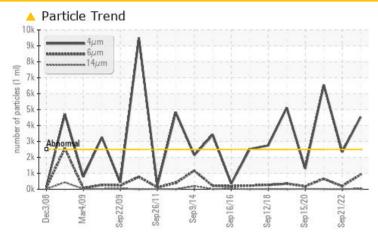


Thompson Falls Machine Id THF07-4 Governor

Component Case Drain Governor System Fluid CHEVRON TURBINE OIL 68 (1800 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS							
Sample Status			ATTENTION	NORMAL	ABNORMAL		
Particles >4µm	ASTM D7647	>2500	<u> </u>	2345	▲ 6556		
Particles >6µm	ASTM D7647	>640	<u> </u>	192	<mark>▲</mark> 652		
Oil Cleanliness	ISO 4406 (c)	>18/16/13	<u> </u>	18/15/10	<u> </u>		

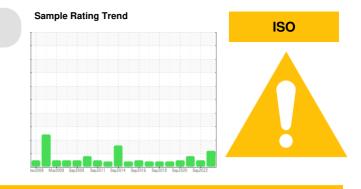
Customer Id: PPLBUT Sample No.: WC0757765 Lab Number: 05962878 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 <u>jhester@wearcheckusa.com</u>

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com



RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

21 Sep 2022 Diag: Doug Bogart



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



23 Sep 2021 Diag: Don Baldridge

15 Sep 2020 Diag: Doug Bogart



No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of silt (particulates < 6 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



NORMAL



Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.







OIL ANALYSIS REPORT

Area **Thompson Falls** Machine Id **THF07-4 Governor** Component

Case Drain Governor System Fluid CHEVRON TURBINE OIL 68 (1800 GAL)

DIAGNOSIS

A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

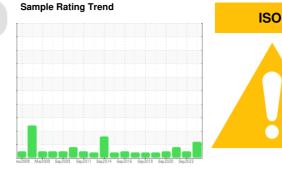
All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

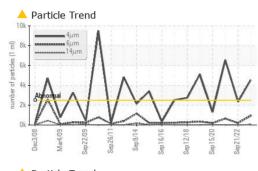
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

