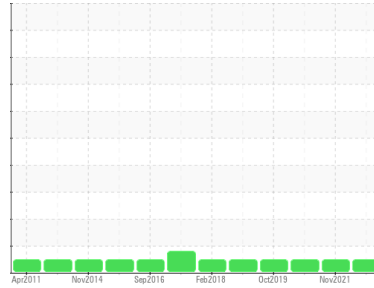


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
A104 (S/N 6410-01)

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

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

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		MHI017496	MHI018320	MHI019266
Sample Date	Client Info		04 Nov 2022	10 Nov 2021	22 Oct 2020
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	90850	84973	78836
Oil Changed	Client Info		Not Chngd	Not Chngd	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>200	8	15	19	
Iron	ppm	ASTM D5185m	>200	16	20	25
Chromium	ppm	ASTM D5185m	>3	0	0	0
Nickel	ppm	ASTM D5185m	>3	1	0	0
Titanium	ppm	ASTM D5185m	>10	0	0	0
Silver	ppm	ASTM D5185m		0	<1	<1
Aluminum	ppm	ASTM D5185m	>30	<1	0	<1
Lead	ppm	ASTM D5185m	>15	<1	0	0
Copper	ppm	ASTM D5185m	>75	29	26	9
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Antimony	ppm	ASTM D5185m	>5	---	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	0	0	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	0	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		1	0	<1
Calcium	ppm	ASTM D5185m	0	1	0	2
Phosphorus	ppm	ASTM D5185m	485	371	408	411
Zinc	ppm	ASTM D5185m	0	28	29	35
Sulfur	ppm	ASTM D5185m		4067	3085	3546

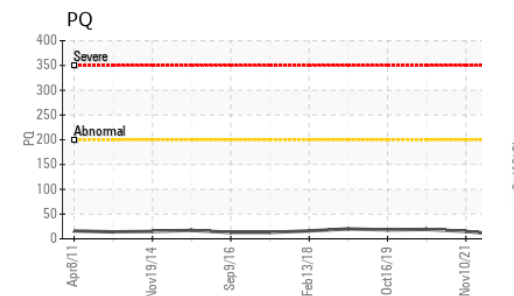
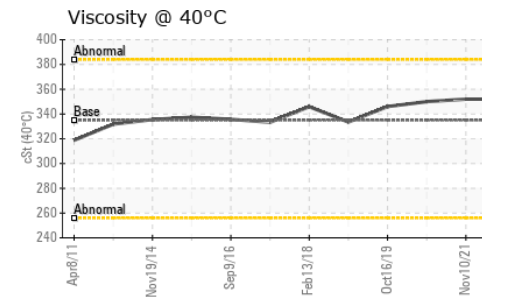
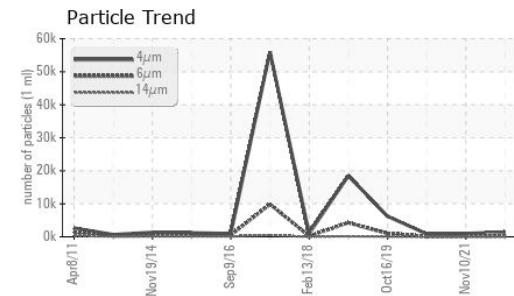
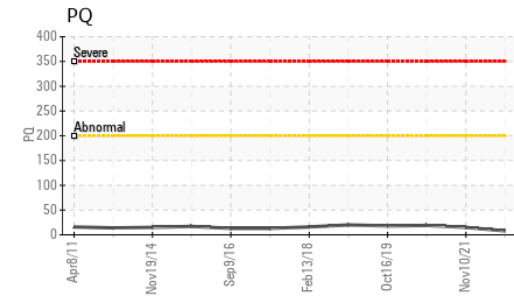
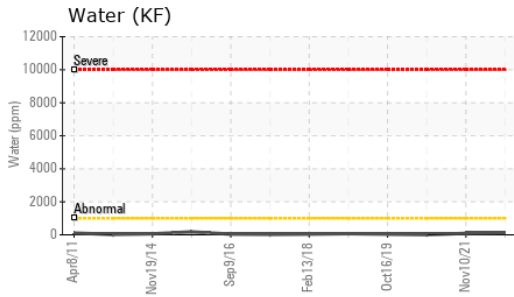
CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+30	<1	0	<1
Sodium	ppm	ASTM D5185m	>15	<1	0	1
Potassium	ppm	ASTM D5185m	>20	1	0	0
Water	%	ASTM D6304	>0.1	0.012	0.008	0.001
ppm Water	ppm	ASTM D6304	>1000	126.8	89.3	9.6

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		1443	999	859
Particles >6µm	ASTM D7647	>5000	230	178	109
Particles >14µm	ASTM D7647	>640	19	18	15
Particles >21µm	ASTM D7647	>160	7	4	6
Particles >38µm	ASTM D7647	>40	0	0	0
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	18/15/11	17/15/11	17/14/11

OIL ANALYSIS REPORT

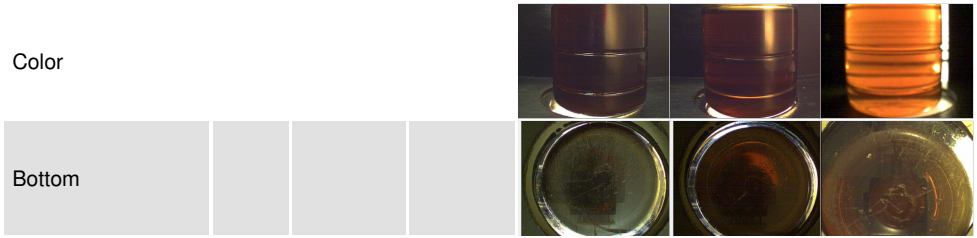


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	1.09	1.199	1.309

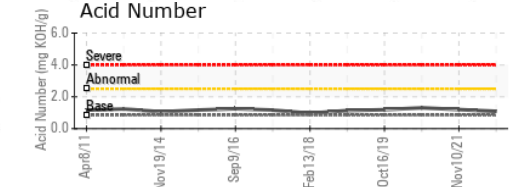
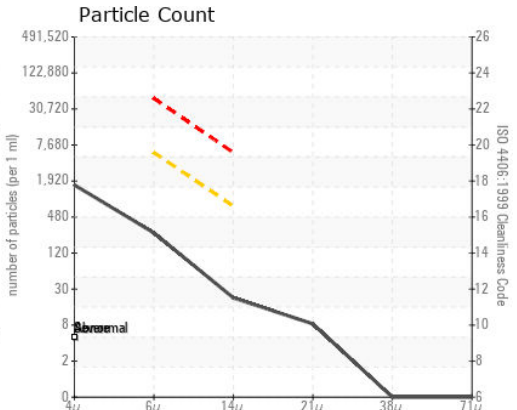
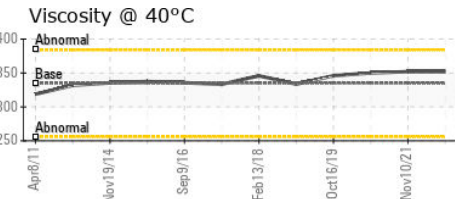
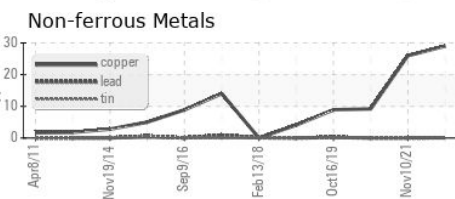
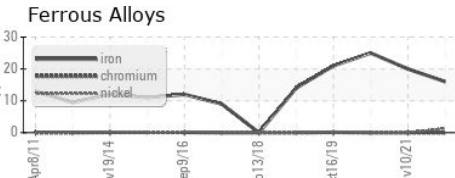
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	352	352	350

SAMPLE IMAGES		method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MH1017496 **Received** : 29 Nov 2022
Lab Number : 05704561 **Diagnosed** : 30 Nov 2022
Unique Number : 10234135 **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)