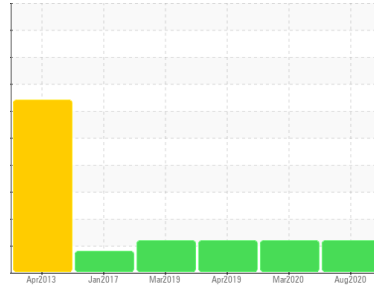


PROBLEM SUMMARY

Sample Rating Trend



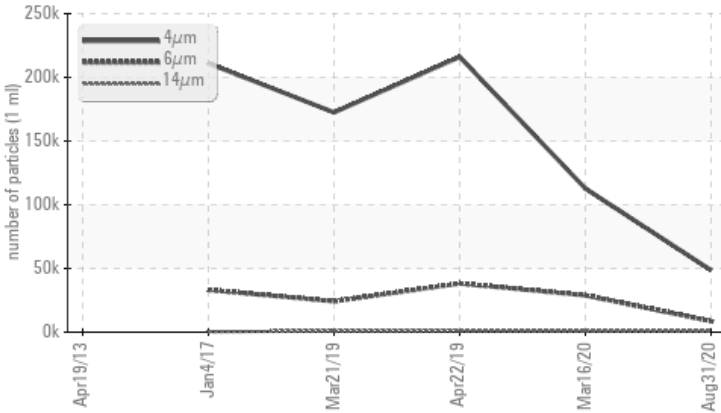
ISO



Machine Id
E003
Component
Wind Turbine Gearbox
Fluid
MITSUBISHI Daphne Alpha Winforce (60 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Particles >6µm	ASTM D7647	>5000	▲ 8646	▲ 28912	▲ 38162
Particles >14µm	ASTM D7647	>640	▲ 786	▲ 923	▲ 1125
Particles >21µm	ASTM D7647	>160	▲ 217	▲ 267	▲ 185
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 23/20/17	▲ 24/22/17	▲ 25/22/17

Customer Id: MITROS
Sample No.: MHI025996
Lab Number: 05066926
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
jhester@wearcheckusa.com

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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.
Resample	---	---	?	Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.

HISTORICAL DIAGNOSIS

16 Mar 2020 Diag: Don Baldrige

ISO



Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report



22 Apr 2019 Diag: Don Baldrige

ISO



Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s). All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report



21 Mar 2019 Diag: Jonathan Hester

ISO



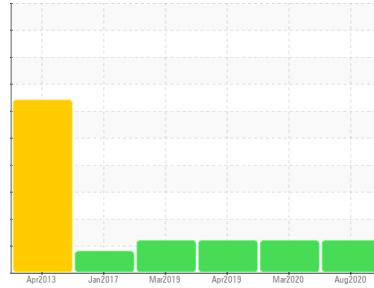
Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s). All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report



OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
E003

Component
Wind Turbine Gearbox

Fluid
mitsubishi Daphne Alpha Winforce (60 GAL)

DIAGNOSIS

Recommendation

Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates present in the oil.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		MHI025996	MHI018400	MHI188272
Sample Date	Client Info		31 Aug 2020	16 Mar 2020	22 Apr 2019
Machine Age	hrs	Client Info	0	0	91648
Oil Age	hrs	Client Info	102345	98754	0
Oil Changed	Client Info		N/A	N/A	Not Changd
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>200	17	26	23
Iron	ppm	ASTM D5185m	>200	170	149
Chromium	ppm	ASTM D5185m	1	1	1
Nickel	ppm	ASTM D5185m	0	<1	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	<1	0	0
Aluminum	ppm	ASTM D5185m	<1	0	0
Lead	ppm	ASTM D5185m	0	<1	<1
Copper	ppm	ASTM D5185m	>75	10	8
Tin	ppm	ASTM D5185m	<1	<1	0
Antimony	ppm	ASTM D5185m	0	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	4	1	<1
Barium	ppm	ASTM D5185m	0	0	<1
Molybdenum	ppm	ASTM D5185m	5	4	4
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	0	0	0
Calcium	ppm	ASTM D5185m	<1	0	<1
Phosphorus	ppm	ASTM D5185m	268	239	202
Zinc	ppm	ASTM D5185m	32	31	22
Sulfur	ppm	ASTM D5185m	4468	3344	5210

