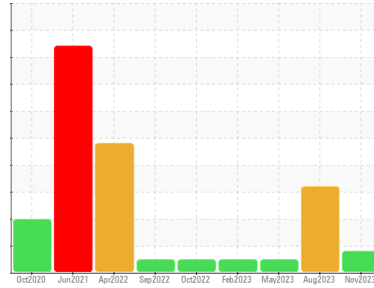




PROBLEM SUMMARY

Sample Rating Trend



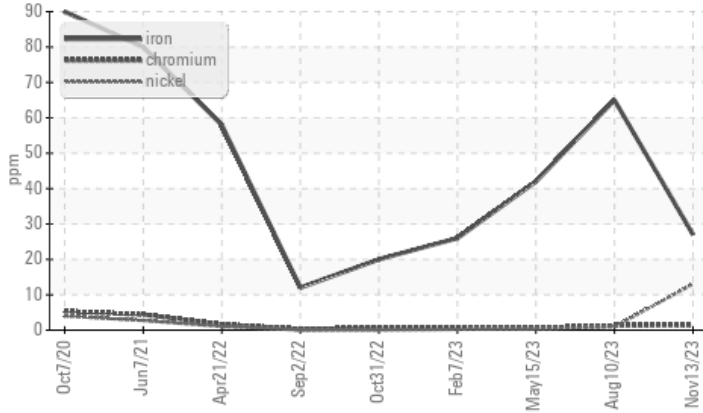
Machine Id
228031-209

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status	ABNORMAL	SEVERE	NORMAL
Nickel	▲ 13	<1	<1

Customer Id: GFL657
Sample No.: GFL0058101
Lab Number: 06007434
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldrige +1
don.b505@comcast.net

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

10 Aug 2023 Diag: Wes Davis

FUEL



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. Aluminum ppm levels are abnormal. Piston wear is indicated. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report



15 May 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



07 Feb 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

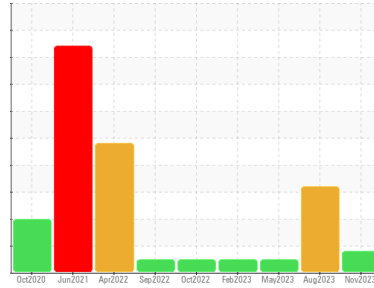
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
228031-209

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)

DIAGNOSIS

Recommendation

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.

Wear

Valve wear is indicated. All other component wear rates are normal.

Contamination

Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

Fluid Condition

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.

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	GFL0058101	GFL0058043	GFL0082501	
Sample Date	Client Info	13 Nov 2023	10 Aug 2023	15 May 2023	
Machine Age	mls	Client Info	265234	263740	310
Oil Age	mls	Client Info	100	1390	281
Oil Changed	Client Info	Changed	Not Changd	Not Changd	
Sample Status		ABNORMAL	SEVERE	NORMAL	

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 >150	27	65	42
Chromium	ppm	ASTM D5185m >10	1	1	<1
Nickel	ppm	ASTM D5185m >10	▲ 13	<1	<1
Titanium	ppm	ASTM D5185m >2	0	<1	<1
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >15	9	▲ 19	8
Lead	ppm	ASTM D5185m >25	1	13	6
Copper	ppm	ASTM D5185m >45	<1	5	3
Tin	ppm	ASTM D5185m >5	<1	3	2
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	4	16	19
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	64	58	57
Manganese	ppm	ASTM D5185m 0	<1	2	<1
Magnesium	ppm	ASTM D5185m 1010	1002	774	738
Calcium	ppm	ASTM D5185m 1070	1159	1274	1224
Phosphorus	ppm	ASTM D5185m 1150	1096	966	933
Zinc	ppm	ASTM D5185m 1270	1412	1206	1148
Sulfur	ppm	ASTM D5185m 2060	2919	3666	3312

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	12	15	12
Sodium	ppm	ASTM D5185m	9	13	10
Potassium	ppm	ASTM D5185m >20	8	14	10
Fuel	%	ASTM D3524 >5	0.4	8.6	<1.0

