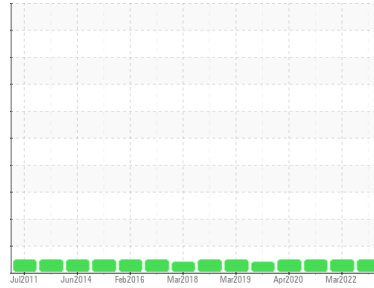


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
E308 (S/N 6411-01)

Component
Wind Turbine Gearbox

Fluid
MOBIL MOBILGEAR SHC XMP 320 (74 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		MHI018852	MHI017006	MHI017430
Sample Date	Client Info		14 Mar 2023	25 Mar 2022	05 Feb 2021
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	90009	84173	77242
Oil Changed	Client Info		Not Changed	Not Changed	Not Changed
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>200	2	20	13
Iron	ppm	ASTM D5185m	>200	11	6
Chromium	ppm	ASTM D5185m	>3	0	0
Nickel	ppm	ASTM D5185m	>3	<1	1
Titanium	ppm	ASTM D5185m	>10	0	0
Silver	ppm	ASTM D5185m		0	<1
Aluminum	ppm	ASTM D5185m	>30	<1	0
Lead	ppm	ASTM D5185m	>15	0	<1
Copper	ppm	ASTM D5185m	>75	2	13
Tin	ppm	ASTM D5185m	>10	0	<1
Antimony	ppm	ASTM D5185m	>5	---	---
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	0
Barium	ppm	ASTM D5185m		0	0
Molybdenum	ppm	ASTM D5185m	0	0	0
Manganese	ppm	ASTM D5185m		<1	<1
Magnesium	ppm	ASTM D5185m		<1	<1
Calcium	ppm	ASTM D5185m	0	0	0
Phosphorus	ppm	ASTM D5185m	485	484	433
Zinc	ppm	ASTM D5185m	0	23	14
Sulfur	ppm	ASTM D5185m		5784	3894

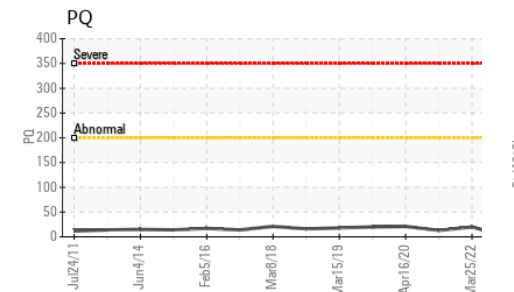
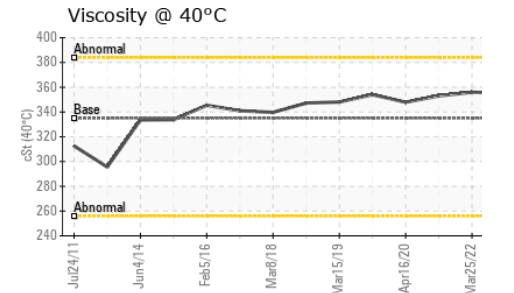
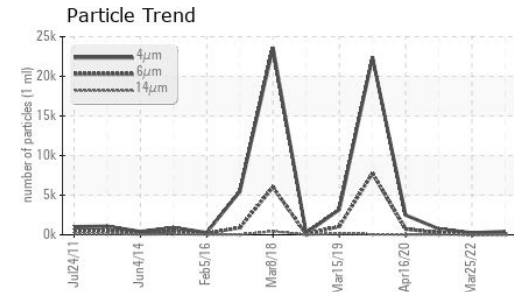
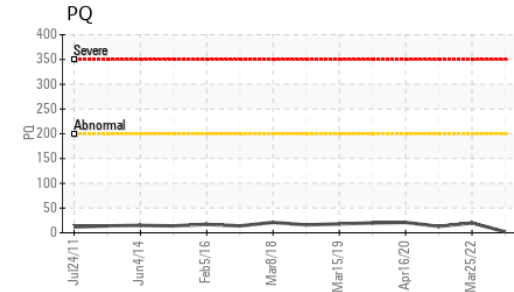
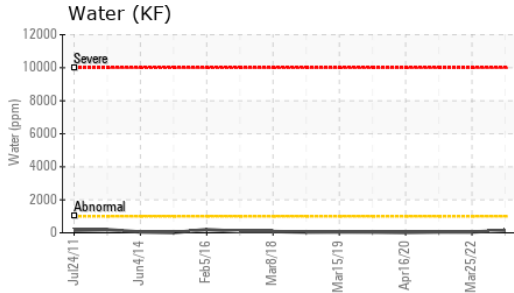
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	0	<1
Sodium	ppm	ASTM D5185m	>15	<1	0
Potassium	ppm	ASTM D5185m	>20	<1	0
Water	%	ASTM D6304	>0.1	0.014	0.004
ppm Water	ppm	ASTM D6304	>1000	141.8	46.7

