



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**284 (S/N 1XKWD40X7MR400484)**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 40 (--- GAL)**

## RECOMMENDATION

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>WC0851038</b>	WC0834223	WC0804085
Sample Date		Client Info		<b>29 Jan 2024</b>	28 Aug 2023	02 May 2023
Machine Age	mls	Client Info		<b>0</b>	0	0
Oil Age	mls	Client Info		<b>0</b>	0	0
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>▲ 105</b>	31	37
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	1	1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>10</b>	8	4
Lead	ppm	ASTM D5185m	>40	<b>31</b>	2	<1
Copper	ppm	ASTM D5185m	>330	<b>2</b>	0	0
Tin	ppm	ASTM D5185m	>15	<b>3</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

There is no indication of any contamination in the oil.

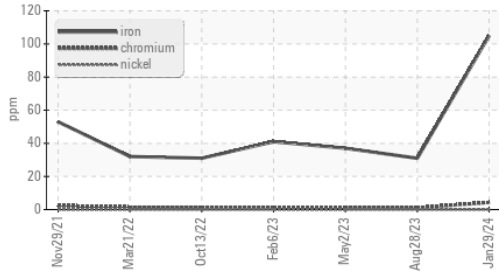
Silicon	ppm	ASTM D5185m	>25	<b>9</b>	4	6
Potassium	ppm	ASTM D5185m	>20	<b>11</b>	12	4
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2.3</b>	0.9	0.9
Nitration	Abs/cm	*ASTM D7624	>20	<b>15.8</b>	10.8	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>36.4</b>	23.7	24.0
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

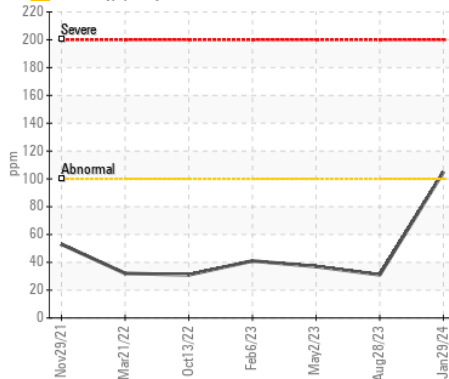
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>216	<b>3</b>	<1	1
Boron	ppm	ASTM D5185m	250	<b>2</b>	5	5
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>58</b>	57	64
Manganese	ppm	ASTM D5185m		<b>2</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>1075</b>	921	990
Calcium	ppm	ASTM D5185m	3000	<b>1252</b>	1083	1197
Phosphorus	ppm	ASTM D5185m	1150	<b>1086</b>	1001	1053
Zinc	ppm	ASTM D5185m	1350	<b>1318</b>	1293	1359
Sulfur	ppm	ASTM D5185m	4250	<b>2513</b>	3453	3166
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>36.1</b>	19.4	21.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>4.2</b>	6.5	5.3
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.9</b>	13.3	13.7

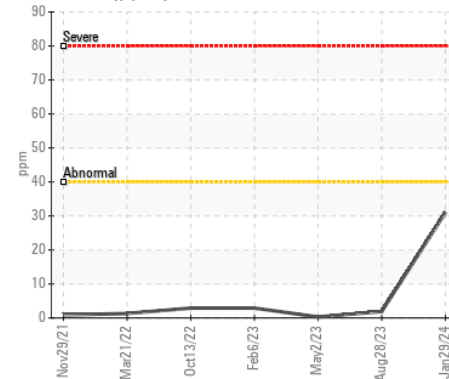
▲ Ferrous Alloys



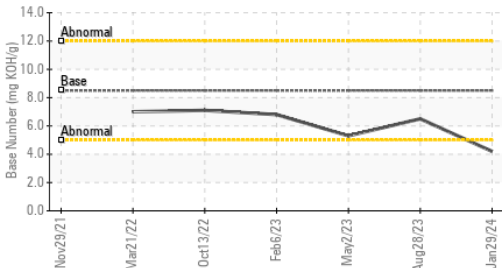
▲ Iron (ppm)



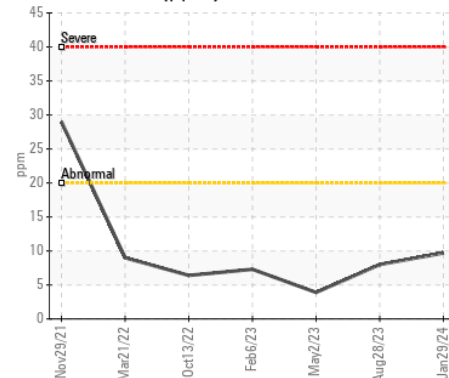
▲ Lead (ppm)



