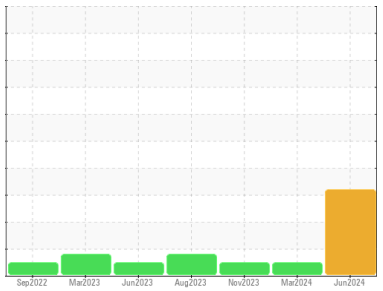
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
(BC93221)
Machine Id
527043
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.

Wear
A decrease in the iron level is noted.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0100015**	GFL0101652	GFL0094862
Sample Date		Client Info		**10 Jun 2024**	13 Mar 2024	06 Nov 2023
Machine Age	hrs	Client Info		**20324**	19868	19062
Oil Age	hrs	Client Info		**500**	51	409
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<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	>80	▲ **106**	12	43
Chromium	ppm	ASTM D5185m	>4	**8**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**2**	0	0
Titanium	ppm	ASTM D5185m	>2	**<1**	0	0
Silver	ppm	ASTM D5185m	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>10	● **14**	2	<1
Lead	ppm	ASTM D5185m	>15	**3**	<1	4
Copper	ppm	ASTM D5185m	>230	**16**	6	240
Tin	ppm	ASTM D5185m	>4	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**6**	7	26
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**54**	65	51
Manganese	ppm	ASTM D5185m	0	**2**	0	0
Magnesium	ppm	ASTM D5185m	1010	**837**	946	650
Calcium	ppm	ASTM D5185m	1070	**990**	1120	1736
Phosphorus	ppm	ASTM D5185m	1150	**885**	1077	1001
Zinc	ppm	ASTM D5185m	1270	**1096**	1226	1255
Sulfur	ppm	ASTM D5185m	2060	**2798**	3366	2844

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **36**	4	9
Sodium	ppm	ASTM D5185m		**5**	2	2
Potassium	ppm	ASTM D5185m	>20	**5**	<1	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.4**	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**8.6**	5.8	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.8**	17.7	22.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.1**	13.8	20.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.3**	8.5	9.0

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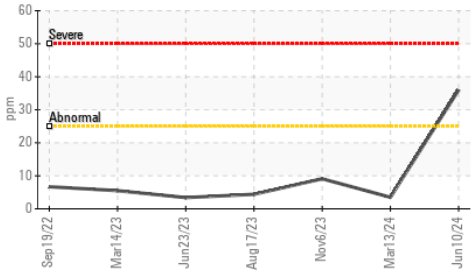
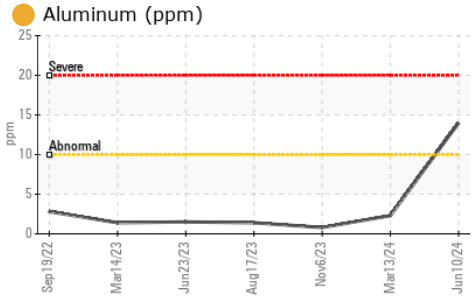
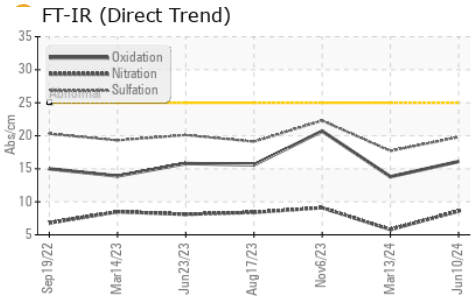
Silicon (ppm)



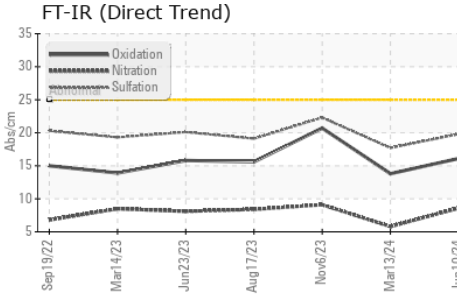
Aluminum (ppm)



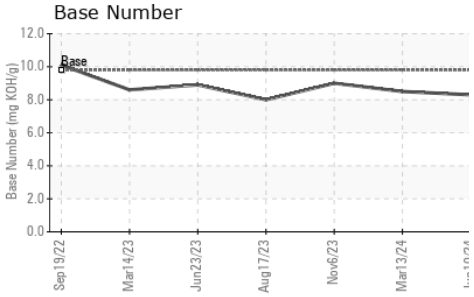
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

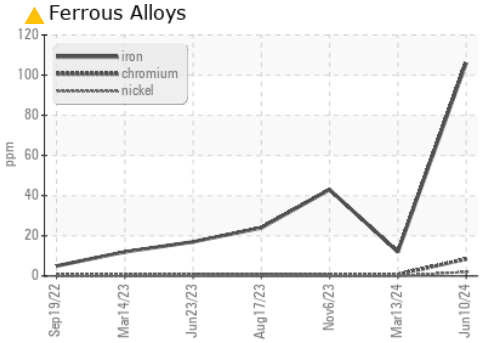


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

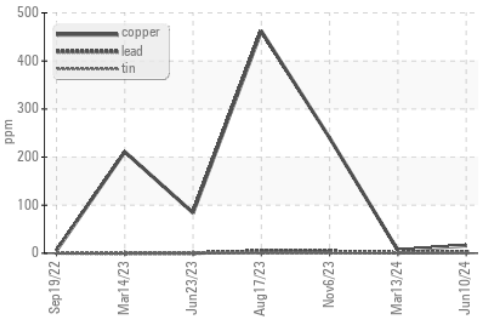
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**13.3**	13.4	13.2

GRAPHS

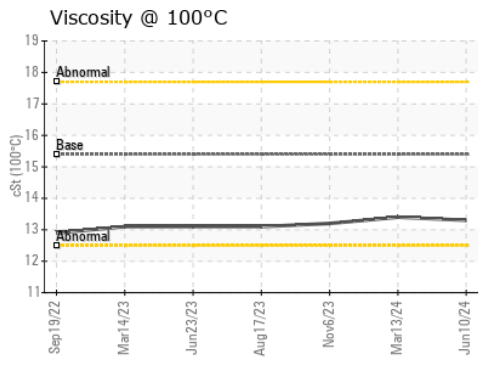
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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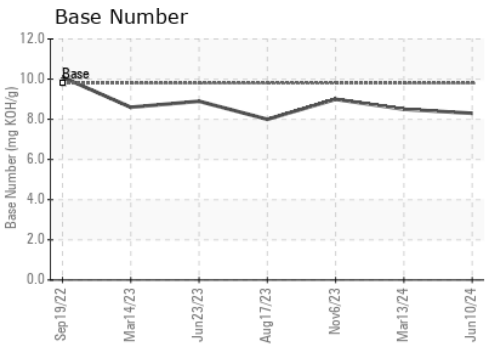

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0100015
Lab Number : 06211286
Unique Number : 11084150
Test Package : FLEET

Received : 17 Jun 2024
Tested : 18 Jun 2024
Diagnosed : 18 Jun 2024 - Angela Borella

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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US 48617
Contact: Glenda Standen
gstanden@gflenv.com
T:
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Report Id: GFL625 [WUSCAR] 06211286 (Generated: 06/21/2024 22:13:21) Rev: 1

Submitted By: GARY BREWER