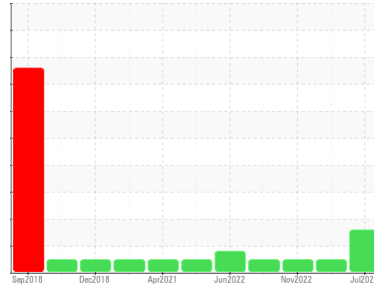




OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id
801108

Component
Diesel Engine

Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. 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.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0084283	GFL0063758	GFL0063725
Sample Date	Client Info	17 Jul 2023	05 Feb 2023	30 Nov 2022
Machine Age	hrs	Client Info	12671	0
Oil Age	hrs	Client Info	592	0
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185(m)	>100	36	24	19
Chromium	ppm	ASTM D5185(m)	>20	1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>20	8	3	4
Lead	ppm	ASTM D5185(m)	>40	0	0	0
Copper	ppm	ASTM D5185(m)	>330	2	2	2
Tin	ppm	ASTM D5185(m)	>15	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	1	2	2
Barium	ppm	ASTM D5185(m)	1	0	0
Molybdenum	ppm	ASTM D5185(m)	60	62	63
Manganese	ppm	ASTM D5185(m)	1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	962	969
Calcium	ppm	ASTM D5185(m)	1070	1034	1119
Phosphorus	ppm	ASTM D5185(m)	1150	1026	1093
Zinc	ppm	ASTM D5185(m)	1270	1181	1217
Sulfur	ppm	ASTM D5185(m)	2060	2338	2481
Lithium	ppm	ASTM D5185(m)		<1	<1

CONTAMINANTS

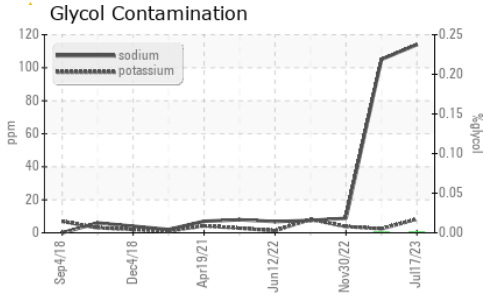
method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	▲ 36	9
Sodium	ppm	ASTM D5185(m)		114	105
Potassium	ppm	ASTM D5185(m)	>20	8	2
Glycol	%	ASTM D7922*		0.0	0.0

INFRA-RED

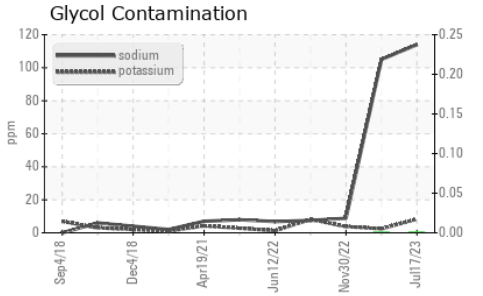
method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	1.4	0.5
Nitration	Abs/cm	ASTM D7624*	>20	11.0	9.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	24.2	22.1