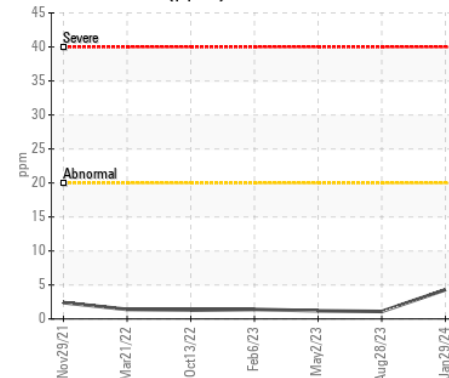
Base Number



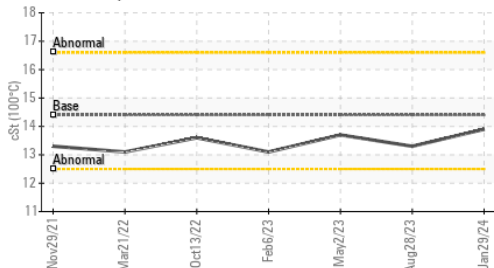
Aluminum (ppm)



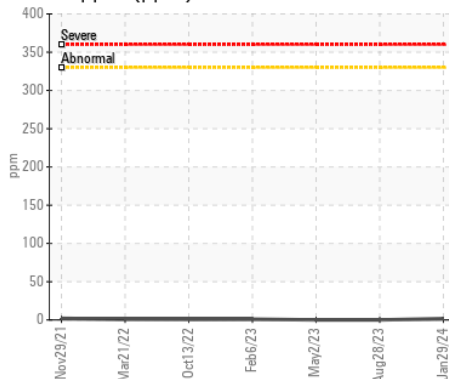
Chromium (ppm)



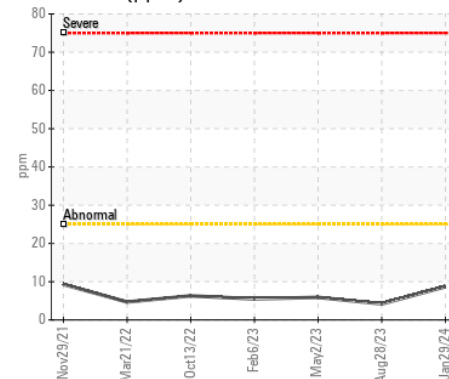
Viscosity @ 100°C



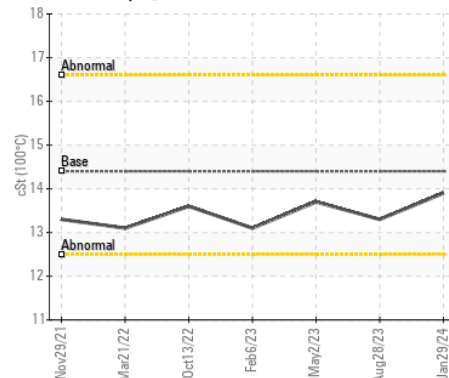
Copper (ppm)



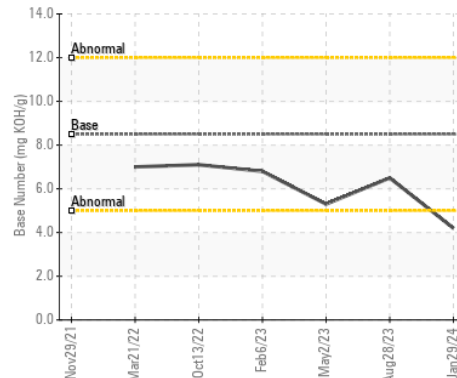
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0851038 **Received** : 31 Jan 2024  
**Lab Number** : 06076346 **Diagnosed** : 02 Feb 2024  
**Unique Number** : 10858437 **Diagnostician** : Don Baldridge  
**Test Package** : MOB 1 ( Additional Tests: 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)

**MANGUMS INC**  
 P.O. BOX 7177  
 WILSON, NC  
 US 27895

Contact: ALAN BAGLEY  
 alanb@mangumsinc.com

T:  
 F: