

# D3Consulting B.V.

## Well Examination Final Report

### TR-05 Workover

v 2.0 11-12-019

Prepared for

NEDMAG B.V.

by

12<sup>th</sup> December 2019

## Revision History

Version	Date	Description	WE Review Date	WE Reports
v1.0	20-11-2019	No attachment	27-11-2019	Draft Preliminary Report
V2.0	11-12-2019	Updated after SWOP and WE	12-12-019	Final Report

## Table of Contents

1. Well Examination
2. Preliminary Report
3. Well Information
4. Background
5. Objective
6. Summary of Operations
7. Findings
8. Compliance with Mining Regulations
9. Conclusions and Recommendation

### Attachments.

1. List with comments on TR-5 Work v2.0 of 11-12-2019

# 1. WELL EXAMINATION

## *Purpose*

NedMag Industries Mining & Manufacturing B.V. (NedMag) requested D3Consultancy B.V. to perform an independent well examination, in accordance with the directive of the 13 of October 2011 of SodM, on the Work Program TR-5 Workover version 2.0 of the 11 December 2019. In this directive SodM states what she expects from a well examiner, like the scope, the independent position of the well examiner, the subjects that needs to be verified and reported in the end report.

## *Independent Well Examiner*

D3Consultancy is an independent drilling- and petroleum-engineering consultancy. Its director, , worked for 12 years for the drilling section of SodM, reviewing the drilling- and workover programs, and monitoring the daily drilling and workover activities of wells offshore and onshore in the Netherlands.

## *No involvement of the Well Examiner in the planning phase*

D3Consultancy was not involved in any design discussions pertaining to the planning operations.

## *The Well Examination during operations*

The Well Examiner will receive each morning a copy of the morning report. He will check the operations against the approved workover program and in case of deviation he will contact the drilling manager either by e-mail or by phone or if needed will visit him for consultation

In case of a dispute, a meeting will be arranged with the Well Examiner and WEP's senior management, as set out in NedMag's Well Examination Verification to resolve the dispute.

# 2. FINAL REPORT

On the 10 December the last comments in the Preliminary reports were discussed and clarified over the telephone with , Project Manager WEP.

There are still some figures missing in Section 8.5. WEP will send these figures in an update.

# 3. WELL INFORMATION

Operator	NedMag B.V.
Well Name	VEENDAM WHC-2
Acronym	TR-5
Well Type	Mg brine producer. Production stopped in June 2000
Municipality	Veendam
Date of last repair	1999 replaced X-mastree
Target	N.A.
Project Manager NedMag	
Project Manager WEP	
Operations Manager WEP	

Geological Studies	N.A,
Workover Program	WEP Hoogetveen
Workover Unit	Balance Point Control
Programme Examiner	D3Consultancy B.V.
Well Examiner	

## 4. BACKGROUND

TR-5 well, was drilled in 1982. The production stopped in June 2000. In September 2019 a pressure drop as observed. Several wireline tests were run, which confirmed the suspicion that all the tubings (the 3 ½" injection-, the 4 ½" production tubing and the 2 7/8" dilution string) were severely corroded and were leaking.

## 5. OBJECTIVE

The objective is to inspect the condition of the 10 ¾" casing, to isolate the reservoir and to set cement plug(s) across the probable leaks in the 10 ¾" casing. The well will be suspended with one joint 7" casing hung off in the wellhead.

## 6. SUMMARY OF THE OPERATIONS

- 6.0. Pre-Workover Wireline Operations
- 6.1. Remove X-mas tree and rig up HWU
- 6.2. POOH 2-7/8" dilution string
- 6.3. Investigate & Cut 4 ½" string
- 6.4. Lift 11" Blind Ram & Remove intermediate spool
- 6.5. SOOH 3-1/2" injection string
- 6.6. Lift BOP & reorient offset spool
- 6.7. POOH 4 ½" production string
- 6.8. Lift Unit and remove offset spool
- 6.9. Investigate 10 ¾" casing
- 6.10. Plug 10 ¾" Casing
- 6.11. Set primary cement plug
- 6.12. Remediate Damage in 10 ¾" Casing
- 6.13. Install 7" Suspension String
- 6.14. Rig down HWU unit & install X-mas tree

## 7. FINDINGS

The workover is complex due to the leaks in all the tubing strings. Therefor one needs to have available clear sketches of the different BOP hook-ups. And detailed instructions when killing the well with the Floating Mud Cap technique.

