



Fishing Run - HON GT-01-S1 Spear LIH

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August 18th, 2015

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The event


100

Pre Job:

- As per requirement by WEP WFT offered a combined drift and fishing run. It was agreed that this BHA will only be used for a single fishing attempt and in case this fails a whipstock will be picked up. The BHA was setup as follows:

- SPEAR LIH

Customer	Well Engineering Partners BV
Contact	Komelius Boersma
Contact Details	
Wfo/d Location	Langenhagen, Germany
Field/ Well No.	Hon GT ST01
Toolstring Desc.	Fishing BHA

BHA	Seq	Description	Asset Number	OD	ID	Connection	Length (m)
 2.45 m	1	Intensifier FNL 320 mm FNOD 120mm	153445-47000	120 mm 4-3/4"	58 mm 2-1/4"	3-1/2 IF Box x Pin	4,58
	2	6 pcs. DCs (Customer owned)		120 mm 4-3/4"		3-1/2 IF Box x Pin	
	3	Super Fishing Jar FNL 350 mm FNOD 120mm	WG 106	120 mm 4-3/4"	56 mm 2-3/16"	3-1/2 IF Box x Pin	2,97
	4	Bumper sub FNL 320 mm FNOD 120mm	CW-1466929-1	120 mm 4-3/4"	52 mm 2-1/16"	3-1/2 IF Box x Pin	2,39
	5	Bit Sub sick	WG3006	120 mm 4-3/4"	36,5 mm 1-7/16"	3-1/2 IF Box x 3-1/2 Reg Box	0,45
	6	7" 29# SD Stabilizer FNL 240mm FNOD 107mm	WG007	155,5 mm 6-1/8"	36,5 mm 1-7/16"	3-1/2 Reg Pin x 3-1/2 Reg Box	1,14
	7	X-Over sick	WG3048	120 mm 4-3/4"	36,5 mm 1-7/16"	3-1/2 Reg Pin x 3-1/2 IF Pin	0,56
	8	Spacer / customer owned DC		120 mm 4-3/4"		3-1/2 IF Box x Pin	
	9	Bit Sub sick	WG3049	120 mm 4-3/4"	36,5 mm 1-7/16"	3-1/2 IF Box x 3-1/2 Reg Box	0,5
	10	7" 29# SD Stabilizer FNL 230mm FNOD 107mm	WG009	155,5 mm 6-1/8"	36,5 mm 1-7/16"	3-1/2 Reg Pin x 3-1/2 Reg Box	1,12
	11	X-Over sick	WG3134	120 mm 4-3/4"	36,5 mm 1-7/16"	3-1/2 Reg Pin x 3-1/2 IF Pin	0,44
	12	7" 29# SD Non Rot. Csg Scraper FNL 600mm FNOD 125mm	WG2004	Drift	49 mm 1-15/16"	3-1/2 IF Box x 3-1/2 IF Pin	1,77
	13	Stop Sub FNL 350 mm FNOD 119mm	WG810	145 mm 5-3/4"	53 mm 2-1/16"	3-1/2 IF Box x 3-1/2 IF Pin	0,5
	14	X-Over sick	WN-XOS-224	114 mm 4-1/2"	53 mm 2-1/16"	3-1/2 IF Box x 2-3/8 Reg Pin	0,49
	15	Spacer sick	WG3141	79 mm 3-1/8"	23 mm 15/16"	2-3/8 Reg Box x 2-3/8 Reg Pin	1,00
	16	Spacer sick	WG3053	79 mm 3-1/8"	23 mm 15/16"	2-3/8 Reg Box x 2-3/8 Reg Pin	0,62
	17	Itco Spear Grapple to catch liner ind. extension to catch the 98,8 mm ID ITCO Grapple 9487, NC 3.885" FNL 150 mm FNOD 80 mm	RS115	80 mm 3-1/8"	20 mm 3/4"	2-3/8 Reg Box x 2-3/8 Reg Pin	0,73
	18	Bull Nose sick	WG6926	80 mm 3-1/8"	25 mm 1"	2-3/8 Reg Box	0,22

PREPARED BY: KR

The event



The Job:

On the 12. of June the BHA was picked up and RIH.

