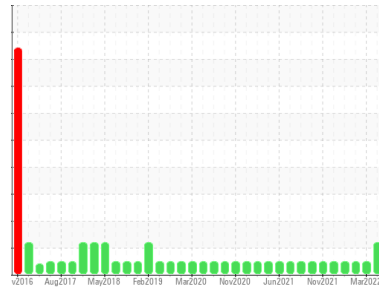




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Area
(64069P)
 Machine Id
3719
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation

We advise that you check for possible coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0049422	GFL0042799	GFL0042824
Sample Date	Client Info	20 Apr 2022	18 Mar 2022	23 Feb 2022
Machine Age	hrs	0	10374	0
Oil Age	hrs	0	10374	0
Oil Changed	Client Info	Not Changed	Changed	Not Changed
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<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 >75	15	27	18
Chromium	ppm ASTM D5185m >5	1	2	1
Nickel	ppm ASTM D5185m >4	<1	0	0
Titanium	ppm ASTM D5185m	0	0	<1
Silver	ppm ASTM D5185m	<1	0	<1
Aluminum	ppm ASTM D5185m >15	2	3	3
Lead	ppm ASTM D5185m >25	<1	<1	<1
Copper	ppm ASTM D5185m >100	9	<1	<1
Tin	ppm ASTM D5185m >4	<1	0	<1
Antimony	ppm ASTM D5185m	---	---	<1
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	21	9	9
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	75	55	52
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	822	867	875
Calcium	ppm ASTM D5185m 1070	1027	1112	1096
Phosphorus	ppm ASTM D5185m 1150	980	970	987
Zinc	ppm ASTM D5185m 1270	1174	1151	1136
Sulfur	ppm ASTM D5185m 2060	2599	2491	2409

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	10	5	4
Sodium	ppm ASTM D5185m	▲ 337	31	20
Potassium	ppm ASTM D5185m >20	2	0	0
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	0.5	0.9	0.6
Nitration	Abs/cm *ASTM D7624 >20	9.7	11.1	9.5
Sulfation	Abs/.1mm *ASTM D7415 >30	20.2	22.8	20.8

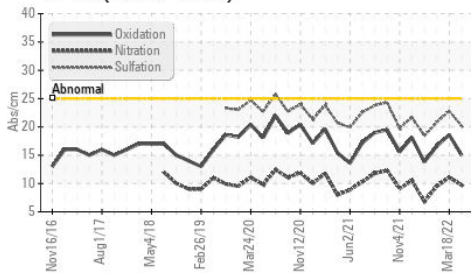
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	15.0	18.6	16.6
Base Number (BN)	mg KOH/g ASTM D2896 9.8	10.1	7.5	8.2

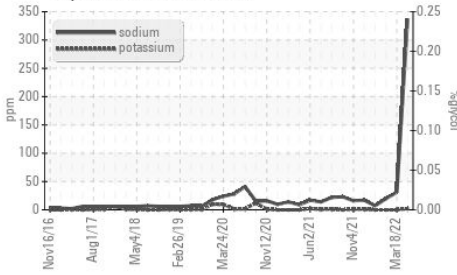


OIL ANALYSIS REPORT

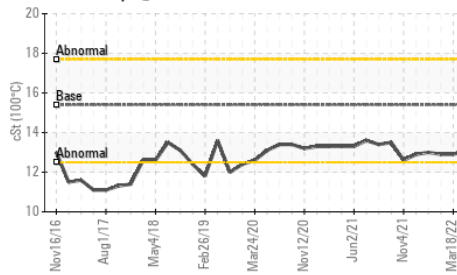
FT-IR (Direct Trend)



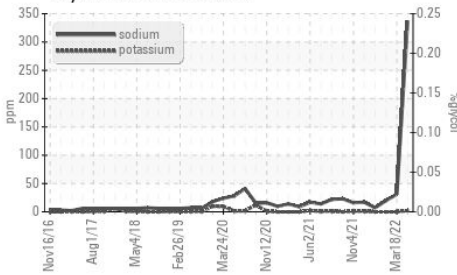
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

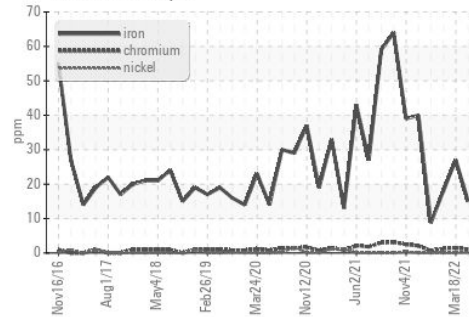


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

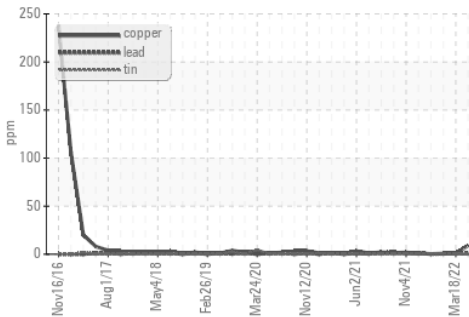
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	12.9

GRAPHS

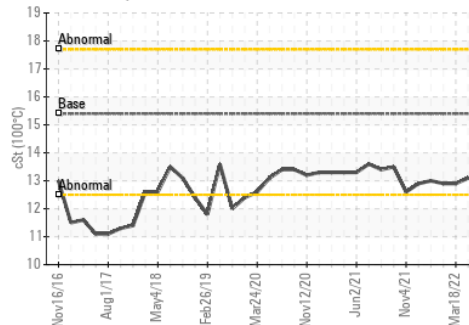
Ferrous Alloys



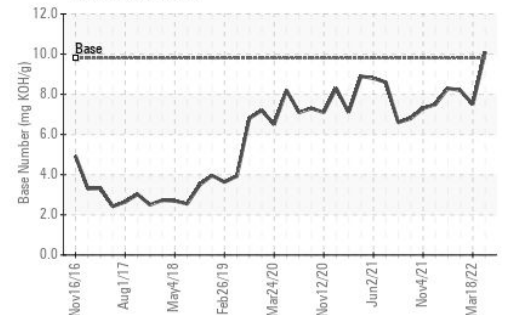
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : GFL0049422

Lab Number : 05530930

Unique Number : 9955219

Test Package : FLEET (Additional Tests: Glycol)

Received : 28 Apr 2022

Tested : 02 May 2022

Diagnosed : 02 May 2022 - Jonathan Hester

GFL Environmental - 029 - Wytheville

2390 North 4th Street

Wytheville, VA

US 24382

Contact: CHARLES CORVIN

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T: (276)223-4476

F: (276)223-1283

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)