## 8. Compliance with Mining Regulations

The work program complies with the Mining Regulations, on assumption that SodM granted the submitted requests for exemption.

## 9. Recommendation and Conclusions.

Complex operations. But the work program is well thought through.

## ATTACHMENTS

List with D3C's comments on version 1.0 of 20-11-2019

<b>ATTACHMENT 2</b> List with comments on the TR 5 Workover version 1.0 of 20 11 2019				
<b>None = No comments</b> <b>Done = Adjusted</b> <b>OK = Answer accepted</b> <b>Xxx = Insert</b>			<b>Outstanding</b> = not received yet	
Section #	Comment Description	Version 1.0	Response WEP Version 1.0	Comment D3C
	Contents			
	Revision Change Notice			
	Authorized Signatures			
	Summary			
3.1.	Abstract	<p>Suggest to indicate here the results of the investigation or to refer to 4.1.2.1 Potential or probable? Insert new section 3.2 Objective.</p> <p>Depending on the results Temporary P&amp;A to evaluate sitetrack (?)</p> <p>Figure 1 Insert depth of collapsed of 2 7/8" injection string and the HUD</p> <p>Suggest to insert a column with Measured Depth AH</p>	<ul style="list-style-type: none"> <li>- Cross-reference to section 4.1.1 &amp; 4.1.2 added</li> <li>- Changed to probable</li> <li>- The chapter structure follows previous workovers</li> <li>- Rephrased the objective to emphasize permanent isolation</li> <li>- Depth inserted</li> <li>- The diagram is a simple overview.</li> <li>- Conversion to AHD included</li> </ul>	<p>Done</p> <p>Done</p> <p>OK</p> <p>Done</p> <p>Probable casing leak</p> <p>Done</p> <p>OK</p> <p>OK</p>
3.2.	TR 5 well data	<p>Well name TCI 5 or TR 5</p> <p>Completion 3 ½" <del>production</del> injection string</p> <p>Expected well head pressures Suggest to make a note that the surface pressures in all annuli are the same (Ca. 50 bar) due to leaks in all tubings.</p>	<ul style="list-style-type: none"> <li>- Fixed</li> <li>- Fixed</li> <li>- Since it is intended to isolate 3 ½" tubing, the pressure will be different in this string. Adjusted text for the other two.</li> </ul>	<p>Done</p> <p>Done</p> <p>OK</p> <p>Done</p>
4.	Introduction	<p>evaluate the 10 ¾" casing condition, set at reservoir level an abandonment plug and to remediate the casing damage by setting cement plugs across the leak</p> <p>Will the well be permanent abandoned or temporary?</p>	<ul style="list-style-type: none"> <li>- Fixed</li> <li>- The bottom plug will be permanent, but the well will be suspended for a while pending pressure monitoring and full abandonment.</li> </ul>	<p>Done</p> <p>Done</p> <p>OK</p>
4.1	History TR 5	and serviced	- Fixed	Done
4.1.1	Pressure drop in well	<p>September 26<sup>th</sup> 2019</p> <p>10 ¾" casing damage was suspected</p> <p>Remove According to this figure</p>	<ul style="list-style-type: none"> <li>- Fixed</li> <li>- Fixed</li> <li>- Fixed</li> </ul>	<p>Done</p> <p>Done</p> <p>Done</p>
4.1.2	Wireline Investigations	Refer to Attachment 8.1.1	- Added	Done
4.1.2.1	3 ½" Injection string	<p>Insert suspected leak at 1163m</p> <p>MID and MFC not in Glossary List</p>	<ul style="list-style-type: none"> <li>- A leak is not suspected at this point based on wireline results (Leak at 250 or 1464m more likely.</li> <li>- Included in glossary</li> </ul>	<p>OK</p> <p>Done</p>
4.1.2.2	2 7/8" dilution string	Insert depth HUD 1316m	- Added	Done
4.1.2.3	4 ½" production string	None		None
4.1.2.4	10 ¾" last cemented casing	Potential casing damage at 434m I do not understand the explanation why a	- The cavern pressure of 252 bar is equivalent to a pressure	OK