The following day the tripping continued, see operator work book notes:

COMMENTS:			
Date	From	To	
12.06.15	09:00		On location,LSA / safety meeting.Stby till pressuretest finished.
	15:30		Bring BHA 1 in position to make up.
	18:30		Crew change HWO.
	19:30		Make up BHA 1 as per drawing and tight up till all recomendet ft/lbs.
	22:00		BHA under rotary.
	22:30		Leave location.

COMMENTS:			
Date	From	To	
13.06.15	09:00		On location , problems to pass Tol 7" 1022m.Hang up with drift stabies and scraper.
			Connect kelly and circulate/wash clean.
	10:30		Still overpull with upper stabilizer/watermelonmill at 1036,97m.
			Start rotation , free 1750 ft/lbs , 79klbs up , 73 klbs down.
	11:00		Pass thru and stop rotation.Pass 1 x without and get in with no problems.
	11:30		Cont. Trip in , get into shift mode.Knut day ,Thomas night and leaves location.
	19:30		Crew change and still trip in.
	23:30		Connect kelly to clean and change mud system.Start pump 750 lpm/1300psi.

The event



The Job:

On the 14.6. the BHA made it to the top of the fish.

COMMENTS:			
Date	From	To	
14.06.15	00:00	09:00	Cont. mix and pump mudsystem
	09:00	09:30	Toolbox talk. Topic: Engage spear and fishing operation.
	09:30	10:15	P/U and M/U 1 pcs. 2m pup joint and 2 DP
	10:15	11:00	Take parameter: ↑150 klb ↓113 klb
			Free torque 50 RPM 3600ft/lbs, ↑135 klb ↓124 klb
			500 l/min 35 bar SPP, 50 RPM 3600ft/lbs, ↑135 klb ↓124 klb
			↑148 klb ↓113 klb w/ 50 RPM
	11:00	11:15	Lower string and engage spear by turning string 3 turns to the left. SPP increase to 38 bar. Stop pumps.
	11:15	12:30	Pick up string to 160 klb and activate the fishing jar. Pick up string in steps to max. 330 klb. (weight of slip cage 14 klb.) Stretch is 2,3m
	12:30	13:00	Circulate w/ 500 l/min and 300 klb tension in the string.
	13:00	13:15	Pick up string to max. 330 klb. Slack of 10 klb to load the jar. Pick up to 70 klb overpull and jarring. Pick up string to 330 klb. Fish not free.
	13:15	13:30	Jarring 3 times with 70 klb. overpull jarring load. Than 330 klb. Pulltest. Fish not free.
	13:30	13:45	Jarring 4 times with 75 klb. overpull jarring load. Than 330 klb. Pulltest. Fish not free.
	13:45	14:00	Jarring 1 times with 80 klb. overpull jarring load. Weight decrease to 150 klb. up weight
	14:00	14:15	Flow check. Decision to POOH
	14:15		POOH

The spear was engaged and jarring commenced. After several attempts with slightly increased overpull the fish was not freed and we even some weight was lost. Decision was made to pull out of hole. Once out pulled out of hole it was noticed that the spear was lost in hole.

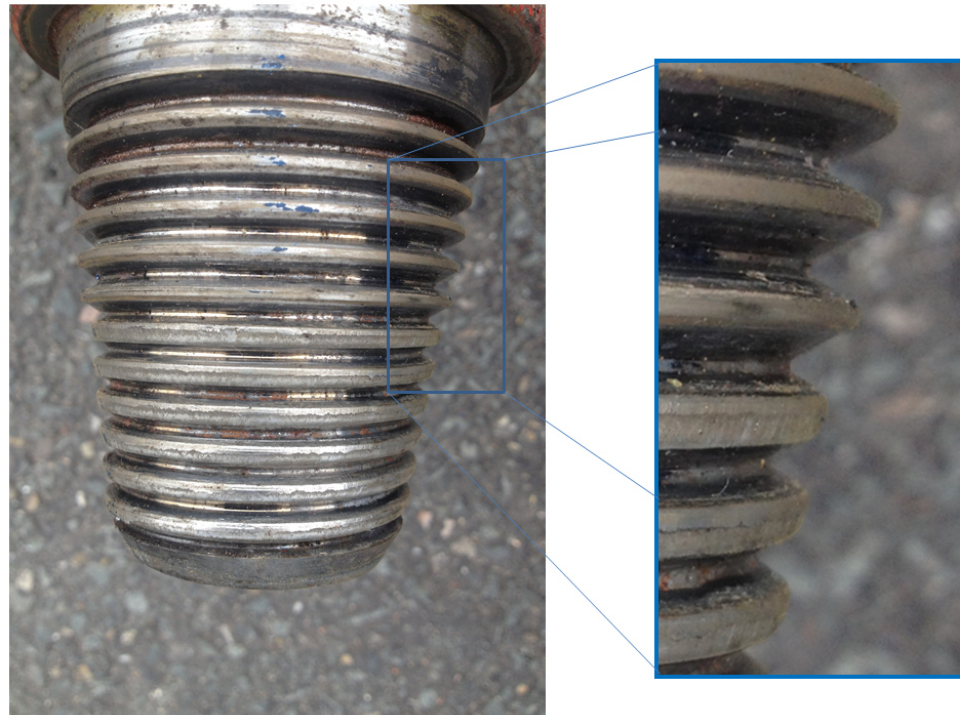
The event



Post Job:

The Itco Spear was attached to a spacer (WG3053, see BHA details).

The lower pin connection showed signs of wear on the lower two thirds of the threads.





Potential Root Causes

Potential Root Cause



Three potential Root Causes have been identified:

Tool Connections

- History of the spear
- History of the spacer

Make-up of the connection

- Was the make-up performed in an adequate way
- Was this process witnessed

Usage downhole

- Jar Placement
- Applied forces

Potential Root Cause



Tool Connections

Traceability of the Itco Spear can be tracked back to 2006.

The tool has never been used and was on rental only.

As part of a fishing tool package the spear was inspected on the 2nd September 2014 with no issues found.

MONITEST srl
NDT - MONITORING & TEST

Rotary Shouldered Connection - Inspection Report

Form-Rev. 01/2014

Customer:		Weatherford Mediterranea S.P.A. Ortona Italy		Work Location:		Ortona Yard		Inspection Date:		02/09/14					
				Work Order:		verbal		Report Number:		M_2014_2906					
Scope of Work		Specification		Inspection Equipment / Material											
X	Magnetic Particle Inspection	Customer Spec 5-3-GL-GL-PED-00002		X	Black Light unit #02RW-12 Cal. due date 01/2015	X	Fluorescent FLUXA LF80	Fluorescent Concentr. 0.3 ml/100 cm3							
X	Visual Inspection	X	DS-1 Cat. 3-5	X	DC Coil #47 (WE-84) Cal. Due Date 04-2015		White contr. CGM	UV intensity 1.000 µw/cm2							
X	Dimensional Inspection	Api RP 7G-2		X	AC Yoke # 43G-13 Cal. Due Date 01-2015		Black mag. ink CGM	Lead Gages e/h 5396 due date 09/2014							
	Other	X	ASTM E709	X	UV meter # 10027247 Cal. Due Date 01-2015	X	Yoke test block 4.5 kg # 0057	Cal. Due Date: 02/2015							
		Customer Spec WT 811													
Tool Description:		RELEASING SPEAR CONN. 2.3/8"Reg						Serial Number #		RS115					
All dimension in millimeter (mm).		Boreback / SRG		Counterbore		BODY		Total Length		Remarks					
Conn. Side	Connection Thread Type	Ø OD	Ø ID	Length Thread	Ø Bevel	Ø	Length / Width	Ø	Depth	VISUAL	MPI	Nose Ø	Tong Space	Final Condition	Remarks
Box	2.3/8"Reg	79,5	25	90	78	n/a	n/a	68	16	Ok	Ok	n/a	185	Acc	
Pin	2.3/8"Reg	79,5		76	78	n/a	n/a	n/a	n/a			n/a	175	Acc	
Comments: All Dimension in mm. Inspection carried out with tool assembled.												2	Connection accepted		
													Connection to Rework		
													Connection Rejected		
CODE															
ACC	Accepted	RF	Refaced	NBB	No Bore Back	CRG	Corroded Relief Groove	REP	Repair	CR	Cracked				
TD	Thread Damage	ECC	Eccentric wear	NSRG	No SRG	PT	Pitted Threads	W	Worm	N/A	Not Applicable				
SD	Seal Damage	IC	Internal Corrosion	CBB	Corroded Boreback	WO	Wash Out	REJ	Rejected	BB	Belled box				

