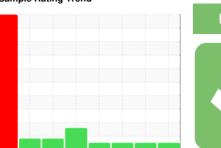


# **GREASE ANALYSIS**

Sample Rating Trend



**NORMAL** 



Machine Id

# TURBINA 21 - REAR BEARING (S/N 101307) Component Grease

KLUBER KLUBERPLEX BEM 41-141 (--- L7

### Recommendation

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

All component wear rates are normal.

## **Grease Condition**

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

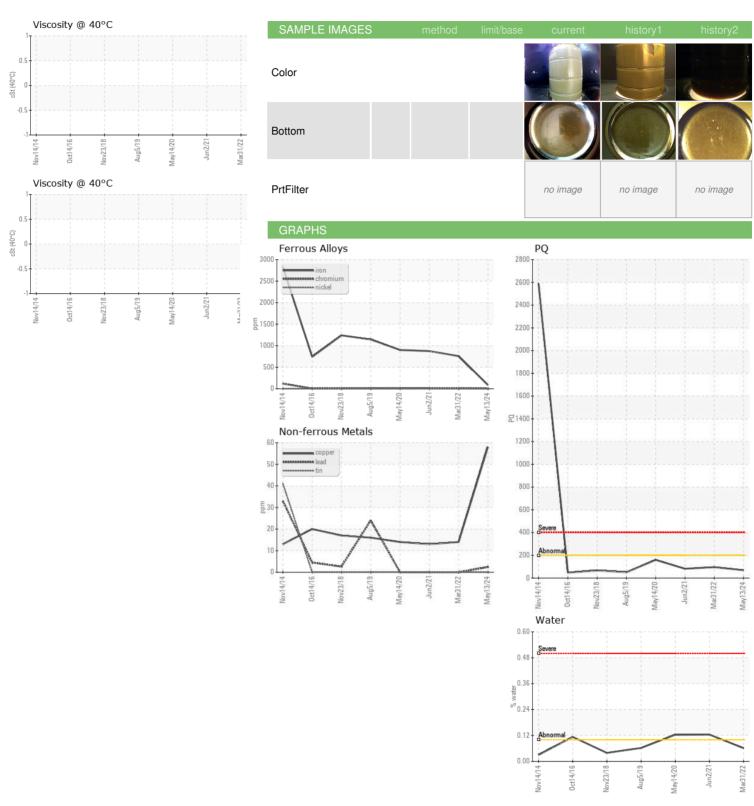
## Contaminants

There is no indication of any contamination in the grease.

Sample Number   Client Info   WC06194909   WC05582730   WC0527946   Sample Date   Client Info   13 May 2024   31 Mar 2022   02 Jun 2021   Machine Age   mths   Client Info   6   6   6   18   Grease Age   mths   Client Info   6   0   0   0   0   0   0   0   0   0	R)		Nov2014 (	Det2016 Nov2018 Aug20	19 May2020 Jun2021 Mar2022	May2024	
Client Info	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age         mths         Client Info         6         6         18           Grease Age         mths         Client Info         6         0         0         0           Grease Serviced         Client Info         N/A         N/A         N/A         N/A         N/A           Contraction of Status         Image: Contraction of Status         Image: Contraction of Status           CONTAMINATION         method         limit/base         current         history1         history1         history1         history2         history1         history2           WEAR METALS         method         limit/base         current         history1         history2           PCQ         ASTM D5185m         >200         69         96         82           Iron         ppm         ASTM D5185m         >250         90         757         875           Chromium         ppm         ASTM D5185m         >10         2         12         13           Nickel         ppm         ASTM D5185m         >11         <1	Sample Number		Client Info		WC06194909	WC05582730	WC0527946
Machine Age         mths         Client Info         6         6         18           Grease Age         mths         Client Info         6         0         0         0           Grease Serviced         Client Info         N/A         N/A         N/A         N/A         N/A           Contraction of Status         Image: Contraction of Status         Image: Contraction of Status           CONTAMINATION         method         limit/base         current         history1         history1         history1         history2         history1         history2           WEAR METALS         method         limit/base         current         history1         history2           PCQ         ASTM D5185m         >200         69         96         82           Iron         ppm         ASTM D5185m         >250         90         757         875           Chromium         ppm         ASTM D5185m         >10         2         12         13           Nickel         ppm         ASTM D5185m         >11         <1	Sample Date		Client Info		13 May 2024	31 Mar 2022	02 Jun 2021
Client Info	Machine Age	mths	Client Info		_	6	18
Client Info		mths	Client Info		6	0	0
Water   WC Method   Solid Neg   N	Grease Serviced		Client Info		N/A	N/A	N/A
Water         WC Method         >0.1         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           PQ         ASTM D8184         >200         69         96         82           Iron         ppm         ASTM D8185m         >250         90         757         875           Chromium         ppm         ASTM D8185m         >10         2         12         13           Nickel         ppm         ASTM D8185m         >5         0         0         0           Cadmium         ppm         ASTM D8185m         >5         0         0         0           Cadmium         ppm         ASTM D8185m         >5         0         0         0           Vanadium         ppm         ASTM D8185m         >55         0         0         0           Lead         ppm         ASTM D8185m         >5         0         0         0           Copper         ppm         ASTM D8185m         >5         0         0         0           Silver         ppm         ASTM D8185m         112         226         197           Magnesium	Sample Status				NORMAL	NORMAL	NORMAL
WEAR METALS	CONTAMINATIO	N	method	limit/base	current	history1	history2
PQ	Water		WC Method	>0.1	NEG	NEG	NEG
ASTM D5185m   September   Se	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >10         2         12         13           Nickel         ppm         ASTM D5185m         >5         0         0         0           Cadmium         ppm         ASTM D5185m         <1         0         0           Titanium         ppm         ASTM D5185m         0         <1         <1           Vanadium         ppm         ASTM D5185m         25         2         0         0           Copper         ppm         ASTM D5185m         >5         0         0         0           Copper         ppm         ASTM D5185m         >5         0         0         0           Silver         ppm         ASTM D5185m         >5         0         0         0           Boron         ppm         ASTM D5185m         112         226         197           Magnesium         ppm         ASTM D5185m         0         0         <1           Manganese         ppm         ASTM D5185m         112         226         197           Manganese         ppm         ASTM D5185m         2760         2679         1628           Phosphorus         ppm         ASTM D5185	PQ		ASTM D8184	>200	69	96	82
Nickel	Iron	ppm	ASTM D5185m	>250	90	757	875
Cadmium         ppm         ASTM D5185m         <1         0         0           Titanium         ppm         ASTM D5185m         0         <1	Chromium	ppm	ASTM D5185m	>10	2	12	13
Cadmium         ppm         ASTM D5185m         <1         0         0           Titanium         ppm         ASTM D5185m         0         <1	Nickel	ppm	ASTM D5185m	>5	0	0	0
Name	Cadmium		ASTM D5185m		<1	0	0
Vanadium         ppm         ASTM D5185m         1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1	Titanium		ASTM D5185m		0	<1	<1
Lead	Vanadium						
Copper				>25			
Tin							
ADDITIVES							
ADDITIVES							
Magnesium         ppm         ASTM D5185m         0         0         <1           Manganese         ppm         ASTM D5185m         2760         2679         1628           Molybdenum         ppm         ASTM D5185m         2760         2679         1628           Phosphorus         ppm         ASTM D5185m         951         498         310           Zinc         ppm         ASTM D5185m         166         133         117           Antimony         ppm         ASTM D5185m           3           THICKENER/SOAP         method         limit/base         current         history1         history2           Aluminum         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current	ADDITIVES		method	limit/base	current	history1	history2