		leak is highly unlikely as the formation fracture gradient etc. as this will be sorted out in 6.2 by neutron density logging. Suggest to remove is highly unlikely etc	<b>gradient of 1.68 s.g. A leak at 434m fuelled by such a gradient would fracture the formation behind the casing. Based on the pressure response, the expected leak is deep in the well, and we have so far not seen a massive pressure drop indicating a shallow leak.</b>	
4.2.	Hydrogeology	Is the Breda sealing barrier still intact?  When is the next Vertical Electrical Sounding Survey planned.	- No pressure response in 16" parallel to the increase / decrease in 10 ¾", so we expect all shallow layers to be intact. - No VES is planned. The VES data was gathered from the DINOLOKET database.	OK  OK
4.3	Scope of Work	Suggest to use same numbering as the sections 1) becomes 6.0. Check 1) thru 6) Is this running of 7" suspension string?	- Included chapter numbers in list - This is a glitch from Word, has been fixed	Done Done
4.3.1	Workover phases overview	Very good!		
4.4	Location	None		None
4.5.	Management of Change	None		None
5.	Well Control procedures			
5.1	Well Barriers	6.1 Replace 4 ½ production string with 2 7/8" injection string. 6.1 Add a new row for the 4 ½" production string with info in the column Internal and external barriers  Pls mail me the exemptions	- Fixed  - 4 ½" internal production string barriers will serve as external barriers for 2 7/8". No external 4 ½" barriers required at this stage. - Will be included with the adjusted program	Done  OK  Done Received
5.2	Well control equipment and testing	See section 5.4 should be 5.5 Refer to Attachment xxx with BOP hook ups There are no shearing limitations for either BOP stack. Was this demonstrated in a real shearing tests? Do you have proof?	- Fixed - Included  - Shear performance based on specifications of shear rams. Confirmation pending from BPC	Done Done  OK
5.3	BOP Testing Requirements	None		None
5.4	Uncontrolled Flow	None		None
5.5	Floating Mud Cap	What is the length of the liquid stopper and the length of the viscous carrier. What is the weight of the viscous carrier if the bottom viscous carrier layer is displaced out of the well  Pls mail me a copy of the "Floating Mud Cap Program"	- The length of these pills will vary between 50 100 m TVD. - 1.25 s.g.; added to the document - Added  - FMC Program will be included in the final document package	OK  Done Done  Received
5.6	First line responsibility for well control	None		None
6.	Work program			