INFRA-RED

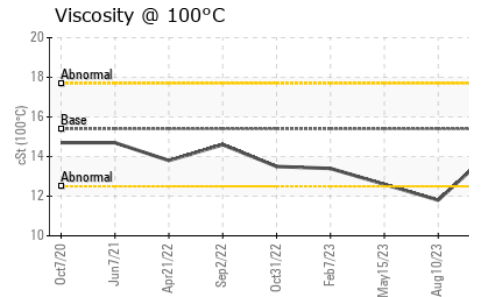
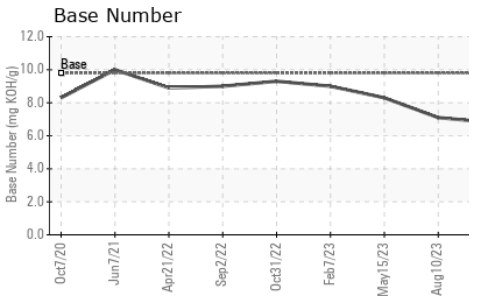
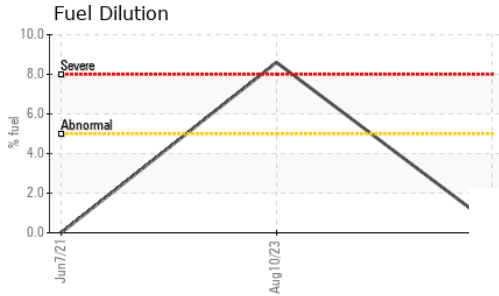
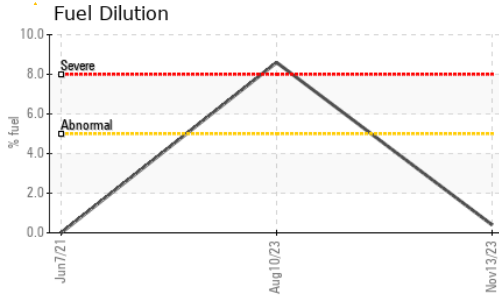
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >3	1.1	0.7	0.5
Nitration	Abs/cm	*ASTM D7624 >20	10.5	10.1	8.5
Sulfation	Abs/.1mm	*ASTM D7415 >30	23.4	20.4	19.8

FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.8	17.9	15.7
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	6.8	7.1	8.3



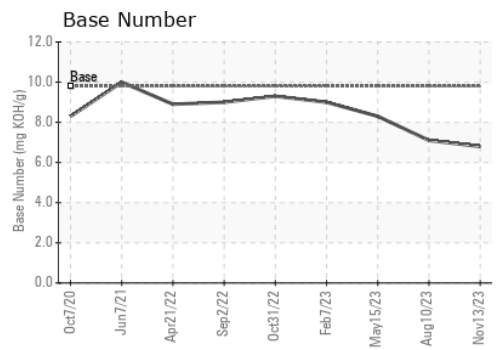
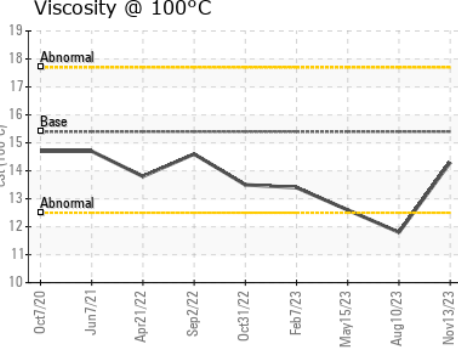
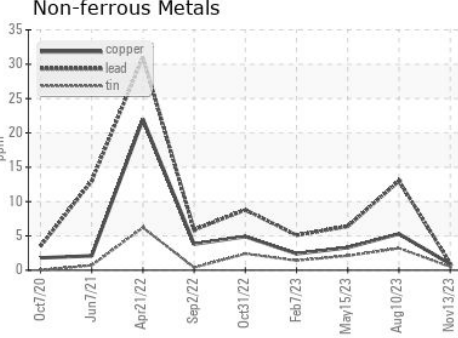
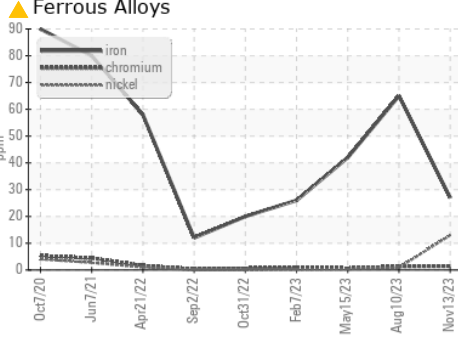
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.3	▲ 11.8 12.6

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0058101 **Received** : 14 Nov 2023
Lab Number : **06007434** **Diagnosed** : 16 Nov 2023
Unique Number : 10741196 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 657 - Charlottesville Hauling
 5498 Richmond Road
 Troy, VA
 US 22974
 Contact: Brian Ulickas
 bulickas@gflenv.com

Certificate L2367
 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)