

OIL ANALYSIS REPORT

Sample Rating Trend

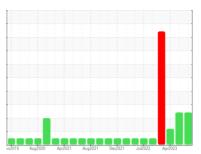
GLYCOL



GFL035 10994 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (9 GAL)





DIAGNOSIS

Recommendation

We advise that you check for the source of the 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 remain high.

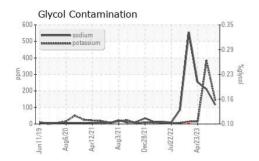
Fluid Condition

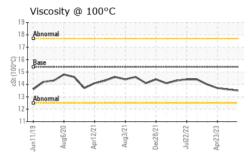
The BN result indicates that there is suitable alkalinity remaining in the oil.

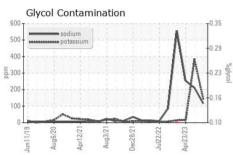
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0102348	GFL0102291	GFL0071589
Sample Date		Client Info		27 Feb 2024	17 Nov 2023	23 Apr 2023
Machine Age	hrs	Client Info		0	6769	0
Oil Age	hrs	Client Info		600	600	0
Oil Changed		Client Info		Not Changd	Changed	N/A
Sample Status				ABNORMAL	ABNORMAL	ATTENTION
CONTAMINATI	ION	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	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	34	18	37
Chromium	ppm	ASTM D5185m	>5	1	1	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	4	4	6
Lead	ppm	ASTM D5185m	>25	<1	0	<1
Copper	ppm	ASTM D5185m	>100	2	2	1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	3	10	3
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	63	69	84
Manganese	ppm	ASTM D5185m	0	<1	0	<1
Manganese Magnesium	ppm	ASTM D5185m ASTM D5185m	1010	<1 1102	0 842	<1 1053
Magnesium						
	ppm	ASTM D5185m	1010	1102	842	1053
Magnesium Calcium	ppm	ASTM D5185m ASTM D5185m	1010 1070	1102 1242	842 1105	1053 1298
Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150	1102 1242 989	842 1105 953	1053 1298 1177
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	1102 1242 989 1484	842 1105 953 1176	1053 1298 1177 1447
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060	1102 1242 989 1484 3369	842 1105 953 1176 3459	1053 1298 1177 1447 3845
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	1102 1242 989 1484 3369	842 1105 953 1176 3459 history1	1053 1298 1177 1447 3845 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1010 1070 1150 1270 2060 limit/base	1102 1242 989 1484 3369 current	842 1105 953 1176 3459 history1	1053 1298 1177 1447 3845 history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	1102 1242 989 1484 3369 current 16	842 1105 953 1176 3459 history1 16	1053 1298 1177 1447 3845 history2 18 253
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	1102 1242 989 1484 3369 current 16 ▲ 116 ▲ 144	842 1105 953 1176 3459 history1 16 210 383	1053 1298 1177 1447 3845 history2 18 253 15
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20	1102 1242 989 1484 3369 current 16 ▲ 116 ▲ 144 NEG	842 1105 953 1176 3459 history1 16 210 383 NEG	1053 1298 1177 1447 3845 history2 18 253 15 NEG
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D2982 Method	1010 1070 1150 1270 2060 Iimit/base >25 >20	1102 1242 989 1484 3369 current 16 ▲ 116 ▲ 144 NEG	842 1105 953 1176 3459 history1 16 210 383 NEG history1	1053 1298 1177 1447 3845 history2 18 253 15 NEG
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m METHOD ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844	1010 1070 1150 1270 2060 Iimit/base >25 >20	1102 1242 989 1484 3369 current 16 ▲ 116 ▲ 144 NEG current 0.9	842 1105 953 1176 3459 history1 16 ▲ 210 ▲ 383 NEG history1 0.4	1053 1298 1177 1447 3845 history2 18 253 15 NEG history2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624 *ASTM D76145	1010 1070 1150 1270 2060 Iimit/base >25 >20	1102 1242 989 1484 3369 current 16 116 144 NEG current 0.9 11.6	842 1105 953 1176 3459 history1 16 210 383 NEG history1 0.4 7.1	1053 1298 1177 1447 3845 history2 18 253 15 NEG history2 0.8 11.2
Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m *ASTM D5185m *ASTM D2982 method *ASTM D7844 *ASTM D7624 *ASTM D76145	1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30	1102 1242 989 1484 3369 current 16 ▲ 116 ▲ 144 NEG current 0.9 11.6 22.3	842 1105 953 1176 3459 history1 16 210 383 NEG history1 0.4 7.1 19.4	1053 1298 1177 1447 3845 history2 18 253 15 NEG history2 0.8 11.2 23.7



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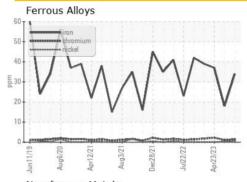


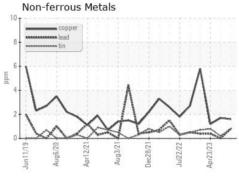


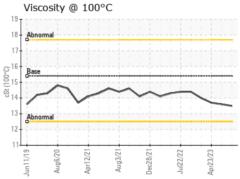
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

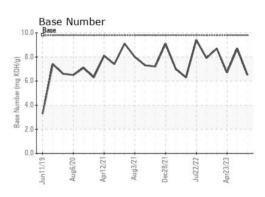
FLUID PROPERTIES		method	ilmit/base	current	nistory i	nistory2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.6	13.7	

GRAPHS













Laboratory Sample No. Lab Number : 06104214 Unique Number : 10902444

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0102348

Test Package: FLEET (Additional Tests: Glycol)

Received **Tested** Diagnosed

: 29 Feb 2024 : 04 Mar 2024

: 04 Mar 2024 - Jonathan Hester

GFL Environmental - 035 - Greensboro 1236 Elon Place High Point, NC

US 27263 Contact: JORGE COSTA

jorge.costa@gflenv.com T: (336)668-3712

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)

Submitted By: JORGE COSTA