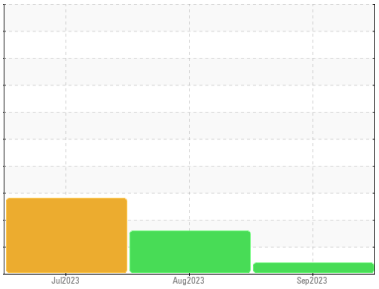
PROBLEM SUMMARY

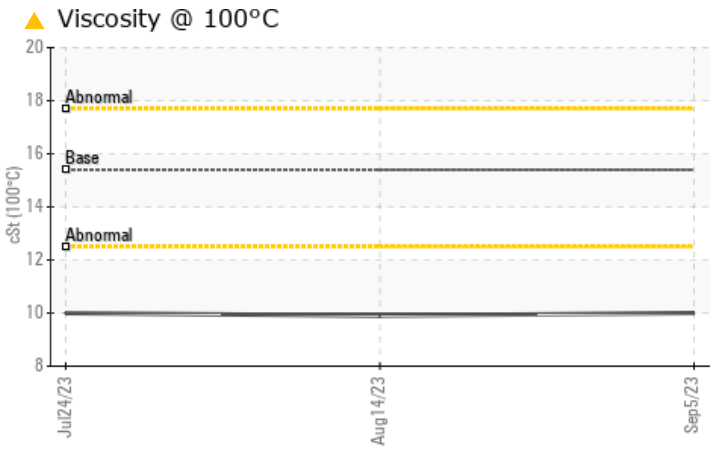
Sample Rating Trend



VISCOSITY

Machine Id
414050
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ATTENTION	ABNORMAL	ABNORMAL
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.0**	9.9	▲ 10.0

Customer Id: GFL814
Sample No.: GFL0091001
Lab Number: 05947788
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.

HISTORICAL DIAGNOSIS

14 Aug 2023 Diag: Sean Felton

DIRT

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.Metal levels are typical for a new component breaking in. Elemental level of silicon (Si) above normal indicating ingress of seal material. 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.

view report

24 Jul 2023 Diag: Sean Felton

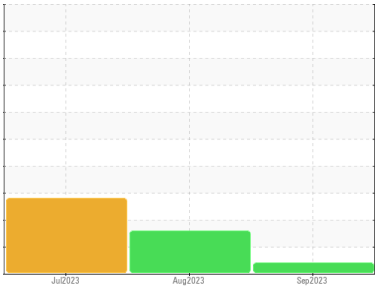
DIRT

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Tests indicate that there is no fuel present in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Machine Id
414050
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
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 no indication of any contamination in the oil.

Fluid Condition
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0091001**	GFL0090994	GFL0082718
Sample Date		Client Info		**05 Sep 2023**	14 Aug 2023	24 Jul 2023
Machine Age	hrs	Client Info		**571**	419	277
Oil Age	hrs	Client Info		**0**	142	277
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ATTENTION**	ABNORMAL	ABNORMAL

CONTAMINATION	method	limit/base	current	history1	history2
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**29**	23	18
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**1**	2	1
Aluminum	ppm	ASTM D5185m	>20	**13**	12	▲ 11
Lead	ppm	ASTM D5185m	>40	**0**	2	0
Copper	ppm	ASTM D5185m	>330	**269**	206	92
Tin	ppm	ASTM D5185m	>15	**3**	2	2
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

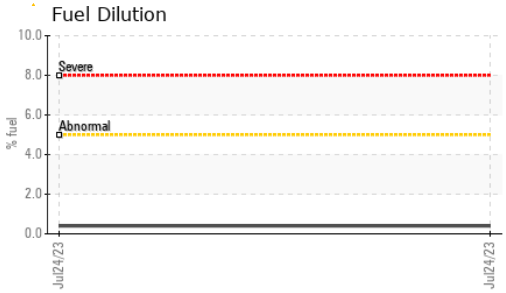
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**195**	262	302
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**120**	117	118
Manganese	ppm	ASTM D5185m	0	**4**	3	3
Magnesium	ppm	ASTM D5185m	1010	**773**	725	759
Calcium	ppm	ASTM D5185m	1070	**1480**	1458	1450
Phosphorus	ppm	ASTM D5185m	1150	**701**	684	734
Zinc	ppm	ASTM D5185m	1270	**844**	826	887
Sulfur	ppm	ASTM D5185m	2060	**2696**	2677	2967