Manganese         ppm         ASTM D5185m         <1         9         11           Molybdenum         ppm         ASTM D5185m         2760         2679         1628           Phosphorus         ppm         ASTM D5185m         951         498         310           Zinc         ppm         ASTM D5185m         166         133         117           Antimony         ppm         ASTM D5185m           3           THICKENER/SOAP         method         limit/base         current         history1         history2           Aluminum         ppm         ASTM D5185m         0         8         12           Barium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         16         22         12           Lithium         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow         Yellow	Boron	ppm	ASTM D5185m		112	226	197
Molybdenum         ppm         ASTM D5185m         2760         2679         1628           Phosphorus         ppm         ASTM D5185m         951         498         310           Zinc         ppm         ASTM D5185m         166         133         117           Antimony         ppm         ASTM D5185m           3           THICKENER/SOAP         method         limit/base         current         history1         history2           Aluminum         ppm         ASTM D5185m         0         8         12           Barium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         3         2         2           Grease Color         *Visual         yellow         Yellow	Magnesium	ppm	ASTM D5185m		0	0	<1
Molybdenum         ppm         ASTM D5185m         2760         2679         1628           Phosphorus         ppm         ASTM D5185m         951         498         310           Zinc         ppm         ASTM D5185m         166         133         117           Antimony         ppm         ASTM D5185m           3           THICKENER/SOAP         method         limit/base         current         history1         history2           Aluminum         ppm         ASTM D5185m         0         8         12           Barium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         3         2	Manganese	ppm	ASTM D5185m		<1	9	11
Phosphorus         ppm         ASTM D5185m         951         498         310           Zinc         ppm         ASTM D5185m         166         133         117           Antimony         ppm         ASTM D5185m           3           THICKENER/SOAP         method         limit/base         current         history1         history2           Aluminum         ppm         ASTM D5185m         0         8         12           Barium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         16         22         12           Lithium         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current	•		ASTM D5185m		2760	2679	1628
Zinc         ppm         ASTM D5185m         166         133         117           Antimony         ppm         ASTM D5185m           3           THICKENER/SOAP         method         limit/base         current         history1         history2           Aluminum         ppm         ASTM D5185m         0         8         12           Barium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         16         22         12           Lithium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current	•						
THICKENER/SOAP   method   limit/base   current   history1   history2							
Aluminum							
Aluminum         ppm         ASTM D5185m         0         8         12           Barium         ppm         ASTM D5185m         9         12         7           Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         16         22         12           Lithium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow             Texture         *In-house         Buttery	THICKENER/SO/	AP	method	limit/base	current	history1	history2
Barium	Aluminum	mag	ASTM D5185m		0		12
Calcium         ppm         ASTM D5185m         21         194         212           Sodium         ppm         ASTM D5185m         16         22         12           Lithium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         3         2         2           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow             Texture         *In-house         Buttery	Barium		ASTM D5185m		9	12	7
Sodium							
Lithium         ppm         ASTM D5185m         2687         2127         1614           Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >150         389         49         35           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow             Texture         *In-house         Buttery							
Sulfur         ppm         ASTM D5185m         3273         6530         5814           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >150         389         49         35           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow              Texture         *In-house         Buttery							
Silicon         ppm         ASTM D5185m         >150         389         49         35           Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow             Texture         *In-house         Buttery							
Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow              Texture         *In-house         Buttery	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         3         2         2           GREASE CONDITION         method         limit/base         current         history1         history2           Grease Color         *Visual         yellow              Texture         *In-house         Buttery							
Grease Color *Visual yellow Yellow Texture *In-house Buttery							
Texture *In-house Buttery	GREASE CONDI	TION	method	limit/base	current	history1	history2
·	Grease Color		*Visual	yellow	Yellow		
·	Texture		*In-house		Buttery		
	NLGI Consistency	NLGI Scale	*SKF Method	1	-		



## **GREASE ANALYSIS**







Certificate 12367

Laboratory Sample No.

Lab Number : 06194909 Unique Number : 11057032

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC06194909 Received : 29 May 2024

**Tested** : 13 Jun 2024 Diagnosed

**EOLO DE NICARAGUA S.A.** DEL SEMAFORO DEL CLUB TERRAZA, 1 CUADRA AL SUR

MANAGUA, ZZ : 13 Jun 2024 - Doug Bogart Contact: Rafael Bermudez

Test Package: GRS 1 (Additional Tests: KV40, SCREEN) 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.

T: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

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