



NEDMAG TR-5
Project-Specific Safety & Health Document
(PSSHD)

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Holds and Change List

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Authorisation:

Title	Name	Signature
NEDMAG Project Manager		
WEP Project Manager		
NEDMAG QHSE Manager		
BPC Operations Manager		

Controlled Copy Holders

Copy	Company	Position
1.	NEDMAG	QHSE-manager (Custodian)
2.	State Supervision of Mines	Inspector General Mines
3.	NEDMAG	Operations Director
4.	NEDMAG	Project Manager
5.	Well Engineering Partners	Project manager
6.	Well Engineering Partners	Well Service Supervisor (Well Site)
7.	BPC	Operations
8.	BPC	HWU Supervisor
9.		
10.		

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1 Summary

NEDMAG B.V. (NEDMAG) intends to execute repair operations on the TR-5 well located at Wellhead Center 2 (WHC-2) at Nedmagweg 199 in Veendam. The repairs are carried out with the Space Saver II Unit owned by Balance Point Control BV (BPC). The execution of the repair is supported by and supervised on behalf of NEDMAG by Well Engineering Partners (WEP).

This document describes the HSE Management measures for the specific operations on the TR-5 well with the objective to reduce the HSE risks associated with the activity to a level As Low As Reasonably Practicable (ALARP).

This Project Specific Safety & Health Document (PSSHD) is a supplement on NEDMAG's and BPC's standard QHSE systems. This document

- is based on a gap analysis of the existing systems which identifies the main discrepancies that exist between the HSE management systems of the above parties
- clarifies which organization, rules and procedures will be enforced on the operations, in order to create a seamless process to safely execute the work program
- identifies the project specific risks and defines associated mitigating measures.

This PSSHD should be considered in conjunction with a number of standard NEDMAG and BPC documents and a number of other Project Specific Documents.

Main employers are as follows:

Company Name	Role
NEDMAG	Operator
BPC	Main contractor of work over and wireline services
WEP	Well engineering and construction supervision

The main contents of this document are:

- An introduction, brief description of the project and overview of related documents
- A description of the project organization, including an overview of tasks, responsibilities and communication structure
- A description of the assessment of risks, definition of mitigating measures and the permit to work process.

All personnel will have access to this document. A copy is available in the office of the BPC Site Supervisor (WSV) and the NEDMAG Company Representative (SSV).

Each person is responsible to carry-out the activities in a correct, professional and safe manner.

'Safety first' shall be the deciding factor in all decisions.

2 General

2.1 Objective & field of application

NEDMAG intends to execute repair operations on the well TR-5 Wellhead Center 2 (WHC-2) at Nedmagweg 199, Veendam. The repairs are carried out with the Space Saver II unit owned by BPC. The execution of the repairs is supported by and supervised on behalf of NEDMAG by WEP.

This document describes the HSE Management measures for the specific operations on TR-5 well with the objective to reduce the HSE risks associated with the activity to a level As Low As Reasonably Practicable (ALARP).

This project specific Safety & Health document is a supplement to NEDMAG's and BPC's standard QHSE systems plan. The resulting document

- is based on a gap analysis of the systems in place, identifying the discrepancies between the HSE manage systems of involved parties
- clarifies the roles and responsibilities of each organization in order to coordinate and safely execute the work program.
- Identifies risks specific to the project and discusses relevant mitigating measures required to reduce the risk

NEDMAG, WEP and BPC are convinced that this document forms the basis for safe and healthy working conditions for all personnel involved.

The objective of the repairs in TR-5 is to remove the completion from the well, investigate the last cemented casing and isolate the well from the cavern cluster by placing a permanent barrier at the bottom of the well.

The workovers are planned to begin in week 1 of 2020 and are scheduled to continue until Week 9 of 2020. The main steps in the workover operations are:

- 1) Remove X-mas tree and rig up HWU
- 2) POOH 2-7/8" dilution string
- 3) Investigate & Cut 4 1/2" string
- 4) Lift 11" Blind Ram & Remove intermediate spool
- 5) SOOH 3-1/2" injection string
- 6) Lift BOP & reorient offset spool
- 7) POOH 4 1/2" production string
- 8) Lift Unit and remove offset spool
- 9) Investigate 10 3/4" casing
- 10) Plug 10 3/4" Casing
- 11) Set primary cement plug
- 12) Remediate Damage in 10 3/4" Casing
- 13) Install 7" Suspension String
- 14) Rig down HWU unit & install X-mas tree
- 15) Hand over well

For detailed information see the work program.

The health and safety legislation (BW 7:658) dictates that the principal party who is 'responsible for work places in the mining industry' is obliged to promote the coordination between all parties involved. NEDMAG as the principal party, is therefore overall responsible for safety and health issues at the location. All contractors present at the site are independent contractors and as such are responsible for the safety and health of their own employees. NEDMAG prepared a concurrent operations document to control and coordinate the interfaces between the project activities and the regular mining activities on WHC-2 location.

This PSSHD aims to give substance to

- art. 2.42f of the Working Conditions Decree (Arbeidsomstandighedenbesluit)
- art. 3.7 and paragraph 3.10 of the Working Conditions Rule (Arbeidsomstandighedenregeling): obligation to draw up a Safety and Health Document, with prescribed content
- art. 2.42 of the Working Conditions Decree: Cooperation between different employers in a business or establishment, obligation to draw up a Safety and Health Document with specified content, coordination for health and safety by the employer responsible for the workplace in the mining industries.

Under art. 3.7 first paragraph under a. of the Working Conditions Decree, BPC is responsible for the Safety & Health Document for their unit and equipment with which the well is being controlled. NEDMAG checks if this requirement has been met.

NEDMAG is in the context of this document responsible for:

- Management of this PSSHD
- Ensuring that it fully covers the planned activities
- Keeping the document up to date
- Distribution of the document to all stakeholders, also after actualisation/revision.

2.2 Reference documents

This HSE Document should be considered in conjunction with:

- NEDMAG TR-5 Workover Work Program
- BPC Unit Specific Safety Case, HSE Case Space Saver II Unit (BPC-QHSE-D-5, 13 May 2012)
- Site specific firefighting and rescue plan, FFRP Nedmag TR-5
- Besluit Algemene Regels Milieu Mijnbouw Melding (BARMM Melding, TR-5 2019)
- Concurrent operations document TR-5
- NEDMAG Mining Safety & Health Document (M-01)
- NEDMAG Emergency Plan Mining (M-02) & NEDMAG Blow out contingency plan (M-12)
- NEDMAG Self-assessment Safety & Health Approach during the life cycle of NEDMAG wells (august 2010)
- NEDMAG SHE requirements for contractors (P2.10)
- NEDMAG HSE instructions for drilling/well activities on the NEDMAG Mining locations
- NEDMAG Management system Procedure for specific well activities (M-08).

2.3 Revision and updates

NEDMAG is the custodian of this document. This implies that this organisation is ultimately responsible ensuring the contents of this document is correct, kept up-to-date and distributed in accordance with requirements.

This document remains valid for the time workover operations on the TR-5 well are in progress. Should a delay occur, the validity of this document will be extended in line with the delay period.

All well operations will be carried out according to the TR-5 Workover Work Program. If changes are required, a management of change (MOC) as described in the work program is applied. In case of change, the risks of the new or changed steps in the work program will be assessed and mitigating measures will be defined, communicated and implemented.

