the general matters which the operative training should consider:

(1) They shall be informed of the specific use for which the item of lifting equipment is intended and have access to the manufacturers and any appropriate instructions for use.

(2) They shall be shown the correct method of use of the item(s). Warning should be given as to incorrect methods of use and dangerous practices, together with an explanation of the possible outcome.

(3) They should be instructed in the recognition of the marking on the equipment and its meaning, including any limitations this may impose on the use.

(4) They should be instructed in the daily check procedure, including any requirements imposed by the manufacturer, supplier, or Competent Person.

(5) They should be informed of the pre-use inspections to be made, including load and angle estimation, where applicable, and the identification of basic equipment defects together with the procedure for reporting these to the Competent Person.

(6) They should be instructed in the correct methods of attaching the load, slings, and other accessories to the load hook of the appliance.

(7) They should be informed of the pre-lift checks to be carried out, e.g., trial lift.

(8) They should be instructed in the lifting and lowering procedures to be adopted. For complicated lifting operations, written systems of work, complete with diagrams, should be issued to operatives or be on permanent display in the vicinity of the lifting operation. Operatives should be familiar with their role within the lift plan.

(9) Where applicable, they should be instructed in the signals to be used when more than one operative is involved in the lifting operation.

(10) They should be conversant with the possible faults which can occur in use and understand the withdrawal from service and reporting procedures applicable to the site.

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9.2 Lifting & Hoisting Person in Charge (PIC)

The training of the Lifting & Hoisting Person in Charge, whilst covering similar points, is likely to require a different emphasis to the above. Formal training should also be undertaken, and a record kept that the Lifting & Hoisting Person in Charge reached a satisfactory standard.

7.34. LIFTING OPERATION AND APPLIANCES

7.34.1. PURPOSE

To describe the required management and inspections of the vessels' lifting operation and appliances for example, Wires and Shackles, assessing their condition and recording the results of the inspections.

7.34.2. RESPONSIBILITY

The vessel's Chief Officer is responsible for:

- The inspection of all Lifting Wires and shackles;
- Maintaining a record of all inspections;
- Maintaining record of certification;
- Maintaining records of all 'spare' Wires and Shackles.

7.34.3. DEFINITIONS

The term "lifting appliances" covers all stationary or mobile cargo-handling appliances used on board ship for suspending, raising or lowering loads or moving them from one position to another while suspended or supported. This includes the equipment used for towing and anchor handling activities as well.

7.34.4. PROCEDURES & STANDARDS

1. Lifting Equipment

e.g. chain register/ Lifting Equipment and Appliance Register **(SM 007-036)**, planned maintenance system, etc. Note: Lifting devices include:

- Pedestal cranes
- Mobile cranes
- Overhead gantry cranes
- Loose lifting gear – chain hoists, lever hoists, slings, shackles, pendants etc.
- Wire line masts
- Draw works and travelling block
- Lifts for persons or goods
- Abseiling equipment
- Sling-sets attached to containers or pieces of equipment
- Runway beams and pad eyes to which lifting equipment is anchored or fixed
- Emergency escape equipment found on offshore installations such as lifeboats (including any davits, winches, ropes, etc.) and Donuts.

Periodic inspection should be carried out in accordance with the relevant legislation and such inspections may be carried out by third parties.
All equipment, which requires thorough examination, should have been identified.

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Prior to using lifting equipment for the first time a thorough examination should be carried out, unless the equipment has not been used before and is not more than 12 months old.

A thorough examination must be carried out if the safety of the lifting equipment is dependent upon installation or assembly conditions.
All lifting equipment deteriorates in use and therefore a thorough examination must be carried out.
Examples of thorough examination intervals are:

- every 6 months if the equipment is used for lifting persons
- every 6 months for lifting accessories (slings, shackles etc)
- every 12 months for all other lifting equipment (chain hoists, lever hoists etc)

A thorough examination should also be carried out following exceptional circumstances which may have jeopardized the safety of the equipment, for example, following an overload or change out of a major load path item.

In addition to thorough examinations, where user risks have been identified inspections should be carried out. The inspection should include visual checks and function tests and be carried out by persons competent to do so.

2. Wire Ropes

Wire ropes shall be inspected by a competent person at the time of installation and during operations and must be removed from load carrying service when wear and corrosion is evident. Wire rope removed from service due to defects shall be plainly marked or identified as being unfit for further use on crane or other load carrying devices. Appropriate eye protection must be worn when cutting wire rope. Further the following must be kept in mind:

- Wire rope must be maintained in accordance with the recommendations of the manufacturer. Kinking and untwisting of wire rope must be avoided. At no time shall a load be applied to a kinked rope.
- Maintain manufacturer's recommended safety factor.
- Connections, fittings, fastenings, parts, etc. used in connection with wire cables and ropes shall be of good quality, of proper size and strength and installed in accordance with the recommendations of the manufacturer.
- A qualified person shall only carry out socketing, splicing and seizing of wire rope. When a wedge-socket type of fastening is used, the dead or shortened end of the rope must be clipped with a U-bolt or otherwise made secure against loosening.
- Wire rope clips attached with U-bolts must have the U-bolts placed around the «dead» or short end of the rope. U-bolt nuts must be checked for tightness.
- Wire rope will stretch and shrink in diameter when loads are

applied. Clips must be inspected periodically and re-tightened.
- Always handle wire rope hand-over-hand. Never let it slide through the hands. Wear gloves when handling wire rope.
- A wire rope cutting torch must be used to cut wire rope and the rope must be tied or taped on each side of the intended cut.

3. Wire Slings

Always inspect slings and other rigging equipment before use to ensure they are in good condition. Cables and slings must be protected when passing over sharp or machined edges of equipment. When using a single sling to hoist pipe or other objects where lifting eyes or holes are not provided, make at least two wraps around the object. Further the following must be kept in mind:
- Suitable protection must be provided between the sling and shaped unyielding surfaces of the load to be lifted.
- The sling must be kept in proper storage when not in use.
- Slings with sharp bends or knots shall not be used.
- Never connect two or more slings together by threading the eyes. Use shackles to connect slings or use a longer sling.
- Use shackles in the end of the slings when practicable. The pull of a shackle must always be from the pin to eye, not from side to side.
- Slings shall be inspected periodically in accordance with statutory requirements.

4. Shackles

Prior of using a shackle, the SWL stamped on the shackles must be checked, and ascertain that the valid certificates is on board. Further the following must be kept in mind:
- Always check the body of the shackle and the pin for identification marks, ensuring that they are of the same quality.
- Ensure that the correct shackles are used.
- If no correct shackles are available, select a shackle with the next higher SWL.
- Report the action immediately to the person responsible for the operations.
- Ensure that the pin is fully engaged into the eye of the shackle.
- Ensure that the collar of the pin seats full on the shackle eye. If not, do not use the shackle.
- Never replace the pin with a bolt, other than the one designed for the shackle.
- Always insert the split cutter pin into the cross-drilled bolt, and bend the pin back to prevent its displacement.
- Shackles must be fitted in line with the load.
- A void inducing bending load on the shackles.
- Avoid eccentric loading of the shackle pin. Use spacers or a shackle with a narrower jaw.
- Do not modify the shackle by welding or mechanically pressing the

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jaw closer together.
- Avoid assembly of the shackle in a manner that may cause the pin to rotate and possibly unscrew itself.
- Shackles used for securing of the top of a sheave block should be sized to take into account the hoisting effort.

5. Chains

Careful attention must be given to the selection of chains. They must be designed for the type of work on which they shall be used. The following must be kept in mind:
- All chains must be identified with SWL. Where a tag is used, the identification should also appear on the Master link. Chains not properly marked shall not be used.
- A chain must not be subjected to strain when it is in a knotted, kinked, or twisted condition.
- Do not tie knots in chains to secure the load.
- Chains must not be shortened or spliced by knotting, wiring, or placing bolts between links.
- If hooks or links become distorted, they must be replaced.
- Chain slings covered by British and International standards will generally not be adversely affected by temperatures down to minus 30 degrees C.
- When the chain is hooked back to its Master link (basket hitch), under normal circumstances, the S\\TL will be the working load limit of a single-leg sling.
- The included angle in multiple leg chains should be taken into account.
- Check that the load is equally shared by each of the legs.
- Never join or shorten any chain except by approved methods.
- If grab-hooks are used for shortening, the manufacturer's recommendation on de-rating the SWL must be followed.
- Never use damaged, corroded or worn chains.
- Chains shall be inspected periodically in accordance with the appropriate governmental requirements.

6. Fiber and Synthetic Ropes

Careful attention must be given to the selection of fiber and synthetic rope. They must be designed for the type of work on which they shall be used. Check the SWL. The color coding and reference number, given by the manufacturer can identify the loading capacity of the soft sling and webbing. The following must be kept in mind:
- Take good care of rope.
- Keep it under cover whenever possible.
- Protect it from caustics and other chemicals.
- Do not let it chafe around sharp corners or on rough objects.
- Keep it dry and clean.
- Rope slings, which have been subjected to acids or excessive heat,

shall not be used for load carrying purposes.

- Keep blocks and tackles in good condition and securely anchored when in use.
- Ropes being subjected to heavy stress may break.
- Remain at a safe distance from lines under tension.
- To prevent damage, ensure that the sling or webbing has adequate width to give spread to the load.
- Do not overcrowd the lifting hook with the thickened eyes of the webbing.
- If necessary, use suitable shackle for connection to the lifting hook.
- Small cuts to the outer sleeve of a soft sling should be repaired to prevent further damage.
- If webbing is frayed at the edges, it should be examined by a competent person before further use.
- If there are large and serious cuts in the soft sling, the sling has to be scrapped or taken out of service and stored, awaiting inspection from manufacturer's representative.

7. Handling Pipes

   Do not place hand or fingers in or on the ends of pipe when it is being moved. Racked pipe must be securely blocked. Avoid overloading pipe racks.

8. Overhead Loads

   Never pass beneath or work under a suspended load. Use tag lines or guide poles when necessary to guide suspended material or equipment.

9. Shore servicing

   An approved shore service company shall perform the inspection, servicing and load testing of the lifting appliances. This company shall inspect the lifting appliances once every 5 years and issue new certificates. Furthermore, the lifting appliances shall be marked.

   In an event the lifting appliance has sustained damages or mechanical faulty, it is imperative this approved shore service company is used to undertake repairs and servicing.

10. Withdrawing of Equipment / Quarantine Procedures

    If one or more defects are found during inspection or in the day-to-day use, the equipment shall be withdrawn from service and put in quarantine until repaired. If repair is not possible, the equipment shall be scrapped.

    In case of cranes or other lifting appliances, they shall be suitably marked and disabled if practicable. In the case of portable lifting equipment, a label stating the reason for its withdrawal/quarantine and including disposal instructions shall be attached to each item stating that it is not to

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be used, and such items shall be stored apart from the lifting equipment still in use.

7.34.5. CRANE (LIFTING) OPERATIONS

1. All precautions shall be observed prior to carrying out any lifting operations. A Tool Box meeting shall be carried out for this purpose.
2. All safety regulations and precautions to be adhered at all times notwithstanding when preparing, during and after lifting operations.
3. Only personnel trained in Rigging and Slinging may be at the lifting area and be involved in performing the various rigging and slinging duties. Any person may STOP the operations if deemed to be unsafe.
4. Crane operations can be dangerous and as such, requires skilled and competent persons to operate and maintain them. The procedures and practices shall be used in conjunction with references to Code of Safe Working Practices (COSWP).

1. Roles and Responsibilities

Crane Operator

The crane operator shall be trained and experienced personnel who demonstrates proficiency in the skills and abilities necessary to operate, inspect and maintain the cranes. The qualified crane operator shall hold a qualification card for the type and capacity of crane that they are operating.

- Operates the crane under the direction of the Banksman.
- Provide technical advice on the safe operation of the crane
- Judgment on the conditions for safe lifting operations from vessels
- Daily maintenance and checks on cranes

Banksman or Signalman

The Banksman or Signalman controls the initial lifting of the load, lay down of the load and lifts that are out of the line of vision of the Crane Operator. The Crane Operator is responsible while the load is in the air. The Banksman must ensure that he:

- Is easily identifiable from other personnel by wearing a hi-visibility jacket or
  Waistcoat, this is clearly marked to indicate that he is the authorized crane Banksman
- He does not touch the load. They must stand back from the load being handled in a prominent position where they have a good view of the lifting activities.
- Remains in communication with the load handler and Crane Operator at all times.
- Keeps the load handler in sight during the lifting operation.

- The signals for crane operation must be used **(SM 007-028)**

Slinger

The Slinger must:

- Stand clear while a load is lifted clear of the deck and landed, while slack is taken up with or without a load on the hook, and must confirm to the Banksman that he is clear.
- Does not touch a load being landed until it is below his/her waist height and never attempt to manually stop a swinging load.
- Control loads with Tag lines
- Be easily identifiable and distinct from the Banksman

2. Crane Pre Use Inspection Checklist

i. Visually inspect boom and lattice for any sign of damage.
ii. Visually inspect crane, rigging and hooks for missing nuts, bolts, pins or keepers.
iii. Ensure the area around the base of the crane is free from all obstructions.
iv. Check fluid levels in the engine fuel, water and oil, also check the hydraulic oil
v. level.
vi. Ensure the engine safety devices, i.e., controls are set.
vii. Visually inspect all wire rope for damage and correct spooling.
viii. Check all controls for correct operation, control levers are spring loaded and must return to the center or neutral position when released.
ix. Check weight and radius indicator, load chart etc if any.
x. Start engine and run at idle speed for 3 to 5 minutes to allow the engine to warm up. While warming up the engine, check around for any sign of water, oil or hydraulic leaks.
xi. Raise the boom, test the anti-two block and boom kick out functions.
xii. Lower the boom and check boom tip sheaves, and ensure the wire rope is on the sheave.
xiii. Report any abnormalities and DO NOT operate the crane.
xiv. On completion of crane operations, lay the boom in the boom rest and set all controls to off or neutral, and set the swing lock.

3. Crane Operations Stoppage

i. Crane operations must be stopped immediately when the weather and seas is not favorable and conducive for a safe operation.

4. Crane Operation Safety Guideline

The followings are safety guideline for the Master and his crew during Crane Operation:

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i. All lifting operations must be properly planned, appropriately supervised and carried out to protect the safety of the crew. Whilst this applies to all vessels, it is particularly important where cranes are being used on work boats and other small vessels as overloading of the crane, or attempting to lift at a wrong angle could, in some circumstances result in stability problems.
ii. Before a lift is made, the operation team will discuss and document, where necessary, the circumstances of the lift. The Crane Operator will obtain all pertinent information before the lift begins. The Crane Operator is responsible for the safe operation of the crane and has the authority to refuse to make any lift.
iii. The crane shall always have a person at the controls whilst it is in operation; it should never be left to run with a control secured in the 'ON' position.
iv. After start up the operator must check whether the function is working properly by moving the crane with no load on it.
v. The person operating the crane should have no other duties which might interfere with their primary task. They should be in a proper and protected position, facing controls and, so far as practicable with a clear view of the operation
vi. Where the operator of the crane does not have a clear view of the whole of the path of travel of any load carried by the crane, only one competent Banksman is to give hand signals to the crane operator. Signals used are to be the accepted standard crane hand signals or by proven radio communications. The signals for crane operation must be used as per **(SM 007-028)**
vii. Stay clear of moving equipment whenever there is danger from swinging booms crane cabs, suspended loads etc. All personnel must stand clear while the lift is being made and while the slings are being drawn from beneath the load.
viii. Tag lines are to be used at all times on all lifts, no matter how small. A 2metre tag line should be secured to the crane hook whilst the hook is free, this is to prevent swinging of the hook in a seaway. Should the hook swing in a uncontrolled manner the hook should either be lowered on to the deck to immediately arrest the swing, or be raised up and well clear of any obstructions until such times as it stopped swinging.
ix. Never use hoist lines or discarded cable to make slings.
x. All rigging and slinging gear should at all times within it's test date, lifting gear that is not tested or out of date should not be used, likewise for any damaged lifting equipment or rigging. At no time should the cranes SWL be exceeded.
xi. Check the angle between the bridle slings. Re-distribute the slings under the load when the angle exceeds 60 degrees. Improper angles of lift result in excessive tension imposed on each leg of the sling, the result is the same as overloading.
xii. Determine the weight and balance of all loads prior to making a lift. Make sure the lifting equipment will be operating within its capabilities

xiii. Use multi-leg slings when required rather than combination of slings. Do not lift loads with one leg of a multi-leg sling until the unused legs are secured.

xiv. Before making a lift, check to see that the slings are not twisted or knotted and are properly attached to the load. Faulty hook-up, point loading of hooks, slipping or unbalanced loads and lifting with twisted or knotted slings can impose loads in excess of the rated capacity of the slings.

xv. When lifting or lowering avoids impact loading caused by sudden jerking. Jerking or snatching loads when lifting can impose stress on the sling and the crane.

xvi. The crane should not be used at any time for dragging loads around the deck, this introduces unknown forces and increase wear and tear on the crane.

xvii. Cranes must be operated with extreme caution when within reach of power lines. A Permit to Work form is required. Power lines must be barricaded or flagged when there is danger of contact by mobile equipment lines, which could be reached accidentally, must be de-energized or otherwise made safe before any work is done.

xviii. Warning horn to be used when the crane is swinging in the vicinity of personnel.

xix. Do not leave a load suspended in the air when the hoist or crane is unattended. Keep loads as low as possible but raise it high enough to clear all items in the path.

5. Crane Operation Signal

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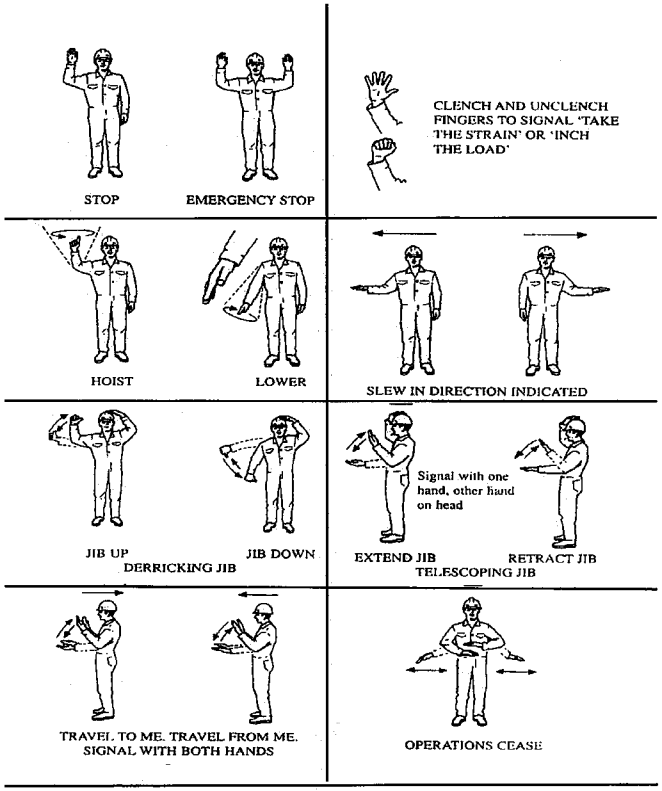

7.36.6 STABILITY OF VESSEL

1. Pre-Load Requirements
   The Master and Chief Officer is responsible for loading a vessel and must ensure that they are aware of the cargo weights to be loaded and the height of their centers of gravity. This information, wherever possible should be determined before loading operations are commenced, so that a safe load sequence can be calculated beforehand and that no nasty surprises are
   encountered at the last minute.

2. Free Surface Effect (FSE)
   The free surface effect of any liquids on board has a marked impact on the vessel's stability by reducing the effective GM (or conversely by effectively increasing the KG). Ideally, ballast tanks should either be pressed up full

or completely empty so there is no free surface effect to consider. However, when this is not possible, it is best practice to initially allow the maximum FSE for each and every slack tank in the stability calculations. If the stability condition is then noted to be critical for any stage of the voyage, the actual free surface moments can be applied to the calculation in order to obtain an accurate assessment of the vessel's condition.

3. Estimating Centre of Gravity
   Masters are reminded of the need for accurate estimation of a cargo's center of gravity. Errors can accumulate if incorrect assumptions are made which can then compromise a vessel's stability. Estimations should always err on the side of safety (i.e. it is better to estimate too high rather than too low). The center of gravity of a container should always be assumed to be at mid height unless it is known to be different

4. Cargo Heights
   Consideration should be given to ensuring the correct cargo heights are used when calculating the VCG, a large number of incorrect heights can have an adverse effect on the final VCG if not allowed for, particularly on smaller vessels.

5. Cargo Weights
   Although there is usually there is no means to assess the weight of a cargo, more emphasis on the need to monitor the vessels actual drafts during loading is given. If discrepancies arise they can be investigated further or allowed for by assuming the worst case scenarios. heavier units can be loaded on top of lighter one may also lead to the subsequent reduction in stability.

6. Draft
   During cargo operations, it is important that the draft is observed visually, forward, aft an amidships on both sides at regular intervals and a comparison made to the calculated or expected draft. Any variances must be check and verified.

7. Cranes Operation
   When ship's crane is being used for cargo operations, the vessel's center of gravity always moves towards the weight loaded, away from a weight discharged or in the direction the weight is moved. As a result, the vessel's vertical center of gravity will be raised and moved in a direction towards the weight, effectively reducing the vessel's stability.

   This can be a crucial factor during the final stages of loading and early stages of discharging when stability could be critical. Care must be taken when calculating the stability at such times and in particular, attention should be paid to the Free Surface Effect. It might be necessary to ballast the double bottom tanks in order to ensure adequate stability during the lifting operation.

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7.34.7 MANAGEMENT SYSTEMS

1. Records

   The following records are to be maintained and updated at least once during each 3-month tour of duty of the Chief Officer and verified at the time of handover.
   - Lifting Equipment and Appliance Register **(SM 007-036)**
   - Towing Log
   - PMS for lifting appliances
   - Record of Withdrawn/Quarantine equipment.

2. Training

   Training on effective and safe mooring/anchor-handling and on the use, inspection and retirement of ropes and wires etc. shall be carried out on board, during routine Training Drills.

7.34.8 HEAVE COMPENSATED CRANE

1. General

   It is important that all personnel, including client representatives, have an understanding of the function and capabilities of the heave compensation systems offered.

   Where heave compensated or constant tension lifts are planned, then the following information should be available for the crane(s):
   □ Crane technical description and operating procedures,
   □ Safe working load radius curves and boom slew angles in heave compensated mode or constant tension mode plus limiting sea states,
   □ Crane de-rating curves,
   □ Failure modes and effects analysis (FMEA)for the crane system,
   □ DAF analysis in heave compensated or constant tension modes,
   □ Engine room/deck engineers' maintenance logs.

   Additionally maximum and minimum crane loads for active heave or constant tension compensation should also be available. Installation analyses should incorporate effects of heave compensation and demonstrate improved operability due to its activation. Sudden loss of heave compensation can result in adverse conditions for load, crane and the vessel which need to be understood as part of planning and considered within the lift risk assessment. There is a requirement to understand the consequence of a sudden loss of heave compensation on the lifted object, crane, and the vessel.

2. Passive Heave Compensation

   A passive heave compensation (PHC) device acts as a spring device normally with a predefined, relatively low stiffness. They are typically hook

mounted but may be mounted on the vessel deck or integrated in the crane heave compensation system. It allows relative vertical motion while keeping load variations in the ropes, suspending the load within acceptable limits. Passive heave compensation systems normally require no power supply for their operation. For subsea lifts, PHC efficiency is dependent on the properties of the lifted object. The properties of PHC need to be set up to react to a part of lift where specific compensation is required (i.e., splash zone, seabed landing or recovery/extraction from seabed).

3. Active Heave Compensation

Active heave compensation (AHC) systems utilise actively controlled devices, which can operate in various modes depending on the required characteristics. They maintain a constant vertical position (AHC-mode) of a free hanging load to a reference point.

The introduction of AHC systems has been of huge benefit to the subsea construction industry over recent years. They involve real time automatic control of the winch or a compensating cylinder in order to counteract the vertical motion of the jib head. Information on crane motion, from which boom tip heave is derived, comes from a motion reference unit (MRU). AHC systems often make use of energy stored in pressurised nitrogen accumulators. An active system which does not take advantage of stored energy in accumulators would require additional energy to drive the winch or compensation cylinder.

While AHC can greatly reduce the movement at the hook, no crane AHC system can compensate for all vessel related movement.

It is important to understand that an AHC system controls the hook/load position and does not limit force transmitted back to the winch. Thus, it is still possible to overload a crane whilst AHC is engaged. This is a particular risk if seabed suction occurs or if the hook is attached to a fixed point/structure. AHC should not be confused with CT (constant tension) which is much more suited to operations involving suction or fixed objects.

The benefits of AHC are primarily:
□ to limit set down speed (and impact) of structures/loads when placing on the seabed/in location;

□ To reduce the amplitude of the motion of a load and stabilise it to, amongst other things, enable ROVs or divers to place rigging on/remove from the hook safely or position the load in relation to another object and facilitate operations such as stabbing etc.

AHC should only be used sparingly, and lifted objects should never be left on the hook for prolonged periods of time in AHC when there is no operational need. The heat generation in the rope due to tension and cyclic bending over sheaves (CBOS) can cause accelerated fatigue of the rope. Additionally, the prolonged use of AHC imposes unnecessary duty to

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the detriment of pumps, motors, and gearboxes. Where difficulties are encountered during an operation with a crane in AHC, then it is prudent to reposition the crane with the winch back in normal mode (i.e., no AHC) whilst those difficulties are overcome (e.g., ROV repair). Project installation engineers and operations personnel should have in place contingency plans to take the crane out of AHC during its planned use, should the operation become prolonged or if difficulties are encountered.

Some limitations in the use of AHC can include:
□ A minimum wire pay-out length to engage AHC

□ Crane movement restrictions once AHC is engaged (e.g., slew / boom)

□ The efficiency of AHC when used in deeper water applications – since the AHC compensates for crane tip motions, the lifted objects heave motions may be out of phase due to hydrodynamic loads imparted on it

It is essential to prevent excessive fatigue on a single section of rope which may render the whole rope unfit for further use.

It IS recommended to use AHC:
□ through the water column when interacting with an ROV and/or divers;

□ when presenting/landing a lifted object from a floating vessel to/on a fixed object;

□ during approach to seabed when setting down and disconnecting load/connecting (slack) rigging and raising a lifted object from a firm seabed (no suction).

It Is NOT recommended to use AHC:
□ in lieu of a constant tension mode with the aim of avoiding overload resulting from the motion of the vessel when attached to a fixed structure/point that is subsurface, e.g., for opening/closing hinged hatches on fixed subsea structures;

□ in order to try to reduce dynamic loads when lowering a lifted object through the water column – PHC is more appropriate for this part of the operation, or a crane which has a special splash zone mode.

□ when lifting a subsea load that is subject to suction;

□ for extended periods unless necessary;

□ at the same water depth over a protracted campaign without monitoring rope condition;

□ when weather conditions or operational constraints do not require it.

4. Combination of Passive and Active Heave Compensation

The capabilities of the system under varying loads and environmental conditions should be fully discussed between manufacturer and customer. An accurate measurement or estimation of vessel motions is critical in ensuring that heave compensation systems meet expectations.

5. Constant Tension (CT)

This is used to achieve a constant line-pull set by the crane operator. The line-pull is measured by a load cell and monitored by the control system. If the actual value differs from the preset value, the winch will either pay in or pay out rope to maintain the preset value. Instant adjustment of the rope tension is possible by changing the tension set point value.

Constant Tension (CT) can, for example, be used to pre-tension a rope prior to hoisting a lifted object from a supply boat or after landing a lifted object onto the seabed. CT prevents lifted object bounce on the deck or being picked up again. However, its primary use is for the lifting of loads subject to suction or potentially at risk of snagging/jamming on underlying structures. Care should be taken to avoid the prolonged use of CT when recovering a lifted object stuck in the seabed. CT can also be used on crane tugger winches.

Although useful for loading/unloading supply vessels, great care should be taken by the crane operator when setting the tension so that unintentional lifting of the lifted object does not occur resulting in a dangerous situation. This system is useful for maintaining a vertical line once a lifted object has been set down on the seabed during subsea construction activities. Be aware that often the CT has a minimum value, which can be several tons.

6. Floating Unit to Floating Unit

Lifting a load from floating unit to floating unit presents additional risk factors than when lifting between fixed and floating locations.

When the lifting site and the landing site are floating, they are usually both continuously moving and sometimes with differing motions.

Various challenges are presented especially when critical alignment is required between the lifted object and the intended landing position/location. The lifting is always dynamic in nature due to the ocean waves, currents, wind forces etc. It is therefore important to include the dynamic effects into the engineered lift calculation as these effects can significantly influence the load and crane capacity.

The vessel crane must have been appropriately designed for offshore lifting and its intended usage. All lifts from floating unit to floating unit must use the appropriate load curves.

The Crane tip motion period needs to be compared with the significant wave period and ensured that both are not close to causing resonance.

The crane operator must have been trained and assessed as competent in this particular lifting activity.

เอกสารแนบที่ 48

เอกสารรับรองและตัวอย่างผลการตรวจสอบอุปกรณ์ที่ใช้ในการยก

Siaptek	Inspection, Certification, Non-Destructive Testing, Helideck surveys, Maintenance and Cleaning Services	Report: MOSTH240120
		Revision No. 00
	LGI Summary Report	Date: 30 March 2024

Borr Drilling – MIST Rig

Borr Drilling

Siaptek Thailand

LIFTING GEAR INSPECTIONS

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INTRODUCTION

Client:	Borr Drilling
Location:	Rig MIST / Valeura Field (Gulf of Thailand)
Project:	Lifting Gear Inspection
Job No:	MOSTH240120
Siaptek Inspector:	
Client Representative:	David Stenzel (OIM)

Siaptek has carried out a Fixed & Loose Lifting Gear Survey on board BORR MIST at Valeura Field (Gulf of Thailand) at the request of our client, Siaptek was contracted to undertake a series of thorough visual inspection various items on-board the Borr Drilling rig MIST

The intent of the survey is to create a safe workplace by ensuring that Lifting Gear used for lifting is safe, certified and fit for purpose. The prime consideration is the safety of personnel and then to ensure that materials and cargo are handled with the minimum risk of damaged.

The colour code (As per Valeura Energy Requested) for this period is Yellow for Lifting Equipment's for duration of 12 months. All equipment found to be acceptable during this survey have been colour coded thus.

Items found defective due to missing parts, missing Unique ID number and not found test certificated will be colour coded White this item should be load test by Siaptek and marking ID no, Safe working load and Dimensions.

Items found defective due to missing & damage parts, missing Unique ID number, bad condition or damaged will be colour coded Red and either scrapped immediately by us or are waiting for disposal by the rig crew.

During the inspection period, most material was found to be in good condition.

Whilst on board we also carried out NDT examinations by means Eddy Current Inspection.

All NDT reports can be found in this package.

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Scope of inspection: Lifting Gear Inspections

Reference Standards or Documentations: Borr Drilling - Valeura

- ASTM E709 for MT
- ASTM E165 for PT
- ASME Section V – NDT GUILD LINE
- TH-GEN-AI-QA-PRC-139-R3_ INSPECTION OF LIFTING EQUIPMENT PROCEDURE
- LOLER 1998_LIFTING OPERATIONS AND LIFTING EQUIPMENT REGULATIONS 1998

Scope of inspection: Lifting Gear Inspections / MT / PT / ET / VT

Reference Standards or Documentations: Siaptek

- SKTH-OPP-NDT-MT-001_MAGNETIC PARTICLE INSPECTION
- SKTH-OPP-NDT-PT-001_DRY - LIQUID PENETRANT INSPECTION
- SKTH-OPP-NDT-ET-001_EDDY CURRENT INSPECTION
- SKTH-OPP-NDT-LGI-001_LIFTING GEAR INSPECTION

Executive Inspection Summary of Inspected Items:

- Pedestal Cranes
- Crane & Overhead Crane
- Lifeboat-FRC Davit - Life raft
- Forklift
- Towing Bridle
- Fabrication Pad eyes
- Swing Jib
- Snatch Block
- Runway Beam
- Manual Hoist & Trolley
- Winches
- Wire Rope Sling
- Shackles
- Hooks
- Webbing Sling
- Hose Lifter
- Hoist Ring (Eye Bolts)
- Swivel Hoist
- CCU'S/Others

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Siaptek

Borr Drilling

General Comments:

The vast majority of the various items subjected to inspection were found to be defect free and therefore can be considered for continual use as per design intent.

- A major thorough visual inspection defect was noted on item below;
  a) Mud Bucket 1 Unit – Not Found Test certificate recommend to load test.
  b) Pipe Rack – Basket (Cantilever) – Lifting Padeye bent / NO ID, recommend to repair and Load test
  c) Trolley Beam/Chain Hoist 3 Pcs. – Fail function test and Heavy rust at all Jacking leg, shall be maintenances.
  d) Runway Beam 2 Pcs. – Found Heavy corrosion / rust on weldments at Jacking leg Port and Beam Damaged at Rigfloor.
  e) MPC Crane – Found Heavy corrosion and rust on structure. Recommend to maintenance and Load test
  f) Derrick OAC Crane – Found Heavy corrosion and rust on structure and bolted. Recommend to maintenance.
  g) Derrick OAC Crane – Wire rope sling, two-line wire cut in one stand (accepted) should be record and weekly inspection on wire rope sling.
  h) Fabrication Padeye NO ID – Recommend to Load test (See on register at below)
  i) Pedestal crane (Stbd/Port Fwd.) – Main hook shank thread damaged and heavy corrosion, recommend to replace or repair (by manufacturer recommend)
  j) Fish Plate With 3x Eye to Suit (Towing Bridle) – Heavy corrosion and rust, recommend to maintenance and NDT Inspections
  k) Main Towing Shackles – Heave corrosion on Split pins, recommend to replace (Can't take out split pins on this time)
  l) 35t Towing shackle below Anchor 4ea – Heavy corrosion and rusty / OD Wear, recommend to replace.
  m) Drill Floor Man riding winch – Function Fail, Manual Control & Emergency stop not installation.
  n) Drill Floor Racking Utility Winch- Heavy corrosion on base structure welded / pressure gauge damaged, recommend to maintenance and replace gauge.
- Other thorough visual inspection defect was noted on Quarantine & Rejected Items list. (See on table at below)
- All Inspection item see in the LGI Register at below; (Ref. MOSTH240120)

On behalf of Siaptek Thailand, we would like to express our gratitude towards Borr Drilling for the support and help rendered throughout our stay onboard.

Teerasak S.

Signed on Behalf of Siaptek Thailand Co.,Ltd
Date: 09.04.2024
Teerasak Sanyos [Team Lead.]

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Borr Drilling

THOROUGH EXAMINATIONS REGISTER

LIFTING GEAR INSPECTIONS

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Client: Borr Drilling
Facility: Borr Mad Jack Up Rig
Mission Order No.MOSTH240120

Lifting Gear Register List
(Cranes Pedestal)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Pedestal Crane-Seatrax Series 72 Model ST220	4660	Port-Fwd Crane	55 Ton	Seatrax	Unknown	4660	31 March 2024	30 September 2024		IN USE
2	Main Block Assembly	TA 3055	Port-Fwd Crane	75 Ton	Seatrax	Unknown	TA 3055	31 March 2024	30 September 2024		IN USE
3	Overhead Ball Assembly	TA 3055 (80-140)	Port-Fwd Crane	17 Ton	Seatrax	Unknown	TA 3055	31 March 2024	30 September 2024		IN USE
4	Single leg STINGER Sling C/W Clevis Spelter 1-end & Self. Locking Hook 1-End @32mm x 3mtr.	FAB 2817	Attach to Aux. Port-Fwd Crane	12 Ton	Franklin	07-Feb-2022	FC5430-2282018	31 March 2024	30 September 2024		IN USE
5	Pedestal Crane-Seatrax Series 72 Model ST220	4661	Stbd-Fwd Crane	55 Ton	Seatrax	Unknown	4661	31 March 2024	30 September 2024		IN USE
6	Main Block Assembly	TA 3068	Stbd-Fwd Crane	68 TDs	Seatrax	Unknown	TA 3068	31 March 2024	30 September 2024		IN USE
7	Overhead Ball Assembly	TA 3055 (CB-002)	Stbd-Fwd Crane	17 Ton	Seatrax	Unknown	TA 3055	31 March 2024	30 September 2024		IN USE
8	Single leg STINGER Sling C/W Clevis Spelter 1-end & Self. Locking Hook 1-End @1 1/4" Dia. X 3.2 mtrs.	STROPSTH-1	Stbd-Fwd Crane	15.05 Ton	Unknow	Unknown	STROPSTH-1	31 March 2024	30 September 2024		IN USE
9	Pedestal Crane-Seatrax Series 72 Model ST220	4662	Port-Aft Crane	55 Ton	Seatrax	Unknown	4662	31 March 2024	30 September 2024		IN USE
10	Main Block Assembly	LB-BO-4661 (TA 3208)	Port-Aft Crane	75 Ton	Seatrax	Unknown	TA 3208	31 March 2024	30 September 2024		IN USE

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Client: Borr Drilling
Facility: Borr Mad Jack Up Rig
Mission Order No.MOSTH240120

Lifting Gear Register List
(Cranes Pedestal)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Main Hook	TA 3082	Port-Aft Crane	75 Ton	Seatrax	Unknown	TA 3082	31 March 2024	30 September 2024		IN USE
12	Overhead Ball Assembly	TA 3055 (BO-466)	Port-Aft Crane	17 Ton	Seatrax	Unknown	TA 3055	31 March 2024	30 September 2024		IN USE

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Lifting Gear Register List
(Lifeboat-FRC Davit-Liferaft)

Client :Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Open Wedge Socket	965	Life Boat No.1	14 Ton	Crosby	Unknown	124281	30 March 2024	29 September 2024		IN USE
12	Open Wedge Socket	803	Life Boat No.1	14 Ton	Crosby	Unknown	124283	30 March 2024	29 September 2024		IN USE
13	1" Safety Pin Bow Shackle	LB1-A	Life Boat No.1	8.5 Ton	Green Pin	04-2023	MS81486.3	30 March 2024	29 September 2024		IN USE
14	1" Safety Pin Bow Shackle	LB1-B	Life Boat No.1	8.5 Ton	Green Pin	04-2023	MS81486.3	30 March 2024	29 September 2024		IN USE
15	1" Safety Pin Bow Shackle	LB1-C	Life Boat No.1	8.5 Ton	Green Pin	04-2023	MS81633.3	30 March 2024	29 September 2024		IN USE
16	1" Safety Pin Bow Shackle	LB1-D	Life Boat No.1	8.5 Ton	Green Pin	04-2023	MS81633.3	30 March 2024	29 September 2024		IN USE
17	Hang Off Padeye / L 300mm X H 240mm X Thk.30mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB1-2	Life Boat No.1	8 Ton	Norsafe	Unknown	TAT/532/ILT-080	30 March 2024	29 September 2024		IN USE
18	Hang Off Padeye / L 300mm X H 240mm X Thk.30mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB1-1	Life Boat No.1	8 Ton	Norsafe	Unknown	TAT/532/ILT-080	30 March 2024	29 September 2024		IN USE
19	Life Boat 2 Davits & Associated Equipment/ Davit	3762	Life Boat No.2	14.28 Ton	Norsafe	Unknown	NS00002844	30 March 2024	29 September 2024		IN USE
20	Double Drum Winch/ Wire Rope 28mm Dia.	1321	Life Boat No.2	150 kN	Norsafe	Unknown	NS00002844	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Crane&Overhead Crane)

Client :Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Multi-Purpose Knuckle Boom Crane / Model MPC-15 K VP	12-0173-II	Cellar Deck - Stbd	15000 LBS	Foram	Unknown	12-0173-II	30 March 2024	29 September 2024		IN USE
2	Multi-Purpose Knuckle Boom Crane / Model MPC-15 K VP	12-0173-A	BOP Dack - Port	15000 LBS	Foram	Unknown	12-0173-A	30 March 2024	29 September 2024		IN USE
3	Overhead Auxiliary Crane (OAC) Model 22K- OAC	12-0152	Derrick - OAC	22000 Lbs	Foram	Unknown	C152	30 March 2024	29 September 2024		IN USE
4	BOP handling Equipment/ Pneumatic Chain Hoist	6781097 - BOP Hoist #1	Under Drill Floor/ BOP Chain Hoist	50 Ton	J.D NEUHAUS GMBH & CO	Unknown	HN2182071	30 March 2024	29 September 2024		IN USE
5	BOP handling Equipment/ Pneumatic Chain Hoist	6781095 - BOP Hoist #2	Under Drill Floor/ BOP Chain Hoist	50 Ton	J.D NEUHAUS GMBH & CO	Unknown	HN2182071	30 March 2024	29 September 2024		IN USE
6	BOP handling Equipment/ Pneumatic Chain Hoist	6781096 - BOP Hoist #3	Under Drill Floor/ BOP Chain Hoist	50 Ton	J.D NEUHAUS GMBH & CO	Unknown	HN2182071	30 March 2024	29 September 2024		IN USE
7	BOP Runway Beam	BOP-RB-01	Under Drill Floor	100 Ton	J.D NEUHAUS GMBH & CO	Unknown	JW703195-C-014	30 March 2024	29 September 2024		IN USE
8	BOP Runway Beam	BOP-RB-02	Under Drill Floor	100 Ton	J.D NEUHAUS GMBH & CO	Unknown	JW703195-C-014	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Lifeboat-FRC Davit-Liferaft)

Client :Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	Life Boat Davits 1 / Fall Wire Rope / 24mm X 94.3mtrs	WITN31920-0338-2	Life Boat No.2	54 MT (MBL)	AMOS	14-Jun-2023	6100081337/001	30 March 2024	29 September 2024		IN USE
22	Life Boat Davits 2 / Fall Wire Rope / 24mm X 87.5mtrs	WITN31920-0338-2	Life Boat No.2	54 MT (MBL)	AMOS	14-Jun-2023	6100081337/001	30 March 2024	29 September 2024		IN USE
23	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81776.4	Life Boat No.2	25.9 T(MBL)	Hendrik Vender Group	03-2023	MS81776	30 March 2024	29 September 2024		IN USE
24	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81545.14	Life Boat No.2	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81545	30 March 2024	29 September 2024		IN USE
25	Oval Master Link With 32-B-6	36944/42	Life Boat No.2	11.4 Ton	Foram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
26	Oval Master Link With 32-B-7	36944/48	Life Boat No.2	11.4 Ton	Foram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
27	Quick Release Hook	AB 0767	Life Boat No.2	8 Ton	Norsafe	Jan-2012	NS00002844	30 March 2024	29 September 2024		IN USE
28	Quick Release Hook	AB 0706	Life Boat No.2	8 Ton	Norsafe	Jan-2012	NS00002844	30 March 2024	29 September 2024		IN USE
29	Open Wedge Socket	1078	Life Boat No.2	14 Ton	Crosby	Unknown	124278	30 March 2024	29 September 2024		IN USE
30	Open Wedge Socket	1074	Life Boat No.2	14 Ton	Crosby	Unknown	124280	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Lifeboat-FRC Davit-Liferaft)

Client :Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Life Boat 1 Davits & Associated Equipment/ Davit	3761	Life Boat No.1	14.28 Ton	Norsafe	Unknown	NS00002843	30 March 2024	29 September 2024		IN USE
2	Double Drum Winch/ Wire Rope: 28mm Dia.	1345	Life Boat No.1	150 kN	Norsafe	Unknown	NS00002843	30 March 2024	29 September 2024		IN USE
3	Life Boat Davits 1 / Fall Wire Rope / 24mm X 94.3mtrs	WITN31920-0338-1	Life Boat No.1	54 MT (MBL)	AMOS	14-Jun-2023	6100081337/001	30 March 2024	29 September 2024		IN USE
4	Life Boat Davits 2 / Fall Wire Rope / 24mm X 87.5mtrs	WITN31920-0338-1	Life Boat No.1	54 MT (MBL)	AMOS	14-Jun-2023	6100081337/001	30 March 2024	29 September 2024		IN USE
5	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81633.3	Life Boat No.1	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81633.3	30 March 2024	29 September 2024		IN USE
6	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81486.3	Life Boat No.1	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81486.3	30 March 2024	29 September 2024		IN USE
7	Oval Master Link With 32-B-6	36944/49	Life Boat No.1	11.4 Ton	Foram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
8	Oval Master Link With 32-B-6	36944/46	Life Boat No.1	11.4 Ton	Foram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
9	Quick Release Hook	AB 0748	Life Boat No.1	8 Ton	Norsafe	Sep-2012	NS00002843	30 March 2024	29 September 2024		IN USE
10	Quick Release Hook	AB 0816	Life Boat No.1	8 Ton	Norsafe	Sep-2012	NS00002843	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	1" Safety Pin Bow Shackle	LB3-C	Life Boat No.3	8.5 Ton	Green Pin	04-2023	MS81633.1	30 March 2024	29 September 2024		IN USE
52	1" Safety Pin Bow Shackle	LB3-B	Life Boat No.3	8.5 Ton	Green Pin	04-2023	MS81633.1	30 March 2024	29 September 2024		IN USE
53	Hang Off Padeye / L 330mm X H 240mm X Thk 30mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB3-1	Life Boat No.3	8 Ton	Norsafe	Unknown	TAT/5328/LT-082	30 March 2024	29 September 2024		IN USE
54	Hang Off Padeye / L 330mm X H 240mm X Thk 30mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB3-2	Life Boat No.3	8 Ton	Norsafe	Unknown	TAT/5328/LT-082	30 March 2024	29 September 2024		IN USE
55	Life Boat Davits 4 Davit	3764	Life Boat No.4	14.28 Ton	Norsafe	Unknown	NS08002846	30 March 2024	29 September 2024		IN USE
56	Double Drum Winch/ Wire Rope: 28mm Dia.	132R	Life Boat No.4	150 kN	Norsafe	Unknown	NS08002846	30 March 2024	29 September 2024		IN USE
57	Life Boat Davits 1 / Fall Wire Rope / 24mm X 94.3mtrs	WTN3/1920-0336-4	Life Boat No.4	54 MT (MBL)	AMOS	14-Jun-2023	6190081337/001	30 March 2024	29 September 2024		IN USE
58	Life Boat Davits 2 / Fall Wire Rope / 24mm X 87.5mtrs	WTN3/1920-0336-4	Life Boat No.4	54 MT (MBL)	AMOS	14-Jun-2023	6190081337/001	30 March 2024	29 September 2024		IN USE
59	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81486.4	Life Boat No.4	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81486.4	30 March 2024	29 September 2024		IN USE
60	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81486.5	Life Boat No.4	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81486.5	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	1" Safety Pin Bow Shackle	LB2-D	Life Boat No.2	8.5 Ton	Green Pin	03-2023	MS81776	30 March 2024	29 September 2024		IN USE
32	1" Safety Pin Bow Shackle	LB2-C	Life Boat No.2	8.5 Ton	Green Pin	03-2023	MS81776	30 March 2024	29 September 2024		IN USE
33	1" Safety Pin Bow Shackle	LB2-B	Life Boat No.2	8.5 Ton	Green Pin	04-2023	MS81545	30 March 2024	29 September 2024		IN USE
34	1" Safety Pin Bow Shackle	LB2-A	Life Boat No.2	8.5 Ton	Green Pin	04-2023	MS81545	30 March 2024	29 September 2024		IN USE
35	Hang Off Padeye / L 330mm X H 240mm X Thk 30mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB2-2	Life Boat No.2	8 Ton	Norsafe	Unknown	TAT/5328/LT-081	30 March 2024	29 September 2024		IN USE
36	Hang Off Padeye / L 330mm X H 240mm X Thk 30mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB2-A	Life Boat No.2	8 Ton	Norsafe	Unknown	TAT/5328/LT-081	30 March 2024	29 September 2024		IN USE
37	Life Boat Davits 3 & Associated Equipment/ Davit	3763	Life Boat No.3	14.28 Ton	Norsafe	Unknown	NS08002845	30 March 2024	29 September 2024		IN USE
38	Double Drum Winch/ Wire Rope: 28mm Dia.	135L	Life Boat No.3	150 kN	Norsafe	Unknown	NS08002845	30 March 2024	29 September 2024		IN USE
39	Life Boat Davits 1 / Fall Wire Rope / 24mm X 94.3mtrs	WTN3/1920-0336-3	Life Boat No.3	54 MT (MBL)	AMOS	14-Jun-2023	6190081337/001	30 March 2024	29 September 2024		IN USE
40	Life Boat Davits 2 / Fall Wire Rope / 24mm X 87.5mtrs	WTN3/1920-0336-3	Life Boat No.3	54 MT (MBL)	AMOS	14-Jun-2023	6190081337/001	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
61	Oval Master Link With 32-B-6	3694447	Life Boat No.4	11.4 Ton	Fram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
62	Oval Master Link With 32-B-6	3694450	Life Boat No.4	11.4 Ton	Fram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
63	Quick Release Hook	AB 8936	Life Boat No.4	8 Ton	Norsafe	Sep-2012	NS08002846	30 March 2024	29 September 2024		IN USE
64	Quick Release Hook	AB 8968	Life Boat No.4	8 Ton	Norsafe	Sep-2012	NS08002846	30 March 2024	29 September 2024		IN USE
65	Open Wedge Socket	1060	Life Boat No.4	14 Ton	Crosby	Unknown	124277	30 March 2024	29 September 2024		IN USE
66	Open Wedge Socket	1092	Life Boat No.4	14 Ton	Crosby	Unknown	124276	30 March 2024	29 September 2024		IN USE
67	1" Safety Pin Bow Shackle	LB4-A	Life Boat No.4	8.5 Ton	Green Pin	04-2023	MS81486.5	30 March 2024	29 September 2024		IN USE
68	1" Safety Pin Bow Shackle	LB4-C	Life Boat No.4	8.5 Ton	Green Pin	04-2023	MS81486.5	30 March 2024	29 September 2024		IN USE
69	1" Safety Pin Bow Shackle	LB4-B	Life Boat No.4	8.5 Ton	Green Pin	04-2023	MS81486.4	30 March 2024	29 September 2024		IN USE
70	1" Safety Pin Bow Shackle	LB4-D	Life Boat No.4	8.5 Ton	Green Pin	04-2023	MS81486.4	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81633.1	Life Boat No.3	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81633.1	30 March 2024	29 September 2024		IN USE
42	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both End @18mm Dia. X 2.25mtrs.	MS81633.2	Life Boat No.3	25.9 T(MBL)	Hendrik Vender Group	04-2023	MS81633.2	30 March 2024	29 September 2024		IN USE
43	Oval Master Link With 32-B-6	3694441	Life Boat No.3	11.4 Ton	Fram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
44	Oval Master Link With 32-B-7	3694445	Life Boat No.3	11.4 Ton	Fram	Unknown	0000675542/010/2018	30 March 2024	29 September 2024		IN USE
45	Quick Release Hook	AB 8705	Life Boat No.3	8 Ton	Norsafe	Jan-2012	NS08002845	30 March 2024	29 September 2024		IN USE
46	Quick Release Hook	AB 8752	Life Boat No.3	8 Ton	Norsafe	Jan-2012	NS08002845	30 March 2024	29 September 2024		IN USE
47	Open Wedge Socket	1073	Life Boat No.3	14 Ton	Crosby	Unknown	124282	30 March 2024	29 September 2024		IN USE
48	Open Wedge Socket	1079	Life Boat No.3	14 Ton	Crosby	Unknown	124279	30 March 2024	29 September 2024		IN USE
49	1" Safety Pin Bow Shackle	LB3-A	Life Boat No.3	8.5 Ton	Green Pin	04-2023	MS81633.2	30 March 2024	29 September 2024		IN USE
50	1" Safety Pin Bow Shackle	LB3-D	Life Boat No.3	8.5 Ton	Green Pin	04-2023	MS81633.2	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Forklift)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Lift Truck Model : ERF30VL-861 F2595	A9T6B02934K	Back Store Room	3216 Kgs	Yale	2012	A9T6B02934K	30 March 2024	29 September 2024		IN USE
2	Hand Pallet Truck	4859523	Platform	2 Ton	JUMBO	Unknown	4859523	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Lifeboat-FRC Davit-Liferaft)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
71	Hang Off Padeye / L:300mm X H 240mm X Thk.38mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB4-1	Life Boat No.4	8 Ton	Norsafe	Unknown	TAT/03284,T-083	30 March 2024	29 September 2024		IN USE
72	Hang Off Padeye / L:300mm X H 240mm X Thk.38mm X 30mm Bore Hole Dia. (2 X Bore Hole)	LB4-2	Life Boat No.4	8 Ton	Norsafe	Unknown	TAT/03284,T-083	30 March 2024	29 September 2024		IN USE
73	Fast Rescue Craft Winch	1289975-103	Fast Rescue Craft	4000 Kgs	Zoller	Unknown	NS00002847	30 March 2024	29 September 2024		IN USE
74	FRC Oval Master Link	24068.25	Fast Rescue Craft	6 Ton	Fram	Unknown	1211444	30 March 2024	29 September 2024		IN USE
75	Fast Rescue Craft -Quick Release Hook	6313	Fast Rescue Craft	5 Ton	Hewikson	02-Oct-2017	NS00002847	30 March 2024	29 September 2024		IN USE
76	Fast Rescue Craft Winch Wire 16mm x 73 M	202111-1219P2-3	Fast Rescue Craft	32.4 MT(MBL)	AMOS	14-Jun-2023	202111-1219P2-3	30 March 2024	29 September 2024		IN USE
77	FRC Hang Off Pennant Leg A & B @16mm Dia. X 960mm	MS82719.5CE	Fast Rescue Craft	25.9 T(MBL)	Hendrik Vonder Group	18 August 2023	77097	30 March 2024	29 September 2024		IN USE
78	1" Safety Pin Bow Shackle	FRC-1	Fast Rescue Craft	8.5 Ton	Green Pin	18 August 2023	77097	30 March 2024	29 September 2024		IN USE
79	1" Safety Pin Bow Shackle	FRC-2	Fast Rescue Craft	8.5 Ton	Green Pin	18 August 2023	77097	30 March 2024	29 September 2024		IN USE
80	1" Safety Pin Bow Shackle	FRC-3	Fast Rescue Craft	8.5 Ton	Green Pin	18 August 2023	77097	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Towing Bidle)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @38mm Dia. X 150 ft.	FK 7832	Main Deck Stdb	22 .6 Ton	Franklin	26-Feb-2018	FOI-ISO-86743	30 March 2024	29 September 2024		IN USE
2	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 150 Ft.	FAB 2750	Main Deck Port-Aft	36 Ton	Franklin	22-Feb-2022	FOI-ISD-2202213	30 March 2024	29 September 2024		IN USE
3	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 200 Ft.	FAB 2750	Main Deck Port-Aft	36 Ton	Franklin	22-Feb-2022	FOI-ISD-2202213	30 March 2024	29 September 2024		IN USE
4	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 200 Ft.	FAB 2751	LQ Roof Top	36 Ton	Franklin	22-Feb-2022	FOI-ISD-2202213	30 March 2024	29 September 2024		IN USE
5	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 200 Ft.	FAB 2752	Main Deck Port-Aft	36 Ton	Franklin	22-Feb-2022	FOI-ISD-2202213	30 March 2024	29 September 2024		IN USE
6	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 200 Ft.	FAB 2753	Main Deck Port-Aft	36 Ton	Franklin	22-Feb-2022	FOI-ISD-2202213	30 March 2024	29 September 2024		IN USE
7	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 200 Ft.	FAB 2754	Main Deck Port-Aft	36 Ton	Franklin	22-Feb-2022	FOI-ISD-2202213	30 March 2024	29 September 2024		IN USE
8	6x36 IWRC EEIPS RHRL Galvanized Steel Wire Rope Sling Both End with Closed Spelter Socket-Hang off wire sling @54mm x 13ft	FW 7733	Main Deck Port-Aft	44 Ton	Franklin	16-May-2013	FOI-PD-C369M	30 March 2024	29 September 2024		IN USE
9	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 150 Ft.	B335-150-4	Main Deck Stbd	130 MBL	AMOS	Unknown	SG2919125-01-336	30 March 2024	29 September 2024		IN USE
10	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With Merlion/ RF Socket @44mm x 150 Ft.	B335-150-7	Main Deck Stbd	130 MBL	AMOS	Unknown	SG2919125-01-336	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Lifeboat-FRC Davit-Liferaft)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
81	Life Boat Davits & Associated Equipment/ FRC Davit	3768	Fast Rescue Craft	4 Ton	Norsafe	Unknown	NS00002847	30 March 2024	29 September 2024		IN USE
82	Life Raft Crane Davit #1	0912512	Life raft #1/ Port Side	2320 Kg	Global Davit	2012	NS00002848	30 March 2024	29 September 2024		IN USE
83	Life Draft & Associated Equipment/ Draft #1/ Manual Release Hook	SC 1835/09	Life raft #1/ Port Side	3.5 Ton	Global Davit	Oct-2018	NS00002848	30 March 2024	29 September 2024		IN USE
84	34LR WSC Grade Steel Wire Rope Sling, One End Tabart Spliced w/Alum. Ferrule and Thimble, Other End Fused and Tapered @12mm x 55 Mtr.	FAF 2445	Life raft #1/ Stbd Side	2.4 Ton	Franklin	07-Feb-2018	FOI-ISD-83089	30 March 2024	29 September 2024		IN USE
85	Life Raft Crane Davit #2	0912A12	Life raft #1/ Stbd Side	2320 Kg	Global Davit	2012	NS00002849	30 March 2024	29 September 2024		IN USE
86	Life Draft & Associated Equipment/ Draft #2/ Manual Release Hook	SC 1853/09	Life raft #1/ Stbd Side	3.5 Ton	Global Davit	Oct-2018	NS00002849	30 March 2024	29 September 2024		IN USE
87	34LR WSC Grade Steel Wire Rope Sling, One End Tabart Spliced w/Alum. Ferrule and Thimble, Other End Fused and Tapered @12mm x 55 Mtr.	FAF 2448	Life raft #1/ Stbd Side	2.4 Ton	Franklin	07-Feb-2018	FOI-ISD-A7216	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Towing Bidle)

Client: Boer Drilling
Facility : Boer Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	6x36 WS IWRC EEIPS RHRL Galv. Steel Wire Rope Sling, Both Ends Talurit Spliced With Thimble @67mm Dia x 50 ft.	FM 9435	Towing Bridle - Under Helideck	63 Ton	Franklin	08-Apr-2019	FOI-ISO-88743	30 March 2024	29 September 2024		IN USE
32	6x36 WS IWRC EEIPS RHRL Galv. Steel Wire Rope Sling, Both Ends Talurit Spliced With Thimble @67mm Dia x 50 ft.	FM 9436	Towing Bridle - Under Helideck	63 Ton	Franklin	08-Apr-2019	FOI-ISO-88743	30 March 2024	29 September 2024		IN USE
33	6x36 WS IWRC EEIPS RHRL Galv. Steel Wire Rope Sling, Both Ends Talurit Spliced With Thimble @67mm Dia x 50 ft.	FM 9437	Towing Bridle - Under Helideck	63 Ton	Franklin	08-Apr-2019	FOI-ISO-88743	30 March 2024	29 September 2024		IN USE
34	6x36 WS IWRC EEIPS RHRL Galv. Steel Wire Rope Sling, Both Ends Talurit Spliced With Thimble @67mm Dia x 50 ft.	FM 9438	Towing Bridle - Under Helideck	63 Ton	Franklin	08-Apr-2019	FOI-ISO-88743	30 March 2024	29 September 2024		IN USE
35	6X36 IWRC RHOL EEIPS Galvanized Steel Wire Rope, Both Ends Spliced With Thimble and Holland Close Spelter Socket. @1.1/2" X 110 Ft.	FAB 0114	Emergency Towing Bridle - Port - Under Helideck	55 Ton	Franklin	01-Dec-2021	FAB 0114	30 March 2024	29 September 2024		IN USE
36	6X36 IWRC RHOL EEIPS Galvanized Steel Wire Rope, Both Ends Holland Close Spelter Socket and Holland Close Spelter Socket. @1.1/2" X 110 Ft.	UW25696	Emergency Towing Bridle - STBD - Under Helideck	60 Ton	Franklin	01-Dec-2021	FAB 0114	30 March 2024	29 September 2024		IN USE
37	3" Safety Pin Bow Shackle	B335-4	Towing Bridle - Under Helideck	85 Ton	Green Pin	25-Jan-2013	SG2919125-01-334	30 March 2024	29 September 2024		IN USE
38	3" Safety Pin Bow Shackle	B335-10	Towing Bridle - Under Helideck	85 Ton	Green Pin	25-Jan-2013	SG2919125-01-334	30 March 2024	29 September 2024		IN USE
39	3" Safety Pin Bow Shackle	B335-7	Towing Bridle - Under Helideck	85 Ton	Green Pin	25-Jan-2013	SG2919125-01-334	30 March 2024	29 September 2024		IN USE
40	3" Safety Pin Bow Shackle	FM 9699	Towing Bridle - Under Helideck	85 Ton	Green Pin	08-Apr-2019	FOI-ISO-88826	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Towing Bidle)

