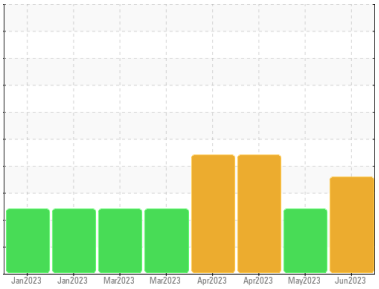
PROBLEM SUMMARY

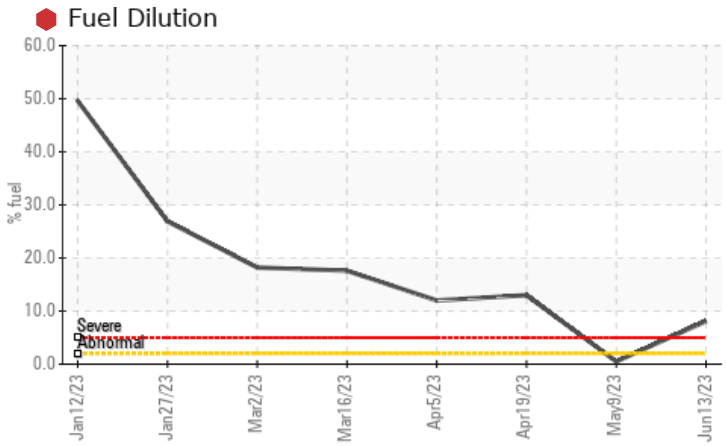
Sample Rating Trend

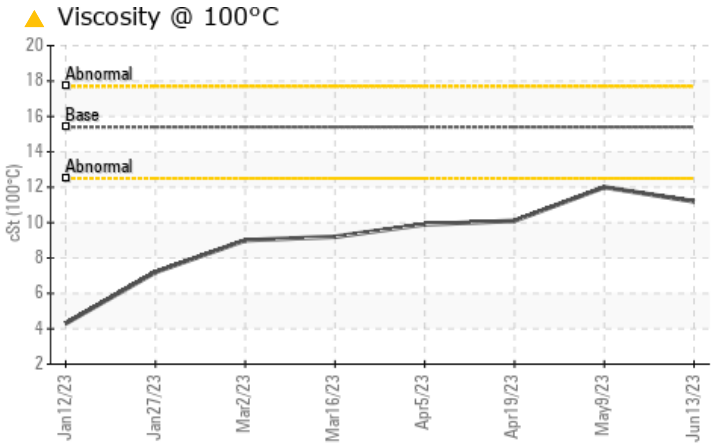


FUEL

Area
ALEXANDER CITY
Machine Id
811071
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. 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
Fuel	%	ASTM D3524	>2.0	**8.1**	0.5	13.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**3.1**	8.8	2.5
Visc @ 100°C	cSt	ASTM D445	15.4	**11.2**	12.0	10.1

Customer Id: GFL172
Sample No.: GFL0081900
Lab Number: 05874885
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	MISSED	Jul 07 2023	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	MISSED	Jul 07 2023	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	MISSED	Jul 07 2023	?	We advise that you check the fuel injection system.

HISTORICAL DIAGNOSIS

09 May 2023 Diag: Doug Bogart

DIRT

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.All component wear rates are normal. Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

19 Apr 2023 Diag: Doug Bogart

FUEL

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.Cylinder, crank, or cam shaft wear is indicated. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

05 Apr 2023 Diag: Doug Bogart

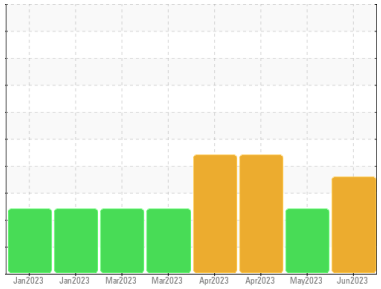
FUEL

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.Cylinder, crank, or cam shaft wear is indicated. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
ALEXANDER CITY
Machine Id
811071
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. 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
There is a high amount of fuel present in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0081900**	GFL0081846	GFL0072590
Sample Date		Client Info		**13 Jun 2023**	09 May 2023	19 Apr 2023
Machine Age	hrs	Client Info		**10701**	10522	10465
Oil Age	hrs	Client Info		**10701**	10522	10383
Oil Changed		Client Info		**Not Changd**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	SEVERE

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	**115**	32	▲ 111
Chromium	ppm	ASTM D5185m	>20	**4**	1	4
Nickel	ppm	ASTM D5185m	>4	**<1**	2	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	1	0
Aluminum	ppm	ASTM D5185m	>20	**15**	▲ 20	9
Lead	ppm	ASTM D5185m	>40	**4**	0	5
Copper	ppm	ASTM D5185m	>330	**6**	45	6
Tin	ppm	ASTM D5185m	>15	**1**	4	<1
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	**25**	260	24
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**66**	123	66
Manganese	ppm	ASTM D5185m	0	**2**	4	2
Magnesium	ppm	ASTM D5185m	1010	**441**	715	310
Calcium	ppm	ASTM D5185m	1070	**1685**	1490	1531
Phosphorus	ppm	ASTM D5185m	1150	**944**	736	840
Zinc	ppm	ASTM D5185m	1270	**1208**	935	1004
Sulfur	ppm	ASTM D5185m	2060	**3368**	3257	2631

