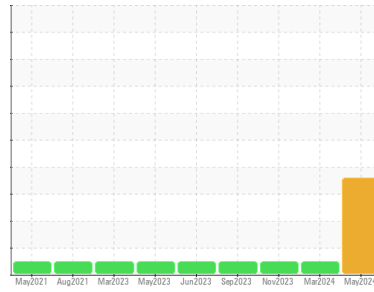




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
3402M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

- Recommendation**
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Check for low coolant level. We recommend an early resample to monitor this condition.
- Wear**
All component wear rates are normal.
- Contamination**
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The high sodium (Na) level indicates the possible presence of salt water.
- 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	GFL0116072	GFL0029665	GFL0092979
Sample Date	Client Info	22 May 2024	01 Mar 2024	27 Nov 2023
Machine Age	hrs	18821	18686	18339
Oil Age	hrs	17775	17775	17775
Oil Changed	Client Info	N/A	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
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >110	34	21	13
Chromium	ppm ASTM D5185m >4	3	<1	<1
Nickel	ppm ASTM D5185m >2	<1	0	0
Titanium	ppm ASTM D5185m	<1	<1	0
Silver	ppm ASTM D5185m >2	1	0	0
Aluminum	ppm ASTM D5185m >25	7	3	4
Lead	ppm ASTM D5185m >45	2	<1	0
Copper	ppm ASTM D5185m >85	3	3	<1
Tin	ppm ASTM D5185m >4	1	<1	0
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	33	7	230
Barium	ppm ASTM D5185m 0	1	0	0
Molybdenum	ppm ASTM D5185m 60	102	62	97
Manganese	ppm ASTM D5185m 0	1	0	0
Magnesium	ppm ASTM D5185m 1010	762	939	744
Calcium	ppm ASTM D5185m 1070	1317	1101	1395
Phosphorus	ppm ASTM D5185m 1150	794	1032	768
Zinc	ppm ASTM D5185m 1270	983	1263	976
Sulfur	ppm ASTM D5185m 2060	2838	3112	2668

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >30	31	5	18
Sodium	ppm ASTM D5185m	115	4	6
Potassium	ppm ASTM D5185m >20	24	2	0
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

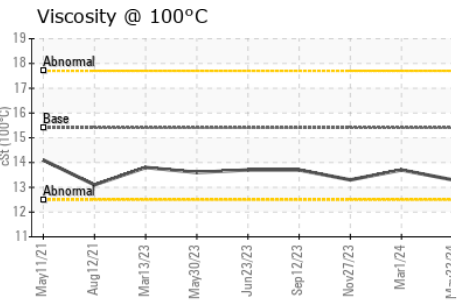
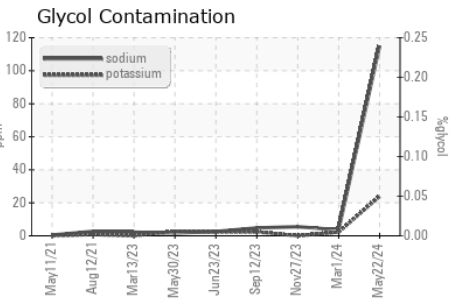
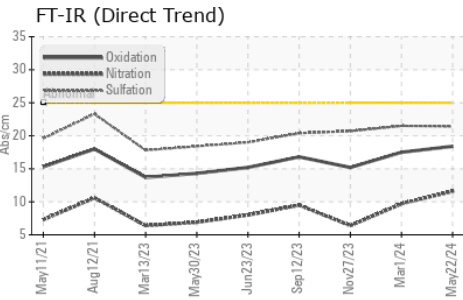
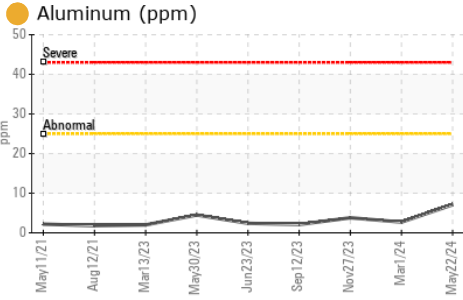
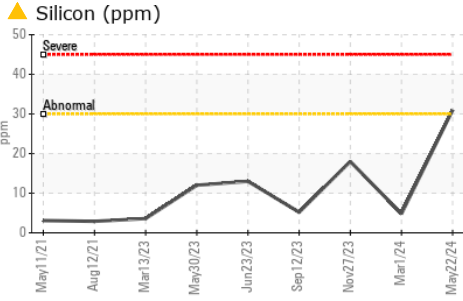
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.3	1.1	0.2
Nitration	Abs/cm *ASTM D7624 >20	11.6	9.7	6.4
Sulfation	Abs/.1mm *ASTM D7415 >30	21.4	21.5	20.7

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	18.4	17.5	15.2
Base Number (BN)	mg KOH/g ASTM D2896 9.8	7.4	8.3	9.0



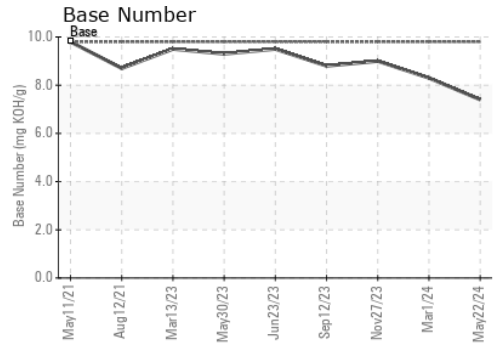
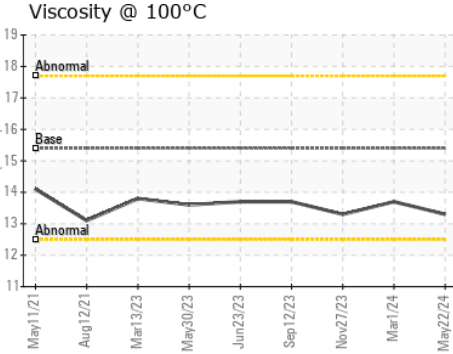
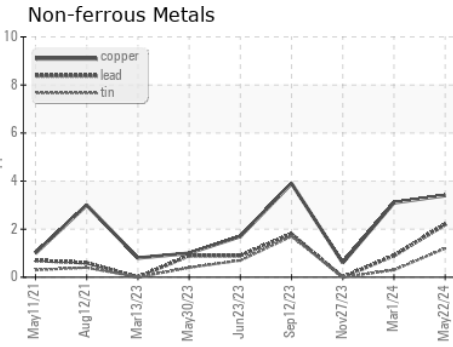
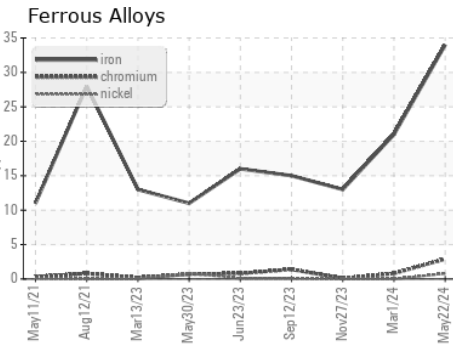
OIL ANALYSIS REPORT



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	13.3	13.7	13.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0116072

Lab Number : 06191876

Unique Number : 11048628

Test Package : FLEET (Additional Tests: Glycol)

Received : 28 May 2024

Tested : 30 May 2024

Diagnosed : 30 May 2024 - Sean Felton

GFL Environmental - 463 - Cheboygan

501 N. Western Ave

Cheboygan, MI

US 49721

Contact: Chris Gee

cgee@gflenv.com

T: (231)597-8553

F:

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)