



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Area  
**MCAVOY MCDOUGAL**

Machine Id  
**783 783**

Component  
**Diesel Engine**

Fluid  
**DIESEL ENGINE OIL SAE 15W40 (3 GAL)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0939228</b>	WC0819112	WC0770841
Sample Date		Client Info		<b>24 May 2024</b>	15 Jun 2023	16 Dec 2022
Machine Age	hrs	Client Info		<b>3226</b>	3033	2652
Oil Age	hrs	Client Info		<b>193</b>	381	792
Filter Age	hrs	Client Info		<b>193</b>	381	471
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ATTENTION</b>	NORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>150	<b>8</b>	11	14
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	2	1
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m	>30	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	▲ MODER
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

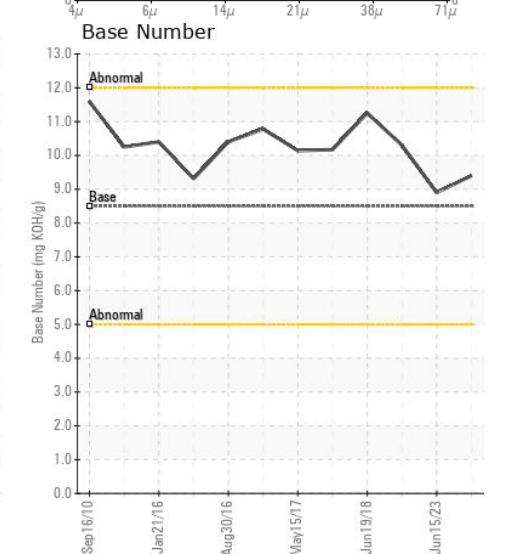
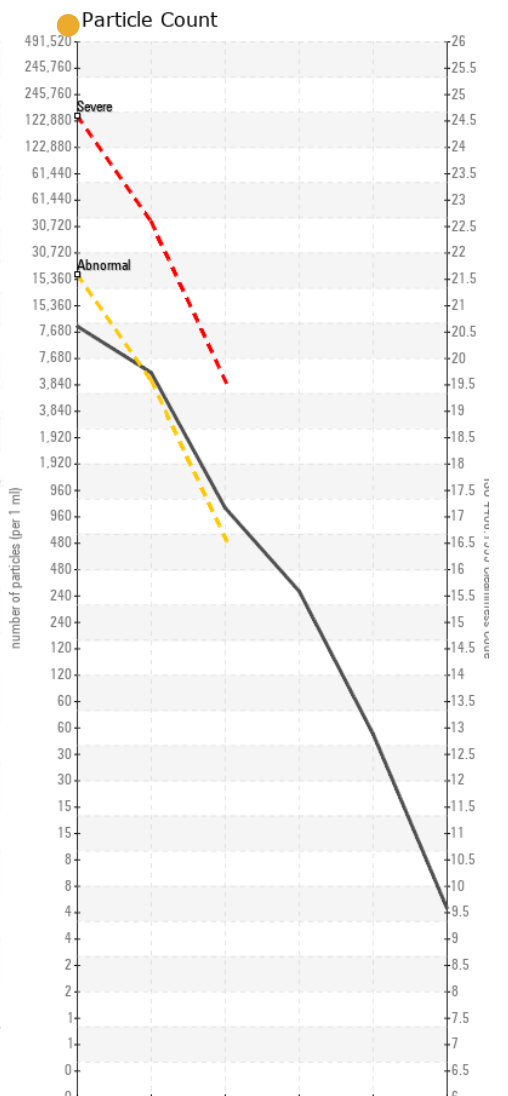
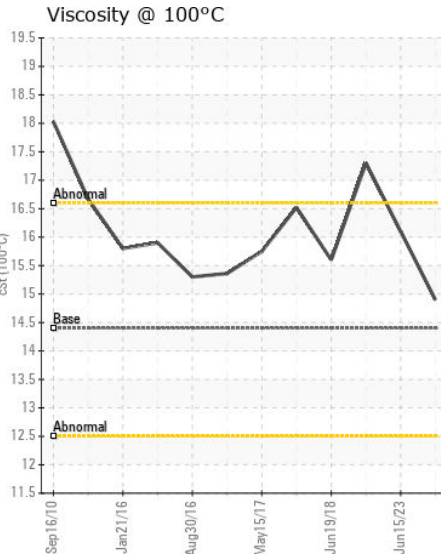
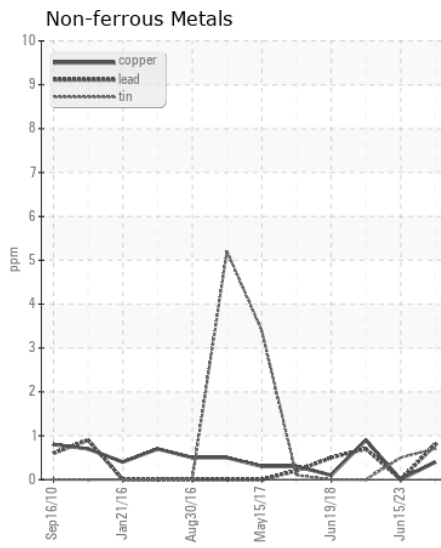
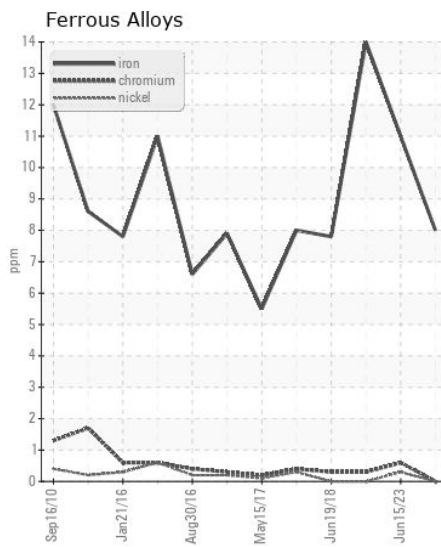
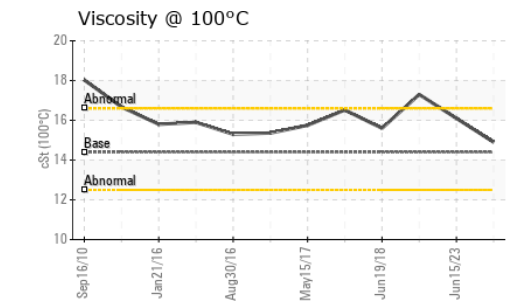
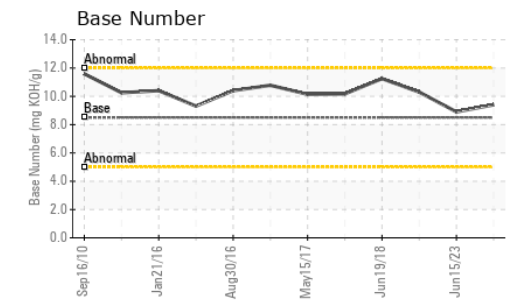
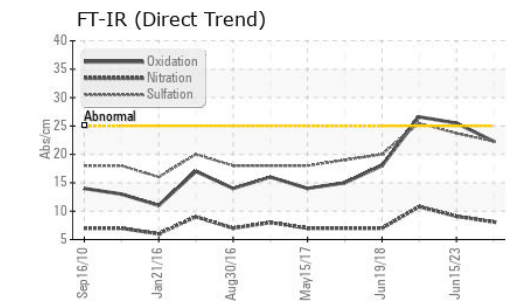
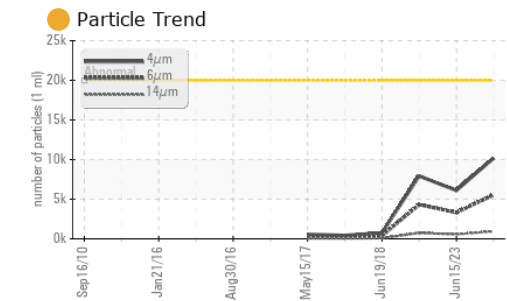
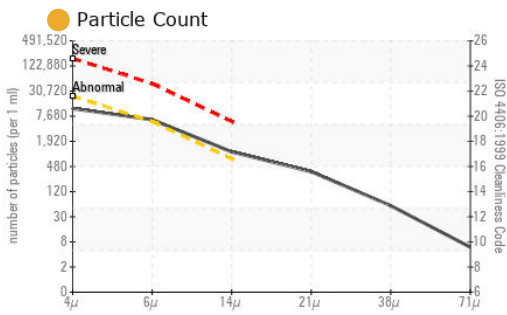
There is a moderate amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>10</b>	8	7
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	<1	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.1</b>	9.1	10.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.3</b>	23.7	25.5