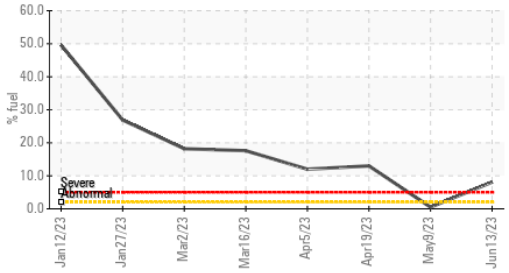
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**20**	▲ 78	20
Sodium	ppm	ASTM D5185m		**6**	4	4
Potassium	ppm	ASTM D5185m	>20	**2**	47	2
Fuel	%	ASTM D3524	>2.0	● **8.1**	0.5	● 13.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	0.2	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**16.7**	8.7	16.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**33.8**	25.4	32.9

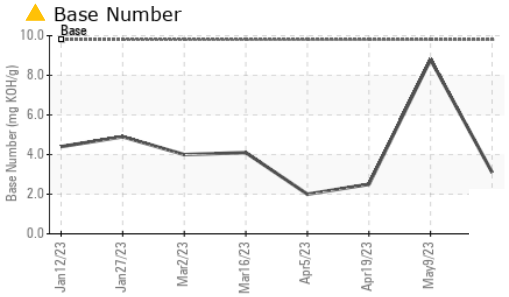
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**39.6**	22.2	38.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **3.1**	8.8	▲ 2.5

OIL ANALYSIS REPORT

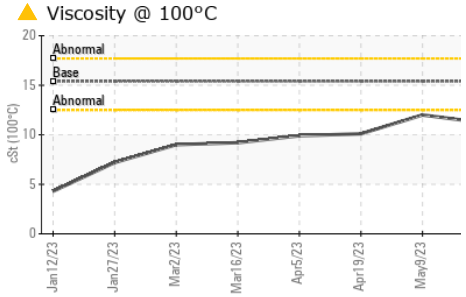
Fuel Dilution



Base Number



Viscosity @ 100°C

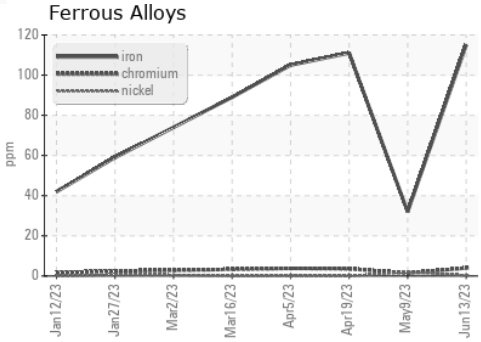


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

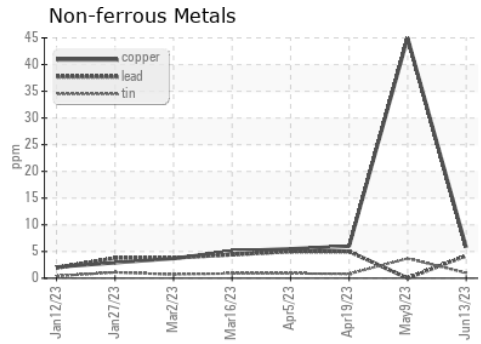
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **11.2**	12.0	▲ 10.1

GRAPHS

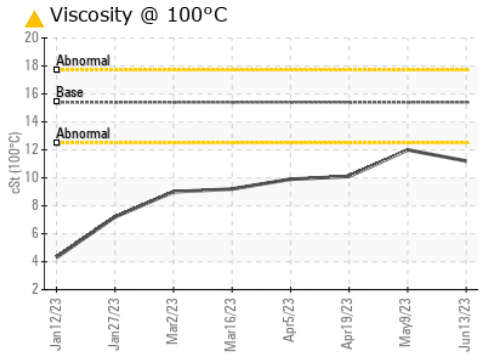
Ferrous Alloys



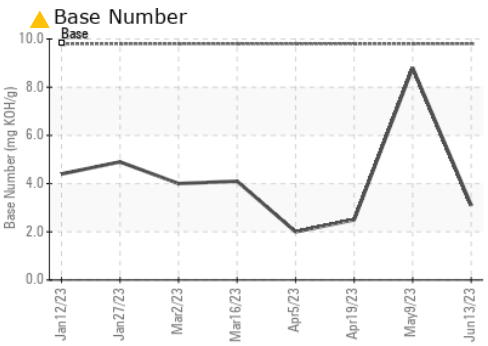
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0081900 **Received** : 15 Jun 2023
Lab Number : 05874885 **Diagnosed** : 19 Jun 2023
Unique Number : 10519988 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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