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		406	260	745
Particles >6µm	ASTM D7647	>5000	119	37	256
Particles >14µm	ASTM D7647	>640	11	4	41
Particles >21µm	ASTM D7647	>160	3	2	15
Particles >38µm	ASTM D7647	>40	0	0	2
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	16/14/11	15/12/9	17/15/13

OIL ANALYSIS REPORT

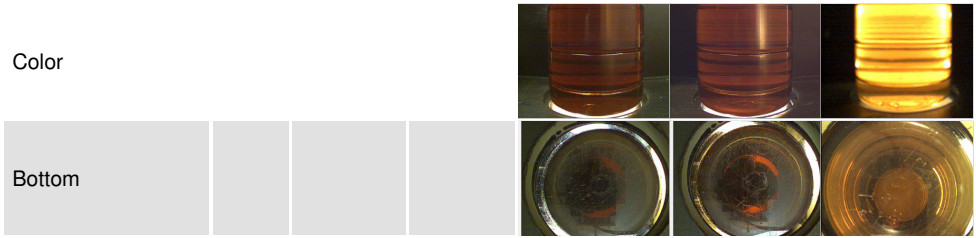


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	1.07	1.15	1.145

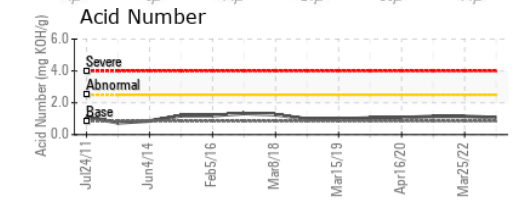
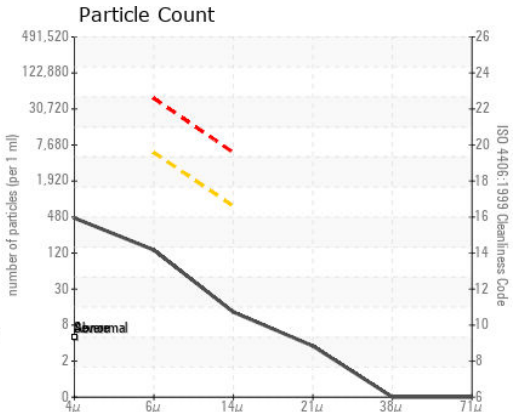
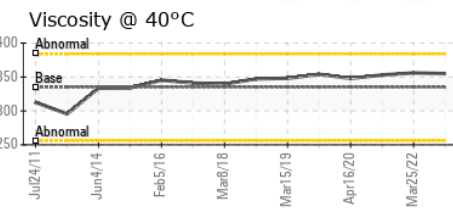
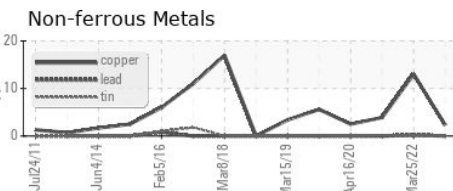
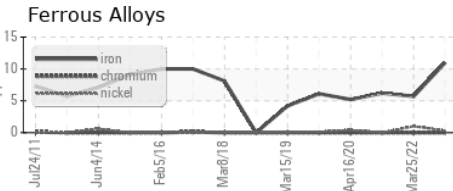
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	335	355	356	353

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MH1018852 **Received** : 27 Mar 2023
Lab Number : 05803353 **Diagnosed** : 29 Mar 2023
Unique Number : 10400882 **Diagnostician** : Doug Bogart
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

DIAMOND WTG - DILLON
P.O. BOX 880
DESERT HOT SPRINGS, CA
US 92240
Contact: DANIEL BOYD
daniel.boyd@diamondwtg.com
T: (760)329-7171
F: (760)329-7122

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)