



# OIL ANALYSIS REPORT

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



Area  
**GM Seattle Off Road Shop**  
Machine Id  
**[GM Seattle Off Road Shop] 28-234**  
Component  
**Diesel Engine**  
Fluid  
**SHELL ROTELLA T 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PE0003399</b>	PE0001980	PE0001794
Sample Date		Client Info		<b>05 Apr 2024</b>	23 Oct 2023	06 Apr 2023
Machine Age	hrs	Client Info		<b>3121</b>	2796	2076
Oil Age	hrs	Client Info		<b>325</b>	720	676
Filter Age	hrs	Client Info		<b>0</b>	720	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>8</b>	30	14
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>3</b>	5	4
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>6</b>	56	47
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
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.

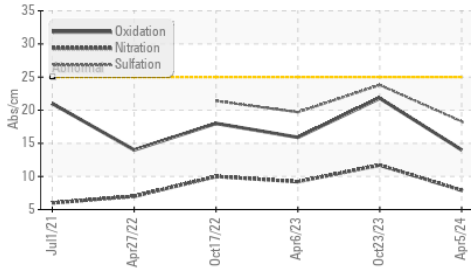
Silicon	ppm	ASTM D5185m	>25	<b>3</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	<1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.9</b>	11.7	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.3</b>	23.8	19.7
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

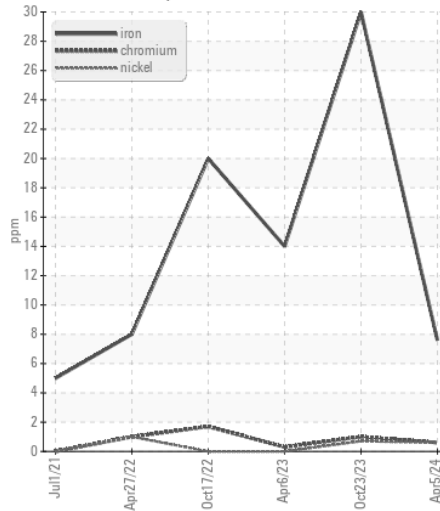
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Boron	ppm	ASTM D5185m	316	<b>48</b>	26	43
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m	1.2	<b>36</b>	43	40
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>506</b>	254	258
Calcium	ppm	ASTM D5185m	2292	<b>1502</b>	1835	1721
Phosphorus	ppm	ASTM D5185m	1064	<b>1009</b>	826	836
Zinc	ppm	ASTM D5185m	1160	<b>1113</b>	1039	1072
Sulfur	ppm	ASTM D5185m	4996	<b>3568</b>	3074	3360
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.0</b>	21.8	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>8.8</b>	5.2	6.0
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.4</b>	12.9	13.2

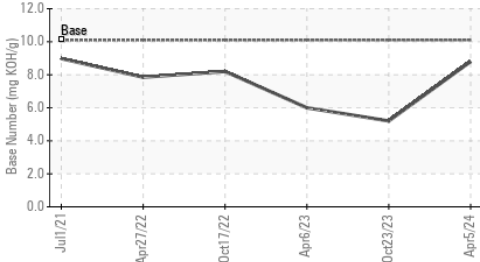
**FT-IR (Direct Trend)**



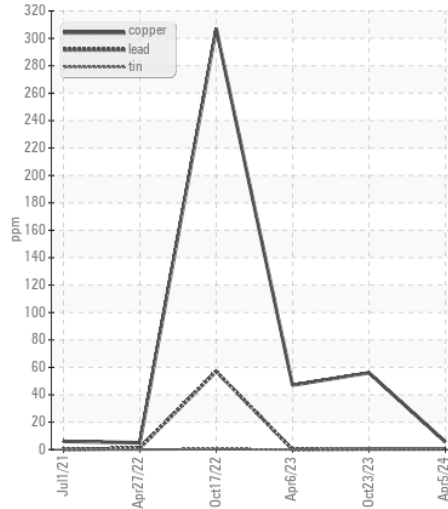
**Ferrous Alloys**



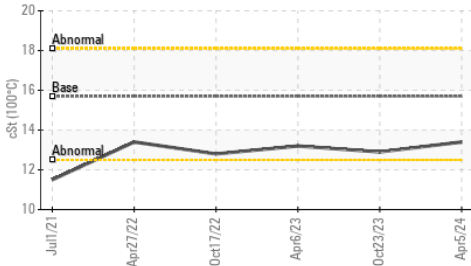
**Base Number**



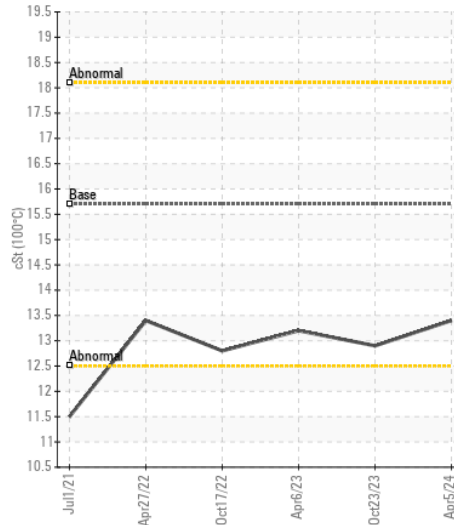
**Non-ferrous Metals**



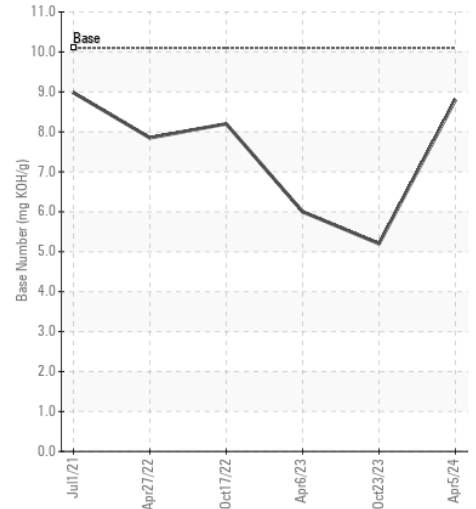
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0003399 **Received** : 22 Apr 2024  
**Lab Number** : 06156722 **Tested** : 23 Apr 2024  
**Unique Number** : 10992145 **Diagnosed** : 24 Apr 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

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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)