Inspector: II level asnt / level 2 EN 473

Supervisor: II level asnt / level 2 EN 473

Customer:

MONITEST
The Inspector
Angelo Di Nuzzio
Rev. 2 / MT
ISO 9712 & SNT-TC1A

MONITEST
OCCHIPINTI GIAMPIERO
LEVEL II SNT-TC1A
LEVEL 2 EN 473/ISO 9712
Rev. 1 / MT

Monitest srl, Traversa Cozzo Pantano 96100 Siracusa Italy - The inspection result as reported by the company to the customer represent good faith opinion and are not be considered warranties or guarantees of quality or usability of tool inspected.

Potential Root Cause



Tool Connections

The spacer has been inspected twice over the last years.

The most recent MPI was carried out a day before we shipped the package.

zmp Krajewski GmbH										Zerstörungsfreie Materialprüfung	
Sägemühlenstraße 9 · 29339 Wathlingen · Germany Tel. 05144 / 8472 · Fax 05144 / 5237 · Email: zmp-wathlingen@t-online.de											
INSPECTION REPORT / WORK ORDER : 8524											
Customer:		Weatherford Oil Tool GmbH				Costcenter:		44961			
Work Location:		Langenhagen				Invoice No.:					
Crew:		C. Jungmichel				PO:		9606523			
Work performed from		10.07.2012		to							
Material:		Spacer				Thread Connection:					
Service Code:						Hours:					
Service Code:						Hours:					
Service Code:		150- Thread Inspection				Ends:		2			
Service Code:		160- Body Inspection				Hours:					
INSPECTION RESULTS											
	Serial No.	Thread	Shoulder re-worked mm	Thread Pin	Shoulder re-worked mm	OD Box Ø	ID Pin Ø	Length mm			
1											
2											
3											
4											
5	WG3053	2 3/8" Reg	ok	2 3/8" Reg	ok	79,5	25,0	0,62			
6											
7				Body	n.g.						
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
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20											
21											
22											
23											
24											
25											
M. Schwab		11.07.2012		Date		Customer					
ZMP Inspector											
Paint Marking: Silver - good for normal Drilling; Red - defect (Near Box or Pin)											
FB 7.01 INSPECTION REPORT REV. 00 / 27.07.2009											

zmp Krajewski GmbH										INSPECTION REPORT NO: 8475-2015	
CUSTOMER		WEATHERFORD		DATE		09.06.2015		MATERIAL			
ORDER NO		12330555		PROJ. No.				Spacer			
WORKLOCATION		Langenhagen		WO. No.							
SALES ORDER											
Inspected in accordance with						Equipment			Lux < 20		
Service Code						150			6		
Weatherford Standard						WF 811			DC		
API/ASTM						API RP7G			UV > 10W/m²		
						UV/Lux Testing No.			900283 cal. valid until 02-16		
									54		
									Magnetic Particle Check 0.2-0.4 to 100ml		
									0.35		
TOOL NAME											
NUMBER											
BOX THREAD											
BOX RESULT											
PIN THREAD											
PIN RESULT											
BOX O.D.											
PIN O.D.											
PIN/BOX I.D.											
BODY MPI											
Length mm											
Spacer											
WG3053											
2 3 /8" Reg.											
ok											
2 3/8" Reg											
ok											
79,5											
N/A											
25,0											
N/A											
620											
Comments:											
Inspector:											
Total Threads inspected (150)											
2											
Total Threads accepted											
2											
Total Threads rejected											
0											
Total working hours (160)											
0											
Total working hours (170)											
0											
Tot. shop repair											
0											
Tot. scrap											
0											
TOOL READY FOR SERVICE, MPI OF ALL ABOVE COMPONENTS											
Customer signed											