Client: Boer Drilling
Facility : Boer Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Anchor/Mooring Winch DMW 300 (wire size 38mm)	126149	Port - Aft	388 KN	Brohl	2012	AMS-H21081952-LOI- GR13-002	30 March 2024	29 September 2024		IN USE
12	6x41 IWRC RHOL EEIPS Galv Steel Wire Rope with both ends talurit spliced with thimble @67mm Dia. X 50 ft.	B335-12	Attach to Towing Bridle Port-Aft	330 Ton (MBL)	AMOS	Unknown	SG2919125-01-336	30 March 2024	29 September 2024		IN USE
13	6x36 WS IWRC EEIPS RHRL Galv. Steel Wire Rope Sling, Both Ends Talurit Spliced With Thimble @67mm Dia x 50 ft.	FM 9436	Attach to Towing Bridle Port-Aft	63 Ton	Franklin	08-Apr-2019	FOI-ISO-88743	30 March 2024	29 September 2024		IN USE
14	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With 'Merlian' RF Socket @44mm x 150 Ft.	FAB 2757	Attach to Towing Bridle Port-Aft	38 Ton	Franklin	22-Feb-2022	FOI-ISO-2202213	30 March 2024	29 September 2024		IN USE
15	3" Safety Pin Bow Shackle	FM 9702	Attach to Towing Bridle Port-Aft	85 Ton	Green Pin	08-Apr-2019	FOI-ISO-88826	30 March 2024	29 September 2024		IN USE
16	2 1/2" Safety Pin Bow Shackle	TR-189	Attach to Towing Bridle Port-Aft	55 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
17	1 3/4" Safety Pin Bow Shackle	SK-25-02	Attach to Bouy Port-Aft	25 Ton	Green Pin	Unknown	SK-25-02	30 March 2024	29 September 2024		IN USE
18	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With 'Merlian' RF Socket @44mm x 150 Ft.	FAB 2758	Attach to Towing Bridle Port-Fwd	38 Ton	Franklin	22-Feb-2022	FOI-ISO-2202213	30 March 2024	29 September 2024		IN USE
19	1 3/4" Safety Pin Bow Shackle	SK-25-04	Attach to Bouy Port-Fwd	25 Ton	Green Pin	Unknown	SK-25-04	30 March 2024	29 September 2024		IN USE
20	1 3/4" Safety Pin Bow Shackle	SK-25-05	Attach to Towing Bridle Stbd-Fwd	25 Ton	Green Pin	Unknown	SK-25-05	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Towing Bidle)

Client: Boer Drilling
Facility : Boer Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	3" Safety Pin Bow Shackle	FM 9700	Towing Bridle - Under Helideck	85 Ton	Green Pin	08-Apr-2019	FOI-ISO-88826	30 March 2024	29 September 2024		IN USE
42	3" Safety Pin Bow Shackle	FM 9701	Towing Bridle - Under Helideck	85 Ton	Green Pin	08-Apr-2019	FOI-ISO-88826	30 March 2024	29 September 2024		IN USE
43	3" Safety Pin Bow Shackle	FM 9703	Towing Bridle - Under Helideck	85 Ton	Green Pin	08-Apr-2019	FOI-ISO-88826	30 March 2024	29 September 2024		IN USE
44	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With 'Merlian' RF Socket @44mm x 200 Ft.	FAB 2750	Main Deck Port-Aft	38 Ton	Franklin	22-Feb-2022	FOI-ISO-2202213	30 March 2024	29 September 2024		IN USE
45	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With 'Merlian' RF Socket @44mm x 150 Ft.	FAB 2755	Towing Bridle - Stbd-Fwd	38 Ton	Franklin	22-Feb-2022	FOI-ISO-2202213	30 March 2024	29 September 2024		IN USE
46	2" Safety Pin Bow Shackle	FAC 6319	Attach to Towing Bridle - Stbd-Fwd	35 Ton	Green Pin	06-Oct-2022	Test Certificate	30 March 2024	29 September 2024		IN USE
47	2 1/2" Safety Pin Bow Shackle	FW 3780	Attach to Towing Bridle Stbd-Aft	55 Ton	Green Pin	08-Apr-2013	FOI-PD-C3015	30 March 2024	29 September 2024		IN USE
48	2 1/2" Safety Pin Bow Shackle	R335-55-2	Attach to Towing Bridle Stbd-Aft	55 Ton	Green Pin	Unknown	R335-55-2	30 March 2024	29 September 2024		IN USE
49	2 1/2" Safety Pin Bow Shackle	SK-55T-4	Attach to Towing Bridle Stbd-Aft	55 Ton	Green Pin	Unknown	SK-55T-4	30 March 2024	29 September 2024		IN USE
50	1 3/4" Safety Pin Bow Shackle	SK-25-06	Attach to Bouy Stbd-Aft	25 Ton	Green Pin	Unknown	SK-25-06	30 March 2024	29 September 2024		IN USE

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ISO 9001:2015 ISO 45001:2018

Lifting Gear Register List
(Towing Bidle)

Client: Boer Drilling
Facility : Boer Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	1 3/4" Safety Pin Bow Shackle	SK-25-06	Attach to Bouy Stbd-Fwd	25 Ton	Green Pin	Unknown	SK-25-06	30 March 2024	29 September 2024		IN USE
22	6x36 IWRC EEIPS RHRL Galvanized Steel Wire Rope Sling Both End with Closed Specter Socket-Hang off wire sling @58mm x 130ft	FM 7790	Attach to Towing Bridle Stbd-Aft	43.1 Ton	PWA	01-Mar-2019	PWA 7790	30 March 2024	29 September 2024		IN USE
23	6x36 IWRC EEIPS RHRL Galvanized Steel Wire rope Sling Both Ends Resin Terminated With 'Merlian' RF Socket @44mm x 150 Ft.	FAB 2756	Attach to Towing Bridle Stbd-Aft	38 Ton	Franklin	22-Feb-2022	FOI-ISO-2202213	30 March 2024	29 September 2024		IN USE
24	2 1/2" Safety Pin Bow Shackle	FW 3780	Attach to Towing Bridle Stbd-Aft	55 Ton	Green Pin	08-Apr-2013	FOI-PD-C3015	30 March 2024	29 September 2024		IN USE
25	2 1/2" Safety Pin Bow Shackle	B335-55-2	Attach to Towing Bridle Stbd-Aft	55 Ton	Green Pin	Unknown	R335-55-2	30 March 2024	29 September 2024		IN USE
26	2 1/2" Safety Pin Bow Shackle	SK-55T-4	Attach to Towing Bridle Stbd-Aft	55 Ton	Green Pin	Unknown	SK-55T-4	30 March 2024	29 September 2024		IN USE
27	2" Safety Pin Bow Shackle	SK-35-01	Attach to Towing Bridle Port-Aft	35 Ton	Green Pin	Unknown	SK-35-10	30 March 2024	29 September 2024		IN USE
28	2" Safety Pin Bow Shackle	SK-35-02	Attach to Towing Bridle Fwd-Aft	35 Ton	Green Pin	Unknown	SK-35-10	30 March 2024	29 September 2024		IN USE
29	2" Safety Pin Bow Shackle	SK-35-04	Attach to Towing Bridle Stbd-Aft	35 Ton	Green Pin	Unknown	SK-35-11	30 March 2024	29 September 2024		IN USE
30	1 3/4" Safety Pin Bow Shackle	SK-25-08	Attach to Bouy Stbd-Aft	25 Ton	Green Pin	Unknown	SK-25-08	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Pad eyes)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Fabricated Padeye	PE-03-05	Aux.Machinery Room stbd aft.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
12	Fabricated Padeye	PE-04-01	Aux.Machinery Room Port aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
13	Fabricated Padeye	PE-04-02	Aux.Machinery Room Port aft.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
14	Fabricated Padeye	PE-04-03	Aux.Machinery Room Port aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
15	Fabricated Padeye	PE-04-04	Aux.Machinery Room Port aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
16	Fabricated Padeye	PE-04-05	Aux.Machinery Room Port aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
17	Fabricated Padeye	PE-04-06	Aux.Machinery Room Port aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
18	Fabricated Padeye	PE-04-07	Aux.Machinery Room Port aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
19	Fabricated Padeye	PE-04-08	Aux.Machinery Room Port aft.	1.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
20	Fabricated Padeye	PE-06-01	Aux.Machinery Room Port Fwrd.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Towing Bidle)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	6X36 IWRC RHOL EIPS Galvanized Steel Wire Rope, Both Ends Spliced With Thimble and Holland Close Spelter Socket. @1.1/2" X 110 Ft.	FAB 0114	Emergency Towing Bridle - Port - Under Helideck	55 Ton	Franklin	01-Dec-2021	FAB 0114	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Pad eyes)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	Fabricated Padeye	PE-06-02	Aux.Machinery Room Port Fwrd.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
22	Fabricated Padeye	PE-06-03	Aux.Machinery Room Port Fwrd.	1.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
23	Fabricated Padeye	PE-06-04	Aux.Machinery Room Port Fwrd.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
24	Fabricated Padeye	PE-06-05	Aux.Machinery Room Port Fwrd.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
25	Fabricated Padeye	PE-06-06	Aux.Machinery Room Port Fwrd.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
26	Fabricated Padeye	PE-02-01	Mud Pit Room	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
27	Fabricated Padeye	PE-02-02	Mud Pit Room	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
28	Fabricated Padeye	PE-02-03	Mud Pit Room	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
29	Fabricated Padeye	PE-02-04	Mud Pit Room	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
30	Fabricated Padeye	PE-02-05	Mud Pit Room	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Pad eyes)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Fabricated Padeye	PE-05-01	Aux.Machinery Room stbd Fwd.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
2	Fabricated Padeye	PE-05-02	Aux.Machinery Room stbd Fwd.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
3	Fabricated Padeye	PE-05-03	Aux.Machinery Room stbd Fwd.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
4	Fabricated Padeye	PE-05-04	Aux.Machinery Room stbd Fwd.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
5	Fabricated Padeye	PE-05-05	Aux.Machinery Room stbd Fwd.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
6	Fabricated Padeye	PE-05-06	Aux.Machinery Room stbd Fwd.	5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
7	Fabricated Padeye	PE-03-01	Aux.Machinery Room stbd aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
8	Fabricated Padeye	PE-03-02	Aux.Machinery Room stbd aft.	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
9	Fabricated Padeye	PE-03-03	Aux.Machinery Room stbd aft.	0.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
10	Fabricated Padeye	PE-03-04	Aux.Machinery Room stbd aft.	1.5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	Fabricated Padeye	PE-02-27	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
52	Fabricated Padeye	PE-02-28	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
53	Fabricated Padeye	PE-02-29	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
54	Fabricated Padeye	PE-02-30	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
55	Fabricated Padeye	PE-02-31	Mud Pump Room	10 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
56	Fabricated Padeye	PE-02-32	Mud Pump Room	10 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
57	Fabricated Padeye	PE-02-33	Mud Pump Room	10 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
58	Fabricated Padeye	PE-02-34	Mud Pump Room	10 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
59	Fabricated Padeye	PE-02-35	Mud Pump Room	10 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
60	Fabricated Padeye	PE-02-36	Mud Pump Room	10 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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ISO ISO

Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	Fabricated Padeye	PE-02-06	Mud Pit Room	1 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
32	Fabricated Padeye	PE-02-07	Mud Pit Room	1 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
33	Fabricated Padeye	PE-02-08	Mud Pit Room	1 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
34	Fabricated Padeye	PE-02-09	Mud Pit Room	1 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
35	Fabricated Padeye	PE-02-12	Mud Pit Room	1 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
36	Fabricated Padeye	PE02-13	Mud Pit Room	0.5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
37	Fabricated Padeye	PE02-51	Mud Pit Room	0.5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
38	Fabricated Padeye	PE02-52	Mud Pit Room	0.5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
39	Fabricated Padeye	PE-02-14	Mud Pump Room	2 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
40	Fabricated Padeye	PE-02-15	Mud Pump Room	2 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
61	Fabricated Padeye	PE-02-37	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
62	Fabricated Padeye	PE-02-38	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
63	Fabricated Padeye	PE-02-39	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
64	Fabricated Padeye	PE-02-40	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
65	Fabricated Padeye	PE-02-41	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
66	Fabricated Padeye	PE-02-42	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
67	Fabricated Padeye	PE-02-43	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
68	Fabricated Padeye	PE-02-44	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
69	Fabricated Padeye	PE-02-45	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
70	Fabricated Padeye	PE-02-46	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	Fabricated Padeye	PE-02-16	Mud Pump Room	2 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
42	Fabricated Padeye	PE-02-17	Mud Pump Room	2 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
43	Fabricated Padeye	PE-02-18	Mud Pump Room	2 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
44	Fabricated Padeye	PE-02-19	Mud Pump Room	1.5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
45	Fabricated Padeye	PE-02-20	Mud Pump Room	1.5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
46	Fabricated Padeye	PE-02-21	Mud Pump Room	1 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
47	Fabricated Padeye	PE-02-23	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
48	Fabricated Padeye	PE-02-24	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
49	Fabricated Padeye	PE-02-25	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
50	Fabricated Padeye	PE-02-26	Mud Pump Room	5 Ton	Kteb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
91	Fabricated Padeye	PE-01-17	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
92	Fabricated Padeye	PE-01-18	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
93	Fabricated Padeye	PE-01-19	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
94	Fabricated Padeye	PE-01-20	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
95	Fabricated Padeye	PE-01-21	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
96	Fabricated Padeye	PE-01-22	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
97	Fabricated Padeye	PE-01-23	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
98	Fabricated Padeye	PE-01-24	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
99	Fabricated Padeye	PE-01-25	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
100	Fabricated Padeye	PE-01-26	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
71	Fabricated Padeye	PE-02-47	Mud Pump Room	5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
72	Fabricated Padeye	PE-02-48	Mud Pump Room	0.5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
73	Fabricated Padeye	PE-02-49	Mud Pump Room	0.5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
74	Fabricated Padeye	PE-02-50	Mud Pump Room	0.5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
75	Fabricated Padeye	PE-01-01	Engine Room	1 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
76	Fabricated Padeye	PE-01-02	Engine Room	0.5 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
77	Fabricated Padeye	PE-01-03	Engine Room	0.5 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
78	Fabricated Padeye	PE-01-04	Engine Room	1 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
79	Fabricated Padeye	PE-01-05	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
80	Fabricated Padeye	PE-01-06	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
101	Fabricated Padeye	PE-01-27	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
102	Fabricated Padeye	PE-01-28	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
103	Fabricated Padeye	PE-01-29	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
104	Fabricated Padeye	PE-HC6-01	Radiator Platform	0.5 Ton	Khels	Unknown	TAT/532/LT-016	30 March 2024	29 September 2024		IN USE
105	Fabricated Padeye	PE-HC6-02	Radiator Platform	0.5 Ton	Khels	Unknown	TAT/532/LT-016	30 March 2024	29 September 2024		IN USE
106	Fabricated Padeye	PE-HC6-03	Radiator Platform	0.5 Ton	Khels	Unknown	TAT/532/LT-016	30 March 2024	29 September 2024		IN USE
107	Fabricated Padeye	PE-HC6-04	Radiator Platform	0.5 Ton	Khels	Unknown	TAT/532/LT-016	30 March 2024	29 September 2024		IN USE
108	Fabricated Padeye	PE 09/04	Under Helideck	5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
109	Fabricated Padeye	PE 09/05	Under Helideck	5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
110	Fabricated Padeye	PE 09/06	Under Helideck	5 Ton	Khels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
81	Fabricated Padeye	PE-01-07	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
82	Fabricated Padeye	PE-01-08	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
83	Fabricated Padeye	PE-01-09	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
84	Fabricated Padeye	PE-01-10	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
85	Fabricated Padeye	PE-01-11	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
86	Fabricated Padeye	PE-01-12	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
87	Fabricated Padeye	PE-01-13	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
88	Fabricated Padeye	PE-01-14	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
89	Fabricated Padeye	PE-01-15	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE
90	Fabricated Padeye	PE-01-16	Engine Room	10 Ton	Khels	Unknown	TM-M026	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Order No.MOSTH240129

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
131	Fabricated Padeye	PE-07-02	Cantilever	12 MT	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
132	Fabricated Padeye	PE-07-03	Cantilever	5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
133	Fabricated Padeye	PE-07-04	Cantilever	5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
134	Fabricated Padeye	PE-11-46	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
135	Fabricated Padeye	PE-11-47	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
136	Fabricated Padeye	PE-11-48	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
137	Fabricated Padeye	PE-11-49	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
138	Fabricated Padeye	PE-11-50	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
139	Fabricated Padeye	PE-11-51	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
140	Fabricated Padeye	PE-11-42	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
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Mission Order No.MOSTH240129

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
111	Fabricated Padeye	PE 09/07	Under Helideck	5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
112	Fabricated Padeye	PE 09/01	Under Helideck	12 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
113	Fabricated Padeye	PE 09/02	Under Helideck	12 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
114	Fabricated Padeye	PE 09/03	Under Helideck	12 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
115	Rig Fabricated Padeye	PE-AS-035	Under Helideck	1 Ton	Rig	Unknown	SISLT/5379-PE-13	30 March 2024	29 September 2024		IN USE
116	Fabricated Padeye	PE-AB-01	Port/Aft Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-018	30 March 2024	29 September 2024		IN USE
117	Fabricated Padeye	PE-AB-05	Port/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-018	30 March 2024	29 September 2024		IN USE
118	Fabricated Padeye	PE-AB-06	Port/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-018	30 March 2024	29 September 2024		IN USE
119	Fabricated Padeye	PE-AB-07	Port/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-018	30 March 2024	29 September 2024		IN USE
120	Fabricated Padeye	PE-AB-08	Port/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-018	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
141	Fabricated Padeye	PE-11-43	Under Cantilever	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
142	Fabricated Padeye	PE-13	Shale Shaker	3 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
143	Fabricated Padeye	PE-14	Shale Shaker	5 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
144	Fabricated Padeye	PE-15	Shale Shaker	6 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
145	Fabricated Padeye	PE-16	Shale Shaker	6 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
146	Fabricated Padeye	PE-05	Shale Shaker	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
147	Fabricated Padeye	PE-06	Shale Shaker	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
148	Fabricated Padeye	PE-09-01	Shale Shaker - Mud Process Area	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
149	Fabricated Padeye	PE-09-02	Shale Shaker - Mud Process Area	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
150	Fabricated Padeye	PE-09-03	Shale Shaker - Mud Process Area	1 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
121	Fabricated Padeye	PE-AB-09	Stbd/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-019	30 March 2024	29 September 2024		IN USE
122	Fabricated Padeye	PE-AB-10	Stbd/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-019	30 March 2024	29 September 2024		IN USE
123	Fabricated Padeye	PE-AB-11	Stbd/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-019	30 March 2024	29 September 2024		IN USE
124	Fabricated Padeye	PE-AB-12	Stbd/Fwrd Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-019	30 March 2024	29 September 2024		IN USE
125	Fabricated Padeye	PE-AB-14	Stbd/Aft Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-019	30 March 2024	29 September 2024		IN USE
126	Fabricated Padeye	PE-AB-15	Stbd/Aft Anchor Buoy	0.5 Ton	Kiels	Unknown	TAT/5328/LT-019	30 March 2024	29 September 2024		IN USE
127	Fabricated Padeye	PE-10/01	Emergency Generator room	6 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
128	Fabricated Padeye	PE-10/02	Emergency Generator room	6 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
129	Fabricated Padeye	PE-10/03	Emergency Generator room	6 Ton	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
130	Fabricated Padeye	PE-07-01	Cantilever	12 MT	Kiels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Order No.MOSTH-240129

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
171	Fabricated Padeye	P013	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
172	Fabricated Padeye	P014	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
173	Fabricated Padeye	P015	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
174	Fabricated Padeye	P016	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
175	Fabricated Padeye	P017	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
176	Fabricated Padeye	P028	Derrick / Water Table	5 Ton	Nov	Unknown	M20121804-02D	30 March 2024	29 September 2024		IN USE
177	Fabricated Padeye	P029	Derrick / Water Table	5 Ton	Nov	Unknown	M20121804-01	30 March 2024	29 September 2024		IN USE
178	Fabricated Padeye	P024	Derrick / Water Table	75 Ton	Nov	Unknown	M20121804-01	30 March 2024	29 September 2024		IN USE
179	Fabricated Padeye	P025	Derrick / Water Table	12 Ton	Nov	Unknown	M20121805-03	30 March 2024	29 September 2024		IN USE
180	Fabricated Padeye	P026	Derrick / Water Table	12 Ton	Nov	Unknown	M20121805-03	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
151	Fabricated Padeye	PE-08-04	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
152	Fabricated Padeye	PE-08-09	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
153	Fabricated Padeye	PE-08-10	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
154	Fabricated Padeye	PE-08-11	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
155	Fabricated Padeye	PE-08-12	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
156	Fabricated Padeye	PE-08-12A	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	SISLT/5379-PE-08	30 March 2024	29 September 2024		IN USE
157	Fabricated Padeye	PE-08-12B	Shale Shaker - Mud Process Area	1 Ton	Kleb	Unknown	SISLT/5379-PE-09	30 March 2024	29 September 2024		IN USE
158	Fabricated Padeye	P001	Derrick / Gin Pole	5 Ton	Nov	Unknown	M20121803-06	30 March 2024	29 September 2024		IN USE
159	Fabricated Padeye	P002	Derrick / Gin Pole	5 Ton	Nov	Unknown	M20121803-03	30 March 2024	29 September 2024		IN USE
160	Fabricated Padeye	P003	Derrick / Gin Pole	15 Ton	Nov	Unknown	M20121803-07	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
181	Fabricated Padeye	P027	Derrick / Water Table	12 Ton	Nov	Unknown	M20121805-03	30 March 2024	29 September 2024		IN USE
182	Fabricated Padeye	P018	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
183	Fabricated Padeye	P019	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
184	Fabricated Padeye	P020	Derrick / Water Table	12 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
185	Fabricated Padeye	P021	Derrick / Water Table	12 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
186	Fabricated Padeye	P022	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
187	Fabricated Padeye	P023	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
188	Fabricated Padeye	P030	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
189	Fabricated Padeye	P031	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
190	Fabricated Padeye	P032	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE

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Mission Order No.MOSTH-240129

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
161	Fabricated Padeye	P004	Derrick / Gin Pole	5 Ton	Nov	Unknown	M20121803-04	30 March 2024	29 September 2024		IN USE
162	Fabricated Padeye	P009	Derrick / Gin Pole	8 Ton	Nov	Unknown	M20121803-06	30 March 2024	29 September 2024		IN USE
163	Fabricated Padeye	P573	Derrick / Gin Pole	15 Ton	Nov	Unknown	M20121803-07	30 March 2024	29 September 2024		IN USE
164	Fabricated Padeye	P005	Derrick / Water Table	20 Ton	Nov	Unknown	M20121805-03	30 March 2024	29 September 2024		IN USE
165	Fabricated Padeye	P006	Derrick / Water Table	20 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE
166	Fabricated Padeye	P007	Derrick / Water Table	20 Ton	Nov	Unknown	M20121805-03	30 March 2024	29 September 2024		IN USE
167	Fabricated Padeye	P008	Derrick / Water Table	20 Ton	Nov	Unknown	M20121805-03	30 March 2024	29 September 2024		IN USE
168	Fabricated Padeye	P010	Derrick / Water Table	12 Ton	Nov	Unknown	M20121804-01	30 March 2024	29 September 2024		IN USE
169	Fabricated Padeye	P011	Derrick / Water Table	12 Ton	Nov	Unknown	M20121804-01	30 March 2024	29 September 2024		IN USE
170	Fabricated Padeye	P012	Derrick / Water Table	5 Ton	Nov	Unknown	M20121805-01	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
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Client: Born Drilling
Facility : Born Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
211	Fabricated Padeye	P051	Derrick / Casing Board / Level 5	5 Ton	Nov	Unknown	M20121808-05	30 March 2024	29 September 2024		IN USE
212	Fabricated Padeye	P052	Derrick / Casing Board / Level 5	1 Ton	Nov	Unknown	M20121817-01	30 March 2024	29 September 2024		IN USE
213	Fabricated Padeye	P053	Derrick / Casing Board / Level 5	1 Ton	Nov	Unknown	M20121817-01	30 March 2024	29 September 2024		IN USE
214	Fabricated Padeye	P054	Derrick / Casing Board / Level 5	1 Ton	Nov	Unknown	M20121802-185	30 March 2024	29 September 2024		IN USE
215	Fabricated Padeye	P055	Derrick / Casing Board / Level 5	1 Ton	Nov	Unknown	M20121817-05	30 March 2024	29 September 2024		IN USE
216	Fabricated Padeye	P056	Derrick / Casing Board / Level 5	5 Ton	Nov	Unknown	M20121817-04	30 March 2024	29 September 2024		IN USE
217	Fabricated Padeye	P063	Derrick / Casing Board / Level 5	12 Ton	Nov	Unknown	M20121819N-04A	30 March 2024	29 September 2024		IN USE
218	Fabricated Padeye	P064	Derrick / Casing Board / Level 5	12 Ton	Nov	Unknown	M20121819N-04A	30 March 2024	29 September 2024		IN USE
219	Fabricated Padeye	P065	Derrick / Casing Board / Level 5	12 Ton	Nov	Unknown	M20121819N-04A	30 March 2024	29 September 2024		IN USE
220	Fabricated Padeye	P066	Derrick / Casing Board / Level 5	12 Ton	Nov	Unknown	M20121819N-04A	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)
Client: Born Drilling
Facility : Born Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
191	Fabricated Padeye	P033	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
192	Fabricated Padeye	P034	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
193	Fabricated Padeye	P035	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
194	Fabricated Padeye	P036	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
195	Fabricated Padeye	P037	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
196	Fabricated Padeye	P038	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
197	Fabricated Padeye	P039	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-50	30 March 2024	29 September 2024		IN USE
198	Fabricated Padeye	P060	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-51	30 March 2024	29 September 2024		IN USE
199	Fabricated Padeye	P061	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121802-51	30 March 2024	29 September 2024		IN USE
200	Fabricated Padeye	P040	Derrick / Finger Board / Level 6	1 Ton	Nov	Unknown	M20121817-02	30 March 2024	29 September 2024		IN USE

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Client: Born Drilling
Facility : Born Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
221	Bolted Padeye	1307-42-1	Lower Derrick	12 Ton	WillTech Asia	Unknown	M20121819N-04A	30 March 2024	29 September 2024		IN USE
222	Bolted Padeye	1307-44-4	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-009	30 March 2024	29 September 2024		IN USE
223	Bolted Padeye	1307-44-5	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-010	30 March 2024	29 September 2024		IN USE
224	Bolted Padeye	1307-44-3	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-010	30 March 2024	29 September 2024		IN USE
225	Bolted Padeye	1307-44-2	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-010	30 March 2024	29 September 2024		IN USE
226	Bolted Padeye	1307-42-1	Lower Derrick	12 Ton	WillTech Asia	Unknown	13-07-ER-010	30 March 2024	29 September 2024		IN USE
227	Bolted Padeye	1307-45-1	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-009	30 March 2024	29 September 2024		IN USE
228	Bolted Padeye	1307-44-7	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-013	30 March 2024	29 September 2024		IN USE
229	Bolted Padeye	1307-44-8	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-011	30 March 2024	29 September 2024		IN USE
230	Bolted Padeye	1307-44-1	Lower Derrick	5 Ton	WillTech Asia	Unknown	13-07-ER-011	30 March 2024	29 September 2024		IN USE

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Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
201	Fabricated Padeye	P041	Derrick / Finger Board / Level 6	1 Ton	Nov	Unknown	M20121817-02	30 March 2024	29 September 2024		IN USE
202	Fabricated Padeye	P042	Derrick / Finger Board / Level 6	1 Ton	Nov	Unknown	M20121817-18	30 March 2024	29 September 2024		IN USE
203	Fabricated Padeye	P043	Derrick / Finger Board / Level 6	1 Ton	Nov	Unknown	M20121817-03	30 March 2024	29 September 2024		IN USE
204	Fabricated Padeye	P045	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121808-05	30 March 2024	29 September 2024		IN USE
205	Fabricated Padeye	P047	Derrick / Finger Board / Level 6	5 Ton	Nov	Unknown	M20121808-05	30 March 2024	29 September 2024		IN USE
206	Fabricated Padeye	P057	Derrick / Finger Board / Level 6	2.5 Ton	Nov	Unknown	M20121814-01	30 March 2024	29 September 2024		IN USE
207	Fabricated Padeye	P058	Derrick / Finger Board / Level 6	2.5 Ton	Nov	Unknown	M20121814-01	30 March 2024	29 September 2024		IN USE
208	Fabricated Padeye	P048	Derrick / Casing Board / Level 5	5 Ton	Nov	Unknown	M20121808-05	30 March 2024	29 September 2024		IN USE
209	Fabricated Padeye	P049	Derrick / Casing Board / Level 5	5 Ton	Nov	Unknown	M20121808-05	30 March 2024	29 September 2024		IN USE
210	Fabricated Padeye	P050	Derrick / Casing Board / Level 5	5 Ton	Nov	Unknown	M20121808-05	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
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Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
251	Fabricated Padeye	PE-UDF-19	Under Drill Floor	3 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
252	Fabricated Padeye	PE-UDF-21	Under Drill Floor	3 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
253	Fabricated Padeye	PE-UDF-22	Under Drill Floor	3 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
254	Fabricated Padeye	PE-UDF-23	Under Drill Floor	3 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
255	Fabricated Padeye	PE-UDF-24	Under Drill Floor	3 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
256	Fabricated Padeye	PE-UDF-25	Under Drill Floor	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
257	Fabricated Padeye	PE-UDF-26	Under Drill Floor	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
258	Fabricated Padeye	PE-UDF-27	Under Drill Floor	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
259	Fabricated Padeye	PE-11-85	Under Drill Floor	30 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
260	Fabricated Padeye	PE-11-14	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
231	Bolted Padeye	1307-44-8	Lower Derrick	5 Tee	WillTech Asia	Unknown	13-07-IR-010	30 March 2024	29 September 2024		IN USE
232	Fabricated Padeye	1307-45-1	Lower Derrick	5 Tee	WillTech Asia	Unknown	13-07-IR-012	30 March 2024	29 September 2024		IN USE
233	Fabricated Padeye	1307-45-2	Lower Derrick	12 Ton	WillTech Asia	Unknown	13-07-IR-012	30 March 2024	29 September 2024		IN USE
234	Fabricated Padeye	1307-45-3	Lower Derrick	12 Ton	WillTech Asia	Unknown	13-07-IR-012	30 March 2024	29 September 2024		IN USE
235	Fabricated Padeye	1307-45-4	Lower Derrick	12 Ton	WillTech Asia	Unknown	13-07-IR-012	30 March 2024	29 September 2024		IN USE
236	Fabricated Padeye	PE-UDF-01	Under Drill Floor	10 Ton	Kleis	Unknown	TAT/5328/LT-048	30 March 2024	29 September 2024		IN USE
237	Fabricated Padeye	PE-UDF-02	Under Drill Floor	10 Ton	Kleis	Unknown	TAT/5328/LT-048	30 March 2024	29 September 2024		IN USE
238	Fabricated Padeye	PE-UDF-03	Under Drill Floor	10 Ton	Kleis	Unknown	TAT/5328/LT-049	30 March 2024	29 September 2024		IN USE
239	Fabricated Padeye	PE-UDF-04	Under Drill Floor	10 Ton	Kleis	Unknown	TAT/5328/LT-049	30 March 2024	29 September 2024		IN USE
240	Fabricated Padeye	PE-UDF-05	Under Drill Floor	6 Ton	Kleis	Unknown	TAT/5328/LT-050	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
261	Fabricated Padeye	PE-11-36	Under Drill Floor	5 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
262	Fabricated Padeye	PE-11-34	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
263	Fabricated Padeye	PE-11-35	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
264	Fabricated Padeye	PE-11-37	Under Drill Floor	5 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
265	Fabricated Padeye	PE-11-38	Under Drill Floor	5 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
266	Fabricated Padeye	PE-11-39	Under Drill Floor	5 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
267	Fabricated Padeye	PE-11-40	Under Drill Floor	5 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
268	Fabricated Padeye	PE-11-45	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
269	Fabricated Padeye	PE-AR-01	Anchor Rack - Port-Aft	8.5 Ton	Kleis	Unknown	AT/5328/LT-021	30 March 2024	29 September 2024		IN USE
270	Fabricated Padeye	PE-AR-02	Anchor Rack - Port-Fwd	8.5 Ton	Kleis	Unknown	AT/5328/LT-022	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
241	Fabricated Padeye	PE-UDF-07	Under Drill Floor	6 Ton	Kleis	Unknown	TAT/5328/LT-050	30 March 2024	29 September 2024		IN USE
242	Fabricated Padeye	PE-UDF-08	Under Drill Floor	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
243	Fabricated Padeye	PE-UDF-09	Under Drill Floor	6 Ton	Kleis	Unknown	TAT/5328/LT-050	30 March 2024	29 September 2024		IN USE
244	Fabricated Padeye	PE-UDF-10	Under Drill Floor	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
245	Fabricated Padeye	PE-UDF-13	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
246	Fabricated Padeye	PE-UDF-14	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
247	Fabricated Padeye	PE-UDF-15	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
248	Fabricated Padeye	PE-UDF-16	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
249	Fabricated Padeye	PE-UDF-17	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
250	Fabricated Padeye	PE-UDF-18	Under Drill Floor	10 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
251	Removable Stairway - Fabricated Padeye	PE-CS3-1	Maindeck	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
252	Removable Stairway - Fabricated Padeye	PE-CS3-2	Maindeck	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
253	Removable Stairway - Fabricated Padeye	PE-CS3-3	Maindeck	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
254	Removable Stairway - Fabricated Padeye	PE-CS3-4	Maindeck	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
255	Removable Stairway - Fabricated Padeye	PE-CS4-1	Shale Shaker to Cantilever	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
256	Removable Stairway - Fabricated Padeye	PE-CS4-2	Shale Shaker to Cantilever	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
257	Removable Stairway - Fabricated Padeye	PE-CS4-3	Shale Shaker to Cantilever	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
258	Removable Stairway - Fabricated Padeye	PE-CS4-4	Shale Shaker to Cantilever	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
299	Stairway - Fabricated Padeye	PE-CS5-01	Radiator - Stairway	0.5 Ton	Klels	Unknown	TAT/5328/LT-038	30 March 2024	29 September 2024		IN USE
300	Stairway - Fabricated Padeye	PE-CS5-02	Radiator - Stairway	0.5 Ton	Klels	Unknown	TAT/5328/LT-038	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
271	Fabricated Padeye	PE-AR-03	Anchor Rack - stbd-Aft	8.5 Ton	Klels	Unknown	AT/5328/LT-023	30 March 2024	29 September 2024		IN USE
272	Fabricated Padeye	PE-AR-04	Anchor Rack - Stbd-Fwd	8.5 Ton	Klels	Unknown	AT/5328/LT-024	30 March 2024	29 September 2024		IN USE
273	Removable Stairway - Fabricated Padeye	PE-CS3-01	Removable Staircase - Main Deck	1 Ton	Klels	Unknown	TAT/5328/LT-036	30 March 2024	29 September 2024		IN USE
274	Removable Stairway - Fabricated Padeye	PE-CS3-02	Removable Staircase - Main Deck	1 Ton	Klels	Unknown	TAT/5328/LT-036	30 March 2024	29 September 2024		IN USE
275	Removable Stairway - Fabricated Padeye	PE-CS3-03	Removable Staircase - Main Deck	1 Ton	Klels	Unknown	TAT/5328/LT-036	30 March 2024	29 September 2024		IN USE
276	Removable Stairway - Fabricated Padeye	PE-CS3-04	Removable Staircase - Main Deck	1 Ton	Klels	Unknown	TAT/5328/LT-036	30 March 2024	29 September 2024		IN USE
277	Fabricated Padeye	PE-11-14	Cellar Deck - BOP Deck	5 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
278	Fabricated Padeye	PE-11-15	Cellar Deck - BOP Deck	5 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
279	Fabricated Padeye	PE-11-28	Cellar Deck - Stbd	5 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
280	Fabricated Padeye	PE-11-36	Cellar Deck - Stbd	5 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
301	Stairway - Fabricated Padeye	PE-CS5-03	Radiator - Stairway	0.5 Ton	Klels	Unknown	TAT/5328/LT-038	30 March 2024	29 September 2024		IN USE
302	Stairway - Fabricated Padeye	PE-CS5-04	Radiator - Stairway	0.5 Ton	Klels	Unknown	TAT/5328/LT-038	30 March 2024	29 September 2024		IN USE
303	Rig Fabricated Padeye	PE-AS-01A	Main Deck - Port / Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378/I-PE-11	30 March 2024	29 September 2024		IN USE
304	Rig Fabricated Padeye	PE-AS-02A	Main Deck - Port / Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378/I-PE-12	30 March 2024	29 September 2024		IN USE
305	Rig Fabricated Padeye	PE-AS-03A	Under Helideck	1 Ton	Rig	Unknown	SIS/LT/5378/I-PE-13	30 March 2024	29 September 2024		IN USE
306	Rig Fabricated Padeye	PE-AS-04A	Main Deck Bow - Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378/I-PE-14	30 March 2024	29 September 2024		IN USE
307	Rig Fabricated Padeye	PE-AS-05A	Main Deck Stbd - Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378/I-PE-15	30 March 2024	29 September 2024		IN USE
308	Rig Fabricated Padeye	PE-AS-010	Main Deck - Port / Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378-PE-11	30 March 2024	29 September 2024		IN USE
309	Rig Fabricated Padeye	PE-AS-020	Main Deck - Port / Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378-PE-12	30 March 2024	29 September 2024		IN USE
310	Rig Fabricated Padeye	PE-AS-040	Main Deck Bow - Towing Slings Hang Off	1 Ton	Rig	Unknown	SIS/LT/5378-PE-14	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
281	Fabricated Padeye	PE-11-07	Cellar Deck - Tip tank	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
282	Fabricated Padeye	PE-11-06	Cellar Deck - Tip tank	1 Ton	Klels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
283	Stairway - Fabricated Padeye	PE-CS1-3	Under Cantilever - Stairway_Port	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
284	Stairway - Fabricated Padeye	PE-CS1-4	Under Cantilever - Stairway_Port	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
285	Stairway - Fabricated Padeye	PE-CS1-5	Under Cantilever - Stairway_Port	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
286	Stairway - Fabricated Padeye	PE-CS1-6	Under Cantilever - Stairway_Port	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
287	Stairway - Fabricated Padeye	PE-CS2-3	Under Cantilever - Stairway_Stbd	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
288	Stairway - Fabricated Padeye	PE-CS2-4	Under Cantilever - Stairway_Stbd	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
289	Stairway - Fabricated Padeye	PE-CS2-5	Under Cantilever - Stairway_Stbd	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE
290	Stairway - Fabricated Padeye	PE-CS2-6	Under Cantilever - Stairway_Stbd	0.5 Ton	Klels	Unknown	TAT/5328/LT-035	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
331	Fabricated Pad Eye @ Raw Water Tower	PE-WTF-1	Fwd Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-001	30 March 2024	29 September 2024		IN USE
332	Fabricated Pad Eye @ Raw Water Tower	PE-WTF-2	Fwd Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-001	30 March 2024	29 September 2024		IN USE
333	Fabricated Padeye @ Preload Pump Tower	PE-PF-04	Fwd Legwell	12 Ton	Kleis	Unknown	TAT/5328/LT-004	30 March 2024	29 September 2024		IN USE
334	Fabricated Pad Eye	PE-1	Fwd Legwell	12 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
335	Fabricated Pad Eye	PE-4	Fwd Legwell	12 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
336	Fabricated Pad Eye	PE-6A	Fwd Legwell	6 Ton	Kleis	Unknown	TAT/5328/LT-006	30 March 2024	29 September 2024		IN USE
337	Fabricated Pad Eye	PE-6B	Fwd Legwell	6 Ton	Kleis	Unknown	TAT/5328/LT-006	30 March 2024	29 September 2024		IN USE
338	Fabricated Pad Eye @ Raw Water Tower	PE-WTS-1	Stbd Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-003	30 March 2024	29 September 2024		IN USE
339	Fabricated Pad Eye @ Raw Water Tower	PE-WTS-2	Stbd Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-003	30 March 2024	29 September 2024		IN USE
340	Fabricated Padeye @ Preload Pump Tower	PE-PS-1	Stbd Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-009	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
311	Rig Fabricated Padeye	PE-AS-058	Main Deck Stbd - Towing Slings Hang Off	6.5 Ton	Rig	Unknown	SIS/LT/5379-PE-15	30 March 2024	29 September 2024		IN USE
312	V-Door Fabricated Padeye	PE-RAM-1	V-Door	5 Ton	Unknow	Unknown	TAT/5328/LT-045	30 March 2024	29 September 2024		IN USE
313	V-Door Fabricated Padeye	PE-RAM-2	V-Door	5 Ton	Unknow	Unknown	TAT/5328/LT-045	30 March 2024	29 September 2024		IN USE
314	V-Door Fabricated Padeye	PE-RAM-3	V-Door	5 Ton	Unknow	Unknown	TAT/5328/LT-045	30 March 2024	29 September 2024		IN USE
315	V-Door Fabricated Padeye	PE-RAM-4	V-Door	5 Ton	Unknow	Unknown	TAT/5328/LT-045	30 March 2024	29 September 2024		IN USE
316	Fabricated Pad eye @ Warehouse / Hatch Cover	PE-HC4-01	Warehouse / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-013	30 March 2024	29 September 2024		IN USE
317	Fabricated Pad eye @ Warehouse / Hatch Cover	PE-HC4-02	Warehouse / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-013	30 March 2024	29 September 2024		IN USE
318	Fabricated Pad eye @ Main Deck Stbd / Hatch Cover	PE-HC3-01	Main Deck Stbd / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-012	30 March 2024	29 September 2024		IN USE
319	Fabricated Pad eye @ Sack Store / Hatch Cover	PE-HC2-01	Main Deck Stbd / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-001	30 March 2024	29 September 2024		IN USE
320	Fabricated Pad eye @ Sack Store / Hatch Cover	PE-HC1-01	Sack Store / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-010	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
341	Fabricated Padeye @ Preload Pump Tower	PE-PS-2	Stbd Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-009	30 March 2024	29 September 2024		IN USE
342	Fabricated Padeye @ Preload Pump Tower	PE-PS-3	Stbd Legwell	12 Ton	Kleis	Unknown	TAT/5328/LT-008	30 March 2024	29 September 2024		IN USE
343	Fabricated Padeye @ Preload Pump Tower	PE-PS-4	Stbd Legwell	12 Ton	Kleis	Unknown	TAT/5328/LT-008	30 March 2024	29 September 2024		IN USE
344	Fabricated Pad Eye	PE-7A	Stbd Legwell	6 Ton	Kleis	Unknown	TAT/5328/LT-005	30 March 2024	29 September 2024		IN USE
345	Fabricated Pad Eye	PE-7B	Stbd Legwell	6 Ton	Kleis	Unknown	TAT/5328/LT-005	30 March 2024	29 September 2024		IN USE
346	Fabricated Padeye	PE-TXS-1	Texas Deck	1 Ton	Kleis	Unknown	TAT/5328/LT-090	30 March 2024	29 September 2024		IN USE
347	Fabricated Padeye	PE-TXS-2	Texas Deck	1 Ton	Kleis	Unknown	TAT/5328/LT-090	30 March 2024	29 September 2024		IN USE
348	Fabricated Padeye	PE-TXS-3	Texas Deck	1 Ton	Kleis	Unknown	TAT/5328/LT-090	30 March 2024	29 September 2024		IN USE
349	Fabricated Padeye	PE-TXS-4	Texas Deck	1 Ton	Kleis	Unknown	TAT/5328/LT-090	30 March 2024	29 September 2024		IN USE
350	Fabricated Padeye	PE-TX-10	Texas Deck	12 Ton	Kleis	Unknown	TAT/5328/LT-092	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
321	Fabricated Pad eye @ Sack Store / Hatch Cover	PE-HC1-02	Sack Store / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-010	30 March 2024	29 September 2024		IN USE
322	Fabricated Pad eye @ Sack Store / Hatch Cover	PE-HC1-03	Sack Store / Hatch Cover	1 Ton	Unknow	Unknown	TAT/5328/LT-010	30 March 2024	29 September 2024		IN USE
323	Fabricated Padeye @ Preload Pump Tower	PE-PP-1	Port Legwell	1 Ton	Unknow	Unknown	TAT/5328/LT-007	30 March 2024	29 September 2024		IN USE
324	Fabricated Padeye @ Preload Pump Tower	PE-PP-2	Port Legwell	1 Ton	Unknow	Unknown	TAT/5328/LT-007	30 March 2024	29 September 2024		IN USE
325	Fabricated Pad Eye @ Raw Water Tower	PE-WTP-1	Port Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-002	30 March 2024	29 September 2024		IN USE
326	Fabricated Pad Eye @ Raw Water Tower	PE-WTP-2	Port Legwell	1 Ton	Kleis	Unknown	TAT/5328/LT-002	30 March 2024	29 September 2024		IN USE
327	Fabricated Pad Eye	PE-3A	Port Legwell	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
328	Fabricated Pad Eye	PE-3B	Port Legwell	6 Ton	Kleis	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
329	Fabricated Padeye @ Preload Pump Tower	PE-PP-3	Port Legwell	12 Ton	Unknow	Unknown	TAT/5328/LT-006	30 March 2024	29 September 2024		IN USE
330	Fabricated Padeye @ Preload Pump Tower	PE-PP-4	Port Legwell	12 Ton	Unknow	Unknown	TAT/5328/LT-006	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Swing Jib)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Order No.MOSTH240128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Swing Jibs / Column Mounted Underbraced Mesorail / 2240mm (L) X 89mm (W) X 128mm (H)	SJ-01	Mud Pump Room, No.1	500 Kgs	Keppel Fels	Unknown	3734/Swing Jibs/SJ- 01 to SJ-03	30 March 2024	29 September 2024		IN USE
2	Swing Jibs / Column Mounted Underbraced Mesorail / 2240mm (L) X 89mm (W) X 128mm (H)	SJ-02	Mud Pump Room, No.2	500 Kgs	Keppel Fels	Unknown	3734/Swing Jibs/SJ- 01 to SJ-03	30 March 2024	29 September 2024		IN USE
3	Swing Jibs / Column Mounted Underbraced Mesorail / 2240mm (L) X 89mm (W) X 128mm (H)	SJ-03	Mud Pump Room, No.3	500 Kgs	Keppel Fels	Unknown	3734/Swing Jibs/SJ- 01 to SJ-03	30 March 2024	29 September 2024		IN USE
4	Crane Swing Jibs	NO ID	Stbd Crane	3.00 Ton	Seatrax	Unknown	Test Certificate by Seatrax	30 March 2024	29 September 2024		IN USE
5	Crane Swing Jibs	NO ID	Port Fwd Crane	3.00 Ton	Seatrax	Unknown	Test Certificate by Seatrax	30 March 2024	29 September 2024		IN USE
6	Crane Swing Jibs	NO ID	Port Aft Crane	3.00 Ton	Seatrax	Unknown	Test Certificate by Seatrax	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Order No.MOSTH240128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
351	Fabricated Padeye	PE-TX-1	Texas Deck	5 Ton	Klals	Unknown	TAT/5328/LT-087	30 March 2024	29 September 2024		IN USE
352	Fabricated Padeye	PE-TX-2	Texas Deck	5 Ton	Klals	Unknown	TAT/5328/LT-087	30 March 2024	29 September 2024		IN USE
353	Fabricated Padeye	PE-TX-9	Texas Deck	12 Ton	Klals	Unknown	TAT/5328/LT-092	30 March 2024	29 September 2024		IN USE
354	Fabricated Padeye	PE-TX-10	Texas Deck	12 Ton	Klals	Unknown	TAT/5328/LT-092	30 March 2024	29 September 2024		IN USE
355	Fabricated Padeye	PE-HCS-01	Drill Floor (Above Drawwork Hatch	1 Ton	Klals	Unknown	TAT/5328/LT-015	30 March 2024	29 September 2024		IN USE
356	Fabricated Padeye	PE-HCS-02	Drill Floor (Above Drawwork Hatch	1 Ton	Klals	Unknown	TAT/5328/LT-015	30 March 2024	29 September 2024		IN USE
357	Fabricated Padeye	PE-HCS-03	Drill Floor (Above Drawwork Hatch	1 Ton	Klals	Unknown	TAT/5328/LT-015	30 March 2024	29 September 2024		IN USE
358	Fabricated Padeye	PE-HCS-04	Drill Floor (Above Drawwork Hatch	1 Ton	Klals	Unknown	TAT/5328/LT-015	30 March 2024	29 September 2024		IN USE
359	Fabricated Padeye	PE-PJ-01	Port - Emergency Escape Ladder	1 Ton	Unknow	Unknown	TAT/5328/LT-030	30 March 2024	29 September 2024		IN USE
360	Fabricated Padeye	PE-PJ-02	Port - Emergency Escape Ladder	1 Ton	Unknow	Unknown	TAT/5328/LT-030	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Snatch Block)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Order No.MOSTH240128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	8" Dia. M-491 Snatch Block	01108009	Under Cantilever Platform	4 Ton	Mckissick	Unknown	01108009	30 March 2024	29 September 2024		IN USE
2	3" Dia. Snatch Block	0833-1 (80400)	Rig floor	2 Ton	Mckissick	Unknown	833	30 March 2024	29 September 2024		IN USE
3	24" Dia. Snatch Block	41252409	Drill Floor Mezzanine	60 Ton	Mckissick	Unknown	CC1-20130614002291	30 March 2024	29 September 2024		IN USE
4	8" Dia. M-491 Snatch Block	FK 3328	Rig floor	8Ton	Mckissick	Unknown	FK 3328	30 March 2024	29 September 2024		IN USE
5	14" Dia. M-491 Snatch Block	41255456	Derrick / Water Table	12 Ton	Mckissick	Unknown	3734/Snatchblock s/ 41255456	30 March 2024	29 September 2024		IN USE
6	8" Dia. M-491 Snatch Block	41123088	Derrick / Water Table	4 Ton	Mckissick	Unknown	CC1-20130614002291	30 March 2024	29 September 2024		IN USE
7	8" Dia. M-491 Snatch Block	41251809	Derrick / Water Table	4 Ton	Mckissick	Unknown	CC1-20130614002291	30 March 2024	29 September 2024		IN USE
8	14" Dia. M-491 Snatch Block	41387723	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614002291	30 March 2024	29 September 2024		IN USE
9	14" Dia. M-491 Snatch Block	41387711	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614002291	30 March 2024	29 September 2024		IN USE
10	14" Dia. M-491 Snatch Block	41387712	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614002291	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Pad eyes)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Order No.MOSTH240128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
361	Fabricated Padeye	PE-SJ-01	Stbd - Emergency Escape Ladder	1 Ton	Unknow	Unknown	TAT/5328/LT-031	30 March 2024	29 September 2024		IN USE
362	Fabricated Padeye	PE-SJ-02	Stbd - Emergency Escape Ladder	1 Ton	Unknow	Unknown	TAT/5328/LT-031	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Runway Beam)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Runway Beam / Overhead 4000mm (L) x 218mm (H)x135mm (W)	TB-16	Aux.March Rm. (Stbd Fwd)	1.5 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
2	Runway Beam / Overhead 1000mm (W) x 160mm (H)x10mm (T)	TB-15	Aux.March Rm. (Port Aft)	1.5 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
3	Runway Beam / Overhead 365mm (H) x 205mm (W)x16mm (T)	TB-10	Mud Pump Room No.1	12 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
4	Runway Beam / Overhead 328mm (H) x 170mm (W)x12mm (T)	TB-08	Mud Pump Room No.1	8 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
5	Runway Beam / Overhead 328mm (H) x 170mm (W)x12mm (T)	TB-09	Mud Pump Room No.1	8 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
6	Runway Beam / Overhead 365mm (H) x 205mm (W)x16mm (T)	TB-01	Engine Room	10 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
7	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	TB-02	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
8	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	TB-03	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
9	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	TB-04	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
10	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	TB-05	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Snatch Block)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	14" Dia. M-491 Snatch Block	41281587	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE
12	16" Dia. N-419 Snatch Block	FAB 8241	Under Holdeck	15 Ton	Mckissick	30-Jul-2022	FAB 8241	30 March 2024	29 September 2024		IN USE
13	14" Dia. M-491 Snatch Block	41255452	Derrick / Gin Pole	12 Ton	Mckissick	Unknown	3734/Snatchblock s/ 41255452	30 March 2024	29 September 2024		IN USE
14	8" Dia. M-491 Snatch Block	01107999	Derrick / Water Table	4 Ton	Mckissick	Unknown	1107999	30 March 2024	29 September 2024		IN USE
15	3" Dia. Snatch Block	10314 (SB903)	Derrick / Monkey Board	2 Ton	Mckissick	Unknown	10314	30 March 2024	29 September 2024		IN USE
16	3" Dia. Snatch Block	10969-1 (SB901)	Derrick / Monkey Board	2 Ton	Crosby	21-Feb-2022	CC1-20220221001 61	30 March 2024	29 September 2024		IN USE
17	3" Dia. Snatch Block	10969-2 (SB902)	Derrick / Monkey Board	2 Ton	Crosby	21-Feb-2022	CC1-20220221001 61	30 March 2024	29 September 2024		IN USE
18	3" Dia. Snatch Block	5812	Derrick / Monkey Board	2 Ton	Mckissick	Unknown	5812	30 March 2024	29 September 2024		IN USE
19	3" Dia. Snatch Block	0833-3	Derrick / Monkey Board	2 Ton	Mckissick	Unknown	833	30 March 2024	29 September 2024		IN USE
20	14" Dia. M-491 Snatch Block	41255426	Derrick / Monkey Board	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Runway Beam)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	TB-06	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
12	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	TB-07	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
13	Runway Beam / Overhead 155mm (H) x 105mm (W)x10mm (T)	B3	Engine Room	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
14	Runway Beam / Overhead 6500mm (L) x 323mm (H)x170mm (W)	TB-17	Heave Tools Store (Mud Pump No.2	8 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
15	Runway Beam / Overhead 4700mm (L) x 323mm (H)x170mm (W)	TB-27	Heave Tools Store (Mud Pump No.2	1.5 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
16	Runway Beam / Overhead 8200mm (L) x 210mm (H)x125mm (W)	TB-14	Heave Tools Store (Mud Pump No.2	2 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
17	Runway Beam / Overhead 14300mm (L) X 210mm (H) X 130mm (W)	TB-26	Under Cantilever Deck	2 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
18	Runway Beam / Overhead 14300mm (L) X 210mm (H) X 130mm (W)	TB-25	Under Cantilever Deck	2 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
19	Runway Beam / Overhead 19000mm (L) X 300mm (H) X 260mm (W)	TB-22	Under Cantilever Deck	20 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
20	Runway Beam / Overhead 3400mm (L) X 160mm (H) X 102mm (W)	TB-23	Under Cantilever Deck	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Snatch Block)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	14" Dia. M-491 Snatch Block	41255433	Derrick / Monkey Board	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE
22	14" Dia. M-491 Snatch Block	41387708	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE
23	14" Dia. M-491 Snatch Block	41387703	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE
24	14" Dia. M-491 Snatch Block	41397712	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE
25	14" Dia. M-491 Snatch Block	41306526	Under Drill Floor	12 Ton	Mckissick	Unknown	CC1-20130614062 91	30 March 2024	29 September 2024		IN USE
25	6" Dia. N-419 Snatch Block	109126	Rig floor	8 Ton	Mckissick	11/2017	109126	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Manual Hoist & Trolley)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Geared Beam Trolley	A15613	Attach with Runway Beam TB-25 - Under Cantilever	2 Ton	Yale	Unknown	A15613	30 March 2024	29 September 2024		IN USE
12	Geared Chain Hoist 6M (L)	OB122359	Attach with Runway Beam TB-25 - Under Cantilever	2 Ton	Yale	Unknown	OB122359	30 March 2024	29 September 2024		IN USE
13	Geared Beam Trolley	PT0657/12	Attach with Runway Beam JKTB-03 Ford- Leg	1 Ton	Ingersoll Rand	Unknown	PT0657/12	30 March 2024	29 September 2024		IN USE
14	Pneumatic Chain Hoist	KTH177-1217-15	Attach with Runway Beam JKTB-03 Ford- Leg	1 Ton	Ingersoll Rand	Unknown	KTH177-1217- 15	30 March 2024	29 September 2024		IN USE (Install Latch)
15	Geared Beam Trolley	PT0658/12	Attach with Runway Beam JKTB-02 Stbd- Leg	1 Ton	Ingersoll Rand	Unknown	PT0658/12	30 March 2024	29 September 2024		IN USE
16	Pneumatic Chain Hoist	KTH176-1217-15	Attach with Runway Beam JKTB-02 Stbd- Leg	1 Ton	Ingersoll Rand	Unknown	KTH176-1217- 15	30 March 2024	29 September 2024		IN USE (Install Latch)
17	Geared Beam Trolley	PT0279K12	Attach with Runway Beam JKTB-01 Port- Leg	1 Ton	Ingersoll Rand	Unknown	PT0279/12	30 March 2024	29 September 2024		IN USE
18	Pneumatic Chain Hoist	KTH175-1217-15	Attach with Runway Beam JKTB-01 Port- Leg	1 Ton	Ingersoll Rand	Unknown	KTH175-1217- 15	30 March 2024	29 September 2024		IN USE
19	Manual Chain Hoist	22120956	Rigging Loft	1 Ton	Kondotec	Unknown	22120956	30 March 2024	29 September 2024		IN USE
20	Manual Chain Hoist	22120979	Aux. Mach. Port-Aft Room	1 Ton	Kondotec	Unknown	22120979	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Runway Beam)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	Runway Beam / Overhead 3480mm (L) X 168mm (H) X 102mm (W)	TB-24	Under Cantilever Deck	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
22	Runway Beam / Overhead 150mm (W) X 265mm (H) X 12mm (T)	TB-20	Stbd Leg-Raw Water Tower	5 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
23	Runway Beam / Overhead 150mm (W) X 265mm (H) X 12mm (T)	TB-21	Port Leg-Raw Water Tower	5 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
24	Runway Beam / Overhead 150mm (W) X 265mm (H) X 12mm (T)	TB-19	Ford Leg-Raw Water Tower	5 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
25	Runway Beam / Overhead 330mm (H) X 165mm (W) X 15mm (T)	TB-18A	Under Radiator Platform	8 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
26	Runway Beam / Overhead 330mm (H) X 165mm (W) X 15mm (T)	TB-18B	Transformer Room	8 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
27	Runway Beam / Overhead 154mm (H) X 93mm (W) X 12mm (T)	JKTB-03	Ford - Jacking Leg	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
28	Runway Beam / Overhead 154mm (H) X 93mm (W) X 12mm (T)	SJWW-01	Welding Workshop	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
29	Runway Beam	TB-26	Riggfloor	1 Ton	Unkonw	Unknown	TATI5328/LT-079	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Manual Hoist & Trolley)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	Manual Chain Hoist	22120998	Rigfloor	1 Ton	Kondotec	Unknown	22120998	30 March 2024	29 September 2024		IN USE
22	Lever Hoist Block	1204052242	Aux Mach. Port-Aft	1.5 Ton	Kondotec	Unknown	1204052242	30 March 2024	29 September 2024		IN USE
23	Lifting Beam Clamp : Jaw Opening 75-230mm.	46020618	Aux Mach. Port-Aft	2 Ton	JG Lifting Clamp	Unknown	46020618	30 March 2024	29 September 2024		IN USE
24	Lifting Beam Clamp : Jaw Opening 120-350mm.	10 41919	Aux Mach. Port-Aft	5 Ton	Crosby	2010	46020621	30 March 2024	29 September 2024		IN USE
25	Lever Hoist Block	22018730	Main Deck Stbd - Gray Tool Box	3 Ton	Kondotec	Unknown	22018730	30 March 2024	29 September 2024		IN USE
26	Beam Trolleys / Geared	ZLG 6716	Under Radiator Platform - Attach to Beam No.TB-18A	10 Ton	Chester	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
27	Beam Trolleys / Geared	ZLG 6717	Transformer Room - Attach to Beam No.TB-18B	10 Ton	Chester	Unknown	TM-M025	30 March 2024	29 September 2024		IN USE
28	Manual Chain Hoist Block 6 M (L)	1334641	Marine Locker	5 Ton	Leydon	Unknown	1334641	30 March 2024	29 September 2024		IN USE
29	Manual Chain Hoist Block 6 M (L)	1334659	Marine Locker	5 Ton	Leydon	Unknown	1334659	30 March 2024	29 September 2024		IN USE
30	Manual Chain Hoist Block 6 M (L)	1334660	Marine Locker	5 Ton	Leydon	Unknown	1334660	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Manual Hoist & Trolley)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Trolley Beam/Chain Hoist	09655 & 43268	Rigging Loft - Fitted to Runway Beam	1 Ton	Elephan	2013	09655 & 43268	30 March 2024	29 September 2024		IN USE
2	Manual Chain Hoist Block 6 M (L)	1334640	Aux Mach. Port-Aft	5 Ton	Leydon	Unknown	1334640	30 March 2024	29 September 2024		IN USE
3	Manual Chain Hoist Block 6 M (L)	1334623	Aux Mach. Port-Aft	5 Ton	Leydon	Unknown	1334623	30 March 2024	29 September 2024		IN USE
4	Manual Chain Hoist Block 6 M (L)	1334661	Aux Mach. Port-Aft	5 Ton	Leydon	Unknown	1334661	30 March 2024	29 September 2024		IN USE
5	Manual Chain Hoist Block	98906	Aux Mach. Port-Aft	2 Ton	VITAL	Unknown	98906	30 March 2024	29 September 2024		IN USE
6	Manual Chain Hoist Block	MST-02	Aux. Mach. Port-Aft Room	1 Ton	Unknow	Unknown	MST-01	30 March 2024	29 September 2024		IN USE
7	Manual Chain Hoist Block	MST-03	Offline tool box	3 Ton	Kawasaki	Unknown	MST-01	30 March 2024	29 September 2024		IN USE
8	Manual Chain Hoist Block	MST-04	Sack Store Room	1 Ton	Unknow	Unknown	MST-04	30 March 2024	29 September 2024		IN USE
9	Geared Beam Trolley	1140936-1	Attach with Runway Beam TB-26 - Under Cantilever	2 Ton	Yale	Unknown	1140936-1	30 March 2024	29 September 2024		IN USE
10	Geared Chain Hoist 6M (L)	01G8591-13	Attach with Runway Beam TB-26 - Under Cantilever	2 Ton	Yale	Unknown	01G8591-13	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Manual Hoist & Trolley)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	Lever Hoist Block	22071963	Mud Pump Room	1.5 Ton	Kenstotec	Unknown	22071963	30 March 2024	29 September 2024		IN USE
52	Geared Beam Trolley / Chain Hoist	A61598 & E1123738	Engine Room -Attach to Runway Beam TB-81	10 Ton	Yale	Unknown	A61598 & E1123738	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Manual Hoist & Trolley)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	Manual Chain Hoist Block	MIST-01	Cellar Deck	2 Ton	Unknow	Unknown	MIST-01	30 March 2024	29 September 2024		IN USE
32	Manual Chain Hoist Block 3M (L)	000002	Marine Locker	3 Ton	Kito Corr	Unknown	000002	30 March 2024	29 September 2024		IN USE
33	Manual Chain Hoist	21010832	Under Drill Floor	2 Ton	Kenstotec	Unknown	21010833	30 March 2024	29 September 2024		IN USE
34	Manual Chain Hoist	21010833	Under Drill Floor	2 Ton	Kenstotec	Unknown	21010833	30 March 2024	29 September 2024		IN USE
35	Trolleys Beam / Geared Chain Hoist MCH-20-5-113	T11-10129	Attach with Runway Beam TB-22 - Under Cantilever	20 Ton	Van Leunden	2011	T11-10129	30 March 2024	29 September 2024		IN USE
36	Manual Chain Hoist	18100025	Main Deck	1 Ton	VITAL	06-Mar-2019	T1903-00347	30 March 2024	29 September 2024		IN USE
37	Manual Chain Hoist	2207739	Main Deck	1 Ton	VITAL	Unknown	Unknown	30 March 2024	29 September 2024		IN USE
38	Geared Beam Trolley / Chain Hoist	E12080402 & 70131	Mud Pump Room - Attach to Runway Beam TB-10	12 Ton	Yale	Unknown	E12080402 & 70131	30 March 2024	29 September 2024		IN USE
39	Geared Beam Trolley / Chain Hoist	E12107362 & 65626	Mud Pump Room - Attach to Runway Beam TB-09	8 Ton	Yale	Unknown	E12107362 & 65626	30 March 2024	29 September 2024		IN USE
40	Geared Beam Trolley / Chain Hoist	E12107367 & 70226	Mud Pump Room - Attach to Runway Beam TB-08	10 Ton	Yale	Unknown	E12107367 & 70226	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Winches)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Racking Utility Winch / Air Power Base Mounted Drum - Rope Brea. HW802-ISX	V7582-3112 (4300)	Derrick - Finger Board	1000 Kgs	Dautrel	Unknown	V7582-3112	30 March 2024	29 September 2024		IN USE
2	Racking Utility Winch PS2-1000R-PHSM-GU123	19 04 025	Derrick - Finger Board	1000 Kgs	Ingersoll Rand	2011	19 04 025	30 March 2024	29 September 2024		IN USE
3	Racking Utility Winch LS2-600-PHOM-CE	11 12 111	Derrick - Monkey Board	600 Kgs	Ingersoll Rand	2011	11 12 111	30 March 2024	29 September 2024		IN USE
4	Utility Winch No 2 / Hydraulic Base Mounted Drum	V7576-3112	Drill Floor Mezzanine AftPort	5000 Kgs	NOV	2012	V7575 to V7579	30 March 2024	29 September 2024		IN USE
5	Utility Winch No 3 / Hydraulic Base Mounted Drum	V7577-3112	Drill Floor Mezzanine AftStbd	5000 Kgs	NOV	2012	V7575 to V7579	30 March 2024	29 September 2024		IN USE
6	Utility Winch No 4 / Hydraulic Base Mounted Drum	V 7578-3112	Drill Floor Mezzanine FwrdStbd	5000 Kgs	NOV	2012	V7575 to V7579	30 March 2024	29 September 2024		IN USE
7	Utility Winch No 1 / Hydraulic Base Mounted Drum	V7575-3112	Cellar Deck - Stbd	5000 Kgs	NOV	2012	V7575-3112	30 March 2024	29 September 2024		IN USE
8	Utility Winch No 6 / Hydraulic Base Mounted Drum	V7580-3112	Under Drill Floor - Stbd	5000 Kgs	NOV	2012	V7580-3112	30 March 2024	29 September 2024		IN USE
9	Utility Winch No 7 / Hydraulic Base Mounted Drum	V7581-3112	Under Drill Floor - Port	5000 Kgs	NOV	2012	V7581-3112	30 March 2024	29 September 2024		IN USE
10	Utility Winch No 5 / Hydraulic Base Mounted Drum	V7579-3112	Cellar Deck - Port	5000 Kgs	NOV	2012	V7579-3112	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Manual Hoist & Trolley)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	Beam Trolleys / Push	633-01	Mud Pump Room - Attach to Swing Jib SJ-03	8.5 Ton	CM	Unknown	3734/Beam Trolleys/633-01	30 March 2024	29 September 2024		IN USE
42	Beam Trolleys / Push	633-02	Mud Pump Room - Attach to Swing Jib SJ-02	8.5 Ton	CM	Unknown	3734/Beam Trolleys/633-02	30 March 2024	29 September 2024		IN USE
43	Beam Trolleys / Push	633-03	Mud Pump Room - Attach to Swing Jib SJ-01	8.5 Ton	CM	Unknown	3734/Beam Trolleys/633-03	30 March 2024	29 September 2024		IN USE
44	Geared Beam Trolley / Chain Hoist	A31755 & E12036805	Engine Room - Attach to Runway Beam TB-03	1 Ton	Yale	Unknown	A31756 & E12036805	30 March 2024	29 September 2024		IN USE
45	Geared Beam Trolley / Chain Hoist	A31756 & E12036793	Engine Room - Attach to Runway Beam TB-04	1 Ton	Yale	Unknown	A31756 & E12036793	30 March 2024	29 September 2024		IN USE
46	Geared Beam Trolley / Chain Hoist	A31709 & E12036801	Engine Room - Attach to Runway Beam TB-05	1 Ton	Yale	Unknown	A31709 & E12036801	30 March 2024	29 September 2024		IN USE
47	Geared Beam Trolley / Chain Hoist	A31765 & E12036809	Engine Room - Attach to Runway Beam TB-07	1 Ton	Yale	Unknown	A31765 & E12036809	30 March 2024	29 September 2024		IN USE
48	Geared Beam Trolley / Chain Hoist	A31759 & E12036860	Engine Room - Attach to Runway Beam TB-06	1 Ton	Yale	Unknown	A31759 & E12036860	30 March 2024	29 September 2024		IN USE
49	Geared Beam Trolley / Chain Hoist	15100 & B00122581	Engine Room - Attach to Runway Beam 0.5t B3	2 Ton	Yale	Unknown	A15100 & B00122581	30 March 2024	29 September 2024		IN USE
50	Geared Beam Trolley / Chain Hoist	A31762 & E12036821	Engine Room - Attach to Runway Beam 0.5t 02	1 Ton	Yale	Unknown	A31762 & E12036821	30 March 2024	29 September 2024		IN USE