6.0	Pre Workover Wireline Operations	<p>Did you skid 1 thru 6</p> <p>1)c. Pressure test against what?</p> <p>3) Insert somewhere Equalize pressure across xxx valve and RIH</p> <p>9) Do you intend to run a temp survey on the spinner string</p> <p>10)c. Insert close Master Valve or Swab valve</p> <p>12)b. Pressure test PCE against which valve?</p> <p>12)c. Insert equalize pressure across upper master valve and RIH</p> <p>14)b above plug WRBP#2</p>	<p>- Another glitch in Word, fixed.</p> <p>- master valve, added</p> <p>- Pressure will automatically equalize when the well is opened.</p> <p>P-test will be done to expected WHP.</p> <p>- Temperature is standard in this tool and will be included.</p> <p>- Upper master valve; added</p> <p>- P-test to expected WHP, pressure equalized</p> <p>- Fixed</p>	<p>Done</p> <p>Done</p> <p>Done</p> <p>OK</p> <p>OK</p> <p>Done</p> <p>Done</p> <p>Done</p> <p>Done</p>
6.1	Remove X mas tree and rig up HWU	<p>18) Displace to 1.3 s.g plant brine. How? Where in where out.</p> <p>18)a. Bullhead fresh water. How? Each tubing and each annulus? Displacing 1.3 s.g. brine?</p> <p>20) Refer to attachment xxx</p> <p>21) Pls mail me a copy of well killing program</p> <p>22) 2 7/8" Production (West) side on X tree</p> <p>25) Insert R/D PCE and Install 2 1/2" BPV etc.</p> <p>26) What is the barrier in the 4 2/1" by 2 7/8" annulus?</p> <p>27) Refer to Attachment xxx</p> <p>28) against which plugs?</p> <p>29) against which plugs?</p> <p>30)b. Refer to attachment xxx</p>	<p>- Bullhead in 10 3/4" annulus</p> <p>- Meant plant brine, not water; fixed.</p> <p>- Added</p> <p>- Will do</p> <p>- Added</p> <p>- Revised</p> <p>- Kill mud and hanger seals on 4 1/2" hanger.</p> <p>- Reference included</p> <p>- P-tests against WRBP s in both 2-7/8" and 3 1/2"</p>	<p>OK</p> <p>Done</p> <p>Done</p> <p>Received</p> <p>Done</p> <p>OK</p> <p>OK</p> <p>Done</p> <p>Done</p> <p>Done</p> <p>Done</p>
6.2	POOH 2 7/8" dilution string	<p>35)a. removing the WRPB barriers from string (Only one WRPB and BPV was removed in step 33)</p> <p>37) R/U Slickline unit f</p> <p>Do you use a shooting nipple at this step?</p> <p>39) Insert note ensure the pressure across the 2 7/8" WRPB#1 is equalised</p> <p>43)d. Pls explain 59.8" in Wall Loss of 59.8" the Margin etc.</p> <p>43)h. Ensure to have stab in safety valve ready on floor.</p> <p>Question When pulling 2 7/8" tubing, what happens with seal of the 4 1/2" tubing hanger in the DCB spool and the 2/7/8" tubing?</p>	<p>- Those are the only barriers in 2 7/8" string at that time</p> <p>- Shooting nipple or landing string if spear is skipped</p> <p>- Rephrased; max. metal loss measured with wireline is 59.8%. This yield an axial yield of 19 mT for 2 7/8" tubing.</p> <p>- Stab-in safety valve will be at the basket as per BPC procedures.</p> <p>The seal does not contact the 2 7/8" tubing and the two hangers are separate, so it will not be affected by pipe movement.</p>	<p>Done</p> <p>Done</p> <p>OK</p> <p>Done</p> <p>OK</p> <p>OK</p>
6.3	Investigate & Cut 4 1/2" string	<p>45) Refer to sketch xxx</p> <p>46)a. Pressure to against xxx???</p> <p>50). Pressure to 100 bar against xxx ???</p>	<p>- Added</p> <p>- Against WL gate valve; added</p> <p>- Against WL gate valve</p>	<p>Done</p> <p>Done</p> <p>Done</p>
6.4	Lift 11" Blind Ram & Remove intermediate spool	<p>59) 66) Illustrate steps with sketches!!</p>	<p>- Included references to BOP drawings. The lifting of unit &amp;</p>	<p>OK</p>