Controlled Copy Holders

Copy	Company	Position
1.	NEDMAG	QHSE-manager (Custodian)
2.	State Supervision of Mines	Inspector General Mines
3.	NEDMAG	Operations Director
4.	NEDMAG	Mine manager / Project manager
5.	Well Engineering Partners	Project manager
6.	Well Engineering Partners	NEDMAG Company Representative (SSV)
7.	BPC	Operations manager
8.	BPC	Supervisor

3 Organisation

3.1 Employers

There are a number of parties active during the snubbing operations on TR-5. Main employers are as follows:

Company Name	Activity
NEDMAG B.V.	Operator
Balance Point Control B.V.	Main contractor of work over and wireline services
Well Engineering Partners BV	Well engineering and Construction supervision & support

Additional parties involved in the project:

Company Name	Activity
Weatherford	Pipe handling (via BPC)
Mammoet	Crane services
Robke	Wellhead services
Halliburton, Expro, BPC Wireline	Specialized wireline services
BHGE	Wireline pipe cutting services (in combination with BPC wireline)
Catch Fishing Services	Fishing and Milling services
Reym	Mud Services
Schlumberger	Cementing Services
BJJ/Lubbers	Transportation

3.2 Cooperation between employers

The cooperation between the relevant employers is focused on alignment of the mutual risks and the effectiveness of the management of these risks in order to ensure the safety and health of the workers.

All main parties have collaborated in preparing this Project Specific Safety & Health Document to ensure that:

- all conceivable and relevant potential risks have been reviewed
- mitigation measures are in place
- all residual risks are reduced to As Low As Reasonably Practicable (ALARP).

Snubbing the Well on Paper and Risk Assessment meetings will take place with all major parties involved prior to the operation as a final check that there will be no conflicting operations that would generate an unacceptable risk.

An overview of the identified risks and their mitigations are shown in Appendix 5: Risk Assessment.

3.3 Organization structure

The figure below illustrates the organogram of the organization of the Workover operation.

3.4 Tasks, Responsibilities and Authorization

The table below defines the roles and responsibilities of the Employers and subcontractors.

Company Name	Role	Responsibilities
NEDMAG	Project Manager (PM)	<ul style="list-style-type: none"> Has the overall responsibility for the entire project, including QHSE assurance, security and logistics Acts as HCO – Head concurrent operations <p>NEDMAG has delegated the implementation of the project to WEP and supervision of all operations to the NEDMAG Company Representative (SSV)</p>
WEP	NEDMAG Company Representative (SSV = Site Supervisor)	<ul style="list-style-type: none"> Has the overall responsibility for the safe implementation of the project in general Supervision of work over operations on behalf of NEDMAG QHSE assurance (well site) Maintenance of persons register personnel & visitors Introduction to well site regulations Communication between field and office Reporting to SodM Collecting, compiling and sending out reports Supervising subcontractors
	WEP back office <ul style="list-style-type: none"> WEP Project Manager (WEPPM) Project Engineer (PE) 	<ul style="list-style-type: none"> Assisting SSV's Advisor for NEDMAG for critical stages of the well General work over and well engineering support
BPC	Supervisor (WSV)	<ul style="list-style-type: none"> Well operations according to work program First line of well control Supervising their subcontractors

Key Roles: responsibilities & authorities

In order to keep a clear structure of the responsibilities during execution phase of this project the responsibilities and authorities of the four key positions are described in the next paragraphs:

NEDMAG PM

The PM will be on WHC-2 location during the day shift, and must be on call for the duration of all well intervention activities. The PM has single point responsibility for operational matters and has the authority to suspend any or all operations. Specific responsibilities include the following:

Responsibilities

- Monitor compliance with this PSSHD. Non-compliance or exceptions will be discussed with the relevant members of the project organisation
- Ensure that all personnel on unit & location are informed of the extra preventive measures required as defined by this PSSHD
- Attend the daily progress meeting
- Conduct visual inspection on operations
- Ensure that new personnel on location are given adequate safety and HSE briefing
- Ensure that all new personnel are instructed on muster points.

Authorized to

- Suspend any well intervention operations at any time
- Deviate from this procedure if safety, health or environmental issues require to do so.

Responsibilities & Authorities WEP Project Manager (WEPPM)

The WEPPM is responsible to the NEDMAG Project Manager for the safe engineering and execution of the TR-5 workover. He or she is specifically responsible for the following:

Responsibilities

- The writing of the work program and other required documentation
- Monitor compliance with this PSSHD. Non-compliance or exceptions must be discussed with the SSV
- Preparation of all necessary HSE submissions
- Provision of office based engineering support during work over operations
- Ensuring all required 'End of Well' reporting is performed and the well audit files are complete
- Organise and record weekly safety meeting
- The production of detailed Time Cost Estimates for the project
- The WEP Project Manager liaises with Nedmag Project Manager.

Authorized to

- The WEPPM has the authority to suspend the HWO operation at any time
- Deviate from this procedure if safety, health or environmental issues require to do so.

Responsibilities & Authorities NEDMAG Company Representative (SSV)

The SSV is on duty during the day shift. A night supervisor (NSSV) will take over the duties of the SSV during the night shift when workover operations require 24-hour coverage. Specific responsibilities of the SSV include the following:

Responsibilities

- Provide all work permits on the workover location
- Attend and record daily progress meeting
- Attend toolbox meeting
- Report to SodM
- Conduct visual inspection on well site
- Ensure that new personnel on site are given adequate safety and HSE briefing
- Ensure that all new personnel on site are instructed on muster points
- During well intervention related emergencies, the SSV manages the emergency response operation in liaison with the HCO and the BPC Supervisor.
- Supervise subcontractors
- Conduct visual inspections on the pipe.

Authorized to

- Suspend the well intervention operation at any time
- Act as considered appropriate for well intervention related issues.

Responsibilities & Authorities BPC Supervisor (WSV)

The WSV is on duty during the day shift. A night supervisor (NWSV) will also be available, and will take over the duties of the WSV for the night shift. Specific responsibilities of the BPC supervisor include the following:

Responsibilities

- Attend the daily progress meeting when operations permit or if operations dictate
- Organize and record toolbox meetings
- Ensure safety of the BPC crew
- Ensure that all personnel works in a safe manner
- During well intervention related emergencies, the WSV supports the SSV with the emergency response operation.

Authorities

- WSV has the unique authority to act as considered appropriate for the issues related to the workover unit and equipment.

See Appendix 2: Responsibility Matrix Guide between NEDMAG, WEP & BPC for a more detailed overview of the split up of the responsibilities between NEDMAG, WEP and BPC.

3.5 Individual responsibility

The NEDMAG HSE Policy establishes NEDMAG’s commitment to safeguarding the environment and minimizing health and safety risks to their personnel, contractors and the communities in which they do business. NEDMAG believes that, in addition to meeting regulatory expectations, the appropriate range of industry best practices should be used throughout its operations, in order to reduce HSE risks to ALARP. Therefore, NEDMAG has preferentially selected Contractors and services providers to meet these objectives.

In respect to all decisions made, safety first shall be the deciding factor and each person is responsible to carry out the activities in a correct, professional and safe manner.

Prior to the work, the operations are discussed in detail with the key players at a Snubbing Well on Paper session. Afterwards, a risk assessment for all steps in the work program is conducted. The results of this can be found in Appendix 5: Risk Assessment. This appendix also provides the overview of all defined mitigating measures.