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ISO ISO

Lifting Gear Register List
(Wire Rope)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	(Descender Guide Line) 6x36Ws IWRC EIPS RHOL Galv Steel Wire Rope @5/8" x 150Ft.	FW 8849	Derrick Emergency Escape	3 Ton	Franklin	28-May-2013	FOI-PD-C3890	30 March 2024	#VALUE!		IN USE
12	(Descender Guide Line) 6x36Ws IWRC EIPS RHOL Galv Steel Wire Rope @5/8" x 150Ft.	FW 8848	Derrick Emergency Escape	3 Ton	Franklin	28-May-2013	FOI-PD-C3890	30 March 2024	#VALUE!		IN USE
13	Singleg Wire Rope, One End, Other End with Wedge Socket @19mm x 65 Mtr.	282969-1-1	Under Drill Floor	6 Ton	Certex	Jun-2022	282969-1-1	30 March 2024	#VALUE!		IN USE
14	Singleg Wire Rope, One End, Other End with Open Wedge Socket @19mm x 140 Mtr.	FAB 7466	Under Rigfloor-Cellar Deck-Stbd Utility Winch	7 Ton	Franklin	14-Jun-2022	FAB 7466	30 March 2024	#VALUE!		IN USE
15	Singleg Wire Rope, One End, Other End with Open Wedge Socket @19mm x 140 Mtr.	FAB 7465	Under Holdback - Utility Winch	7 Ton	Franklin	14-Jun-2022	FAB 7465	30 March 2024	#VALUE!		IN USE
16	MPC Crane Galvanized Completed Wire Rope With Open Spelter Socket And Other End. @20mm x 43.68 mtr.	23-80623-10-1	Cellar Deck STBD-Fitted to MPC	8.10 ton	Unknow	October 2023	Test certificate	30 March 2024	#VALUE!		IN USE
17	MPC Crane Galvanized Completed Wee Rope With Open Spelter Socket And Other End. @20mm x 43.68 mtr.	23-80623-10-2	Cellar Deck PORT-Fitted to MPC	8.10 ton	Unknow	October 2023	Test certificate	30 March 2024	#VALUE!		IN USE
18	Single Leg Sling D/W 3/8" x 29" Cable Laid Attached to 5/32" x 7 Links with eyes grab Hook @8 mm x 18.3 mtr / 10 mm x 0.74 mtr	LIS 01810823	Derrick / Monkey Board Fitted to Racking Utility Winch / HW662/-SX	0.8 Ton	L.I.S	20-Mar-2023	T20230320-001	30 March 2024	29 September 2024		IN USE
19	Single Leg Sling D/W 3/8" x 29" Cable Laid Attached to 5/32" x 7 Links with eyes grab Hook @8 mm x 18.3 mtr / 10 mm x 0.74 mtr	LIS 01820823	Derrick / Monkey Board Fitted to Racking Utility Winch / HW662HSX	0.8 Ton	L.I.S	20-Mar-2023	T20230320-001	30 March 2024	29 September 2024		IN USE

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ISO ISO

Lifting Gear Register List
(Winches)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Air Winches FA5/E12001	A020910	Welder Shop	11000 LBS	Ingersoll Rand	2012	A020910	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @1.1/2" Dia. X 65 ft.	FN 0349	Rigfloor	25 Ton	Franklin	23-Apr-2019	FOI-ISO-B8938	30 March 2024	29 September 2024		IN USE
2	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @1.1/2" Dia. X 65 ft.	FN 0348	Rigfloor	25 Ton	Franklin	23-Apr-2019	FOI-ISO-B8938	30 March 2024	29 September 2024		IN USE
3	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 7 mtrs.	NPSB 777	Main Deck Port-Aft	4.6 Ton	Unknow	Unknown	NPSB 777	30 March 2024	29 September 2024		IN USE
4	Single leg wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9 mtrs.	NPSB 9839	LQ Roof top	4.6 Ton	Unknow	Unknown	NPSB 9839	30 March 2024	29 September 2024		IN USE
5	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 2 mtrs.	BTCY 5892-58	Derrick / Monkey Board	1 Ton	Bridge Testing	29-May-2013	Y 5892	30 March 2024	29 September 2024		IN USE
6	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 2 mtrs.	LIS 606/2016	Rigfloor	2.3 Ton	Lee & Steel Co. Ltd	Unknown	T20171010-002	30 March 2024	29 September 2024		IN USE
7	Single leg wire Rope Sling with Ferrule Soft Eye Both End @30mm Dia. X 50 mtrs.	G 34977-01	Under cantilever platform	12 Ton	AMOS	17-Oct-2019	34977	30 March 2024	29 September 2024		IN USE
8	Single leg wire Rope Sling with Thimble Eye Both End @30mm Dia. X 50 mtrs.	G 34977-02	Under Cantilever platform	12 Ton	AMOS	17-Oct-2019	34977	30 March 2024	29 September 2024		IN USE
9	Single leg wire Rope Sling with Thimble Eye Both End @13mm Dia. X 73 mtrs.	T1961-01859	Under Cantilever platform	2.10 Ton	Unknow	25-Jan-2019	T1961-01859	30 March 2024	29 September 2024		IN USE
10	Single leg wire Rope Sling with Ferrule Soft Eye Both End @3/4" Dia. X 4 ft.	FN 1432	Under Cantilever	5 Ton	Franklin	09-May-2019	FOI-ISO-B9203	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO ISO

Lifting Gear Register List
(Wire Rope)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Single Sling Steel Core Wire Rope Sling / 24mm Dia x 71 M length, One Ends with Open Spelter Socket, Other End Resin Termination	FD 6442	Derrick - OAC	9.7 Ton	Franklin	Unknown	FOI-ISO-C5648	30 March 2024	29 September 2024		IN USE
2	7x35 IWRC RHLL Galvanised Non Rotating Steel Wire Rope, One end fitted with Crosby G-417 closed spelter socket. Other end fused & tapered @19mm dia. x 455Ft.	FH 2374	Drill Floor Man riding Wire	1.28 Ton	Franklin	09-Feb-2017	FOI-ISO-A6677	30 March 2024	29 September 2024		IN USE
3	34x7 Single Leg Wire Rope, One End w/CSS MR200 Cast, Other End Fused and Tapered @19mm x 140 Mtr.	FAD 5853	Utility Winch No. 1 - Rigfloor	7 Ton	Franklin	13 March 2023	FAD 5853	30 March 2024	29 September 2024		IN USE
4	34x7 Single Leg Wire Rope, One End w/CSS MR200 Cast, Other End Fused and Tapered @19mm x 140 Mtr.	CW 269	Utility Winch No. 2 - Rigfloor	6.76 Ton	Unknow	Unknown	CW 269	30 March 2024	29 September 2024		IN USE
5	34x7 Single Leg Wire Rope, One End w/CSS MR200 Cast, Other End Fused and Tapered @19mm x 140 Mtr.	CW 270	Utility Winch No. 3 - Rigfloor	6.76 Ton	Unknow	Unknown	CW 270	30 March 2024	29 September 2024		IN USE
6	Core Wire Rope Sing, One Ends with Thimble Eyes, Other End @5/8" x 240 Ft.	FJ 5258	Under Cantilever platform for Casing Tong	3.29 Ton	Franklin	19-Oct-2017	FOI-ISO-B0954	30 March 2024	29 September 2024		IN USE
7	Core Wire Rope Sing, One Ends with Thimble Eyes, Other End @5/8" x 240 Ft.	FJ 5259	Under Cantilever platform for Casing Tong	3.29 Ton	Franklin	19-Oct-2017	FOI-ISO-B0955	30 March 2024	29 September 2024		IN USE
8	Singleg Wire Rope, One End, Other End with Open Spelter Socket @19mm x 43.59 Mtr.	FAC 6858	Under Cantilever platform	6.7 Ton	Franklin	20-Oct-2022	FAC 6858	30 March 2024	29 September 2024		IN USE
9	Core Wire Rope Sing, One Ends with Thimble Eyes, Other End @5/8" x 240 Ft.	FB 8424	Hang off Power hawk jaw	3.29 Ton	Franklin	19-Oct-2017	FOI-ISO-B0956	30 March 2024	29 September 2024		IN USE
10	7x35 IWRC R-6LL Galvanised Non Rotating Steel Wire Rope, One end fitted with Crosby G-417 closed spelter socket. Other end fused & tapered @19mm dia. x 455Ft.	FE 2524	Under Cantilever Platform for Man riding Wire	1.8 Ton	Franklin	26 November 2015	FE 2524	30 March 2024	29 September 2024		IN USE

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ISO ISO

Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @18mm Dia x 2.94 mtrs.	11215	Drill Floor Tugger Pennent Wire	5.14 Ton	Unknow	Unknown	11215	30 March 2024	29 September 2024		IN USE
32	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @18mm Dia x 2.94 mtrs.	11212	Drill Floor Tugger Pennent Wire	5.14 Ton	Unknow	Unknown	11212	30 March 2024	29 September 2024		IN USE
33	Single leg wire Rope Sling with Thimble Eye Both End @48" Dia. X 59 ft.	FF 3719	Under Cantilever Platform	3.28 Ton	Franklin	30-Apr-2016	FOI-ISO-B0628	30 March 2024	29 September 2024		IN USE
34	Single leg Wire Rope sling with Thimble eyes Both End @12mm Dia. X 43.6 ft.	LIS-172-2014	Under Cantilever Platform	2.06 Ton	L.I.S	04-Sep-2014	T20140904-001	30 March 2024	29 September 2024		IN USE
35	Single leg Wire Rope sling with Thimble eyes Both End @12mm Dia. X 43.6 ft.	LIS-173-2014	Under Cantilever Platform	2.06 Ton	L.I.S	04-Sep-2014	T20140904-001	30 March 2024	29 September 2024		IN USE
36	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 7 mtrs.	N32	LQ Roof top	4.6 Ton	NPSB	18-Nov-2019	T20191118-001	30 March 2024	29 September 2024		IN USE
37	18mm Dia. X 7 mtrs. Single leg Wire Rope Sling with Ferrule Soft Eye Both End	N20	Fwd - Leg	4.6 Ton	NPSB	18-Nov-2019	T20191118-001	30 March 2024	29 September 2024		IN USE
38	Single leg Galv. Steel wire rope c/w steel ferrule soft eye both end. Ø13 mm x 2 Mtr.	LIS 0085/2022	Offsea tool box	2.36 Ton	L.I.S	07-Feb-2022	T20220208-002	30 March 2024	29 September 2024		IN USE
39	Single leg Galv. Steel wire rope c/w steel ferrule soft eye both end. Ø13 mm x 1.83 Mtr.	LIS 0083/2022	Rigfloor	2.36 Ton	L.I.S	07-Feb-2022	T20220208-002	30 March 2024	29 September 2024		IN USE
40	Single leg Pennent Wire Rope Sling with Ferrule Thimble Eye Both End @25mm Dia. X 1.1 mtrs.	TE 2557	Attached to OAC Crane	10.7 Ton	BC Wire Rope	05/2013	TE 2557	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Single leg wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 146 ft.	G-34981-03	Under Cantilever platform	4.14 Ton	AMOS	18-Oct-2019	34981	30 March 2024	29 September 2024		IN USE
12	Single leg wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 146 ft.	G-34981-04	Under Cantilever platform	4.14 Ton	AMOS	18-Oct-2019	34981	30 March 2024	29 September 2024		IN USE
13	Single leg wire Rope Sling with Thimble swaged on one End @7/8" Dia. X 25 ft.	262956-17	Rigfloor - Attached to Cathead No. 1	17.5 Ton	AMOS	Jul-2020	262956-17	30 March 2024	29 September 2024		IN USE
14	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @26mm Dia. X 2 mtrs.	OOE V788-1	Cantilever Deck	8.1 Ton	Oceanic Offshore Engineering	08-May-2013	OOE V788	30 March 2024	29 September 2024		IN USE
15	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @26mm Dia. X 2 mtrs.	OOE V788-6	Platform	8.1 Ton	Oceanic Offshore Engineering	08-May-2013	OOE V788	30 March 2024	29 September 2024		IN USE
16	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @26mm Dia. X 2 mtrs.	OOE V788-7	Cantilever Deck	8.1 Ton	Oceanic Offshore Engineering	08-May-2013	OOE V788	30 March 2024	29 September 2024		IN USE
17	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @26mm Dia. X 2 mtrs.	OOE V788-8	Platform	8.1 Ton	Oceanic Offshore Engineering	08-May-2013	OOE V788	30 March 2024	29 September 2024		IN USE
18	Single leg wire Rope Sling with Ferrule Soft Eye Both End @32mm Dia. X 30 ft. S	FL 6566	Under Cantilever platform	12.5 Ton	Franklin	01-Aug-2018	FOI-ISO-B5593	30 March 2024	29 September 2024		IN USE
19	Single leg wire Rope Sling with Ferrule Soft Eye Both End @32mm Dia. X 30 ft.	FL 6565	Under Cantilever platform	12.5 Ton	Franklin	01-Aug-2018	FOI-ISO-A3123	30 March 2024	29 September 2024		IN USE
20	Single leg wire Rope Sling with Ferrule Soft Eye Both End @26mm Dia. X 1 mtr.	TS 612389	Rigging Loft	5.12 Ton	T.S.T	08-Nov-2019	TS612389	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	Single leg Pennent Wire Rope Sling with Ferrule Thimble Eye Both End @25mm Dia. X 1.1 mtrs.	TE 2558	Attached to OAC Crane	10.7 Ton	BC Wire Rope	05/2013	TE 2558	30 March 2024	29 September 2024		IN USE
42	Single leg Pennent Wire Rope Sling with Ferrule Thimble Eye Both End @25mm Dia. X 1.1 mtrs.	TE 5227	Heavy Tool Store	10.7 Ton	BC Wire Rope	05/2013	TE 5227	30 March 2024	29 September 2024		IN USE
43	Single leg Pennent Wire Rope Sling with Ferrule Thimble Eye Both End @25mm Dia. X 1.1 mtrs.	TE 5228	Heavy Tool Store	10.7 Ton	BC Wire Rope	05/2013	TE 5228	30 March 2024	29 September 2024		IN USE
44	Single leg Galv. Steel wire rope c/w steel ferrule soft eye both end. Ø13 mm x 2 Mtr.	LIS 0265/2023	Rigfloor	2.36 Ton	L.I.S	08-May-2023	T20230508-003	30 March 2024	29 September 2024		IN USE
45	Single leg Galv. Steel wire rope c/w steel ferrule soft eye both end. Ø13 mm x 2 Mtr.	LIS 0268/2023	Under Helideck - Attach to Emergency towing wire sling	2.36 Ton	L.I.S	08-May-2023	T20230508-003	30 March 2024	29 September 2024		IN USE
46	Single leg Galv. Steel wire rope c/w steel ferrule soft eye both end. Ø13 mm x 2 Mtr.	LIS 0276/2023	Rigfloor	2.36 Ton	L.I.S	08-May-2023	T20230508-003	30 March 2024	29 September 2024		IN USE
47	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 7 mtrs.	R40	LQ Roof Top	4.6 Ton	NPSB	18-Nov-2019	T20191118-001	30 March 2024	29 September 2024		IN USE
48	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 7 mtrs.	N459	Main Deck Stbd	4.6 Ton	NPSB	18-Nov-2019	T20191118-001	30 March 2024	29 September 2024		IN USE
49	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 7 mtrs.	N383	Main Deck Stbd	4.6 Ton	NPSB	18-Nov-2019	T20191118-001	30 March 2024	29 September 2024		IN USE
50	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 7 mtrs.	N67	Under Helideck	4.6 Ton	NPSB	Jun-2018	T20180600-001	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	Single leg wire Rope Sling with Ferrule Soft Eye Both End @32mm Dia. X 10 Mtr.	FE 6142	Under Cantilever platform	12.5 Ton	Franklin	30-Jan-2018	FOI-ISO-A3123	30 March 2024	29 September 2024		IN USE
22	Single leg wire Rope Sling with Ferrule Soft Eye Both End @32mm Dia. X 10 Mtr.	FE 6145	Under Cantilever platform	12.5 Ton	Franklin	30-Jan-2018	FOI-ISO-A3123	30 March 2024	29 September 2024		IN USE
23	Single leg wire Rope Sling with Ferrule Soft Eye Both End @32mm Dia. X 10 Mtr.	FE 6141	Under Cantilever platform	12.5 Ton	Franklin	30-Jan-2018	FOI-ISO-A3123	30 March 2024	29 September 2024		IN USE
24	Single leg wire Rope Sling with Ferrule Soft Eye Both End @15mm Dia. X 1.5 mtrs.	FW 9401	Rigfloor	5 Ton	Franklin	Unknown	FOI-ISO-A3242	30 March 2024	29 September 2024		IN USE
25	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 30.4 mtrs.	LIS 1785/2017	Under Cantilever Platform	3.5 Ton	L.I.S	01-Jul-2017	T20170701-001	30 March 2024	29 September 2024		IN USE
26	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 30.4 mtrs.	LIS 1786/2017	Under Cantilever Platform	3.5 Ton	L.I.S	01-Jul-2017	T20170701-001	30 March 2024	29 September 2024		IN USE
27	Single leg wire Rope Sling with Ferrule Soft Eye Both End @25mm Dia. X 6 mtrs.	FK 9786	Under Cantilever Platform	8 Ton	Franklin	27-Sep-2013	FOI-PD-C6195	30 March 2024	29 September 2024		IN USE
28	Single leg STINGER Sling C/W master link & Ferrule Thimble Both End @28mm Dia. X 15ft.	G-35576-01	Under Cantilever Platform	14.25 Ton	AMOS	5 December 2019	G-35576	30 March 2024	29 September 2024		IN USE
29	Single leg Wire Rope Sling with Ferrule thimble eyes Both End @22mm Dia. X 7 Ft.	SOZ 15	Rigfloor	5.85 Ton	NEPSLING	11-Oct-2017	SOZ 15	30 March 2024	29 September 2024		IN USE
30	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @18mm Dia x 2.94 mtrs.	11211	Drill Floor Tugger Pennent Wire	5.14 Ton	Unknow	Unknown	11211	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
71	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 10 Mtr.	7538-35	Cantilever Deck	4.5 Ton	Franklin	18 March 2022	FOI-ISD-1802022	30 March 2024	29 September 2024		IN USE
72	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 7 Mtr.	NPSB 4161	Cantilever Deck	4.15 Ton	NPSB	06-Jul-2019	NPSB 4161	30 March 2024	29 September 2024		IN USE
73	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 7 Mtr.	NPSB 2612	Cantilever Deck	4.15 Ton	NPSB	15-Apr-2019	NPSB 2612	30 March 2024	29 September 2024		IN USE
74	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 7 Mtr.	NPSB 4165	LQ Roof Top	4.15 Ton	NPSB	06-Jul-2019	NPSB 4165	30 March 2024	29 September 2024		IN USE
75	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 7 Mtr.	NPSB 8929	Rigging Loft	4.15 Ton	NPSB	06-Jul-2019	NPSB 8929	30 March 2024	29 September 2024		IN USE
76	(6x36) IWRC EEIPS RHRL Galvanized Steel Wire Rope Sling Ferrule Thimble Eye Bolt End @13mm Dia. X 220 Ft.	FC 5359	Under Cantilever Platform	1.5 Ton	Franklin	17-Feb-2015	FOI-PD-0465111	30 March 2024	29 September 2024		IN USE
77	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	T1310-01380	Drill Floor Mezzanine	4.4 Ton	Thai Mai	16-Oct-2013	T1310-01380	30 March 2024	29 September 2024		IN USE
78	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	T1708-80483	Rigging Loft	4.6 Ton	Thai Mai	22 August 2017	T1708-80483	30 March 2024	29 September 2024		IN USE
79	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	T1709-81682	LQ Roof Top - Attach to Work Basket	4.6 Ton	Thai Mai	22 August 2017	T1708-80483	30 March 2024	29 September 2024		IN USE
80	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	YAS-0005	Rigging Loft	4.6 Ton	Thai Mai	6 January 2024	YAS-0005	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0003	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
52	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0007	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
53	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0008	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
54	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0010	LQ Roof top	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
55	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0012	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
56	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0015	Cantilever Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
57	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0017	Cantilever Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
58	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0018	Cantilever Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
59	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0022	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
60	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0024	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
81	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 3 mtrs.	LIS 1825/2017	Drill Floor Mezzanine	2.3 Ton	L.I.S	19-Oct-2017	T20171819-001	30 March 2024	29 September 2024		IN USE
82	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 3 mtrs.	LIS 1819/2017	Drill Floor Mezzanine	2.3 Ton	L.I.S	19-Oct-2017	T20171819-001	30 March 2024	29 September 2024		IN USE
83	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 5 Ft.	FD 7688	Rigging Loft	3.2 Ton	Franklin	23-Sep-2015	FOI-ISD-A1257	30 March 2024	29 September 2024		IN USE
84	Single leg wire Rope Sling with Ferrule Soft Eye Both End @5/8" Dia. X 8 Ft.	FN 1470	Attached to Port Transfer hose	3 Ton	Franklin	09-May-2019	FOI-ISD-9282	30 March 2024	29 September 2024		IN USE
85	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm. Dia. X 6.10 Mtr.	LIS 0052/2023	Cantilever Deck	3.3 Ton	L.I.S	06-Mar-2023	T20230309-004	30 March 2024	29 September 2024		IN USE
86	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm. Dia. X 2 Mtr.	LIS 0087/2023	Attached to Port Transfer hose	2 Ton	L.I.S	08-Mar-2023	T20230308-003	30 March 2024	29 September 2024		IN USE
87	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm. Dia. X 2 Mtr.	LIS 0088/2023	Attached to Port Transfer hose	2 Ton	L.I.S	08-Mar-2023	T20230308-003	30 March 2024	29 September 2024		IN USE
88	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 0194/2023	Rigfloor	3.3 Ton	L.I.S	18-Jul-2023	T20230713-001	30 March 2024	29 September 2024		IN USE
89	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 7 mtrs.	PR 7481	Main Deck	4.6 Ton	Unknown	Unknown	PR 7481	30 March 2024	29 September 2024		IN USE
90	Single Leg Sling C/W eyes grab Hook @16 mm x 9.74 mtr	LIS 0198/2022	Rigfloor	1.06 Ton	L.I.S	20-Mar-2023	T20230320-001	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
61	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0040	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
62	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0043	LQ Roof top	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
63	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0046	Cantilever Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
64	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0047	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
65	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0049	Rigging Loft	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
66	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0057	Rigging Loft	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
67	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0060	LQ Roof top	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
68	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 9.15 mtrs.	MIST-0064	Main Deck	4.6 Ton	Thai Mai	14-Dec-2022	T2122-011/4	30 March 2024	29 September 2024		IN USE
69	Single leg STINGER Sling C/W Class Spelter 1-end & Self- Locking Hook 1-End @51mm DIA x 15 Ft.	FAB 2515	Port Leg Well	42 Ton	Franklin	07-Feb-2022	FOI-ISD-2202015	30 March 2024	29 September 2024		IN USE
70	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.5 Mtr.	FAB 4005	Rigfloor	4.5 Ton	Franklin	18 March 2022	FOI-ISD-1802022	30 March 2024	29 September 2024		IN USE

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(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
111	Single leg wire Rope Sling with Thimble Eye Both End @ 13mtrs	FX 7108	Drill Floor Mezzanine	2 Ton	Franklin	2019	FX 7108	30 March 2024	29 September 2024		IN USE
112	Single leg STINGER Sling C/W master link & Hook 1-End @36mm Dia. X 4 mtrs.	T1011-00005 (PERL-5-10-904)	Cantilever Deck	18.50 Ton	Thai Mui	1 November 2010	T1011-00006	30 March 2024	29 September 2024		IN USE
113	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 20ft.	AD 1318	Rigfloor	4.40 Ton	Aesthai	6 March 2013	QT-2013/01/001	30 March 2024	29 September 2024		IN USE
114	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0172	Cantilever Deck	4.60 Ton	Thai Mui	11 December 2023	XL2.0172	30 March 2024	29 September 2024		IN USE
115	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0282	Cantilever Deck	4.60 Ton	Thai Mui	11 December 2023	XL2.0282	30 March 2024	29 September 2024		IN USE
116	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0295	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0295	30 March 2024	29 September 2024		IN USE
117	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0275	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0275	30 March 2024	29 September 2024		IN USE
118	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0230	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0230	30 March 2024	29 September 2024		IN USE
119	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0213	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0213	30 March 2024	29 September 2024		IN USE
120	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0220	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0220	30 March 2024	29 September 2024		IN USE

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(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
91	Single Leg Sling C/W eyes grab Hook @10 mm x 0.74 mtr	LIS 8410/2022	Rigfloor	1.00 Ton	L.I.S	20-Mar-2023	T2023/0704-003	30 March 2024	29 September 2024		IN USE
92	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs.	LIS 0202/2023	Cantilever Deck	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-002	30 March 2024	29 September 2024		IN USE
93	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs.	LIS 0203/2023	Attached to Port Transfer hose	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-002	30 March 2024	29 September 2024		IN USE
94	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs.	LIS 0294/2023	Under Cantilever Locker	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-002	30 March 2024	29 September 2024		IN USE
95	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 1.40 mtrs.	LIS 0281/2023	Rigging Loft	4.60 Ton	L.I.S	08-May-2023	T2023/0508-006	30 March 2024	29 September 2024		IN USE
96	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 1.40 mtrs.	LIS 0282/2023	Rigging Loft	4.60 Ton	L.I.S	08-May-2023	T2023/0508-006	30 March 2024	29 September 2024		IN USE
97	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 6.10 mtrs.	LIS 0272/2023	Rigging Loft	4.60 Ton	L.I.S	08-May-2023	T2023/0508-001	30 March 2024	29 September 2024		IN USE
98	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 6.10 mtrs.	LIS 0271/2023	Rigging Loft	4.60 Ton	L.I.S	08-May-2023	T2023/0508-001	30 March 2024	29 September 2024		IN USE
99	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 6.10 mtrs.	LIS 0273/2023	Under Helideck	4.60 Ton	L.I.S	08-May-2023	T2023/0508-001	30 March 2024	29 September 2024		IN USE
100	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 6.10 mtrs.	LIS 0274/2023	Rigging Loft	4.60 Ton	L.I.S	08-May-2023	T2023/0508-001	30 March 2024	29 September 2024		IN USE

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(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
121	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0265	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0265	30 March 2024	29 September 2024		IN USE
122	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0294	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0294	30 March 2024	29 September 2024		IN USE
123	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0284	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0284	30 March 2024	29 September 2024		IN USE
124	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0218	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0218	30 March 2024	29 September 2024		IN USE
125	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0219	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0219	30 March 2024	29 September 2024		IN USE
126	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0264	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0264	30 March 2024	29 September 2024		IN USE
127	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0280	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0280	30 March 2024	29 September 2024		IN USE
128	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0245	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0245	30 March 2024	29 September 2024		IN USE
129	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0244	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0244	30 March 2024	29 September 2024		IN USE
130	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0266	LQ Roof Top	4.60 Ton	Thai Mui	11 December 2023	XL2.0266	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
101	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 0180/2023	LQ Roof Top - Attach to Transfer Basket	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-001	30 March 2024	29 September 2024		IN USE
102	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 0189/2023	Main Deck	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-001	30 March 2024	29 September 2024		IN USE
103	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 0188/2023	Cantilever Deck	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-001	30 March 2024	29 September 2024		IN USE
104	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 0192/2023	Cantilever Deck	3.30 Ton	L.I.S	19-Jul-2023	T2023/0719-001	30 March 2024	29 September 2024		IN USE
105	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 1.83 mtrs.	LIS 0278/2023	Rigfloor	2.30 Ton	L.I.S	19-Jul-2023	T2023/0719-001	30 March 2024	29 September 2024		IN USE
106	Single leg wire Rope Sling with Thimble Eye Both End @7/8" Dia. X 13ft.	59058113-6-2	Rigfloor	7.6 Ton	NOV	Unknown	59058113-6-2	30 March 2024	29 September 2024		IN USE
107	Single leg wire Rope Sling with Ferrule Soft Eye Both End @1/2" Dia. X 10ft.	FH 2797	Rigfloor	1.84 Ton	Franklin	22 February 2017	FDI-ISO-A8249	30 March 2024	29 September 2024		IN USE
108	Single leg wire Rope Sling with Thimble Eye Both End @ 13mm x 73 mtrs	FX 7105	Drill Floor Mezzanine	2 Ton	Franklin	2019	FX 7105	30 March 2024	29 September 2024		IN USE
109	Single leg wire Rope Sling with Thimble Eye Both End @ 13mm	FX 7106	Drill Floor Mezzanine	2 Ton	Franklin	2019	FX 7106	30 March 2024	29 September 2024		IN USE
110	Single leg wire Rope Sling with Thimble Eye Both End @ 13mm	FX 7107	Drill Floor Mezzanine	2 Ton	Franklin	2019	FX 7107	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Single Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
151	Single leg STINGER Sling C/W Clone Spotter 1-end & Self- Locking Hook 1-End @1.1/2" Dia. X 1.8 mtrs.	BS 7101-2	Marine Locker	15.5 Ton	AMOS	05-Apr-2013	S6507101/1	30 March 2024	29 September 2024		IN USE
152	Single leg STINGER Sling C/W Clone Spotter 1-end Ferrule Thimble Both End @1.1/2" Dia. X 1.8 mtrs.	BS 7101-3	Marine Locker	15.5 Ton	AMOS	05-Apr-2013	S6507101/1	30 March 2024	29 September 2024		IN USE
153	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @19mm Dia x 2.80 mtrs.	11210	Under Helideck	5.14 Ton	Unknow	Unknown	11210	30 March 2024	29 September 2024		IN USE
154	Single leg wire Rope Sling with Ferrule Thimble Eye Both End @16mm Dia x 2.54 mtrs.	11208	Under Drill Floor	5.14 Ton	Unknow	Unknown	11208	30 March 2024	29 September 2024		IN USE
155	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @3/4" Dia. X 30 Ft.	MIST-041 (PWA 65755)	LQ Roof top	4.4 Ton	PWA	23-Nov-2018	PWA 65755	30 March 2024	29 September 2024		IN USE
156	Single leg wire Rope Sling with Thimble Eye Both End @16mm Dia. X 2 mtrs.	BTC Y5088-01	Under Drill Floor	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
157	Single leg wire Rope Sling with Thimble Eye Both End @9mm Dia. X 2.13 mtrs.	TS-26 (T1197-08096)	Under Drill Floor	1 Ton	Unknown	Unknown	Unknown	30 March 2024	29 September 2024		IN USE
158	Single leg wire Rope Sling with Thimble Eye Both End @16mm Dia. X 2 mtrs.	BTC Y5088-11	Under Drill Floor	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
159	Single leg wire Rope Sling with Thimble Eye Both End @16mm Dia. X 2 mtrs.	BTC Y5088-14	Under Drill Floor	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
160	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm. Dia. X 2 Mtr.	LIS 00892023	Rigfloor	2 Ton	LLS	08-Mar-2023	T20230305-003	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
131	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0247	LQ Roof Top	4.60 Ton	Thai Mo	11 December 2023	XL2.0247	30 March 2024	29 September 2024		IN USE
132	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0215	Cantilever Deck	4.60 Ton	Thai Mo	11 December 2023	XL2.0215	30 March 2024	29 September 2024		IN USE
133	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0217	Cantilever Deck	4.60 Ton	Thai Mo	11 December 2023	XL2.0217	30 March 2024	29 September 2024		IN USE
134	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 9.15 mtrs.	XL2.0263	Cantilever Deck	4.60 Ton	Thai Mo	11 December 2023	XL2.0263	30 March 2024	29 September 2024		IN USE
135	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @28mm Dia. X 9.15 mtrs.	OOE E2861-58	LQ Roof Top	5.0 Ton	Oceanic Offshore Engineering	11 December 2023	OOE E2861-58	30 March 2024	29 September 2024		IN USE
136	Single leg STINGER Sling C/W Clone Spotter 1-end & Self- Locking Hook 1-End @1-3/8" DIA x 16 Ft.	FN 1365	Under Cantilever Platform	15 Ton	Franklin	07-Feb-2022	FOI-ISD-2202015	30 March 2024	29 September 2024		IN USE
137	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 26 ft. (SKAL01)	21-23276-200-12	Main Deck	4.6 Ton	AMOS	04/2021	21-23276-200	30 March 2024	29 September 2024		IN USE
138	Single leg STINGER Sling C/W Clone Spotter 1-end & Self-Locking Hook 1-End @28mm Dia. X 15Ft.	G34981-04	Marine Locker	14.25 Ton	Unknow	05-Dec-2019	G34981	30 March 2024	29 September 2024		IN USE
139	Single leg wire Rope Sling with Ferrule Soft Eye Both End @14mm Dia. X 2 mtrs.	BTCY 5089-07	Under Drill Floor	2.5 Ton	Bridge Testing	29-May-2013	Y 5089	30 March 2024	29 September 2024		IN USE
140	Single leg wire Rope Sling with Ferrule Soft Eye Both End @14mm Dia. X 2 mtrs.	BTCY 5089-05	Derrick / Water Table	2.5 Ton	Bridge Testing	29-May-2013	Y 5089	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
161	Single leg wire Rope Sling with Thimble Eye Both End @16mm Dia. X 12 mtrs.	FC 3679	Marine Locker	3 Ton	Franklin	17-Feb-2015	C3679	30 March 2024	29 September 2024		IN USE
162	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 01952023	Main Deck STBD-AFT	3.3 Ton	LLS	15-Jul-2023	T20230713-001	30 March 2024	29 September 2024		IN USE
163	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm. Dia. X 1.83 Mtr.	LIS 00902022	Under Helideck	2.3 Ton	LLS	Unknown	T20220330-001	30 March 2024	29 September 2024		IN USE
164	Single leg wire Rope Sling with Ferrule Soft Eye Both End @3/4"Dia. X 30 ft.	FM 1128	Cantilever Deck	4.6 Ton	Franklin	29-Oct-2018	FOI-ISD-A3123	30 March 2024	29 September 2024		IN USE
165	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs.	LIS 0293/2023	Main deck STBD-AFT	3.30 Ton	LLS	19-Jul-2023	T20230719-002	30 March 2024	29 September 2024		IN USE
166	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs.	LIS 0291/2023	Rigging Loft	3.30 Ton	LLS	19-Jul-2023	T20230719-002	30 March 2024	29 September 2024		IN USE
167	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 6.10 mtrs.	LIS 0269/2023	Main deck	4.60 Ton	LLS	08-May-2023	T2023508-006	30 March 2024	29 September 2024		IN USE
168	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @19mm Dia. X 6.10 mtrs.	LIS 0270/2023	Main deck	4.60 Ton	LLS	08-May-2023	T2023508-006	30 March 2024	29 September 2024		IN USE
169	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 1.83 mtrs.	LIS 0283/2023	Derrick / Monkey Board	2.30 Ton	LLS	Unknown	Unknown	30 March 2024	29 September 2024		IN USE
170	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 1.83 mtrs.	LIS 02712023	Under Rigfloor	2.30 Ton	LLS	Unknown	Unknown	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
141	Single leg wire Rope Sling with Ferrule Soft Eye Both End @24mm Dia. X 2 mtrs.	BTCY 5087-01	Under Helideck	8 Ton	Bridge Testing	29-May-2013	Y 5087	30 March 2024	29 September 2024		IN USE
142	Single leg wire Rope Sling with Ferrule Soft Eye Both End @12mm Dia. X 2100 mm.	BTCY 6483-01	Derrick / DAC	2 Ton	Bridge Testing	18-Jun-2013	Y 6483	30 March 2024	29 September 2024		IN USE
143	Single leg wire Rope Sling with Ferrule Soft Eye Both End @12mm Dia. X 838mm.	BTCY 6484-02	Derrick / DAC	2 Ton	Bridge Testing	18-Jun-2013	Y 6484	30 March 2024	29 September 2024		IN USE
144	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 1.5 Mtr.	LIS 46102015	Under Drill Floor	2.1 Ton	LLS	15-Dec-2015	T20151210-001	30 March 2024	29 September 2024		IN USE
145	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 6FT.	FE 7229	Under Drill Floor	2 Ton	Franklin	Unknown	FOI-ISD-A3242	30 March 2024	29 September 2024		IN USE
146	Single leg wire Rope Sling with Ferrule Soft Eye Both End 1 1mm Dia. X 0.66 mtrs.	19-21025-10-1	Under Dill floor - Fitted with BOP Hoist	1.8 Ton	T.S.T	Unknown	19-21025-10	30 March 2024	29 September 2024		IN USE
147	Single leg wire Rope Sling with Ferrule Soft Eye Both End 1 1mm Dia. X 0.66 mtrs.	19-21025-10-2	Under Dill floor - Fitted with BOP Hoist	1.8 Ton	T.S.T	Unknown	19-21025-10	30 March 2024	29 September 2024		IN USE
148	Single leg wire Rope Sling with Ferrule Soft Eye Both End 1 1mm Dia. X 0.66 mtrs.	19-21025-10-3	Under Dill floor - Fitted with BOP Hoist	1.8 Ton	T.S.T	Unknown	19-21025-10	30 March 2024	29 September 2024		IN USE
149	Single leg wire Rope Sling with Ferrule Soft Eye Both End 1 1mm Dia. X 0.66 mtrs.	19-21025-10-4	Under Dill floor - Fitted with BOP Hoist	1.8 Ton	T.S.T	Unknown	19-21025-10	30 March 2024	29 September 2024		IN USE
150	Single leg STINGER Sling C/W Clone Spotter 1-end & Ferrule Thimble Both End @1.1/2" Dia. X 1.8 mtrs.	BS 7101-1	Marine Locker	15.5 Ton	AMOS	05-Apr-2013	S6507101/1	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
191	Single leg wire Rope Sling with Ferrule Soft Eye Both End @50mm Dia. X 2 mtrs.	BTCY 5092-09	Derrick / Monkey Board	1 Ton	Bridge Testing	29-May-2013	Y 5092	30 March 2024	29 September 2024		IN USE
192	Single leg wire Rope Sling with Ferrule Soft Eye Both End @50mm Dia. X 6FT.	TESCO-ILS-023	Derrick / Monkey Board	1.5 Ton	Unknow	Unknown	TESCO-ILS-023	30 March 2024	29 September 2024		IN USE
193	Single leg wire Rope Sling with Ferrule Soft Eye Both End @14mm Dia. X 2 mtrs.	BTCY 5089-10	Derrick / Monkey Board	2.5 Ton	Bridge Testing	29-May-2013	Y 5089	30 March 2024	29 September 2024		IN USE
194	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 18 ft.	FL 8958	Derrick - Finger board	2 Ton	Franklin	04-Nov-2019	FOI-ISD-A8248	30 March 2024	29 September 2024		IN USE
195	(6x36) IWRC EEIPS RHRL Galvanized Steel Wire Rope Sling Ferrule Thimble Eye Bolt End @13mm Dia. X 220 Ft.	FC 3675	Rigflew	1.5 Ton	Franklin	17-Feb-2015	FOI-PD-D4651/1	30 March 2024	29 September 2024		IN USE
196	(6x36) IWRC EEIPS RHRL Galvanized Steel Wire Rope Sling Ferrule Thimble Eye Bolt End @13mm Dia. X 220 Ft.	FC 3676	Derrick - Finger board	1.5 Ton	Franklin	17-Feb-2015	FOI-PD-D4651/1	30 March 2024	29 September 2024		IN USE
197	Single leg wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 2 mtrs.	BTC Y5093-34	Derrick / Monkey Board	1 Ton	Bridge Testing	29-May-2013	Y5093	30 March 2024	29 September 2024		IN USE
198	Single leg wire Rope Sling with Thimble Eye Both End @18mm Dia. X 2 mtrs.	BTC Y5088-02	Derrick / Monkey Board	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
199	Single leg wire Rope Sling with Thimble Eye Both End @18mm Dia. X 2 mtrs.	BTC Y5088-04	Under Drill Floor	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
200	Single leg wire Rope Sling with Thimble Eye Both End @18mm Dia. X 2 mtrs.	BTC Y5088-05	Under Drill Floor	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
171	Single leg wire Rope Sling with Ferrule Soft Eye Both End @10mm Dia. X 2 mtrs.	BTCY 5092-29	Derrick / Monkey Board - Emergency Escap	1 Ton	Bridge Testing	29-May-2013	Y 5092	30 March 2024	29 September 2024		IN USE
172	Single leg wire Rope Sling with Ferrule Soft Eye Both End @10mm Dia. X 2 mtrs.	BTCY 5092-31	Derrick / Monkey Board - Emergency Escap	1 Ton	Bridge Testing	29-May-2013	Y 5092	30 March 2024	29 September 2024		IN USE
173	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A0048-2	Life Boat No.1	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
174	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A0349-4	Life Boat No.1	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
175	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A 0349-5	Life Boat No.2	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
176	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A 0349-1	Life Boat No.2	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
177	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A 0349-7	Life Boat No.3	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
178	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A 0349-8	Life Boat No.3	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
179	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A 0349-3	Life Boat No.4	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE
180	Single Leg Wire Sling Mechanically Terminated With Eye Thimble Ferrule At Both Ends' 26mm Dia. X 2050 mm	MKS A 0349-6	Life Boat No.4	48.1T(MBL)	Unknow	19-Oct-2018	OEMCertificate(Qatar	30 March 2024	29 September 2024		IN USE

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201	Single leg wire Rope Sling with Thimble Eye Both End @18mm Dia. X 2 mtrs.	BTC Y5088-06	Derrick / Water Table	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
202	Single leg wire Rope Sling with Thimble Eye Both End @18mm Dia. X 2 mtrs.	BTC Y5088-10	Derrick / Monkey Board	4 Ton	Bridge Testing	29-May-2013	Y5088	30 March 2024	29 September 2024		IN USE
203	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @18mm Dia. X 1.83 mtrs.	LIS 0169/2023	Rigflew	3.30 Ton	LIS	19-Jul-2023	T20230719-002	30 March 2024	29 September 2024		IN USE
204	Single leg wire Rope Sling with Ferrule Soft Eye Both End @13mm Dia. X 1.83 mtrs.	LIS 0275/2023	Cantilever	2.20 Ton	LIS	Unknown	Unknown	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
181	FRC Hang Off Pennant 22mm Dia. X 1 mtr	MKS A 0175-1	Marine Locker	5 Ton	MKS	19-Dec-2018	MKS A0175-(1-2)	30 March 2024	29 September 2024		IN USE
182	FRC Hang Off Pennant 22mm Dia. X 1 mtr	MKS A 0175-2	Marine Locker	5 Ton	MKS	19-Dec-2018	MKS A0175-(1-2)	30 March 2024	29 September 2024		IN USE
183	Single Sling Steel Core Wire Rope Sling, Both Ends With Close Spilter Socket @58mm Dia x 130 ft length.	FM 7788	Derrick / Water Table	43.1 Ton	Franklin	01-Mar-2019	FOI-ISD-88311	30 March 2024	29 September 2024		IN USE
184	Single leg wire Rope Sling with Ferrule Soft Eye Both End @14mm Dia. X 2 mtrs.	BTCY 5089-11	Derrick / Water Table	2.5 Ton	Bridge Testing	29-May-2013	Y 5089	30 March 2024	29 September 2024		IN USE
185	Single leg wire Rope Sling with Ferrule Soft Eye Both End @14mm Dia. X 2 mtrs.	BTCY 5089-12	Derrick / Water Table	2.5 Ton	Bridge Testing	29-May-2013	Y 5089	30 March 2024	29 September 2024		IN USE
186	Single leg wire Rope Sling with Ferrule Soft Eye Both End @14mm Dia. X 2 mtrs.	BTCY 5089-15	Derrick / Water Table	2.5 Ton	Bridge Testing	29-May-2013	Y 5089	30 March 2024	29 September 2024		IN USE
187	Single leg wire Rope Sling with Ferrule Soft Eye Both End @24mm Dia. X 2 mtrs.	BTCY 5087-02	Derrick / Water Table	8 Ton	Bridge Testing	29-May-2013	Y 5087	30 March 2024	29 September 2024		IN USE
188	Single leg wire Rope Sling with Ferrule Soft Eye Both End @10mm Dia. X 2 mtrs.	BTCY 5092-01	Derrick / Monkey Board	1 Ton	Bridge Testing	29-May-2013	Y 5092	30 March 2024	29 September 2024		IN USE
189	Single leg wire Rope Sling with Ferrule Soft Eye Both End @10mm Dia. X 2 mtrs.	BTCY 5092-41	Derrick / Monkey Board	1 Ton	Bridge Testing	29-May-2013	Y 5092	30 March 2024	29 September 2024		IN USE
190	Single leg wire Rope Sling with Ferrule Soft Eye Both End @10mm Dia. X 2 mtrs.	BTCY 5092-42	Derrick / Monkey Board	1 Ton	Bridge Testing	29-May-2013	Y 5092	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Multi Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	5 Legged Wire Rope Sling with Thimble Eye, c/with Master Link Assy. @ 1-Leg 39mm x 1.22M / 4-Leg 24mm x 2.75 mtr.	TAT-DG-01/1	Marine Locker	10.3 Tns	T.S.T	Unknown	T8012-0013	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Multi Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	2- leg Wire rope Sling with Ferrule Thimble Eye Both End c/w Master Link @46mm Dia. X 20 ft.	FN 634T	Rigfloor	35 Tns	Franklin	23-Apr-2018	FOI-ISD-89937	30 March 2024	29 September 2024		IN USE
2	2-leg Wire rope Sling c/w Swivel with Ferrule Thimble Eye Both End @16mm Dia. X 4 ft.	NPSB 4368	Rigfloor	5.2 Ton	NPSB	Unknown	4368	30 March 2024	29 September 2024		IN USE
3	2-leg STINGER Sling with thimble eyes C/W Master Link @22" Dia. X 6 ft.	SOZ 33	Rigfloor	8 Ton	NEPSLING	30-Oct-2017	SOZ 33	30 March 2024	29 September 2024		IN USE
4	2-leg STINGER Sling with with Ferrule Thimble Eye Connected with Masterlink Bolted End Fitted with Swivel Hook @25" Dia. X 6 Mtr.	FAD 2573	Under Cantilever platform	12 Ton	Franklin	09-Feb-2023	FOI-ISD-2302060	30 March 2024	29 September 2024		IN USE
5	2-leg Wire Rope Sling with Ferrule Thimble Eye 1 End, Swivel Hook 1-end @28mm Dia. X 3 mtrs.	ST 8383402	Rigging Loft	16 Tns	Unknow	Unknown	ST8383401/1-2	30 March 2024	29 September 2024		IN USE
6	2- leg Wire rope Sling with Ferrule Thimble Eye Both End c/w Master Link @18mm Dia. X 2.43 Mtr.	LIS 0084/2023	Rigfloor	6.46 Ton	L.I.S	08-Mar-2023	T20230308-001	30 March 2024	29 September 2024		IN USE
7	2- leg Wire rope Sling with Ferrule Thimble Eye Both End c/w Master Link @18mm Dia. X 2.43 Mtr.	LIS 0085/2023	Rigging Loft	6.46 Ton	L.I.S	08-Mar-2023	T20230308-002	30 March 2024	29 September 2024		IN USE
8	2- leg Wire rope Sling with Ferrule Thimble Eye Both End c/w Master Link @15mm Dia. X 2.43 Mtr.	LIS0093/2023	Rigging Loft	6.46 Ton	L.I.S	06-May-2023	T20230506-001	30 March 2024	29 September 2024		IN USE
9	2- leg Wire rope Sling with Ferrule Thimble Eye Both End c/w Master Link @15mm Dia. X 2.43 Mtr.	LIS0094/2023	Rigging Loft	6.46 Ton	L.I.S	06-May-2023	T20230506-001	30 March 2024	29 September 2024		IN USE
10	2- leg Wire rope Sling with Ferrule Thimble Eye Both End c/w Master Link @16mm Dia. X 2.43 Mtr.	LIS0064/2023	Rigging Loft	6.46 Ton	L.I.S	6 March 2023	T20230305-001	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Shackles)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	1-3/8" Safety Pin Bow Shackle	CR 35-5	Aux Mach. Port-Aft	13.5 Ton	Crosby	Unknown	AMS-NO1001552-LGI-DR3-824	30 March 2024	29 September 2024		IN USE
2	1-3/8" Safety Pin Bow Shackle	SH-135	Under Helideck - Attach to Emergency Towing wire sling	13.5 Ton	Crosby	Unknown	SH-135	30 March 2024	29 September 2024		IN USE
3	5/8" Safety Pin Bow Shackle	FE 5992	Offline tool box	3.25 Ton	Green Pin	09-May-2019	AMS-NO1001552-LGI-DR3-883	30 March 2024	29 September 2024		IN USE
4	3/4" Safety Pin Bow Shackle	FN 1424	Rigfloor	4.75 Ton	Green Pin	09-May-2019	FOI-ISD-89157	30 March 2024	29 September 2024		IN USE
5	3/4" Safety Pin Bow Shackle	FN 1425	Rigfloor	4.75 Ton	Green Pin	09-May-2019	FOI-ISD-89157	30 March 2024	29 September 2024		IN USE
6	3/4" Safety Pin Bow Shackle	FN 1414	Rigfloor	4.75 Ton	Green Pin	09-May-2019	FOI-ISD-89157	30 March 2024	29 September 2024		IN USE
7	3/4" Safety Pin Bow Shackle	BCTY 5094-83	Rigging Loft	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
8	3/4" Safety Pin Bow Shackle	BCTY 5094-84	Rigging Loft	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
9	3/4" Safety Pin Bow Shackle	BCTY 5094-85	Rigging Loft	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
10	3/4" Safety Pin Bow Shackle	BCTY 5094-86	Rigging Loft	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO ISO

