

GREASE ANALYSIS

Sample Rating Trend

WEAR



TURBINA 20 - FRONT BEARING (S/N 101181)

Grease

Fluid KLUBER KLUBERPLEX BEM 41-141 (--- LTR)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

🔺 Wear

Bearing and/or bushing wear is indicated.

Grease Condition

The condition of the grease is acceptable for the time in service.

Contaminants

There is no indication of any contamination in the grease.

R)		Nov2014 Oct	2016 Oct2018 Aug2019	Apr2020 Apr2021 Mar2022 Aug202	23 May2024	
SAMPLE INFORM		method	limit/base	current	history1	history2
Sample Number		Client Info		WC0881139	WC0505300	WC05582727
Sample Date		Client Info		04 May 2024	23 Aug 2023	30 Mar 2022
Vachine Age	yrs	Client Info		2	11	6
Grease Age	yrs	Client Info		1	1	0
Grease Serviced		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	MARGINAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>200	<u> </u>	629	4 514
Iron	ppm	ASTM D5185m	>250	<u> </u>	215	A 3724
Chromium	ppm	ASTM D5185m	>10	1 4	3	<u> </u>
Nickel	ppm	ASTM D5185m	>5	0	0	0
Cadmium	ppm	ASTM D5185m		1	<1	0
Titanium	ppm	ASTM D5185m		1	2	2
Vanadium	ppm	ASTM D5185m		2	<1	<1
Lead	ppm	ASTM D5185m	>25	1	<1	0
Copper	ppm	ASTM D5185m	>75	32	25	1 50
Tin	ppm	ASTM D5185m	>5	0	0	0
Silver	ppm	ASTM D5185m	>5	0	7	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base	current 165	history1 106	history2 239
Boron	ppm ppm		limit/base			
Boron Magnesium		ASTM D5185m	limit/base	165	106	239
Boron Magnesium Manganese	ppm	ASTM D5185m ASTM D5185m	limit/base	165 0	106 0	239 1
Boron Magnesium Manganese Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	165 0 3	106 0 <1	239 1 35
Boron Magnesium Manganese Molybdenum Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	165 0 3 4935	106 0 <1 2813	239 1 35 2451
Boron Magnesium Manganese Molybdenum Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	165 0 3 4935 971	106 0 <1 2813 914	239 1 35 2451 471
Boron Magnesium Manganese Molybdenum Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	165 0 3 4935 971	106 0 <1 2813 914 95	239 1 35 2451 471 205
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		165 0 3 4935 971 277 	106 0 <1 2813 914 95	239 1 35 2451 471 205
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Zinc Antimony THICKENER/SOA Aluminum	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		165 0 3 4935 971 277 current	106 0 <1 2813 914 95 history1	239 1 35 2451 471 205 history2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Zinc Antimony THICKENER/SOA Aluminum Barium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m		165 0 3 4935 971 277 current 0	106 0 <1 2813 914 95 history1 0	239 1 35 2451 471 205 history2 10
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m		165 0 3 4935 971 277 current 0 13	106 0 <1 2813 914 95 history1 0 9	239 1 35 2451 471 205 history2 10 8
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		165 0 3 4935 971 277 current 0 13 21	106 0 <1 2813 914 95 history1 0 9 19	239 1 35 2451 471 205 history2 10 8 154
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Sodium Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		165 0 3 4935 971 277 current 0 13 21 22	106 0 <1 2813 914 95 history1 0 9 19 13	239 1 35 2451 471 205 history2 10 8 154 24
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Sodium Lithium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m		165 0 3 4935 971 277 current 0 13 21 22 3341	106 0 <1 2813 914 95 history1 0 9 19 13 2938	239 1 35 2451 471 205 history2 10 8 154 24 2309
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Sodium Lithium Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base	165 0 3 4935 971 277 current 0 13 21 22 3341 4823	106 0 <1 2813 914 95 history1 0 9 19 19 13 2938 3172	239 1 35 2451 471 205 history2 10 8 154 24 2309 6880
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Calcium Sodium Lithium Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base	165 0 3 4935 971 277 current 0 13 21 22 3341 4823 current	106 0 <1 2813 914 95 history1 0 9 19 13 2938 3172 history1	239 1 35 2451 471 205 history2 10 8 154 24 2309 6880 history2
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Calcium Sodium Lithium Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base	165 0 3 4935 971 277 current 0 13 21 22 3341 4823 current 249	106 0 <1 2813 914 95 history1 0 9 19 19 13 2938 3172 history1 ∧ 1089	239 1 35 2451 471 205 history2 10 8 154 24 2309 6880 history2 95
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Sodium Lithium Sodium Lithium Sulfur CONTAMINANTS Silicon Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base limit/base >150	165 0 3 4935 971 277 current 0 13 21 22 3341 4823 current 249 5	106 0 <1 2813 914 95 history1 0 9 19 13 2938 3172 history1 ▲ 1089 1	239 1 35 2451 471 205 history2 10 8 154 24 2309 6880 history2 95 3
Boron Magnesium Manganese Molybdenum Phosphorus Zinc Antimony THICKENER/SOA Aluminum Barium Calcium Sodium Lithium Sulfur CONTAMINANTS Silicon Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >150 limit/base	165 0 3 4935 971 277 current 0 13 21 22 3341 4823 current 249 5 current	106 0 <1 2813 914 95 history1 0 9 19 19 13 2938 3172 istory1 1089 1 1089 1	239 1 35 2451 471 205 history2 10 8 154 24 2309 6880 history2 95 3 history2



