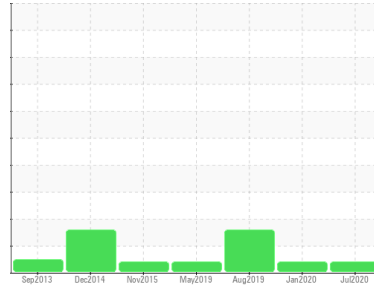


PROBLEM SUMMARY

Sample Rating Trend



ISO



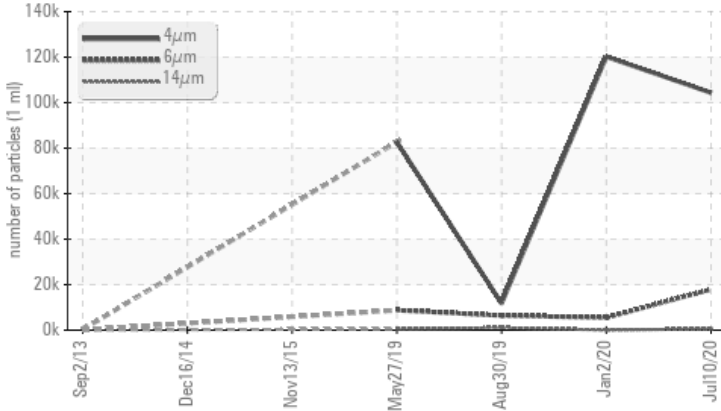
Machine Id
W-10

Component
Wind Turbine Gearbox

Fluid
MITSUBISHI Daphne Alpha Winforce (70 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	▲ 17901	▲ 5460	▲ 6418
Oil Cleanliness	ISO 4406 (c) >--/19/16	▲ 24/21/16	▲ 24/20/13	▲ 21/20/17

Customer Id: MITSANJON
Sample No.: MHI017740
Lab Number: 05026415
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldrige +1
don.b505@comcast.net

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

02 Jan 2020 Diag: Doug Bogart

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 moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid.

view report



30 Aug 2019 Diag: Jonathan Hester

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 moderate amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report



27 May 2019 Diag: Don Baldrige

ISO



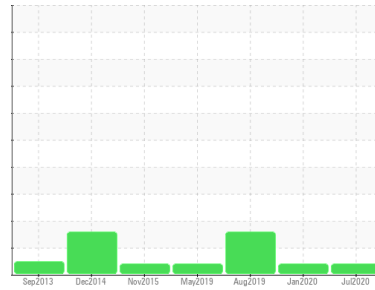
Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s). All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid.

view report



OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
W-10

Component
Wind Turbine Gearbox

Fluid
mitsubishi Daphne Alpha Winforce (70 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 silt (particulates < 14 microns in size) 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		MHI017740	MHI018895	MHI04801422
Sample Date	Client Info		10 Jul 2020	02 Jan 2020	30 Aug 2019
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		Not Chngd	Not Chngd	N/A
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>200	23	23	16
Iron	ppm	ASTM D5185m	>200	31	19
Chromium	ppm	ASTM D5185m		<1	<1
Nickel	ppm	ASTM D5185m		<1	1
Titanium	ppm	ASTM D5185m		<1	0
Silver	ppm	ASTM D5185m		0	0
Aluminum	ppm	ASTM D5185m		<1	0
Lead	ppm	ASTM D5185m		0	<1
Copper	ppm	ASTM D5185m	>75	2	2
Tin	ppm	ASTM D5185m		<1	<1
Antimony	ppm	ASTM D5185m		0	0
Vanadium	ppm	ASTM D5185m		0	0
Cadmium	ppm	ASTM D5185m		0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<1	0
Barium	ppm	ASTM D5185m		0	0
Molybdenum	ppm	ASTM D5185m		<1	<1
Manganese	ppm	ASTM D5185m		<1	<1
Magnesium	ppm	ASTM D5185m		0	0
Calcium	ppm	ASTM D5185m		1	0
Phosphorus	ppm	ASTM D5185m		345	300
Zinc	ppm	ASTM D5185m		0	0
Sulfur	ppm	ASTM D5185m		4831	5533

CONTAMINANTS

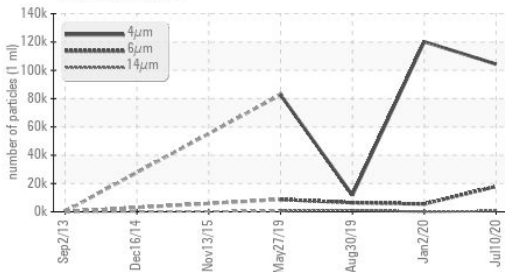
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	4	4
Sodium	ppm	ASTM D5185m		0	0
Potassium	ppm	ASTM D5185m	>20	<1	1
Water	%	ASTM D6304	>0.1	0.007	0.005
ppm Water	ppm	ASTM D6304	>1000	70.7	59.6