Fb. 7.17 Inspection Report Rev. 00 / 23.10.14

Potential Root Cause



Make-up of the connection

The make-up of the BHA was done in our workshop in Langenhagen, Germany. This process was done by our workshop technician Björn Graunke and witnessed by the Senior Field Supervisor Knut Reppert. Mr. Reppert is the operator who was selected to run the operation.

As a best practice we have the Senior Field Supervisor joining the make-up procedure, this allows him to carryout final checks and measurements before the tools leave our base.

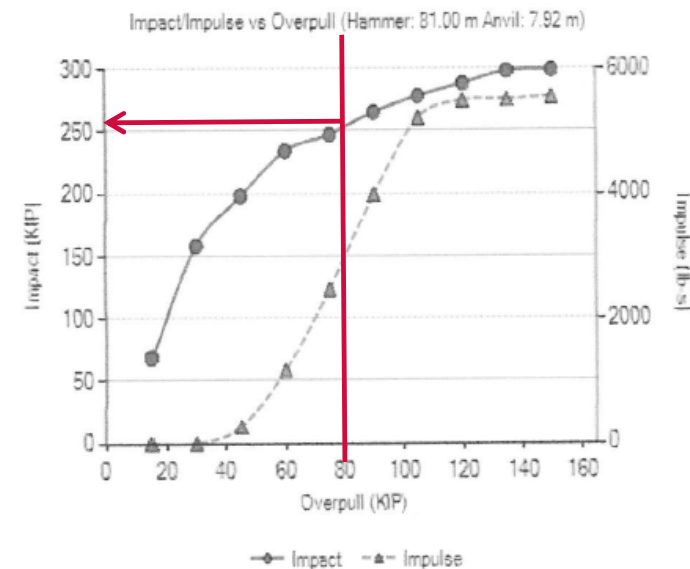
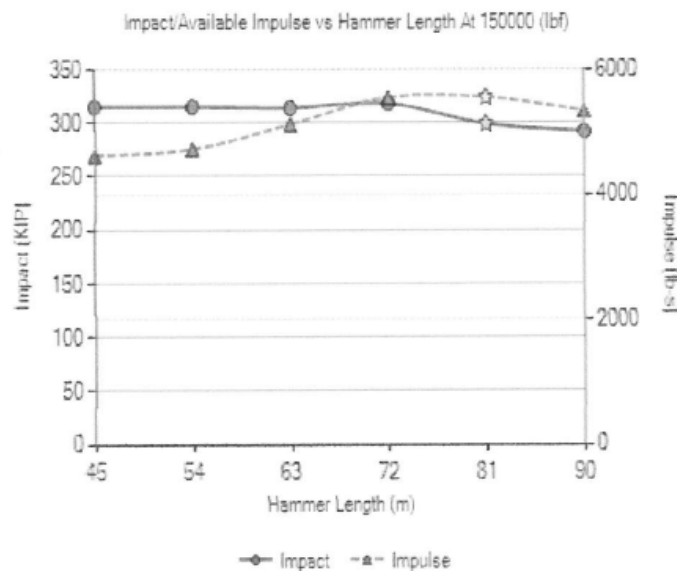
No abnormality were observed during this phase.

Potential Root Cause



Usage downhole

Knut and Thomas (the second field hand) ran a jar placement simulation before the BHA was run in hole. The calculations resulted in the following numbers:



With a calculated impact of 260Klbs they stayed quite safely away from the tensile limit of the 2-3/8" Regular Box (375Klbs) or even 80% of the tensile yield (300Klbs).



Conclusion

Conclusion



None of the potential three Root Causes have provide any evidence why the connection failed downhole. It is impossible to determine a reliable Root Cause as the key witness (Itco Spear) is lost down hole.