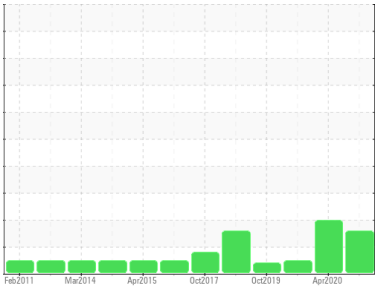
DIAMOND WTG ENGINEERING & SERVICES, INC.
a group company of MITSUBISHI HEAVY INDUSTRIES, LTD.

PROBLEM SUMMARY

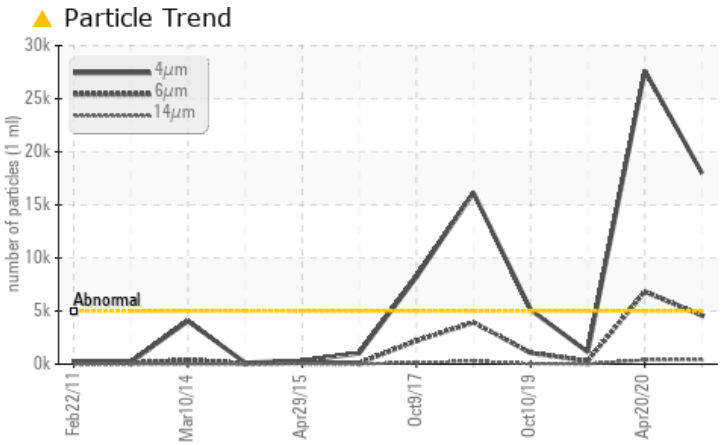
Sample Rating Trend



ISO

Machine Id
A-73
Component
Hydraulic System
Fluid
MOBIL DTE 10 EXCEL 32 (165 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	NORMAL
Particles >4µm		ASTM D7647	>5000	▲ **17985**	▲ 27616	1135
Particles >6µm		ASTM D7647	>1300	▲ **4591**	▲ 6830	297
Particles >14µm		ASTM D7647	>160	▲ **420**	▲ 394	22
Particles >21µm		ASTM D7647	>40	▲ **106**	▲ 102	15
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **21/19/16**	▲ 22/20/16	17/15/12

Customer Id: MITSANNM
Sample No.: MHI023548
Lab Number: 04983827
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Doug Bogart +1 (800)237-1369 x4016
dougb@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	---	---	?	Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).
Resample	---	---	?	Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).

HISTORICAL DIAGNOSIS

20 Apr 2020 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

25 Nov 2019 Diag: Jonathan Hester

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

10 Oct 2019 Diag: Doug Bogart

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). Please note that this is a corrected copy for diagnostic comment updates.All component wear rates are normal. There is a high amount of silt (particulates < 6 microns in size) present in the oil. The AN level is acceptable for this fluid.

view report

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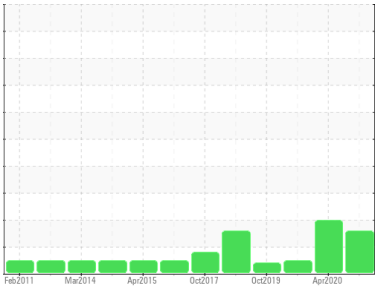
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
A-73
Component
Hydraulic System
Fluid
MOBIL DTE 10 EXCEL 32 (165 LTR)

DIAGNOSIS

Recommendation
Re-sample to verify the actual oil condition. Replace filter elements. Change oil if cleanliness level does not improve after replacing the filter(s).

Wear
All component wear rates are normal.

Contamination
There is a high 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		**MHI023548**	MHI017900	MHI019041
Sample Date		Client Info		**12 May 2020**	20 Apr 2020	25 Nov 2019
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**93159**	92693	89619
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**3**	4	4
Chromium	ppm	ASTM D5185m		**<1**	0	<1
Nickel	ppm	ASTM D5185m		**3**	1	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	<1
Aluminum	ppm	ASTM D5185m		**0**	0	0
Lead	ppm	ASTM D5185m		**<1**	<1	<1
Copper	ppm	ASTM D5185m		**<1**	2	<1
Tin	ppm	ASTM D5185m		**0**	0	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		**<1**	45	<1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**<1**	<1	<1
Calcium	ppm	ASTM D5185m		**69**	65	70
Phosphorus	ppm	ASTM D5185m		**427**	418	461
Zinc	ppm	ASTM D5185m		**16**	17	15
Sulfur	ppm	ASTM D5185m		**1258**	1206	1386

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	**<1**	0	<1
Sodium	ppm	ASTM D5185m		**0**	2	0
Potassium	ppm	ASTM D5185m	>20	**0**	<1	<1
Water	%	ASTM D6304	>0.1	**0.004**	0.003	0.002
ppm Water	ppm	ASTM D6304	>1000	**49.9**	36.2	26.9

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **17985**	▲ 27616	1135
Particles >6µm		ASTM D7647	>1300	▲ **4591**	▲ 6830	297
Particles >14µm		ASTM D7647	>160	▲ **420**	▲ 394	22
Particles >21µm		ASTM D7647	>40	▲ **106**	▲ 102	15
Particles >38µm		ASTM D7647	>10	**6**	▲ 13	1
Particles >71µm		ASTM D7647	>3	**1**	1	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **21/19/16**	▲ 22/20/16	17/15/12