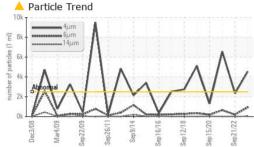


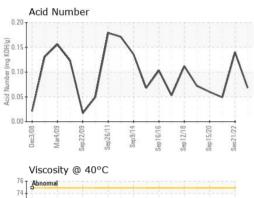
Sample Number Client Info WC0757765 WC1232610 WC1232612 Sample Date client Info 15 Sep 2023 21 Sep 2022 23 Sep 2021 Machine Age yrs Client Info 7 6 5 Oil Changed Client Info N/A N/A N/A N/A Sample Status Imit base current history1 history2 Iron ppm ASTM 05185m >50 <1 <1 <1 Olrormium ppm ASTM 05185m >10 0 0 0 Nickel ppm ASTM 05185m >10 0 0 0 Auminum ppm ASTM 05185m >3 0 0 0 Auminum ppm ASTM 05185m >5 0 0 0 0 Auminum ppm ASTM 05185m >5 0 0 0 0 Auminum ppm ASTM 05185m 0 0 0 0 0	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info 15 Sep 2023 21 Sep 2022 23 Sep 2021 Machine Age yrs Client Info 28 27 26 Oil Age yrs Client Info 7 6 5 Oil Changed Client Info N/A N/A N/A N/A Sample Status Client Info N/A ATTENTION NORMAL ABNORMAL WEAR METALS method limitbase current history1 history2 Iron ppm ASTM 05185m >50 <1							
Machine Age yrs Client Info 28 27 26 Oil Age yrs Client Info 7 6 5 Oil Age yrs Client Info N/A N/A N/A Sample Status method limit/base current history1 history2 Iron ppm ASTM D5185n >50 <1							
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Sample Status method Imit base current history1 ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185n >50 <1	-	y15					
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1	•		Client Inio				
Iron ppm ASTM D5185m >50 <1 <1 <1 Chromium ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >10 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >75 0 <1	-		mothod	limit/bass	-	-	-
Ppm ASTM D5185m >10 0 0 0 Nickel ppm ASTM D5185m >10 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >55 0 <1							
Nickel ppm ASTM D5185m >10 0 0 0 Titanium ppm ASTM D5185m <1	-						
Titanium ppm ASTM D5185m <1 0 0 Silver ppm ASTM D5185m S3 0 0 <1					-		
Silver ppm ASTM D5185m 0 0 <1 Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >75 0 <1				>10	-		÷
Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >75 0 <1							
Lead ppm ASTM D5185m<>75 0 <1 0 Copper ppm ASTM D5185m<>15 <1					-		
Copper ppm ASTM D5185m >15 <1 <1 <1 <1 <1 Tin ppm ASTM D5185m >55 0 0 0 Antimony ppm ASTM D5185m >55 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 Calacium ppm ASTM D5185m 0 0 0 0 Slifor ppm ASTM D5185m 0 0 0 0 Suffur ppm ASTM D5185m 0 0 0 0 Suffur ppm ASTM D5185m 0 0 </td <td></td> <td></td> <td></td> <td></td> <th>-</th> <td></td> <td></td>					-		
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Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 6 6 3 3 Sulfur ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 20 0 <1 0	Tin	ppm	ASTM D5185m	>55	0	0	
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Contram ppm ASTM D5185m 0 0 0 0 Contram ppm ASTM D5185m 6 6 3 3 Silicon ppm ASTM D5185m 0 0 0 0 Sodium ppm ASTM D5185m 20 0 1 0 Potassium ppm ASTM D5185m 20 0 3 0 0	Antimony	ppm	ASTM D5185m	>5			0
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Marganese ppm ASTM D5185m 0 <1	Vanadium	ppm	ASTM D5185m		0	0	0
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Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
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Manganese ppm ASTM D5185m <1 0 0 Magnesium ppm ASTM D5185m 0 <1 0 Calcium ppm ASTM D5185m 0 <1 0 Phosphorus ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 6 6 3 Zinc ppm ASTM D5185m 6 6 3 Sulfur ppm ASTM D5185m 6 6 3 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >8 <1 0 0 Sodium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >2500 4544 2345 6526 Particles >4µm ASTM D7647 >20 5 2 3 Particles >4µm ASTM D7647 >20 5 </td <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 0 <1 0 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 6 6 3 3 Zinc ppm ASTM D5185m 6 6 3 3 Sulfur ppm ASTM D5185m 671 678 610 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >8 <1	Molybdenum	ppm	ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 6 6 3 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 671 678 610 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >8 <1	Manganese	ppm	ASTM D5185m		<1	0	0
Phosphorus ppm ASTM D5185m 6 6 3 Zinc ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 671 678 610 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >8 <1 0 0 Sodium ppm ASTM D5185m >8 <1 0 0 Sodium ppm ASTM D5185m >8 <1 0 0 Sodium ppm ASTM D5185m >20 0 <1 0 Potassium ppm ASTM D5185m >20 0 <1 0 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >2500 4 4544 2345 6556 Particles >14µm ASTM D7647 >80 35 6 16	Magnesium	ppm	ASTM D5185m		0	<1	0
Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 671 678 610 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >8 <1	Calcium	ppm	ASTM D5185m		0	0	0
Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 671 678 610 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >8 <1	Phosphorus	ppm	ASTM D5185m		6	6	3
SulfurppmASTM D5185m671678610CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>8<1	Zinc		ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >8 <1 0 0 Sodium ppm ASTM D5185m 0 0 0 0 Potassium ppm ASTM D5185m >20 0 <1	Sulfur		ASTM D5185m		671	678	610
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FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >2500 ▲ 4544 2345 ▲ 6556 Particles >6µm ASTM D7647 >640 ▲ 925 192 ▲ 652 Particles >14µm ASTM D7647 >80 35 6 16 Particles >21µm ASTM D7647 >20 5 2 3 Particles >21µm ASTM D7647 >20 5 2 3 Particles >38µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		0	0	0
Particles >4µm ASTM D7647 >2500 ▲ 4544 2345 ▲ 6556 Particles >6µm ASTM D7647 >640 ▲ 925 192 ▲ 652 Particles >14µm ASTM D7647 >80 35 6 16 Particles >21µm ASTM D7647 >20 5 2 3 Particles >21µm ASTM D7647 >20 5 2 3 Particles >38µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	0	<1	0
Particles >6µm ASTM D7647 >640 925 192 652 Particles >14µm ASTM D7647 >80 35 6 16 Particles >21µm ASTM D7647 >20 5 2 3 Particles >38µm ASTM D7647 >4 0 0 0 Particles >38µm ASTM D7647 >3 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14µm ASTM D7647 >80 35 6 16 Particles >21µm ASTM D7647 >20 5 2 3 Particles >38µm ASTM D7647 >4 0 0 0 Particles >38µm ASTM D7647 >3 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647	>2500	4 544	2345	▲ 6556
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Particles >38μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>80	35	6	16
Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>20	5	2	3
Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>4	0	0	0
Oil Cleanliness ISO 4406 (c) >18/16/13 19/17/12 18/15/10 20/17/11 FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0	0	0
	Oil Cleanliness			>18/16/13	19/17/12	18/15/10	▲ 20/17/11
Acid Number (AN) mg KOH/g ASTM D8045 0.068 0.14 0.049	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/a	ASTM D8045		0.068		0.049

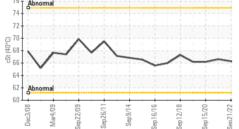


OIL ANALYSIS REPORT



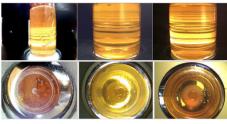




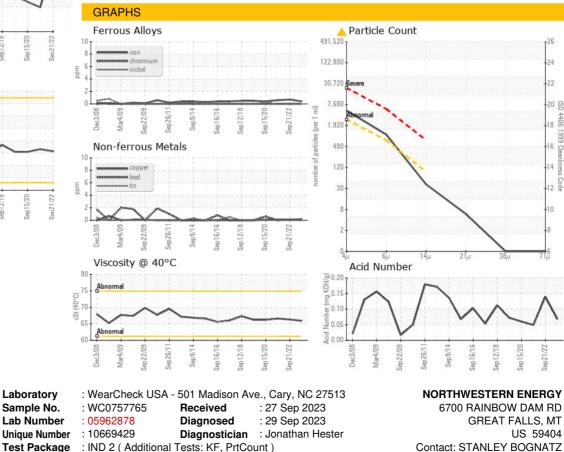


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		65.9	66.3	66.6
SAMPLE IMAGES	S	method	limit/base	current	history1	history2
			ļ		U	

Color



Bottom



 Certificate 12367
 Test Package
 : IND 2 (Additional Tests: KF, PrtCount)
 O

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 *
 Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: PPLBUT [WUSCAR] 05962878 (Generated: 10/04/2023 23:40:31) Rev: 1

Contact/Location: STANLEY BOGNATZ - PPLBUT

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srb@mbesi.com

T: (570)575-9252

F: (570)227-0014