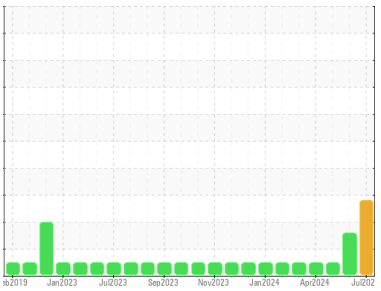
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
227055-632109
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0128558**	GFL0123027	GFL0119410
Sample Date		Client Info		**06 Jul 2024**	31 May 2024	22 Apr 2024
Machine Age	hrs	Client Info		**7884**	7698	7526
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	>100	**23**	12	30
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	1
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m	>2	**0**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**5**	4	6
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**3**	1	2
Tin	ppm	ASTM D5185m	>15	**0**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**16**	47	21
Barium	ppm	ASTM D5185m	0	**0**	2	0
Molybdenum	ppm	ASTM D5185m	60	**82**	96	67
Manganese	ppm	ASTM D5185m	0	**<1**	0	<1
Magnesium	ppm	ASTM D5185m	1010	**190**	177	1007
Calcium	ppm	ASTM D5185m	1070	**2136**	2117	1116
Phosphorus	ppm	ASTM D5185m	1150	**993**	1012	1095
Zinc	ppm	ASTM D5185m	1270	**1149**	1231	1301
Sulfur	ppm	ASTM D5185m	2060	**3650**	3877	3653

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **35**	▲ 33	10
Sodium	ppm	ASTM D5185m		**5**	0	2
Potassium	ppm	ASTM D5185m	>20	**<1**	2	0
Fuel	%	ASTM D3524	>5	▲ **5.3**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**11.2**	8.9	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.3**	19.3	20.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.9**	15.3	16.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**5.8**	7.1	9.1

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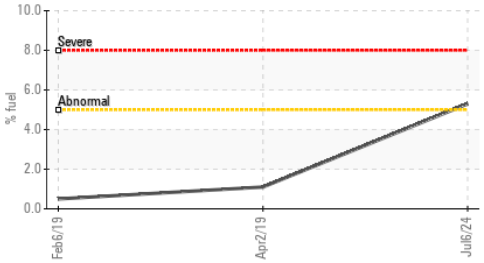
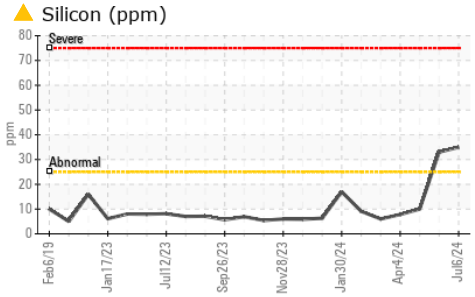
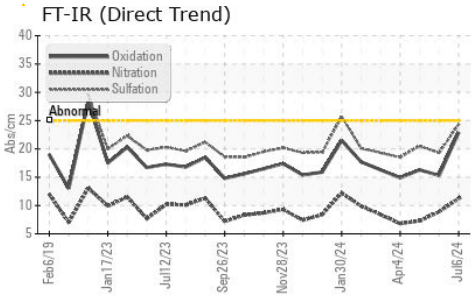
Fuel Dilution



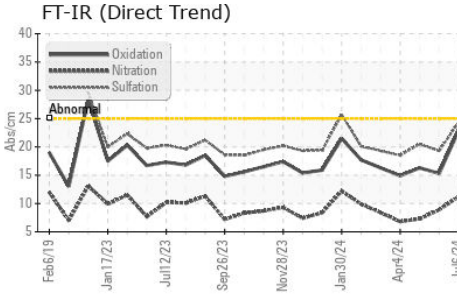
Silicon (ppm)



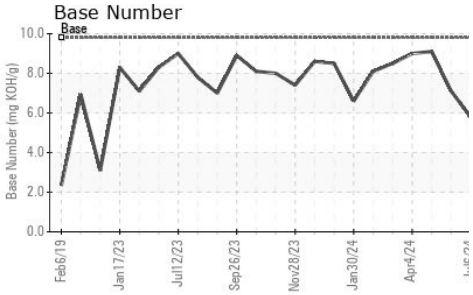
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

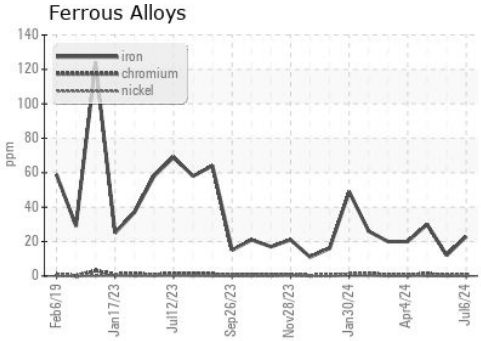


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

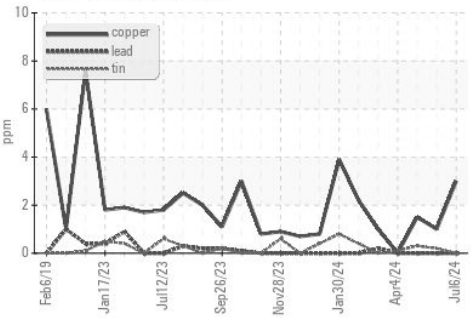
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **12.4**	13.5	14.7

GRAPHS

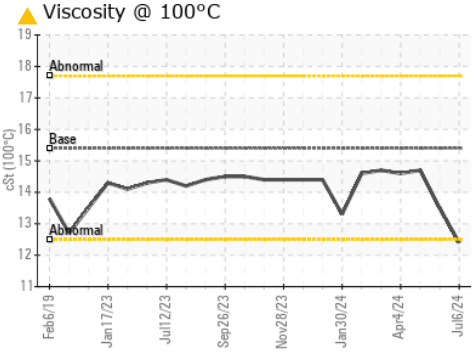
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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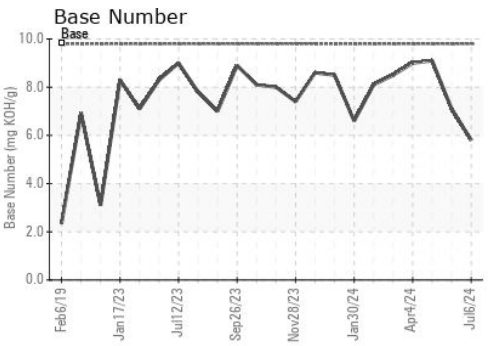

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0128558
Lab Number : 06234279
Unique Number : 11123113
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 11 Jul 2024
Tested : 16 Jul 2024
Diagnosed : 16 Jul 2024 - 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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LIttle Rock, AR
US 72117
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T:
F:

Report Id: GFL814 [WUSCAR] 06234279 (Generated: 07/16/2024 15:35:51) Rev: 1

Submitted By: Nicole Walls