Lifting Gear Register List
(Multi Leg Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	3-leg STINGER Sling with thimble eyes C/W Master Link @3/4" Dia. X 3.2 mtrs.	FW 7738/57	Riggin Loft	5 Ton	Franklin	16-Mar-2013	FOI-ISD-A3242	30 March 2024	29 September 2024		IN USE
12	4-leg Wire Ropep Sling with thimble eyes and Master Link attached cloeth 4x 5/8" Bolt type Anchor Shackles (Crosby) @16mm Dia. X 4.62 mtrs.	TAT-STW-01/5	Riggin Loft	8 Ton	Franklin	17-Feb-2023	FOI-ISD-A3242	30 March 2024	29 September 2024		IN USE
13	4-Legged wire rope sling C/W Masterlink Assy. @16 mm x 1.8 mtr	LIS 166602017	Rigfloor	5 Ton	L.I.S	2017	Test Certificate	30 March 2024	29 September 2024		IN USE
14	2-leg STINGER Sling c/With Thimble Top Ends Connected with Masterlink, Bottom Ends Fitted with Safety Eye Hook End @25mm DIA x 6mtr.	FAB 9807	Main Deck	12 Ton	Franklin	03-Aug-2022	FOI-ISD-2208003	30 March 2024	29 September 2024		IN USE
15	2-leg STINGER Sling c/With Thimble Top Ends Connected with Masterlink, Bottom Ends Fitted with Safety Eye Hook End @25mm DIA x 6mtr.	FAB 9808	Main Deck	12 Ton	Franklin	03-Aug-2022	FOI-ISD-2208003	30 March 2024	29 September 2024		IN USE
16	2-leg STINGER Sling c/With Thimble Top Ends Connected with Masterlink, Bottom Ends Fitted with Safety Eye Hook End @25mm DIA x 6mtr.	FAB 2615	Marine Locker	12 Ton	Franklin	07-Feb-2022	FOI-ISD-2202017	30 March 2024	29 September 2024		IN USE
17	2-Leg Steel Wire Rope Sling All End Flemish Spliced with Steel Ferrule c/w Thimble, Top ends attached with Masterlink @1.1/4" x 14 Mtr. and Two (2) 1.1/4" bolts type anchor shackle 12 tons	FW 9025	Fwd-Leg Preload Pump	22 Ton	Franklin	30-May-2013	FOI-PD-C3918	30 March 2024	29 September 2024		IN USE
18	2-Leg Steel Wire Rope Sling All End Flemish Spliced with Steel Ferrule c/w Thimble, Top ends attached with Masterlink @1.1/4" x 14 Mtr. and Two (2) 1.1/4" bolts type anchor shackle 12 tons	FW 9026	Sbd-Leg Preload Pump	22 Ton	Franklin	30-May-2013	FOI-PD-C3918	30 March 2024	29 September 2024		IN USE
19	2-Leg Steel Wire Rope Sling All End Flemish Spliced with Steel Ferrule c/w Thimble, Top ends attached with Masterlink @1.1/4" x 14 Mtr. and Two (2) 1.1/4" bolts type anchor shackle 12 tons	FW 9027	Port-Leg Preload Pump	22 Ton	Franklin	30-May-2013	FOI-PD-C3918	30 March 2024	29 September 2024		IN USE
20	4-Legged wire rope sling C/W Masterlink Assy. @19 mm x 3.96 mtr	1110-00063	Marine Locker	8 Ton	Thai Mit	28-Mar-2016	T1633-02119	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	2" Safety Pin Bow Shackle	SH-35-101	Rigfloor	35 Ton	Green Pin	Unknown	AMS-N210081952-LGI-GR3-009	30 March 2024	29 September 2024		IN USE
32	2" Safety Pin Bow Shackle	SH-35-102	Marine Locker	35 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-009	30 March 2024	29 September 2024		IN USE
33	1 1/4" Safety Pin Bow Shackle	SH-12-108	Port Leg Well - Attach to Raw water tower	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
34	3" Safety Pin Bow Shackle	SH-85-01 (SF85-01)	Rigfloor	85 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-009	30 March 2024	29 September 2024		IN USE
35	1.3/4" Safety Pin Bow Shackle	57964	Under Helideck - Attach to Emergency Towing wire sling	25 Ton	Crosby	Unknown	57964	30 March 2024	29 September 2024		IN USE
36	1.1/4" Safety Pin Bow Shackle	SH-12-103	Drill Floor Mezzanine	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
37	1-1/4" Safety Pin Bow Shackle	SH-12-109	Aux Mach. Port-Aft	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
38	3/4" Safety Pin Bow Shackle	BTCY 5094-32	Port Leg Well	4.75 Ton	Green Pin	29-May-2013	Y 5095	30 March 2024	29 September 2024		IN USE
39	3/4" Safety Pin Bow Shackle	SH-4.75-101	Offline tool box	4.75 Ton	Crosby	09-May-2019	Test Certificate	30 March 2024	29 September 2024		IN USE
40	3/4" Safety Pin Bow Shackle	FN 1491	Attach to Safety Tri-pod	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-88197	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	3/4" Safety Pin Bow Shackle	BTCY 5094-63	Rigfloor	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
12	7/8" Safety Pin Bow Shackle	FM T197	Rigfloor	6.5 Ton	Green Pin	Unknown	FOI-PD-C3810	30 March 2024	29 September 2024		IN USE
13	5/8" Safety Pin Bow Shackle	FN 1370	Offline tool box	3.25 Ton	Green Pin	Unknown	FOI-PD-C3810	30 March 2024	29 September 2024		IN USE
14	1-1/2" Safety Pin Bow Shackle	BTCY 5090	Drill Floor Mezzanine - Deadline Sheave block	17 Ton	Green Pin	29-May-2013	Y 5090	30 March 2024	29 September 2024		IN USE
15	3/4" Safety Pin Bow Shackle	BTCY 5094-75	Rigfloor	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
16	3/4" Safety Pin Bow Shackle	BTCY 5094-58	Drill Floor Mezzanine	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
17	3/4" Safety Pin Bow Shackle	BTCY 5094-83	Drill Floor Mezzanine - Emergency Escape	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
18	3/4" Safety Pin Bow Shackle	BTCY 8094-80	Drill Floor Mezzanine - Emergency Escape	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
19	1 1/4" SCREW Pin Bow Shackle	SH-OF-101	Rigging Loft	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-007	30 March 2024	29 September 2024		IN USE
20	1 1/4" SCREW Pin Bow Shackle	SH-OF-102	Rigging Loft	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-007	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	3/4" Safety Pin Bow Shackle	FN 1469	Under Cantilever Platform	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-88197	30 March 2024	29 September 2024		IN USE
42	1 1/8" Safety Pin Bow Shackle	REE 12/16 C	RigFloor	9.5 TOn	Crosby	Unknown	REE 12/16	30 March 2024	29 September 2024		IN USE
43	1 3/8" Safety Pin Bow Shackle	SH-13-001	Rigfloor	13.5 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
44	7/8" Safety Pin Bow Shackle	SH-02	Rigfloor	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
45	1 1/4" Safety Pin Bow Shackle	SF12-15	Rigfloor attached to GAC	12 Ton	Crosby	Unknown	SF12	30 March 2024	29 September 2024		IN USE
46	1 3/8" Safety Pin Bow Shackle	FQ 6432	Rigfloor	13.5 Ton	Crosby	07-Sep-2020	AMS-N210081952-LGI-GR3-025	30 March 2024	29 September 2024		IN USE
47	1 3/8" Safety Pin Bow Shackle	FQ 6436	LQ Roof Top - Attach to Work Basket	13.5 Ton	Crosby	07-Sep-2020	AMS-N210081952-LGI-GR3-025	30 March 2024	29 September 2024		IN USE
48	1 3.8" Safety Pin Bow Shackle	FQ 6439	Rigfloor	13.5 Ton	Crosby	07-Sep-2020	AMS-N210081952-LGI-GR3-025	30 March 2024	29 September 2024		IN USE
49	2 1/2" Safety Pin Bow Shackle	FQ 6430	Rigfloor	55 Ton	Crosby	07-Sep-2020	AMS-N210081952-LGI-GR3-026	30 March 2024	29 September 2024		IN USE
50	2 1/2" Safety Pin Bow Shackle	SH-55-201	Marine Locker	55 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	1 1/2" Safety Pin Bow Shackle	TX 24 (SH-17-101)	Offline tool box	17 Ton	Green Pin	29-Apr-2013	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
22	1 1/2" Safety Pin Bow Shackle	TR 171	Offline tool box	17 Ton	Green Pin	29-Apr-2013	Test Certificate	30 March 2024	29 September 2024		IN USE
23	1 1/2" Safety Pin Bow Shackle	SH-17-103 (TX 22)	Rigfloor	17 Ton	Green Pin	29-Apr-2013	FOI-PD-C3318	30 March 2024	29 September 2024		IN USE
24	1 1/4" Safety Pin Bow Shackle	SH-12-101	Under Cantilever Platform	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
25	1 1/4" Safety Pin Bow Shackle	SH-12-102	Rigfloor	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
26	1 1/4" Safety Pin Bow Shackle	SH-12-110	Rigfloor attached to GAC	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
27	1 1/4" Safety Pin Bow Shackle	SH-12-111	Under Cellever Locker	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
28	1 1/4" Safety Pin Bow Shackle	SH-12-116	Aux Mach. Port-Aft	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
29	1 1/4" Safety Pin Bow Shackle	SH-12-105	Rigfloor	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
30	1 1/4" Safety Pin Bow Shackle	SH-12-106	Rigfloor	12 Ton	Crosby	Unknown	AMS-N210081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
71	3/4" Safety Pin Bow Shackle	BTCY 5094-10	Fitted to Stbd-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
72	3/4" Safety Pin Bow Shackle	BTCY 5094-12	Fitted to Stbd-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
73	3/4" Safety Pin Bow Shackle	BTCY 5094-60	Fitted to Stbd-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
74	3/4" Safety Pin Bow Shackle	BTCY 5094-76	Fitted to Stbd-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
75	3/4" Safety Pin Bow Shackle	BTCY 5094-06	Fitted to Stbd-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
76	3/4" Safety Pin Bow Shackle	BTCY 5094-02	Fitted to Port-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
77	3/4" Safety Pin Bow Shackle	BTCY 5094-19	Fitted to Port-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
78	3/4" Safety Pin Bow Shackle	BTCY 5094-86	Fitted to Port-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
79	3/4" Safety Pin Bow Shackle	BTCY 5094-97	Fitted to Port-Fwd Crane Boom tip	4.75 Ton	Green Pin	29-May-2013	Y5094	30 March 2024	29 September 2024		IN USE
80	3/4" SCREW Pin Bow Shackle	SH-201	Offline tool box	4.75 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	2 1/2" Safety Pin Bow Shackle	SH-55-202 (1031)	Marine Locker	55 Ton	Crosby	28-Apr-2013	Test Certificate	30 March 2024	29 September 2024		IN USE
52	1 3/4" Safety Pin Bow Shackle	FY 1932	Rigging Loft	25 Ton	Green Pin	28-Oct-2013	FOI-PD-C5679	30 March 2024	29 September 2024		IN USE
53	1" SCREW Pin Bow Shackle	FH 3629	Rigging Loft	8.5 Ton	Green Pin	8 March 2017	AMS-N21081952-LGI-GR3-031	30 March 2024	29 September 2024		IN USE
54	1 1/4" Safety Pin Bow Shackle	155A	Rigging Loft	12 Ton	Crosby	Unknown	155A	30 March 2024	29 September 2024		IN USE
55	1 1/4" Safety Pin Bow Shackle	SH-12-01	Rigfloor	12 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
56	1 3/8" Safety Pin Bow Shackle	FG 6433	Rigfloor	13.5 Ton	Crosby	07-Sep-2020	AMS-N21081952-LGI-GR3-032	30 March 2024	29 September 2024		IN USE
57	1 3/8" Safety Pin Bow Shackle	FG 6434	Rigfloor	13.5 Ton	Crosby	07-Sep-2020	AMS-N21081952-LGI-GR3-032	30 March 2024	29 September 2024		IN USE
58	3/4" Safety Pin Bow Shackle	FG 3336-2	Main Deck	4.75 Ton	Green Pin	Unknown	FG3836-2	30 March 2024	29 September 2024		IN USE
59	1 3/4" Safety Pin Bow Shackle	FW 7195	Attach to Aux. Stbd Crane	35 Ton	Green Pin	10-May-2013	FOI-PD-C3588	30 March 2024	29 September 2024		IN USE
60	7/8" SCREW Pin Bow Shackle	SC-8.5-001	Rigging Loft	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
81	1/2" Safety Pin Bow Shackle	SK-109	Attach to Desender Block	2 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
82	5/8" Safety Pin Bow Shackle	FN 1357	Fwd - Legs	3.25 ton	Green Pin	09-May-2019	FOI-ISD-89196	30 March 2024	29 September 2024		IN USE
83	5/8" Safety Pin Bow Shackle	FN 1372	Fwd - Legs	3.25 ton	Green Pin	09-May-2019	FOI-ISD-89196	30 March 2024	29 September 2024		IN USE
84	3/4" Safety Pin Bow Shackle	TAT-GR-883*10	Attached to Part Transfer hose	3.25 Ton	Crosby	Unknown	81173/0014	30 March 2024	29 September 2024		IN USE
85	3/4" Safety Pin Bow Shackle	CTU-0003A	Port Leg Well - Attach to Air Hoist	3.25 Ton	Green Pin	Unknown	CTU-0003A	30 March 2024	29 September 2024		IN USE
86	3/4" Safety Pin Bow Shackle	FN 1464	Rigfloor	4.75 Ton	Green Pin	09-May-2019	FOI-ISD-89197	30 March 2024	29 September 2024		IN USE
87	2" Safety Pin Bow Shackle	FD 6188	Rigfloor	35 Ton	Crosby	22-Aug-2015	FOI-ISD-A6189	30 March 2024	29 September 2024		IN USE
88	1 3/4" Safety Pin Bow Shackle	B34-01	Rigfloor	25 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
89	5/8" SCREW Pin Bow Shackle	FQ 3720	Offline tool box	3.25 Ton	Crosby	30-Apr-2018	FOI-ISD-A4112	30 March 2024	29 September 2024		IN USE
90	1-1/4" Safety Pin Bow Shackle	1528915-2	Rigfloor attached to OAC	12 Ton	Crosby	13-Jun-2013	CC1281306130897I	30 March 2024	29 September 2024		IN USE

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(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
61	1 1/4" SCREW Pin Bow Shackle	SC-12-109	Under Cantilever Locker	12 Ton	Crosby	Unknown	BD 149993	30 March 2024	29 September 2024		IN USE
62	3/4" Safety Pin Bow Shackle	CTU-0008A	Cantilever Deck	4.75 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3-022	30 March 2024	29 September 2024		IN USE
63	1 1/8" Safety Pin Bow Shackle	FE 8270	Rigfloor	9.5 Ton	Green Pin	Unknown	FOI-PD-C3315	30 March 2024	29 September 2024		IN USE
64	1 1/8" Safety Pin Bow Shackle	SH-9.5-101	Rigfloor	9.5 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3- 032	30 March 2024	29 September 2024		IN USE
65	1 1/4" SCREW Pin Bow Shackle	SH-12-107	V-Door	12 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3- 032	30 March 2024	29 September 2024		IN USE
66	1" Safety Pin Bow Shackle	FV 5983	Rigfloor	8.5 Ton	Green Pin	Unknown	FV 5983	30 March 2024	29 September 2024		IN USE
67	2" Safety Pin Bow Shackle	MR-01	Rigfloor	35 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
68	1-1/4" Safety Pin Bow Shackle	FF 3813	Rig floor	12 Ton	Green Pin	5 May 2018	AMS-N21081952-LGI-GR3-022	30 March 2024	29 September 2024		IN USE
69	1.3/4" Safety Pin Bow Shackle	SH-25-101	Fitted to Aux.block Port-Aft	25 Ton	Crosby	Unknown	AMS-N21081952-GR3-010	30 March 2024	29 September 2024		IN USE
70	1-3/4" Safety Pin Bow Shackle	BTC AC 6985-06	Fitted to Aux.block Port-Fwd	25 Ton	Holland	May-2015	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
111	1" Screw Pin Shackle	FW 6725	Offline tool box	6.5 Ton	Green Pin	8 April 2013	FOI-PD-G4093	30 March 2024	29 September 2024		IN USE
112	7/8" Safety Pin Bow Shackle	SSJ 48	Offline tool box	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
113	7/8" Safety Pin Bow Shackle	17602	Offline tool box	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
114	7/8" Safety Pin Bow Shackle	SH-6.5-001	Offline tool box	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
115	7/8" Safety Pin Bow Shackle	SH-6.5-002	Attached to Pod Transfer hose	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
116	5/8" Safety Pin Bow Shackle	P22-168	Offline tool box	3.25 Ton	Crosby	Unknown	P22-168	30 March 2024	29 September 2024		IN USE
117	5/8" Safety Pin Bow Shackle	P22-154	Offline tool box	3.25 Ton	Crosby	Unknown	P22-154	30 March 2024	29 September 2024		IN USE
118	5/8" Safety Pin Bow Shackle	P22-159	Attach to Deserader Block	3.25 Ton	Crosby	Unknown	P22-154	30 March 2024	29 September 2024		IN USE
119	5/8" Safety Pin Bow Shackle	P22-163	Offline tool box	3.25 Ton	Crosby	Unknown	P22-163	30 March 2024	29 September 2024		IN USE
120	3/4" Safety Pin Bow Shackle	P22-181	Rigging Loft	4.75 Ton	Crosby	Unknown	P22-181	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
91	5/8" Safety Pin Bow Shackle	FN 1376	Drill Floor Mezzanine	3.25 Ton	Green Pin	09-May-2019	FOI-ISD-B9196	30 March 2024	29 September 2024		IN USE
92	5/8" Safety Pin Bow Shackle	FN 1377	Drill Floor Mezzanine	3.25 Ton	Green Pin	09-May-2019	FOI-ISD-B9196	30 March 2024	29 September 2024		IN USE
93	5/8" Safety Pin Bow Shackle	FW 8251	Drill Floor Mezzanine	3.25 Ton	Green Pin	23-May-2013	FOI-ISD-C3808	30 March 2024	29 September 2024		IN USE
94	5/8" Safety Pin Bow Shackle	FW 8252	Drill Floor Mezzanine	3.25 Ton	Green Pin	23-May-2013	FOI-ISD-C3808	30 March 2024	29 September 2024		IN USE
95	5/8" Safety Pin Bow Shackle	FW 8253	Drill Floor Mezzanine	3.25 Ton	Green Pin	23-May-2013	FOI-ISD-C3808	30 March 2024	29 September 2024		IN USE
96	5/8" Safety Pin Bow Shackle	FW 8254	Drill Floor Mezzanine	3.25 Ton	Green Pin	23-May-2013	FOI-ISD-C3808	30 March 2024	29 September 2024		IN USE
97	1/2" Safety Pin Bow Shackle	FW 9648	Drill Floor Mezzanine	2 Ton	Green Pin	07-Jun-2013	FOI-ISD-C4093	30 March 2024	29 September 2024		IN USE
98	1/2" Safety Pin Bow Shackle	FW 9644	Drill Floor Mezzanine	2 Ton	Green Pin	07-Jun-2013	FOI-ISD-C4093	30 March 2024	29 September 2024		IN USE
99	1/2" Safety Pin Bow Shackle	FW 9650	Drill Floor Mezzanine	2 Ton	Green Pin	07-Jun-2013	FOI-ISD-C4093	30 March 2024	29 September 2024		IN USE
100	1/2" Safety Pin Bow Shackle	FW 9651	Drill Floor Mezzanine	2 Ton	Green Pin	07-Jun-2013	FOI-ISD-C4093	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
121	3/4" Safety Pin Bow Shackle	P22-191	Attached to Stairway 01 Sling	4.75 Ton	Crosby	Unknown	P22-181	30 March 2024	29 September 2024		IN USE
122	5/8" Safety Pin Bow Shackle	BJS 46	Fitted to Port-Fwd Crane Boom tip	3.25 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
123	1" Safety pin Bow Shackle	20203	Rigfloor	8.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
124	1" Safety pin Bow Shackle	301 II	Rigfloor	8.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
125	7/8" Safety pin Bow Shackle	KM JK305	Rigfloor	6.5 Ton	Crosby	17 September 2013	KM JK296-1	30 March 2024	29 September 2024		IN USE
126	1-1/4" Safety Pin Bow Shackle	11408	Rigfloor	12 Ton	Crosby	Unknown	11408	30 March 2024	29 September 2024		IN USE
127	7/8" Safety pin Bow Shackle	FE 34218	Rigfloor	6.5 Ton	Green Pin	25-Jun-2016	FOI-ISD-A4968	30 March 2024	29 September 2024		IN USE
128	7/8" Safety Pin Bow Shackle	LIS 1435/2023	Port Leg Well	6.5 Ton	Crosby	Unknown	LIS 1435/2023	30 March 2024	29 September 2024		IN USE
129	7/8" Safety Pin Bow Shackle	LIS 1431/2023	Port Leg Well	6.5 Ton	Crosby	Unknown	LIS 1431/2023	30 March 2024	29 September 2024		IN USE
130	7/8" Safety Pin Bow Shackle	LIS 1439/2023	Port Leg Well	6.5 Ton	Crosby	Unknown	LIS 1439/2023	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
101	3/4" Safety Pin Bow Shackle	BTCY 5094-T7	Drill Floor Mezzanine	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
102	1" Safety Pin Bow Shackle	SK-101	Drill Floor Mezzanine	8.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
103	1-1/4" Safety Pin Bow Shackle	12-B	Offline tool box	12 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
104	1-1/4" SCREW Pin Bow Shackle	SC-12-105	Under Cantilever Locker	12 Ton	Crosby	Unknown	AMS-N21001952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
105	1-1/4" SCREW Pin Bow Shackle	SC-12-108	Under Cantilever Locker	12 Ton	Crosby	Unknown	AMS-N21001952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
106	1-1/4" SCREW Pin Bow Shackle	SC-12-120	Aux. Mach. Port-Aft	12 Ton	Crosby	Unknown	AMS-N21001952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
107	1-1/4" SCREW Pin Bow Shackle	SC-12-121	Aux. Mach. Port-Aft	12 Ton	Crosby	Unknown	AMS-N21001952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
108	5/8" SCREW Pin Bow Shackle	FF 8170	Offline tool box	3.25 Ton	Crosby	25-Jun-2016	FOI-ISD-A4960	30 March 2024	29 September 2024		IN USE
109	1-1/2" Safety Pin Bow Shackle	SF 17	Rigfloor	17 Ton	Crosby	06-Apr-2015	3734/Shackle/SF 17	30 March 2024	29 September 2024		IN USE
110	7/8" Safety Pin Bow Shackle	FW 7193	Offline tool box	6.5 Ton	Green Pin	10-May-2013	FOI-PD-C3587	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
151	7/8" Safety Pin Bow Shackle	KIMJK 318	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
152	5/8" Safety Pin Bow Shackle	BTCY 6482-05	Derrick / OAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
153	5/8" Safety Pin Bow Shackle	BTCY 6482-07	Derrick / OAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
154	5/8" Safety Pin Bow Shackle	BTCY 6482-02	Derrick / OAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
155	5/8" Safety Pin Bow Shackle	BTCY 6482-03	Derrick / OAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
156	5/8" Safety Pin Bow Shackle	TX-11	Derrick / Monkey Board - Emergency Escap	3.25 Ton	Green Pin	09-May-2019	AMS-N21081552-LGI-GR3-003	30 March 2024	29 September 2024		IN USE
157	5/8" Safety Pin Bow Shackle	TX-9	Derrick / Monkey Board - Emergency Escap	3.25 Ton	Green Pin	09-May-2019	FOI-ISO-89196	30 March 2024	28 September 2024		IN USE
158	3/4" Safety Pin Bow Shackle	FN 1397	Derrick / Monkey Board	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-89197	30 March 2024	29 September 2024		IN USE
159	3/4" Safety Pin Bow Shackle	FN 1399	Stairway to Texas deck	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-89197	30 March 2024	29 September 2024		IN USE
160	3/4" Safety Pin Bow Shackle	FN 1412	Derrick / Monkey Board	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-89197	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
131	7/8" Safety Pin Bow Shackle 5685F "A"	LIS 14342023	Port Leg Well	9.5 Ton	Crosby	Unknown	LIS 14342023	30 March 2024	29 September 2024		IN USE
132	3/4" Safety Pin Bow Shackle	IC34-09	Attached to Pod Transfer Hose	4.75 Ton	Crosby	Unknown	IC34-09	30 March 2024	29 September 2024		IN USE
133	3/4" Safety Pin Bow Shackle	FH 5643	Aux Mach. Port Fwd	4.75 Ton	Crosby	Unknown	FH 5643	30 March 2024	29 September 2024		IN USE
134	1. 1/8" Safety pin Bow Shackle	4849 D	Port Leg Well - Attach to Leg weight	9.5 Ton	Green Pin	Unknown	4849 D	30 March 2024	29 September 2024		IN USE
135	7/8" Safety Pin Bow Shackle	TAT-8KT-01D	Under Cantilever Locker	6.5 Ton	Crosby	Unknown	TAT-8KT-01D	30 March 2024	29 September 2024		IN USE
136	1 3.8" Safety Pin Bow Shackle	LIS 0262/2022	RSTB Locker	13.5 Ton	Crosby	Unknown	LIS 0262/2022	30 March 2024	29 September 2024		IN USE
137	1 3.8" Safety Pin Bow Shackle	LIS 0263/2022	RSTB Locker	13.5 Ton	Crosby	Unknown	LIS 0263/2022	30 March 2024	29 September 2024		IN USE
138	2" Screw Pin Shackle	SK-35-01	Marine Locker	35 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
139	2" Screw Pin Shackle	SK-35-02	Marine Locker	35 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
140	2" Screw Pin Shackle	SK-35-03	Marine Locker	35 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
161	3/4" Safety Pin Bow Shackle	448	Derrick / Monkey Board - Emergency Escap	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-89197	30 March 2024	29 September 2024		IN USE
162	3/4" Safety Pin Bow Shackle	FX 5793	Derrick / Monkey Board - Emergency Escap	4.75 Ton	Green Pin	09-May-2019	FOI-ISO-89197	30 March 2024	29 September 2024		IN USE
163	3/4" Safety Pin Bow Shackle	BTCY 5194-05	Derrick / Monkey Board - Emergency Escap	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
164	3/4" Safety Pin Bow Shackle	BTCY 5094-04	Derrick / Monkey Board - Emergency Escap	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
165	3/4" Safety Pin Bow Shackle	BCTY 5094-02	Derrick / Monkey Board - Emergency Escap	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
166	3/4" Safety Pin Bow Shackle	BTCY 5094-09	Derrick / Monkey Board - Emergency Escap	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
167	7/8" Safety Pin Bow Shackle	FW 7190	Rigfloor	6.5 Ton	Green Pin	10-May-2013	FOI-FD-03587	30 March 2024	29 September 2024		IN USE
168	3/4" Safety Pin Bow Shackle	BTCY 5094-41	Main Deck STBD-AFT	4.75 Ton	Green Pin	29-May-2013	Y 5894	30 March 2024	29 September 2024		IN USE
169	1" Safety Pin Bow Shackle	FW 7204	Under Cantilever	9.5 Ton	Green Pin	10-May-2013	FOI-FD-03588	30 March 2024	29 September 2024		IN USE
170	1 1/2" Safety Pin Bow Shackle	SH-17-102 (TX 21)	Under Drill Floor	17 Ton	Green Pin	28-Apr-2013	FOI-FD-03318	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
141	2" Screw Pin Shackle	SK-35-04	Marine Locker	35 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
142	1-3/8" Safety Pin Bow Shackle	CR 35-2	Engine Room	13.5 Ton	Crosby	Unknown	AMS-N21081552-LGI-GR3-024	30 March 2024	29 September 2024		IN USE
143	1" Safety Pin Bow Shackle	BTCY 5895-01	Under Drill Floor	8.50 Ton	Green Pin	Unknown	Y 5895	30 March 2024	29 September 2024		IN USE
144	1" Safety Pin Bow Shackle	FW 3754	Under Drill Floor	8.50 Ton	Green Pin	Unknown	AMS-N21081552-CR3-011	30 March 2024	29 September 2024		IN USE
145	1. 1/4" Safety Pin Bow Shackle	BTCY 5095-05	Under Drill Floor	8.50 MT	Green Pin	29-May-2013	Y 5095	30 March 2024	29 September 2024		IN USE
146	1.1/4" Safety Pin Bow Shackle	KIMJK 314	Derrick / Water Table	12 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
147	1.1/4" Safety Pin Bow Shackle	KIMJK 318	Derrick / Water Table	12 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
148	7/8" Safety Pin Bow Shackle	KIMJK 299	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
149	7/8" Safety Pin Bow Shackle	KIMJK 302	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
150	7/8" Safety Pin Bow Shackle	KIMJK 303	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
191	1 1/8" Safety Pin Bow Shackle	FW 9642	Under Helideck	9.5Ton	Green Pin	07-Jun-2013	FOI-PD-C4091	30 March 2024	29 September 2024		IN USE
192	1 1/4" Safety Pin Bow Shackle	8335-23	Under Helideck	12 Ton	Green Pin	25-Jan-2012	SG2019125-01-340	30 March 2024	29 September 2024		IN USE
193	1" Safety Pin Bow Shackle	SH-8.5-01	Under Helideck	8.5 Ton	Green Pin	Unknown	SH-8.5-01	30 March 2024	29 September 2024		IN USE
194	1" Safety Pin Bow Shackle	SH-8.5-02	Under Helideck	8.5 Ton	Green Pin	Unknown	SH-8.5-01	30 March 2024	29 September 2024		IN USE
195	1" Safety Pin Bow Shackle	SH-8.5-03	Under Helideck	8.5 Ton	Green Pin	Unknown	SH-8.5-01	30 March 2024	29 September 2024		IN USE
196	7/8" Safety Pin Bow Shackle	SH-6.5-02	Under Helideck	6.5 Ton	Green Pin	Unknown	SH-6.5-02	30 March 2024	29 September 2024		IN USE
197	2" Safety Pin Bow Shackle	FAC 6318	Marine Locker	35 Ton	Green Pin	06-Oct-2022	Test Certificate	30 March 2024	29 September 2024		IN USE
198	2" Safety Pin Bow Shackle	MR-02	Marine Locker	35 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
199	1" Screw Pin Shackle	FW 3335	Attached to MPC Port	8.5 Ton	Green Pin	08-Apr-2013	Test Certificate	30 March 2024	29 September 2024		IN USE
200	3/4" Safety Pin Bow Shackle	BTCY 5894-88	Under Drill Floor	4.75 Ton	Green Pin	29-May-2013	Y5894	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
171	2" Safety Pin Bow Shackle	SH-35-103	Rigfloor	35 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3-008	30 March 2024	29 September 2024		IN USE
172	3" Safety Pin Bow Shackle	SH-85-101	Marine Locker	85 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3-009	30 March 2024	29 September 2024		IN USE
173	3" Safety Pin Bow Shackle	SH-85-02 (SF85-02)	Marine Locker	85 Ton	Crosby	Unknown	AMS-N21081952-LGI-GR3-009	30 March 2024	29 September 2024		IN USE
174	1.3/4" Safety Pin Bow Shackle	SH-25-102	Marine Locker	25 Ton	Crosby	Unknown	AMS-N21081952-GR3-010	30 March 2024	29 September 2024		IN USE
175	3/4" Safety Pin Bow Shackle	FW 1417	Under Drill Floor	4.75 Ton	Green Pin	Unknown	FOI-ISO-89197	30 March 2024	29 September 2024		IN USE
176	1" Safety Pin Bow Shackle	BTCY 5895-04	Under Drill Floor	8.5 Ton	Green Pin	29-May-2013	Y 5895	30 March 2024	29 September 2024		IN USE
177	1" Safety Pin Bow Shackle	BTCY 5895-06	Under Drill Floor	8.5 Ton	Green Pin	29-May-2013	Y 5895	30 March 2024	29 September 2024		IN USE
178	1" Safety Pin Bow Shackle	FW 3752	Under Drill Floor	8.5 Ton	Green Pin	08-Apr-2013	FOI-PD-C3812	30 March 2024	29 September 2024		IN USE
179	1" Safety Pin Bow Shackle	FW 3753	Under Drill Floor	8.5 Ton	Green Pin	08-Apr-2013	FOI-PD-C3812	30 March 2024	29 September 2024		IN USE
180	1" Safety Pin Bow Shackle	FW 3760	Under Drill Floor	8.5 Ton	Green Pin	08-Apr-2013	FOI-PD-C3812	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
201	1" Safety Pin Bow Shackle	5174838	Main deck	12 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
202	1" Safety Pin Bow Shackle	FC 4285	Main deck	12 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
203	5/8" Safety Pin Bow Shackle	FE 7225	Main deck	3.25 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
204	3/4" Safety Pin Bow Shackle	BTCY 5894-47	Main deck	4.75 Ton	Green Pin	29-May-2013	Y5894	30 March 2024	29 September 2024		IN USE
205	1.3/4" Safety Pin Bow Shackle	KIM JK 323 (SK-001)	Marine Locker	25 Ton	Crosby	17-Sep-2013	KIM JK256-2	30 March 2024	29 September 2024		IN USE
206	1.3/4" Safety Pin Bow Shackle	SK-002	Marine Locker	25 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
207	1.3/4" Safety Pin Bow Shackle	KIM JP 088	Marine Locker	25 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
208	1-1/4" Safety Pin Bow Shackle	10988332-0-13	Marine Locker	12 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
209	2" Safety Pin Bow Shackle	KIM NU 719	Marine Locker	35 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
210	1.3/4" Safety Pin Bow Shackle	B34-02	Marine Locker	25 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
181	1" Safety Pin Bow Shackle	FW 3748	Under Drill Floor	8.5 Ton	Green Pin	28-Oct-2013	FOI-PD-C3812	30 March 2024	29 September 2024		IN USE
182	3/4" Safety Pin Bow Shackle	19-21029-20-1	Under Drill Floor - Fitted with BOP Hoist	4.75 Ton	Gunnebo	Unknown	AMS-N21081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
183	3/4" Safety Pin Bow Shackle	19-21029-20-4	Under Drill Floor - Fitted with BOP Hoist	4.75 Ton	Gunnebo	Unknown	AMS-N21081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
184	3/4" Safety Pin Bow Shackle	19-21029-20-6	Under Drill Floor - Fitted with BOP Hoist	4.75 Ton	Gunnebo	Unknown	AMS-N21081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
185	3/4" Safety Pin Bow Shackle	19-21029-20-9	Under Drill Floor - Fitted with BOP Hoist	4.75 Ton	Gunnebo	Unknown	AMS-N21081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
186	3/4" Safety Pin Bow Shackle	19-21029-20-10	Under Drill Floor - Fitted with BOP Hoist	4.75 Ton	Gunnebo	Unknown	AMS-N21081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
187	3/4" Safety Pin Bow Shackle	19-21029-20-12	Under Drill Floor - Fitted with BOP Hoist	4.75 Ton	Gunnebo	Unknown	AMS-N21081952-LGI-GR3-023	30 March 2024	29 September 2024		IN USE
188	1.1/4" Safety Pin Bow Shackle	OVEM395-1	Under Drill Floor	12 Ton	Green Pin	Unknown	OCEM395	30 March 2024	29 September 2024		IN USE
189	1 3/4" Safety Pin Bow Shackle	FY 1930	Marine Locker	25 Ton	Green Pin	28-Oct-2013	FOI-PD-C4870	30 March 2024	29 September 2024		IN USE
190	1 1/4" Safety Pin Bow Shackle	KIMJG 434	Under Helideck	12 Ton	Crosby	07-Apr-2015	3734/Shackle/KIMJG 434	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
231	1/2" Safety Pin Bow Shackle	SH-2-06	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
232	1/2" Safety Pin Bow Shackle	SH-2-07	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
233	1/2" Safety Pin Bow Shackle	SH-2-08	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
234	1/2" Safety Pin Bow Shackle	SH-2-09	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
235	1/2" Safety Pin Bow Shackle	SH-2-10	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
236	1/2" Safety Pin Bow Shackle	SH-2-11	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
237	1/2" Safety Pin Bow Shackle	SH-2-12	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
238	1/2" Safety Pin Bow Shackle	SH-2-13	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
239	1/2" Safety Pin Bow Shackle	SH-2-14	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
240	1/2" Safety Pin Bow Shackle	SH-2-15	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE

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(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
211	1-1/4" Safety Pin Bow Shackle	FF 3812	Rigfloor	12 Ton	Green Pin	05-May-2016	FOI-ISO-A4113	30 March 2024	29 September 2024		IN USE
212	7/8" Safety Pin Bow Shackle	SK-480	Main deck	6,5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
213	1" Safety pin Bow Shackle	FE 8267	Attached to MPC Port	8,5 Ton	Green Pin	Unknown	FOI-ISO-A3323	30 March 2024	29 September 2024		IN USE
214	1" Safety pin Bow Shackle	FE 8268	Attached to MPC Port	8,5 Ton	Green Pin	Unknown	FOI-ISO-A3323	30 March 2024	29 September 2024		IN USE
215	3/4" Safety Pin Bow Shackle	FW 9546	Rigfloor	4,75 Ton	Green Pin	10-May-2013	FOI-PD-C3587	30 March 2024	29 September 2024		IN USE
216	3/4" Safety Pin Bow Shackle	FW 7186	Rigfloor	4,75 Ton	Green Pin	10-May-2013	FOI-PD-C3587	30 March 2024	29 September 2024		IN USE
217	7/8" Safety Pin Bow Shackle	FW 7184	Rigfloor	6,5 Ton	Green Pin	10-May-2013	FOI-PD-C3587	30 March 2024	29 September 2024		IN USE
218	1" Screw Pin Shackle	BL 23	Marine Locker	12 Ton	Crosby	Unknown	BL 23	30 March 2024	29 September 2024		IN USE
219	3/4" Safety Pin Bow Shackle	62819 D	Under Drill Floor	4,75 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
220	3/4" Safety Pin Bow Shackle	62819 C	Main deck	4,75 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

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(Shackles)

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
241	1/2" Safety Pin Bow Shackle	SH-2-16	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
242	1/2" Safety Pin Bow Shackle	SH-2-17	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
243	1/2" Safety Pin Bow Shackle	SH-2-18	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
244	1/2" Safety Pin Bow Shackle	SH-2-19	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
245	1/2" Safety Pin Bow Shackle	SH-2-20	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
246	1/2" Safety Pin Bow Shackle	SH-2-21	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
247	1/2" Safety Pin Bow Shackle	SH-2-22	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
248	1/2" Safety Pin Bow Shackle	SH-2-23	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
249	1/2" Safety Pin Bow Shackle	SH-2-24	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
250	1/2" Safety Pin Bow Shackle	SH-2-25	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE

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Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
221	5/8" Safety Pin Bow Shackle	P23-171	Main deck	3,25 Ton	Crosby	Unknown	Unknown	30 March 2024	29 September 2024		IN USE
222	7/8" Safety Pin Bow Shackle	KIMJK 297	Derrick / Water Table	6,5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
223	7/8" Safety Pin Bow Shackle	KIMJK 298	Derrick / Water Table	6,5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
224	1/2" Safety Pin Bow Shackle	KIMJK 326	Deerick / Monkey Board - Emergency Escap	2,0 Ton	Crosby	Unknown	Unknown	30 March 2024	29 September 2024		IN USE
225	1/2" Safety Pin Bow Shackle	FW 9649	Deerick / Monkey Board - Emergency Escap	2,0 Ton	Green Pin	Unknown	Unknown	30 March 2024	29 September 2024		IN USE
226	1/2" Safety Pin Bow Shackle	SH-2-01	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
227	1/2" Safety Pin Bow Shackle	SH-2-02	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081552-GR3-012	30 March 2024	29 September 2024		IN USE
228	1/2" Safety Pin Bow Shackle	SH-2-03	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081552-GR3-012	30 March 2024	29 September 2024		IN USE
229	1/2" Safety Pin Bow Shackle	SH-2-04	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081552-GR3-012	30 March 2024	29 September 2024		IN USE
230	1/2" Safety Pin Bow Shackle	SH-2-05	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081552-GR3-012	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
271	1/2" Safety Pin Bow Shackle	SH-2-46	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
272	1/2" Safety Pin Bow Shackle	SH-2-47	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
273	1/2" Safety Pin Bow Shackle	SH-2-48	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
274	1/2" Safety Pin Bow Shackle	SH-2-49	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
275	1/2" Safety Pin Bow Shackle	SH-2-50	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
276	1/2" Safety Pin Bow Shackle	SH-2-51	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
277	1/2" Safety Pin Bow Shackle	SH-2-52	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
278	1/2" Safety Pin Bow Shackle	SH-2-53	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
279	1/2" Safety Pin Bow Shackle	SH-2-54	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
280	1/2" Safety Pin Bow Shackle	SH-2-55	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Shackles)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
251	1/2" Safety Pin Bow Shackle	SH-2-26	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
252	1/2" Safety Pin Bow Shackle	SH-2-27	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
253	1/2" Safety Pin Bow Shackle	SH-2-28	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
254	1/2" Safety Pin Bow Shackle	SH-2-29	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
255	1/2" Safety Pin Bow Shackle	SH-2-30	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
256	1/2" Safety Pin Bow Shackle	SH-2-31	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
257	1/2" Safety Pin Bow Shackle	SH-2-32	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
258	1/2" Safety Pin Bow Shackle	SH-2-33	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
259	1/2" Safety Pin Bow Shackle	SH-2-34	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
260	1/2" Safety Pin Bow Shackle	SH-2-35	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE

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(Shackles)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
281	1/2" Safety Pin Bow Shackle	SH-2-56	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
282	1/2" Safety Pin Bow Shackle	SH-2-57	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
283	1/2" Safety Pin Bow Shackle	SH-2-58	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
284	1/2" Safety Pin Bow Shackle	SH-2-59	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
285	1/2" Safety Pin Bow Shackle	SH-2-60	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
286	1/2" Safety Pin Bow Shackle	SH-2-61	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
287	1/2" Safety Pin Bow Shackle	SH-2-62	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
288	1/2" Safety Pin Bow Shackle	SH-2-63	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
289	1/2" Safety Pin Bow Shackle	SH-2-64	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
290	1/2" Safety Pin Bow Shackle	SH-2-65	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE

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Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
261	1/2" Safety Pin Bow Shackle	SH-2-36	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
262	1/2" Safety Pin Bow Shackle	SH-2-37	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
263	1/2" Safety Pin Bow Shackle	SH-2-38	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
264	1/2" Safety Pin Bow Shackle	SH-2-39	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
265	1/2" Safety Pin Bow Shackle	SH-2-40	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
266	1/2" Safety Pin Bow Shackle	SH-2-41	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
267	1/2" Safety Pin Bow Shackle	SH-2-42	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
268	1/2" Safety Pin Bow Shackle	SH-2-43	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
269	1/2" Safety Pin Bow Shackle	SH-2-44	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE
270	1/2" Safety Pin Bow Shackle	SH-2-45	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21081952-GR3-012	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
311	1.1/4" Safety Pin Bow Shackle	10299-19-5	Derrick / Water Table	12 Ton	Crosby	Unknown	AMS-N21001552-LGI-GR3-002	30 March 2024	29 September 2024		IN USE
312	2.1/2" Safety Pin Bow Shackle	KIMJK 325	Derrick / Water Table	55 Ton	Crosby	17-Sep-2013	KIMJK 296-2	30 March 2024	29 September 2024		IN USE
313	5/8" Safety Pin Bow Shackle	BTCY 6482-01	Derrick / DAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
314	5/8" Safety Pin Bow Shackle	BTCY 6482-04	Derrick / DAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
315	5/8"Safety Pin Bow Shackle	BTCY 6482-06	Derrick / DAC	3.25 Ton	Green Pin	18-Jun-2013	Y 6482	30 March 2024	29 September 2024		IN USE
316	3/4" Safety Pin Bow Shackle	BTCY 5094-04	Derrick / Monnkey Board - Emergency Escap	4.75 Ton	Green Pin	29-May-2013	Y 5194	30 March 2024	29 September 2024		IN USE
317	2 1/2" Safety Pin Bow Shackle (Hang off wire)	KIMJK 324	Lower Derrick	55 Ton	Crosby	17-Sep-2013	KIMJK 296-2	30 March 2024	29 September 2024		IN USE
318	3/4" Safety Pin Bow Shackle	BTCY 5094-22	Derrick - Monkey / Finger board	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
319	3/4" Safety Pin Bow Shackle	BTCY 5094-28	Derrick - Monkey / Finger board	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
320	3/4" Safety Pin Bow Shackle	BTCY 5094-14	Derrick / Water Table	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
291	1/2" Safety Pin Bow Shackle	SH-2-66	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
292	1/2" Safety Pin Bow Shackle	SH-2-67	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
293	1/2" Safety Pin Bow Shackle	SH-2-68	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
294	1/2" Safety Pin Bow Shackle	SH-2-69	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
295	1/2" Safety Pin Bow Shackle	SH-2-70	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
296	1/2" Safety Pin Bow Shackle	SH-2-71	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
297	1/2" Safety Pin Bow Shackle	SH-2-72	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
298	1/2" Safety Pin Bow Shackle	SH-2-73	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
299	1/2" Safety Pin Bow Shackle	SH-2-74	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
300	1/2" Safety Pin Bow Shackle	SH-2-75	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
321	3/4" Safety Pin Bow Shackle	BTCY 5094-15	Derrick / Water Table	4.75 Ton	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
322	1" Screw Pin Shackle	FW 3778	Under Drill Floor	8.5 Ton	Crosby	08-Apr-2013	FOI-PD-C3012	30 March 2024	29 September 2024		IN USE
323	1 1/4" Safety Pin Bow Shackle	FW 9952	Under Drill Floor	12 Ton	Green Pin	07-Jun-2013	FOI-PD-C4094	30 March 2024	29 September 2024		IN USE
324	1 3/8" SCREW Pin Bow Shackle	FG 6435	Mud Pump Room	13.5 Ton	Crosby	07-Sep-2020	AMS-N21001552-LGI-GR3-032	30 March 2024	29 September 2024		IN USE
325	7/8" Safety Pin Bow Shackle	WF 74-21	Mud Pump Room	6.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
326	3/4" Safety Pin Bow Shackle	CTU-03008	Mud Pump Room	4.75 Ton	Crosby	Unknown	AMS-N21001552-LGI-GR3-022	30 March 2024	29 September 2024		IN USE
327	1/2" Safety Pin Bow Shackle	SH-2-061	Mech. Workshop Room	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
328	1/2" Safety Pin Bow Shackle	SH-2-062	Mech. Workshop Room	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
329	1/2" Safety Pin Bow Shackle	SH-2-063	Mech. Workshop Room	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
330	1/2" Safety Pin Bow Shackle	SH-2-064	Mech. Workshop Room	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
301	1/2" Safety Pin Bow Shackle	SH-2-76	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
302	1/2" Safety Pin Bow Shackle	SH-2-77	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
303	1/2" Safety Pin Bow Shackle	SH-2-78	Under Drill Floor / Hydraulic Hose Clamp	2 Ton	Green Pin	Unknown	AMS-N21001552-GR3-012	30 March 2024	29 September 2024		IN USE
304	1 1/4" Safety Pin Bow Shackle	OOE-V395-3	Under Drill Floor	12 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
305	1" Safety Pin Bow Shackle	BTCY 5095-17	Under Drill Floor	8.50 Ton	Green Pin	Unknown	Y 5095	30 March 2024	29 September 2024		IN USE
306	3/4" Safety Pin Bow Shackle	BTCY 5094-09	Lower Derrick	4.75 MT	Green Pin	29-May-2013	Y 5094	30 March 2024	29 September 2024		IN USE
307	7/8" Safety Pin Bow Shackle	KIMJK 305	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
308	7/8" Safety Pin Bow Shackle	KIMJK 306	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
309	7/8"Safety Pin Bow Shackle	KIMJK 319	Derrick / Water Table	6.5 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE
310	1.1/4" Safety Pin Bow Shackle	KIMJK 312	Derrick / Water Table	12 Ton	Crosby	17-Sep-2013	KIMJK 296-1	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Hook)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Swivel Hook Model 13-6	H-01	Main Deck - Attached to Stairway 01 Sling	5.30 Ton	Yoke	Unknown	127169	30 March 2024	29 September 2024		IN USE
2	Swivel Hook Model 13-6	H-02	Main Deck - Attached to Stairway 01 Sling	5.30 Ton	Yoke	Unknown	127169	30 March 2024	29 September 2024		IN USE
3	Swivel Hook Model 13-6	H-03	Main Deck - Attached to Stairway 01 Sling	5.30 Ton	Yoke	Unknown	127169	30 March 2024	29 September 2024		IN USE
4	Self-Locking Hook Model BK-13-10	H05	Rigfloor	15000 LBS	Yoke	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
5	Self-Locking Hook Model BK-13-10	10908981-0-1-1 (H-06)	Rigfloor	6.80 Ton	Gunnebo	Unknown	10908981-0-1-1 to 6	30 March 2024	29 September 2024		IN USE
6	Self-Locking Hook Model BK-13-10	10908981-0-1-2 (H-07)	Rigfloor	6.80 Ton	Gunnebo	Unknown	10908981-0-1-1 to 6	30 March 2024	29 September 2024		IN USE
7	Self-Locking Hook Model BK-13-10	10908981-0-1-4 (H-08)	Main Deck - Attached to Stairway 01 Sling	6.80 Ton	Gunnebo	Unknown	10908981-0-1-1 to 6	30 March 2024	29 September 2024		IN USE
8	Self-Locking Hook Model BK-13-10	10908981-0-1-5 (H-09)	Rigfloor	6.80 Ton	Gunnebo	Unknown	10908981-0-1-1 to 6	30 March 2024	29 September 2024		IN USE
9	Self-Locking Hook Model BK-18/26-10	10908981-0-2-2	Rigfloor	6.80 Ton	Gunnebo	Unknown	10908981-0-2-1 to 4	30 March 2024	29 September 2024		IN USE
10	Self-Locking Hook Model BK-18/26-10	10908981-0-2-3	Rigfloor	6.80 Ton	Gunnebo	Unknown	10908981-0-2-1 to 4	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Shackles)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
331	1-1/4" Safety Pin Bow Shackle	KIMJK 317	Derrick - Finger board	12 Ton	Crosby	17-Sep-2013	KIM JK296-1	30 March 2024	29 September 2024		IN USE
332	1-1/4" Safety Pin Bow Shackle	1526919-9	Derrick - Finger board	12 Ton	Crosby	13-Jun-2013	CC12813061300871	30 March 2024	29 September 2024		IN USE
333	1-1/4" Safety Pin Bow Shackle	KIMJK 313	Derrick - Finger board	12 Ton	Crosby	17-Sep-2013	KIM JK296-1	30 March 2024	29 September 2024		IN USE
334	1-1/4" Safety Pin Bow Shackle	KIMJK 315	Derrick - Finger board	12 Ton	Crosby	17-Sep-2013	KIM JK296-1	30 March 2024	29 September 2024		IN USE
335	1" Safety pin Bow Shackle	FE 8268	Attach to MPC - Stbd	8.5 Ton	Green Pin	Unknown	FOI-ISO-A3323	30 March 2024	29 September 2024		IN USE
336	1" Safety pin Bow Shackle	FE 8268	Attach to MPC - Stbd	8.5 Ton	Green Pin	Unknown	FOI-ISO-A3323	30 March 2024	29 September 2024		IN USE
337	1-1/4" SCREW Pin Bow Shackle	SC-12-107	Mud Pump Room	12 Ton	Crosby	Unknown	AMS-N2164 1952-LGI-CR3-068	30 March 2024	29 September 2024		IN USE
338	2-1/2" Safety Pin Bow Shackle	BMW 1256	Rigfloor - Attach to Traveling Block	55 Ton	Crosby	03-Sep-2014	CC4 2014090300357	30 March 2024	29 September 2024		IN USE
339	1/2" Safety Pin Bow Shackle	SH-2-005	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
340	1/2" Safety Pin Bow Shackle	SH-2-006	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Webbing Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 3 Mtr.	FN 1353	Rigging Loft	5 Ton	Franklin	09-May-2019	FOI-ISO-89194	30 March 2024	29 September 2024		IN USE
2	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 3 Mtr.	FN 1354	Rigging Loft	5 Ton	Franklin	09-May-2019	FOI-ISO-89194	30 March 2024	29 September 2024		IN USE
3	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 3 Mtr.	FN 1355	Rigging Loft	5 Ton	Franklin	09-May-2019	FOI-ISO-89194	30 March 2024	29 September 2024		IN USE
4	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 3 Mtr.	FN 1356	Rigging Loft	5 Ton	Franklin	09-May-2019	FOI-ISO-89194	30 March 2024	29 September 2024		IN USE
5	2-Ply Polyester Webbing Sling, Eye & Eye Type @90 mm (Width) x 2 Mtr.	FN 1339	Rigging Loft	3 Ton	Franklin	09-May-2019	FOI-ISO-89191	30 March 2024	29 September 2024		IN USE
6	Kimbel Synthetic Round Sling @73mm Dia x 6100mm.	KIM YF448	Marine Locker	180 Ton	KIM	Dec-2021	KIM YF448 to 449	30 March 2024	29 September 2024		IN USE
7	Kimbel Synthetic Round Sling @73mm Dia x 6100mm.	KIM YF449	Marine Locker	180 Ton	KIM	Dec-2021	KIM YF448 to 449	30 March 2024	29 September 2024		IN USE
8	2-Ply Polyester Webbing Sling, Eye & Eye Type @60 mm (Width) x 2 Mtr.	203939715	Rigging Loft	2 Ton	Technetex	09/2022	203939715	30 March 2024	29 September 2024		IN USE
9	2-Ply Polyester Webbing Sling, Eye & Eye Type @60 mm (Width) x 2 Mtr.	203939717	Rigging Loft	2 Ton	Technetex	09/2022	203939717	30 March 2024	29 September 2024		IN USE
10	2-Ply Polyester Webbing Sling, Eye & Eye Type @130 mm (Width) x 6 Mtr.	2305043	Rigging Loft	5 Ton	Webbers	09/2023	2305043	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Shackles)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
341	1/2" Safety Pin Bow Shackle	SH-2-013	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
342	1/2" Safety Pin Bow Shackle	SH-2-014	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
343	1/2" Safety Pin Bow Shackle	SH-2-015	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
344	1/2" Safety Pin Bow Shackle	SH-2-016	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
345	1/2" Safety Pin Bow Shackle	SH-2-017	Derrick - Monkey / Finger board	2 Ton	Green Pin	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Hose Lifter)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Hose Lifter	HL004	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
12	Hose Lifter	HL005	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
13	Hose Lifter	HL006	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
14	Hose Lifter	HL008	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
15	Hose Lifter	HL-202403-001	Marine Locker	4 Ton	Unknow	03/2024	HL-202403	30 March 2024	29 September 2024		IN USE
16	Hose Lifter	HL-202403-002	Marine Locker	4 Ton	Unknow	03/2024	HL-202403	30 March 2024	29 September 2024		IN USE
17	Hose Lifter	HL-202403-003	Marine Locker	4 Ton	Unknow	03/2024	HL-202403	30 March 2024	29 September 2024		IN USE
18	Hose Lifter	HL-202403-004	Marine Locker	4 Ton	Unknow	03/2024	HL-202403	30 March 2024	29 September 2024		IN USE
19	Hose Lifter	HL020	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
20	Hose Lifter	HL021	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

Lifting Gear Register List
(Webbing Sling)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	2-Ply Polyester Webbing Sling, Eye & Eye Type @130 mm (Width) x 6 Mtr.	2305042	Rigging Loft	5 Ton	Ribbons	05/2023	2305042	30 March 2024	29 September 2024		IN USE
12	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 6 Mtr.	56129	Rigging Loft	5 Ton	MAX-LIft	10 January 2020	56129	30 March 2024	29 September 2024		IN USE
13	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 3 Mtr.	302946514	Under Cantilever Locker	5 Ton	Technetex	07/2020	302946514	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Hose Lifter)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	Hose Lifter	LG18A0418-5	Marine Locker	4 Ton	Unknow	18-Apr-2018	LG18A0418	30 March 2024	29 September 2024		IN USE
22	Hose Lifter	LG18A0503-5	Marine Locker	4 Ton	Unknow	03-Apr-2018	LG18A0503	30 March 2024	29 September 2024		IN USE
23	Hose Lifter	LG18A0503-11	Marine Locker	4 Ton	Unknow	03-Apr-2018	LG18A0503	30 March 2024	29 September 2024		IN USE
24	Hose Lifter	LG18A0503-13	Marine Locker	4 Ton	Unknow	03-Apr-2018	LG18A0503	30 March 2024	29 September 2024		IN USE

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Lifting Gear Register List
(Hose Lifter)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Hose Lifter	HL005	Fitted to Transfer Hose - Port	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
2	Hose Lifter	HL010	Fitted to Transfer Hose - Port	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
3	Hose Lifter	HL011	Fitted to Transfer Hose - Port	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
4	Hose Lifter	HL012	Fitted to Transfer Hose - Port	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
5	Hose Lifter	LG18A0503-6	Fitted to Transfer Hose - Port	4 Ton	Unknow	03-Apr-2018	LG18A0503	30 March 2024	29 September 2024		IN USE
6	Hose Lifter	LG18A0503-8	Fitted to Transfer Hose - Port	4 Ton	Unknow	03-Apr-2018	LG18A0503	30 March 2024	29 September 2024		IN USE
7	Hose Lifter	LG18A0418-3	Strobe Sacker - Fitted to Hose	4 Ton	Unknow	18-Apr-2018	LG18A0418	30 March 2024	29 September 2024		IN USE
8	Hose Lifter	HL001	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
9	Hose Lifter	HL002	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
10	Hose Lifter	HL003	Marine Locker	4 Ton	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO ISO

Lifting Gear Register List
(Hoist Ring (Eye Bolts))

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH1249128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
21	1x14 SEB Wt1.1/8" at 1"-8NC Threads, Lifting Eye Bolt	514875-1-6	Under Cantilever Locker	9000 Lbs	Hydrill	13-Jun-2013	514875-1	30 March 2024	29 September 2024		IN USE
22	1x14 SEB Wt1.1/8" at 1"-8NC Threads, Lifting Eye Bolt	510567-1-15	Under Cantilever Locker	9000 Lbs	Hydrill	13-Jun-2013	510567-1	30 March 2024	29 September 2024		IN USE
23	Hoist Ring	34-2	Offline tool box	5000 Lbs	Crosby	Unknown	10968200-8-3	30 March 2024	29 September 2024		IN USE
24	3/4" Hoist Ring	521358-1-25	Under Cantilever Locker	5000 Lbs	Holloway	18 April 2013	190076-08	30 March 2024	29 September 2024		IN USE
25	Hoist Ring	10968200-8-8-1	Offline tool box	1050 Kg	Crosby	Unknown	10968200-8-8	30 March 2024	29 September 2024		IN USE
26	Hoist Ring	10968200-8-8-3	Offline tool box	1050 Kg	Crosby	Unknown	10968200-8-8	30 March 2024	29 September 2024		IN USE
27	M16 - Hoist Ring	M16-01	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
28	M16 - Hoist Ring	M16-03	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
29	M16 - Hoist Ring	M16-05	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
30	M16 - Hoist Ring	M16-07	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO ISO

Lifting Gear Register List
(Hoist Ring (Eye Bolts))