0.5

lov19/12

4000 3500 3000

2500

E 2000

150

1000

500

0 5

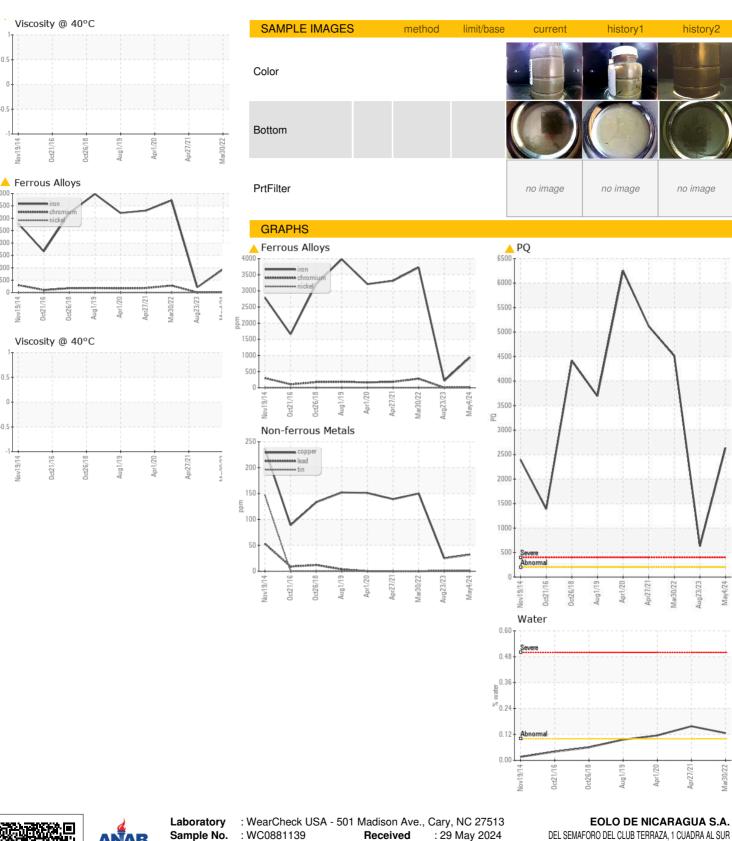
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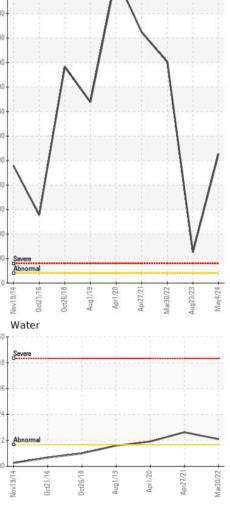
Nov19/14

cSt (40°C)

cSt (40°C) -0.5

GREASE ANALYSIS





history2

no image

history1

no image



Diagnosed Unique Number : 11057057 : 13 Jun 2024 - Doug Bogart Test Package : GRS 1 (Additional Tests: KV40, SCREEN) Contact: Rafael Bermudez Certificate 12367 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)

Tested

: 13 Jun 2024

Report Id: EOLOMAN [WUSCAR] 06194934 (Generated: 06/15/2024 09:08:04) Rev: 1

Lab Number : 06194934

Contact/Location: Rafael Bermudez - EOLOMAN

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