



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
GM SEATTLE OFF ROAD SHOP
Machine Id
[GM SEATTLE OFF ROAD SHOP] 24-752
Component
Diesel Engine
Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0003402	PE0001990	PE0002199
Sample Date		Client Info		20 Mar 2024	17 Oct 2023	28 Jun 2023
Machine Age	hrs	Client Info		1010	805	502
Oil Age	hrs	Client Info		507	303	502
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changed	Changed
Filter Changed		Client Info		Changed	None	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	13	6	28
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>25	3	2	4
Lead	ppm	ASTM D5185m	>40	1	0	0
Copper	ppm	ASTM D5185m	>330	4	2	6
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

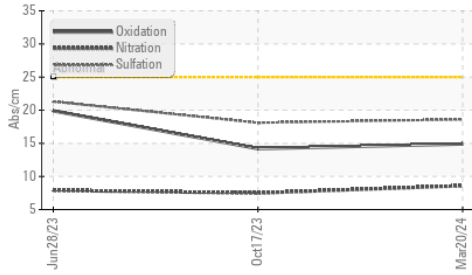
Silicon	ppm	ASTM D5185m	>25	6	5	16
Potassium	ppm	ASTM D5185m	>20	2	3	<1
Fuel		WC Method	>5	<1.0	<1.0	▲ 2.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.6	7.5	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	18.1	21.3
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

FLUID CONDITION

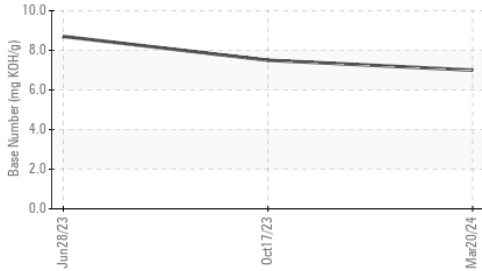
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>150	0	1	<1
Boron	ppm	ASTM D5185m		60	66	43
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		62	56	42
Manganese	ppm	ASTM D5185m		1	<1	5
Magnesium	ppm	ASTM D5185m		165	157	431
Calcium	ppm	ASTM D5185m		1833	1758	1686
Phosphorus	ppm	ASTM D5185m		975	872	879
Zinc	ppm	ASTM D5185m		1099	1077	1104
Sulfur	ppm	ASTM D5185m		3508	3201	3669
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	14.2	19.9
Base Number (BN)	mg KOH/g	ASTM D2896		7.0	7.5	8.7
Visc @ 100°C	cSt	ASTM D445		12.9	13.2	▲ 10.7

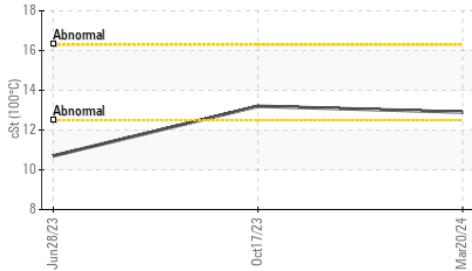
FT-IR (Direct Trend)



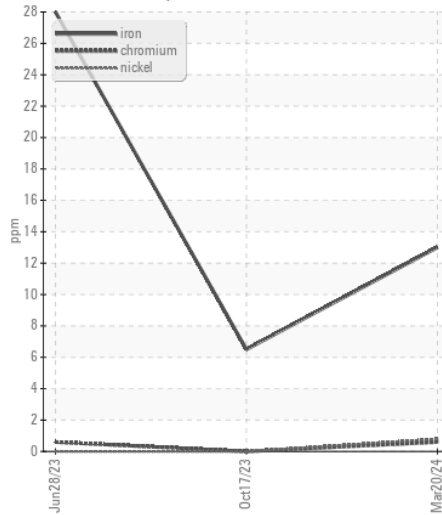
Base Number



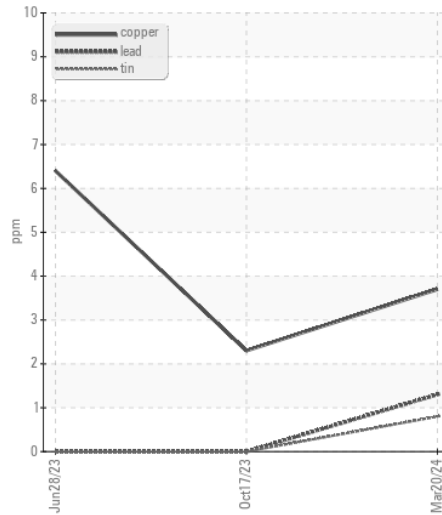
Viscosity @ 100°C



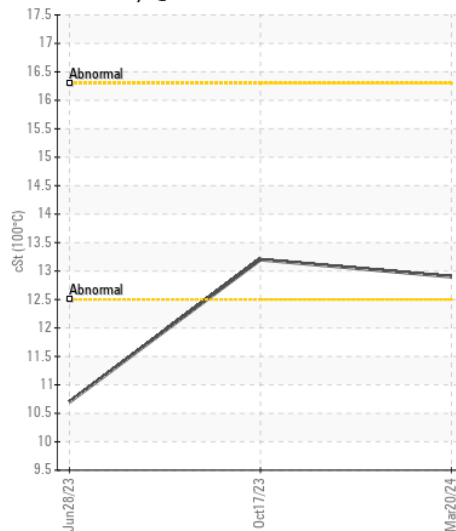
Ferrous Alloys



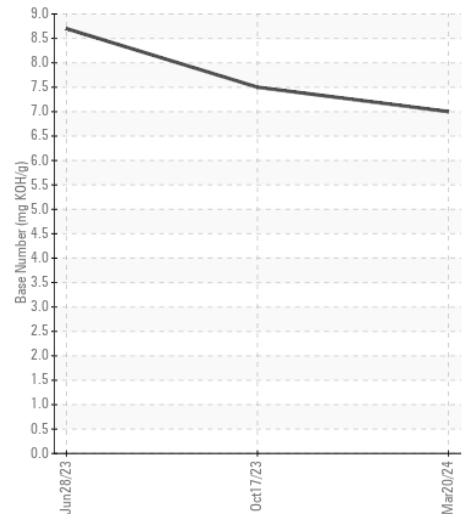
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003402
Lab Number : 06156720
Unique Number : 10992143
Test Package : CONST (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

Received : 22 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 24 Apr 2024 - Sean Felton

Gary Merlino Construction - Off Road Shop
 9125 10TH AVE SOUTH
 SEATTLE, WA
 US 98108
 Contact: Jesse Patterson
 oilsamples@gmccinc.com

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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F: