

OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL

Area GFL035 2629

Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (30 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

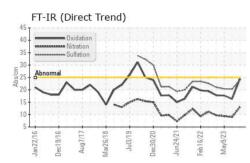
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

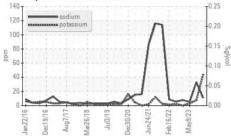
SAMPLE INFORM	ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0116429	GFL0071553	GFL0071539
Sample Date		Client Info		01 Apr 2024	21 Jun 2023	09 May 2023
Machine Age	hrs	Client Info		16576	16576	16576
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL
CONTAMINATIO	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	4.6	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	45	14	19
Chromium	ppm	ASTM D5185m	>20	2	3	2
Nickel	ppm	ASTM D5185m	>4	1	2	2
Titanium	ppm	ASTM D5185m		0	2	0
Silver	ppm	ASTM D5185m	>3	0	1	<1
Aluminum	ppm	ASTM D5185m	>20	11	6	1
Lead	ppm	ASTM D5185m	>40	1	5	2
Copper	ppm	ASTM D5185m	>330	2	2	<1
Tin	ppm	ASTM D5185m	>15	0	2	<1
Vanadium	ppm	ASTM D5185m		<1	1	<1
Cadmium	ppm	ASTM D5185m		0	2	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	13	23	4
	ppm	ASTM D5185m	0	0	18	0
	ppm	ASTM D5185m	60	51	49	58
Manganaac						
-	ppm	ASTM D5185m		<1	2	<1
Magnesium	ppm ppm	ASTM D5185m	1010	806	633	895
Magnesium Calcium		ASTM D5185m ASTM D5185m	1010 1070	806 1141	633 776	895 977
Magnesium Calcium Phosphorus	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	806 1141 832	633 776 733	895 977 986
Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	806 1141 832 1027	633 776 733 904	895 977 986 1219
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	806 1141 832	633 776 733	895 977 986
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	806 1141 832 1027	633 776 733 904	895 977 986 1219
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm ppm ppm S	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	1010 1070 1150 1270 2060	806 1141 832 1027 2947 current 8	633 776 733 904 2580 history1 7	895 977 986 1219 3516 history2 7
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	806 1141 832 1027 2947 <u>current</u> 8 11	633 776 733 904 2580 history1 7 33	895 977 986 1219 3516 history2 7 5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm S ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base	806 1141 832 1027 2947 <u>current</u> 8 11 ▲ 44	633 776 733 904 2580 history1 7 33 8	895 977 986 1219 3516 history2 7 5 3
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm S ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	806 1141 832 1027 2947 <u>current</u> 8 11	633 776 733 904 2580 history1 7 33	895 977 986 1219 3516 history2 7 5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm S ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	806 1141 832 1027 2947 <u>current</u> 8 11 ▲ 44	633 776 733 904 2580 history1 7 33 8	895 977 986 1219 3516 history2 7 5 3 NEG
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm S ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982	1010 1070 1150 1270 2060 limit/base >25 >20	806 1141 832 1027 2947 <u>current</u> 8 11 ▲ 44 NEG	633 776 733 904 2580 history1 7 33 8 NEG history1 0.4	895 977 986 1219 3516 history2 7 5 3 NEG history2 0.5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D2982	1010 1070 1150 1270 2060 limit/base >25 >20	806 1141 832 1027 2947 current 8 11 ▲ 44 NEG current	633 776 733 904 2580 history1 7 33 8 NEG history1	895 977 986 1219 3516 history2 7 5 3 NEG history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm S ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 method *ASTM D7844	1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	806 1141 832 1027 2947 current 8 11 ▲ 44 NEG current 1.4	633 776 733 904 2580 history1 7 33 8 NEG history1 0.4	895 977 986 1219 3516 history2 7 5 3 NEG history2 0.5
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D2982 method *ASTM D7844 *ASTM D7844	1010 1070 1150 1270 2060 Iimit/base >25 >20 Iimit/base >3 >20	806 1141 832 1027 2947 current 8 11 ▲ 44 NEG current 1.4 1.3.1	633 776 733 904 2580 history1 7 33 8 NEG history1 0.4 9.0	895 977 986 1219 3516 history2 7 5 3 NEG history2 0.5 9.4 20.4
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm %	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D2982 *ASTM D2982 *ASTM D7844 *ASTM D7844	1010 1070 1150 22060 limit/base >25 >20 limit/base >3 >20 >30	806 1141 832 1027 2947 current 8 11 ▲ 44 NEG current 1.4 1.4 13.1 23.9	633 776 733 904 2580 history1 7 33 8 NEG history1 0.4 9.0 20.3	895 977 986 1219 3516 history2 7 5 3 NEG history2 0.5 9.4

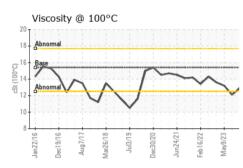


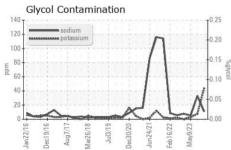
OIL ANALYSIS REPORT



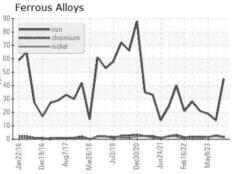


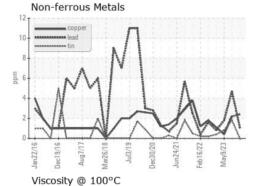


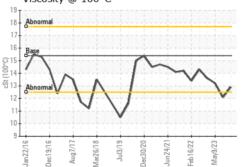


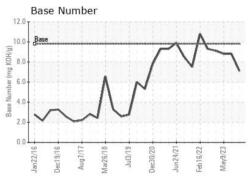


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	▲ 12.1	13.2
GRAPHS						









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 035 - Greensboro Sample No. : GFL0116429 Received : 03 Apr 2024 1236 Elon Place Lab Number : 06137215 Tested : 05 Apr 2024 High Point, NC Unique Number : 10956680 Diagnosed : 05 Apr 2024 - Jonathan Hester US 27263 Test Package : FLEET (Additional Tests: Glycol) Contact: JORGE COSTA Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. jorge.costa@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (336)668-3712 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL035 [WUSCAR] 06137215 (Generated: 04/05/2024 23:58:01) Rev: 1

Submitted By: JORGE COSTA Page 2 of 2