			removal of wellhead are standard operations	
6.5	SOOH 3 1/2" injection string	<p>70) P test PCE to 100 bar against xxx?</p> <p>72) Insert R/D Wireline unit, PCE and shooting nipple</p> <p>74) and 75) Check numbering a,b,c, a etc</p> <p>76) Rig up on?? 3 1/2" tubing??</p> <p>76). Illustrate step with sketches</p> <p>77) Pressure test PCE against xxx??</p> <p>81) thru 86) Not clear what the intension is. Illustrate with sketches.</p> <p>81) Inflow test string below hole. Purpose Checking if well dead?</p> <p>82) Set permanent bridge plug in 3 1/2" tubing above plug bottom plug. How? The WRBP#1 has not been retrieved yet at this point.</p>	<p>- W/L gate valve</p> <p>- Added</p> <p>- Fixed</p> <p>- R/U on 3 1/2" tubing indeed; added</p> <p>- Cannot make any sketches without PCE drawing from supplier ; added cross reference</p> <p>- P-test against wireline gate valve</p> <p>- According to WEP and BPC s procedure, the intention is to always have two internal barriers when pulling pipe under live conditions. These steps will allow a second permanent plug to be placed at the bottom of the string and allow the remainder to be pulled with 2 barriers.</p> <p>- Inflow test is to confirm there are no additional leaks. However the WRBP #1 must be removed beforehand</p> <p>- Correct. A step missing regarding removing WRBP #1.</p> <p>- 84) Blind rams are inflow tested before lift as they are the only stable barriers prior to the lift</p>	<p>Done</p> <p>Done</p> <p>Done</p> <p>Done</p> <p>OK</p> <p>OK</p> <p>OK</p> <p>OK</p> <p>Done</p> <p>OK</p>
6.6.	Lift BOP & reorient offset spool	<p>85) Prepare unit for 3 1/2" DP or 4 1/2" tubing??</p> <p>86)d. Refer to sketch xxx</p> <p>86)d. Is Offset spool the same as the DCB spool?</p> <p>91)a. No barriers in 3 1/2" side to perform test. Pls explain Install TWCV?</p>	<p>85) 3 1/2" Drill pipe. Contractor can use either 3 1/2" of 5" DP for lifts.</p> <p>- Offset spool is installed on the DCB spool to allow aligning on either of the dual strings. It is a different spool than DCB spool.</p> <p>-89) With 3 1/2" tubing and hanger removed from the well, it is not possible to set a barrier on the injection side. <b>Rephrased the step to inflow test against WHP with the assumption that the kill mud will be lost while pulling 3 1/2" tubing</b></p>	<p>OK</p> <p>Done</p> <p>OK</p> <p>-OK</p>
6.7	POOH 4 1/2" production string	<p>90)a. Pressure test against???</p> <p>93). Pressure test against???</p> <p>Switch 98) and 99)</p>	<p>- Against bottom stripper (stripper #3). There will be 2 safeties above stripper #3 and these can be switched out to 4 1/2"</p> <p>- Against wireline gate valve</p> <p>- Switched</p>	<p>OK</p> <p>Done</p> <p>Done(96 en 97)</p>
6.8.	Lift Unit and remove offset spool	<p>102)a. Pressure test against???</p> <p>104)d. Refer to sketch xxx</p> <p>109)a. Pls explain note. Alternative for blindram???</p>	<p>- Against stripper #3</p> <p>- Added</p> <p>- With no completion in the well, no place to set a barrier</p>	<p>Done</p> <p>Done</p> <p>How do you displace with no pipe in the well?</p>