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.080**	0.095	0.032

OIL ANALYSIS REPORT

DIAMOND WTG ENGINEERING & SERVICES, INC.
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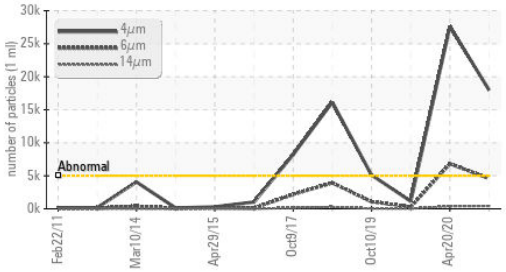
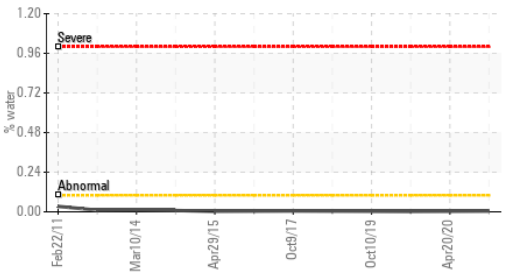
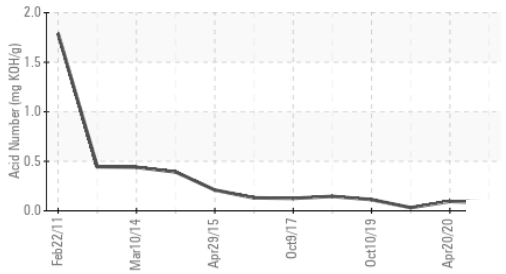
Particle Trend



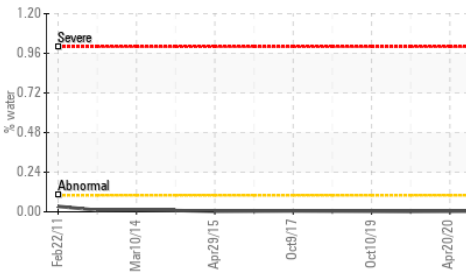
Water



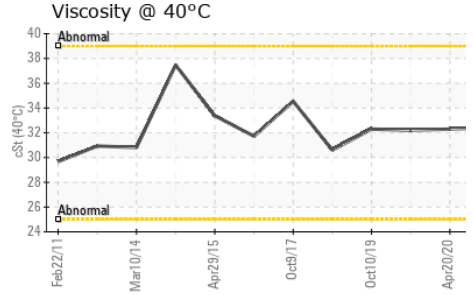
Acid Number



Water

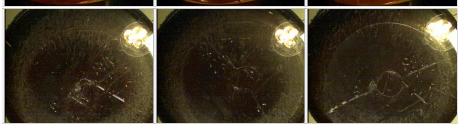


Viscosity @ 40°C



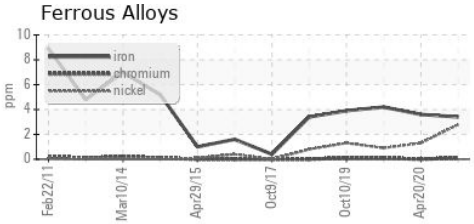
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	VLITE	NONE
Sand/Dirt	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		**32.4**	32.3	32.2

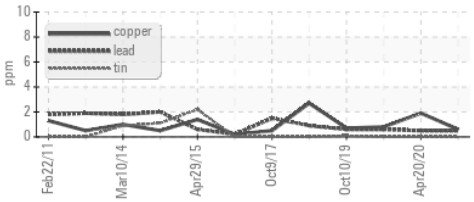
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

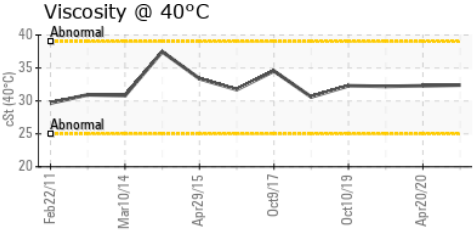
Ferrous Alloys



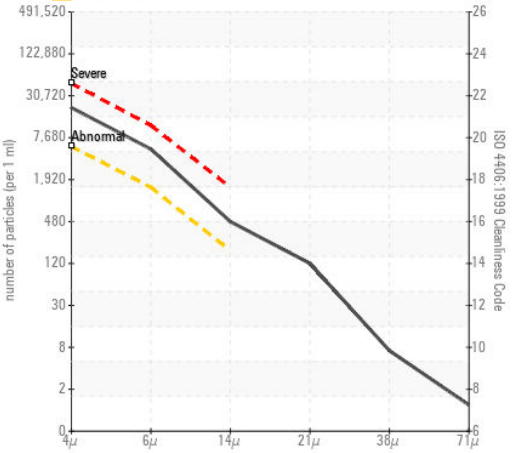
Non-ferrous Metals



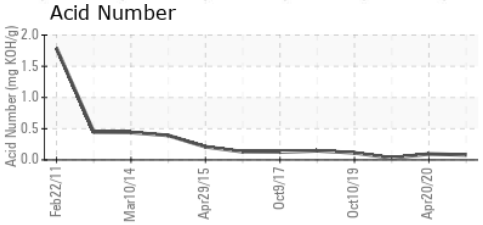
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MHI023548
Lab Number : 04983827
Unique Number : 9038974
Test Package : IND 2 (Additional Tests: KF)

Received : 22 May 2020
Diagnosed : 26 May 2020
Diagnostician : Doug Bogart

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)

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