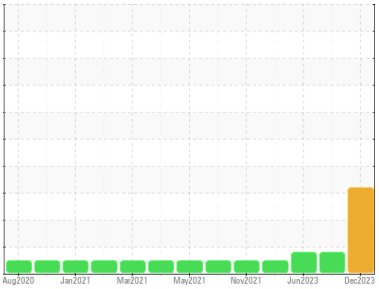
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
427033-4033
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend an early resample to monitor this condition.

Wear
The chromium level is abnormal. Ring wear is indicated.

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 suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0098185**	GFL0098249	GFL0083849
Sample Date		Client Info		**12 Dec 2023**	17 Nov 2023	13 Jun 2023
Machine Age	hrs	Client Info		**15292**	15103	6816
Oil Age	hrs	Client Info		**7005**	15103	6816
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

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	>110	**109**	71	82
Chromium	ppm	ASTM D5185m	>4	▲ **9**	▲ 6	▲ 6
Nickel	ppm	ASTM D5185m	>2	**<1**	0	1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	▲ **12**	8	8
Lead	ppm	ASTM D5185m	>45	**10**	5	13
Copper	ppm	ASTM D5185m	>85	**4**	3	5
Tin	ppm	ASTM D5185m	>4	**2**	<1	2
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**16**	13	30
Barium	ppm	ASTM D5185m	0	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	60	**75**	69	81
Manganese	ppm	ASTM D5185m	0	**1**	<1	1
Magnesium	ppm	ASTM D5185m	1010	**1154**	1119	1199
Calcium	ppm	ASTM D5185m	1070	**1455**	1310	1446
Phosphorus	ppm	ASTM D5185m	1150	**1276**	1076	1263
Zinc	ppm	ASTM D5185m	1270	**1542**	1428	1557
Sulfur	ppm	ASTM D5185m	2060	**3412**	3155	3885

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	▲ **37**	26	24
Sodium	ppm	ASTM D5185m		**11**	8	7
Potassium	ppm	ASTM D5185m	>20	**7**	2	3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.6**	0.4	0.6
Nitration	Abs/cm	*ASTM D7624	>20	**14.6**	13.1	14.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**30.8**	27.0	27.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**32.6**	26.8	26.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**4.8**	6.1	7.4

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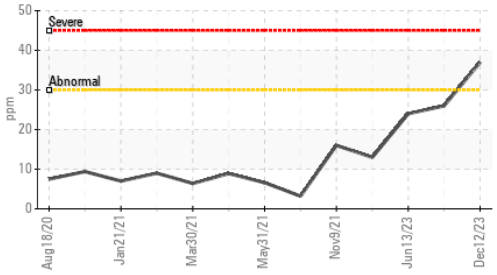
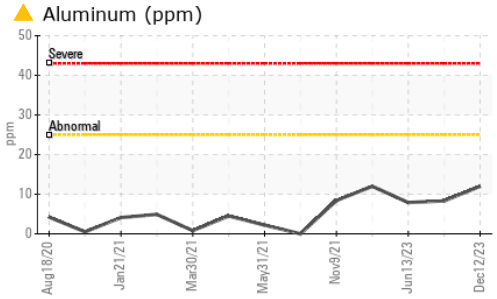
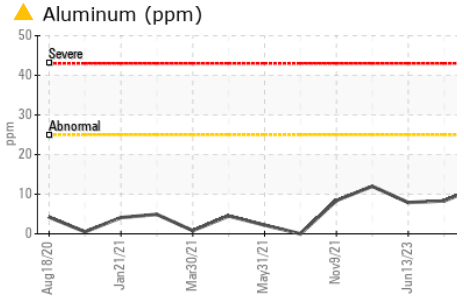
Silicon (ppm)



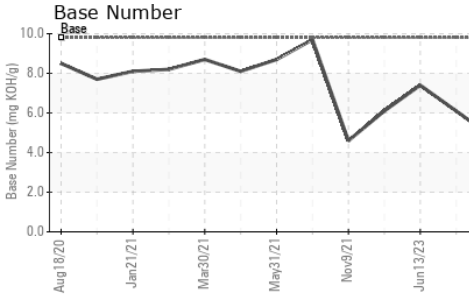
Aluminum (ppm)



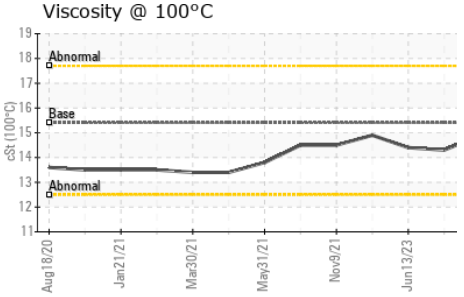
Aluminum (ppm)



Base Number



Viscosity @ 100°C

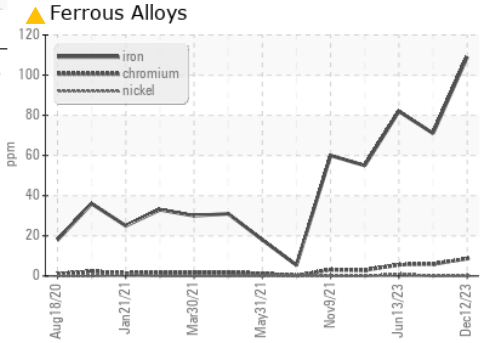


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

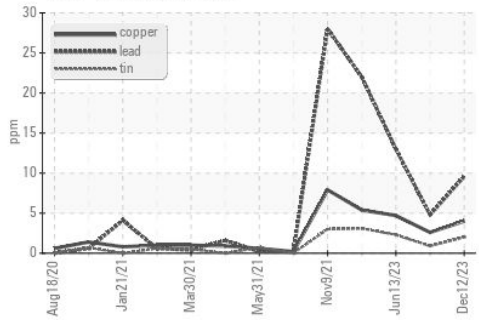
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.9**	14.3	14.4

GRAPHS

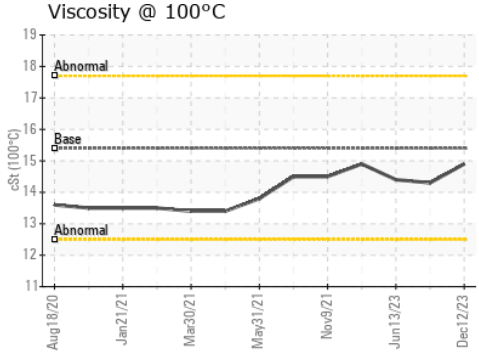
Ferrous Alloys



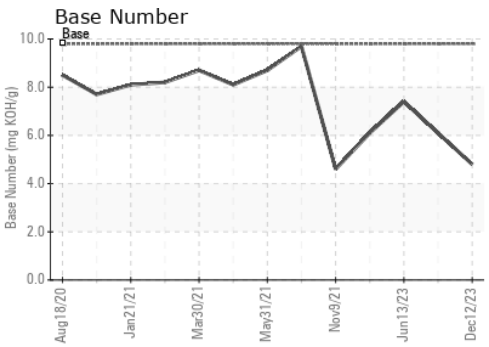
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0098185
Lab Number : 06035630
Unique Number : 10790859
Test Package : FLEET

Recieved : 15 Dec 2023
Diagnosed : 22 Dec 2023
Diagnostician : Jonathan Hester

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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Report Id: GFL652 [WUSCAR] 06035630 (Generated: 12/22/2023 08:02:11) Rev: 1

Submitted By: TECHNICIAN ACCOUNT