			and test connection from direction of flow. Will move step 110 before 109 & inflow test against WHP.	
6.9	Investigate 10 3/4" casing	<p>Move step 110) between 114) and 115)</p> <p>114) P test PCE against???</p> <p>114). Equalize pressure across wireline gate valve, open same RIH</p> <p>116)e. Insert POH and close wireline valve.</p> <p>117) Close blind rams below shooting nipple</p>	<p>- Step 110 moved to previous section</p> <p>- P-test against WL gate valve</p> <p>- Added</p> <p>- Added as additional step (116 &amp; 117 combined)</p>	<p>Done</p> <p>Done</p> <p>Done</p>
6.10	Plug 10 3/4" Casing	<p>121) Pressure test against???</p> <p>121) Equalize pressure across xxx which valves? (Blind rams and wireline valve??). Open well and set 10 3/4" bridge plug on in 10 3/4" casing.</p> <p>122)a. Insert or refer to detailed stratigraphic column behind 10 3/4" casing.</p> <p>122)b. Ca 1620 depth. What do you mean. The depth of the bridgeplug or top salt or xxx?</p> <p>What does NedMag consider being the seal?</p> <p>123) Inflow test 10 3/4" bridgeplug. How??? Refer to attachment xxx</p> <p>123)b Insert POH with toolstring, close blindram and L/D toolstring and PCE and remove shooting nipple etc</p>	<p>- Fill up string and P-test against safety and blind rams (P-test to WHP as blind rams will leak from above)</p> <p>- Reference made to well status (Top ZEZ @ 1540m)</p> <p>- The plug depth, revised depth</p> <p>- Sealing layers are Zechstein, Claystone &amp; Vlieland Claystone</p> <p>- Bleed off pressure above to zero and monitor for 20 minutes</p> <p>- Added</p>	<p>123) Done</p> <p>121) Done</p> <p>122) OK</p> <p>121) OK</p> <p>Note: Insert somewhere in text in workprogram that the seals are Zechstein etc</p> <p>122) Done</p> <p>124) Done</p>
6.11	Set primary cement plug	<p>124) Pressure test against???</p> <p>124)a No barriers in well to perform test.</p> <p>125) Insert Ensure well is dead</p> <p>127) Where in which step was the 7 1/16" wireline gate valve and PCE removed?</p> <p>128) P test PCE against???</p> <p>133) 80 meter balanced cement plug from xxx to xxx. Not clear where the cement plug will be set!</p> <p>134) No reversing out of possible cement?</p>	<p>- P-test against plug set at bottom</p> <p>- The well is plugged at the bottom, and barrier installed in string,</p> <p>- not required to check if the well is dead.</p> <p>- Gate valve was removed after plugging casing (step 125 in updated program)</p> <p>- P-test against gate valve</p> <p>- The drill pipe will be above the intended TOC when all cement is pumped</p> <p>- Bleed off pressure at the stack and monitor</p>	<p>126) Done</p> <p>126) OK</p> <p>OK</p> <p>125) Done</p> <p>130) Done</p> <p>135) Done</p> <p>134)Done</p> <p>139) OK</p>
6.12	Remediate Damage in 10 3/4" Casing	<p>141) Ensure well is dead</p> <p>142)b. Insert sketch showing the intended cement plug with stratigraphy behind casing</p>	<p>- Two tested permanent barriers installed in well at this stage</p> <p>- As we do not know the depth of the leak, it is not possible to do a sketch at this point in time.</p>	<p>143) OK</p> <p>144) OK</p>

6.13.	Install 7" Suspension String	<p>154) Only one joint?</p> <p>155) Will the 7" hanger fit in the DCB spool?</p> <p>155)c Pressure test seals from above or below.</p> <p>157). Suggest to consider to replace TWCV with BPV after Rig Down HWO after step 160)</p>	<p>- This is an ongoing discussion, but for the time being yes. An MoC will be issued if a full string is placed.</p> <p>- Yes, the 7" hanger is designed for the DCB spool in TR-3, which is identical to the spool in TR-5</p> <p>- Pressure test from above between hanger seals and safety ram</p> <p>- SodM (and part manufacturer) does not consider TWCV as a tested barrier, therefore TWCV needs to be replaced with BPV before rig-down.</p>	<p>156) OK</p> <p>157) OK</p> <p>157) OK</p> <p>159) OK</p>
6.14	Rig down HWU unit & install X mas tree	<p>160) How do you test the flange connection of the Adaptor spool and the tree with a BPV installed in the hanger. Suggest to leave TWCV in the hanger for pressure testing the flange connections, well is dead</p> <p>160) The Adapter Spool wil not seal? Pls check, alternative</p> <p>Do you leave brine as P&amp;A liquid in the well? or kill fluid with corrosion inhibitor?</p>	<p>- BPV will have to be reset to allow testing of the flange connections indeed (TWCV / BPV swap in previous section can be skipped if we have 3 internal barriers before rig-up)</p> <p>- Due to lead time constraints, a specifically machined adapter spool for the tubing hanger cannot be manufactured in time. Therefore, the seals installed in hanger neck will not seal. The seal on the hanger body installed in the DCB spool will be the only hanger seal.</p>	<p>159) OK.</p> <p>162) OK</p> <p>Understood</p> <p>a similar sketch as in Attachment 8.2 would very helpful. Only one barrier the ring gasket in the 11" 5K flange</p> <p>OK</p>
7.	Major Contingencies to Work Program	None		None
7.1	Multiple leaks in 3 ½" Injection String	Apparently, the advise in the 4 <sup>th</sup> alinea of 7.1 to abandon the well kill prior to the rig up etc is not followed, see step 27) killing and step 37) Rig up Snubbing unit. Pls explain or remove this alinea.	- The base program (Section 6) is written with the assumption of a single leak present in 3 ½" tubing based on well information. Therefore, abandoning the well kill is not considered before rig-up in Section 6.1. If multiple leaks are found in 3 ½" tubing during Section 6.0, Section 6.1 will be skipped and 7.2.1 will be carried out instead.	OK
7.2	Remove 2 ⅞" Dilution String			
7.2.1.	Well kill unsuccessful (Pull & Cut)	<p>Suggest In the event that the initial attempts to kill well prior to the HWU rig up (step 37) fails, the dilution string will be removed by pulling the live pipe into the BOP stack of the HWU with a special machined overshot etc.</p> <p>Add sketch of BOP rig up with additional cavities.</p>	<p>Revised as suggested.</p> <p>Sketch will be included in the 7 1/16" BOP stack drawing (pending contractor documentation)</p>	<p>Done</p> <p>Sketch outstanding</p>