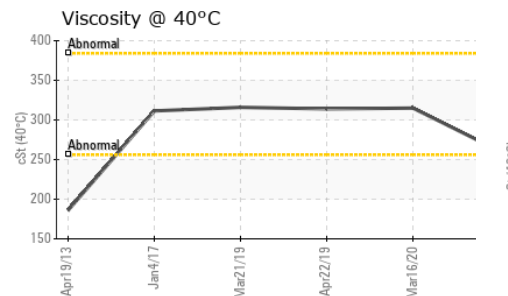
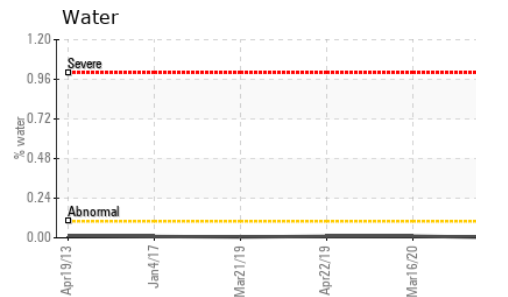
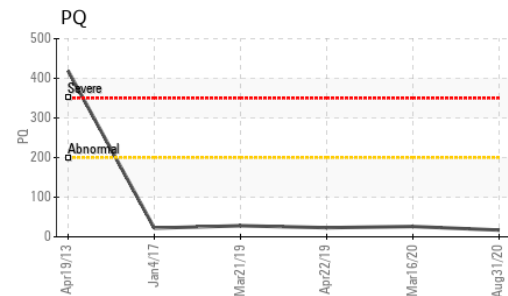
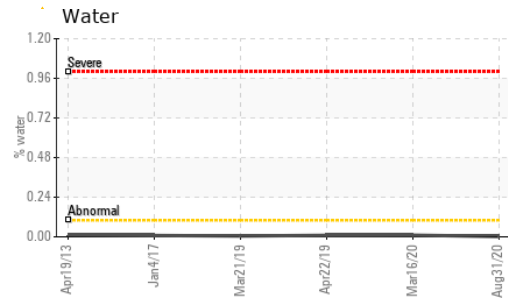
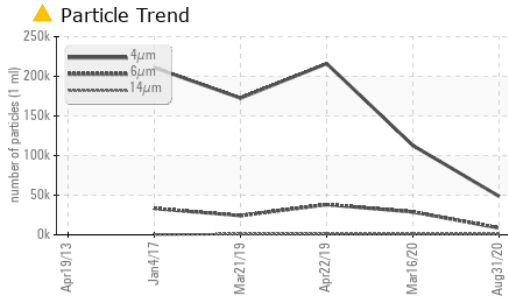
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	4	<1
Sodium	ppm	ASTM D5185m	0	0	<1
Potassium	ppm	ASTM D5185m	>20	0	0
Water	%	ASTM D6304	>0.1	0.002	0.010
ppm Water	ppm	ASTM D6304	>1000	18.9	108.8

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		48594	112756	216057
Particles >6µm	ASTM D7647	>5000	▲ 8646	▲ 28912	▲ 38162
Particles >14µm	ASTM D7647	>640	▲ 786	▲ 923	▲ 1125
Particles >21µm	ASTM D7647	>160	▲ 217	▲ 267	▲ 185
Particles >38µm	ASTM D7647	>40	8	17	7
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 23/20/17	▲ 24/22/17	▲ 25/22/17

OIL ANALYSIS REPORT



FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.666	0.631	0.784

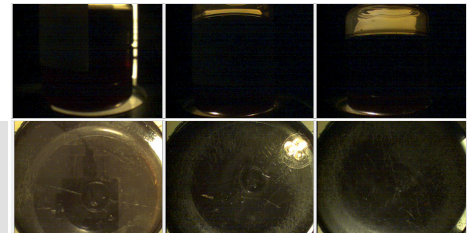
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	VLITE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	261	315	314

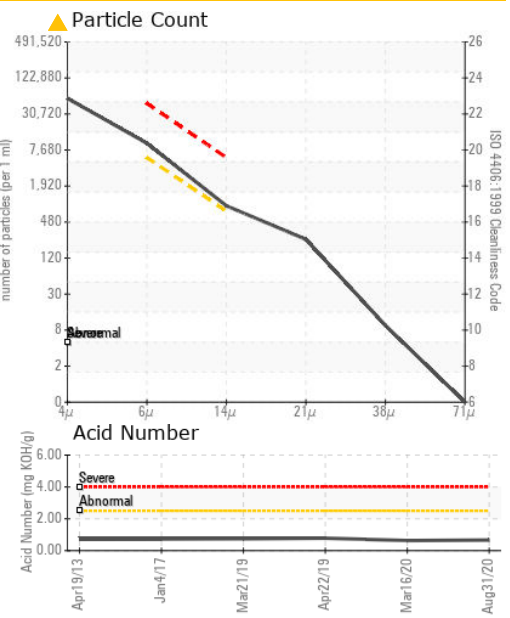
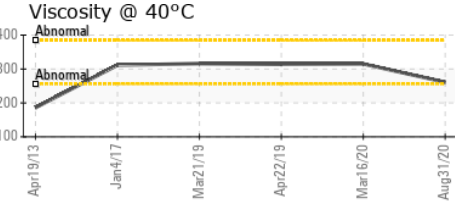
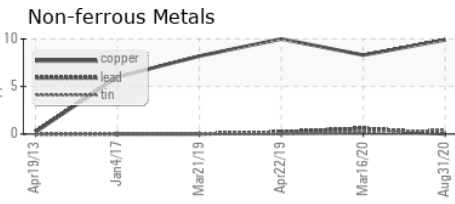
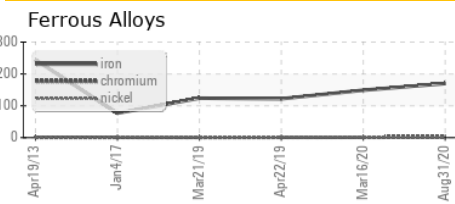
SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

Bottom



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MH1025996 **Received** : 16 Sep 2020
Lab Number : 05066926 **Diagnosed** : 17 Sep 2020
Unique Number : 9177116 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

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 ROSCOE, TX
 US 79545
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 matthew.miles@diamondwtg.com
 T: (325)288-4333
 F: (325)288-4338

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)