OIL ANALYSIS REPORT



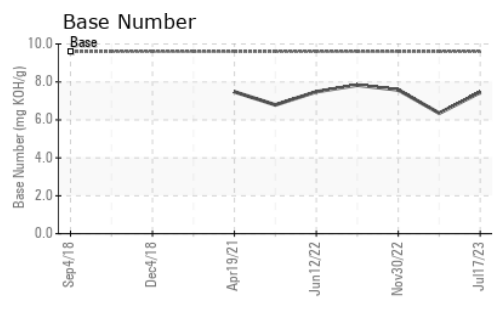
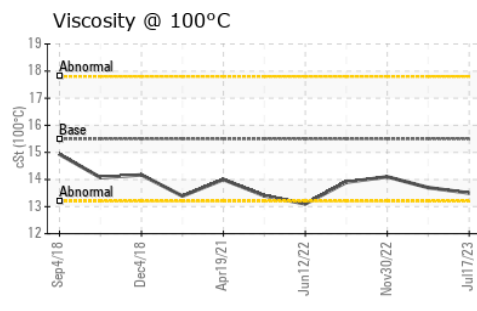
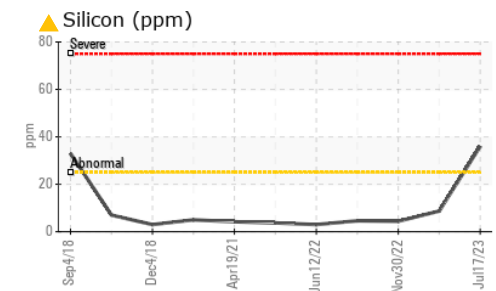
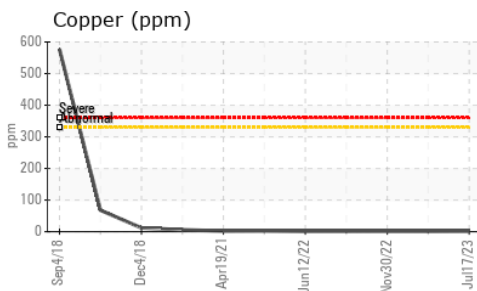
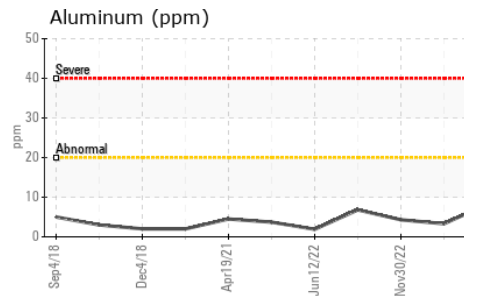
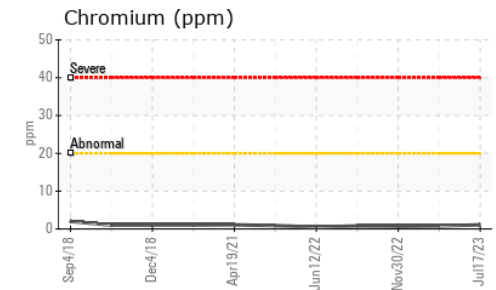
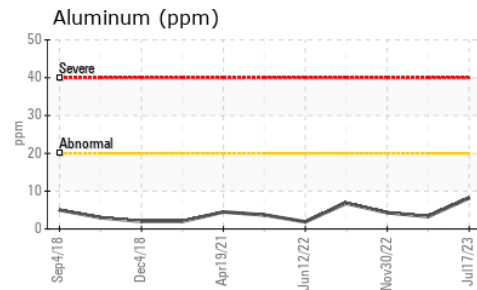
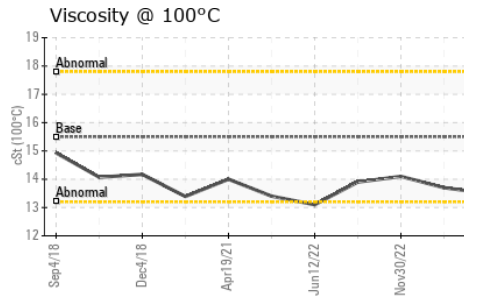
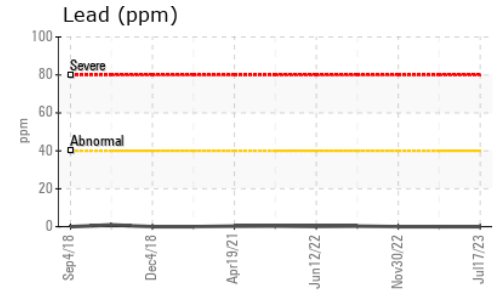
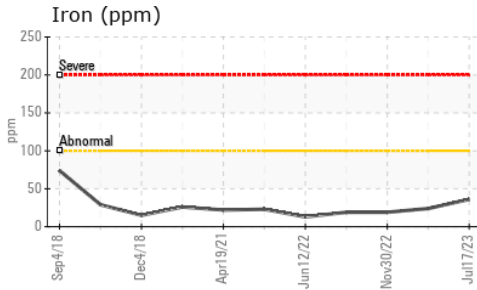
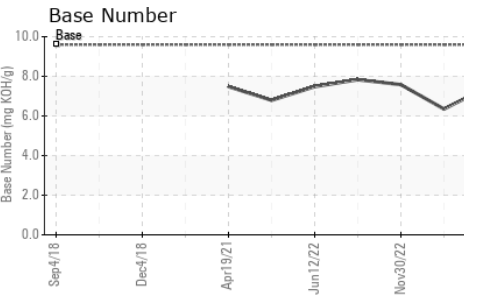
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	20.2	16.7	19.4
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	7.45	6.35	7.58



VISUAL	method	limit/base	current	history1	history2	
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 D7279(m)	15.5	13.5	13.7	14.1

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0084283 **Received** : 24 Jul 2023
Lab Number : 02571639 **Diagnosed** : 25 Jul 2023
Unique Number : 5616690 **Diagnostician** : Kevin Marson
Test Package : MOB 2 (Additional Tests: Glycol)
 To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Contact: GFL Calgary
 calgarymaintenance@gflenv.com
 T: (403)369-6163