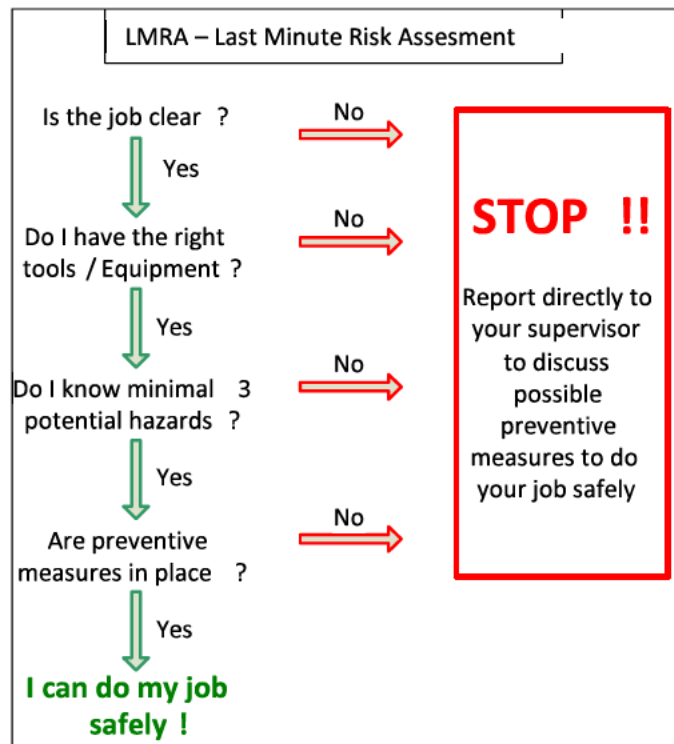
For a number of activities with a relatively high risk, the permit to work system is applicable, see under 3.6.

For all BPC Activities, a Toolbox Talk (TBT) will be held. TBT’s are held daily before a job starts and when the job changes.

For any work, a Last Minute Risk Assessment (LMRA) must be carried out in order to ensure that at all times and even under changed circumstances, work is executed safely. It is each person’s individual responsibility to conduct a LMRA.

All personnel on site will register themselves in the site register when arriving on location. The site registration list requires each person on site to register with name, company name, date of arrival, time of arrival and time and date of departure. Any visitors to site will if at all possible require a 24 hours notification to the SSV. This is done to ensure safe execution of any visits. Depending on ongoing operations, the SSV has the right to suspend any visits.

All employees visiting the site for the first time and any employee who have not worked at Nedmag WHC-2 in the past 12 months; must see the HSE instructions video and have to read and sign their commitment to those instructions. In addition, to raise HSE awareness, all employees visiting the site for the first time also receive a copy of the HSE instructions pamphlet.



3.6 Coordination

The NEDMAG PM will coordinate the HSE issues of all mining activities on WHC-2 and will coordinate the HSE issues of the Concurrent Operations. The SSV will coordinate HSE issues concerning the well intervention operation at WHC-2, after the well is handed over to him. By handing over the TR-5 well to the SSV, the NEDMAG PM permits the SSV and rest of the workover organization to execute all activities as defined in the work over program, under the following conditions:

- The measures as stated in the Risk Assessment are in place during execution of the work. In case of changes to the work program, through the MOC procedure as described in the work program. the same applies for the measures based on a RA related to the changes in the program
- Each shift starts with a toolbox safety meeting, at which as a minimum the measures from the RA are discussed and from which the minutes are undersigned by the BPC supervisor and the SSV
- The SSV issues specific work permits in the following cases:
 - Hot work (any work where sparks and/or heat are generated or released)
 - X-mas tree and wellhead operations
 - Work in confined spaces, including cellars and tanks
 - Maintenance work on hydraulically or electrically driven equipment
 - Work involving explosives
 - Heavy lifting (>5ton and/or difficult lifts)
 - Activities outside the work program and any other (non-routine) work where the SSV and/or WSV concludes that issuing a specific work permit adds value.

The permits will contain the following information

- A description of the work to be performed
- The location where the work is to be performed, including clear identification of the specific plant or equipment being worked on
- Hazard identification or risk assessment of both the work and the worksite
- Specification of necessary precautions
- Protective equipment (including PPE, emergency equipment, etc.)
- Identification of the specific competent people who are to conduct the work.

The permit to work system will be provided by NEDMAG and will be used or audited by the SSV, BPC supervisor, WEPPM and PM. The goal of the permit to work system is to minimize safety incidents during the workover activities on the NEDMAG WHC-2 site. Proper use of the system ensures:

- Good communication about work to be done
- Recognition of the relevant associated risks
- Definition and implementation of appropriate mitigating measures.

The WSV carries the immediate coordination for recovery and rescue operations on the workover location. The BPC Supervisor will be on site during day shift and can be called up 24 hours a day in case of emergencies. During the night shift, a night supervisor will take over the BPC Supervisor's responsibilities. He will take the necessary primary actions in an emergency and will call the BPC Supervisor without delay.

Work permits outside workover area

The NEDMAG shift leader will issue all work permits for work outside the workover area, as long as it has no impact on the workover. In case of work outside the workover may potentially have an impact on the workover operations, the shift leader will inform the HCO or his representative, will assess the risks and define appropriate measures, and will have the work permit also undersigned by the SSV and the HCO.

3.7 Communication

Effective communication is critical to the success of the operation where different parties interface. The following clearly defines how communication is managed between the interfaces during the following situations. See also Appendix 3: Overview of Meetings and Reporting for an overview of meetings and reporting.

Pre Operations

All employers will be informed of the objectives and timetable of the operation prior to the start of operations. A pre-job meeting on site will be held with the Employers and subcontractors involved with the operation. The project specific HSE document will be available and presented at this meeting.

HSE Information

Each main employer is responsible for ensuring that all relevant HSE information is effectively communicated within their own organisation including alerts, notices, reports etc. The person (within the party specific organisation) with overall responsibility for HSE will ensure that all relevant HSE information is communicated to all persons throughout the onsite operation.

Execution of Operations

All employers shall ensure that their personnel, including all subcontractors, are notified of and are familiar with the ongoing activity program, and abide by all relevant regulations and standards.

During the execution of operations, the BPC STOP System (Safety Observation System) will be used. This system gives anyone on site the opportunity to report all matter that have potential impact on safety, such as

- Housekeeping
- Behaviour / discipline
- Good job, good communication
- Equipment related
- Near misses
- Unsafe situations & acts.

The STOP cards are available at either the BPC Supervisor or the NEDMAG/WEP supervisor. Filled in cards can be given to them. Reports are evaluated immediately. If necessary, direct action will be taken. The reports are also reviewed by the supervisors and BPC QHSE Coordinator / Manager on a daily basis and during the daily morning call, and by the WEPPM and BPC engineer on a weekly basis.

Management of Change (Communication of Change)

If changes to the operations are required, a management of change (MOC) as described in the work program is applied. This will include an assessment of the risks associated with the new or changed steps, including a definition of required mitigating measures.

Incident reporting

All personnel have a responsibility to report accidents, incidents and unsafe situations immediately to the SSV. Reporting incidents to the Authorities is being done by NEDMAG according to the NEDMAG procedure.

After action review

All main employers will come together for a close out meeting to assess the results of the project. Key lessons will be captured at this after action review meeting and documented to ensure their follow up on future operations.

4 Risk Identification, Assessment and Management

4.1 Hazard Identification

The Self-Assessment performed by NEDMAG in 2010 identified one worst case scenario during work overs:

- Brine blow-out.

This scenario can result in:

- Exposures to fluid under high pressure and high temperature (65°C) for personnel
- Flow outside of location into the environment.

NEDMAG identified the following major hazards during regular activities (M-01 Veiligheids- & gezondheidsdocument Mijnbouwwerk WHC-112):

- Brine Blow-out
- Presence of CO gas – not applicable for TR-5
- Gas Blow-out (H₂) – not applicable for TR-5
- Fire and Explosives
- Exposure to hazardous substances.

BPC has defined the following major hazards (HSE Case space saver II):

- Loss of mechanical integrity of the unit / well control equipment
- Guy wire failure, impact by outside agency
- Wellhead failure
- Dropped heavy load, lifting BOP stack and/or unit components
- Workstring failure, loss of control over the pipe
- Structural failure
- Loss of well control
- Blowout
- Loss of stability of the unit
- Fire, explosion

The results of the project risk review related to TR-5 workover operations are found in Appendix 5: Risk Assessment.

4.1.1 Applied Studies

Risk Assessment

Based on the final work over program as discussed at the Snubbing the Well on Paper session, a Risk Assessment (RA), is carried out to assess the risks associated with the various steps in the work over process. Mitigation measures in place are identified and further measures are put in place if required. The risks associated with generic HWO operations are described in the HSE case of BPC.

4.2 Risk analysis

The NEDMAG Risk matrix has been used to assess risks within the framework of this PSSHD:

Nedmag Risk Matrix							
Severity	(Potential) Effect		Increasing probability				
	People	Environment & Material	A Has never occurred in other companies	B Has occurred in other companies	C Has occurred at Nedmag or more than 1 x other companies	D Has occurred on the department or more than 1 x a year at Nedmag	E Has more than 1 x a year occurred on department
I	No injuries	No damage	AI	BI	CI	DI	EI
II	First Aid injury	Minor damage	AII	BII	CII	DII	EII
III	Medical care and LTI	Limited damage	AIII	BIII	CIII	DIII	EIII
IV	Severe injuries, permanent injury	Major damage	AIV	BIV	CIV	DIV	EIV
V	Death	Ravages	AV	BV	CV	DV	EV

Red	Unacceptable risk
Yellow	Reduce risk to levels as low as reasonably achievable
Green	Continuous improvement, acceptable risk

4.3 Risk elimination and reduction

See Appendix 5: Risk Assessment, for the control measures and acceptance criteria.

4.4 Performance standards

Performance standards are defined as clear and measurable parameters relating to the performance of a process or system component, equipment and management systems, which contribute directly to achieving safety and health objectives.

The risks to workers connected with the HWO operations, including the preparation and disposal of equipment are inventoried and evaluated. There is a set of adequate physical facilities and organizational measures in place to eliminate or minimize risks.

Furthermore, the organization assures that all necessary plans, programs and documents are submitted to the State Supervision of Mines in time, and that work will be done in accordance with such plans.

Assessment against the performance standards:

- When selecting contractors the track records in the areas of quality, safety and environment are reviewed
- The Contractors use only certified equipment and materials during the activities, such as Ex-proof according to the ATEX standard
- Prior to the start of the HWO activities a document (certificates) check will be performed
- Periodically (1x per week), safety inspections are performed by a qualified external safety inspector. After the inspection, an evaluation of the findings will be shared with the PM, WEPPM and SSV. If necessary, additional measures are taken.

5 Emergency Preparedness and Response

5.1 Fire Fighting and Rescue Plan

For the project a specific Fire Fighting and Rescue Plan has been prepared supporting the general NEDMAG Mining fire fighting and rescue plan M-02 (Calamiteitenplan Mining), which is a separate document.

5.2 Well Emergencies & Blow Out Contingency Plan

NEDMAG document M-12 (Blow out draaiboek), which is a separate document, shall be used.

Appendix 1: Reference to Legislation

WCL = Working Conditions Law = Arbeidsomstandighedenwet

WCD = Working Conditions Decree = Arbeidsomstandighedenbesluit

WCR = Working Conditions Regulations = Arbeidsomstandighedenregeling

	Section	Reference to legislation		
		WCL	WCD	WCR
1	Introduction			
1.1	Summary of performers			
2	General aspects			
2.1	Purpose and scope of the H&S document for special operations		2.42e sub 1	37 sub 1b
2.3	Reference documents			3.12 sub 2
2.4	Revision and actualisation		2.42 sub 4	
3	Organisation			
3.1	Employers			
3.2	Cooperation	19 sub 2	2.42 sub 2d 2.42f sub 3	
3.3	Description of the organisation			
3.4	Tasks, Responsibilities and Authorization			
3.5	Individual responsibilities			
3.6	Coordination		2.42 sub 3 2.42f sub 3	
3.7	Communication			
4	Risk Identification, Assessment and Management		2.42f sub 1	
4.1	Hazard identification		2.42 sub 2a	3.10 sub 1c
4.1.1	Applied studies			3.10 sub 1d
4.2	Risk analyses		2.42f sub 1c	3.10 sub 1b 3.10sub 1c
4.3	Risk elimination and reduction improvement measures		2.42 sub 2b 2.42 sub 2c 2.42f sub 1b	3.10 sub 1c - 1h
4.4	Performance standards			3.10 sub1g
5.0	Emergency Preparedness and Response		2.42g 2.42h	
5.1	Fire Fighting and rescue plan		2,5c 2.42,f sub 1c 2.42h	3.9 sub c 3.10 sub 1a 3.12 sub 3 3.14 3.37n 3.37q - 3.37u 6.4.14 Appendix 1 sub f Appendix II Appendix VIII
5.2	Well Emergencies & Blow Out Contingency Plan		2.42h	3.10 sub 1a 3.10 sub 2 3.12 sub 3 3.14 3.37n 3.37q – 37v Appendix VIII

Appendix 2: Responsibility Matrix Guide between NEDMAG, WEP & BPC

Planning				
R: Responsible		A: Accountable		
C: Consulted		I: Informed		
Item	Activity / Deliverable	NEDMAG	WEP	BPC
1.	Contract Requirements	RA	C	RA
2.	Work Over Location: Site Survey	I	C	RA
3.	HWO Unit Move Procedure(s)	I	C	RA
4.	Well Program(s)	AC	R	C
5.	Hold Pre-spud Meeting(s)	A	R	C
6.	Emergency Response Interface	A	R	C
7.	Equipment Transport Arrangements	A	R	C
8.	Third Party Procurement (NEDMAG Contractors)	A	R	I
9.	Third Party Procurement (BPC Contractors)	I	C	RA
10.	Equipment Requirements	A	R	I
11.	Service Requirements	A	R	I
12.	Environmental Reporting (BARMM)	A	R	I

Resource management				
R: Responsible		A: Accountable		
C: Consulted		I: Informed		
Item	Activity / Deliverable	NEDMAG	WEP	BPC
13.	Control of POS / Crew Change	A	R	I
14.	Site Induction of all Personnel	A	R	I
15.	Control of Third Party Personnel on site	A	R	I
16.	Control of Third Party Equipment On Site	A	R	I
17.	Materials Management	A	R	I
18.	Activities: Relating to the Routine Operation of the HWO Unit	I	C	RA
19.	Maintenance	I	C	RA
20.	Modifications	I	C	RA
21.	Control of Inspection, Measuring and Test Equipment	I	C	RA
22.	Occupational Safety	A	R	R
23.	Occupational Health	A	R	R
24.	Environmental Spill Control	A	R	R
25.	Waste Management	A	R	R

Resource management				
R: Responsible		A: Accountable		
C: Consulted		I: Informed		
Item	Activity / Deliverable	NEDMAG	WEP	BPC
26.	Major Accident Prevention	A	R	R

