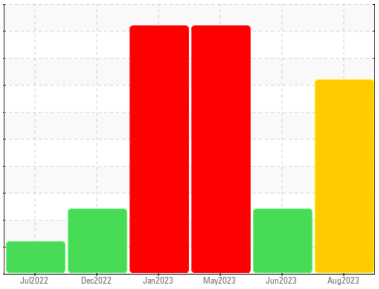
PROBLEM SUMMARY

Machine Id
422101
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

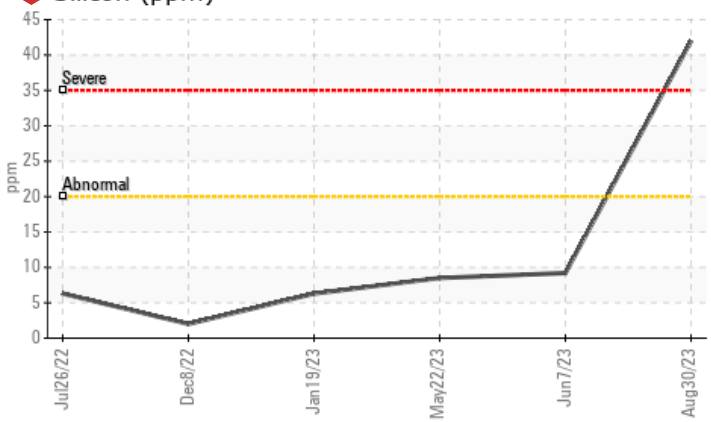
Sample Rating Trend



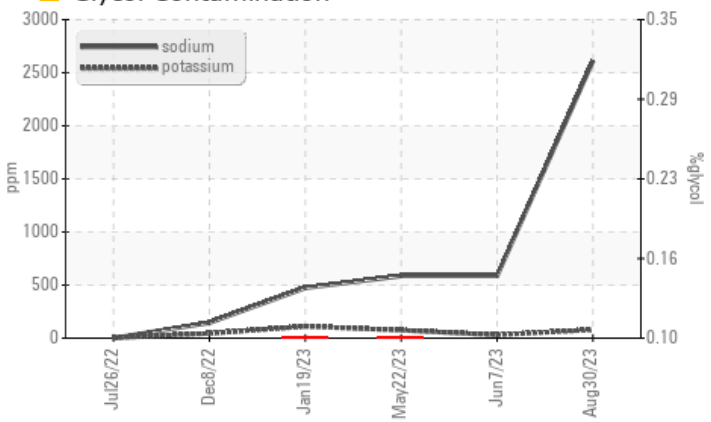
DIRT

COMPONENT CONDITION SUMMARY

Silicon (ppm)



Glycol Contamination



RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	ABNORMAL	SEVERE
Silicon	ppm	ASTM D5185m	>20	**42**	9	8
Sodium	ppm	ASTM D5185m		**2610**	586	586
Potassium	ppm	ASTM D5185m	>20	**79**	30	75

Customer Id: GFL419
Sample No.: GFL0072532
Lab Number: 05943316
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	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

07 Jun 2023 Diag: Jonathan Hester

GLYCOL

We advise that you check for possible coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

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22 May 2023 Diag: Don Baldridge

GLYCOL

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). Sodium and/or potassium levels are high. Test for glycol is positive. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

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19 Jan 2023 Diag: Jonathan Hester

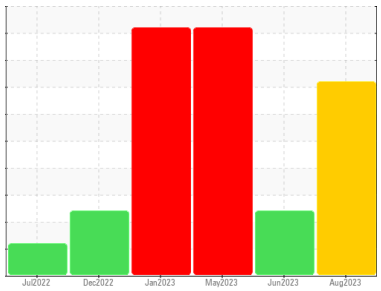
GLYCOL

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). Sodium and/or potassium levels are high. Test for glycol is positive. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
422101
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
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		**GFL0072532**	GFL0068294	GFL0068325
Sample Date		Client Info		**30 Aug 2023**	07 Jun 2023	22 May 2023
Machine Age	hrs	Client Info		**20913**	20913	20913
Oil Age	hrs	Client Info		**20913**	20913	20913
Oil Changed		Client Info		**Not Changd**	N/A	Changed
Sample Status				**SEVERE**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	**23**	6	18
Chromium	ppm	ASTM D5185m	>5	**5**	<1	2
Nickel	ppm	ASTM D5185m	>2	**0**	0	<1
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m	>3	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>30	**3**	0	4
Lead	ppm	ASTM D5185m	>30	**0**	0	4
Copper	ppm	ASTM D5185m	>150	**89**	68	▲ 279
Tin	ppm	ASTM D5185m	>5	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**35**	12	8
Barium	ppm	ASTM D5185m	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	60	**155**	82	78
Manganese	ppm	ASTM D5185m	0	**1**	<1	1
Magnesium	ppm	ASTM D5185m	1010	**921**	940	927
Calcium	ppm	ASTM D5185m	1070	**1087**	1085	1086
Phosphorus	ppm	ASTM D5185m	1150	**816**	1032	922
Zinc	ppm	ASTM D5185m	1270	**1253**	1242	1159
Sulfur	ppm	ASTM D5185m	2060	**3546**	3560	2551