FLUID CLEANLINESS

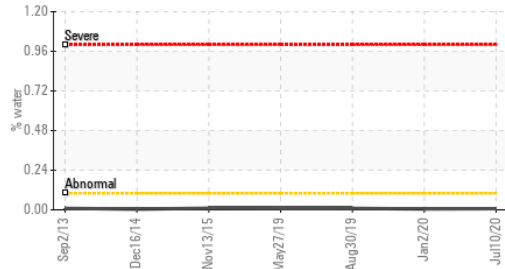
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		104347	120211	11782
Particles >6µm	ASTM D7647	>5000	▲ 17901	▲ 5460	▲ 6418
Particles >14µm	ASTM D7647	>640	543	51	▲ 1093
Particles >21µm	ASTM D7647	>160	113	19	▲ 369
Particles >38µm	ASTM D7647	>40	3	7	▲ 56
Particles >71µm	ASTM D7647	>10	2	7	5
Oil Cleanliness	ISO 4406 (c)	>--/19/16	▲ 24/21/16	▲ 24/20/13	▲ 21/20/17

OIL ANALYSIS REPORT

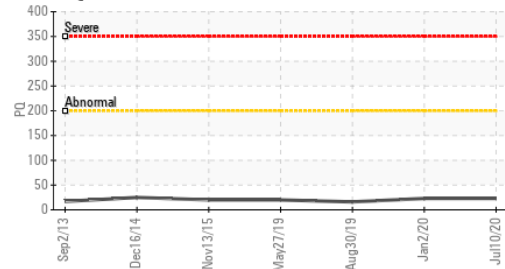
Particle Trend



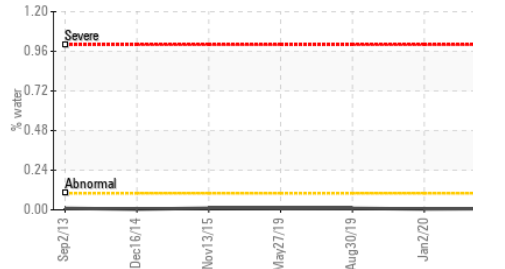
Water



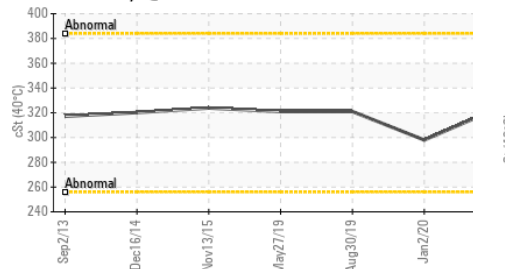
PQ



Water



Viscosity @ 40°C

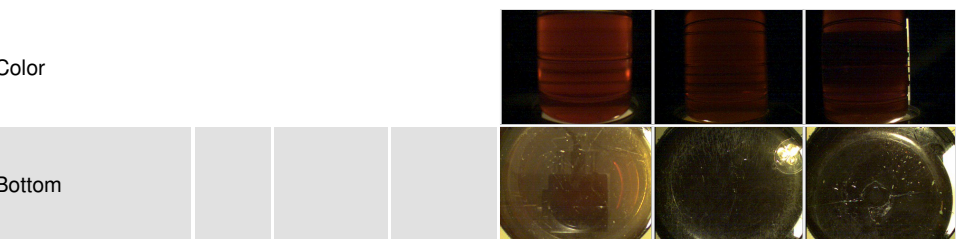


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.820	0.729	0.839

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	LIGHT	NONE	LIGHT
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

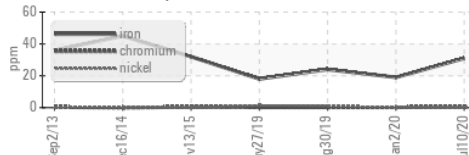
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		323	298	321

SAMPLE IMAGES

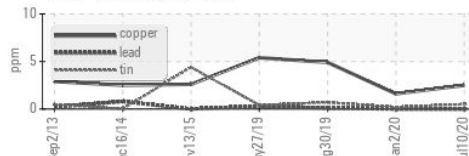


GRAPHS

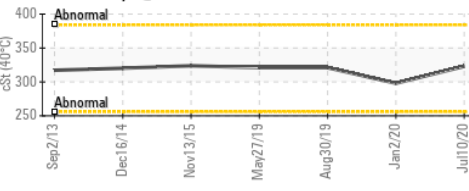
Ferrous Alloys



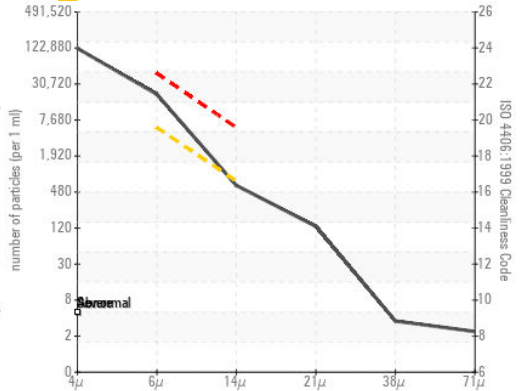
Non-ferrous Metals



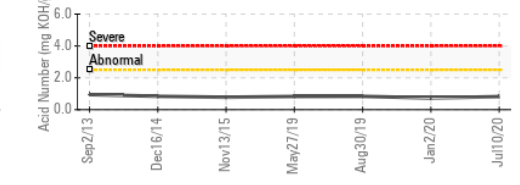
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MHI017740 **Received** : 23 Jul 2020
Lab Number : 05026415 **Diagnosed** : 24 Jul 2020
Unique Number : 9111576 **Diagnostician** : Don Baldrige
Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

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)

DIAMOND WTG - CAPROCK SITE - MPS CAP
 PO BOX 44
 SAN JON, NM
 US 88434
 Contact: SANTIAGO ROMERO
 Santiago.Romero@Diamondwtg.com
 T:
 F: (575)576-9472