Execute work program				
R: Responsible		A: Accountable		
C: Consulted		I: Informed		
Item	Activity / Deliverable	NEDMAG	WEP	BPC
27.	Execute HWO Unit mobilisation/de-mobilisation Procedure	I	C	RA
28.	Prepare for Well Operations	A	R	R
29.	Confirm readiness for HWO operations in all respects at location.	A	R	R
30.	Approval to Rig down at end of operations.	A	C	R
31.	Execute Well Programme	A	R	C
32.	Amend Well Programme	A	R	C

Appendix 3: Overview of Meetings and Reporting

Risk Analysis Meeting	
Purpose	To review possible risks and determine mitigating actions.
Chairman	WEPPM
Attendees	All major contractors + NEDMAG
Frequency	Once during drafting Safety and Health document
Records	Minute of Meeting and update Risk register
SWOP meeting	
Purpose	Discuss plan for whole well
Chairman	WEPPM
Attendees	All major contractors + NEDMAG
Frequency	Once during drafting work program
Records	Minute of Meeting and update work program
Daily Ops Meeting	
Purpose	Discuss SHEQ items, last & next 24 hours, 6-day lookahead and compliance issues
Chairman	SSV
Attendees	SSV, BPC SV, BPCPE, WEPPM + NEDMAG
Frequency	Daily
Records	Minute of Meeting
Pre-job safety meeting (toolbox)	
Purpose	Discuss specific job
Chairman	BPC supervisor
Attendees	Involved crew + SSV
Frequency	Ad hoc
Records	Signed TBT sheet
Audits	
Purpose	Review implementation of systems
Auditor	NEDMAG Project manager / WEP Project manager
Frequency	No set frequency (minimal 1x before commissioning)
Records	Audit report (email) to SSV
Site Induction	
Purpose	To make everyone aware of operations, risks and emergency procedure before allowed on site
Chairman	Wellsite Supervisor
Attendees	Everyone who has to go on site
Frequency	Before going on site
Records	List of Attendees and identified on Personal Safety Log
Supervisor Shift handover	
Purpose	To handover the work and brief the new shift on the status
Chairman	Leaving Supervisor
Attendees	Leaving and upcoming Supervisor
Frequency	Every shift change of SSV
Records	Shift handover form
Pre Shift Briefing (TBT)	
Purpose	To brief all applicable of the work to be done in the upcoming shift
Chairman	Drilling Supervisor / WSV (depending on activities to be executed)
Attendees	Applicable working crew
Frequency	Beginning of every shift
Records	Pre Shift Report & LMRA Card

Weekly Safety meeting	
Purpose	Review safety performance from preceding week
Chairman	WEP Project manager
Attendees	BPC supervisor / engineer
Frequency	Once a week
Records	Minutes of meeting

Reporting

SodM Daily drilling report	
Purpose	To inform the own organisation and SodM of the Work Over operation status
Responsible	WEP Project Manager
Distribution	SodM
Frequency	Daily before 9:00 am
Records	Originals are kept by NEDMAG
Daily drilling report	
Purpose	To inform the own organisation and partners of the Work Over operation status
Responsible	SSV
Distribution	NEDMAG Organisation
Frequency	Daily before 9:00 am
Records	Originals are kept by NEDMAG
Incident report	
Purpose	To report incident or near miss
Responsible	SSV
Distribution	NEDMAG Organisation, SodM
Frequency	Directly after incident
Records	Originals are kept by NEDMAG
Safety inspection report	
Purpose	Review against performance standards
Responsible	Independent safety inspector
Distribution	NEDMAG Organisation
Frequency	1x per week
Records	Inspection reports are kept by NEDMAG

Appendix 4: Overview data Chemicals workload TR-5

Items below in the REACH list are planned for the main operations. The list will be updated with the input from the snubbing services contractor and the cementing services supplier and updated on location.

Bijlage 1 bij het formulier voor melding								
Versie: 02-12-2019								
Chemicaliënoverzicht, voor chemicaliën waarvoor een melding overeenkomstig 6.2.1.1 onder m van de Mijnbouwweging noodzakelijk is, ten behoeve van het gebruik chemicaliën op het vaste land								
Naam melder (OPERATOR):		Nedmag B.V.		Referentie nummer:				
Tbv: (productie/putwerkzaamheden/pijpleidingen)		TR-5 Workover		Naam landlocatie :		Tripscompagnie Nee		
In Waardzone of kustzone < 3 mijl								
DATA PROVIDED BY THE OPERATOR								
LANDLOCATIE	Product handelsnaam (1)	Leveranciernaam (2)	Datum van uitgifte VIB (indien beschikbaar) (3)	CpB nr. ("toelatingsnummer" of "samenstellingsnummer") indien bloede (4)	Product etiket: Ndinnen of Rdinnen (6)	REACH Compliance check afgerond (gevaarlijk product) (6)	Geplande maximaal te gebruiken kg (7)	OPERATOR DATA Algemene opmerking (8)
Chemor Drilling fluid services								
Tripscompagnie	CALCIUM CARBONATE (all grades)	CEBO HOLLAND B.V.	18/01/2013	Niet gevaarlijk	Niet gevaarlijk	N.v.t. (niet gevaarlijk)	1,000	
Tripscompagnie	FBRE MK (all grades)	CHEMFOR HOLLAND B.V.	18/01/2017	Niet gevaarlijk	Niet gevaarlijk	N.v.t. (niet gevaarlijk)	1,000	
Tripscompagnie	MIKHART (all grades)	CEBO HOLLAND B.V.	03/12/2018	Niet gevaarlijk	Niet gevaarlijk	N.v.t. (niet gevaarlijk)	1,000	
Tripscompagnie	NUTSHELLS (all grades)	CEBO HOLLAND B.V.	26/11/2015	Niet gevaarlijk	Niet gevaarlijk	N.v.t. (niet gevaarlijk)	1,000	
Balance Point Control (BPC) Snubbing Services								
Tripscompagnie								
Tripscompagnie								
Nedmag - Operator								
Tripscompagnie	Magnesium Chloride Pefel 22-33% (n/m)	Nedmag B.V.	04/06/2015	P264 P305 P351 P338		Ja	273,000	
Tripscompagnie	Emvare 2000	Emvare - Slielke	07/05/2010	Niet Gevaarlijk	H304, H315, H318, H332, H351, H373, H411	N.v.t. (niet gevaarlijk)	1,650	
Tripscompagnie	Diesel	Nedmag B.V.	16/07/2015	P264 P305 P351 P338		Ja	30,000	
Tripscompagnie	Magnesium Chloride Flakes	Nedmag B.V.	11/06/2015			Ja	10,000	
Schlumberger cementing services								
Tripscompagnie	LIJUD ANTIFOAM D242	Schlumberger	07/09/2016	Niet Gevaarlijk		N.v.t. (niet gevaarlijk)	50	
Tripscompagnie	ENVIRONMENTALLY FRIENDLY DISPERSANT D240	Schlumberger	11/07/2014	Niet Gevaarlijk		N.v.t. (niet gevaarlijk)	50	
Tripscompagnie	CEMENT CLASS G D907	Schlumberger	28/09/2016	H315, H318, H335		Ja	20,000	
Tripscompagnie	ANTISETTLING AGENT D153	Schlumberger	30/07/2015	H373		Ja	50	
Tripscompagnie	MID-TEMP RETARDER/D180T	Schlumberger	09/10/2014	Niet Gevaarlijk		N.v.t. (niet gevaarlijk)	500	
Tripscompagnie	ANTI-FORMING AGENT D206	Schlumberger	15/09/2014	Niet Gevaarlijk		Ja	20	
Reym - Drilling fluid Services								
Tripscompagnie	Barje	CEBO HOLLAND B.V.	22/10/2015	Niet gevaarlijk		N.v.t. (niet gevaarlijk)	126,000	
Tripscompagnie	XANTHAN GUM	CEBO HOLLAND B.V.	26/11/2015	Niet gevaarlijk		N.v.t. (niet gevaarlijk)	2,000	