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH1249128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	2"-2.5" Collared Eye Bolt	516664-1-25	Under Cantilever Locker	38000 Lbs	Hydrill	Unknown	516664	30 March 2024	29 September 2024		IN USE
2	2"-2.5" Collared Eye Bolt	516664-1-23	Under Cantilever Locker	38000 Lbs	Hydrill	Unknown	516664	30 March 2024	29 September 2024		IN USE
3	2"-2.5" Collared Eye Bolt	516664-1-24	Under Cantilever Locker	38000 Lbs	Hydrill	Unknown	516664	30 March 2024	29 September 2024		IN USE
4	M36x4.00 Safety Swivel Hoist Ring	AK 9C 9988	Rigging Loft	11000 LBS	Crosby	Unknown	AK9C9988	30 March 2024	29 September 2024		IN USE
5	M36x4.00 Safety Swivel Hoist Ring	AK 9C 9982	Rigging Loft	11000 LBS	Crosby	Unknown	AK9C9982	30 March 2024	29 September 2024		IN USE
6	1 1/4" Swivel Hoist Ring	AK TC 8580	Under Cantilever Locker	7000 LBS	Crosby	Unknown	AKTC8580	30 March 2024	29 September 2024		IN USE
7	1 1/4" Swivel Hoist Ring	AK TC 8957	Rigging Loft	7000 LBS	Crosby	Unknown	AKTC8957	30 March 2024	29 September 2024		IN USE
8	1 1/4" Swivel Hoist Ring	AK TC 8586	Rigging Loft	7000 LBS	Crosby	Unknown	AKTC8468	30 March 2024	29 September 2024		IN USE
9	1 1/4" Swivel Hoist Ring	AK TC 8468	Rigging Loft	7000 LBS	Crosby	Unknown	AKTC8468	30 March 2024	29 September 2024		IN USE
10	1 1/4" Swivel Hoist Ring	10968200-8-6-1	Rigging Loft	15000 LBS	Crosby	Unknown	10968200-8-6-1 to 4	30 March 2024	29 September 2024		IN USE

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ISO ISO

Lifting Gear Register List
(Hoist Ring (Eye Bolts))

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH1249128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
31	M16 - Hoist Ring	M16-12	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
32	M16 - Hoist Ring	M16-13	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
33	M16 - Hoist Ring	M16-15	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
34	M16 - Hoist Ring	M16-16	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
35	M16 - Hoist Ring	M16-17	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
36	M16 - Hoist Ring	M16-19	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
37	M16 - Hoist Ring	M16-20	Aux. Mach. Port-Aft room	0.45 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
38	M16 - Hoist Ring	M16-21	Aux. Mach. Port-Aft room	0.45 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
39	M16 - Hoist Ring	M16-22	Aux. Mach. Port-Aft room	0.45 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
40	M24 - Hoist Ring	M24-1	Under Cantilever Locker	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO ISO

Lifting Gear Register List
(Hoist Ring (Eye Bolts))

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH1249128

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	1 1/4" Swivel Hoist Ring	10968200-8-6-2	Rigging Loft	15000 LBS	Crosby	Unknown	10968200-8-6-1 to 4	30 March 2024	29 September 2024		IN USE
12	1 1/4" Swivel Hoist Ring	10968200-8-6-3	Rigging Loft	15000 LBS	Crosby	Unknown	10968200-8-6-1 to 4	30 March 2024	29 September 2024		IN USE
13	1/2" Swivel Hoist Ring	10968200-1-3-2	Rigging Loft	2500 LBS	Crosby	Unknown	10968200-1-3-1 to 4	30 March 2024	29 September 2024		IN USE
14	1/2" Swivel Hoist Ring	10968200-1-3-3	Rigging Loft	2500 LBS	Crosby	Unknown	10968200-1-3-1 to 4	30 March 2024	29 September 2024		IN USE
15	1/2" Swivel Hoist Ring	10968200-1-3-4	Rigging Loft	2500 LBS	Crosby	Unknown	10968200-1-3-1 to 4	30 March 2024	29 September 2024		IN USE
16	1/2" Swivel Hoist Ring	10968200-8-8-4	Rigging Loft	1360 Kg	Crosby	Unknown	10968200-8-8-4	30 March 2024	29 September 2024		IN USE
17	1" Swivel Hoist Ring	10968200-8-1-1	Rigging Loft	4200 LBS	Crosby	Unknown	10968200-8-1-1 to 2	30 March 2024	29 September 2024		IN USE
18	7/8" Swivel Hoist Ring	10968200-8-2-1	Rigging Loft	8000 LBS	Crosby	Unknown	10968200-8-2-1 to 2	30 March 2024	29 September 2024		IN USE
19	7/8" Swivel Hoist Ring	10968200-8-2-2	Rigging Loft	8000 LBS	Crosby	Unknown	10968200-8-2-1 to 2	30 March 2024	29 September 2024		IN USE
20	1" Swivel Hoist Ring	10968200-8-10-1	Rigging Loft	10000 LBS	Crosby	Unknown	10968200-8-10-1 to 2	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
61	M20 - Hoist Ring	M20-08	Under Cantilever Locker	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
62	1x14 SEB WFL 3/8" of 1"-8NC Threads. Lifting Eye Bolt	510567-1-G	Under Cantilever Locker	9990 Lbs	Hydill	13-Jun-2013	510567-1	30 March 2024	29 September 2024		IN USE
63	1 3/4" Swivel Hoist Ring	10998200-0-4-1	Mud Pump Room	24000 LBS	Crosby	Unknown	10908200041 to 4	30 March 2024	29 September 2024		IN USE
64	1 3/4" Swivel Hoist Ring	10998200-0-4-2	Mud Pump Room	24000 LBS	Crosby	Unknown	10908200041 to 4	30 March 2024	29 September 2024		IN USE
65	1 3/4" Swivel Hoist Ring	10998200-0-4-3	Mud Pump Room	24000 LBS	Crosby	Unknown	10908200041 to 4	30 March 2024	29 September 2024		IN USE
66	1 3/4" Swivel Hoist Ring	10998200-0-4-4	Mud Pump Room	24000 LBS	Crosby	Unknown	10908200041 to 4	30 March 2024	29 September 2024		IN USE
67	M12 - Hoist Ring	M12-03	Engine Room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
68	M36 - Swivel Hoist Ring	M36-01	Mud Pump Room	11990 LBS	Actek	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
69	M16 - Hoist Ring	M16-02	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
70	M16 - Hoist Ring	M16-04	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
71	M16 - Hoist Ring	M16-10	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
41	M24 - Hoist Ring	M24-2	Under Cantilever Locker	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
42	1 1/8" x 8UN - Hoist Ring	EY-01	Aux. Mach. Port-Aft room	10000 LBS	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
43	1 1/8" x 8UN - Hoist Ring	EY-02	Aux. Mach. Port-Aft room	10000 LBS	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
44	1 1/8" x 8UN - Hoist Ring	EY-03	Under Cantilever Locker	10000 LBS	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
45	1 1/8" x 8UN - Hoist Ring	EY-04	Aux. Mach. Port-Aft room	10000 LBS	Unknow	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
46	M12 - Hoist Ring	M12-01	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
47	M12 - Hoist Ring	M12-04	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
48	M12 - Hoist Ring	M12-06	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
49	M24 - Hoist Ring	M24-01	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
50	M24 - Hoist Ring	M24-02	Under Cantilever Locker	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
72	M16 - Hoist Ring	M16-14	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
73	M16 - Hoist Ring	M16-23	Aux. Mach. Port-Aft room	0.7 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
74	M12 - Hoist Ring	M12-02	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
75	M12 - Hoist Ring	M12-05	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
76	M12 - Hoist Ring	M12-07	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
77	M12 - Hoist Ring	M12-09	Aux. Mach. Port-Aft room	0.34 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
78	M30 - Hoist Ring	M30-01	Aux. Mach. Port-Aft room	3.6 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
79	M30 - Hoist Ring	M30-02	Aux. Mach. Port-Aft room	3.6 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
80	M20 - Hoist Ring	M20-02	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
81	M10 - Hoist Ring	M10-01	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
82	M10 - Hoist Ring	M10-02	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
83	M10 - Hoist Ring	M10-03	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
84	M10 - Hoist Ring	M10-04	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
51	M24 - Hoist Ring	M24-03	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
52	M24 - Hoist Ring	M24-04	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
53	M24 - Hoist Ring	M24-05	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
54	M24 - Hoist Ring	M24-06	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
55	M24 - Hoist Ring	M24-07	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
56	M20 - Hoist Ring	M20-03	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
57	M20 - Hoist Ring	M20-01	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
58	M20 - Hoist Ring	M20-04	Aux. Mach. Port-Aft room	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
59	M20 - Hoist Ring	M20-05	Under Cantilever Locker	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
60	M20 - Hoist Ring	M20-07	Under Cantilever Locker	1.8 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

Lifting Gear Register List
(Swivel Hoist)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
11	Eye to Eye Swivel	SW-3-02	Attach to Power Tong	3 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

Lifting Gear Register List
(Hoist Ring (Eye Bolts))

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
85	M10 - Hoist Ring	M10-05	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
86	M10 - Hoist Ring	M10-06	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
87	M10 - Hoist Ring	M10-07	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
88	M10 - Hoist Ring	M10-08	Aux. Mach. Port-Aft room	0.23 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
89	M8 - Hoist Ring	M8-01	Aux. Mach. Port-Aft room	0.14 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
90	M8 - Hoist Ring	M8-02	Aux. Mach. Port-Aft room	0.14 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
91	M8 - Hoist Ring	M8-03	Aux. Mach. Port-Aft room	0.14 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
92	M8 - Hoist Ring	M8-04	Aux. Mach. Port-Aft room	0.14 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
93	M8 - Hoist Ring	M8-05	Aux. Mach. Port-Aft room	0.14 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
94	M8 - Hoist Ring	M8-06	Aux. Mach. Port-Aft room	0.14 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
95	M16 - Hoist Ring Eye Nut	M16-01	Aux. Mach. Port-Aft room	0.45 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
96	M16 - Hoist Ring Eye Nut	M16-02	Aux. Mach. Port-Aft room	0.45 Ton	PGB - Fasteners	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

Lifting Gear Register List
(CCU-Other)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Gas Rack @68 x 73 x 160 mm (WxLxH) (TW: 0.20 MT. PL: 2.80 MT)	TAT-GR-002	Main Deck	3.00 MT	NOV	Unknown	MI LT VI 242/21/264 SKL	Not Found	#VALUE!		IN USE
	c/with Fouleg wire rope sling with master link assembly @16mm x 185cms.	TAT-GR-002/S	Attached to Gas Rack No.TAT-GR-002	3.00 Ton	NOV	Unknown	MI LT VI 242/21/264 SKL	Not Found	#VALUE!		IN USE
	Four(4) 5/8" bolts type anchor shackle	02 A to 02 D	Attached to Gas Rack No.TAT-GR-002	3.25 Ton	Crosby	Unknown	MI LT VI 242/21/264 SKL	Not Found	#VALUE!		IN USE
2	Conductor Tenbroner Unit @185x365x365cms. (TW: 6.50 MT)	002-0300	Cellar Deck - Stbd	6.50 MT	NOV	Unknown	MOSTH230084-002	30 March 2024	29 September 2024		IN USE
	c/With Five(5) leg wire rope sling with master link assembly @32mm x 1.52mtrs (1L) / 22mm x 1.83mtrs (4L)	TAT-DG-06/1	Attached to CTU No.002-0300	6.50 MT	NOV	Unknown	MI LT VI 242/21/264 SKL	30 March 2024	29 September 2024		IN USE
	Four(4) 7/8" bolts type anchor shackle	TAT-DG-06 A to TAT-DG-06 D	Attached to CTU No.002-0300	6.50 MT	Crosby	Unknown	MI LT VI 242/21/264 SKL	30 March 2024	29 September 2024		IN USE
3	6 FT Dry Goods Container	TAT-DG-01	Main Deck	7100 Kg	Sunstank Thailand	Sep-2012	132183	30 March 2024	29 September 2024		IN USE
4	Rigging Loft Container	TAT-RL-01	Main Deck	10300 Kg	Sunstank Thailand	Nov-2012	132188	30 March 2024	29 September 2024		IN USE
5	6 FT Dry Goods Container	TAT-DG-05	Main Deck	7100 Kg	Sunstank Thailand	Oct-2012	130507	30 March 2024	29 September 2024		IN USE
6	6 FT Dry Goods Container	TAT-DG-06	Main Deck	7100 Kg	Sunstank Thailand	Oct-2013	130508	30 March 2024	29 September 2024		IN USE

SK Siaptek

Lifting Gear Register List
(Swivel Hoist)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
1	Eye to Eye Swivel	SW-297459-8.5-4 (SW-8.5-04)	Utility Winch No. 2 - Rigfloor	8.5 Ton	Crosby	Unknown	297459	30 March 2024	29 September 2024		IN USE
2	Eye to Jaw Swivel	SW-297459-8.5-5 (SW-8.5-05)	Utility Winch No. 1 - Rigfloor	8.5 Ton	Crosby	Unknown	297459	30 March 2024	29 September 2024		IN USE
3	Eye to Jaw Swivel	80246	Rigfloor - Iron rub neck	5 Ton	Crosby	Unknown	80246	30 March 2024	29 September 2024		IN USE
4	Eye to Jaw Swivel	80245 (SW-AR-01)	Utility Winch No. 3 - Rigfloor	5 Ton	Crosby	Unknown	80245	30 March 2024	29 September 2024		IN USE
5	Eye to Jaw Swivel	SW-297244-5-102	Attach to winch logger - Cellar deck - Port	5 Ton	Crosby	Unknown	297244	30 March 2024	29 September 2024		IN USE
6	Eye to Jaw Swivel	SW-297244-5-103	Attach to winch logger - Cellar deck - Stbd	5 Ton	Crosby	Unknown	297244	30 March 2024	29 September 2024		IN USE
7	Eye to Eye Swivel	SW-MS-01	Attach to MPC - Stbd	8.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
8	Eye to Jaw Swivel	SW-MS-02	Attach to MPC - Port	8.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
9	Eye to Jaw Swivel	1091T304-1-18	Rigfloor	8.5 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE
10	Eye to Eye Swivel	SW-3-01	Attach to Power Tong	3 Ton	Crosby	Unknown	Test Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO 9001:2015 ISO 45001:2018

Lifting Gear Register List
(CCU-Other)

Client: Boer Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
15	Fuel Tank @185x210x200cms (WxLxH) (TW: 1.73 MT, PL: 2.77 MT)	TT 328/10/12	Under Helideck	4.50 MT	Unknown	Unknown	MI VT LT24/21/0745/KL	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @20mm x 4 mtrs.	LIS-096-2014	Attached to Fuel Tank No.TT 328/10/12	12.16 Ton	Unknown	Unknown	MI VT LT24/21/0845/KL	30 March 2024	29 September 2024		IN USE
	Four(4) 7/8" bolts type anchor shackle	P14-523 to P14-526	Attached to Fuel Tank No.TT 328/10/12	6.5 Ton	Unknown	Unknown	MI VT LT24/21/0845/KL	30 March 2024	29 September 2024		IN USE
16	Light Glass Waste @100x210x190cms (WxLxH) (TW: 0.59 MT, PL: 1.00 MT)	SDL/8824/3	LQ Roof Top	1.59 MT	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @13mm x 1.7mtrs.	ICON-624	Attached to Fuel Tank No.TT 328/10/12	4.00 Ton	Unknown	Unknown	MI VT LT24/21/0284/SKL	30 March 2024	29 September 2024		IN USE
	Four(4) 3/4" bolts type anchor shackle	24/3A to 24/3D	Attached to Fuel Tank No.TT 328/10/12	4.75 Ton	Unknown	Unknown	MI VT LT24/21/0284/SKL	30 March 2024	29 September 2024		IN USE
17	Spider Basket	TA 11871	LQ Roof Top	1000 LBS	Unknown	02/2013	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
17	Spider Basket	TA 11852	LQ Roof Top	1000 LBS	Unknown	01/2013	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
18	Bully Pugh Personnel Transfer Basket : X-594-4	3907-22	LQ Roof Top	1.95 MT	Unknown	Jun-2022	OEM Certificate	30 March 2024	29 September 2024		IN USE
	c/With Five leg wire rope sling with master link assembly & six(6) 3/4" bolts type anchor shackle 4.75 tons	19068-22	Attach to Basket No. 3907-22	1.95 MT	Unknown	Jun-2022	OEM Certificate	30 March 2024	29 September 2024		IN USE

SK Siaptek

ISO 9001:2015 ISO 45001:2018

Lifting Gear Register List
(CCU-Other)

Client: Boer Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
7	6 FT Dry Geogs Container c/With Four leg wire rope sling with master link assembly 7.10 tons (TAT-DG-07/1) & Four(4) 7/8" bolts type anchor shackle 6.5 tons (TAT-DG-07A to TAT-DG-07D)	TAT-DG-07	Main Deck	7100 Kg	Unknown	Unknown	Test Certificated on Unit	Not Found	#VALUE!		IN USE
8	6 FT Dry Geogs Container c/With Four leg wire rope sling with master link assembly 7.10 tons (TAT-DG-04/1) & Four(4) 7/8" bolts type anchor shackle 6.5 tons (TAT-DG-04A to TAT-DG-04D)	TAT-DG-04	LQ Roof Top	7100 Kg	Unknown	Unknown	Test Certificated on Unit	Not Found	#VALUE!		IN USE
9	Gas Rack @68 x 73 x 160 mm (WxLxH) (TW: 0.20 MT, PL: 2.80 MT)	TAT-GR-067	Main Deck	3.00 MT	Unknown	Unknown	MI VT LT24/21/0875/KL	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @16mm x 105cms	TAT-GR-07/S	Attached to Gas Rack No.TAT-GR-067	3.00 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	Four(4) 5/8" bolts type anchor shackle	7A to 7D	Attached to Gas Rack No.TAT-GR-067	3.25 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
10	Gas Rack @68x72x160cms. (WxLxH) (TW: 0.20 MT, PL: 2.80 MT)	TAT-GR-008	Main Deck	3.00 MT	Unknown	Unknown	MI VT LT24/21/0285/KL	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @16mm x 105cms	TAT-GR-08/S	Attached to Gas Rack No.TAT-GR-067	3.00 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	Four(4) 5/8" bolts type anchor shackle	8A to 8D	Attached to Gas Rack No.TAT-GR-067	3.25 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
11	Mashead Basket @1320 X 1320 X 1190 (WxLxH) (TW: 0.20 MT, PL: 1.80 MT)	TAT-BKT-05	Main Deck	2.00 MT	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @13mm x 1.8mtrs.	TAT-BKT-05/S	Attached to Basket No.TAT-BKT-05	3.00 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE

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ISO 9001:2015 ISO 45001:2018

Lifting Gear Register List
(CCU-Other)

Client: Boer Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
19	Removable Stairway @99x336x138cms (WxLxH)	TAT-EXT-STW-01	LQ Roof Top	0.35 Ton	Unknown	Unknown	MI VT LT24/21/0545/KL	30 March 2024	29 September 2024		IN USE
19	Access Stairwad from Rig to Platform @125 x 1340 x 940 cms. (WxLxH)	TAT-STW-01	Cantilever Deck	1.00 Ton	Unknown	Unknown	MOSTH230065-003	30 March 2024	29 September 2024		IN USE
19	Access Stairwad from Rig to Platform @125 x 1215 x 900 cms. (WxLxH)	TAT-STW-02	Cantilever Deck	1.72 Ton	Unknown	Unknown	MI VT 24/2/24/0513 SKL	30 March 2024	29 September 2024		IN USE
19	Extension Stair for TAT-STW-01 Stairway @99 x 266 x 138 cms. (WxLxH)	TAT-EXT-STW-01	Cantilever Deck	0.35 Ton	Unknown	Unknown	MOSTH230065-002	30 March 2024	29 September 2024		IN USE
20	Tool Box @93 x 61 x 161 Cms. (LxWxH) (TW: 0.45 MT, PL: 1.85 MT)	TAT/STH/067/2014	Cantilever Deck	1.5 MT	Unknown	26-Jun-2014	STH-14-001/518	30 March 2024	29 September 2024		IN USE
	C/With Four leg wire rope sling with master link assembly	TAT-BKT-05/S	Attached to Tool box No.TAT/STH/067/2014	3.0 MT	Unknown	26-Jun-2014	STH-14-001/518	30 March 2024	29 September 2024		IN USE
	Four(4) 5/8" bolts type anchor shackle	BKT-05A to D	Attached to Tool box No.TAT/STH/067/2014	3.25 MT	Unknown	26-Jun-2014	STH-14-001/518	30 March 2024	29 September 2024		IN USE
21	Tank Liquitote	9520-33	Gray Platform	6000 Lbs	Unknown	6 December 1990	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
22	Tank Liquitote	240320	Gray Platform	2735 Kgs	Unknown	Apr-2013	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
23	Tank Liquitote	240319	Main Deck	2735 Kgs	Unknown	Apr-2013	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE

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ISO 9001:2015 ISO 45001:2018

Lifting Gear Register List
(CCU-Other)

Client: Boer Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
	Four(4) 3/4" bolts type anchor shackle	05A to 05D	Attached to Basket No.TAT-BKT-05	4.75 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
12	Mashead Basket @132x 132x (WxLxH) (TW: 0.20 MT, PL: 1.80 MT)	TAT-BKT-06	Main Deck	2.00 MT	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @13mm x 1.8mtrs.	TAT-BKT-06/S	Attached to Basket No.TAT-BKT-06	3.00 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	Four(4) 3/4" bolts type anchor shackle	BKT-06A to D6D	Attached to Basket No.TAT-BKT-06	4.75 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
13	Basket @130 x 122 x 145 cms (WxLxH) (TW: 1.50 MT, PL: 3.00 MT)	TAT-BKT-01	LQ Roof Top	4.50 MT	Unknown	Oct-2012	MI VT LT24/21/0845/KL	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @20mm x 100cms	TAT-BKT-01/1	Attached to Basket No.TAT-BKT-01	4.50 Ton	Unknown	Unknown	MI VT LT24/21/0845/KL	30 March 2024	29 September 2024		IN USE
	Four(4) 7/8" bolts type anchor shackle	BKT-1A to BKT-1D	Attached to Basket No.TAT-BKT-01	6.5 Ton	Unknown	Unknown	MI VT LT24/21/0284/SKL	30 March 2024	29 September 2024		IN USE
14	Work Basket	135-13	LQ Roof Top	1800 Lbs	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	c/With Four leg wire rope sling with master link assembly @16mm x 210cms	FW 4442	Attached to Basket No.135-13	6.3 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE
	Four(4) 5/8" bolts type anchor shackle	319A to 319D	Attached to Basket No.135-13	3.25 Ton	Unknown	Unknown	Test Certificated on Unit	30 March 2024	29 September 2024		IN USE

NDT REGISTER

LIFTING GEAR INSPECTIONS

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Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
1	Conductor Tentioner Unit	002-0300	Cellar Deck - Stbd	6.50 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Five(5) leg wire rope sling with master link assembly @32mm x 1.52mtrs (1L) / 22mm x 1.83mtrs (4L)	TAT-DG-06/1	Attached to CTU No.002-0300	6.50 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	Four(4) 7/8" bolts type anchor shackle	TAT-DG-06 A to TAT-DG-06 D	Attached to CTU No.002-0300	6.50 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
2	6 FT Dry Googs Container	TAT-DG-01	Main Deck	7100 Kg	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
3	Rigging Loft Container	TAT-RL-01	Main Deck	10300 Kg	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
4	6 FT Dry Googs Container	TAT-DG-05	Main Deck	7100 Kg	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
5	6 FT Dry Googs Container	TAT-DG-06	Main Deck	7100 Kg	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
6	Gas Rack @68 x 73 x 160 mm (WxLxH) (TW: 0.20 MT, PL: 2.80 MT)	TAT-GR-007	Main Deck	3.00 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @16mm x 105cms	TAT-GR-07/S	Attached to Gas Rack No.TAT-GR-007	3.00 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE

Lifting Gear Register List
(CCU-Other)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
24	Elevator Lifting Stand	TAT-EL3-01	Under Cantilever Platform	2 Ton	Unknown	Unknown	STH 14-001/1166	30 March 2024	29 September 2024		IN USE
25	Elevator Lifting Stand	TAT-EL3-02	Under Cantilever Platform	2 Ton	Unknown	Unknown	STH 14-001/1167	30 March 2024	29 September 2024		IN USE
26	Elevator Lifting Stand	TAT-EL3-03	Rig Floor	2 Ton	Unknown	Unknown	STH 14-001/1168	30 March 2024	29 September 2024		IN USE
27	Elevator Lifting Stand	TAT-EL2-02	Main Deck Stbd	2 Ton	Unknown	Unknown	STH 14-001/1163	30 March 2024	29 September 2024		IN USE
28	Elevator Lifting Stand	TAT-EL2-04	Under Cantilever Platform	2 Ton	Unknown	Unknown	STH 14-001/1165	30 March 2024	29 September 2024		IN USE
29	10FL Open Top Container c/With 5-leg wire rope sling with master link assembly 12.40 tons (TAT-OT-01/1) & Four(4) 7/8" bolts type anchor shackle 6.50 tons (TAT-OT-01A to 01D)	TAT-OT-01	Main Deck	12.4 Ton	Unknown	Oct-2012	132191	Not Found	#VALUE!		IN USE
30	10' x 8' x 8'6" Dry Googs Container @2438 x 2991 x 2591 mm (WxLxH) (TW: 2010Kgs, PL: 7990 Kgs)	BSLU 910641-7	Main Deck	10000 Kgs	Unknown	Sep 2019	SHI1903399-11	Inspection by Intertex	#VALUE!		IN USE
	c/With Five leg wire rope sling with master link assembly @30mm x 1.44mtrs (1L) / 24mm x 2.29 mtrs (4L)	BSL-SS10-0338	Attached to Container No.BSLU 910641-7	10.0 Ton	Unknown	12 August 2019	MKS-19-8204--11	Inspection by Intertex	#VALUE!		IN USE
	Four(4) 1" bolts type anchor shackle	TAT-OT-01A to D	Attached to Container No.BSLU 910641-7	8.5 Ton	Unknown	Oct-2012	132191	Inspection by Intertex	#VALUE!		IN USE
31	Personal Work Basket @138x656x234cms (WxLxH) (TW: 480Lbs, PL: 900Lbs)	J-8048	LQ Roof Top	5700 Lbs	Unknown	Unknown	MI VI LI 242/21/01325/EL	30 March 2024	29 September 2024		IN USE

Lifting Gear Register List
(CCU-Other)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	TER Report No.	Inspection Date	Recommended Next Inspection Date	TER Report No.	Status
	c/With Five leg wire rope sling with master link assembly @19mm x 197cms (1L) / 16mm x 280cms (2L) and 16mm x 195cms (2L)	0913235	Attached to Basket No..J-8048	3.50 Ton	ICON	Unknown	MI VI LI 242/21/01325/EL	30 March 2024	29-Sep-2024		IN USE
	Four(4) 3/4" bolts type anchor shackle	3239 A to 3239 D	Attached to Basket No..J-8048	4.75 Ton	Crosby	Unknown	MI VI LI 242/21/01325/EL	30 March 2024	29-Sep-2024		IN USE
32	Service And Access Basket : V7551-01151-0038	V7551-3112	Rig floor	300 Kgs	National Oilwell Varco	2012	V7551	30 March 2024	29 September 2024		In Service

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Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
	Four(4) 7/8" bolts type anchor shackle	P14-523 to P14-526	Attached to Fuel Tank No.TT 328/10/12	6.5 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
13	Light Glass Waste @105x218x118cms (WxLxH) (TW: 0.50 MT, PL: 1.00 MT)	SOLM824/5	LQ Roof Top	1.50 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @13mm x 1.7mtrs.	ICON-624	Attached to Fuel Tank No.TT 328/10/12	4.00 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	Four(4) 3/4" bolts type anchor shackle	24/3A to 24/3D	Attached to Fuel Tank No.TT 328/10/12	4.75 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
14	Bully Pugh Personnel Transfer Basket X-906-4	3607-22	LQ Roof Top	1.95 MT	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
	c/With Five leg wire rope sling with master link assembly & six(6) 3/4" bolts type anchor shackle 4.75 tons	15669-22	Attach to Basket No. 3607-22	1.95 MT	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
15	Extension Stairway @69x320x136cms (WxLxH)	TAT-EXT-STW-01	LQ Roof Top	0.35 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
16	Assess Stairwat from Rig to Platform @125 x 1340 x 140 cms. (WxLxH)	TAT-STW-01	Cantilever Deck	1.93 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
17	Assess Stairwat from Rig to Platform @125 x 1215 x 103 cms. (WxLxH)	TAT-STW-02	Cantilever Deck	1.72 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE

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Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
	Four(4) 5/8" bolts type anchor shackle	7A to 7D	Attached to Gas Rack No.TAT-GR-007	3.25 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
7	Gas Rack @98x73x160cms. (WxLxH) (TW: 0.28 MT, PL: 2.80 MT)	TAT-GR-006	Main Deck	3.00 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @16mm x 105cms	TAT-GR-06/S	Attached to Gas Rack No.TAT-GR-007	3.00 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	Four(4) 5/8" bolts type anchor shackle	8A to 8D	Attached to Gas Rack No.TAT-GR-007	3.25 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
8	Mashead Basket @1320 X 1320 X 1160 (WxLxH) (TW: 0.20 MT, PL: 1.80 MT)	TAT-BKT-05	Main Deck	2.00 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @13mm x 1.8mtrs.	TAT-BKT-05/S	Attached to Basket No.TAT-BKT-05	3.00 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	Four(4) 3/4" bolts type anchor shackle	05A to 05D	Attached to Basket No.TAT-BKT-05	4.75 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
9	Mashead Basket @132x 132x (WxLxH) (TW: 0.20 MT, PL: 1.80 MT)	TAT-BKT-06	Main Deck	2.00 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @13mm x 1.8mtrs.	TAT-BKT-06/S	Attached to Basket No.TAT-BKT-06	3.00 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE

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Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
18	Extension Stair for TAT-STW-01 Stairway @69 x 266 x 130 cms. (WxLxH)	TAT-EXT-STW-01	Attach to Stairway No. TAT-STW-01	0.35 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
19	Tool Box @93 x 61 x 161 Cms. (LxWxH) (TW: 0.45 MT, PL: 1.05 MT)	TAT/STH/067/2014	Cantilever Deck	1.5 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	C/With Four leg wire rope sling with master link assembly	TAT-BKT-05/S	Attached to Tool box No.TAT/ST/H/067/2014	3.0 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	Four(4) 5/8" bolts type anchor shackle	BKT-05A to D	Attached to Tool box No.TAT/ST/H/067/2014	3.25 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
20	Tank Liquilote	240319	Main Deck	2735 Kgs	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
21	Personal Work Basket @138x656x234cms (WxLxH) (TW: 4803Lbs, PL: 930Lbs)	J-8048	LQ Roof Top	5700 Lbs	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
	c/With Five leg wire rope sling with master link assembly @19mm x 187cms (1L) / 16mm x 208cms (2L) and 16mm x 169cms (2L)	0913239	Attached to Basket No. J-8048	3.50 Ton	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
	Four(4) 3/4" bolts type anchor shackle	3239 A to 3239 D	Attached to Basket No. J-8048	4.75 Ton	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
22	Main Hook	TA 3066	Port/Fwd Crane	85 Ton	30 Mar 24	N/A	Wait for review	Wait for review	UNSAFE

SK Siaptek

Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
	Four(4) 3/4" bolts type anchor shackle	BKT-06A to 06D	Attached to Basket No.TAT-BKT-06	4.75 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
10	Basket @120 x 122 x 145 cms (WxLxH) (TW: 1.50 MT, PL: 3.00 MT)	TAT-BKT-01	LQ Roof Top	4.50 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @20mm x 160cms	TAT-BKT-01/1	Attached to Basket No.TAT-BKT-01	4.50 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	Four(4) 7/8" bolts type anchor shackle	BKT-1A to BKT-1D	Attached to Basket No.TAT-BKT-01	6.5 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
11	Work Basket	135-13	LQ Roof Top	1000 Lbs	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @16mm x 210cms	FW 4442	Attached to Basket No.135-13	6.3 Ton	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
	Four(4) 5/8" bolts type anchor shackle	319A to 319D	Attached to Basket No.135-13	3.25 Ton	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
12	Fuel Tank @185x210x260cms (WxLxH) (TW: 1.73 MT, PL: 2.77 MT)	TT 328/10/12	Under Helideck	4.50 MT	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
	c/With Four leg wire rope sling with master link assembly @20mm x 4 mtrs.	LIS-096-2014	Attached to Fuel Tank No.TT 328/10/12	12.16 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE

STATEMENT OF FACT ITEMS

LIFTING GEAR INSPECTIONS

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Borr Drilling

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Inspection, Certification, Non Destructive Testing,
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STATEMENT OF FACT (Safety Equipment)

Customer :	Borr SEA Operation Inc (Thailand)	Work scope	Lifting Gear Inspections
Work Location :	MIST RIG	Mission Order No. :	MOSTH240120
Ordered by :	Borr SEA Operation Inc (Thailand)	P/O No.:	

This is to certify that the undersigned, a competent inspector for Siaptek Inspection Services, has thoroughly examined the aforementioned fall protection equipment and lad-saf systems throughout the facility.The overall condition of the equipment inspected meets the specific requirements that are stated below and should only be used for the purpose for which they were designed for. All equipment inspected has been declared fit for use at the time of inspection.

Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
1	E0040100245BF8G8	1231117	1" Wide Web Lanyard (1.5 FL)	SALA	Feb-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
2	E004010024A5572C	1231117	1" Wide Web Lanyard (1.5 FL)	SALA	Feb-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
3	E00403500FC8038F	1102010	Fall Arrest Full Body Harness	SALA	May-19	Rig Floor	Unknow	30 March 2024	In use Good condition	
4	E00403501076B851	1102010	Fall Arrest Full Body Harness	SALA	Mar-19	Rig Floor	Unknow	30 March 2024	In use Good condition	
5	E00403500F448D03	1102010	Fall Arrest Full Body Harness	SALA	May-19	Rig Floor	Unknow	30 March 2024	In use Good condition	
6	E00403500FG18746	1102010	Fall Arrest Full Body Harness	SALA	Jun-19	Rigging Locker	Unknow	30 March 2024	In use Good condition	
7	E00403501BACB12D	1102010	Fall Arrest Full Body Harness	SALA	May-19	Rig Floor	Unknow	30 March 2024	In use Good condition	
8	E00403501239B4D5	1107807	Fall Arrest Full Body Harness	SALA	Jun-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
9	E00403501245 3A5A	1107807	Fall Arrest Full Body Harness	SALA	Jun-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
10	E00403501252E9C8	1107807	Fall Arrest Full Body Harness	SALA	Jun-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
11	E00403501253A6D1	1107807	Fall Arrest Full Body Harness	SALA	Jun-20	Rig Floor	Unknow	30 March 2024	In use Good condition	

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Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
23	Single leg STINGER Sling C/W Close Spelter 1-end & Self- Locking Hook 1-End @32mm x 3mtr.	FAB 2617	Attach to Aux. Port-Fwd Crane	12 Ton	1 Apr 24	1 Oct 24	Wait for review	.tod	IN USE
24	Main Hook	TA 3606	Stbd-Fwd Crane	75 Ton	30 Mar 24	N/A	Wait for review	Wait for review	UNSAFE
25	Single leg STINGER Sling C/W Close Spelter 1-end & Self- Locking Hook 1-End @1 1/4" Dia. X 3.2 mtrs.	ST87497/1-1	Stbd-Fwd Crane	15.55 Ton	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
26	Main Hook	TA 3302	Port-Aft Crane	75 Ton	30 Mar 24	29 Sep 24	Wait for review	Wait for review	IN USE
27	BOP handling Equipment/ Pneumatic Chain Hoist	8701097 - BOP Hoist #1	Under Drill Floor/ BOP Hoist	50 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
28	BOP handling Equipment/ Pneumatic Chain Hoist	8701095 - BOP Hoist #2	Under Drill Floor/ BOP Hoist	50 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
29	BOP handling Equipment/ Pneumatic Chain Hoist	8701096 - BOP Hoist #3	Under Drill Floor/ BOP Hoist	50 Ton	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
30	Texas Deck - Fabrication Padeyes and Critical weldments area	Not Found	Texas Deck	Unknown	30 Mar 24	TBC	Not Access	Wait for review	IN USE
31	BOP Lifting Frame	Not Found	BOP	Unknown	30 Mar 24	29 Sep 24	Not Access	Wait for review	IN USE

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Register
(NDT)

Client: Borr Drilling
Facility : Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	Inspection Date	Recommended Next Inspection Date	THV Report No.	NDT Report No.	Status
32	V-Door Fabrication Padeye	Not Found	Rigfloor	15.0 Ton	30 Mar 24	29 Sep 24	Not Access	Wait for review	IN USE
33	V-Door Fabrication Padeye	Not Found	Rigfloor	15.0 Ton	30 Mar 24	29 Sep 24	Not Access	Wait for review	IN USE
34	King Post - Fabrication Padeye	Not Found	Rigfloor	15.0 Ton	30 Mar 24	29 Sep 24	Not Access	Wait for review	IN USE
35	King Post - Fabrication Padeye	Not Found	Rigfloor	15.0 Ton	30 Mar 24	29 Sep 24	Not Access	Wait for review	IN USE
36	Fabrication Runway Beam	Not Found	Shale Shaker	Unknown	5 Apr 24	TBC	Not Access	Wait for review	IN USE
37	Tank Liquidole	9520-30	Grey Platform	6000 Lbs	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
38	Tank Liquidole	240320	Grey Platform	2735 Kgs	30 Mar 24	29 Mar 25	Wait for review	Wait for review	IN USE
39	Derrick Escape T-Bar	Unknown	Derrick	Unknown	30 Mar 24	29 Sep 24	Not Access	Wait for review	IN USE

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Inspection, Certification, Non Destructive Testing,
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STATEMENT OF FACT (Safety Equipment)

Customer :	Borr SEA Operation Inc (Thailand)	Work scope	Lifting Gear Inspections
Work Location :	MIST RIG	Mission Order No. :	MOSTH240120
Ordered by :	Borr SEA Operation Inc (Thailand)	P/O No.:	

This is to certify that the undersigned, a competent inspector for Siaptek Inspection Services, has thoroughly examined the aforementioned fall protection equipment and lad-saf systems throughout the facility.The overall condition of the equipment inspected meets the specific requirements that are stated below and should only be used for the purpose for which they were designed for. All equipment inspected has been declared fit for use at the time of inspection.

Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
34	E00403508W6F8B3E	6160030	Lad-Safe × 2	SALA	Unknow	Safety Store	Unknow	30 March 2024	In use Good condition	
35	E00403500A5F91C7 047544	6160030	Lad-Safe × 2	SALA	Unknow	CRANE PORT-STBD	Unknow	30 March 2024	In use Good condition	
36	E00403508EEA136D	6160054	Lad-Safe × 3	SALA	Unknow	Engine Room – Rescue Box	Unknow	30 March 2024	In use Good condition	
37	E00403508A6F89AD	6160054	Lad-Safe × 3	SALA	Unknow	Engine Room – Rescue Box	Unknow	30 March 2024	In use Good condition	
38	267868	AD111AR	Land Yard	Rebel Protector	Mar-13	Safety Store	Unknow	30 March 2024	In use Good condition	
39	E00401007EDEEB3C	123180	Land Yard 1.5 FL (LY-03)	SALA	Apr-13	Safety Store	Unknow	30 March 2024	In use Good condition	
40	E00401007EDEEC3D	123180	Land Yard 1.5 FL (LY-04)	SALA	Apr-13	Safety Store	Unknow	30 March 2024	In use Good condition	
41	E00403503FCFBC1C	1246021	Land Yard 4 ft.	SALA	Mar-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
42	E00403508F70832E	1246027	Lanyard (LY-11)	SALA	Jun-19	Rigging Locker	Unknow	30 March 2024	In use Good condition	
43	E00403501068832A	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB	SALA	May-21	Rigging Locker	Unknow	30 March 2024	In use Good condition	
44	E00403501110B660	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB (DF-L01, DF-L02)	SALA	May-21	Rig Floor	Unknow	30 March 2024	In use Good condition	

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Inspection, Certification, Non Destructive Testing,
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STATEMENT OF FACT (Safety Equipment)

Customer :	Borr SEA Operation Inc (Thailand)	Work scope	Lifting Gear Inspections
Work Location :	MIST RIG	Mission Order No. :	MOSTH240120
Ordered by :	Borr SEA Operation Inc (Thailand)	P/O No.:	

This is to certify that the undersigned, a competent inspector for Siaptek Inspection Services, has thoroughly examined the aforementioned fall protection equipment and lad-saf systems throughout the facility.The overall condition of the equipment inspected meets the specific requirements that are stated below and should only be used for the purpose for which they were designed for. All equipment inspected has been declared fit for use at the time of inspection.

Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
12	E00403501253C38F	1107807	Fall Arrest Full Body Harness	SALA	Jun-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
13	E00403501AE301FE	1107807	Fall Arrest Full Body Harness	SALA	Mar-23	Rig Floor	Unknow	30 March 2024	In use Good condition	
14	E00401007EDED3CA	1101828	Fall Arrest Full Body Harness	SALA	Apr-13	Rigging Locker	Unknow	30 March 2024	In use Good condition	
15	E00403500FDB9F23	1105827	Fall Arrest Full Body Harness	SALA	Dec-13	Platform	Unknow	30 March 2024	In use Good condition	
16	E00403501079AFDC	1102010	Fall Arrest Full Body Harness (HN-06)	SALA	May-19	Rigging Locker	Unknow	30 March 2024	In use Good condition	
17	E00403501078B819	1102010	Fall Arrest Full Body Harness (HN-07)	SALA	May-19	Rigging Locker	Unknow	30 March 2024	In use Good condition	
18	E00403501D7576E1	1102010	Fall Arrest Full Body Harness (HN-15)	SALA	May-19	Rigging Locker	Unknow	30 March 2024	In use Good condition	
19	E00401002458B35C3	102010	Fall Arrest Full Body Harness (HN-38)	SALA	May-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
20	E00403501D76CDAD	1102010	Fall Arrest Full Body Harness (HN-44)	SALA	May-19	Rig Floor	Unknow	30 March 2024	In use Good condition	
21	E00403508F452C8A	110382	Fall Arrest Full Body Harness (HN-49)	SALA	Mar-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
22	E00401002459BCEB	1107805	Fall Arrest Full Body Harness (HN-49)	SALA	Mar-14	Rig Floor	Unknow	30 March 2024	In use Good condition	

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STATEMENT OF FACT (Safety Equipment)

Customer :	Borr SEA Operation Inc (Thailand)	Work scope	Lifting Gear Inspections
Work Location :	MIST RIG	Mission Order No. :	MOSTH240120
Ordered by :	Borr SEA Operation Inc (Thailand)	P/O No.:	

This is to certify that the undersigned, a competent inspector for Siaptek Inspection Services, has thoroughly examined the aforementioned fall protection equipment and lad-saf systems throughout the facility.The overall condition of the equipment inspected meets the specific requirements that are stated below and should only be used for the purpose for which they were designed for. All equipment inspected has been declared fit for use at the time of inspection.

Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
45	E00403501202DF01	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB (DF-L01, DF-L02)	SALA	May-21	Rig Floor	Unknow	30 March 2024	In use Good condition	
46	E00403501AE17138D	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB (WA-L01 / L02)	SALA	May-21	Rigging Locker	Unknow	30 March 2024	In use Good condition	
47	E00403501578B3D74	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB (WA-L01 / L02)	SALA	May-21	Rigging Locker	Unknow	30 March 2024	In use Good condition	
48	E00403501219438	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB (RF-01, RF-02)	SALA	May-21	Rig Floor	Unknow	30 March 2024	In use Good condition	
49	E00403508FE010DF	3101277	Lanyard, EZ-stop double leg with 1 STD/2 Alum rebar-3600LB (RF-01, RF-02)	SALA	May-21	Rig Floor	Unknow	30 March 2024	In use Good condition	
50	E00403508E46B2AB	1246021	Lanyard, Pro shock Absorbing for hot work	SALA	Mar-20	Rigging Locker	Unknow	30 March 2024	In use Good condition	
51	E00403508FAB3630	1246021	Lanyard, Pro shock Absorbing for hot work	SALA	Mar-20	Rigging Locker	Unknow	30 March 2024	In use Good condition	
52	E00403508FDD9059	1246021	Lanyard, Pro shock Absorbing for hot work	SALA	Jan-21	Rig Floor	Unknow	30 March 2024	In use Good condition	
53	E00403500FE20B71	1246021	Lanyard, Pro shock Absorbing for hot work	SALA	Mar-20	Rigging Locker	Unknow	30 March 2024	In use Good condition	
54	E00403508F3599D8	1108127	Man-Riding Harness	SALA	Jan-19	Rig Floor	Unknow	30 March 2024	In use Good condition	
55	249/2018	1621001	Safety Tripod	Shilling	2018	Main Deck	Unknow	30 March 2024	In use Good condition	

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STATEMENT OF FACT (Safety Equipment)

Customer :	Borr SEA Operation Inc (Thailand)	Work scope	Lifting Gear Inspections
Work Location :	MIST RIG	Mission Order No. :	MOSTH240120
Ordered by :	Borr SEA Operation Inc (Thailand)	P/O No.:	

This is to certify that the undersigned, a competent inspector for Siaptek Inspection Services, has thoroughly examined the aforementioned fall protection equipment and lad-saf systems throughout the facility.The overall condition of the equipment inspected meets the specific requirements that are stated below and should only be used for the purpose for which they were designed for. All equipment inspected has been declared fit for use at the time of inspection.

Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
23	E00401002461087B	1107805	Fall Arrest Full Body Harness (HN-49)	SALA	Mar-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
24	E08401577CA1F6	2108406	Fixed Beam Anchor	SALA	Dec-10	Safety Store	Unknow	30 March 2024	In use Good condition	
25	E0840174F42E56	2108406	Fixed Beam Anchor	SALA	Unknow	Safety Store	Unknow	30 March 2024	In use Good condition	
26	E00403508A64C54A 047744	6160030	Lad-Safe × 2	SALA	Unknow	Rig Floor	Unknow	30 March 2024	In use Good condition	
27	E00403508A64D068	6160030	Lad-Safe × 2	SALA	Unknow	Safety Store	Unknow	30 March 2024	In use Good condition	
28	E00403508A65E12F	6160030	Lad-Safe × 2	SALA	Unknow	Safety Store	Unknow	30 March 2024	In use Good condition	
29	E00403508A693FC9 047088	6160030	Lad-Safe × 2	SALA	Unknow	Rig Floor	Unknow	30 March 2024	In use Good condition	
30	E00403508A67B86F 047715	6160030	Lad-Safe × 2	SALA	Unknow	CRANE PORT-FWD	Unknow	30 March 2024	In use Good condition	
31	E00403508A68BC3A 039198	6160030	Lad-Safe × 2	SALA	Unknow	Rig Floor	Unknow	30 March 2024	In use Good condition	
32	E00403508A6CC2B8 047623	6160030	Lad-Safe × 2	SALA	Unknow	Rig Floor	Unknow	30 March 2024	In use Good condition	
33	E00403508A6901ED	6160030	Lad-Safe × 2	SALA	Unknow	Safety Store	Unknow	30 March 2024	In use Good condition	

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STATEMENT OF FACT (Safety Equipment)

Customer : Borr SEA Operation Inc (Thailand)
Work scope : Lifting Gear Inspections
Work Location : MIST RIG
Mission Order No. : MOSTH240120
Ordered by : Borr SEA Operation Inc (Thailand)
P/O No.:

This is to certify that the undersigned, a competent inspector for Siaptek Inspection Services, has thoroughly examined the aforementioned fall protection equipment and lad-saf systems throughout the facility.The overall condition of the equipment inspected meets the specific requirements that are stated below and should only be used for the purpose for which they were designed for. All equipment inspected has been declared fit for use at the time of inspection.

Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
78	08176	3400862	Self-Retracting Lifeline 85 FT.	SALA	Jan-14	Safety Store	Unknow	30 March 2024	In use Good condition	
79	141737	3400308	Self-Retracting Lifeline 85 FT. (Retrieval)	SALA	Apr-13	Safety Store	Unknow	30 March 2024	In use Good condition	
80	141738	3400308	Self-Retracting Lifeline 85 FT. (Retrieval)	SALA	Apr-13	Safety Store	Unknow	30 March 2024	In use Good condition	
81	18123	3400874	Self-Retracting Lifeline 85 FT. (Retrieval)	SALA	Nov-13	Safety Store	Unknow	30 March 2024	In use Good condition	
82	18124	3400874	Self-Retracting Lifeline 85 FT. (Retrieval)	SALA	Nov-13	Safety Store	Unknow	30 March 2024	In use Good condition	
83	140288	3400611	Self-Retracting Lifeline 115 FT.	SALA	Feb-13	Safety Store	Unknow	30 March 2024	In use Good condition	
84	140795	3400611	Self-Retracting Lifeline 115 FT.	SALA	Feb-13	Safety Store	Unknow	30 March 2024	In use Good condition	
85	13101	3400902	Self-Retracting Lifeline 90 FT.	SALA	Apr-13	Safety Store	Unknow	30 March 2024	In use Good condition	
86	13908	3400662	Self-Retracting Lifeline	SALA	Jan-19	Under Rig Floor	Unknow	30 March 2024	In use Good condition	
87	J3934	3400662	Self-Retracting Lifeline	SALA	Jan-19	Under Rig Floor	Unknow	30 March 2024	In use Good condition	
88	E00403500FOCD861	1246021	Y -Land Yard	SALA	Mar-20	Rig Floor	Unknow	30 March 2024	In use Good condition	

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STATEMENT OF FACT (Safety Equipment)

Customer : Borr SEA Operation Inc (Thailand)
Work scope : Lifting Gear Inspections
Work Location : MIST RIG
Mission Order No. : MOSTH240120
Ordered by : Borr SEA Operation Inc (Thailand)
P/O No.:

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Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
89	E00403500FE1910F	1246021	Y -Land Yard	SALA	Mar-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
90	E00403500FE387D9	1246021	Y -Land Yard	SALA	Mar-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
91	E00403500FG264G8	1246021	Y -Land Yard	SALA	Mar-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
92	E00403500FG41G19	1246021	Y -Land Yard	SALA	Mar-20	Rig Floor	Unknow	30 March 2024	In use Good condition	
93	E00403500R48E8D5	1246021	Y -Land Yard	SALA	Jan-20	Rigging Locker	Unknow	30 March 2024	In use Good condition	
94	E00403500F937FD2	1246027	Y-Lanyard	SALA	Jun-19	Safety Store	Unknow	30 March 2024	In use Good condition	
95	E00403500F750E08	1246027	Y-Lanyard	SALA	Jun-19	Safety Store	Unknow	30 March 2024	In use Good condition	
96	E00403500F49CB0	1246021	Y-Lanyard (LY-02)	SALA	Jan-20	Rigging Locker	Unknow	30 March 2024	In use Good condition	

The results of tool inspection reported by the company to the customer represent good faith opinions and are not to be considered warranties or guarantees of quality, classification or usability of tool inspected.

Inspector Name & Signature :
Pitsanu Chakongma
ASNT NDT Level II
Date : 30 March 2024

Siaptek (Thailand) Co.,Ltd.

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Inspection, Certification, Non Destructive Testing,
Helideck surveys, Maintenance and Cleaning Services

STATEMENT OF FACT (Safety Equipment)

Customer : Borr SEA Operation Inc (Thailand)
Work scope : Lifting Gear Inspections
Work Location : MIST RIG
Mission Order No. : MOSTH240120
Ordered by : Borr SEA Operation Inc (Thailand)
P/O No.:

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Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
55	E00401005AAF7713	8000000	Safety Tripod	SALA	Apr-13	Main Deck	Unknow	30 March 2024	In use Good condition	
57	E00401007DE25990	8000000	Safety Tripod	SALA	Apr-13	Main Deck	Unknow	30 March 2024	In use Good condition	
58	134930	3303001	Sala Block Low Speed Descender (115 FL)	SALA	May-12	Safety Store	Unknow	30 March 2024	In use Good condition	
59	141332	3303003	Sala Block Low Speed Descender (115 FL)	SALA	April 2013	Derrick / Monnkey Board - Emergency Escap	Unknow	30 March 2024	In use Good condition	
60	141574	3303003	Sala Block Low Speed Descender (115 FL)	SALA	April 2013	Derrick / Monnkey Board - Emergency Escap	Unknow	30 March 2024	In use Good condition	
61	13136	22214	Self-Retracting Lieffing	SALA	Unknow	Derrick	Unknow	30 March 2024	In use Good condition	
62	22214	3400010	Self-Retracting Lieffing	SALA	Mar-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
63	05114	400662	Self-Retracting Lieffing	SALA	Sep-12	Rig Floor	Unknow	30 March 2024	In use Good condition	
64	147587	3101001	Self-Retracting Lieffing	SALA	May-17	Rig Floor	Unknow	30 March 2024	In use Good condition	
65	12760	3400902	Self-Retracting Lieffing	SALA	Feb-13	Derrick – Monkey Board	Unknow	30 March 2024	REMOVE FROM SERVICE	Rejected wire sling Broken
66	21762	3400902	Self-Retracting Lieffing	SALA	Jun-14	Derrick – Monkey Board	Unknow	30 March 2024	In use Good condition	

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Inspection, Certification, Non Destructive Testing,
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STATEMENT OF FACT (Safety Equipment)

Customer : Borr SEA Operation Inc (Thailand)
Work scope : Lifting Gear Inspections
Work Location : MIST RIG
Mission Order No. : MOSTH240120
Ordered by : Borr SEA Operation Inc (Thailand)
P/O No.:

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Item No.	Serial Number	Model / LOT Number	Item Description	OEM	D.O.M. (Month/Year)	Location	Date into Service	Inspected Date	Status	Comment
67	23509	3400902	Self-Retracting Lieffing	SALA	Mar-14	Rig Floor	Unknow	30 March 2024	In use Good condition	
68	08142	3400902	Self-Retracting Lieffing	SALA	Jun-14	Derrick – Monkey Board	Unknow	30 March 2024	In use Good condition	
69	22496	3400920	Self-Retracting Lieffing	SALA	Jun-13	Rig Floor	Unknow	30 March 2024	In use Good condition	
70	E00401002338EEEC8	3101001	Self-Retracting Lieffing	SALA	Feb-12	Safety Store	Unknow	30 March 2024	In use Good condition	
71	E00401007FE121F5	3101001	Self-Retracting Lieffing	SALA	Feb-12	Mud Pump Room	Unknow	30 March 2024	In use Good condition	
72	E00401002338E2A3	3101001	Self-Retracting Lieffing	SALA	Feb-12	Mud Pump Room	Unknow	30 March 2024	In use Good condition	
73	115396	3101001	Self-Retracting Lifeline	SALA	Feb-13	Safety Store	Unknow	30 March 2024	In use Good condition	
74	124006	3101001	Self-Retracting Lifeline	SALA	Jan-14	Safety Store	Unknow	30 March 2024	In use Good condition	
75	141836	3400010	Self-Retracting Lifeline 50 FT.(Retrieval)	SALA	Apr-13	Safety Store	Unknow	30 March 2024	In use Good condition	
76	11541	3400920	Self-Retracting Lifeline 50 FT.(Retrieval)	SALA	Feb-13	Safety Store	Unknow	30 March 2024	In use Good condition	
77	11565	3400920	Self-Retracting Lifeline 50 FT.(Retrieval)	SALA	Feb-13	Safety Store	Unknow	30 March 2024	In use Good condition	

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Lifting Gear Register List

Quarantine Items

Client: Borr Drilling
Facility: Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Recommended Next Inspection Date	Status
11	Manual Chain Hoist	18080648	Offline tool box	1 Ton	Kendotec	Unknown	18080648	30 March 2024	To be Maintenance - Fail Function Test - Condition / Latch damaged	Quarantine
12	Single leg wire rope ,Ferrule Soft Eye Both End @13mm Dia. X 1 mtrs.	No ID	Offline tool box	Unknow	Unknow	Unknown	Not Found	30 March 2024	To load test and Stamp ID no.	Quarantine
13	Man Rider Winch	V 7584-3112	Drill Floor Aft	150 Kgs	NOV	2012	V 7584	30 March 2024	To be Maintenance - Fail Function Test - Control/EM Damaged	Quarantine
14	Hand Winch - Automatic Brake Winch	BHW-880	Drill Floor Aft	400 Lbs	Tiger	Unknown	0020175	30 March 2024	To be Maintenance - Fail Function Test / Condition Fail	Quarantine
15	Hand Pallet Truck	No ID	Main Deck	3000 Kgs	Unknown	Unknown	Unknown	30 March 2024	To be Maintenance / Load test - Fail Function Test / NO ID	Quarantine
16	Fabrication Padeye	No ID	Under Cantilever	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
17	Fabrication Padeye	No ID	Under Cantilever	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
18	Fabrication Padeye - Elbow 90	No ID	Stbd Leg well	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
19	Fabrication Padeye - Elbow 90	No ID	Port Leg well	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
20	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine

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QUARANTINE ITEMS

LIFTING GEAR INSPECTIONS

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Borr Drilling

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Lifting Gear Register List

Quarantine Items

Client: Borr Drilling
Facility: Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Recommended Next Inspection Date	Status
21	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well - Spare	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
22	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well - Spare	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
23	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well - Spare	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
24	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well - Spare	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
25	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well - Spare	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
26	Fabrication Padeye - Elbow 90	No ID	Fwd Leg well - Spare	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
27	Fabrication Runway Beam	No ID	Shale Shaker	Unknown	Unknown	Unknown	Unknown	30 March 2024	To be Load test - NO ID	Quarantine
28	Fish Plate With 3x Eye To Suit	FM 9439	Towing Bridle - Under Helideck	85 T	Franklin	08-Apr-2019	FOI-ISD-88744-R1	30 March 2024	Need to Maintenance and change safety pin of Shackle	Quarantine
29	Pipe Rack - Basket	No ID	Cantilever Deck	Unknown	Unknown	Unknown	Unknown	30 March 2024	Padeye deformation, need to maintenance and Load test - NO ID	Quarantine
30	Drill Floor Air Winch - Racking Utility Winch	A020968	Drill Floor	5000 LBS	Ingersoll Rand	2012	A020968	30 March 2024	PG Damaged / Heavy corrosion and rust on base sturcture welded	Quarantine

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Lifting Gear Register List

Quarantine Items

Client: Borr Drilling
Facility: Borr Mist Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Recommended Next Inspection Date	Status
1	Mud Bruket Unit c/with 2-leg wire rope sling with master link assembly 3.5 tons (PWA 29671) & Two(2) 1/2" bolts type anchor shackle 2 tons	MS-193	Rigfloor	Unknow	Unknow	Unknown	Not Found	30 March 2024	Not found test certificate	Quarantine
2	Single leg wire rope ,Ferrule Soft Eye Both End @15mm Dia. X 1 mtrs.	No ID	Rigfloor	Unknow	Unknow	Unknown	Not Found	30 March 2024	To load test and Stamp ID no.	Quarantine
3	Trolley Beam/Chain Hoist	A31834 & E12047412	Port - Jacking Leg	5 Ton	Yale	Unknown	A31834	30 March 2024	To be Maintenance - Fail Function Test	Quarantine
4	Trolley Beam/Chain Hoist	A31838 & E12047423	Fwd - Jacking Leg	5 Ton	Yale	Unknown	A31838	30 March 2024	To be Maintenance - Fail Function Test	Quarantine
5	Trolley Beam/Chain Hoist	A31839 & E12047417	Stbd - Jacking Leg	5 Ton	Yale	Unknown	A31839	30 March 2024	To be Maintenance - Fail Function Test	Quarantine
6	Runway Beam	JKTB-01	Port - Jacking Leg	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	To be Maintenance - Heavy Corrosion on weldments	Quarantine
7	Runway Beam	JKTB-02	Stbd - Jacking Leg	1 Ton	Keppel Fels	Unknown	TM-M025	30 March 2024	To be Maintenance - Heavy Corrosion on weldments & Beam deformation	Quarantine
8	Hand Lift	No ID	Main Deck	2 Ton	Unknow	Unknown	Not Found	30 March 2024	To be Maintenance - Fail Function Test	Quarantine
9	Drill Floor Air Winch - Racking Utility Winch	A020968	Drill Floor	5000 LBS	Ingersoll Rand	2012	A020968	30 March 2024	PG Damaged / Broken wire sling	Quarantine
10	Lever Hoist Block	22971404	Offline tool box	1 Ton	Kendotec	Unknown	22971404	30 March 2024	To be Maintenance - Fail Function Test / Latch damaged	Quarantine

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Lifting Gear Register List

Rejected Items

Client: Borr Drilling
Facility : Borr Mat Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
6	1" Safety Pin Bow Shackle	No ID	Rigfloor	8.5 Ton	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	OD Wear Out	Unused
7	7/8" Safety Pin Bow Shackle	No ID	Rigfloor	8.5 Ton	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	OD Wear Out	Unused
8	5/8" Safety Pin Bow Shackle	No ID	Rigfloor	3.25 Ton	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Bolted not correct type	Unused
9	5/8" Safety Pin Bow Shackle	No ID	Rigfloor	3.25 Ton	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Bolted not connected type	Unused
10	3" Dia. Snatch Block	6833-2	Offline tool box	2 Ton	Mckissick	Unknown	833	30 March 2024	to be removed from service	Roller damaged	Unused

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REJECTED ITEMS

LIFTING GEAR INSPECTIONS

Borr Drilling

www.siaptek.co.th
Email: info@siaptek.co.th

Siaptek

Lifting Gear Register List

Rejected Items

Client: Borr Drilling
Facility : Borr Mat Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
11	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs	LIS-01992023	Rigging Loft	3.39 Ton	L.I.S.	19-Jul-2023	T2023071 9-001	30 March 2024	to be removed from service	Kinked	Unused
12	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.83 mtrs	LIS-02932023	Rigging Loft	3.39 Ton	L.I.S.	19-Jul-2023	T2023071 9-001	30 March 2024	to be removed from service	Kinked	Unused
13	1" SCREW Pin Bow Shackle	FH 3930	Cantilever Deck	8.5 Ton	Green Pin	Unknown	AMS-N21991952-LGI-GRS- 031	30 March 2024	to be removed from service	OD Wear Out	Unused
14	1" SCREW Pin Bow Shackle	SH-DF-164	Cantilever Deck	8.5 Ton	Crosby	Unknown	AMS-N21991952-LGI-GRS- 031	30 March 2024	to be removed from service	OD Wear Out	Unused
15	2-Ply Polyester Webbing Sling, Eye & Eye Type @80 mm (Width) x 5 Mtr	SMR1547	Platform	3 Ton	Franklin	02-Jun-2022	SMR1547	28 March 2024	to be removed from service	Burn / Damaged	Unused

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Lifting Gear Register List

Rejected Items

Client: Borr Drilling
Facility : Borr Mat Jack Up Rig
Mission Oder No.MOSTH240120

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
1	Single leg wire Rope Sling with Ferrule Soft Eye Both End	FX 0372	Main Deck Port-Aft	3.29 Ton	Unknow	Unknown	Unknown	30 March 2024	to be removed from service	Heavy corrosion and Broken wire	Unused
2	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.1 mtrs	LIS 01010023	Rigfloor	3.3 Ton	L.I.S	24-Mar-2023	T2023032 0-002	30 March 2024	to be removed from service	Broken wire / Kinked	Unused
3	Self-Locking Hook Model: BK-13-10	10999881-0-1-5 (H-04)	Rigfloor	6.80 Ton	Gunnebo	Unknown	10999881-0-1-1 to 6	30 March 2024	to be removed from service	Function Fail	Unused
4	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 8 mtrs	PJE 179	Rigfloor	3 Ton	PJE	Unknown	Test Certificate	30 March 2024	to be removed from service	Broken wire / Kinked	Unused
5	Single leg wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 1.5 mtrs.	No ID	Rigfloor	Unknown	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Broken wire / Kinked	Unused

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
26	Main Hook	TA 3066	Port-Fwd Crane	65 Ton	Seatrax	Unknown	TA 3066	30 March 2024	to be removed from service	Hook Heavy Corrosioned on Thread & Housing thread	Unused
27	Main Hook	TA 3036	Stbd Fwd Crane	75 Ton	Seatrax	Unknown	TA 3036	30 March 2024	to be removed from service	Hook Shank Thread Damaged	Unused
28	2" Safety Pin Bow Shackle	SK-35-05	Attach to Towing Bridle Port-Fwd, Bokoo Anchor	35 Ton	Green Pin	Unknown	SK-35-05	30 March 2024	to be removed from service	Heavy Corrosion and OD Wear out	Unuse
29	2" Safety Pin Bow Shackle	SK-35-12	Attach to Towing Bridle Stbd-Aft Bokoo Anchor	35 Ton	Green Pin	Unknown	SK-35-12	30 March 2024	to be removed from service	Heavy Corrosion and OD Wear out	Unuse
30	2" Safety Pin Bow Shackle	SK-35-03	Attach to Towing Bridle STBD-FWD, Bokoo Anchor	35 Ton	Green Pin	Unknown	SK-35-05	28 September 2023	Need to change new	Heavy Corrosion and Rust	Unuse

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
16	2-Ply Polyester Webbing Sling, Eye & Eye Type @150 mm (Width) x 3 Mtr.	FN 1357	Rigging Loft	5 Ton	Franklin	09-May-2019	FDI-ISO-89194	30 March 2024	to be removed from service	Burn / Damaged	Unused
17	2-Ply Polyester Webbing Sling, Eye & Eye Type @90 mm (Width) x 2 Mtr	FN 1336	Rigging Loft	3 Ton	Franklin	09-May-2019	FDI-ISO-89191	30 March 2024	to be removed from service	Burn / Damaged	Unused
18	2-Ply Polyester Webbing Sling, Eye & Eye Type @90 mm (Width) x 2 Mtr	FN 1340	Rigging Loft	3 Ton	Franklin	09-May-2019	FDI-ISO-89191	30 March 2024	to be removed from service	Burn / Damaged	Unused
19	4Leg Chain Sling c/With Lifting bushing hooks @16mm Chain x 1.5mtrs.	No ID	Rigfloor	Unknown	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Common link chain OD wear out	Unused
20	2Leg Chain Sling c/With Lifting bushing hooks @7mm Chain x 1.5mtrs.	No ID	Rigfloor	Unknown	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Common link chain OD wear out	Unused

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
31	2" Safety Pin Bow Shackle	SK-35-06	Attach to Towing Bridle Port-AFT Bokoo Anchor	35 Ton	Green Pin	Unknown	SK-35-05	28 September 2023	Need to change new	Heavy Corrosion and Rust	Unuse
32	Single leg wire Rope Sling with Ferrule Soft Eye Both End @58" Dia X 2 mtrs	FN 1451	Attached to Stair way to Texas deck	2 Ton	Franklin	09-May-2019	FDI-ISO-9202		to be removed from service	Broken wire	Unuse
33	Fabricaiton Pad eye	NA	Stbd - Aft	NA	Unknow	Unknown	Unknown	Unknown	to be removed from service	Heavy Corrosion	Unuse
34	Fabricaiton Pad eye	NA	Stbd - Aft	NA	Unknow	Unknown	Unknown	Unknown	to be removed from service	Heavy Corrosion	Unuse
35	2" Safety Pin Bow Shackle	HA35-002	Rigging Loft Port-AFT	35 Ton	Unknow	UnKnown	Unknown	Unknown	to be removed from service	Heavy Corrosion	Unuse

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
21	Fabricaiton Pad eye	No ID	Cantilever - Pipe Catwalk	Unknown	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Damaged / Deformation	Unused
22	Fabricaiton Pad eye	No ID	Cantilever - Pipe Catwalk	Unknown	Unknown	Unknown	Unknown	30 March 2024	to be removed from service	Damaged / Deformation	Unused
23	6x36 IWRC EEPS RHRL Galvanized Steel Wire Rope Sling Both Ends Resin Terminated With 'Merlow' RF Socket @38mm Dia X 150 ltr.	FK 7931	Main Deck Port-Aft	22 .8 Ton	Franklin	06-Feb-2019	FDI-ISO-89743	30 March 2024	to be removed from service	Five wire cut in one strand	Unused
24	Single leg wire Rope Sling with Thimble Eye Both End @16mm Dia X 1 mtrs.	50138036-1-TS	Fitted to Transfer Hose - Poo	3.5 Ton	Unknow	Unknown	50138036-1-TS	30 March 2024	to be removed from service	Broken wire	Unused
25	Single leg Wire Rope Sling with Ferrule Soft Eye Both End @16mm Dia. X 6.10 mtrs.	LIS 8193/2023	Cantilever Deck	3.30 Ton	L.I.S	19-Jul-2023	T2023071B-001	30 March 2024	to be removed from service	Broken wire / Kinked	Unused

Item No.	Equipment Description	Serial No / ID No.	Location of Equipment	SWL / WLL	OEM	Manufacturer Date	Test Report No.	Inspection Date	Action	Comment	Status
36	5/8" Safety Fin Bow Shackle	No ID	Attach to Fabrication Padeye - Under Cantilever	25 Ton	Green Pin	Unknown	SH-25-12	30 March 2024	to be removed from service	Pinned and Bolted not correct type	Unuse
37	Fabrication Pad eye	PE-BB-08	Bbd - AB	8 Ton	Unknow	Unknown	Unknown	28 September 2023	to be removed from service	Heavy Corrosion and Deformations	Unuse

VISUAL INSPECTION CERTIFICATE

No: MI VI 321 / 24 / 028 SAT

Client Name: Siam Deep Sea Co., Ltd.
Actual Owner: Siam Deep Sea Co., Ltd.
Work Location: MP Prestige Vessel, Kerry Siam Seaport, Ao-Udom Thailand.
Attention to: [redacted]

Description of Lifting Equipment

CRANE HOOK
S/N : HS 00763
WLL. : 5.00MT.

