



NEDMAG TR-5
Concurrent operations Document

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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	General Manager
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.		

Contents

1. Summary.....	4
2. Concurrent operations organization	4
3. Risk Inventory & Evaluation of concurrent operations workover TR-3 / TR-8	5
4. Report of transmission TR-3 and TR-8 (Proces verbaal van overdracht)	7
5. Coordination	7
6. Emergencies and critical situations during concurrent operations.....	8
Attachment 1: Definition concurrent operation	9
Attachment 2: Report of transmission from HCO to the SSV	10
Attachment 3: Appointment of replacement HCO	11
Attachment 4: Report of transmission from SSV to the HCO	12

1. Summary

This document is written in order to address the risks and responsibilities involved in concurrent operations during the workover of TR-5 in Q1 of 2020.

Since the workover operation and brine and salt production constitute the two main activities that take place simultaneously at WHC-2, a situation of concurrent operations exists.

2. Concurrent operations organization

The following organization is in place during concurrent operations. The organization comes into force after a report of transmission of the TR-5 well is signed by the NEDMAG Company Representative (SSV) and the Head Concurrent Operations (HCO), and stops when the well is handed back to the HCO.

3. Risk Inventory & Evaluation of concurrent operations workover TR-5

During concurrent operations, specific risks apply. These risks have been assessed in addition to the risks associated with the workover process as described in Chapter 4 of the NEDMAG TR-5 Project Specific Safety & Health Document (PSSHD). The NEDMAG Risk matrix is used to assess risks and to determine mitigating measures and corresponding responsibilities.

Nedmag Risk Matrix							
Severity	(Potential) Effect		Increasing probability				
	People	Environment & Material	A	B	C	D	E
			Has never occurred in other companies	Has occurred in other companies	Has occurred at Nedmag or more than 1 x other companies	Has occurred on the department or more than 1 x a year at Nedmag	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

Table 1. Risk Assessment & Evaluation for Concurrent Operations

RISK ASSESSMENT & EVALUATION - CONCURRENT OPERATIONS						
Nr	Activity/Event	Risk	Score-1	Measures	Score-2	Action by
1	Transport required for salt & brine operation concurrent with TR-5 workover operation.	Traffic collisions and damages to structures.	C-III	Proper safety instructions Speed limitations & traffic plan to avoid unnecessary moves. Minimization of traffic.	C-II	NEDMAG
2		Traffic accidents with heavily injured people and/or casualties.	C-V	Proper safety instructions Speed limitations & traffic plan to avoid unnecessary moves. Locate doors of (mobile) office as much as possible away from direct road access.	C-II	NEDMAG BPC
3	Unauthorized people entering the workover site.	Unauthorized/uninformed people on workover site with chance of getting injured	C-III	All employees receive safety instructions before starting work on site. Regular entrance policy for visitors	C-II	NEDMAG
4		No clear distinction between brine production & workover site and people get injured	B-V	The workover area will be marked with road barriers.	B-II	NEDMAG
5	Contractor employees entering NEDMAG operations unauthorized	Contractor employees enter the brine & salt operation unauthorized and get injured	B-V	Contractor personnel are not allowed to enter the salt operations without authorization & guidance of NEDMAG personnel.	B-I	BPC Third party service contractors NEDMAG
6	Control checks and sampling of the wells TR-1, 2, 3, 4, 6, 7, 8 & 9.	Unauthorized people on the workover site.	B-V	NEDMAG operator must inform the company representative of this activity. When finished he must vacate the workover area.	B-I	NEDMAG
7	Hazardous critical situation (mustering)	Depending on the origin of the critical situation different people can take the lead.	B-V	Give clear instructions who is responsible when in case of emergency situations	B-I	NEDMAG BPC

4. Report of transmission TR-5 (Proces verbaal van overdracht)

Both main activities will interfere, therefore the following rules apply:

Prior to the workover operation of TR-5, the SSV obtains a handover document ('Procesverbaal van Overdracht') for TR-5 from the HCO. After the workover operation, TR-5 is returned to the HCO. See Attachment 1-4.

During the workover operation, the SSV and HCO keep each other informed of the situation on a regular basis. Both have the obligation to inform the other when interference between workover operation and production activities will take place, to achieve agreement on the actions and precautions to take.

All NEDMAG operating personnel is informed of the activities to come and of the change in responsibilities during the workover operation.