Appendix 5: Risk Assessment

Schedule Risk Register - WO TR-5 YEAR 2020					RISK							
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Risk rating	Remarks		
General												
G-2	Weather conditions	NEDMAG BPC BPC WL Catch Mammoet HLB SLB Transport company	NEDMAG	High winds	High winds can jeopardize the stability and cause the Unit / Crane to tumble over with potential to cause multiple fatalities Falling heavy equipment could cause serious material damage to surrounding equipment, walls, and/or injury to people. Detachment of equipment, Loose cables, hoses, pipe, slamming container doors etc. can start to fly around and can cause material damage or injure personnel	Weather forecasts shall be monitored regularly and work will be planned based on forecast. Equipment design and limitations -> Stay within equipment limits install and secure all equipment properly. All equipment fall within design criteria. Guy wire pre-tensioning to be controlled during commissioning and after any shut-down due to high winds event R/U Procedures to be followed Crane and HWO unit equipped with gauges to determine wind speed Weather forecast to be mentioned during Toolbox meetings when relevant Stop operations at the first signs of detached equipment, cables, hoses, etc. Maintain Good housekeeping All operational staff have the authority to stop work when unsafe Perform preventive inspections prior to high winds Keep all doors closed/locked off	B	II	III	http://buienradar.nl http://windfinder.com/ BPC: 22m/s working limit (stop work & R/D slide + ginpole) 55m/s unit limit (rig down, based on forecast) Crane: acc crane driver		
							Lightning	Lightning strike can cause personnel injuries and damage to the installation	C	I	CI	http://goe.gl/anFdxj Check lightning forecast prior to wireline operations
							Cold weather (freezing)	Freezing lines Cold stress Slippery surface	C	II	CI	Use brine for testing etc. or drain fresh water after use Proper clothing, dry/warm De-ice ground and equipment salt available on location Check weather forecast regularly
							Heavy Rain - flooding of location	Spillage of waste fluids (mud, waste water, etc.) will mix with incoming fresh water and uncontrolled flow will cause a spill outside the location. Slips / trips / falls Electrocution	C	II	CI	In time emptying of cellars, gutter systems, pits, etc. will reduce the risk of mixing up (drilling) fluids and waste water with rain water coming onto the location. Dedicated chemical storage areas Ensure no electrical cable sockets are placed on the ground
									C	II	CI	

Schedule Risk Register - WO TR-5 YEAR 2020						RISK		Remarks	
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability		Severity
General									
G-3	Traffic to location	NEDMAG BPC BPC WL Mammoet HLB, SLB Transport company	NEDMAG	Increase in traffic	Complaints from the neighbours, local authorities Accidents, injury / damage to equipment	Dedicated traffic routes (traffic plan available) Supply truck drivers with a timetable Plan transport during office hours when possible	C	I	
G-4	Traffic on location	NEDMAG BPC BPC WL Mammoet HLB, SLB Transport company	NEDMAG	Collision / struck / crash	Collision of moving vehicles which may trap and hit people on site resulting in severe injury Collision of moving vehicles with wells and pressurized piping may result in an uncontrolled high pressure brine leakage which may cause serious injuries and environmental spills	Driving routes and direction will be shown in the traffic plan No uncontrolled driving on location Hard barriers are placed around the present wells on location Speed limit enforced Parking allowed only in designated areas Driving on workover site allowed only under supervision	B	III	
G-5	Lifting	NEDMAG BPC BPC WL Mammoet HLB, SLB Transport company	NEDMAG	Overload of mobile/static crane Overloading of Lifting Accessories (Chains, Hooks, Slings etc.) Collision with equipment on location Collision with personnel	Personnel at fatal risk - Crane operator - Customer representative - Banksman - Operators - Supervisor Damage to equipment & wells, injury to personnel	PTW system to be used for heavy / complex lifting Crane lifting capacity to be identified on the crane and certification available in cabin Certified lifting equipment Weights of loads to be established Allow adequate clearances to avoid conflict with other plant or structures in the lift vicinity Use tag lines to help control the load if needed Use of banksman with radio communication with crane operator Wellhead protection placed on surrounding wells Lifting plan available for rig up and complex lifts No personnel allowed under suspended load Follow appropriate PTW / workprogram, P.JSM Proper supervision Certified & pressure tested equipment, barriers (tape-off zone) Tie down lines Limit entry to zone to authorized personnel Keep clear of all lines for the duration of the test All personnel have the authority to stop work when unsafe Only authorized personnel to operate swab and master valves	B	III	Heavy lift >5mT
G-6	Working with pressure vessels / piping	NEDMAG BPC BPC WL WSG	NEDMAG	Bursting of hoses, pipes and fittings Release of projectiles Release of powerful jet of fluid	Injury to people Environmental spill Damage to equipment	Follow SDS procedures; take adequate measures as stated in SDS (Correct PPE use) SDS available on location (chemical storage area & supervisors' offices) Dedicated storage location Drip pans where possible	B	III	
G-7	Working with chemicals	NEDMAG BPC WSG Transport company	NEDMAG	Exposure to chemicals	Injury to people Environmental spill		B	III	

Schedule Risk Register - WO TR-5 YEAR 2020					RISK				
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Remarks
Wireline operations on wellhead									
6.0.1	Rig-up E-line unit, tools and PCE	NEDMAG HLB BPC WL Mammoet	BPC WL	RIE BPC WL					
6.0.11			HLB WL	RIE HLB WL					
6.0.13	Perform wireline operation (measurements, cutting pipe, setting plugs)	NEDMAG HLB BPC WL Mammoet	Mammoet	RIE Mammoet					
6.0.18				Refer to general risk G-1 through G-6 above					
6.1.22	Rig-down E-line	NEDMAG		Exposure to wellbore pressure	Injury of people Spill of fluids	Hold P.J.S.M prior to job, discuss responsibilities Keep two barriers between working environment and people Check PCE test validity + condition Pressure test PCE according NEDMAG procedure NEDMAG supervisor to handle wellhead valves	C	III	
6.1.25				Damage to wellhead	Spill of fluids	Hold P.J.S.M prior to placement unit/crane at wellhead Check placement crane with lift plan Check WH and PCE connections on rig up/down NEDMAG supervisor to handle wellhead valves	B	III	
				Damage to well (test pressure on well)	Uncontrolled flow of water / brine from the wells Injury of people	P.W system to be used P.J.S.M Barrier off area Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	I	CI
Kill well									
			BPC	RIE BPC snubbing unit; 2.2.5 Overpressures					
				Refer to general risks G-1, G-6 and G-7					
6.1.21	Displace well to FMC	NEDMAG BPC		Plugged line	Spill of fluids Burst of lines, injury	Hold P.J.S.M Check pump lines, Piest same Adequate supervision while performing the job Set pop-off limit Contain fluids onsite (location gutters) Proper mixing liquids/topper via mix tank	B	III	
6.3.52				Leak at surface exposure WH & casing to high pressure					
6.7.96									

