

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

05 May 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. 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



21 Mar 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



22 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.

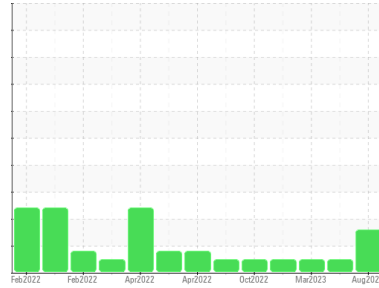
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OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
822005-190

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

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

Wear

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Contamination

There is an abnormal amount of solids and carbon present 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	GFL0089523	GFL0067888	GFL0067961
Sample Date	Client Info	07 Aug 2023	05 May 2023	21 Mar 2023
Machine Age	hrs	Client Info	11987	65615
Oil Age	hrs	Client Info	1044	65615
Oil Changed	Client Info	Changed	N/A	N/A
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >80	▲ 101	71	53
Chromium	ppm ASTM D5185m >5	3	2	2
Nickel	ppm ASTM D5185m >2	1	<1	0
Titanium	ppm ASTM D5185m	<1	<1	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >30	6	3	4
Lead	ppm ASTM D5185m >30	6	4	2
Copper	ppm ASTM D5185m >150	4	3	2
Tin	ppm ASTM D5185m >5	2	<1	<1
Vanadium	ppm ASTM D5185m	<1	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	4	4	4
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	67	66	63
Manganese	ppm ASTM D5185m 0	1	<1	1
Magnesium	ppm ASTM D5185m 1010	1024	957	958
Calcium	ppm ASTM D5185m 1070	1160	1135	1150
Phosphorus	ppm ASTM D5185m 1150	1099	1047	998
Zinc	ppm ASTM D5185m 1270	1375	1316	1300
Sulfur	ppm ASTM D5185m 2060	3446	3084	3000

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >20	15	14	11
Sodium	ppm ASTM D5185m	11	8	8
Potassium	ppm ASTM D5185m >20	11	9	6

INFRA-RED

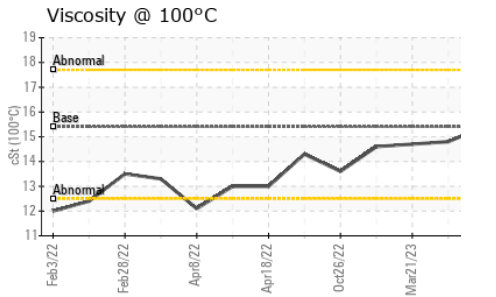
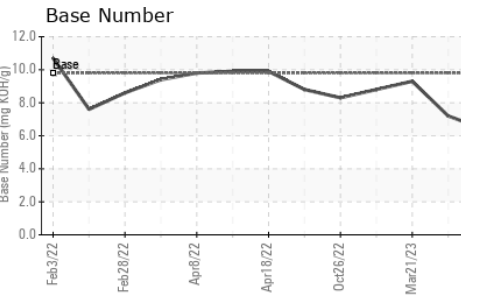
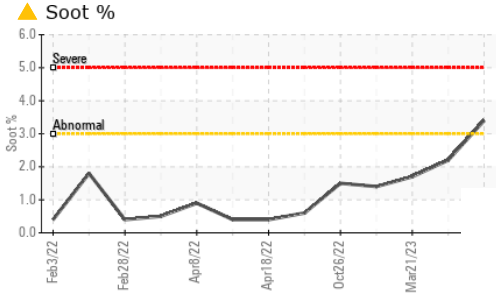
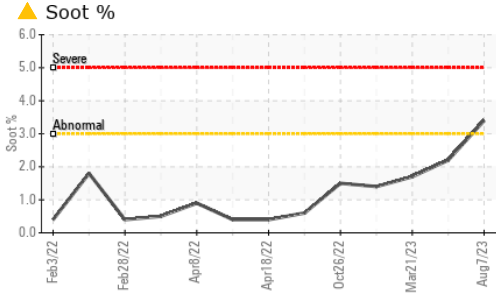
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	▲ 3.4	2.2	1.7
Nitration	Abs/cm *ASTM D7624 >20	18.2	13.6	12.6
Sulfation	Abs/.1mm *ASTM D7415 >30	32.3	25.4	24.3

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	29.6	22.6	20.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.4	7.2	9.3



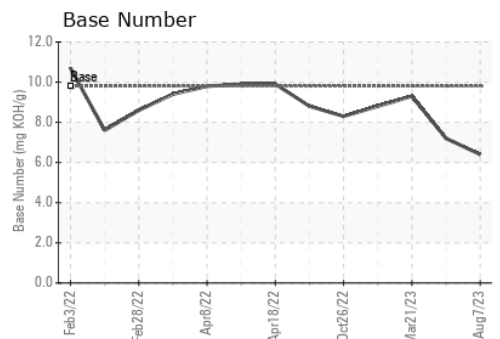
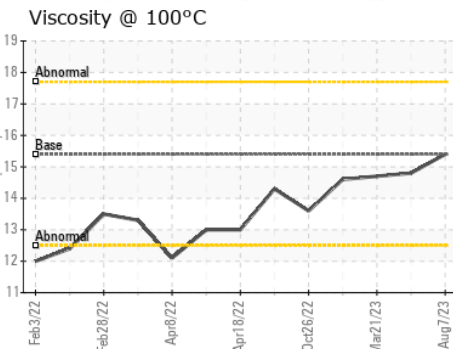
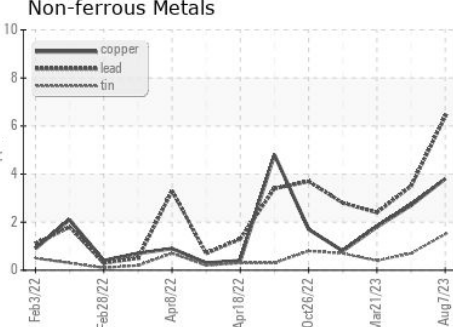
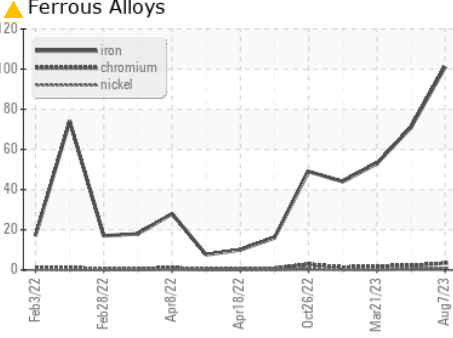
OIL ANALYSIS REPORT



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	14.8	14.7

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0089523 **Received** : 11 Aug 2023
Lab Number : 05922644 **Diagnosed** : 14 Aug 2023
Unique Number : 10602591 **Diagnostician** : Don Baldrige
Test Package : FLEET

GFL Environmental - 654S - Midlothian
 12230 Deergrove Road
 Midlothian, VA
 US 23112
 Contact: Corbin Umphlet
 cumphlet@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)