5. 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. With the handover of well TR-5 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 & Evaluation Overview (Table 1) and the Project Specific Safety and Health Document, 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, during 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/complex lifts)
 - Activities outside the work program and any other (non-routine) work where the SSV and/or BPC supervisor think 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/HCO.

The goal of the work permit 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 BPC Supervisor 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 area which does 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

6. Emergencies and critical situations during concurrent operations

In case emergencies and critical situations occur during the salt & brine operation the NEDMAG's M-02 Calamiteitenplan Zoutwinlocaties WHC-1 and WHC-2 (Emergency Response Plan) will be effective. In this case the NEDMAG shift leader on duty takes the lead during emergency response and mustering.

When the emergency occurs on the unit or workover area of TR-5, the SSV will take the lead according to the project specific firefighting and rescue plan.

7. Complaints

Any complaints from neighbours regarding the workover or production operations should be directed to the Nedmag Project Manager / HCO.

Attachment 1: Definition concurrent operation

Concurrent Operations NEDMAG location WHC-2

During the TR-5 workover operation at the NEDMAG WHC-2 location Veendam a situation of "concurrent operations" will apply.

The (producing) wells TR-1, 2, 3, 4, 6, 7, 8 & 9 will be in the vicinity of the workover area and the surrounding wells during the TR-5 operations TR-3, 4, 6, 7 & 8 will be protected by a shelter.

The workover operation will be executed under supervision of WEP.

Under the "Concurrent Operations" the following dispositions and measures will apply:

1. The organization required for the workover of TR-5 workover is described in the NEDMAG TR-5 workover Project Specific Safety & Health Plan. NEDMAG Project Manager or his replacement will function as Head Concurrent Operations.
2. In case of emergency, complaints of the neighbors or similar the NEDMAG procedure should be followed.
3. A daily meeting will be held between the HCO, WEP, and the operation supervisors. All work on the hardstand that can have impact on the workover operation and the concurrent operations shall be addressed and planned.
4. The area addressed for the workover operation shall be transferred by NEDMAG to the NEDMAG Company Representative. Therefore the report of the TR-5 transmission will be used. The remaining terrain, production facilities and offices will remain under supervision of NEDMAG. The report of transmission contributes to a good workover operation. The NEDMAG HCO will remain responsible for the entire terrain. The transmission will start when the area is safely handed over. After the workover operation, the well will be handed over to NEDMAG. Therefore, a report of transmission will also be used.
5. All persons on the workover terrain shall be registered on a registry document in the office of the company representative. All personnel outside workover area shall be registered in line with the normal NEDMAG procedure.
6. All operations to be performed prior to the transfer of the well to the SSV require a work permit signed by the Nedmag production shift leader. Once the well is transferred to the SSV, chapter 5 of this document applies.
7. All waste streams resulting from the workover operation will be removed by NEDMAG.

NEDMAG:

WEP:

Attachment 2: Report of transmission from HCO to the SSV

Veendam, _____

From: NEDMAG Head Concurrent Operations (HCO)

To: NEDMAG Company Representative (SSV)

Subject: Report of TR-5 transmission

Dear Sir,

This document transfers the responsibility for the TR-5 well from Head Concurrent Operations (HCO) to the NEDMAG Company Representative (SSV). The transfer period will start currently and will end when the workover period is finished and the workover unit is demobilized. For the description, the structure and the responsibilities of the operation reference is made to the NEDMAG TR-5 Project Specific Safety & Health Plan.

Yours sincerely,

NEDMAG Head Concurrent Operations (HCO)

NEDMAG Company Representative (SSV)

Attachment 3: Appointment of replacement HCO

TO: WEP, BPC
All NEDMAG employees
FROM:
Date: _____
Subject: Concurrent Operations

During the TR-5 workover operations on location WHC-2, _____ is appointed as Head Concurrent Operations (HCO).

As replacement _____ is appointed.

Tel.
Mob.
Tel.
Mob.

Attachment 4: Report of transmission from SSV to the HCO

Date: _____

From: NEDMAG Company Representative (SSV)

To: NEDMAG Head Concurrent Operations (HCO)

Subject: Report of TR-5 transmission

Dear Sir,

This document transfers back the responsibility for the TR-5 well to the Head Concurrent Operations (HCO). The well will be transferred, as written down in the well schematic TR-5. All depths shall be referenced to the tie down bolts of the 11" DCB spool and stated as MBCHH. All temporarily safety measures (test plugs) have been removed.

Yours Sincerely,

NEDMAG Company Representative (SSV)

NEDMAG Head Concurrent Operations (HCO)