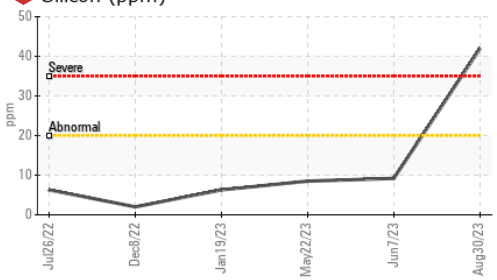
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	⬢ **42**	9	8
Sodium	ppm	ASTM D5185m		▲ **2610**	▲ 586	▲ 586
Potassium	ppm	ASTM D5185m	>20	▲ **79**	▲ 30	▲ 75
Glycol	%	*ASTM D2982		**NEG**	NEG	⬢ 0.10

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.3**	0.3	0.6
Nitration	Abs/cm	*ASTM D7624	>20	**15.4**	7.6	10.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**25.9**	19.5	21.4

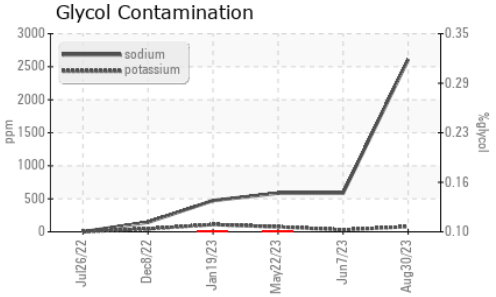
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.9**	14.3	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**14.7**	10.2	8.3

OIL ANALYSIS REPORT

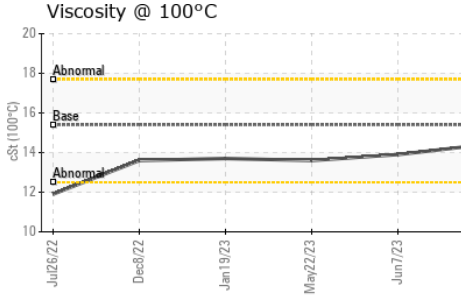
Silicon (ppm)



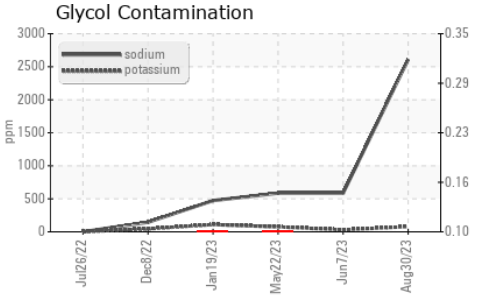
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

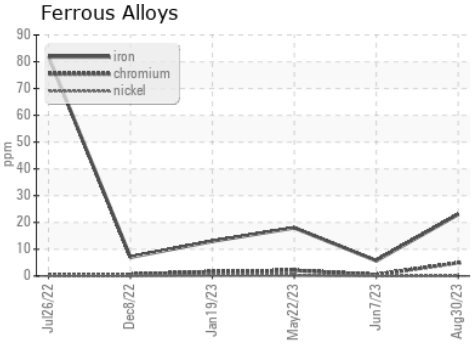


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

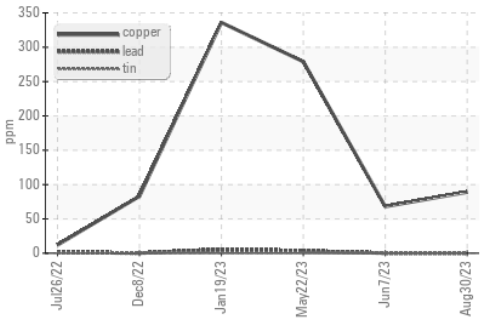
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**14.4**	13.9	13.6

GRAPHS

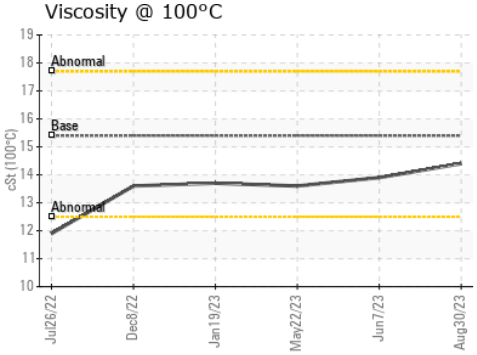
Ferrous Alloys



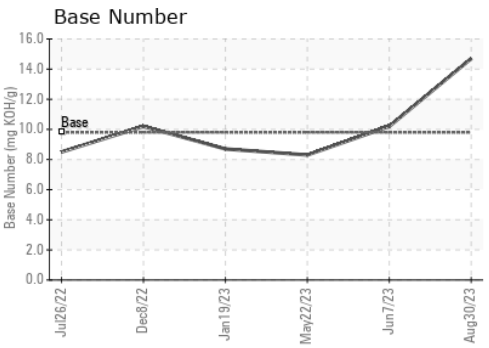
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0072532 **Received** : 06 Sep 2023
Lab Number : 05943316 **Diagnosed** : 08 Sep 2023
Unique Number : 10633928 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

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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T: (800)684-1277
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