		When, at which step, do you intent to install additional cavities?	During R/U of the unit and 7 1/16" stack.	OK
7.2.2	Dilution string stuck in production string	it can be concluded do you mean is concluded or might be concluded?	rephrased to it is observed	OK
		If (step 46) it is not possible etc 4) and PCE on 4 1/16" Wireline gate valve on shooting nipple 7)a As per step 46 in program	- Fixed - Fixed  - The manner in which the string will be removed will be dependent whether the well is live or dead at that point; hence the references to section 6.2 and 7.2.1 - Fixed	Done Done  OK
		8) Refer to milling attachment xxx 12) Prepare another barrier list for the Major Contingencies	- The barriers will be specified on the BHA lists in Section 8.6	OK
7.3	Remove 3 1/2" Injection String	Insert depth of HUD Insert step where in the workprogram it becomes clear that the 3 1/2" tubing is stuck 4). PCE on wireline gate valve and shooting nipple 15) Add a barrier list for section 7. Major Contingencies to Workprogram	- Added - Added, step 75  - Added  - Will be included in BHA lists in Section 8.6	Done Done  Done OK
7.4.	Remove 4 1/2" Production String	At which step in the workprogram has the 4 1/2" tubing been cut and pulled?	- Two different steps. The string will be cut in Step 51, and attempted to be pulled in Step 100.	Done
8.	Attachments			
8.1	Well Schematics			
8.1.1	Current Status (25 10 2019)	Suspected csg damage at 430m. Question which casing? MBCHH AH not in Glossary Indicate depth Halite behind 10 3/4" casing as in Figure 1	- Only 10-3/4" casing available at that depth - Will be added - Top ZEZ indicates halite (white / blank) depicts halite; See 1683 1728m.	Sorry!!  Done OK
8.1.2	Well status after Workover	Indicate depth Halite behind 10 3/4" casing as in Figure 1.  Which formation considers NedMag to be the seal of the reservoir, in case of permanent P&A. See Mijnbouwregeling  What are the plans after suspension?	- Top ZEZ indicates halite (white / blank) depicts halite; See 1683 1728m. - The remaining salt roof (ZEZ) is the seal of the reservoir  - Monitor pressure to ensure casing is intact. Abandon well after confirmation. Unsure at this stage how long the monitoring period would be	OK   OK
8.2	Wellhead	Indicate which spools are Intermediate Spool, Dual Completion Bore Spool	- Included in updated version	OK Insert a similar sketch of wellhead after workover
8.3	Unit and BOP stack up drawing	Outstanding		
8.3.1	Unit Drawing	Outstanding		
8.3.2.	BOP Stack	Outstanding		
8.4	Location layout	Outstanding		
8.5	P & ID HWU installation w/ auxiliaires	Outstanding		
8.6	BHA lists	Outstanding		
8.6.1	7/8" Spear Assembly	Outstanding		
8.6.2	3 1/2" Spear Assembly	Outstanding		
8.6.3	4 1/2" Spear Assembly	Outstanding		

