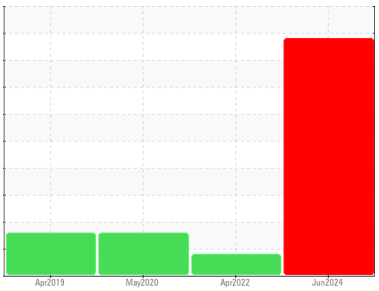
PROBLEM SUMMARY

Sample Rating Trend

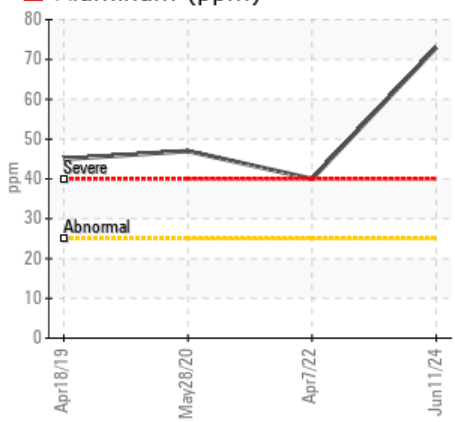


WEAR

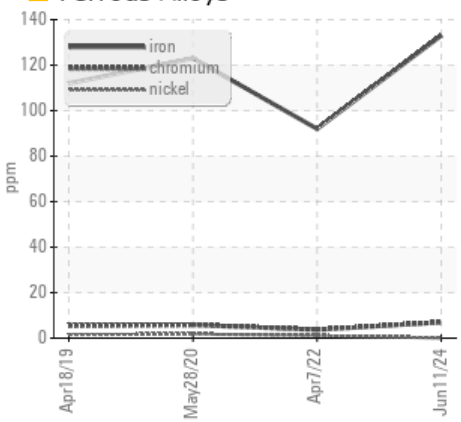
Area
Contracting
Machine Id
4216 4216
Component
Diesel Engine
Fluid
MOBIL DELVAC 1300 SUPER15W40 (3 GAL)

COMPONENT CONDITION SUMMARY

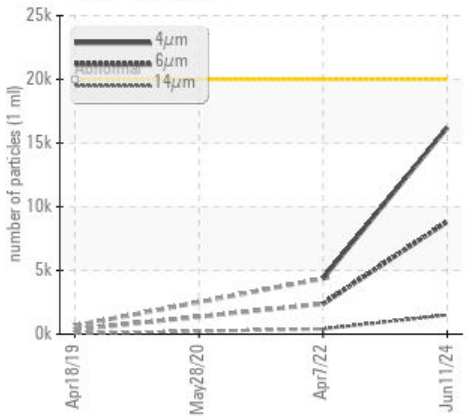
▲ Aluminum (ppm)



▲ Ferrous Alloys



▲ Particle Trend



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	MARGINAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	▲ **133**	92	▲ 123
Aluminum	ppm	ASTM D5185m	>25	▲ **73**	▲ 40	▲ 47
Particles >6µm		ASTM D7647	>5000	▲ **8829**	2379	---
Particles >14µm		ASTM D7647	>640	▲ **1503**	405	---
Particles >21µm		ASTM D7647	>160	▲ **506**	136	---
Particles >38µm		ASTM D7647	>40	▲ **78**	21	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **21/20/18**	19/18/16	---

Customer Id: CARBUTNC
Sample No.: WC0947791
Lab Number: 06208607
Test Package: CONST

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
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

WEAR

07 Apr 2022 Diag: Jonathan Hester

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.The aluminum level has decreased, but is still abnormal. All other 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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

WEAR

28 May 2020 Diag: Don Baldridge

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.Piston, ring and cylinder wear is indicated. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

WEAR

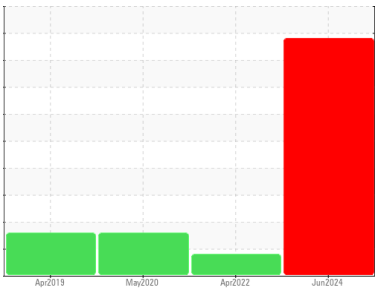
18 Apr 2019 Diag: Jonathan Hester

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.Piston and cylinder wear is indicated. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
Contracting
Machine Id
4216 4216
Component
Diesel Engine
Fluid
MOBIL DELVAC 1300 SUPER15W40 (3 GAL)

DIAGNOSIS

▲ Recommendation
Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear
Piston and cylinder wear is indicated.

▲ Contamination
There is a high amount of particulates present in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0947791**	WC0688250	WC0470326
Sample Date		Client Info		**11 Jun 2024**	07 Apr 2022	28 May 2020
Machine Age	hrs	Client Info		**2850**	2430	1869
Oil Age	hrs	Client Info		**420**	561	478
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	MARGINAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **133**	92	▲ 123
Chromium	ppm	ASTM D5185m	>20	**7**	4	6
Nickel	ppm	ASTM D5185m	>2	**<1**	1	2
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ **73**	▲ 40	▲ 47
Lead	ppm	ASTM D5185m	>40	**0**	<1	0
Copper	ppm	ASTM D5185m	>330	**2**	3	4
Tin	ppm	ASTM D5185m	>15	**1**	2	<1
Antimony	ppm	ASTM D5185m		**---**	---	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

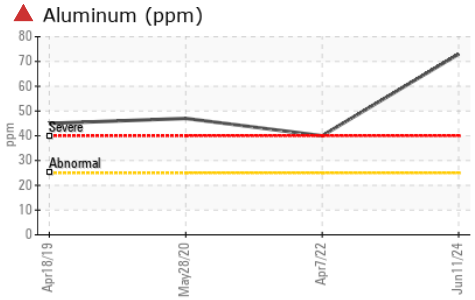
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**47**	48	53
Barium	ppm	ASTM D5185m	0	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	0	**48**	16	45
Manganese	ppm	ASTM D5185m		**1**	1	1
Magnesium	ppm	ASTM D5185m	0	**581**	681	535
Calcium	ppm	ASTM D5185m		**1600**	1491	1634
Phosphorus	ppm	ASTM D5185m		**759**	702	790
Zinc	ppm	ASTM D5185m		**968**	801	890
Sulfur	ppm	ASTM D5185m		**3286**	2524	2112

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**15**	11	15
Sodium	ppm	ASTM D5185m		**2**	4	3
Potassium	ppm	ASTM D5185m	>20	**12**	23	<1

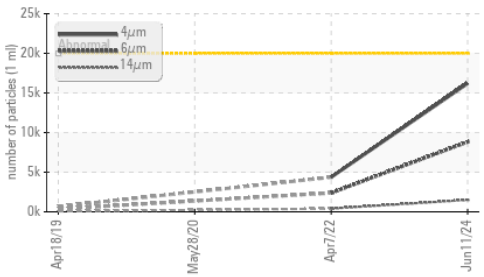
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.4	0.5
Nitration	Abs/cm	*ASTM D7624	>20	**7.7**	10.7	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.4**	21.0	22.3

OIL ANALYSIS REPORT

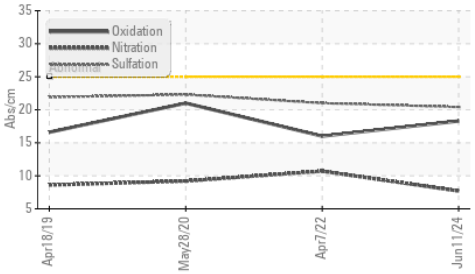
Aluminum (ppm)