Note : Equipment(s) Tested/Inspected are shown in Picture below

Method Of Inspection: As per the following Procedures:

- ☑ Intertek : MI-SOP-001-TH2012 rev.3 General Inspection for Lifting Equipment./ Update : 07 April 2021
- ☑ Valeura Energy : Inspection of Lifting Equipment Procedure Doc No. TH-GEN-AI-QA-PRC-0139 Rev R3 Approved on : 25 July 2023
- ☑ PTTEPI: Myanmar Lifting Equipment Inspection Procedure Document No.Myanmar-13264-PDR-070 Revision No.03 Revision Date: Jun 2020.
- ☑ PTTEP: Integrity Management of Container Guideline Document Code: 12089-GDL-5-INT-002-R00Revision Date: June 2023
- ☑ PTTEP:Lifting Equipment Inspection Requirement Summary Guideline Document Code: 10289-GDL-5-INT-001-R00 Revision Date: June 2023
- ☑ PTTEP: General Instruction for PTTEP Lifting Equipment Integrity Management for S1 Asset Document Code: 13245-PDR-5-S1M-ALL-INT-005-R00 Date : February 2023
- ☑ PTTEP: General Instruction for PTTEP Integrity Management of Lifting appliance Guideline (Cranes & Hoists) Document No. 10017-GDL-5-INT-006-R00 Revision Date : Dec 2022
- ☑ PTTEP: General Instruction for PTTEP Lifting Equipment Integrity Inspection Procedure Document No. 10017-PDR-5-INT-012-R00 Revision Date : Dec 2022
- ☑ Chevron Thailand: Portable Lifting Equipment Operating Practices : Appendix 2 -Guide for Examination and Testing of Containers V1.3 (1 Jul 2016)
- ☑ MEDCOENERGI - Lifting Equipment and Accessory Guideline Document No. : THA-HSE-THO-GL-006 Rev.0 Date : 15 November 2022
- ☑ Customer's Instructions.

Scope of Inspection

Thorough Visual Inspection of Lifting Equipment.

Results of Inspection : Satisfactory.

Equipment Used

Vernier Caliper S/N: 19079889 Certificate No: DM-24-0030 Precision Standard Laboratory Co., Ltd. Date of Cal : 02 Feb 2024. Next of Cal : 01 Feb 2025
Measuring Steel Tape S/N: 0-827558-65 Certificate No: NDM-24-0057 Precision Standard Laboratory Co., Ltd. Date of Cal : 02 Feb 2024. Next of Cal : 01 Feb 2025

Notes

This report describe the condition of all items inspected, at time of inspection.
Customer's representative are advised of the condition of all items inspected, at time of inspection or immediately after.
Magnetic Particle Inspection Report (MPI) shall be attached with certificate. Issue by INTERTEK Report No. MI MPI 321/24/020 SAT Date Inspection : 27 Sep 2024
Intertek Industry and Certification Services (Thailand) Ltd. Inspection Report No. ***MI IR 321 / 24 / 001 SAT*** **SEE LIABILITY OVERLEAFT**

Following Procedures Chevron :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures PTTEP :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures PTTEPI :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures Valeura :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Customer : Medco :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures Customer's :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**

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☐ Reviewed
☐ Witnessed

[redacted]

Inspector/Sign Name
Intertek Industry and Certification Services (Thailand) Ltd.

Customer Representative

VISUAL INSPECTION CERTIFICATE

No: MI VI 321 / 24 / 029 SAT

Client Name: Siam Deep Sea Co., Ltd.
Actual Owner: Siam Deep Sea Co., Ltd.
Work Location: MP Prestige Vessel, Kerry Siam Seaport, Ao-Udom Thailand.
Attention to: [redacted]

Description of Lifting Equipment

HYDRAULIC TELESCOPIC CRANE
S/N : HS 00763
Crane Model : ATB 98/12EI
Manufacture : HS MARINE
Boom Length : 12.0M.
SWL. : 5.00MT.
Detail Test : Angle & Radius Boom
Wire Diameter 13.0MM.
Dynamic Test : Function and Good Condition.
Static Test : Function and Good Condition.

Note : Equipment(s) Tested/Inspected are shown in Picture below

Method Of Inspection: As per the following Procedures:

- ☑ Intertek : MI-SOP-001-TH2012 rev.3 General Inspection for Lifting Equipment./ Update : 07 April 2021
- ☑ Valeura Energy : Inspection of Lifting Equipment Procedure Doc No. TH-GEN-AI-QA-PRC-0139 Rev R3 Approved on : 25 July 2023
- ☑ PTTEPI: Myanmar Lifting Equipment Inspection Procedure Document No.Myanmar-13264-PDR-070 Revision No.03 Revision Date: Jun 2020.
- ☑ PTTEP: Integrity Management of Container Guideline Document Code: 12089-GDL-5-INT-002-R00Revision Date: June 2023
- ☑ PTTEP:Lifting Equipment Inspection Requirement Summary Guideline Document Code: 10289-GDL-5-INT-001-R00 Revision Date: June 2023
- ☑ PTTEP: General Instruction for PTTEP Lifting Equipment Integrity Management for S1 Asset Document Code: 13245-PDR-5-S1M-ALL-INT-005-R00 Date : February 2023
- ☑ PTTEP: General Instruction for PTTEP Integrity Management of Lifting appliance Guideline (Cranes & Hoists) Document No. 10017-GDL-5-INT-006-R00 Revision Date : Dec 2022
- ☑ PTTEP: General Instruction for PTTEP Lifting Equipment Integrity Inspection Procedure Document No. 10017-PDR-5-INT-012-R00 Revision Date : Dec 2022
- ☑ Chevron Thailand: Portable Lifting Equipment Operating Practices : Appendix 2 -Guide for Examination and Testing of Containers V1.3 (1 Jul 2016)
- ☑ MEDCOENERGI - Lifting Equipment and Accessory Guideline Document No. : THA-HSE-THO-GL-006 Rev.0 Date : 15 November 2022
- ☑ Customer's Instructions.

Scope of Inspection

Thorough Visual Inspection of Lifting Equipment.
Visual Examination & Function Test.

Results of Inspection : Satisfactory.

Equipment Used

Vernier Caliper S/N: 19079889 Certificate No: DM-24-0030 Precision Standard Laboratory Co., Ltd. Date of Cal : 02 Feb 2024. Next of Cal : 01 Feb 2025
Measuring Steel Tape S/N: 0-827558-65 Certificate No: NDM-24-0057 Precision Standard Laboratory Co., Ltd. Date of Cal : 02 Feb 2024. Next of Cal : 01 Feb 2025

Notes

This report describe the condition of all items inspected, at time of inspection.
Customer's representative are advised of the condition of all items inspected, at time of inspection or immediately after.
Intertek Industry and Certification Services (Thailand) Ltd. Inspection Report No. ***MI IR 321 / 24 / 001 SAT*** **SEE LIABILITY OVERLEAFT**

Following Procedures Chevron :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures PTTEP :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures PTTEPI :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures Valeura :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Customer : Medco :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**
Following Procedures Customer's :	Date of Inspection:	**27-Sep-24**	Next of Inspection :	**26-Sep-25**

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Inspector/Sign Name
Intertek Industry and Certification Services (Thailand) Ltd.

Customer Representative

Magnetic Particle Inspection Certificate

No: MI MPI 321 / 24 / 020 SAT

Client Name: Siam Deep Sea Co., Ltd.
Actual Owner: Siam Deep Sea Co., Ltd.
Work Location: MP Prestige Vessel, Kerry Siam Seaport, Ao-Udom Thailand.
Attention to: [redacted]

Method Of Inspection

- ☐ MPI (Dry Magnetic Power)
- ☑ MPI (Black Magnetic Ink & White Contrast Aid)
- ☐ MPI (Wet Fluorescent Magnetic Particle & Black light)
- ☐ Various methods were used; please refer to picture
- ☑ After Visual inspection
- ☐ Before and After load test.

Acceptance Criteria Procedure/ Specification	Area Inspected	Surface Preparation	Material Used	Equipment Used
☐ AWS D1.1	☐ Lifting Pad eye	☐ Grinding	☑ Magnaflux 7 HF	☑ AC Yoke ☐ Permanent Magnet
☑ ASTM E-709	☐ Weldment Area	☑ Brushing	☑ Magnaflux WCP-2	S/N: 6640 Cert no. D0021
☑ Customer's Instructions	☑ Full Body	☐ Other	☐ Others	Cal Date: 05 Feb 2024
☑ Intertek Procedure No. MI 022 Rev. M 03	☐ Stress Areas			Light Meter S/N:Q892239
	☑ Customer's Indications			Light Intensity: 20,000LUX
				Field Indicator: Pie Gauge

Material type of part Inspected
☑ Carbon steel, Thickness N/A

Calibration Lifting Weight
☑ 10 lb (4.50kg) ☐ 40 lb (18 kg)

Magnetizing Technic	Magnetizing Current type	Magnetic Particle	Particle Application	Surface Temperature
☑ Yoke	☑ AC ☐ DC	☑ Wet ☐ Dry	☑ Spray	☐ Ambient Temp
☑ Continuous ☐ Residual	☐ Permanent	☑ Visible ☐ Fluorescent		

Equipment Identification/Description

Equipment Name	Area, Quantity inspected	Serial No./WIN No.	Remark
CRANE HOOK	1 Ea. Swivel Hook.	HS 00763	
WLL. : 5.00MT.	1 Ea. Shackle.		

Area(s) inspected are indicated in Picture below

Results Of Inspection

- ☐ Crack (S) found (Please see picture)
- ☐ Various results found (Refer to picture)
- ☑ Was found to be free of surface crack at the time of Inspection.
- ☐ Other (See Comments)

At the time of Inspection, no visible defects that could be detrimental to Equipment's Safe Usage are found

Comments:
This certificate represent our finding at time, date and place of inspection only.
Refer to Inspection Report No. ***MI IR 321 / 24 / 001 SAT***

Following Procedures Chevron :	Date of Inspection:	**27 September 2024**	Next of Inspection :	**26 September 2025**
Following Procedures PTTEP :	Date of Inspection:	**27 September 2024**	Next of Inspection :	**26 September 2025**
Following Procedures PTTEPI :	Date of Inspection:	**27 September 2024**	Next of Inspection :	**26 September 2025**
Following Procedures Valeura :	Date of Inspection:	**27 September 2024**	Next of Inspection :	**26 September 2025**
Following Procedures Medco :	Date of Inspection:	**27 September 2024**	Next of Inspection :	**26 September 2025**
Following Procedures Customer's :	Date of Inspection:	**27 September 2024**	Next of Inspection :	**26 September 2025**

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NDT Inspector [redacted]
MT/PT Level II ASNT (SNT-TC-1A)
Intertek Industry and Certification Services (Thailand) Ltd.

Customer Representative

Brecht Technology Calibration Co.,Ltd.
999/84 Moo. 1, T. Nernpra, A. Muang, Rayong 21000.

Magnetic Particle Inspection Report

No: MPI 24-11-027

Client Name: Siam Deep Sea Co., Ltd.
Actual Owner: Vessel MP PROSPER
Work Location: Sattahip Port Chonburi, Thailand.
Attention to: [redacted]

Method Of Inspection

- ☐ MPI (Dry Magnetic Power)
- ☑ MPI (Black Magnetic Ink & White Contrast Aid)
- ☐ MPI (Wet Fluorescent Magnetic Particle & Black light)
- ☐ Various methods were used; please refer to picture
- ☐ VI (Visual Inspection)

Acceptance Criteria.
- ☑ AWS D1.1
- ☑ Customer's Instructions

Standard guide for inspection - MPI.
- ☑ ASTM E-709 - 08

Area Inspected
- ☐ Lifting Pad eye
- ☐ Weldment Area
- ☐ Full Body
- ☑ Stress Areas
- ☑ Customer's Indications

Surface Preparation
- ☐ Grinding
- ☑ Brushing
- ☐ Other

Material Used
- ☑ Magnaflux 7 HF
- ☑ Magnaflux WCP-2
- ☐ Others

Equipment Used
- ☑ Magnetic AC Yoke
- ☐ Permanent Magnet

S/N: 6640 Cert no. D0021
Cal Date: 05 Feb 2024

Note : Area(s) inspected are indicated in Picture below

HOOK OF PROVISION CRANE SWL 5 T. 1 EA. S/N: HS00807

Results Of Inspection

- ☐ Crack (S) found (Please see picture)
- ☐ Various results found (Refer to picture)
- ☑ Was found to be free of surface crack at the time of Inspection
- ☐ Other (See Comments)

At the time of Inspection, no visible defects that could be detrimental to Equipment's Safe Usage are found

Comments:
This certificate represent our finding at time, date and place of inspection only.
Magnetic Particle Inspection (MPI) was examined BEFORE and AFTER the load test.

Following Procedures Chevron :	Date of Inspection:	**30 November 2024**	Next of Inspection :	**1 December 2025**
Following Procedures PTTEP :	Date of Inspection:	**30 November 2024**	Next of Inspection :	**1 December 2025**
Following Procedures Valeura :	Date of Inspection:	**30 November 2024**	Next of Inspection :	**1 December 2025**
Following Procedures Customer's :	Date of Inspection:	**30 November 2024**	Next of Inspection :	**1 December 2025**

NDT [redacted]
Inspector -Level II ASNT (SNT-TC-1A)
Brecht Technology Calibration Co.,Ltd.

BTEC BRECHT TECHNOLOGY CALIBRATION CO.,LTD.

Client

Brecht Technology Calibration Co.,Ltd.
999/84 Moo. 1, T. Nernpra, A. Muang, Rayong 21000.

VISUAL INSPECTION REPORT

No: VI 24-11-010

Client Name: Siam Deep Sea Co., Ltd.
Actual Owner: Vessel MP PROSPER
Work Location: Sattahip Port Chonburi, Thailand.
Attention to: [redacted]

Description of Lifting Equipment

HYDRAULIC TELESCOPIC CRANE
S/N : HS00807
SWL : 5 T.
DIAMETER SLING : 13 MM.

Note : Equipment(s) Tested/Inspected are shown in Picture below

Method Of Inspection: As per the following Procedures:

- ☐ Customer's Instructions.
- ☑ Valeura Energy : Inspection of Lifting Equipment Procedure Doc No. TH-GEN-AI-QA-PRC-0139 Rev. R3 Approved on : 25 July 2023
- ☐ PTTEP General Instruction for PTTEP Lifting Equipment Integrity Inspection Procedure Document No. 10017-PDR-5-INT-012-R00 Revision Date : Dec 2022
- ☑ Chevron Thailand Portable Lifting Equipment Operating Practices Appendix 2 -Guide for Examination and Testing of Containers V1.3 (1 Jul 2016)

Scope of Inspection

Thorough Visual Inspection of Lifting Equipment

Results of Inspection : Satisfactory.

Equipment Used

Vernier Caliper SN: 11199478 Certificate No: D17-010602 Eastern Metrology Service Co., Ltd. Date of Cal : 05 June 2024. Next of Cal : 04 June 2025
Measuring Steel Tape SN: 0-13206-57 Certificate No: D170026 Brecht Technology Calibration Co., Ltd. Date of Cal : 02 June 2024 . Next of Cal : 01 June 2025

Notes

This report describe the condition of all items inspected, at time of inspection.
Customer's representative are advised of the condition of all items inspected, at time of inspection or immediately after.

Following Procedures PTTEP :	Date of Inspection:	**30-Nov-24**	Next of Inspection	**01-Dec-25**
Following Procedures Valeura :	Date of Inspection:	**30-Nov-24**	Next of Inspection	**01-Dec-25**
Following Procedures Customer's :	Date of Inspection:	**30-Nov-24**	Next of Inspection	**01-Dec-25**

[redacted]
Inspector/Sign Name
Brecht Technology Calibration Co.,Ltd.

BTEC BRECHT TECHNOLOGY CALIBRATION CO.,LTD.

Customer Representative

เอกสารแนบที่ 49

ตัวอย่างบันทึกปริมาณสารเคมี และน้ำมัน

DESCRIPTION	LOCATION	BD number	Part number	29-Dec-24	Unit		Equipment
CASTROL Vecton 15W-40	Engine Room Tank	BD141059 No use this BD	15C302	2,100	TK Ltrs		Engine crankcase oil/ Crane engine crankcase oil
CASTROL Vecton 15W-40	sack room	New(BD183278)	15C302	0	200 ltrs Drum		Engine crankcase oil/ Crane engine crankcase oil
Castrol Alphasyn EP460	Pump room		EP-460-55GAl	150	TK Ltrs or Gallons		
Castrol Alphasyn EP460	Main deck	BD101228	EP-460-55GAl	3	200 ltrs Drum		Jacking gearbox/Gumbo g/b/ Mud pump
Castrol Alpha SP 320	Main Deck	BD101225	ALPHASP320-208L-DR	4	200 ltrs Drum		Topdrive gear oil/ Drawwork Gear oil.
Castrol Alpha SP 220	Main Deck	BD101224	AlphaSP220-200L-DR	1	200 ltrs Drum		Deck Crane gear oil/ Anchor winch/ oil sep
Castrol Alpha SP 220	Main Deck Storage Tank	BD101224	AlphaSP220-200L-DR	540	TK Ltrs		
Castrol Alphasyn EP220	Main Deck			0	200 ltrs Drum		Agitator gearbox,
Castrol Alpha SP 150	Main deck / Hazard Area	BD100828	AlphaSP150200LDR	0	200 ltrs Drum		All Hyd. winch Gear oil/Lifeboat davit
Castrol Alpha SP 150	Main Deck Storage Tank #2	BD100828	AlphaSP150200LDR	1,100	TK Ltrs		All Hyd. winch Gear oil/Lifeboat davit
Fluid, Aqualink 300F	Main Deck	BD101556	300FV2	7	200 ltrs Drum		
Fluid, Aqualink 300F	Storage Tank under cantilever	BD101556	BD101556	1,200	Liters		
Houghto-Safe 273 CTF (Fluid Glycol)	Main Deck			0	200 ltrs Drum		
Castrol Hyspin AWS 68	Main Deck	BD136369	HYSPIN AWS 68/208L-DR	4	200 ltrs Drum		Crane hydraulic oil /Rig central HPU, Skidding HPU
Castrol Hyspin AWS 68	Main Deck Storage Tank #1	BD136369	HYSPIN AWS 68/208L-DR	830	TK Ltrs		Preload HPU/Trash Compactor
Castrol Hyspin AWS 32	Main Deck Storage Tank	BD101232	HyspinAWS32-208L-DR	350	TK Ltrs		Preload HPU/Trash Compactor
Castrol Hyspin AWS 32	Main Deck	BD101232	HyspinAWS32-208L-DR	1	200 ltrs Drum		Drawwork Hydraulic oil
Castrol Hyspin AWS 22	Main Deck Storage Tank	BD101231	HYSPINAWS22-210L-DR	600	TK Ltrs		Drawwork Hydraulic oil
Castrol Hyspin AWS 22	Main Deck	BD101231	HYSPINAWS22-210L-DR	1	200 ltrs Drum		
COMPRESSOR PTT ISO VG 46	Hazard Area 2	BD191559		9	18 LTR/PAIL		Air compressor oil
Castrol Hyspin AWH-M15	Hazard Area 1			6	Pail(18 ltrs)		Air lubricator
Castrol Axle GL-5 80W-90	Main Deck	BD101227	AxleEPX80W90-209L-DR	1	200 ltrs Drum		Deck crane gear oil (Currently using Alpha SP220)
CHEMICAL, SAFE-ACID	Hazard Area 2	BD149945	777232	2	bags (20 kg.)		Acid all heat exchangers
HDC-ASI-001/002 (Anti Scalant)	Hazard Area	BD101955	0920-HDASI02B/ECO2	2	25Ltr.		
HDC-ALK-002	Hazard Area	BD101954	0920-HDALK02B	3	25Ltr.		
HDC-ACD-001	Drill water room/Hazard area	BD101953	0920-HDACD01A	2	10 Lts.		
HDC-CON-001	Port Aux.room	BD101956	0920-HDCON01C	4	10 Lts.		
SOLVENT, WATER BASED	Hazard area	BD103606	PBA733	0	Pail(18 ltrs)		
CLEANER, ELECTRIC	mechanical workshop	BD101394	2020.00	0	Pail(18 ltrs)		CLEANER, ELECTRIC
TREATMENT, EVAPORATOR AMEROYAL	Port Aux.room	BD100699	0024-40-6	6	Pail(18 ltrs)		Alfa laval
CHEMICAL, SODIUM BISULPHITE	Stbd Aux. room	BD101932	777852	2	Pail(18 ltrs)		Sewage treatment unit
CHEMICAL, SODIUM HYPOCHLORITE	Stbd Aux. room	BD101931	B18013	0	Pail(18 ltrs)		Sewage treatment unit
OIL, HYDRAULIC ISO 68, CRANKCASE	Port/fwd aux room	BD136166	6105	4	18Ltr		
Water, Distrilled 5 Gal	Stbd Aux. room	BD102733	DW-5GAL	12	5 Gallons		Electrical batteries
Oil, Turbine, Mineral T68	Stbd Aux. room	BD136162	PERFECTOT68-20L PL	0	Pail(18 ltrs)		Shaker Vibration Motor
BIOCIDE,fuel and storage tanks biocontr	Stbd Aux. room	BD112681	571257	6	25Ltr.		FUEL OIL TANK
Additive coolant NALFLEET 2000	Stbd Aux. room	BD198910		9	25Ltr.		Engine coolant
COOLEDGE OIL BI	Port/fwd aux room	BD101550		0	Pail(18 ltrs)		
AFT Dex III	Port/fwd aux room			2	Pail(18 ltrs)		
Heavy duty Energized Electrical Cleaner	Stbd Aux. room	BD101394	CRC02021	5	20Ltr.		
Electrosolv-E	Hazard Area 2			0	25Ltr.		
Oil,Hydraulic ISO 68 Crankcase	Warehouse	BD136166	6105 Cat pump Corp.	0	Pail(5 ltrs)		For RO Cat pump.
Perfecto X 68	Main Deck			3rd January 2024	200 ltrs Drum		Shaker Vibration Motor

CHEMICAL INVENTORY FORM

(COR-FRM-0837) - Rev. 1 | Corporate Safety

Borr Drilling

For a definition of what the headings mean, pass the mouse cursor on top of a blue cell with a small red triangle.

Installation MIST

MASTER COPY TO BE MAINTAINED ELECTRONICALLY

MARINE

Storage Location	Type of Substance	Substance Name	IFS - BD Number (If Applicable)	Manufacturer	Use	SDS Available	Chemical Risk Assessment Available (If required)	Container Capacity	Container Type	Total Number of Containers in Stock	Total Quantity of Product in Stock	Remarks
Paint Locker	Liquid	JOTUN ALKYD HIGH GLOSS BLUE (5017)	N/A		PAINT			2.7 Ltr		4		
Paint Locker	Liquid	JOTUN ALKYD HIGH GLOSS BLACK (9005)	N/A		PAINT			2.7 Ltr		11		
Paint Locker	Liquid	JOTUN HARDTOP GREY XP 7037	N/A		PAINT			16.4 Ltr.		5		
Paint Locker	Liquid	JOTUN HARDTOP XP 5017 TRAFFIC BLUE	N/A		PAINT			16.4 Ltr.		0		
Paint Locker	Liquid	JOTUN HARDTOP XP 0537 SIGNAL RED	N/A		PAINT			16.4 Ltr.		0		
Paint Locker	Liquid	JOTUN HARDTOP GREEN XP 6032	N/A		PAINT			16.4 Ltr.		0		
Paint Locker	Liquid	JOTUN HARDTOP XP YELLOW RAL 1023	N/A		PAINT			4.55 Ltr.		8		
Paint Locker	Liquid	JOTUN HARDTOP XP 9005 BLACK	N/A		PAINT			16.4 Ltr.		0		
Paint Locker	Liquid	JOTUN HARDTOP XP 9003 WHITE	N/A		PAINT			16.4 Ltr.		6		
Paint Locker	Liquid	HARDTOP SIGNAL VIOLET PART A	N/A		PAINT			4.1 Ltr		6		
Paint Locker	Liquid	HARDTOP XP PART B	N/A		PAINT			0.45 Ltr		16		
Paint Locker	Liquid	HARDTOP XP COMP B	N/A		PAINT			1.8 Ltr.		6		
Paint Locker	Liquid	BALLOXY HB LIGHT,BEIGE (FINAL COAT)	N/A		PAINT			20 Ltr.		1		
Paint Locker	Liquid	JOTAMASTIC 80 COMP A (GRAY)	N/A		PRIMER			16 Ltr		15		
Paint Locker	Liquid	JOTAMASTIC 80 COMP B	N/A		PRIMER			2.3 Ltr		15		
Paint Locker	Liquid	BALLOXY HB LIGHT,GREEN (FIRST COAT)	N/A		PRIMER			20 Ltr.		1		
Paint Locker	Liquid	JOTAMASTIC 90 COMP A (ALUMINIUM)	N/A		PRIMER			3.55 Ltr.		13		
Paint Locker	Liquid	JOTAMASTIC 90 COMP B	N/A		PRIMER			1 Ltr.		13		
Paint Locker	Liquid	JOTAMASTIC 90 COMP A (STD049 RED)	N/A		PRIMER			3.5 Ltr.		13		
Paint Locker	Liquid	JOTAMASTIC 90 COMP B	N/A		PRIMER			1 Ltr.		13		
Paint Locker	Liquid	THINNER NO.17	N/A		THINNERS			20 Ltr		12		
Paint Locker	Liquid	THINNER NO. 10	N/A		THINNERS			20 Ltr		5		
Paint Locker	Liquid	Jotun Anti skid coarse (sand)	N/A		THINNERS			3 Ltr		6		
Paint Locker	Liquid	T32 Rust Remover (TRIMAR EUROLUBE)	N/A		THINNERS			1000 Ltr.		1		

MP PRESTIGE

Lub.oil, Hyd.oil,Gear oil & Graese Inventories

Item No	Descriptions	Part No.	Last MTB	Recvd	Cons	ROB	Unit	Locations	Remarks
1	[redacted]	Main Engines	900			900	Liters	Storage Tk / Engine Room	Caltex using
2	[redacted]	Aux. Engines	300			300	Liters	Second floor STBD,E/R	
3	Shell Tellus S2 VX 32	Steering Gear & CPP	630			630	Liters	Steering Gear Storage+ Power Pack Deck	Hyd.oil in Log book
4	Shell Tellus S2 VX 68	Deck Machineries/Water tight doors	960			960	Liters	Hydraulic Storage Tk STBD	Hyd.oil in Log book
5	[redacted]	FiFi Gearbox / Resoue Boat Davit	652			652	Liters	AIR MANIFOLD E/R	[redacted]
6	[redacted]	Purifier	70			70	Liters	E/R	
7	[redacted]	Stern Tubes	130			130	Liters	Drum under Gravity Tank Stern Thruster	
8	[redacted]	Bow & Stern Thrusters	360			360	Liters	Winch room Stbd.	[redacted]
9	Shell Gadus S2 V220 1 Grease/CaltexMultilak EP	Intermediate Shafts	24			24	Kgs	Stbd. Steering gear room	1 Bucket=16 Kgs
10	Shell Gadus S2 V220 2 Grease/Mobilux EP2	BJT & SJT , Pumps, Electric Motors	24			24	Kgs	Stbd. Steering gear room	1 Bucket=16 Kgs
11	Shell Gadus S2 V220 3 Grease/Caltex Mobil EP 3	Shaft Generator Motors	10			10	Kgs	Stbd. Steering gear room	1 Bucket=16 Kgs
12	Shell Gadus S2 A320 2 Grease	Multipurpose	9.5			9.5	Kgs	Stbd. Steering gear room	1 Bucket=16 Kgs
13	[redacted]	Dry Bulk Comp.	10			10	Liters	Stbd. Steering gear room	1 Bucket=18 Lites
14	[redacted]	Dry Bulk Comp.	65			65	Liters	Stbd. Steering gear room	1 Bucket=18 Lites

MARCO POLO MARINE

MARCO POLO MARINE

Inventory of Chemical and Lub Oil

MP PROSPER

Update : 31-12-2024

No	Description	P/N	Last Mont	Recv	Cons	Rob	Unit	Location	Remarks
					LUBE OIL & GEAR OIL				
1	SHELL GADINIA S3 40 (ME)		822	1045	710	1157	LTR	Store Tank	ME / ME GEARBOX
2	SHELL SIRIUS S4 15W40 (A/E)		280	624	165	739	LTR	Store Tank p	MAIN/EMERG. GENSET/Mud punp
3	OMALA S2 G 150		348		5	343	LTR	In drum(Crane)	PURIFIER
4	OMALA S2 GX68		114			114	LTR	In Drum Engine room	JOURNAL BRG/FIFI G.B/CRANE
5	OMALA S2 GX100		423		10	413	LTR	In drum(Winch Room)	THRUSTERS
6	CORENA S2 P 100		15			15	LTR	Pail in engine room	MAIN AIR COMPRESSOR
7	REFRIGRATION OIL S4 F68 B		2			2	LTR	PAIL(NEAR REEFER AREA)	REFRIGRATION COMPRESSOR
8	CORENA S4 R 46		80			80	LTR	Pail in engine room	BULK COMPRESSOR
					HYDRAULIC				
1	TELLUS S2 V32		675		5	670	LTR	In drum(E/R,Winch Room)	CPP MAIN ENGINE/STEERING GEAR
2	TELLUS S2 V 68		394		15	379	LTR	In drum(Winch room)	AHT/TOW PIN/CAPSTAN
					GREASE				
1	GADUS S2V 100 3 @18KG		0			0	KG	E/R Stbd Side Tk Top	General Grease
2	Mobil Grease XHP"222 @16kg	NLGI-2	1			1	KG	E/R Stbd Side Tk Top	Bow thruster,Stern Thruster Bearing
2	PTT GREASE		12			12	KG	E/R Stbd Side Tk Top	General Grease
3	Mobil Grease EP3 @16kg		18			18	KG	E/R Stbd Side Tk Top	FOR SHAFT GEN ALTERNATOR BEARING
					CHEMICAL				
1	Coolant (FALCHEM) @20ltrs		3			3	LTRS	E/R Stbd Side Tk Top	Main Engine
2	ELC Extended Life Coolant (CAT) @18 ltr	365-8396	14	90	14	90	LTRS	E/R Stbd Side Tk Top	Auxiliary Engine
3	Coolant (OSAKA)		25			25	LTRS	Em'cy Generator	Emergency Generator
4	Coolant (PG-PLUS)@20ltrs		30			30	LTRS	E/R Stbd Side Tk Top	
5	Chemax C301L		50			50	LTRS	E/R Stbd Side Tk Top	
6	Rocor NB Liquid		15		5	10	LTRS	E/R Stbd Side Tk Top	Main Engine
8	Cleaning Soap (Teepol)@20ltrs		30			30	LTRS	E/R Stbd Side Tk Top	Cleaning floor
9	Descular BK-2000 @20ltrs		10			10	LTRS	E/R Stbd Side Tk Top	

10	Degreaser,CLEANBREAK		8			8	LTRS	E/R Stbd Side Tk Top	General Used
11	Electric Motor Cleaner		15		5	10	LTRS	E/R Stbd Side Tk Top	
12	Metal Brite		8			8	LTRS	E/R Stbd Side Tk Top	

CHECKED BY :

SIGNATURE :

ACKNOWLEDGE

SIGNATURE:

เอกสารแนบที่ 50

เอกสารรับรองและตัวอย่างผลการตรวจสอบอุปกรณ์ป้องกันการพลุ่ง

CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR DRILLING MALAYSIA SDN BHD

P.O. NUMBER: P48356

S.O. NUMBER: 0000145

DESCRIPTION: RAM, BLOCK ONLY, VBR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP X 3-1/2" TO 5-1/2" VARIABLE BORE. NEW MFG, API 16A, INDUCTION HARDENED, T-20/250, H2S SERVICE PER NACE MR-0175 SPECIFICATIONS. REF PN - 2011438-01.

PART NUMBER: 61773-06-40

SERIAL NUMBER(S): 252-19, 285-19, 231-19, 249-19, 242-19, 292-19

QUANTITY: 6

Ram Blocks were manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. Ram Blocks meet and exceed design criteria of OEM manufactured specification. Ram Blocks meet NACE MR-0175 & H2S Service Specification. Ram Blocks are 100% compatible to be used in Type U manufactured Blow Out Preventers.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Products, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements

Brittany Dalhoff
B.O.P. Products, LLC

August 31, 2020
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

HARDNESS CERTIFICATION REPORT

DATE: 08/31/2020

CUSTOMER: BORR DRILLING MALAYSIA SDN BHD

CUSTOMER P.O.: P48356

ATTENTION QUALITY CONTROL DEPARTMENT

THE RAMS LISTED BELOW WERE HEAT TREATED AS PER BOP PROCESS IN-450-A AND B CORE HARDNESS REQUIREMENTS: 235-255
INDUCTION HARDENED BLADE REQUIREMENTS: IN-450B 48-53RC
INDUCTION HARDENED PIPE REQUIREMENTS: IN-450A 43-53RC
KING HARDNESS TESTER: SERIAL UH-45 RECALL DATE 04/01/2020 TO 04/01/2021
CLARK HARDNESS TESTER: MODEL CPT, S/N 02376, RECALL DATE 08/07/20 TO 11/07/20

PURCHASE ORDER #	SERIAL #	CORE HARDNESS	BLADE HARDNESS	PIPE HARDNESS
P48356	252-19	248 BHN	N/A	48-48-49
P48356	285-19	241 BHN	N/A	48-49-50
P48356	231-19	255 BHN	N/A	53-53-52
P48356	249-19	255 BHN	N/A	48-50-50
P48356	242-19	235 BHN	N/A	49-50-51
P48356	292-19	255 BHN	N/A	49-48-49

BOP PRODUCTS, LLC
QUALITY CONTROL DEPARTMENT

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

PRINTED 6/19/2019

LARK HEAT TREATING, INC.
6640 MAYARD HOUSTON, TEXAS 77041
(713) 937-9089

JOB NO. 742334

CERTIFICATION

Customer:	Phone:	P.O. No:	Heat Number:	Revision
B.O.P. PRODUCTS, LLC	281-955-6321	PO-190614001		

PO Box 692172
Lisa@bop-products.com
HOUSTON, TX 77269

Material: 4140 **Specification:** BOP MS-300 REV 1 & PROCEDURE:DSP TASK 22A REV 3

Quantity	Weight	Part No.	Description	Other No.
6	2255	LINE 1	13-5/8" VBR (3-1/2" TO 5-1/2") RAMS	
		SN#229-19,	230-19, 231-19, 232-19, 233-19, 234-19	
4		LINE 2	13-5/8" (3-1/2" TO 5-7/8")VBR RAMS	
			SN# 18-919, 190-19, 191-19, 192-19	
			INDUCTION HARDEN PER SPEC	250.75

Note: S/N: 189-19 Arc burned on induction area during processing. - Hardness readings by serial number - SN:229-19)52-52-53, #230)51-52-52, #231)53-53-52, #232)52-51-53, #233)52-52-50, #234)52-53-52, #189)52-52-51, #190)52-52-53, #191)51-50, 50, #192)52-52-51 HRC

	Process Instructions	Heat Temp	Heat Time	ATMO	Coolant	Start	End	(1) Chart	(2) TC Time
1	INDUCTION HARDEN	1650	1MN	AIR	POLYMER				
2	TEMPER	600	2.00	AIR	AIR				

Hardness: 50-53 HRC **NO. Pieces Tested:** 10 **Other:**

(1) Furnace Charts included if indicated
(2) Time at temperature as measured by attached thermocouple chart.

Authorized Signature

*** All times expressed in hours unless designated in minutes by (mn).**
This work was accepted and processed pursuant to the Metal Treating Institute (MTI) statement of limited liability. The full statement is printed on the back hereof. Revision 1 - 02/01/01

PRINTED 8/20/2019

LARK HEAT TREATING, INC.
6640 MAYARD HOUSTON, TEXAS 77041
(713) 937-9089

JOB NO. 745082

CERTIFICATION

Customer:	Phone:	P.O. No:	Heat Number:	Revision
B.O.P. PRODUCTS, LLC	281-955-6321	PO-190813007		

PO Box 692172
Lisa@bop-products.com
HOUSTON, TX 77269

Material: 4140 **Specification:** BOP MS-300 REV 1 & PROCEDURE:DSP TASK 22A REV 3

Quantity	Weight	Part No.	Description	Other No.
12	2648	LINE 1	13-5/8" 3-10K X VBR(3-1/2"TO 5-1/2")	RAM BLOCK
			SN#241-19 TO 252-19	
3	662	LINE 2	13-5/8" 3-10K X VBR(3-1/2"TO 5-1/2")	RAM BLOCK
			SN# 285-19, 287-19, 292-19	
			INDUCTION HARDEN PER SPEC	250.75

Note: #241)49-50-48, 242)49-50-51, 243)52-52-51, 244)50-51-51, 245)50-50-50, 246)50-51-49, 247)51-52-50, 248)51-52-50, 249)48-50-50, 250)49-50-51, 251)50-49-50, 252)48-48-49, 285)48-49-50, 287)49-49-50, 292)49-48-49 HRC

	Process Instructions	Heat Temp	Heat Time	ATMO	Coolant	Start	End	(1) Chart	(2) TC Time
1	INDUCTION HARDEN	1650	1MN	AIR	POLYMER				
2	TEMPER	550	2.00	AIR	AIR				

Hardness: 48-52 HRC **NO. Pieces Tested:** 15 **Other:**

1) Furnace Charts included if indicated
2) Time at temperature as measured by attached thermocouple chart.

Authorized Signature

All times expressed in hours unless designated in minutes by (mn).
This work was accepted and processed pursuant to the Metal Treating Institute (MTI) statement of limited liability. The full statement is printed on the back hereof. Revision 1 - 02/01/01

MATERIAL CERTIFICATION REPORT

DATE: 08/31/2020

CUSTOMER: BORR DRILLING MALAYSIA SDN BHD

CUSTOMER P.O.: P48356

ATTENTION QUALITY CONTROL DEPARTMENT

THE RAMS LISTED BELOW WERE MACHINED FROM MATERIAL SUPPLIED BY:

STOOSS, USA

EACH RAM IS IDENTIFIED ON THE BUTT WITH: MFG USA, SERIAL AND HEAT NUMBER

QTY	SIZE	PIPE SIZE	DRIFT/GAUGE	HEAT #	SERIAL #
1	13-5/8" 3/10M	VBR, 3-1/2"-5-1/2"	PASSED	183197	252-19
1	13-5/8" 3/10M	VBR, 3-1/2"-5-1/2"	PASSED	183197	285-19
1	13-5/8" 3/10M	VBR, 3-1/2"-5-1/2"	PASSED	183197	231-19
1	13-5/8" 3/10M	VBR, 3-1/2"-5-1/2"	PASSED	183197	249-19
1	13-5/8" 3/10M	VBR, 3-1/2"-5-1/2"	PASSED	183197	242-19
1	13-5/8" 3/10M	VBR, 3-1/2"-5-1/2"	PASSED	183197	292-19

BOP PRODUCTS, LLC
QUALITY CONTROL DEPARTMENT

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

Magnetic Particle Examination Report

☐ *Initial Inspection* ☐ *WIP* ☒ *Final Inspection*

Facility Name:	BOP PRODUCTS, LLC	Inspection/Report Date:	08/31/2020
Customer Name:	BORR DRILLING MALAYSIA SDN BHD	P.O. Number:	P48356
S.O. Number:	0000145	Quantity:	6
Test Procedure:	OP 8.2.4.1	Revision Level:	4th ED
Acceptance Standard:	API 16A	Revision Level:	CURRENT
Part Description:	RAM, BLOCK ONLY, VBR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP X 3-1/2" TO 5-1/2" VARIABLE BORE. NEW MFG, API 16A, INDUCTION HARDENED, T-20/250, H2S SERVICE PER NACE MR-0175 SPECIFICATIONS. REF PN - 2011438-01.		

Test Method:	☐ Continuous ☐ Residual ☐ True Continuous ☐ Other: ☒ Yoke AC ☐ Yoke DC		
Particles / Light	☒ Wet ☐ Dry	Concentration:	11g/L
	☐ Fluorescent ☒ Visual	Ambient Light (Lux):	1076
	Manufacturer: CircleSafe 850A Batch: 19650		

Item Serial #	Heat Number	Temp F°	Area Under Examination (Scope of Examination)	Pass	Fail	Inspection Results (If Necessary Reference Sketch Below)
252-19	183197	84	100% SURFACE AREA	☒	☐	NO INDICATIONS
285-19	183197	84	100% SURFACE AREA	☒	☐	NO INDICATIONS
231-19	183197	84	100% SURFACE AREA	☒	☐	NO INDICATIONS
249-19	183197	84	100% SURFACE AREA	☒	☐	NO INDICATIONS
242-19	183197	84	100% SURFACE AREA	☒	☐	NO INDICATIONS
292-19	183197	84	100% SURFACE AREA	☒	☐	NO INDICATIONS
Product / Equipment Description (Draw Sketches, if Necessary):						

Inspector Performing MP Signature:	[redacted]	I:	II	Date:	08/31/2020
Inspector Reviewing MP Report Signature:	[redacted]	I:	II	Date:	08/31/2020

Form 137 Rev 1 March 2019

CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR DRILLING MALAYSIA SDN BHD

P.O. NUMBER: P48356

S.O. NUMBER: 0000145

DESCRIPTION: PACKER, VBR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP X 2-7/8" TO 5" AND 3-1/2" TO 5-1/2" VARIABLE BORE. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS. REF PN: 20372043.

PART NUMBER: 51773-03-01

BATCH NUMBER: E28707 (6), E28860 (3)

MFG DATE: 08/2020

EXP DATE: 08/2023

QUANTITY: 9

Packers were manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. Packers meet and exceed design criteria of OEM manufactured packer specification.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Product, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

Brittany Dalhoff
B.O.P. Products, LLC

August 31, 2020
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR DRILLING MALAYSIA SDN BHD

P.O. NUMBER: P48356

S.O. NUMBER: 0000145

DESCRIPTION: TOP SEAL, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP. VARIABLE BORE RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS. REF PN: 20350255.

PART NUMBER: 51700-04-05-DD-01

BATCH NUMBER: 1901

MFG DATE: 04/2020

EXP DATE: 04/2023

QUANTITY: 9

Top Seals were manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. Top Seals meet and exceed design criteria of OEM manufactured packer specification.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Product, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

Brittany Dalhoff
B.O.P. Products, LLC

August 31, 2020
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

Reg. Nr.: 10537

SCHMIEDEWERK **STOOSS** AG
BRINGT STAHL IN FORM

TÜV nach AD 2000 W 0 / TRD 100 / PED 2014/68/EU Annex I / Bureau Veritas
DET NORSKE VERITAS - Germanischer Lloyd - Lloyd's Register of Shipping
URZAD DOZURU TECHNICZNEGO, UDT-Polen, American Bureau of Shipping
Russian Maritime Register of Shipping

EN 10 204 3.1

ST

Herstellerzeichen
Manufacturer's stamp
Sigle du fabricant
ORIGINAL

Dokumentation / Documentation / Documentation

Kunde/ Customer/ Client	B.O.P. Products, LLC 9118 Sweetbrush Houston, Texas 77269 USA	unsere Ref./ Certificate no./ No.	73623A12
Kd.Bestell Nr./ PO no./ No de commande	4385 / 190606005 ✓	Position/ Item/ Poste	1
Bezeichnung/ Description/	RAM Forging ✓	Anzahl/ Quantity/ Quantité	6 ✓
Kd. Material/ Cust. Material/ Nuance matière	ASTM A 29 Grade 4140 (AISI 4140) ✓	Charge Nr./ Heat no./ No.de coulée	183197 ✓
Lieferzustand/ Condition of delivery/ Etat de livraison	Unmachined ✓	Dimension/ Dimension	BS 350.0 x 204.0 x 407.0 mm
Kd. Zeichn. Nr./ Cust. drawing/ Plan	F-14356-1 Rev.C	Liefergewicht/ Weight of delivery/ Poids livré	6450 kg
Artikel No./ Part no./ No. d'article	--	Probe Nr./Test no./ No. d'essai	65610 ✓
Kd. Spezifikation/ Cust.Spec./ Spec. Client	MS-200 Rev.2 / NACE MR0175ISO 15156 1st Ed.		
Stempelung/ Marking/ Marquage	73623A12 / 183197 painted: 73623A12 label: 73623A12 / ASTM A 29 Grade 4140 (AISI 4140) / 183197 / 4385 / F-14356-1 / ST 65610 QI		
Visuelle Prüfung/ Visual inspection/ Contrôle	in Ordnung/ accepted/ accepte	Massstabroite/Dimension Dimensionelle	in Ordnung/ accepted/ accepte

Inhaltsverzeichnis / Content / Contenu

Materialzeugnis / Material test report / Certificat matière 2
Wärmebehandlungsprotokoll / Test report heat treatment / Fiche de traitement thermique 4
Zerstörende Prüfung / Destructive testing / Essai destructif 16
Zerstörungsfreie Prüfung / Non destructive testing / Essais non destructifs 19

Wir bestätigen, dass das Produkt gemäss der Norm ISO 9001 produziert wurde und die Lieferung den Vereinbarungen bei der Kundenbestellnummer:4385 entspricht.
We confirm that the product was produced under a quality system ISO 9001 and in acc to. to PO 4385.
Produit et testé selon le Système d'Assurance Qualité EN-ISO 9001 et les Conditions Générales d'Achats No.de Commande 4385.

Werksachverständiger / Inspector / Inspecteur :

6-10-2019

SCHMIEDEWERK STOOSS AG
Malenbrunnenstrasse 9 CH-8908 Hedingen Tel.+41 43 322 6200 Fax +41 43 322 6200 www.stooss.com info@stooss.com

Reg. Nr.: 10537

SCHMIEDEWERK **STOOSS** AG
BRINGT STAHL IN FORM

TÜV nach AD 2000 W 0 / TRD 100 / PED 2014/68/EU Annex I / Bureau Veritas
DET NORSKE VERITAS - Germanischer Lloyd - Lloyd's Register of Shipping
URZAD DOZURU TECHNICZNEGO, UDT-Polen, American Bureau of Shipping
Russian Maritime Register of Shipping

EN 10 204 3.1

ST

Herstellerzeichen
Manufacturer's stamp
Sigle du fabricant
ORIGINAL

Chemische Zusammensetzung gem. Hersteller / Chemical composition according to manufacturer / Analyse chemique de la coulée selon fabricant

Heat no.	C	Si	Mn	P	S	Cr	Mo
183197	0.400	0.24	0.83	0.008	0.011	1.07	0.22
RUBIERA	Ni	V	Al	Cu	N	Sn	H
	0.21	0.004	0.020	0.14	0.0064	0.008	0.00012

Melting practices: VD

Reduction ratio: > 3:1
Test Specimen taken from a saparally forged QTC 4"x4"x8" from the same heat as production parts
No welding repair has been performed out on forgings.

RUBIERA SPECIAL STEEL S.P.A.

ISO 9001 TÜV NORD EMAS

Società unipersonale
Capitale Soc. € 1.000.000 int. versato
SEDE LEGALE: Via Valeriana 103, 23015 Dubino (SO)
UFFICI E STABILIMENTO: Via XXV Aprile 64, 42013 Casalgrande (RE)
Tel. +39 0522 997200 – Fax +39 0522 840040 - Partita IVA e Codice Fiscale 00662720140
Società soggetta all'attività di direzione e coordinamento di RHC MILI S.p.A.
Iscritta al Registro Imprese di Sondrio al numero 00122100142

CERTIFICATO DI COLLAUDO N.ro C-0075721 del 25.10.2018	**COLATA N.** 183197
TEST CERTIFICATE in accordo EN 10204 3.1	HEAT N.
Manuale del Sistema di Gestione Aziendale Rev.01 del 06-08-2018	
Spett.le/ Cestomer: **SCHMIEDEWERK STOOSS AG** **MAIENBRUNNENSTRASSE 8** **CH-8908 HEDINGEN** **SVIZZERA**	Vs. ordine N. **14114** Your order N.
Lingotti/Billette Ingots/Billets: **LINGOTTI BASSO LEGATI SV RT600L N.6**	Non sono state eseguite saldature su materiale No welding filler metal has been performed on material
Acciaio Steel grade: **AISI4140 - NV52 Rev.5 / 42CrMo4**	Elaborazione a forno elettrico sottovuoto Arc furnace processing with vacuum degassing

ANALISI CHIMICA (di colata)
CHEMICAL ANALYSIS (ladle analysis)

C %	Mn %	Si %	P %	S %	Cr %	Ni %	Mo %	Cu %	Sn %	Al %	H ppm	N %	V %	848 %
0,409	0,83	0,24	0,008	0,011	1,07	0,21	0,22	0,14	0,008	0,020	1,2	0,0064	0,004	0,040
J %														
171,2														

CARATTERISTICHE MECCANICHE
MECHANICAL PROPERTIES

Provetta tipo Test specimen	Carico di snervamento Yield strength R	Carico di rottura Tensile strength Rm	Allungamento Elongation A	Strizione Reduction of area Z	Durezza Brinell hardness	Resilienza Impact strength	Trattamento termico Heat treatment	
	N/mm²	N/mm²	%	%		J	Normalized	Quenched and tempered
					270			

INCLUSIONI Guarantee according to DIN50602 MET.K4
INCLUSIONS

GRANO AUSTENITICO
AUSTENITIC GRAIN SIZE

K4						
<= 20						

JOMINY EN ISO 642

1,5 HRC	3,0 HRC	5,0 HRC	7,0 HRC	9,0 HRC	11,0 HRC	13,0 HRC	15,0 HRC	20,0 HRC	25,0 HRC	30,0 HRC	35,0 HRC	40,0 HRC	45,0 HRC	50,0 HRC	Trattamento termico Heat treatment
57,0	56,5	56,0	55,0	54,0	53,5	53,0	51,5	48,0	44,0	43,0	41,0	39,0	38,0	37,0	850

Osservazioni [note]
(848)-(4*P)+(5x. (J) (Si+Mn)*(P+Sn)/ 10000. ANNEALED INGOTS - N.6 AVERAGE INGOT WEIGHT : 11000 Kg - THEORETIC HEAT WEIGHT:66000 Kg. - "Material free of radioactive contamination." - No welding with filler metal has been performed - "Rev.1"

Collaudo Tester | Responsabile Qualità Quality Manager

Reg. Nr.: 10537

SCHMIEDEWERK **STOOSS** AG
BRINGT STAHL IN FORM

TÜV AD 2000 W 0 / TRD 100 / PED 2014/68/EU Annex I
Bureau Veritas, DNV GL, Lloyd's Register of Shipping
Urzad Dozoru Technicznego, American Bureau of Shipping
Russian Maritime Register of Shipping

Herstellerzeichen
Manufacturer's stamp
Marque de fabricant

ST

ORIGINAL

Wärmebehandlungsprotokoll / Test report heat treatment / Fiche de traitement thermique

	Stooss Ref. Certificate no. No. Certificat	73623 A12,A1R

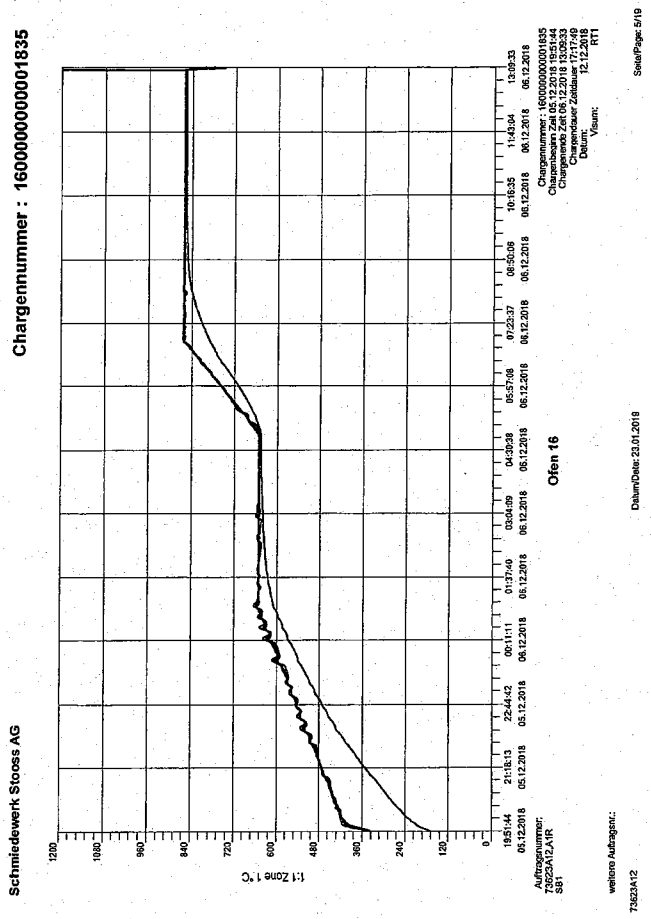
Wärmbehandlung / *Heat treatment/ Traitement thermique:*

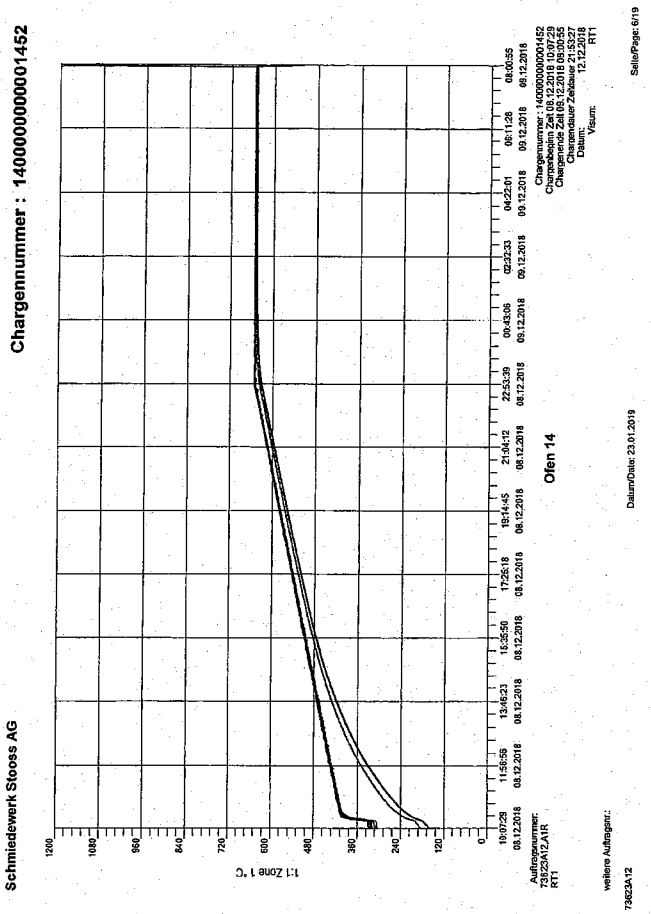
	Ofen / furnace / four Batch No. #	Temperatur / temperature / température / °C	Zeit / time / temps /h	Abkühlmedium cooling medium Type de refroidissement
Normalisieren / normalising / normalisation	01-766	880	4	Luft/ air/ air
Härten / hardening / durcissement	16-1835	880	4	Polymer
Anlassen / Tempered / revenu	14-1452	650	7	Luft/ air/ air

Härteprüfung / *Hardness test/ test de dureté:*

Vorschrift specification spécification EN ISO 6506-1:02.2015		Prüfmethode Test Method Méthode d' essai	HBW	Sollwerte/ Requirements/ Valeurs Imposées:235-255	
Belastungsdauer Load time durée de charge	10 Sek.	Prüfdruck Testing pressure pression d'épreuve	3000 kg	Kugel Ø Ball Ø bille Ø	10 mm
1.	251	12.	254	23.	252
2.	254	13.	250	24.	251
3.	253	14.	252	25.	250
4.	248	15.	254	26.	254
5.	254	16.	255	27.	252
6.	252	17.	251	28.	252
7.	249	18.	249	29.	251
8.	251	19.	251	30.	253
9.	251	20.	252	Pr.:	255.254
10.	252	21.	252		
11.	253	22.	255		
Visum / sign / signature:HR1			Datum / date / date: 12.12.2018		

SCHMIEDEWERK STOOSS AG
Malenbrunnenstrasse 9 CH-8908 Hedingen Tel. +41 43 322 6200 Fax +41 43 322 6201 www.stooss.com info@stooss.com

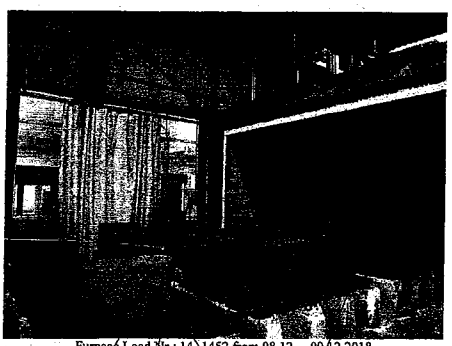




STOOSS

Foto
Heat Treatment Batch

Order No.
73623 – 4365



Furnace Load Nr.: 14-1452 from 08.12. – 09.12.2018

2 x Thermocouples No.: 122100 / 81 and 122100 / 76

30 x 73623 A12
1 x 73623 A1R (sacrificial part)

08.12.2018 R.Thomas

STOOSS

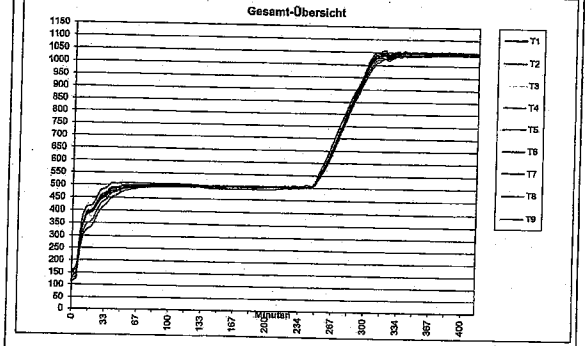
Messungen, Analysen, Verbesserungsprozesse
Kapitel 06-020.020
Kalibrierung von Wärmebehandlungsöfen

Formular
FO 62-19 Rev. 0
Status: freigegeben

Kalibrier-Zertifikat	Zertifikat Nr. 2018-065-O	Seite 1 von 4

Messresultate / Bemerkungen:

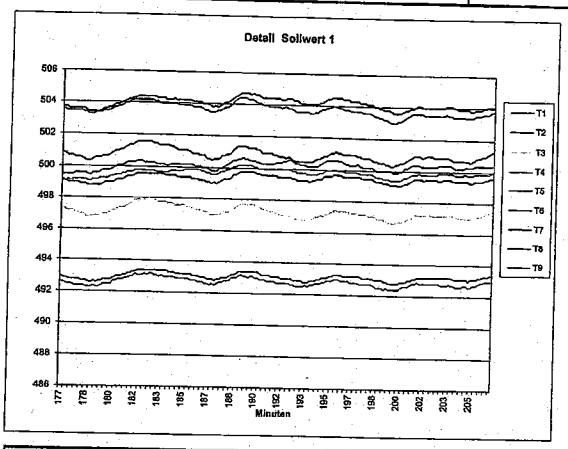
Anlage- Bezeichung :	Ofen Nr. 16/08
Hersteller :	Loecher
Typ :	gasbeheizt
Serie-Nr. :	
Bemerkungen 1 :	
Bemerkungen 2 :	
Messfühlerbezeichnung :	31708137
Anzahl Kanäle :	9
Q:\WBH\MCS\Daten\Ofen\2018-065-O	
Messzeit	30 Minuten
Prozessanweisung	PA 62-56



Sollwert	Toleranzbereich	Mittelwert	Tmax-Tmin	Berechnung Von	Berechnung bis	Kalibrierung
500	± 8°C	499.0	12.4	177	207	i.O
1050	± 14°C	1046.8	13.1	385	415	i.O

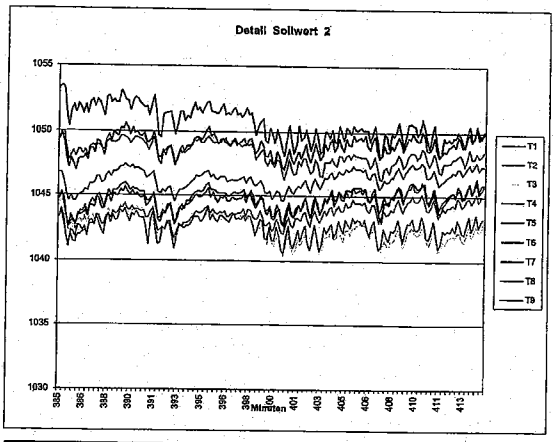
Datum der Kalibrierung : 22.01.2018 **Visum :**

Detail-Angaben	Zertifikat Nr.	Seite
Sollwert 500 °C	2018-065-O	2 von 4



Max-Wert	Min-Wert	Mittelwert	Tmax-Tmin	Fühler-Nr	Kanal Nr
501.6	500.3	500.9	1.3	31708137 / 31	1
493.4	492.6	493.1	0.8	31708137 / 32	2
498.0	496.7	497.2	1.3	31708137 / 33	3
493.2	492.3	492.8	0.9	31708137 / 34	4
499.8	498.8	499.4	1.0	31708137 / 35	5
504.7	503.4	504.1	1.3	31708137 / 36	6
500.7	499.5	500.2	1.2	31708137 / 37	7
504.4	503.0	503.7	1.4	31708137 / 38	8
500.2	499.1	499.8	1.1	31708137 / 39	9

Detail-Angaben	Zertifikat Nr.	Seite
Sollwert 1050.00 °C	2018-065-O	3 von 4

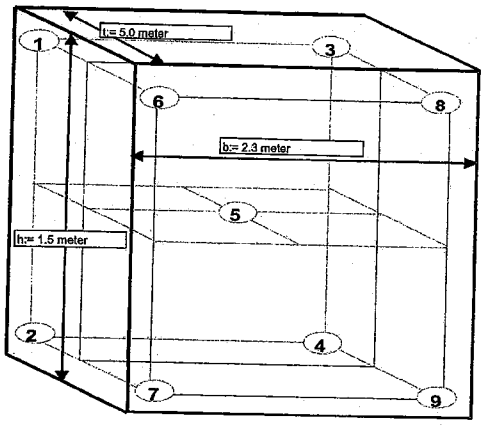


Max-Wert	Min-Wert	Mittelwert	Tmax-Tmin	Fühler-Nr	Kanal Nr
1053.5	1048.1	1050.6	5.4	31708137 / 31	1
1050.0	1046.3	1048.3	3.7	31708137 / 32	2
1044.7	1040.4	1042.5	4.3	31708137 / 33	3
1044.1	1040.6	1042.6	3.5	31708137 / 34	4
1046.1	1042.6	1044.8	3.5	31708137 / 35	5
1050.6	1047.0	1049.0	3.6	31708137 / 36	6
1046.4	1042.7	1044.7	3.7	31708137 / 37	7
1047.7	1044.6	1046.3	3.1	31708137 / 38	8
1045.2	1041.4	1043.6	3.8	31708137 / 39	9

Beilage zu Positionierung TE	Zertifikat Nr.	Seite
	2018-065-O	4 von 4

Kalibrieren von Wärmebehandlungsöfen mit 9 Messstellen

Anordnung der Temperaturfühler



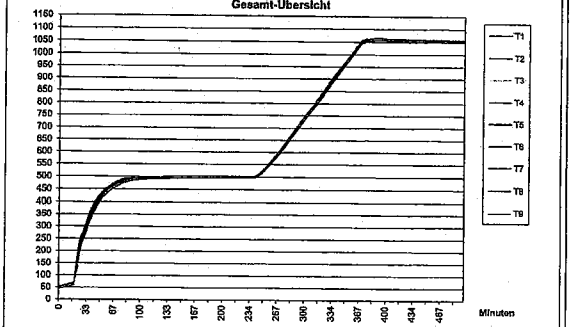
Auswertung der Messergebnisse

Pro Temperatur-Messpunkt wird nach Erreichen des stabilen Zustands dieser Messpunkt während minimum 30 Minuten gemessen und danach ausgewertet.
Die Anforderung an die Temperatur ist erfüllt, wenn die Differenz gleich oder kleiner als die vom Kunden festgelegte Temperaturbandbreite ist.
Das arithmetische Mittel des Nutzraumes wird pro Zeiteinheit über alle Kanäle für den angegebenen Zeitabschnitt gebildet.
Die Temperaturdifferenz ist die Differenz zwischen dem grössten und dem kleinsten Temperaturwert über alle Kanäle und dem angegebenen Zeitabschnitt.

Kalibrier-Zertifikat	Zertifikat Nr.	Seite
	2018-077-O	1 von 4

Messresultate / Bemerkungen:

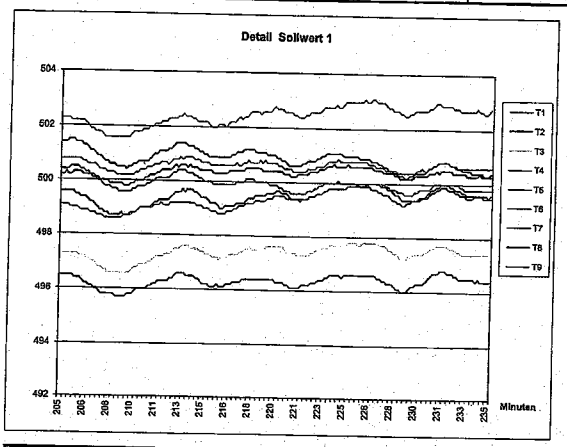
Anlage- Bezeichung :	14/08
Hersteller :	Löcher
Typ :	gasbehelzt
Serie-Nr. :	
Bemerkungen 1 :	
Bemerkungen 2 :	
Messfühlerbezeichnung :	122100
Anzahl Kanäle :	9
Q:\WBH\MCS\Daten\Ofen\2018-077-O	
Messzeit	30 Minuten
Prozessanweisung	PA 62-56



Sollwert	Toleranzbereich	Mittelwert	Tmax-Tmin	Berechnung Von	Berechnung bis	Kalibrierung
500	± 6°C	499.6	7.4	205	235	I.O.
1050	± 14°C	1054.6	10.4	486	496	I.O.

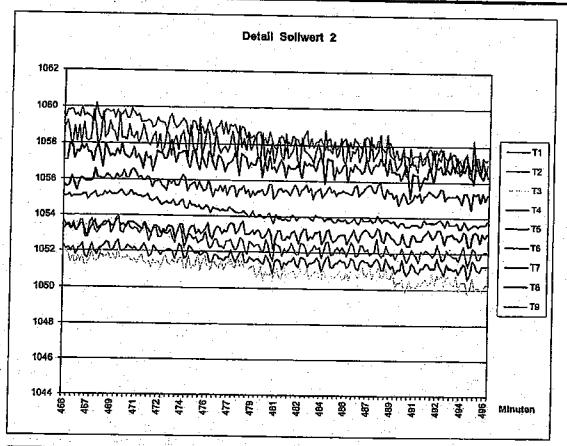
Datum der Kalibrierung : 20.12.2018 **Visum :** R. Thoma

Detail-Angaben	Zertifikat Nr.	Seite
Sollwert 500 °C	2018-077-O	2 von 4



Max-Wert	Min-Wert	Mittelwert	Tmax-Tmin	Fühler-Nr	Kanal Nr
500.0	498.7	499.5	1.3	122100 / 51	1
500.0	498.6	499.4	1.4	122100 / 52	2
497.8	496.6	497.4	1.2	122100 / 53	3
503.1	501.6	502.4	1.5	122100 / 54	4
496.8	495.7	496.3	1.1	122100 / 55	5
501.5	500.2	500.8	1.3	122100 / 56	6
500.7	499.8	500.3	0.9	122100 / 57	7
500.5	499.2	499.9	1.3	122100 / 58	8
500.9	500.2	500.6	0.7	122100 / 59	9

Detail-Angaben	Zertifikat Nr.	Seite
Sollwert 1050.00 °C	2018-077-O	3 von 4

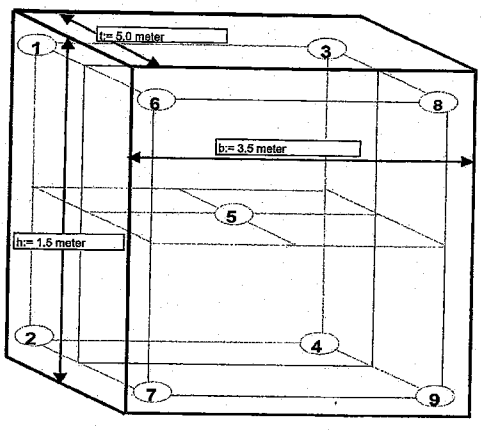


Max-Wert	Min-Wert	Mittelwert	Tmax-Tmin	Fühler-Nr	Kanal Nr
1058.2	1055.1	1057.0	3.1	122100 / 51	1
1059.8	1056.2	1057.8	3.6	122100 / 52	2
1052.1	1049.8	1051.0	2.3	122100 / 53	3
1060.2	1056.6	1058.5	3.6	122100 / 54	4
1053.8	1052.2	1053.1	1.6	122100 / 55	5
1056.6	1054.5	1055.6	2.1	122100 / 56	6
1055.4	1053.4	1054.2	2.0	122100 / 57	7
1052.6	1050.6	1051.6	2.0	122100 / 58	8
1054.0	1051.3	1052.5	2.7	122100 / 59	9

Beilage zu Positionierung TE	Zertifikat Nr.	Seite	4 von 4
	2018-077-O		

Kalibrieren von Wärmebehandlungsöfen mit 9 Messstellen

Anordnung der Temperaturfühler



Auswertung der Messergebnisse

Pro Temperatur-Messpunkt wird nach Erreichen des stabilen Zustands dieser Messpunkt während minimum 30 Minuten gemessen und danach ausgewertet.
Die Anforderung an die Temperatur ist erfüllt, wenn die Differenz gleich oder kleiner als die vom Kunden festgelegte Temperaturbandbreite ist.
Das arithmetische Mittel des Nutzraumes wird pro Zeiteinheit über alle Kanäle für den angegebenen Zeitabschnitt gebildet.
Die Temperaturdifferenz ist die Differenz zwischen dem grössten und dem kleinsten Temperaturwert über alle Kanäle und dem angegebenen Zeitabschnitt.

Auftragsdaten / Order data			
Auftragsnr. / Article no.	73623A1R	Probenr. / Sample no.	65610
Kunde / Customer	B.O.P. Products, LLC	Werkstoff / Material	AISI 4140
Charge / Heat	183197	Prüfstelle / Test place	Probenmaterial / sample material

Untersuchung / Examination	
Härtevergleichsplatte / Hardness comparison plate	287 ± 1.70 HBW2.5/187.5 (MPA NRW 6415902.1115)
Prüfmittel / Test equipement	655-017 Otto Wolpert Werke GmbH / Diatestor 2Rc incl. HME 5.3 + EBV + LE / 9253/HME5.3:906.005.310-0099 650.002-001-10-0021
Letze Kalibration / last calibration	14.11.2018 (Jährlich / annual)
Untersuchungsmethode / Examination Method	Brinell: DIN EN ISO 6506-1 (2015-02) / ASTM E10-17

Ergebnis / Result	
Vorgabe / Requirements	235 - 255 HB
Ergebnis / Result	244.3 ± 2.78 HBW2.5/187.5

Prüfer / Examiner	Patrick Kiener, Techn. Prüfung / Abnahmen
Unterschrift / Signature	Mafonbrunnenstr. 8 CH-8909 Hedingen
Datum / Date	Dienstag, 18. Dezember 2018

Dokument Name: MTR-H 65610

STOOSS

Datum: 19.12.2018

Dokument Name : MTR-T65610

Prüfprotokoll - Zugversuch / tensile testing / essai de traction

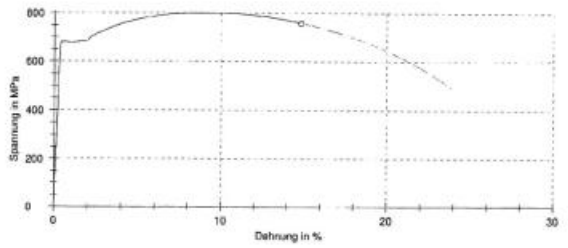
Werkstoff : ASTM A 29 Grade 4140 (AISI 4140)
Prüfnorm : ASTM A370 (2017) / ASTM E8 (2016)
Prüfer : PK1
AGN : 110

Ergebnisse / results / résultats:

Probenlage Zug : 1/4 T
Probenrichtung Zug : längs

Probe	$R_{p0.2}$ MPa	R_{eH} MPa	R_m MPa	A %	Z %	L_0 mm
	---		---	---	---	
	621		759	18,0	35	
65610	680	-	801	23,6	68	49,98

Grafik / graphic / graphique:



Legende:
Werkstoff / material / matière
Prüfnorm / standard / norme
Prüfer / inspector / inspecteur
AGN / operation / opération
Probe / test sample / coupon d'essai
Spannung / tensile / traction
Dehnung / elongation

STOOSS

Datum: 19.12.2018

Dokument Name : MTR-C65610

Prüfprotokoll - Kerbschlag / impact test / essai de résilience

Werkstoff : ASTM A 29 Grade 4140 (AISI 4140)
Prüfnorm : ASTM A 370 (2017) / ASTM E 23 (2018b)
Prüfer : PK1
AGN : 120

Ergebnisse / results / résultats:

Probenlage Kerb : 1/4 T
Probenrichtung Kerb : längs
Probeform : Charpy-V [Joule]

Probe	EW (J) J	MW (J) J	EW (ft) ft lbf	MW (ft) ft lbf	T_{Probe} °C
	---	---			
	20	25			
65610	142	137	105	101	-29.0
	131		95		-29.0
	138		102		-29.0

Legende:
Werkstoff / material / matière
Prüfnorm / standard / norme
Probeform / specimen type / forme d'échantillon
Prüfer / inspector / inspecteur
AGN / operation / opération
Probe / test sample / coupon d'essai
EW (Einzelwert) / single value / valeur individuelle
MW (Mittelwert) / average value / valeur moyenne

STOOSS SCHMIEDEWERK — GROWTH STARTS TO FORM

Prüfbericht
Sichtprüfung / *Visuals testing report*
Schmiedeteile / *Forgings*

Prüfbericht Nr. / *Test report no.*: 73623A12 — Rev. / *Rev.*: 0
Seite / *Page*: 1 von / *of* 1

Kundendaten / *Customer data*

Kunde / *Customer*	Kunden Bestell. Nr. / *Customer order no.*	Kunden Artikel Nr. / *Customer article no.*
B.O.P. Products, LLC	4385	-
Kunden Zeichnungs Nr. / *Customer drawing no.*	Serial Nr. / *Serial no.*	Bezeichnung / *Designation*
F-14356-1 Rev.C	-	RAM Forging
Charge / *Batch no.*	Werkstoff / *Material*	Anzahl / *Quantity*
183197	ASTM A 29 Grade 4140 (AISI 4140)	30
Spezifikation / *Specification*	Prüfumfang / *Extent of examination*	Dimensionen / *Dimension*
MS-200 Rev.2	100%	acc. drawing

Prüfzustand / *State of testing*

Roh / *Rough*	Gestrahlt / *Shotblasted*	Vorbearbeitet / *Pre machined*	Fertigbearbeitet / *Finished machined*	Qualifizierende Wärmebehandlung / *QT heat treatment*	Spannungsarmgeglüht / *Stress relief*
☐	☒	☐	☐	vor / *before* ☐ nach / *after* ☒	vor / *before* ☐ nach / *after* ☐ ohne / *without* ☒

Prüfverfahren / *Examination procedure*

Direktprüfung / *Direct inspection*	Lupe / *Magnifying glass*	Vergrösserung / *Magnifying*	Hintergrundbeleuchtung / *Backlight*	Betrachtungswinkel / *Viewing angle*	Betrachtungsabstand / *Viewing distance*
☒	☐	X -	> 1000 Lux	> 30°	max. 600 mm

Indirekteprüfung / *Indirect inspection*	Hilfsmittel / *Auxiliary means*	
☐	-	-

Prüfgeräte / *Examination equipment*

Hersteller / Typ / Seriennummer / *Manufacturer / Type /Serial number*		
Accumax	XR-1000 / XDS-1000	1883040 / 1883042

Bemerkung / *Remark*

Prüfergebnis / *Result of examination*

Keine registrierpflichtige(n) Anzeige(n) / *Without recordable indication(s)*	Mit registrierpflichtige(n) Anzeige(n) / *With recordable indication(s)*	Nr. Abweichungsbericht / *No. Non-conformance report*
☒	☐	-
Prüfer / *Examiner*	Prüfaufsicht / *Supervisor*	Besteller o. Abnehmer / *Purchaser o.Inspector*
Imgrüth Sandro [redacted] UT/MT/PT/ UT/MT/PT/VT Lev. II acc. to SNT-TC-1A		
18.01.2019	18.01.2019	

Certificate of Authority to use the Official API Monogram
License Number: 16A-0250
ORIGINAL

The American Petroleum Institute hereby grants to

B.O.P. PRODUCTS, LLC
9118 Sweetbrush
Houston, TX

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In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **16A-0250**

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The scope of this license includes the following: Adapters, Drilling Spools and Spacer Spools, Annular BOP, Ram Blocks, Packers, and/or Top Seals and Ram BOP

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: APRIL 2, 2020
Expiration Date: MAY 5, 2023

To verify the authenticity of this license, go to www.api.org/compositelist.

American Petroleum Institute

Streicher Projektnummer / Streicher Project No.: #65220042	**Firmenname /** Company Name: Streicher Drilling Technology GmbH
Projektaktivität / Project Activity: 5-yearly Recertification	**Kundenname /** Customer: Borr Drilling Management (UK) Ltd (UK) c/o Paragon Offshore (Land Support)
Hersteller / Original Manufacturer: ---	**Kundeninventarnummer /** Customer's Inventory No.: ---
Typbezeichnung BOP / BOP Type: RAM-Block Pipe 5-1/2", U-Type 13-5/8" x 10.000 psi	**Zusammenbaunr. / Seriennummer /** Assembly No. / Serial No.: 44, 45

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Table of Content

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3. Certificate of Conformance, AXON....3
3.1 Certificate of Quality, STREICHER....4
4. Inspection Report....7
5. MT-Report....10
6. Certificate of installed parts....22

AXON ENERGY SERVICES
596 South Hollywood Road
Houma, Louisiana USA 70360
T: (1) 985-872-9711

CERTIFICATE OF CONFORMANCE

Certificate Issue Date:	5/24/2022
Certificate Expiration Date:	5/24/2027
Customer:	BORR DRILLING MANAGEMENT (UK) LTD (UK) C/O PARAGON OFFSHORE (LAND SUPPORT)
Customer Purchase Order:	P77205
Sales Order Number:	48-13232
Certificate Number:	SDT65220042-4
OEM:	N/A
CEM:	AXON ENERGY SERVICES
Date Of Repair:	05/2022
ARF Job Number:	65220042

This certificate confirms that the equipment requested per the above purchase order and listed below has been manufactured in conformance with:

- API Specification 16AR First Edition

This Certification is Related to the Following Ratings:

Rated Working Pressure:	10 KSI
Rated Temperature of Metallic Components (min/max):	0 to 250 °F
Sour Service according to NACE MR0175/ISO 15156:	☒ Yes ☐ No
Remanufacturing Specification Level (RSL) :	1
Operation Enviroment (Marine / Land) :	LAND/MARINE
Reason for Current RSL Determination:	

List of Certified Equipment:

Item	Assembly or Part No.	Rev	Qty	Description	Serial Number(s)
1	N/A	N/A	2	1 SET RAM-BLOCK PIPE 5-1/2", 13-5/8" X 3K/5K/10K U TYPE	44 & 45

Records to support this Certificate have been reviewed and found to be within conformance with the applicable standards listed above. These records will be retained on file for a minimum of 10 years from the date of manufacture as indicated on the equipment.

Certificate of Conformance Approval

Signature

Name:

Friday, May 20, 2022

STREICHER Drilling Technology GmbH
94469 Deggendorf
Josef-Wallner-Straße 5a
Germany

Company Registration No.: HRB 4795

API 16A Monogram License No.: 16A-0560

CERTIFICATE OF QUALITY

Equipment description:	1 Set RAM-Block Pipe 5-1/2", 13-5/8"x3k/5k/10k U-Type
Certificate No.:	SDT65220042-4
Customer :	Borr Drilling Management (UK) Ltd (UK) c/o Paragon Offshore (Land Support)
Customer Inventory No.:	---
OEM	---
OEM Serial No.:	44, 45
Repair or Remanufacturing:	Remanufacturing
Date of Repair/Remanufacturing:	05/2022
Customer Purchase Order:	P77205
Streicher Work Order No.:	65220042
Date of OEM Manufacturing:	---
Heat treatment performed:	No
Specification Level acc. API STD 16AR:	RSL1

A. Assurance:

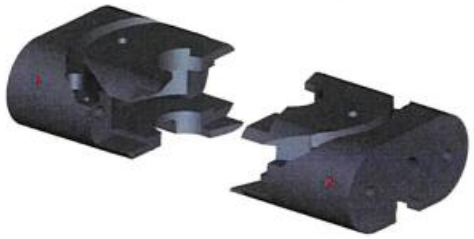
This is to confirm that this BOP has been inspected, repaired / remanufactured and tested in accordance with:

1. API STD 16AR, 1st Edition, Apr. 2017: Standard for Repair and Remanufacture of Drill-through Equipment
2. NACE MR0175 / ISO 15156 - 2015: Materials for use in H_2S-containing environments in oil and gas production
3. API STD 53, 5th Edition, Dec. 2018: Well Control Equipment Systems for Drilling Wells

B. Operational Conditions and Limitations:

Maximum Working Pressure:	10.000 psi (690 bar)
Sour Service according to NACE MR0175:	Yes
Temperature Rating for Metallic Materials (minimum to maximum):	-29°C - 121°C
Operational environment (Marine/Land):	Land
Other limitation:	None

C. List of Inspected Equipment / Traceability List:



Item	Part Description	Serial Number(s)	Heat No.	Hardness	Material	Work Performed
1	RAM-Block Pipe 5-1/2"	44	---	238 HV	AISI 4140	Polish
1.1	RAM-Block Pipe 5-1/2"	45	---	237 HV	AISI4130	Polish
2	Seal Kit AXON	---	---	---	---	New spare part

Applied inspections and results:

1	visual	accepted
2	dimensional	accepted
3	liquid penetrate	N/A
4	magnetic particle	accepted
5	hardness	accepted
6	radiography	N/A
7	ultrasonic	N/A
8	pressure test	N/A
9	drift check	N/A

D. Comments:

4. The documentation of this work order is retained on file by STREICHER Drilling Technology GmbH for a minimum of 10 years after this repair / remanufacture.
5. All essential works, processes, parts replacements and tests are documented.
6. This certificate and the databook shall be added to the Product History File by the equipment owner.

E. Attachments

7. Data book

Approval

Signature Project Manager
STREICHER
20.05.2022
Name/Date:

Signature Quality Assurance
23.05.2022
Name/Date:

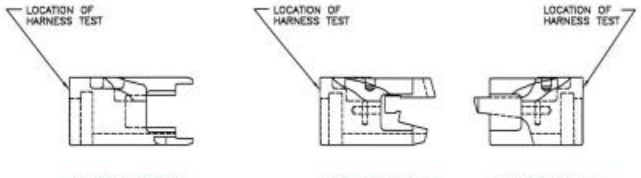
AXON | PRESSURE PRODUCTS

INSPECTION REPORT

CUSTOMER: Paragon / Borr Drilling
W/O: 65220042.004

TRACEABILITY REPORT, F/ RAMS, TYPE 50 (U) BOP ASSEMBLY

BOP SIZE: 13-5/8" PRESSURE: 10.000 REPORTED BY:
ASSEMBLY TYPE: DOUBLE ☐ SINGLE ☐ NO RAMS INSTALLED (TEST RAMS USED) ☒ DATE:



UPPER CAVITY OF DOUBLE BOP OR SINGLE BOP RAMS INSTALLED:

RAM TYPE:
☐ BLIND
☒ PIPE, SIZE: 5-1/2"
☐ VARIABLE BORE
☐ DS SHEAR
☐ ISR SHEAR
☐ SBR SHEAR

RAM NO. 1:	RAM NO. 2:
SERIAL NO.: 44	SERIAL NO.: 45
HEAT NO.:	HEAT NO.:
HARDNESS: 238 HV	HARDNESS: 237 HV
HN:	HN:
~~(IF SHEAR RAM: UPPER ☐ LOWER ☐)~~	~~(IF SHEAR RAM: UPPER ☐ LOWER ☐)~~

~~LOWER CAVITY OF DOUBLE BOP RAMS INSTALLED:~~

~~RAM TYPE:~~
~~☐ BLIND~~
~~☐ PIPE, SIZE:~~
~~☐ VARIABLE BORE~~
~~☐ DS SHEAR~~
~~☐ ISR SHEAR~~
~~☐ SBR SHEAR~~

~~RAM NO. 1:~~	~~RAM NO. 2:~~
~~SERIAL NO.:~~	~~SERIAL NO.:~~
~~HARDNESS: HB~~	~~HARDNESS: HB~~
~~HN:~~	~~HN:~~
~~(IF SHEAR RAM: UPPER ☐ LOWER ☐)~~	~~(IF SHEAR RAM: UPPER ☐ LOWER ☐)~~

CS2040-10-03 REV: 10.10.08

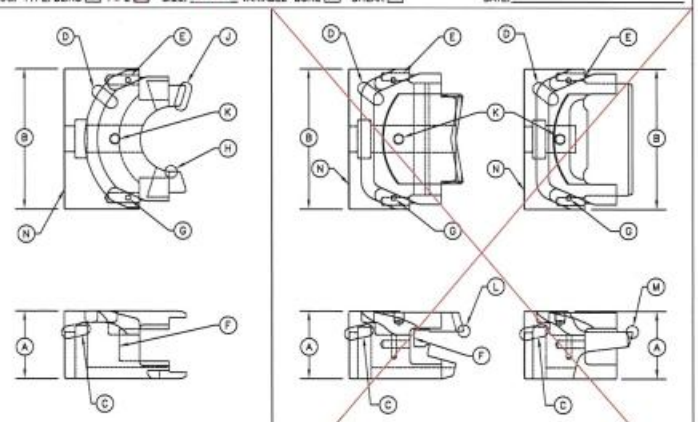
AXON | PRESSURE PRODUCTS

INSPECTION REPORT

CUSTOMER: Paragon / Borr Drilling
W/O: 65220042.004

INSPECTION REPORT, RAM BODY, TYPE 50 (U) BOP

BOP SIZE: 13-5/8" PRESSURE: 10.000 INSPECTED BY:
RAM TYPE: BLIND ☐ PIPE ☒ SIZE: 5-1/2" VARIABLE BORE ☐ SHEAR ☐ DATE:



AREA INSPECTED	STATUS	AREA INSPECTED	STATUS
A. RAM BODY HEIGHT: 190.1 mm	OK	~~L. UPPER BLADE EDGE (SHEAR RAM ONLY):~~	
B. RAM BODY WIDTH: 393.3 mm	OK	~~M. LOWER BLADE EDGE (SHEAR RAM ONLY):~~	
C. RAM CONNECTING ROD SLOT: 64.1 mm, 31.3 mm	OK	N. HARDNESS: 238 HV ~~HB~~:	
D. TOP SEAL SLOT: DEPTH: 31.9 mm WIDTH: 34.7 mm	OK	P. MAGNETIC PARTICLE INSPECTION	OK
E. PACKER PIN HOLE:	OK	ADDITIONAL REPAIR COMMENTS:	
F. PACKER SEAL SURFACE:	OK	Reported dimensions and hardness meet Axon requirements Process per indicated disposition Danny Wolfe, Axon Engineering, 24 Mar 2022	
G. TOP SEAL PIN HOLES:	OK		
H. PIPE BORE:	OK		
J. PIPE GUIDES:	OK		
K. LIFT EYE HOLE:	OK	✳ DENOTES OUT OF TOLERANCE DIMENSION	

DISPOSITION CODES: OK: USE AS IS P: POLISH RW: REWORK/REPAIR R: REPLACE/SCRAP

CS2040-10-01 REV: 10.10.08

AXON PRESSURE PRODUCTS

INSPECTION REPORT

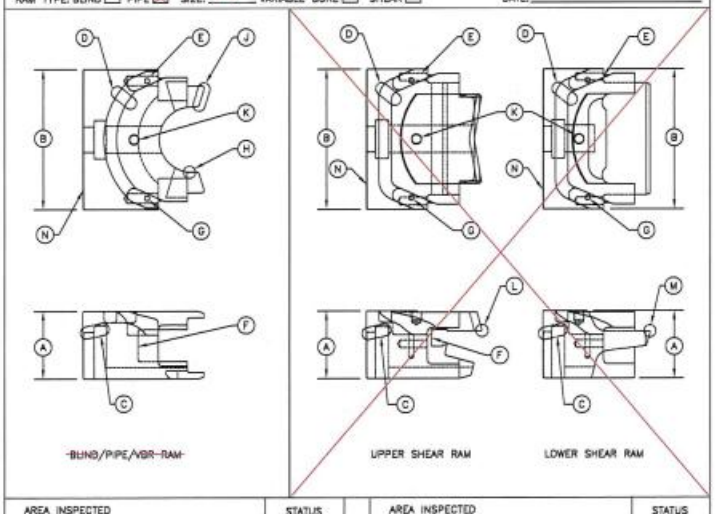
CUSTOMER: Paragon / Barr Drilling

W/O: 65220042.004

INSPECTION REPORT, RAM BODY, TYPE 50 (U) BOP

BOP SIZE: 13-5/8" PRESSURE: 10.000 INSPECTED BY: _____

RAM TYPE: BLIND ☐ PIPE ☒ SIZE: 5-1/2" VARIABLE BORE ☐ SHEAR ☐ DATE: _____



AREA INSPECTED		STATUS
A. RAM BODY HEIGHT:	190.1 mm	OK
B. RAM BODY WIDTH:	393.3 mm	OK
C. RAM CONNECTING ROD SLOT:	64.1 mm, 31.3 mm	OK
D. TOP SEAL SLOT: DEPTH:	31.8 mm	OK
WIDTH:	34.8 mm	
E. PACKER PIN HOLE:		OK
F. PACKER SEAL SURFACE:		OK
G. TOP SEAL PIN HOLES:		OK
H. PIPE BORE:		OK
J. PIPE GUIDES:		OK
K. LIFT EYE HOLE:		OK

AREA INSPECTED	STATUS
~~L. UPPER BLADE EDGE (SHEAR RAM ONLY):~~	
~~M. LOWER BLADE EDGE (SHEAR RAM ONLY):~~	
N. HARDNESS: 237 HV HB:	
P. MAGNETIC PARTICLE INSPECTION	OK
ADDITIONAL REPAIR COMMENTS:	
Reported dimensions and hardness meet Axon requirements Process per indicated disposition Danny Wolfe, Axon Engineering, 24 Mar 2022	
✳ DENOTES OUT OF TOLERANCE DIMENSION	

DISPOSITION CODES: OK: USE AS IS P: POLISH RW: REWORK/REPAIR R: REPLACE/SCRAP

CS2040-10-01 REV. 10.10.06

Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

STREICHER

Report of Magnetic particle testing		Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01
			Blatt: 1 von 12

Auftraggeber: Customer	Paragon / Barr Drilling	Projekt: Project	Inspektion RAM-Blocks 13-5/8"x10k U-Type
Auftragsnummer / Kommission: Order No. / Commission	65220042.004	Hersteller: Manufacturer	Cameron, T3
Zeichnungsnummer/Isometrie: Drawing No. / Isometric	n/a	Hersteller-/Seriennr.: Manufacturer No. / Serial No.	n/a
Prüfgegenstand: Component	Ram Block U-Type 13 5/8" x 10k	Abmessungen: Dimension	n/a
Werkstoff: Material	siehe Dokumentation	Schweißverfahren: Welding process	n/a
Prüfflächenzustand: Test surface condition	unbehandelt/gebürstet/geschliffen: ground/unbehandelt/brushed/polished	Prüfung vor/nach Wärmebehandlung: Examination before/after Heat	vor: before ☒ nach: after ☐
Prüfvorschrift: Test specification	API Std. 16AR, 1. Ed. 2017	Prüfanweisung: Examination Procedure	QAC-641-201
Prüfumfang: Scope of inspection	100% Schweißnaht + WEZ	Bewertungsvorschrift: Acceptance Standard	API Std. 16AR, 1. Ed., 2017
Prüfer: Inspector	Hilger Kevin	Level: level	II

Prüfdaten / test data

Prüfverfahren: Test method	X Weiß/Schwarz: white/black ☐ Fluoreszierend: fluorescent			Magnetisierungstechnik: Magnetization technology	Handjochmagnet
Gerätetyp: Equipment type	MR-56	Serien-Nr.: Serial No.	279	Stromart: Type of current	~
Tangentialfeldstärke: Field generation	> 2,9 kA/m			Prüftemperatur: Test of temperature	20 °C
Prüfmittel/Chargen-Nr.: Test equipment batch number	MR765 765/1286A	Untergrundfarbe/Chargen-Nr.: Background colour/batch number	MR 72 72/1273A		
Beleuchtungsstärke: Illuminance	1680 Lux	UV Lampentyp/Serien-Nr.: UV lamp type/Serial No.	n/a	UV-Bestrahlungsstärke: UV-light intensity	n/a W/m²
Beleuchtungsmessgerät/Serien-Nr.: Examination equipment/Serial No.	MR 454 / G0279/50279	Kontrolle der Prüfmittel: Control of test equipment	Vergleichs-körper 1	Magnetisierungskontrolle: Magnetism test medium	Hebeplatte 4,5 kg

Befund/objection

101 Längsriss	longitudinal crack
102 Querriss	transverse crack
2011 Pore	gas pore
2012 Porosität	porosity
2013 Porennest	clustered pores
2014 Porenzeile	lineare porosity
401 Bindefehler	lack of fusion
402 Ungenügende Durchschweißung	incomplete of penetration
4021 Ungenügender Wurzeleinbrand	incomplete Root penetration
5011 Einbrandkerben	undercut
5012 nicht durchlaufende Einbrandkerbe	intermitted undercut
5013 Wurzelkerbe	shrinkage undercut

Bemerkung / Remark

Die angegebenen Schweißnäht wurden mittels Magnetpulverprüfung auf Oberflächenfehler geprüft.
Es wurden keine registrierpflichtigen Anzeigen gefunden.

01.03.2022 [redacted]
Datum / Unterschrift Prüfer
Date / Signature Inspector II

ZIP STREICHER 03

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MT_65220042.004-01.XLSX

QAC-641-201-F
Revision 02

07.08.2018

Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

STREICHER

Report of Magnetic particle testing		Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01
			Blatt: 2 von 12

Kundendaten / customer data		Auftragsnummer / Kommission: Order No. / Commission	65220042.004
Auftraggeber: Customer	Paragon / Barr Drilling	Prüfvorschrift: Test specification	API Std. 16AR, 1. Ed. 2017

Prüfergebnis / test result U-Type 13 5/8" x 10k

Hinl.-Nr./Prüfbereich: Weld No./Examination area	Anzeige-Nr.: Indication No.	Schweißer-Nr.: Welder's No.	Abmessung, Ø o.ä.: Dimension, Ø or ø	Lage/Orientierung: Position/Orientation	Länge/Ausw.: Length/Assessment	Repräsentige Ungänzenlänge: Representative length	Beschreibung/Kennzeichen: Evaluation/Abbreviation	Bewertung*: Evaluation @	n.i.O	Bemerkung: Remark
V-Shear T3-1 AFT 17	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
V-Shear T3-2 FWD 20	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Cameron SBR Body R 16	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Cameron SBR Body R 17	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		x	
ISR Ram Block R32	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
ISR Ram Block R33	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5" 1.Satz 71	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5" 1.Satz 70	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5" 2.Satz 72	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5" 2.Satz 73	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5-1/2" 1.Satz 26	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5-1/2" 1.Satz 27	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5-1/2" 2.Satz 29	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 5-1/2" 2.Satz 30	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 3-1/2"-5" 1.Satz 4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 3-1/2"-5" 1.Satz 5	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 3-1/2"-5" 2.Satz 7	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 3-1/2"-5" 2.Satz 8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 3-1/2"-5" 3.Satz 152-18	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
Pipe 3-1/2"-5" 3.Satz 153-18	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	x		
					ENDE					

*) erfüllt die Anforderungen der Spezifikation / accepted / ne = erfüllt nicht die Anforderungen der Spezifikation / not accepted ° n.A. = keine registrierpflichtigen Anzeigen / no indications to record

01.03.2022 [redacted]
Datum / Unterschrift Prüfer
Date / Signature Inspector II

ZIP STREICHER 03

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MT_65220042.004-01.XLSX

QAC-641-201-F
Revision 02

07.08.2018

Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

STREICHER

Report of Magnetic particle testing		Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01
			Blatt: 3 von 12

Kundendaten / customer data		Auftragsnummer / Kommission: Order No. / Commission	65220042.004
Auftraggeber: Customer	Paragon / Barr Drilling	Prüfvorschrift: Test specification	API Std. 16AR, 1. Ed. 2017

Prüfergebnis / test result U-Type 13 5/8" x 10k

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MT_65220042.004-01.XLSX

QAC-641-201-F
Revision 02

07.08.2018

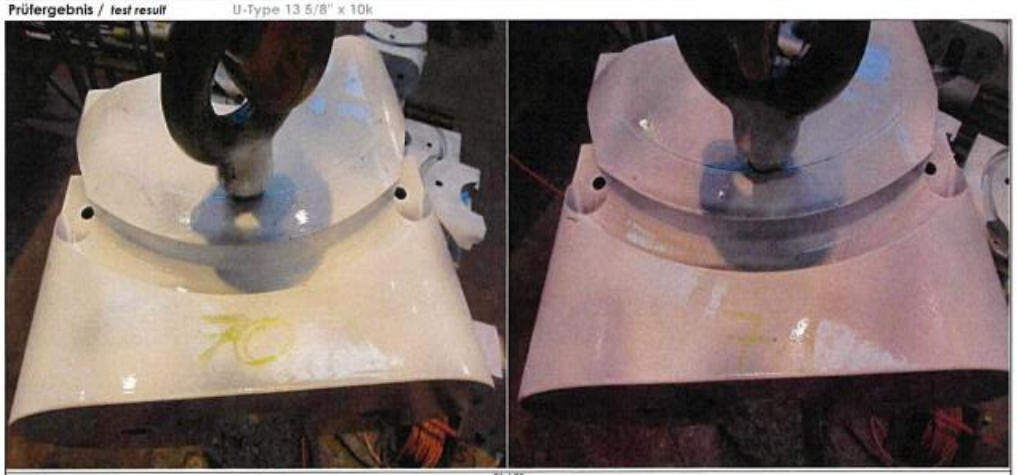
Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Prüfvorschrift: API Std. 16AR, 1. Ed, 2017
		Blatt: 6 von: 12	

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber	Auftragsnummer / Kommission
Paragon / Borr Drilling	65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k



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Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Prüfvorschrift: API Std. 16AR, 1. Ed, 2017
		Blatt: 4 von: 12	

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber	Auftragsnummer / Kommission
Paragon / Borr Drilling	65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k

R 14 / R 17

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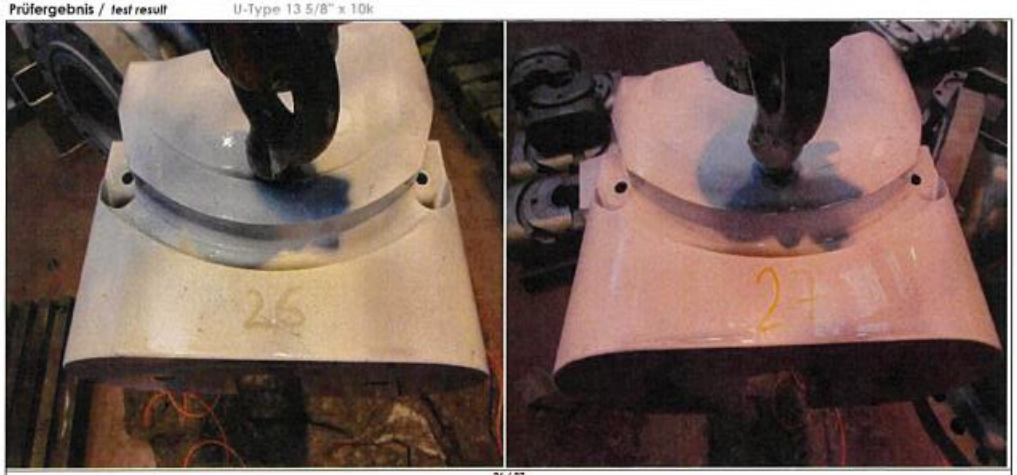
Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Prüfvorschrift: API Std. 16AR, 1. Ed, 2017
		Blatt: 7 von: 12	

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber	Auftragsnummer / Kommission
Paragon / Borr Drilling	65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k



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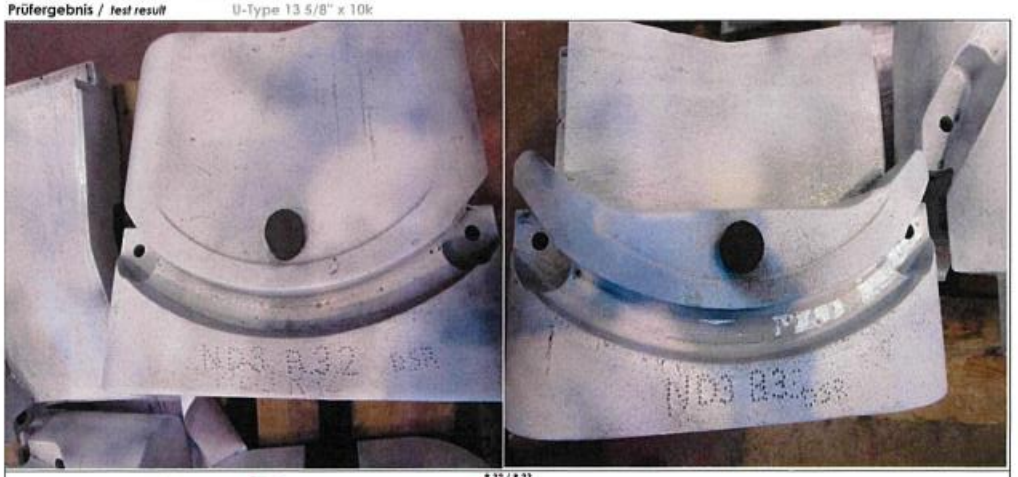
Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Prüfvorschrift: API Std. 16AR, 1. Ed, 2017
		Blatt: 5 von: 12	

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber	Auftragsnummer / Kommission
Paragon / Borr Drilling	65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k



R 32 / R 33

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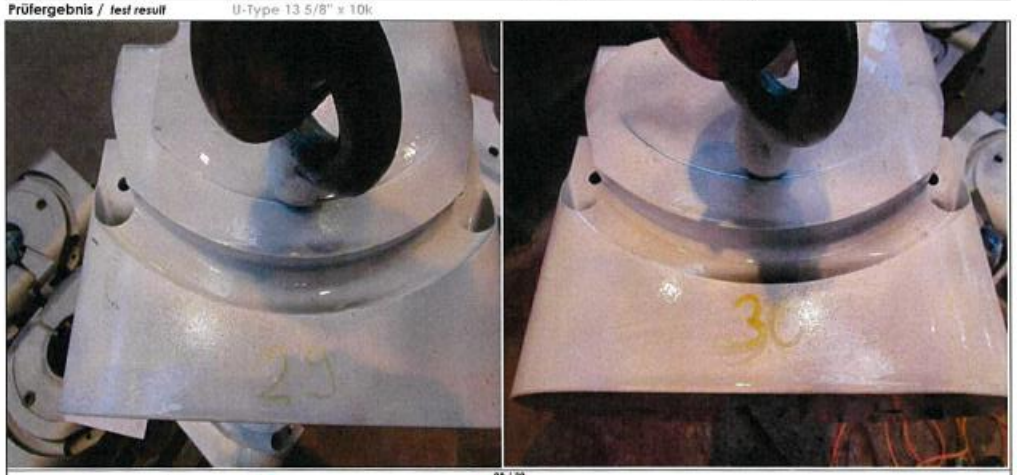
Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Blatt: 10 von 12	Prüfvorschrift: API Std. 16AR, 1. Ed. 2017

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber: Paragon / Barr Drilling	Auftragsnummer / Kommission: 65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k



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Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Blatt: 8 von 12	Prüfvorschrift: API Std. 16AR, 1. Ed. 2017

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber: Paragon / Barr Drilling	Auftragsnummer / Kommission: 65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k

Bauteil 4 / Bauteil 1

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Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Blatt: 11 von 12	Prüfvorschrift: API Std. 16AR, 1. Ed. 2017

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber: Paragon / Barr Drilling	Auftragsnummer / Kommission: 65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k

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20 von 25

Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing	Prüfort / Datum: Deggendorf, den 01.03.2022	Protokoll-Nr.: MT-65220042-01	Blatt: 9 von 12	Prüfvorschrift: API Std. 16AR, 1. Ed. 2017

Kundendaten / *customer data* 65220042.004 n/a

Auftraggeber: Paragon / Barr Drilling	Auftragsnummer / Kommission: 65220042.004

Prüfergebnis / *test result* U-Type 13 5/8" x 10k

152-18 / 153-18

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Prüfprotokoll für Magnetpulverprüfung
Max Streicher GmbH & Co. KG aA

Report of Magnetic particle testing

Prüfort / Datum: Deggendorf, den 01.03.2022

Prüfvorschrift: API Std. 16AR, 1. Ed., 2017

Kundendaten / customer data: 45220042.004

Auftraggeber: Paragon / Barr Drilling

Auftragsnummer / Kennnummer: 45220042.004

Prüfergebnis / test result: U-Type 13 5/8" x 10k

Bauteil 7 / Bauteil 8

21 von 25

07.09.2018

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MT_45220042.004-01.XLSX

Manufacturing Record Book

Customer: STREICHER DRILLING TECHNOLOGY GMBH
Purchase Order No.: BE2201061558
Sales Order No.: 46-13091
Part Number: 81590-04-51
Job Number 46-13091-1 QTY: 10
Date: 3/14/2022
Description: TOP SEAL, RAM, AXON, TYPE 50 BOP, 13-5/8" 3/10M
Comment: 46-41720-1 B: 61 CD: 12/8/2021 ED: 12/8/2036 HL: 503454

AXON ENERGY SERVICES

AXON ENERGY SERVICES

CERTIFICATE OF CONFORMANCE

This certifies that AXON parts, on the below AXON Sales Order and Customer Purchase Order, conform to all applicable AXON specifications. The parts meet NACE MR0175 requirements for H2S service. The parts have been dimensionally inspected and tested per applicable specifications and have been found acceptable. The parts were manufactured, remanufactured or repaired conforming to the Quality Assurance System stated in the AXON Quality Manual. The Quality System for the verification, validation, monitoring, measurement, inspection and test activities has been certified to comply with Q1, 9th Edition. AXON is authorized to apply the API Monogram to equipment manufactured in accordance with API Specifications 6A, 16A, 16C, and 16D.

QTY: 10
Part No.: 81590-04-51
Customer: STREICHER DRILLING TECHNOLOGY GMBH
PO No.: BE2201061558
Order No.: 46-13091
Date: 3/14/2022
Description: TOP SEAL, RAM, AXON, TYPE 50 BOP, 13-5/8" 3/10M
Comment: 46-41720-1 B: 61 CD: 12/8/2021 ED: 12/8/2036 HL: 503454

Angelicia Davis

Digitally signed by Angelicia Davis
DN: cn=Angelicia Davis, o=Axon Energy Services, ou=Lead Document Control Coordinator, email=angelicia.davis@axon-es.com, c=US
Date: 2022.03.14 08:01:20 -05'00'

North Houston Rosslyn Facility
(Houston, TX)
API 6A-1470
API 16A-0358
API 16C-024

Quality Assurance

Manufacturing Record Book

Customer: STREICHER DRILLING TECHNOLOGY GMBH
Purchase Order No.: BE2201061558
Sales Order No.: 46-13091
Part Number: 81603-13-51
Job Number 46-13091-4 QTY: 4
Date: 3/14/2022
Description: PACKER, PIPE, RAM, AXON TYPE 50 BOP, 13-5/8" 3/10M, 5.500" PIPE
Comment: 46-42064-5 B: 62 CD: 1/6/2022 ED: 1/6/2037 HL: 503633

AXON ENERGY SERVICES

AXON
ENERGY SERVICES

CERTIFICATE OF CONFORMANCE

This certifies that AXON parts, on the below AXON Sales Order and Customer Purchase Order, conform to all applicable AXON specifications. The parts meet NACE MR0175 requirements for H2S service. The parts have been dimensionally inspected and tested per applicable specifications and have been found acceptable. The parts were manufactured, remanufactured or repaired conforming to the Quality Assurance System stated in the AXON Quality Manual. The Quality System for the verification, validation, monitoring, measurement, inspection and test activities has been certified to comply with Q1, 9th Edition. AXON is authorized to apply the API Monogram to equipment manufactured in accordance with API Specifications 6A, 16A, 16C, and 16D.

QTY: 4
Part No.: 81603-13-51
Customer: STREICHER DRILLING TECHNOLOGY GMBH
PO No.: BE2201061558
Order No.: 46-13091
Date: 3/14/2022
Description: PACKER, PIPE, RAM, AXON TYPE SO BOP, 13-5/8" 3/10M, 5.500" PIPE
Comment: 46-42064-5 B: 62 CD: 1/6/2022 ED: 1/6/2037 HL: 503633

Angelicia Davis

Digitally signed by Angelicia Davis
DN: cn=Angelicia Davis, o=Axon Energy Services, ou=Lead Document Control Coordinator, email=angelicladavis@axon-es.com, c=US
Date: 2022.03.14 08:02:47 -05'00'

North Houston Rosslyn Facility
(Houston, TX)
API 6A-1470
API 16A-0358
API 16C-024

Quality Assurance

HMH

Pressure Control Systems

Hydril USA Distribution LLC
18000 US-59
Humble, TX 77396
United States
+1 281 985 6800

HMP_80010573

Rev No.0

Certificate of Compliance/Conformance

Component(s)

(Manufacturer's Affidavit of Compliance/Conformance)

Customer Name	:	EQUIPMENT RESOURCES INTERNATIONAL
Rig Name	:	N/A
Sales Order Number	:	20006897
Purchase Order	:	27629
Part Ship Date	:	26-Apr-23
Shipment Number	:	80010573

Part Information				Part Traceability			
Part No.	Rev.	Description		Durometer	Material Type	Qty	Cure date
3112017-02	K	PACKING UNIT GX 13-5M NBR 16A		68	NBRX	1	1/18/2023
Serial No.	NA			Lot No. 0123-0038		Exp Date. 18-Jan-29	
API Monogram	NA	Date of Manufacture 18-Jan-23		Rated Working Pressure NA			
Equipment Test Pressure	NA	Design Temperature of Nonmetallic	NA	Equipment Temp Rating NA			
Performance Requirement (PR) NA		Codes, Standards or specification applied					

*NA: Part Traceability not required for API/Product standards.