8.6.4	2 7/8" Dress Mill Assembly (Contingency)	Outstanding		
8.6.5.	2 7/8" Overshot Assembly (Contingency)	Outstanding		
8.6.6.	3 1/2" Tubing fishing Assembly (Contingency)	Outstanding		
8.6.7	4 1/2" Tubing fishing Assembly (Contingency)	Outstanding		
8.6.8.	Completion Milling Assembly (Contingency)	Outstanding		
8.7	Tallies	Not reviewed		
8.7.1.	2 7/8" Dilution Tubing tally	Not reviewed		
8.7.2	3 1/2" Injection Tubing Tally	Not reviewed		
8.7.3	4 1/2" Production String	Not reviewed		
8.7.4	10 3/4" Casing	Not reviewed		
8.8	VAM Connection / Tubing Data Sheets	Not reviewed		
8.9	Wireline PCE Diagrams			
8.9.1	PCE Plugging and Cutting Operations (Pre / Post Workover	Outstanding		
8.9.1.1	Halliburton	Missing		
8.9.1.2	BPC	Wireline Valve Listed in column Description, but not a symbol in sketch		
8.9.2	PCE with Snubbing Unit	Outstanding		
8.9.2.1	Wireline operations on 2 7/8" tubing	Outstanding		
8.9.2.2	on 4 1/2" tubing	Outstanding		
8.9.2.3	on 3 1/2" tubing	Outstanding		
8.9.2.4	on 10 3/4" casing	Wireline valve Listed in column Description, but not a symbol in sketch		
8.9.2.5	On 5" Drill Pipe	Outstanding		
8.10	Wireline Toolstring Diagrams	Outstanding		
8.10.1	Dummy / WECT Toolstring	Outstanding		
8.10.2	Halliburton Bridge plug setting toolstring	Outstanding		
8.10.3	RMT (Pulse Neutron Capture) toolstring	Not reviewed		
8.10.4	PLT (Spinner) toolstring	Missing		
8.10.5	BPC Bridge plug setting toolstring			
8.10.5.1	Junk Catcher Setting	OK		
8.10.5.2	Bridge Plug Setting	OK		
8.10.6	DECT Toolstring (Contingency)	Outstanding		
8.10.7.	Downhole Camera Toolstring	OK		
8.10.8	CAST M Toolstring	OK		
8.11	Contingencies	OK		
8.12	Wellplan drag & StressCheck Simulations	Not reviewed		

8.13	Well Survey List	Not reviewed	<b>Incorrect well survey data used, fixed.</b>	
	List of Figures			
Figure 1.	TR 5 before and after the workover	Include also MD along hole, in particular the depth s of Halite above the Carnalite	<b>Conversion factor included in figure</b>	Done
Figure 2	Overview of TR 5 WHP between 26/09/2019 and 13/11/2019	None		None
Figure 3	Observations from downhole camera run in 2 7/8" tubing. Collapsed tubing at HUD (left), Hole in tubing at ca. 250m (middle), 2 holes across each other at ca. 395m (right) .....	None		None
Figure 4	. W E (left) and N S (right) sections investigated for hydrogeology	None		None
Figure 5.	Underground aquifer and sealing layer information in TR 5 well vicinity	None		None
Figure 6.	Overview of Workover Phases (1 of 2)	None		None
Figure 7	Overview of Workover Phases (2 of 2)	None		None
Figure 8	Floating Mud Cap Schematic	Add length with weights	<b>These are included in the separate kill program</b>	Received