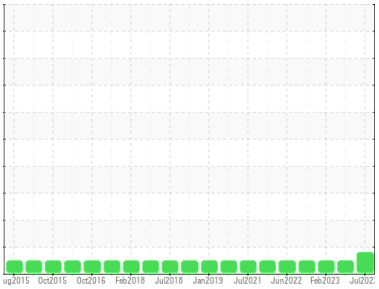
OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
4493
Component
Right Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (36 LTR)

DIAGNOSIS

Recommendation
We recommend that you drain the oil from the component if this has not already been done.

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. Light concentration of carbon/soot present in the oil.

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		**GFL0084297**	GFL0077604	GFL0063766
Sample Date		Client Info		**24 Jul 2023**	25 Apr 2023	02 Feb 2023
Machine Age	kms	Client Info		**990083**	35918	35324
Oil Age	kms	Client Info		**0**	594	600
Oil Changed		Client Info		**N/A**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	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 D5185(m)	>100	**47**	38	49
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	1	1
Titanium	ppm	ASTM D5185(m)		**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>25	**2**	3	2
Lead	ppm	ASTM D5185(m)	>40	**<1**	<1	<1
Copper	ppm	ASTM D5185(m)	>330	**2**	2	4
Tin	ppm	ASTM D5185(m)	>15	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**<1**	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	3
Barium	ppm	ASTM D5185(m)	1	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**56**	58	58
Manganese	ppm	ASTM D5185(m)	1	**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	**910**	924	932
Calcium	ppm	ASTM D5185(m)	1070	**1019**	1070	1084
Phosphorus	ppm	ASTM D5185(m)	1150	**1020**	1072	1094
Zinc	ppm	ASTM D5185(m)	1270	**1132**	1143	1193
Sulfur	ppm	ASTM D5185(m)	2060	**2468**	2574	2601
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**6**	3	5
Sodium	ppm	ASTM D5185(m)		**3**	3	5
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	<1
Fuel	%	ASTM D7593*	>6.0	**0.9**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**3.3**	2.5	1.7
Nitration	Abs/cm	ASTM D7624*	>20	**11.6**	11.6	11.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	**26.0**	23.5	23.0

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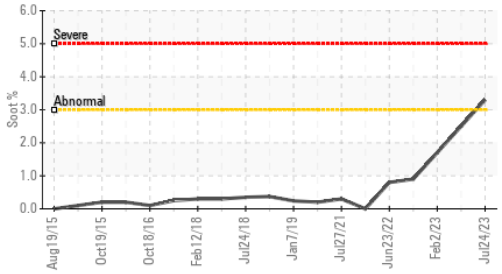
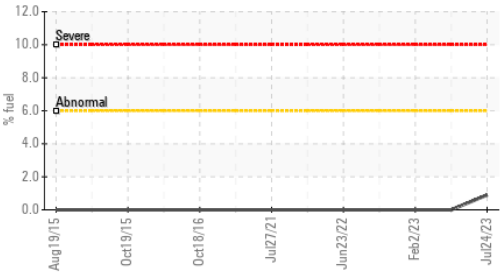
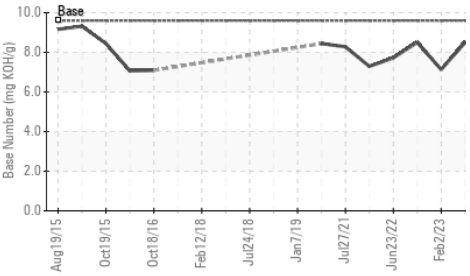
Soot %



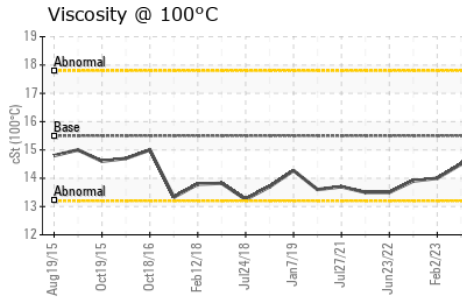
Fuel Dilution



Base Number



Viscosity @ 100°C



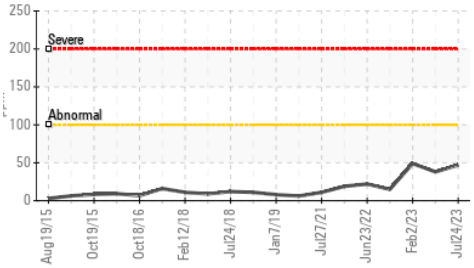
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**16.6**	16.4	16.5
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	**8.31**	8.50	7.13