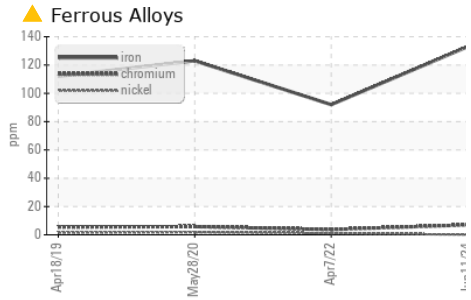
Particle Trend



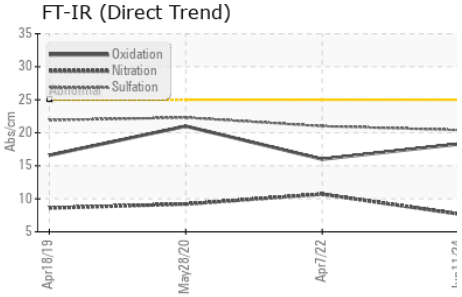
FT-IR (Direct Trend)



Ferrous Alloys



FT-IR (Direct Trend)



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**16208**	4367	---
Particles >6µm		ASTM D7647	>5000	▲ **8829**	2379	---
Particles >14µm		ASTM D7647	>640	▲ **1503**	405	---
Particles >21µm		ASTM D7647	>160	▲ **506**	136	---
Particles >38µm		ASTM D7647	>40	▲ **78**	21	---
Particles >71µm		ASTM D7647	>10	**8**	2	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **21/20/18**	19/18/16	---

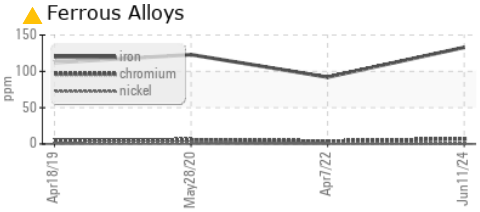
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.3**	16.0	21
Base Number (BN)	mg KOH/g	ASTM D2896	9.4	**9.5**	8.6	9.6

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	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

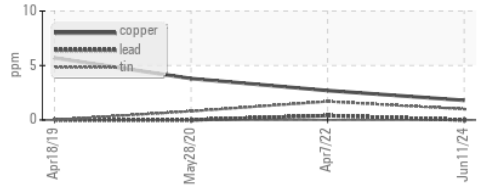
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14	**12.5**	12.7	12.3

GRAPHS

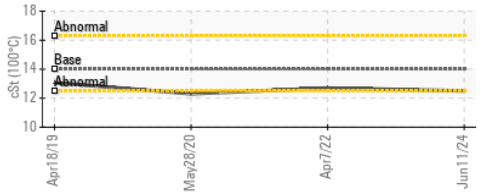
Ferrous Alloys



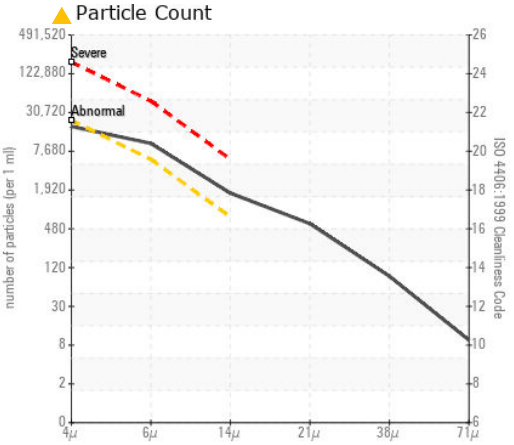
Non-ferrous Metals



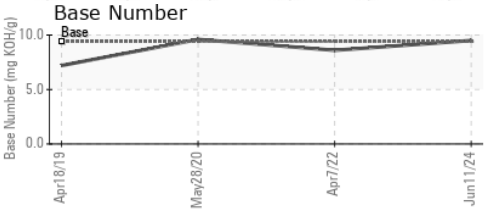
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0947791 **Received** : 13 Jun 2024
Lab Number : 06208607 **Tested** : 19 Jun 2024
Unique Number : 11076068 **Diagnosed** : 19 Jun 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: PrtCount, TBN)

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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