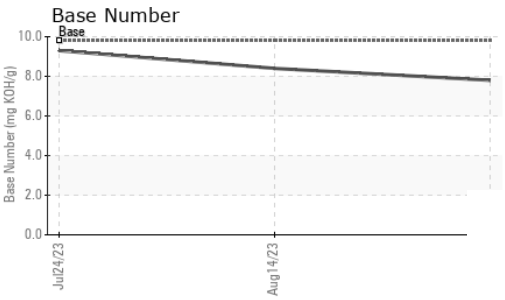
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**83**	▲ 79	▲ 83
Sodium	ppm	ASTM D5185m		**4**	4	4
Potassium	ppm	ASTM D5185m	>20	**29**	26	21
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	0.4

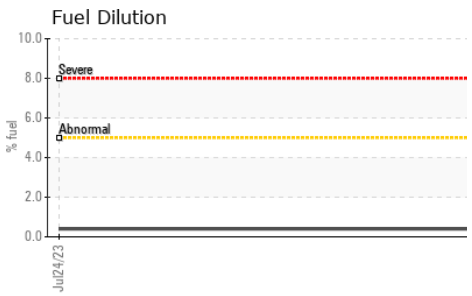
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**9.4**	8.4	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.4**	23.9	25.0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.0**	21.0	20.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**7.8**	8.4	9.3

OIL ANALYSIS REPORT





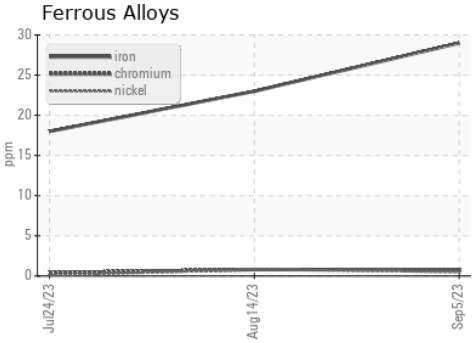


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

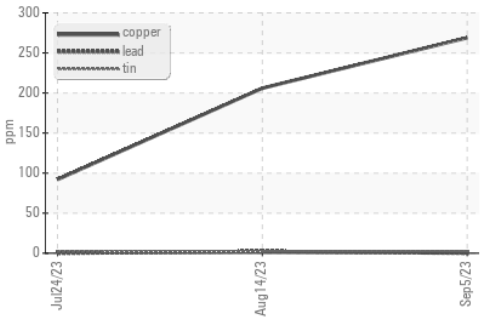
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **10.0**	9.9	▲ 10.0

GRAPHS

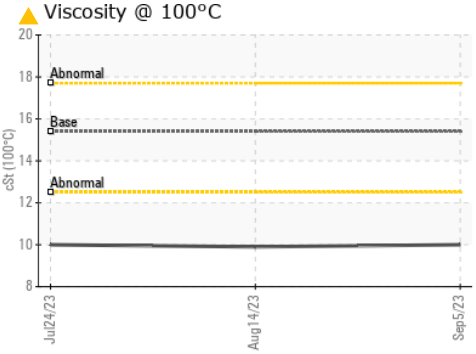
Ferrous Alloys



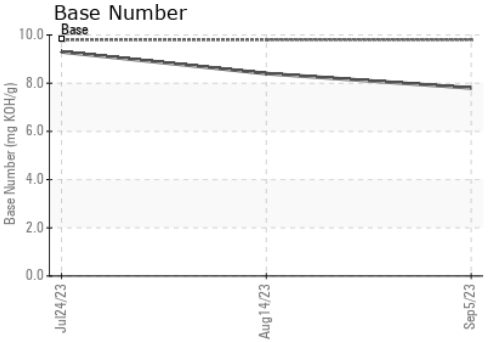
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0091001 **Received** : 12 Sep 2023
Lab Number : 05947788 **Diagnosed** : 14 Sep 2023
Unique Number : 10643747 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution)

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 72117
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Report Id: GFL814 [WUSCAR] 05947788 (Generated: 09/14/2023 09:46:29) Rev: 1

Submitted By: Nicole Walls