Schedule Risk Register - WO TR-5 YEAR 2020						RISK				
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Remarks	
Rig up snubbing unit										
6.1.19 -	Mobilize equipment Removal top X-Mas Tree R/U BOP	NEDMAG BPC Mammoet	BPC	RE BPC Snubbing unit, Reference No: 1.3.2 Transport; 2.1.4 Positioning of Equipment; 4.1 Location lay-out, 2.2.6.4 Lifting BOP components; 2.2.6.21 Lifting / skidding BOP stack; 3.6 Labour and industrial dangers						
			Mammoet	RIE Mammoet						
6.1.26 6.1.34	Rig up snubbing unit, auxiliaries and pump lines	NEDMAG BPC Mammoet	NEDMAG	Refer to general risks G-1, G-2, G-4, G-5 and G-6						
				Damage to wellhead	Spill of fluids	Hold PJSM prior to placement unit/crane at wellhead Check placement crane with lift plan Check WH and PCE connections on rig up/down PIW system to be used Adequate supervision while performing the job Work instructions discussed during PJSM	B	II	BI	
6.1.19 -	Rig up snubbing unit, Reference No: 2.2.6 Positioning of Equipment, 2.4.4 Controls and gauges	BPC	Mammoet	Exposure to wellbore pressure	Injury of people Spill of fluids	Internal and external barriers in place according to Work Program Hold PJSM prior to job Keep two barriers between working environment and people Prepare equipment offline, minimize exposure Check PCE test validity + condition Confirm "onrifting / exemption" SodM	B	II	BI	
				RIE BPC Snubbing unit, Reference No: 2.2.6 Positioning of Equipment, 2.4.4 Controls and gauges						
6.1.26 6.1.34	Rig up snubbing unit, auxiliaries and pump lines	NEDMAG BPC Mammoet	NEDMAG	Refer to general risks G-1, G-2, G-5 and G-6						
				Damage to surrounding wells	Uncontrolled flow of water / brine from the wells Injury of people	Construction of well barrier structures to shield surrounding wells. PIW system to be used Have lift plan in place Adequate supervision while performing the job.	B	II	BI	
6.1.26 6.1.34	Function test unit, pressure test BOP and commission unit	NEDMAG BPC	BPC	RIE BPC Snubbing unit 20170817, Reference No: 2.2.1 Leakage of high pressure systems; 2.2.2. Leakage of well control equipment						
				Wrong rig up of control lines of the BOP components	Equipment damage	Adequate supervision Pre-check lines before function test	C	I	CI	
6.1.26 6.1.34	Function test unit, pressure test BOP and commission unit	NEDMAG BPC	NEDMAG	Refer to task G-6 above						
				Damage to well (test pressure on well)	Uncontrolled flow of water / brine from the well Injury of people	PIW system to be used Commissioning checklist Function and pressure test program for BOP's PJSM Barrier off area Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	I	CI	

Schedule Risk Register - WO TR-5 YEAR 2020						RISK				
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Remarks	
POOH 2 7/8" dilution hanger and string										
6.2.35 - 6.2.43	Run 2 7/8" landing string	NEDMAG BPC BPC WL Mammoet	BPC	RIE BPC Snubbing unit 20170817, Reference No. 2.4.3.1 Lifting gear in General, Reference No. 2.2.7.1 Pipe Handling RIE BPC-OPS-P-HWO-10 RU Wireline on top of HWO unit, RIE BPC snubbing unit, 2.2.5 Overpressures						
	Remove WRBP		BPC WL	RIE BPC WL						
	Release tie-down bolts		Mammoet	RIE Mammoet						
	POOH dilution string			Refer to tasks G-1, G-5, G-6, G-7 above						
						Damage to wellhead	Injury of people Spill of fluids	P.JSM before job Ensure all pressure over hanger is released before unscrewing tie-down bolts. Refer to bolt extrusion measurements of previous jobs to know when hanger is released.	B	■ B
6.3.44 - 6.3.55	Rig-up E-line unit, tools and PCE Perform wireline operation Rig-down E-line Potential kill operation see Kill well risks	NEDMAG BPC BPC WL Mammoet	NEDMAG	Exposure to wellbore pressure	Injury of people Spill of fluids	Keep hole full Discuss in P.JSM Perform Kick drill before pulling, assure IBOP is on the floor Internal and external barriers in place according to Work Program	B	■ B		
				Scaling outside tubing	Dropping debris	Discuss in P.JSM Clean pipe in basket/unit (wiper rubbers installed in unit)	B	■ B		
				Tubing severely corroded	Injury of people, dropping sections/debris	Discuss in P.JSM restricted area at pipe deck evaluate condition string when pulled	B	■ B		
Wireline operations on 4 1/2"										
6.3.44 - 6.3.55	Rig-up E-line unit, tools and PCE Perform wireline operation Rig-down E-line Potential kill operation see Kill well risks	NEDMAG BPC BPC WL Mammoet	BPC	RIE BPC Snubbing unit 20170817, Reference No. 2.4.3.1 Lifting gear in General RIE BPC-OPS-P-HWO-10 RU Wireline on top of HWO unit						
			BPC WL	RIE BPC WL						
			Mammoet	RIE Mammoet						
				Refer to general risk G-1 through G-6 above						
			NEDMAG	Exposure to wellbore pressure	Injury of people Spill of fluids	Hold P.JSM prior to job, discuss responsibilities Keep two barriers between working environment and people Check PCE test validity + condition Pressure test PCE according NEDMAG procedure Keep snubbing unit blind rams closed during rig up/down	C	■ CII		

Schedule Risk Register - WO TR-5 YEAR 2020					RISK					
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Risk Rating	Remarks
Lift Unit										
			BPC	Refer to BPC lifting unit procedure						
			Mammoet	Refer to tasks G-1, G-5, G-6, and G-7 above						
6.4.56 - 6.4.86	Lift HWU w/ BOPs	NEDMAG BPC Mammoet		Working under suspended load (BOP's stack)	failure of lifting equipment serious injury of people / fatality damage of equipment	Appropriate PIW in place, P.JSM Snubbing operator procedures for BOP lifting Minimize exposure time by having appropriate planning, equipment and man-power Adequate supervision while performing the job Work instructions / lifting plan and procedures discussed during P.JSM	B	II	III	
6.6.85 - 6.6.89	Remove spool Re-install HWU w/ BOPs			Handling heavy equipment	Damage to surrounding wells Uncontrolled flow of water / brine from the wells Injury of people	Construction of well barrier structures to shield surrounding wells. PIW system to be used Have lift plan in place Adequate supervision while performing the job.	B	I	III	
6.8.102 - 6.8.108	Plast BOP/connections		NEDMAG	Exposure to wellbore pressure	Uncontrolled flow of water / brine from the well Damage to equipment Injury of people Spill of fluids	Internal and external barriers in place according to Work Program Compliance with exemption requirements Adequate supervision while performing the job Work instructions discussed during P.JSM Minimize exposure time by having appropriate planning, equipment and man-power	C	I	III	
				Damage to well (test pressure on well)	Uncontrolled flow of water / brine from the well Injury of people	PIW system to be used Commissioning checklist BOP's function and pressure test program P.JSM Barrier off area Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	I	III	

Schedule Risk Register - WO TR-5 YEAR 2020					RISK		Remarks	
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan		Probability
POOH 3 1/2" string								
			BPC	RIE BPC Snubbing unit 20170817, Reference No: 2.4.3.1 Lifting gear in General, Reference No: 2.2.7.1 Pipe Handling RIE BPC-OPS-P-HWO-10 RU Wireline on top of HWO unit, RIE BPC snubbing unit, 2.2.5 Overpressures				
			BPC WL	RIE BPC WL				
			Mammoet	RIE Mammoet				
				Refer to tasks G-1, G-5, G-6, G-7 above				
6.5.67	Run 3 1/2" fishing string	NEDMAG BPC BPC WL Mammoet		Damage to wellhead	Injury of people Spill of fluids	P.JSM before job Ensure all pressure over hanger is released before unscrewing tie-down bolts. Refer to bolt extrusion measurements of previous jobs to know when hanger is released.	B	II
6.5.84	Release tie-down bolts POOH/SOOH string WL remove/install plugs		NEDMAG	Exposure to wellbore pressure	Injury of people Spill of fluids	Keep hole full Discuss in P.JSM Perform Kick drill before pulling, assure IBOP is on the floor Internal and external barriers in place according to Work Program	B	II
			NEDMAG	Scaling inside tubing	Dropping debris Spray over location	Discuss in P.JSM Restricted area at pipe deck Retain pipe capacity in basket	B	II
				Multiple plugs in string, breaking connection below plug, Potential pressure below plug	Injury of people Spill of fluids	Discuss in P.JSM Jack operator to be informed, properly with plugs Leave plugs in BOP, remove with WL, check for pressure	B	II
				Damage to well (test pressure on well)	Uncontrolled flow of water / brine from the wells Injury of people	PIW system to be used P.JSM Barrier off area Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	CI

Schedule Risk Register - WO TR-5 YEAR 2020					RISK				
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Remarks
POOH 4 1/2" string									
			BPC	RIE BPC Snubbing unit 20170817, Reference No. 2.4.3.1 Lifting gear in General, Reference No. 2.2.7.1 Pipe Handling RIE BPC-OPS-P-HWO-10 RU Wireline on top of HWO unit, RIE BPC snubbing unit, 2.2.5 Overpressures					
			BPC WL	RIE BPC WL					
			Mammoet	RIE Mammoet					
				Refer to tasks G-1, G-5, G-6, G-7 above					
6,7,90 - 6,7,101	Remove WRBP with WL Run fishing string Release tie-down bolts POOH string Potential kill operation see kill well risks	NEDMAG BPC BPC WL Mammoet	NEDMAG	Damage WH Exposure to wellbore pressure Scaling inside tubing Tubing severely corroded	Injury of people Spill of fluids Injury of people Spill of fluids Dropping debris Spray over location Injury of people, dropping sections/debris	PJSM before job Ensure all pressure over hanger is released before unscrewing tie-down bolts. Refer to bolt extrusion measurements of previous jobs to know when hanger is released. Keep hole full Discuss in PJSM Perform Kick drill before pulling, assure IBOP is on the floor Internal and external barriers in place according to Work Program Discuss in PJSM Restricted area at pipe deck Retain pipe capacity in basket Discuss in PJSM restricted area at pipe deck evaluate condition string when pulled	B B B B	II II II II	

Schedule Risk Register - WO TR-5 YEAR 2020					RISK						
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Risk Rating	Remarks	
Wireline operations on 10 3/4"											
6.9.109 - 6.10.125	Rig-up E-line unit, tools and PCE Perform wireline operation, WT measurement, CBL Install 10 3/4" Bridge plug Rig-down E-Jine	NEDMAG BPC BPC WL HLB WL Mammoet	BPC	RIE BPC Snubbing unit 20170817, Reference No: 2.4.3.1 Lifting gear in General RIE BPC-OPS-P-HWO-10 RU Wireline on top of HWO unit							
			BPC WL	RIE BPC WL							
			HLB WL	RIE HLB WL							
			Mammoet	RIE Mammoet							
				Refer to general risk G-1, G-2, G-5, G-6							
			NEDMAG	Damage to well (test pressure on well)	Uncontrolled flow of water / brine from the well Injury of people	PIW system to be used Commissioning checklist BOP's function and pressure test program P-JSM Barrier off area Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	I	CI		
			NEDMAG	Exposure to wellbore pressure	Injury of people Spill of fluids	Hold P-JSM prior to job, discuss responsibilities Keep two barriers between working environment and people Check PCE test validity + condition Pressure test PCE according NEDMAG procedure Keep snubbing unit blind rams closed during rig up/down	C	II	CII		

Schedule Risk Register - WO TR-5 YEAR 2020					RISK					
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Risk rating	Remarks
Set cement plug										
			BPC	RIE BPC Shubbing unit 20170817, Reference No: 2.4.3.1 Lifting gear in General, Reference No: 2.2.7.1 Pipe Handling						
			BPC WL	RIE BPC WL						
			Mammoet	RIE Mammoet						
			SLB cmt	RIE SLB cmt						
				Refer to tasks G-1, G-5, G-6, G-7 above						
6.11.126 - 6.11.142	Run 5" string	NEDMAG BPC	NEDMAG							
	WL remove diat	BPC WL Mammoet	BPC WL Mammoet	Damage to well (test pressure on well)	Uncontrolled flow of water / brine from the well Injury of people	PTW system to be used Commissioning checklist BOP's function and pressure test program P.JSM Barrier off area Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	I	CI	
6.12.143 - 6.12.155	Set cement plug	SLB cmt	SLB cmt							
	POOH 5" string									
	Pleat casing									
	Optional remediate operation									
				Exposure to wellbore pressure	Injury of people Spill of fluids	Keep hole full Discuss in P.JSM Internal and external barriers in place according to Work Program	B	II	BI	

Schedule Risk Register - WO TR-5 YEAR 2020					RISK					
Task ID	Description of Operation	Stakeholder(s)	Party Responsible	Risks	Potential Consequences	Action to mitigate or create contingency plan	Probability	Severity	Risk Rating	Remarks
Install 7" suspension string. Rig down snubbing unit										
			BPC	RIE BPC Snubbing unit 20170817, Reference No: 1,3,2 Transport; 2,1,4 Positioning of Equipment; 4,1 Location lay-out; 2,2,6,4 Lifting BOP components; 2,2,6,21 Lifting / skidding BOP stack; 3,6 Labour and industrial dangers						
			Mammoet	RIE Mammoet						
			ROBKE	RIE Robke wellhead testing 20170801						
				Refer to general risks G-1, G-2, G-4, G-5 and G-6						
				Exposure to wellbore pressure	Uncontrolled flow of water / brine from the well Injury of people Damage to equipment	PTW to be used Internal and external barriers in place according to Work Program Adequate supervision while performing the job Work instructions discussed during P.JSM	B	I	BI	
6.13.156 - 6.13.159	Install 7" suspension string	NEDMAG BPC Mammoet Robke	NEDMAG	Damage to wellhead	Uncontrolled flow of water / brine from the well	PSJM before job start Detailed instruction lending hanger & working on Tie-down bolts Supervision during critical operations skilled personnel performing job Follow Wellhead Specialist procedures for installation and retrieval of TWCVs and BPVs	B	I	BI	
6.14.160 - 6.14.167	Rig-down HMO Unit Rig-down BOP's & demobilize Install Xmas tree			Damage to surrounding wells	Uncontrolled flow of water / brine from the wells Injury of people	Construction of well barrier structures to shield of surrounding wells. PTW system to be used Have lift plan in place Adequate supervision while performing the job.	B	II	BI	
				Damage to well (pressure test on well)	Uncontrolled flow of water / brine from the well Injury of people	Detailed program Adequate supervision Pressure setting of test pump limited to lowest pressure rating of equipment	C	I	CI	