Code(s), Standard(s) or Specification(s) Applied : Applicable HMH company Standards and Specifications.

The manufacturer certifies that the component(s) described above and supplied for this order, on the date of this certificate, complies with the codes, standards or specifications referenced above when properly installed, operated and maintained in accordance with manufacturer's specifications and instructions and sound engineering procedures. Any modifications made to the component(s) after issuance of this COC is at the risk of the customer.

The manufacturer retains supporting documentation for a period of time as specified in the applicable standards, which is available on request. The Sales Order includes the General Terms and Conditions, and the product described above is covered exclusively by the one year warranty set forth in the General Terms and Conditions. The product is subject to the limitations and exclusions of warranty and liability as detailed in the General Terms and Conditions or such other separate applicable contract that may be agreed between the parties. Any deviation from traceability and equipment operation is at the sole risk of the customer.

HMH Representative : Enrique Guillen
SAP ID : E405657
Certificate Issue Date : 27-Apr-23

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HMH

Quality Control Inspection Release

Part Number:	3112017-02	Manufacturing Facility:	HHP
Part Description:	PACKING UNIT GX-13-5M	Work Order Number:	1001081
Part Revision:	K	Manufacturing Date:	18-Jan-23
Serial Number:	0123-0038	Expiration Date:	18-Jan-29

Type Material	NBRX
Molding Document Review Date	20-Jan-23
Pretest Visual Dimensional Inspection Date	22-Jan-23
Manufacturing Facility Q.C. Inspector	STOKES,STEVEN L.
Pressurization Test Record and Date Tested	14-Feb-23
Post Test Visual & Dimensional Inspection	16-Feb-23
Testing Facility Q.C. Inspector	
Testing Facility Q.C. Supervisor	
Release Date	16-Feb-23

The signatures of the QC above certify that the above inspection have been performed . The signature also certifies the above evidence information and that physical evidence are on file at the identified manufacturing facility.

Baker Hughes

Oilfield Equipment – Subsea Drilling Systems

Baker Hughes Drilling Asia Pte. Ltd
2 Benoi Road
Singapore 629876
Republic of Singapore
Ph:+65 68613344

SGN_881442

Rev No. :0

Certificate of Conformance

Remanufactured Equipment

(Manufacturer's Affidavit of Conformance)

Customer Name	:	BORR DRILLING MALAYSIA SDN. BHD.
Rig Name	:	MIST
Service Request/C Number	:	SR206951 / CSD4149073
Sales Order Number:	:	20003201
Purchase Order:	:	P64242
Description of Equipment	:	BOP ASSY,GX 13-5 RL,ABS,5 ST-T,10 FLG-B,CRA RTJ,NPT,RED
Equipment Serial Number	:	159649
Equipment Part Number/Rev #	:	3131443-15/NC
Date of Shipment	:	07-Oct-2021
Codes, Standards or Specifications Applied	:	Applicable BH Standards and Specifications

The manufacturer certifies that, except for customer supplied elements, the products identified above were inspected and repaired/remanufactured in conformance with the manufacturer's standards and specifications, and other standards and specifications as listed above. Baker Hughes is not in control of operation or maintenance of customer supplied elements or equipment once returned to the customer. Any customer supplied elements and modifications made to the equipment after issuance of this certificate are at the risk of the customer.

The manufacturer has verified all relevant records for compliance to the standards applied above. The manufacturer retains the records for a period of time as specified in the applicable standards, which is available on request. The Sales Order includes the General Terms and Conditions, and the product described above is covered exclusively by the one year warranty set forth in the General Terms and Conditions and subject to the limitations and exclusions of warranty and liability as detailed in the General Terms and Conditions or such other separate applicable contract that may be agreed between the parties. The warranty extends only to the inspection and repair/remanufacture actually performed and not to the product as a whole. Baker Hughes assumes customer has maintained and made available to Baker Hughes traceability in accordance to the codes, standards or specifications referenced above. Any deviation from traceability and equipment operation is at the sole risk of the customer.

Baker Hughes Representative: Kui Leong Ng
Employee ID: 300015272
Issue Date: 06-Oct-2021

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CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: RAM, ASSEMBLY, ISR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP X UPPER INTERLOCKING SHEAR RAM, WITH BOPPL PACKERS AND TOP SEALS INSTALLED. NEW MFG, API 16A, INDUCTION HARDENED, T-20/250, H2S SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 71783-51-40-03-01

SERIAL NUMBER(S): BOP-210436-000 (BOP-210062-000-2)

QUANTITY: 1

Ram Assemblies were manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. Ram Assemblies meet and exceed design criteria of OEM manufactured specification. Ram Assemblies meet NACE MR-0175 & H2S Service Specification. Ram Assemblies are 100% compatible to be used in Type U manufactured Blow Out Preventers.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Products, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

[redacted]
B.O.P. Products, LLC

December 14, 2021
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

HARDNESS CERTIFICATION REPORT

DATE: 12/14/2021

CUSTOMER: BORR SEA OPERATIONS INC

CUSTOMER P.O.: P73100

ATTENTION QUALITY CONTROL DEPARTMENT

THE RAMS LISTED BELOW WERE HEAT TREATED AS PER BOP PROCESS IN-450-A AND B CORE HARDNESS REQUIREMENTS: 235-255
INDUCTION HARDENED BLADE REQUIREMENTS: IN-450B 48-53RC
INDUCTION HARDENED PIPE REQUIREMENTS: IN-450A 43-53RC
KING HARDNESS TESTER: SERIAL UH-45 RECALL DATE 04/01/2021 TO 04/01/2022
CLARK HARDNESS TESTER: MODEL CPT, S/N 02376, RECALL DATE 11/07/20 TO 02/07/22

PURCHASE ORDER #	SERIAL #	CORE HARDNESS	BLADE HARDNESS	PIPE HARDNESS
P73100	BOP-210436-000	235 BHN	50-51	N/A

BOP PRODUCTS, LLC
QUALITY CONTROL DEPARTMENT

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

LONE STAR HEAT TREATING CORP. HOUSTON, TEXAS

Certificate of Heat Treatment
Work Order No: 574285

3939 Blaffer
Houston, Tx 77026
Ph. 713-672-6616
Fax (713) 672-9509

Cust No: 009595
Cust Name: B.O.P. PRODUCTS, LLC
Quantity: 2
Cust PO#: 0000914-00
Matl: 4140
Cert Date: 05/12/2021

Description: ITEM 003 PN:61783-51-03-40 RAM,S700 UPPER,ISR SN:BOP-210062-000-1 & BOP-210062-000-2 HN:90349 WO:210062 000 000500 7 1/2" X 12 1/2" X 15"LG

INDUCTION HARDEN PER MS300 REV 2 43-52 HRC 100% INSPECTION

INDUCTION HARDENED:		OIL QUENCHED	
AS QUENCHED HARDNESS:		56-57 HRC (ETIP) TAKEN IN 6 AREAS	
TEMPERED:	625°F	4.0 HOURS	AIR COOLED
AS TEMPERED HARDNESS:		50-51 HRC (ETIP) TAKEN IN 6 AREAS	

Furnaces and instruments are calibrated to AMS 2750F. Reported heat treat times and temperatures are taken from the furnace chart recorder. Mechanical testing conforms to the requirements of ASTM A370 and only applies to the sample tested or inspected. Frequency of all testing is dictated by specification and/or customer purchase order. All work is performed and accepted, unless otherwise agreed to in writing, in accordance with the Lone Star Heat Treating Corporation Master Services Agreement Terms and Conditions which may be found at www.lsht.com and our quality manual QM-01 Rev. 21. While at Lone Star Heat Treating this material did not come in contact with mercury nor was it subject to any weld repairs.

Lone Star Heat Treating Corp.

[redacted]

MATERIAL CERTIFICATION REPORT

DATE: 12/14/2021

CUSTOMER: BORR SEA OPERATIONS INC

CUSTOMER P.O.: P73100

ATTENTION QUALITY CONTROL DEPARTMENT

THE RAMS LISTED BELOW WERE MACHINED FROM MATERIAL SUPPLIED BY:

STOOSS, USA

EACH RAM IS IDENTIFIED ON THE BUTT WITH: MFG USA, SERIAL AND HEAT NUMBER

QTY	SIZE	PIPE SIZE	DRIFT/GAUGE	HEAT #	SERIAL #
1	13-5/8" 3/10M	ISR - UPPER	PASSED	90349	BOP-210436-000

BOP PRODUCTS, LLC
QUALITY CONTROL DEPARTMENT

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

Magnetic Particle Examination Report

☐ *Initial Inspection* ☐ *WIP* X *Final Inspection*

Facility Name:	BOP PRODUCTS, LLC	Inspection/Report Date:	05/20/2021
Customer Name:	BOP	P.O. Number:	
W.O. Number:	210111-000	Quantity:	2
Test Procedure:	OP 8.4.2.1	Revision Level:	4
Acceptance Standard:	API 16A	Revision Level:	CURRENT
Part Description:	13-5/8" 3-10K T-U ISR X--UPPER		

Test Method:	☐ Continuous ☐ Residual X True Continuous ☐ Other: X Yoke AC 115V Yoke DC ___		
Particles / Light	X Wet ☐ Dry	Concentration:	11g/L
	☐ Fluorescent X Visual	Ambient Light (Lux)	150 fc
	Manufacturer: CircleSafe 850A Batch:21235		

Item Description	SERIAL#	Temp C/F	Area Under Examination (Scope of Examination)	Pass	Fail	Inspection Results (If Necessary Reference Sketch Below)
RAM BLOCKS	BOP-210062-000-1	89F	ALL ACCESSIBLE AREAS	X	☐	NO INDICATIONS FOUND
RAM BLOCKS	BOP-210062-000-2	89F	ALL ACCESSIBLE AREAS	X	☐	NO INDICATIONS FOUND
	BOP-			☐	☐	
	BOP-			☐	☐	

	SN#	HBW	FM#	HT#
Product/Equipment Description (Draw Sketches, if Necessary):	BOP-210062-000-1 BOP-210062-000-2	241 235	079-21 080-21	90349 90349

Inspector Performing MP Signature:	[redacted]	Level:	II	Date:	05/20/2021
Inspector Reviewing MP Report Signature:	[redacted]	Level:	II	Date:	5-20-2021

Form 137 Rev 1 March 2019

CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: PACKER, BLADE SEAL, INTERLOCKING SHEAR, LEFT HAND, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP ISR/DS RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 51783-21-02-01-01

BATCH NUMBER: 1016972

MFG DATE: 10/2021

EXP DATE: 10/2028

QUANTITY: 1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Product, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

Brittany Dalhoff
B.O.P. Products, LLC

December 14, 2021
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: PACKER, BLADE SEAL, INTERLOCKING SHEAR, RIGHT HAND, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP ISR/DS RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 51783-22-02-01-01

BATCH NUMBER: 1016972

MFG DATE: 10/2021

EXP DATE: 10/2028

QUANTITY: 1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

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[redacted]
B.O.P. Products, LLC

December 14, 2021
Date

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CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: PACKER, SIDE, LEFT HAND, INTERLOCKING SHEAR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP ISR/DS RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 51783-11-02-01-01

BATCH NUMBER: 5054269-2

MFG DATE: 12/2021

EXP DATE: 12/2028

QUANTITY: 1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Product, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

[redacted]
B.O.P. Products, LLC

December 14, 2021
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DESCRIPTION: PACKER, SIDE, RIGHT HAND, INTERLOCKING SHEAR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP ISR/DS RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 51783-12-02-01-01

BATCH NUMBER: 5054269-2

MFG DATE: 12/2021

EXP DATE: 12/2028

QUANTITY: 1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

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CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: TOP SEAL, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP. DUAL AND INTERLOCKING SHEAR RAMS. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 51700-04-06-DD-01

BATCH NUMBER: 36-113051553

MFG DATE: 11/2021

EXP DATE: 11/2026

QUANTITY: 1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Product, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

B.O.P. Products, LLC

December 14, 2021
Date

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CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: RAM, ASSEMBLY, ISR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP X LOWER INTERLOCKING SHEAR RAM, WITH BOPPL PACKERS AND TOP SEALS INSTALLED. NEW MFG, API 16A, INDUCTION HARDENED, T-20/250, H2S SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 71783-52-40-03-01

SERIAL NUMBER(S): BOP-210435-000 (BOP-210063-000-1)

QUANTITY: 1

Ram Assemblies were manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. Ram Assemblies meet and exceed design criteria of OEM manufactured specification. Ram Assemblies meet NACE MR-0175 & H2S Service Specification. Ram Assemblies are 100% compatible to be used in Type U manufactured Blow Out Preventers.

All material acceptances, dimensional acceptance, functional checks and processing surveillance were performed by the Quality Control Department in accordance with established B.O.P. Products, LLC procedures. If required, all non-destructive testing was performed by B.O.P. Products, LLC certified personnel or approved sources that meet customer requirements.

B.O.P. Products, LLC

December 14, 2021
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

HARDNESS CERTIFICATION REPORT

DATE: 12/14/2021

CUSTOMER: BORR SEA OPERATIONS INC

CUSTOMER P.O.: P73100

ATTENTION QUALITY CONTROL DEPARTMENT

THE RAMS LISTED BELOW WERE HEAT TREATED AS PER BOP PROCESS IN-450-A AND B CORE HARDNESS REQUIREMENTS: 235-255
INDUCTION HARDENED BLADE REQUIREMENTS: IN-450B 48-53RC
INDUCTION HARDENED PIPE REQUIREMENTS: IN-450A 43-53RC
KING HARDNESS TESTER: SERIAL UH-45 RECALL DATE 04/01/2021 TO 04/01/2022
CLARK HARDNESS TESTER: MODEL CPT, S/N 02376, RECALL DATE 11/07/20 TO 02/07/22

PURCHASE ORDER #	SERIAL #	CORE HARDNESS	BLADE HARDNESS	PIPE HARDNESS
P73100	BOP-210435-000	242 BHN	50-51	N/A

LONE STAR HEAT TREATING CORP. HOUSTON, TEXAS

Certificate of Heat Treatment
Work Order No: 574284

3939 Blaffer
Houston, Tx 77026
Ph. 713-672-6616
Fax (713) 672-9509

Cust No: 009595
Cust Name: B.O.P. PRODUCTS, LLC
Quantity: 2
Cust PO#: 0000914-00
Mat'l: 4140
Cert Date: 05/12/2021

Description: ITEM 002 PN:61783-52-03-40 RAM,S700 LOWER,ISR SN:BOP-210063-000-1 & BOP-210063-000-2
HN:91159 WO:210063 000 000500 7 1/2" X 12 1/2" X 15"LG

INDUCTION HARDEN PER MS300 REV 43-53 HRC 100% INSPECTION

INDUCTION HARDENED:		OIL QUENCHED	
AS QUENCHED HARDNESS:		56-57 HRC (ETIP) TAKEN IN 6 AREAS	
TEMPERED:	625°F	4.0 HOURS	AIR COOLED
AS TEMPERED HARDNESS:		50-51 HRC (ETIP) TAKEN IN 6 AREAS	

Furnaces and instruments are calibrated to AMS 2750F. Reported heat treat times and temperatures are taken from the furnace chart recorder. Mechanical testing conforms to the requirements of ASTM A370 and only applies to the sample tested or inspected. Frequency of all testing is dictated by specification and/or customer purchase order. All work is performed and accepted, unless otherwise agreed to in writing, in accordance with the Lone Star Heat Treating Corporation Master Services Agreement Terms and Conditions which may be found at www.lsht.com and our quality manual QM-01 Rev. 21. While at Lone Star Heat Treating this material did not come in contact with mercury nor was it subject to any weld repairs.

Lone Star Heat Treating Corp.

[redacted]

MATERIAL CERTIFICATION REPORT

DATE: 12/14/2021

CUSTOMER: BORR SEA OPERATIONS INC

CUSTOMER P.O.: P73100

ATTENTION QUALITY CONTROL DEPARTMENT

THE RAMS LISTED BELOW WERE MACHINED FROM MATERIAL SUPPLIED BY:

STOOSS, USA

EACH RAM IS IDENTIFIED ON THE BUTT WITH: MFG USA, SERIAL AND HEAT NUMBER

QTY	SIZE	PIPE SIZE	DRIFT/GAUGE	HEAT #	SERIAL #
1	13-5/8" 3/10M	ISR - LOWER	PASSED	90349	BOP-210435-000

BOP PRODUCTS, LLC
QUALITY CONTROL DEPARTMENT

9118 SWEETBRUSH, HOUSTON, TX 77064
P.O. BOX 692172 HOUSTON, TX 77269 USA
Phone: 281.955.6321 – Fax: 281.955.6329
Sales@bop-products.com

Magnetic Particle Examination Report

☐ *Initial Inspection* ☐ *WIP* **X** *Final Inspection*

Facility Name:	BOP PRODUCTS, LLC	Inspection/Report Date:	05/20/2021
Customer Name:	BOP	P.O. Number:	
W.O. Number:	210063-000	Quantity:	2
Test Procedure:	OP 8.4.2.1	Revision Level:	4
Acceptance Standard:	API 16A	Revision Level:	CURRENT
Part Description:	13-5/8" 3-10K T-U ISR X—LOWER		

Test Method:	☐ Continuous ☐ Residual X True Continuous ☐ Other: X Yoke AC _115V_ Yoke DC		
Particles / Light	X Wet ☐ Dry	Concentration:	11g/L
	☐ Fluorescent X Visual	Ambient Light (Lux)	150 fc
	Manufacturer: CircleSafe 850A Batch:21235		

Item Description	SERIAL#	Temp C/F	Area Under Examination (Scope of Examination)	Pass	Fail	Inspection Results (If Necessary Reference Sketch Below)
RAM BLOCKS	BOP-210063-000-1	87F	ALL ACCESSIBLE AREAS	X	☐	NO INDICATIONS FOUND
RAM BLOCKS	BOP-210063-000-2	87F	ALL ACCESSIBLE AREAS	X	☐	NO INDICATIONS FOUND
	BOP-			☐	☐	
	BOP-			☐	☐	

	SN#	HBW	FM#	HT#
Product/Equipment Description (Draw Sketches, if Necessary):	BOP-210063-000-1	242	081-21	91159
	BOP-210063-000-2	242	082-21	91159

Inspector Performing MP Signature:	[redacted]	Level:	II	Date:	05/20/2021
Inspector Reviewing MP Report Signature:		Level:	II	Date:	5-20-2021

Form 137 Rev 1 March 2019

CERTIFICATE OF CONFORMANCE

CUSTOMER: BORR SEA OPERATIONS INC

P.O. NUMBER: P73100

S.O. NUMBER: 0000936

DESCRIPTION: PACKER, SIDE, LEFT HAND, INTERLOCKING SHEAR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP ISR/DS RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.

PART NUMBER: 51783-11-02-01-01

BATCH NUMBER: 5054269-2

MFG DATE: 12/2021

EXP DATE: 12/2028

QUANTITY: 1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

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[redacted]
B.O.P. Products, LLC

December 14, 2021
Date

9118 SWEETBRUSH, HOUSTON, TX 77064
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CERTIFICATE OF CONFORMANCE

CUSTOMER:	BORR SEA OPERATIONS INC
P.O. NUMBER:	P73100
S.O. NUMBER:	0000936
DESCRIPTION:	PACKER, SIDE, RIGHT HAND, INTERLOCKING SHEAR, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP ISR/DS RAM. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.
PART NUMBER:	51783-12-02-01-01
BATCH NUMBER:	5054269-2
MFG DATE:	12/2021
EXP DATE:	12/2028
QUANTITY:	1

This equipment was manufactured and inspected in accordance with B.O.P. Products, LLC and API 16A latest Edition Specification requirements. This equipment meets and exceeds design criteria of OEM manufactured packer specification.

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[redacted]
B.O.P. Products, LLC

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CERTIFICATE OF CONFORMANCE

CUSTOMER:	BORR SEA OPERATIONS INC
P.O. NUMBER:	P73100
S.O. NUMBER:	0000936
DESCRIPTION:	TOP SEAL, SERIES 700 (U), 13-5/8" 3/10,000 PSI WP. DUAL AND INTERLOCKING SHEAR RAMS. NEW MFG, API 16A, T-20/250, BOPPL, STANDARD SERVICE PER NACE MR-0175 SPECIFICATIONS.
PART NUMBER:	51700-04-06-DD-01
BATCH NUMBER:	36-113051553
MFG DATE:	11/2021
EXP DATE:	11/2026
QUANTITY:	1

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[redacted]
B.O.P. Products, LLC

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SQS Reg. Nr.: 10537

SCHMIEDEWERK STOOSS
TÜV nach AD 2000 W 0 / TRD 100 / PED 2014/68/EU Annex I / Bureau Veritas
DET NORSKE VERITAS - Germanischer Lloyd - Lloyd's Register of Shipping
URZAD DOZORU TECHNICZNEGO, UDT-Polen, American Bureau of Shipping
Russian Maritime Register of Shipping

EN 10 204 3.1
ST
Herstellerzeichen
Manufacturer's stamp
Sigle du fabricant
ORIGINAL

Dokumentation / Documentation / Documentation

Kunde/ Customer/ Client	B.O.P. Products, LLC 9118 Sweetbrush Houston, Texas 77269 USA	unsere Ref./ Certificate no./ No.	77583A11
Kd.Bestell Nr./ PO no./ No de commande	913-00 ✓	Position / Item/ Poste	1
Bezeichnung/ Description/	RAM Forging ✓	Anzahl/ Quantity/ Quantité	5 ✓
Kd. Material/ Cust. Material/ Nuance matière	ASTM A 29 Grade 4140 (AISI 4140) ✓	Charge Nr./ Heat no./ No.de coulée	90349 ✓
Lieferzustand/ Condition of delivery/ Etat de livraison	Unmachined ✓	Dimension/ Dimension	BS 350.0 x 204.0 x 407.0 mm
Kd. Zeichn. Nr./ Cust. drawing/ Plan	F-14356-1 Rev.C	Liefergewicht/ Weight of delivery/ Poids livré	6020 kg
Artikel No./ Part no./ No. d'article	M22616000650016O0	Probe Nr./Test no./ No. d'essai	69113 ✓
Kd. Spezifikation/ Cust.Spec./ Spec. Client	MS-200 Rev.2 / NACE MR0175/ISO 15156 1st Ed.		
Stempelung/ Marking/ Marquage	77583A11 / 90349 painted: 77583A11 label: 77583A11 / ASTM A 29 Grade 4140 (AISI 4140) / 90349 / 5066 / F-14356-1 / ST 69113 QI ✓		
Visuelle Prüfung/ Visual inspection/ Contrôle	in Ordnung/ accepted/ accepte	Masskontrolle/Dimension Dimensionelle	in Ordnung/ accepted/ accepte

Inhaltsverzeichnis / Content / Contenu

Materialzeugnis / Material test report / Certificat matière 2
Wärmebehandlungsprotokoll / Test report heat treatment / Fiche de traitement thermique 4
Zerstörende Prüfung / Destructive testing / Essai destructif 13
Zerstörungsfreie Prüfung / Non destructive testing / Essais non destructifs 16

Wir bestätigen, dass das Produkt gemäss der Norm ISO 9001 produziert wurde und die Lieferung den Vereinbarungen bei der Kundenbestellnummer:5066 entspricht.
We confirm that the product was produced under a quality system ISO 9001 and in acc to. to PO 5066.
Produit et testé selon le Système d'Assurance Qualité EN-ISO 9001 et les Conditions Générales d'Achats No.de Commande 5066.

[redacted]
5-7-2021

Werkszeugnisprüfer / Inspector / Inspecteur :

[redacted]
A. Kneidinger

SQS Reg. Nr.: 10537

SCHMIEDEWERK STOOSS
TÜV nach AD 2000 W 0 / TRD 100 / PED 2014/68/EU Annex I / Bureau Veritas
DET NORSKE VERITAS - Germanischer Lloyd - Lloyd's Register of Shipping
URZAD DOZORU TECHNICZNEGO, UDT-Polen, American Bureau of Shipping
Russian Maritime Register of Shipping

EN 10 204 3.1
ST
Herstellerzeichen
Manufacturer's stamp
Sigle du fabricant
ORIGINAL

Chemische Zusammensetzung gem. Hersteller / Chemical composition according to manufacturer / Analyse chemique de la coulée selon fabricant

Heat no.	C	Si	Mn	P	S	Cr	Mo
90349	0.427	0.24	0.80	0.006	0.0110	1.05	0.21
BREITENFEL	Ni	V	Al	Cu	N	Co	W
	0.11	0.025	0.012	0.06	0.0063	0.01	0.01
	Sn	H	Fe				
	0.006	0.00013	97.00				

Melting practices: EAF, LF, VD

Test Specimen taken from a separatly forged QTC 4"x4"x8" from the same heat as production parts.
No welding repair has been performed out on forgings.
Reduction ratio: > 3:1

[redacted]
5-7-2021

Breitenfeld Edelstahl

ABNAHMEPRÜFZEUGNIS 3.1 Rev.1

Test certificate - Certificato di collaudo

EN 10 204

Abnahme / approval

Nr. 100432

AN BESTELLER: SCHMIEDEWERK STOOSS AKTIENGESELLSCHAFT MAIENBRUNNENSTRASSE 8 6008 HEDINGEN
Purchaser/Cliente

BESTELL-NR.: 14352
Purchaser's Order No./Ordine Nr.

UNSERE AUFTRAGS-Nr.: 93509
Works Order No./Nr. Commessa

ERSCHMELZUNGSART: EAF+LF+VD
Steelmaking Process/ Tipo di elaborazione acciaio

WERKSTOFF: AISI4140/ 42CrMo4
Material/Materiale

MARKENBEZEICHNUNG: AISI4140/ 42CrMo4
Specification,Grade of Material/ Marca dell' acciaio

ORDNUNGSNR.: Blockguss/ Ingot
Object/Oggetto

LIEFERZUSTAND: Enden gesägt
Condition of delivery/Stato di fornitura

ANFORDERUNGEN: gem. Spez. NV 52 Rev. 5
Requirements/Specifica

KENNZEICHNUNG: Qual., Chg.Nr.
Marking/Marcature

POS. Pos./Pos.	STÜCK Pieces/Pezzi	ABMESSUNG Dimension/Dimensione	SCHMELZE NR. Heat No./Colata Nr.	PROBE NR. Spec.Nr/Provv Nr	GEWICHT TO Weight/Peso
1	3	Ø 592	90349	1	24,940
1	3	Ø 592	90349	1	24,580

Ergänzungen: STIRNABSCHRECKVERSUCH NACH JOMINY:

MM: 1,5 3 5 7 9 11 13 15 20 25 30 35 40 45 50
60 59 59 59 57 57 56 55 53 50 47 45 44 43 43

RG nach DIN 50602 wird garantiert: K4 : max.20 HB : max.300 J-Faktor : 120

EAF - Electric Arc furnace, LF - Ladle Furnace, VOD - Vacuum Oxygen Decarburization, VD - Vacuum Degassing, VCD - Vacuum Carbon Decarburization, ESR - Electro Slag Remelting, VAR - Vacuum Arc Remelting

No welding operations during production of material performed / Material free of radioactive contaminations (Co 60< 0,18q / g)

SCHMELZE NR. Heat No/Colata Nr	CHEMISCHE ANALYSE / Chemical composition / Analisi chimica delle colate (%)					
90349	C :0,427	Si:0,24	Mn:0,80	P :0,006	S :0,0110	Cu:0,06
	Cr:1,05	Ni:0,11	Mo:0,21	W :<0,01	V :0,025	Ti:0,002
	Co:0,01	Al:0,012	Sn:0,006	Pb:0,0002	N :0,0063	H2:0,00013
	Fe:97,00					

Ergebnis der Prüfungen :
Test Results / Risultato delle prove

Die gestellten Anforderungen sind erfüllt.
The material has been furnished in accordance with the requirements
Il materiale è stato collaudato secondo le valori richiesti

BESICHTIGUNG UND NACHMESSUNG : KEIN ANSTAND
Inspection and Checking of Dimensions : satisfactory
Controllo visivo e dimensionale : senza difetti

[redacted] 5-7-2021

VERIFIED COPY
GEPRÜFTE KOPIE
Datum: 2019/11/22
Visum: MetzerK

[redacted] D Edelstahl
llschaft
re-Mitterdorf

Mitterdorf, 22.11.2019

Der Werksachverständige / official expert

77583A11 Datum/Date: 20.02.2020 Seite/Page: 3/16

Reg. Nr.: 10537

STOOSS

TÜV AD 2000 W 0 / TRD 100 / PED 2014/68/EU Annex I
Bureau Veritas, DNV GL, Lloyd's Register of Shipping
Urzad Dozoru Technicznego, American Bureau of Shipping
Russian Maritime Register of Shipping

Herstellerzeichen Manufacturer's stamp Marque de fabricant: ST ORIGINAL

Wärmebehandlungsprotokoll / Test report heat treatment / Fiche de traitement thermique

	Stooss Ref. Certificate no. No. Certificat	77583 A11,A1Q

Wärmebehandlung / *Heat treatment/ Traitement thermique:*

	Ofen / furnace / four Batch No. #	Temperatur / temperature / température / °C	Zeit / time / temps /h	Abkühlmedium cooling medium Type de refroidissement
Normalisieren / normalising / normalisation	17-2179	880	4	Luft/ air/ air
Härten / hardening / durcissement	17-2180	860	4	Polymer
Anlassen / Tempered / revenu	17-2181	640	7	Luft/ air/ air

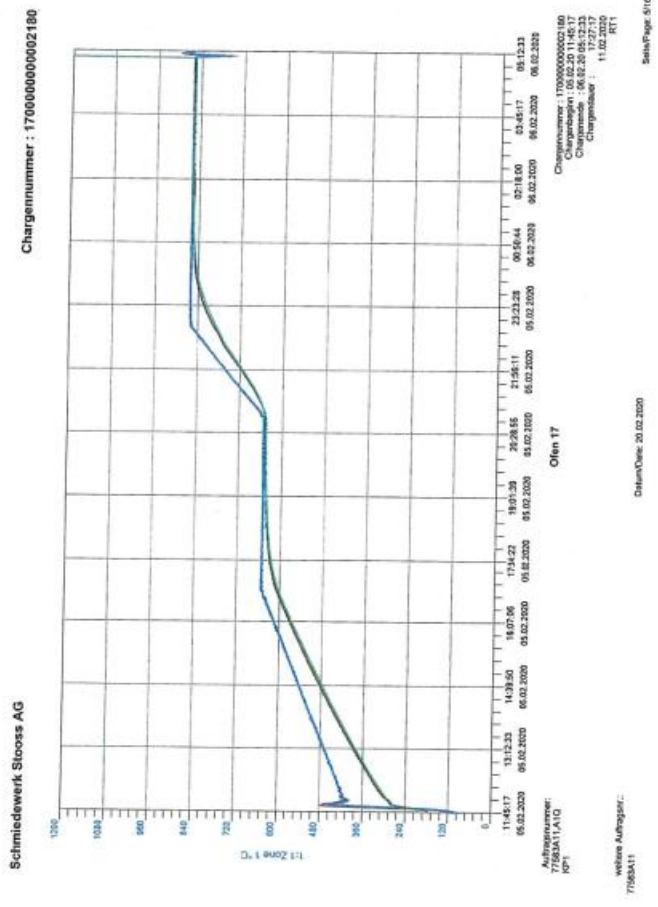
Härteprüfung / *Hardness test/ test de dureté:*

Vorschrift *specification* *spécification* EN ISO 6506-1:02.2015		Prüfmethode *Test Method* *Méthode d' essai* HBW		Sollwerte/ Requirements/ Valeurs imposées: 235-255	
Belastungsdauer *Load time* *durée de charge*	10 Sek.	Prüfdruck *Testing pressure* *pression d'épreuve*	3000 kg	Kugel Ø *Ball Ø* *bille Ø*	10 mm
77583A11 1.	250	12.	253	23.	255
2.	251	13.	252	24.	251
3.	255	14.	253	25.	250
4.	253	15.	254	26.	249
5.	250	16.	254	27.	251
6.	250	17.	252	28.	255
7.	252	18.	253		
8.	255	19.	251		
9.	254	20.	255		
10.	253	21.	255	77583A1Q	255
11.	252	22.	254		
Visum / sign / signature:RT1		Datum / date / date: 11.02.2020			

[redacted] 1 - 252

[redacted] 5-7-2021

77583A11 SCHMIEDEWERK STOOSS AG Datum/Date: 20.02.2020 Seite/Page: 4/16



STOOSS

Foto
Heat Treatment Batch

Order No.
77583 – 5066

Furnace Load Nr.: 17 - 2180 from 05.02. - 06.02.2020

2 x Thermocouples No.: 124685/71 and 123695/76

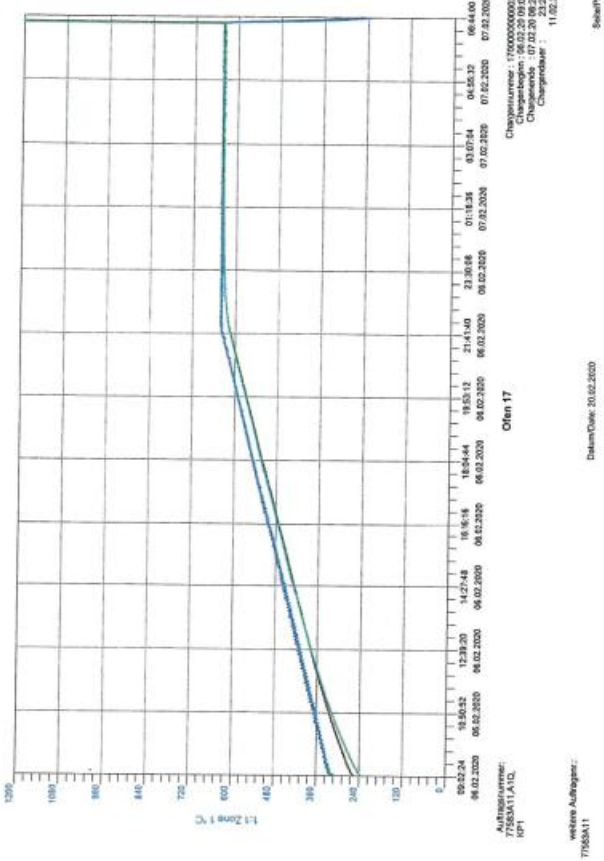
28 x 77583 A11
1 x 77583 A1Q (sacrificial part)

11.02.2020

R.Thomas

77583A11 Datum/Date: 20.02.2020 Seite/Page: 6/16

Chargennummer : 170000000002181



Schmiedewerk Stooss AG

STOOSS

Foto
Heat Treatment Batch

Order No.
77583 – 5066

Furnace Load Nr.: 17 - 2181 from 06.02. – 07.02.2020

2 x Thermocouples No.: 124688/71 and 123695/76

28 x 77583 A11
1 x 77583 A1Q (sacrificial part)

11.02.2020

R.Thomas

77583A11

Datum/Date: 20.02.2020

Seite/Page: 8/16

STOOSS

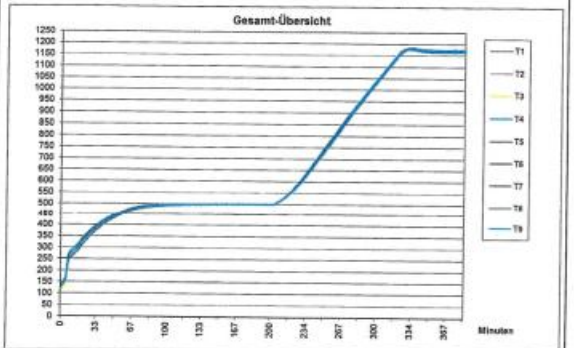
Messungen, Analysen, Verbesserungsprozesse
Kapitel 06-020.020
Kalibrierung von Wärmebehandlungsöfen

Formular
FO 62-19 Rev. 0
Status: freigegeben

Kalibrier-Zertifikat	Zertifikat Nr. 2019-090-O	Seite 1 von 4

Messresultate / Bemerkungen:

Anlage- Bezeichung :	Ofen Nr. 17/11
Hersteller :	Löcher
Typ :	gasbeheizt
Serie-Nr. :	
Bemerkungen 1 :	
Bemerkungen 2 :	
Messfühlerbezeichnung :	123695
Anzahl Kanäle :	9
Q:\WBH\MCS\Daten\Ofen\2019-090-O	
Messzeit:	30 Minuten
Prozessanweisung:	PA 62-56



Sollwert	Toleranzbereich	Mittelwert	Tmax-Tmin	Berechnung Von	Berechnung bis	Kalibrierung
500	± 8°C	499.7	6.6	168	198	i.O
1170	± 14°C	1168.8	14.9	354	384	i.O

Datum der Kalibrierung : 17.09.2019 **Visum :**

77583A11

Datum/Date: 20.02.2020

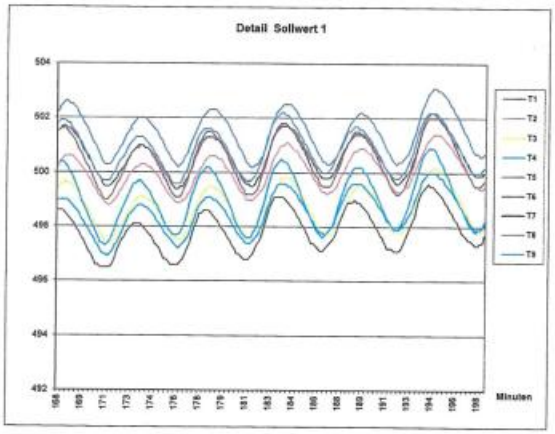
Seite/Page: 9/16

STOOSS

Messungen, Analysen, Verbesserungsprozesse
Kapitel 06-020.020
Kalibrierung von Wärmebehandlungsöfen

Formular
FO 62-19 Rev. 0
Status: freigegeben

Detail-Angaben Sollwert 500 °C	Zertifikat Nr. 2019-090-O	Seite 2 von 4



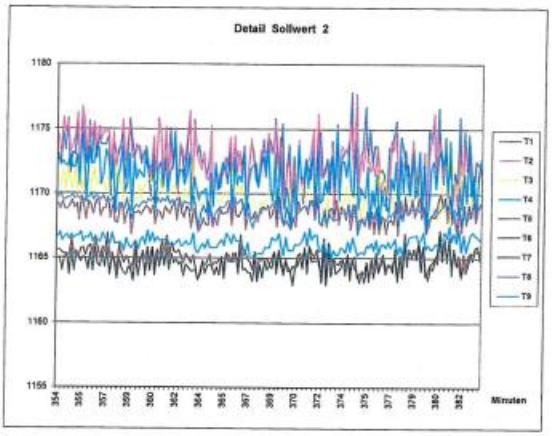
Max-Wert	Min-Wert	Mittelwert	Tmax-Tmin	Fühler-Nr	Kanal Nr
503.1	500.2	501.5	2.9	123695 / 91	1
501.4	498.8	500.0	2.6	123695 / 92	2
500.2	497.4	498.7	2.8	123695 / 93	3
500.9	497.3	499.0	3.6	123695 / 94	4
502.2	499.0	500.5	3.2	123695 / 50	5
502.0	499.4	500.6	2.6	123695 / 76	6
499.6	496.5	497.9	3.1	123695 / 77	7
502.2	499.6	500.8	2.6	123695 / 88	8
500.0	496.9	498.5	3.1	123695 / 79	9

77583A11

Datum/Date: 20.02.2020

Seite/Page: 10/16

Detail-Angaben Sollwert 1170.00 °C	Zertifikat Nr. 2019-090-O	Seite 3 von 4

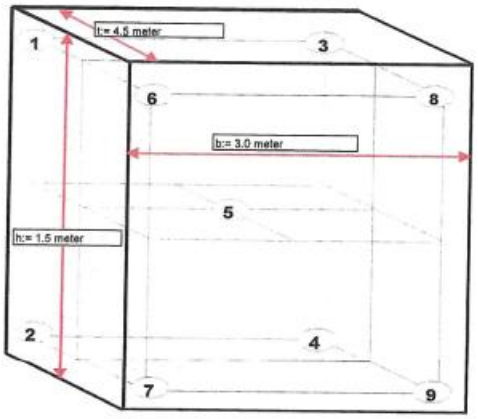


Max-Wert	Min-Wert	Mittelwert	Tmax-Tmin	Fühler-Nr	Kanal Nr
1177.8	1168.2	1172.7	9.6	123695 / 91	1
1177.5	1168.4	1172.8	9.1	123695 / 92	2
1173.2	1167.2	1169.9	6.0	123695 / 93	3
1174.9	1167.0	1171.2	7.9	123695 / 94	4
1170.0	1166.7	1168.5	3.3	123695 / 50	5
1167.1	1163.3	1165.0	3.8	123695 / 76	6
1166.7	1162.9	1164.5	3.8	123695 / 77	7
1170.1	1166.8	1168.8	3.3	123695 / 88	8
1167.5	1165.0	1166.2	2.5	123695 / 79	9

Beilage zu Positionierung TE	Zertifikat Nr. 2019-090-O	Seite 4 von 4

Kalibrieren von Wärmebehandlungsöfen mit 9 Messstellen

Anordnung der Temperaturfühler



Auswertung der Messergebnisse

Pro Temperatur-Messpunkt wird nach Erreichen des stabilen Zustands dieser Messpunkt während minimum 30 Minuten gemessen und danach ausgewertet.
Die Anforderung an die Temperatur ist erfüllt, wenn die Differenz gleich oder kleiner als die vom Kunden festgelegte Temperaturbandbreite ist.
Das arithmetische Mittel des Nutzraumes wird pro Zeiteinheit über alle Kanäle für den angegebenen Zeitabschnitt gebildet.
Die Temperaturdifferenz ist die Differenz zwischen dem grössten und dem kleinsten Temperaturwert über alle Kanäle und dem angegebenen Zeitabschnitt.

Auftragsdaten / Order data

Auftragsnr. / Article no.	77583A1Q, A11	Probenr. / Sample no.	69113
Kunde / Customer	B.O.P. Products, LLC	Werkstoff / Material	ASTM A29 Grade 4140
Charge / Heat	90349	Prüfstelle / Test place	Probenmaterial / sample material

Untersuchung / Examination

Härtevergleichsplatte / Hardness comparison plate	340 ± 2.1 HBW2.5/187.5 (MPA NRW 7757502.0218)
Prüfmittel / Test equipment	655-017 Otto Wolpert Werke GmbH / Dialestor 2Rc incl. HME 5.3 + ESV + LE / 9253/HME5.3:906.005.310-0099 650.002-001-10-0021
Letze Kalibration / last calibration	06.11.2019 (Jährlich / annual)
Untersuchungsmethode / Examination Method	Brinell: DIN EN ISO 6506-1 (2015-02) / ASTM E10-17

Ergebnis / Result

Vorgabe / Requirements	235 - 255 HB
Ergebnis 1 / Result	254 HBW2.5/187.5
Ergebnis 2 / Result	255 HBW2.5/187.5

242 - 252
[redacted]
5-7-21

Konformitätsaussage : Konform / conform

Prüfer / Examiner	Patrick Kiener, Techn. Prüfung / Abnahmen
Unterschrift / Signature	[redacted]
Datum / Date	Freitag, 14. Februar 2020

Dokument Name: MTR-H 69113

Prüfprotokoll - Zugversuch / tensile testing / essai de traction

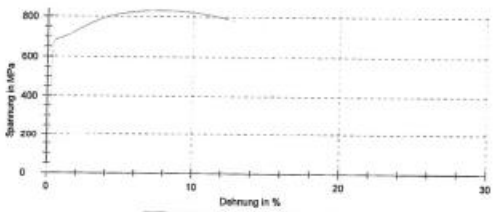
ProbenNr. : 69113
AGN : 110
Werkstoff : ASTM A 29 Grade 4140 (AISI 4140)
Prüfnorm : ASTM A370 (2017)
Probentyp : ASTM E8-16a FIG.9 Specimen 4 (L0 = 4 x d0)
Prüfer : PK!
Maschine : Nennarbeitsvermögen 250 kN / ID 655-0015

Ergebnisse / results / résultats:

Probenlage Zug : 1/4 T
Probenrichtung Zug : längs
Prüfgeschwindigkeit : 0.008 1/s
Geschwindigkeit Streckgrenze : 60 MPa/s
Kalibrierdatum : 25. November 2019

ProbeNr.	R_{eH} MPa	$R_{p0.2}$ MPa	R_m MPa	A %	Z %	L0 mm	d_0 mm
		---	---	---	---		
		621	759,0	18,0	35,0		
69113	-	683	831,4	18,1	50,9	50,0	12,50

Grafik / graphic / graphique:



Konformitätsaussage: Konform / conform

Die Prüfergebnisse beziehen sich nur auf die aufgeführte Proben. Es darf nicht auszugsweise kopiert werden.
These test results only relate to the above mentioned sample. This test record has to be treated as confidential and may not be copied.

Legende:
Werkstoff / material / matière
Prüfnorm / standard / norme
Prüfer / inspector / inspecteur
AGN / operation / opération
Probe / test sample / coupon d'essai
Spannung / tensile / traction
Dehnung / elongation / élongation

STOOSS

Datum: 14.02.2020

Dokument Name : MTR-C69113

Prüfprotokoll - Kerbschlag / impact test / essai de résilience

ProbenNr. : 69113
AGN : 120
Werkstoff : ASTM A 29 Grade 4140 (AISI 4140)
Prüfnorm : ASTM A 370 (2017) / ASTM E 23 (2016b)
Prüfer : PKI
Maschine : Kapazität 450 J / ID 655-0016 / theor. Auftreffgeschw. 5.232 m/s

Ergebnisse / results / résultats:

Probenlage Kerb : 1/4 T
Probenrichtung Kerb : längs
Probeform : Charpy-V [Joule]
Kalibrierdatum : 13. November 2019

Probe	EW (J) J	MW (J) J	EW (ft) ft lbf	MW (ft) ft lbf	Prüftemperatur	Probenbruch
	---	---				
	20	27				
69113	34	30	25	22	-29°C / -20.2°F	Gebrochen / Broken
	28		20			
	27		20			

Konformitätsaussage: Konform / conform

Legende:
Werkstoff / material / matière
Prüfnorm / standard / norme
Probeform / specimen type / forme d'échantillon
Prüfer / inspector / inspecteur
AGN / operation / opération
Probe / test sample / coupon d'essai
EW (Einzelwert) / single value / valeur individuelle
MW (Mittelwert) / average value / valeur moyenne

STOOSS

Prüfbericht
Sichtprüfung
Visuale testing report
Schmiedeteile
Forgings

Prüfbericht Nr. / *Test report no.*: 77583A11 Rev. / *Rev.*: 0
Seite / *Page*: 1 von / *of*: 1

Kundendaten / *Customer data*

Kunde / *Customer*: B.O.P. Products, LLC	Kunden Bestell. Nr. / *Customer order no.*: 5066	Kunden Artikel Nr. / *Customer article no.*: -
Kunden Zeichnungs Nr. / *Customer drawing no.*: F-14356-1 Rev.C	Serial Nr. / *Serial no.*: -	Bezeichnung / *Designation*: RAM Forging
Charge / *Batch no.*: 90349	Werkstoff / *Material*: ASTM A 29 Grade 4140 (AISI 4140)	Anzahl / *Quantity*: 28
Spezifikation / *Specification*: MS-200 Rev.02	Prüfumfang / *Extent of examination*: 100%	Dimensionen / *Dimension*: 410 x 210 x 355

Prüfzustand / *State of testing*

Roh / *Rough*	Gestrahlt / *Shotblasted*	Vorbearbeitet / *Pre machined*	Fertigbearbeitet / *Finished machined*	Qualifizierende Wärmebehandlung / *QT heat treatment*	Spannungsarmgeglüht / *Stress relief*
☐	☐	☒	☐	vor / *before* ☐ nach / *after* ☒	vor / *before* ☐ nach / *after* ☐ ohne / *without* ☒

Prüfverfahren / *Examination procedure*

Direktprüfung / *Direct inspection*	Lupe / *Magnifying glass*	Vergrösserung / *Magnifying*	Hintergrundbeleuchtung / *Backlight*	Betrachtungswinkel / *Viewing angle*	Betrachtungsabstand / *Viewing distance*
☒	☐	X -	> 1000 Lux	> 30°	max. 600 mm

Indirektprüfung / *Indirect inspection*	Hilfsmittel / *Auxiliary means*		
☐	-	-	-

Prüfgeräte / *Examination equipment*

Hersteller / Typ / Seriennummer / *Manufacturer / Type /Serial number*		
Accumax	XR-1000 / XDS-1000	1883040 / 1883042

Bemerkung / *Remark*

Prüfergebnis / *Result of examination*

Keine registrierpflichtige(n) Anzeige(n) / *Without recordable indication(s)*	Mit registrierpflichtige(n) Anzeige(n) / *With recordable indication(s)*	Nr. Abweichungsbericht / *No. Non-conformance report*
☒	☐	-

Signaturen / *Signatures*

Prüfer / *Examiner*	Prüfaufsicht / *Supervisor*	Besteller o. Abnehmer / *Purchaser o.inspector*
Imgrüth Sandro [redacted] UT/MT/PT/VT Lev. 2 acc. to EN 9712 UT/MT/PT/VT Lev. II acc. to SNT-TC-1A 18.02.2020	Wenta Andreas [redacted] UT/MT/PT/VT Lev. 3 acc. EN 9712 UT/MT/PT/VT Lev. II acc. SNT-TC 1A 18.02.2020	

Certificate of Authority to use the Official API Monogram

ORIGINAL

License Number: 16A-0250

The American Petroleum Institute hereby grants to

B.O.P. PRODUCTS, LLC
9118 Sweetbrush
Houston, TX

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-16A** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **16A-0250**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Adapters, Drilling Spools and Spacer Spools, Annular BOP, Ram Blocks, Packers, and/or Top Seals and Ram BOP

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: APRIL 2, 2020
Expiration Date: MAY 5, 2023

[redacted]
Vice President of Global Industry Services

To verify the authenticity of this license, go to www.api.org/compositelist.

American Petroleum Institute

AXON ENERGY SERVICES

596 South Hollywood Road
Houma, Louisiana USA 70360
T: (1) 985-872-3711

CERTIFICATE OF CONFORMANCE

Certificate Issue Date:	4/27/2023
Customer:	BORR DRILLING
Customer Purchase Order:	P105881
Sales Order Number:	48-14261
Certificate Number:	S-SDT65220122
OEM:	CAMERON
CEM:	AXON ENERGY SERVICES
Date Of Repair:	04/2023
ARF Job Number:	65220122

This certificate confirms that the equipment requested per the above purchase order and listed below has been remanufactured in conformance with:

- API Specification 16AR First Edition

This Certification is Related to the Following Ratings:

Rated Working Pressure:	10 KSI
Rated Temperature of Metallic Components (min/max):	0 to 250 °F
Sour Service according to NACE MR0175/ISO 15156:	☒ Yes ☐ No
Remanufacturing Specification Level (RSL) :	1
Operation Enviroment (Marine / Land) :	MARINE/LAND
Reason for Current RSL Determination:	1.NO TENSILE TESTING IS AVAILABLE FOR WELLBORE WETTED PRESUURE CONTROLLING PARTS. 2.NO IMPACT TESTING IS AVAILABLE FOR WELLBORE WETTED PRESSURE CONTROLLING PARTS. 3.MATERIAL PROPERTIES ARE NOT AVAILABLE FOR AT LEAST ONE PRESSURE CONTAINING, PRESSURE RETAINING, OR PRESSURE CONTROLLING PART.

List of Certified Equipment:

Item	Assembly or Part No.	Rev	Qty	Description	Serial Number(s)
1	N/A	N/A	1	DOUBLE RAM 13-5/8" 10,000 PSI U TYPE (SB-SB)	111144715-01

Records to support this Certificate have been reviewed and found to be within conformance with the applicable standards listed above. These records will be retained on file for a minimum of 10 years from the date of remanufacture as indicated on the equipment.

Certificate of Conformance Approval

Signatur[redacted]

Name: [redacted]

Title: QUALITY MANAGER

Schlumberger

CCMQ0007
Well Construction Equipment

Certificate of Conformance
Repair/Remanufacture to Cameron Specification

Cameron (Singapore) Pte Ltd
100 Tuas South Avenue 8
Singapore 637424
API Q1 Reg. N. Q1-3689

Certificate Date: Aug 2021 **Customer PO Number:** P61475 R1

Customer Name: BORR DRILLING MALAYSIA SDN BHD **Sales Order Number:** 6200235420

Cameron a Schlumberger Company certifies that the item(s) described here with is (are) in conformance with the requirements of the above Purchase Order Number and fully comply with applicable Cameron specifications in effect at the date this document is issued. The company through this media declares that, to the extent of its knowledge, the product(s) listed below is/are Free from Asbestos when delivered from the Company, including any fittings, equipment, cables, gaskets, glands, packings, brake lining and insulation.

Table 1

List of Equipment								
Item #	Part Number	Rev #	Description	OEM Serial Number(s)	CP Number	Repair/ Remanufacturing Work Order Number	Equipment Number (ERN)	Notes
1	2396230-113	01	CONVERSION ASSY U BOP 13-5/8 10K DOUBLE CAVITY, W/ API 8X-159 FLANGED TOP AND BOTTOM, W/ FOUR 3-1/16 10K API 8X-154 FLANGED OUTLET, W/ SPECIAL INLAY PER SO-39410-13" ON ALL SEALING AREAS, W/ SEAL CARRIER PREP, W/ STANDARD BONNETS ON UPPER CAVITY, W/ LARGE BORE SHEAR BONNETS AND TANDEM BOOSTER ON LOWER CAVITY, W/ MANUAL LOCKING SCREWS, W/ LIFTING PLATES CAPACITY 100 METRIC TONNES BY SET (BODY MATERIAL 4130 AND BONNETS CR COMPONENTS) PER API 16A 3RD ED, T-20	4864294	6296235429-1301	4864294	15939943	NA

Table 2

Rating and Operational Limits	
Rated Working Pressure:	10K PSI
Rated Temperature for Metallic Components:	T-20
Design Temperature of Non-Metallic Components (minimum and maximum):	Not Applicable
Sour Service according to NACE MR0175/ISO 15156:	YES ☒ NO ☐ This BOP assembly is manufactured from metallic materials that are in full compliance with NACE MR0175: 2015. This standard imposes no environmental limits based on the rated working pressure or maximum temperature rating of the metallic components.
CCP Program-Cameron Product Line Continuous Certification Program:	☐ Applicable SP: NA
Operational Environment (Marine/Land):	☒ Marine ☐ Land ☐ Not Applicable
Other limitations:	NA

Schlumberger-Private

Schlumberger

CCMQ0007
Well Construction Equipment

Certificate of Conformance
Repair/Remanufacture to Cameron Specification

Cameron (Singapore) Pte Ltd
100 Tuas South Avenue 8
Singapore 637424
API Q1 Reg. N. Q1-3689

Table 3

Cameron Certifications:

- ☐ First Class per SP-001060-03 *
- ☐ Working Class per SP-001060-04 *
- ☐ Combination Class per SP-001060-09 *
- ☐ Norwegian Specification per SP-001060-16 *
- ☒ In-Service Re-Certification (Inspection) per SP-001060-21-Drill Through Equipment *
- ☐ In Service Re-Certification per SP-001060-24 C&K Manifolds *
- ☐ In Service Re-Certification per SP-001060-25 Control Systems *
- ☐ In Service Re-Certification per SP-001060-26 Riser Equipment
- ☐ Other, please specify: NA

Special Conditions / Exceptions: the following special conditions and /or exceptions apply:

NA

Table 4 (Comments)

- It is the responsibility of the owner to ensure risk analysis is considered and carried out prior to every operation including subject equipment when evaluating risk situation.
- All documents and inspection reports to support this Certificate of Conformance have been verified and added to the product history file for a minimum of 10 years from the date this certificate is issued.
- Repair/Remanufacturing SP's marked with (*) in table 3 satisfy the Inspection Requirements of API Standard 53, 5th edition, Sections 5.4.2.1a and 6.5.2.1a

All documents and inspection reports to support this Certificate of Conformance have been verified to the best of my knowledge to be true and correct.

FIRST NAME, MIDDLE INITIAL, LAST NAME	HAND WRITTEN SIGNATURE	QUALITY STAMP (If applicable)	Date Signed:
Kok Soon, Lai		Cameron (Singapore) Pte Ltd	31 Aug 2021

Form 017 DRL HD Rev 17, (07/30/2020)

Schlumberger-Private

PN 2396230-113
SN 4864294
SO 6200235420

เอกสารแนบที่ 51

เอกสารรับรองพนักงานที่ได้รับการอบรมในด้านการตรวจสอบและป้องกันการพลุ่ง

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 3
Petroleum Training Services Ltd (TH.1350)

CR-800671

DOB:18/08/1985

[redacted]

eCert No:DL3S-00141734-SA-GF6D

Issue Date:07 Jul 2023 Expiry Date:06 Jul 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 3
PTTCO Ltd (TH.548)

CR-385461

DOB:12/11/1993

[redacted]

eCert No:DL3S-00161776-SA-EIHG

Issue Date:15 Mar 2024 Expiry Date:14 Mar 2026

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 3
PTTCO Ltd (TH.548)

CR-584043

DOB:29/05/1972

[redacted]

eCert No:DL3S-00152454-SA-DBVO

Issue Date:17 Nov 2023 Expiry Date:16 Nov 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 3
Petroleum Training Services Ltd (TH.1350)

CR-717329

DOB:13/01/1981

[redacted]

eCert No:DL3S-00158804-SA-25QE

Issue Date:09 Feb 2024 Expiry Date:08 Feb 2026

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
PTTCO Ltd (TH.548)

CR-375197

DOB:12/11/1990

[redacted]

eCert No:DL4S-00161266-SA-R3L2

Issue Date:08 Mar 2024 Expiry Date:07 Mar 2026

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
PTTCO Ltd (TH.548)

CR-589503

DOB:15/12/1968

[redacted]

eCert No:DL4S-00120027-SA-M08K

Issue Date:14 Oct 2022 Expiry Date:13 Oct 2024

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 3
PTTCO Ltd (TH.548)

CR-330503

DOB:01/03/1982

[redacted]

eCert No:DL3S-00166240-SA-A1PG

Issue Date:24 May 2024 Expiry Date:22 Aug 2024

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
PTTCO Ltd (TH.548)

CR-247601

DOB:27/08/1989

[redacted]

eCert No:DL4S-00147217-SA-P8Z5

Issue Date:15 Sep 2023 Expiry Date:14 Sep 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
Australian Well Control Centre Pty Ltd (AU.896)

CR-253233

DOB:23/01/1972

[redacted]

eCert No:DL4S-00129201-SA-4PDB

Issue Date:10 Feb 2023 Expiry Date:09 Feb 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
Petroleum Training Services Ltd (TH.1350)

CR-488734

DOB:18/09/1976

[redacted]

eCert No:DL4S-00137458-SA-3BIA

Issue Date:18 Jun 2023 Expiry Date:17 Jun 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
Drilling School Asia Pacific (AU.1030)

CR-911397

DOB:10/05/1967

[redacted]

eCert No:DL4S-00150574-SA-EO32

Issue Date:26 Nov 2023 Expiry Date:25 Nov 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
PTTCO Ltd (TH.548)

CR-830417

DOB:01/03/1968

[redacted]

eCert No:DL4S-00145166-SA-EGNG

Issue Date:24 Sep 2023 Expiry Date:23 Sep 2025

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
Well Academy Pty Ltd (AU.1313)

CR-406184

DOB:28/11/1978

[redacted]

eCert No:DL4S-00173649-SA-PVBR

Issue Date:20 Sep 2024 Expiry Date:19 Sep 2026

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
Malaga Drilling School (ES.1594)

CR-199374

DOB:19/02/1980

[redacted]

eCert No:DL4S-00177855-SA-85KJ

Issue Date:27 Nov 2024 Expiry Date:26 Nov 2026

Chairman: [redacted]

The International Well Control Forum

Drilling Well Control Programme
Surface BOP Stack
Level 4
Petroleum Training Services Ltd (TH.1350)

CR-369775

DOB:20/04/1986

[redacted]

eCert No:DL4S-00140799-SA-DURT

Issue Date:23 Jun 2023 Expiry Date:22 Jun 2025

Chairman: [redacted]