Particles >4µm		ASTM D7647	>20000	<b>10179</b>	6098	7928
Particles >6µm		ASTM D7647	>5000	<b>5545</b>	3322	4319
Particles >14µm		ASTM D7647	>640	<b>944</b>	565	735
Particles >21µm		ASTM D7647	>160	<b>318</b>	190	248
Particles >38µm		ASTM D7647	>40	<b>49</b>	29	38
Particles >71µm		ASTM D7647	>10	<b>5</b>	3	4
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>21/20/17</b>	20/19/16	20/19/17
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>158	<b>3</b>	3	3
Boron	ppm	ASTM D5185m	250	<b>64</b>	67	57
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>49</b>	56	55
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m	450	<b>589</b>	677	584
Calcium	ppm	ASTM D5185m	3000	<b>1841</b>	2213	2117
Phosphorus	ppm	ASTM D5185m	1150	<b>742</b>	795	776
Zinc	ppm	ASTM D5185m	1350	<b>971</b>	1123	1047
Sulfur	ppm	ASTM D5185m	4250	<b>2566</b>	2967	2871
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>22.3</b>	25.5	26.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>9.4</b>	8.9	10.3
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.9</b>	16.1	17.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0939228 **Received** : 29 May 2024  
**Lab Number** : 06193844 **Tested** : 01 Jun 2024  
**Unique Number** : 11055967 **Diagnosed** : 01 Jun 2024 - Don Baldrige  
**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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