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

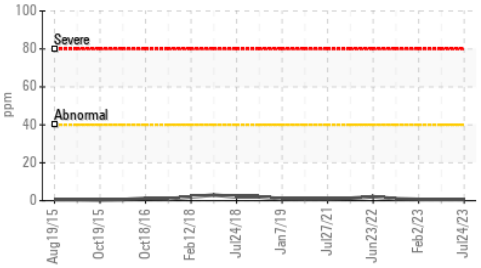
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.5	**15.2**	14.5	14.0

GRAPHS

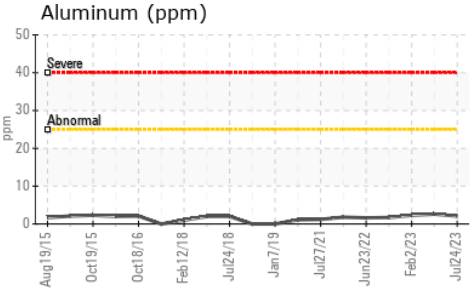
Iron (ppm)



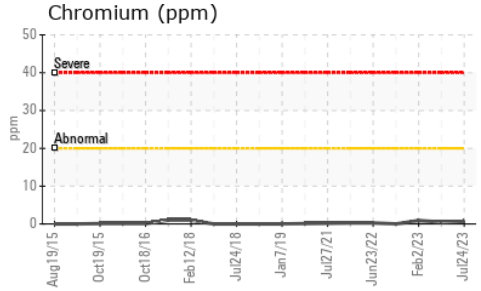
Lead (ppm)



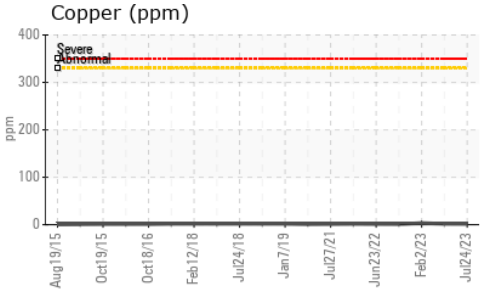
Aluminum (ppm)



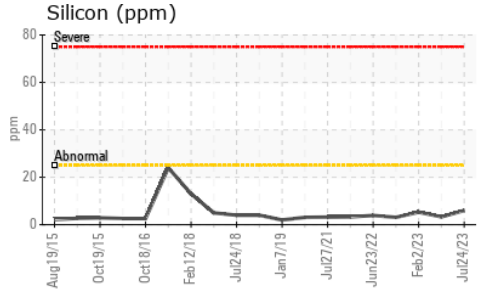
Chromium (ppm)



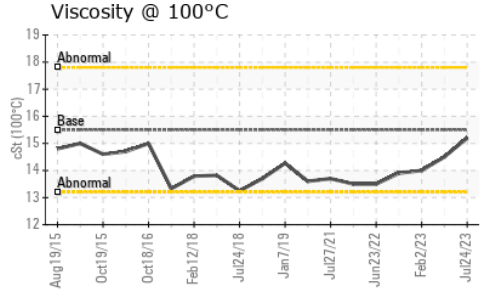
Copper (ppm)



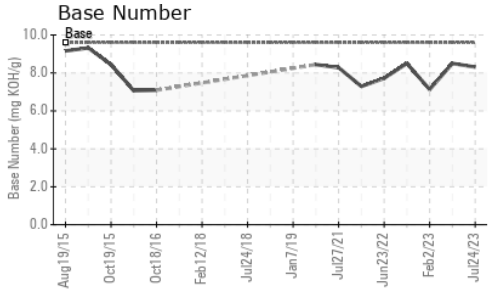
Silicon (ppm)



Viscosity @ 100°C



Base Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 550 - Rocky View County**
Sample No. : GFL0084297 **Received** : 02 Aug 2023 220 Carmek Blvd
Lab Number : 02573647 **Diagnosed** : 08 Aug 2023 Rocky View County, AB
Unique Number : 5618698 **Diagnostician** : Wes Davis CA T1X 1X1
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) Contact: GFL Calgary

To discuss this sample report, contact Customer Service at 1-800-268-2131. calgarymaintenance@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T:
Validity of results and interpretation are based on the sample and information as supplied. F: (403)369-6163