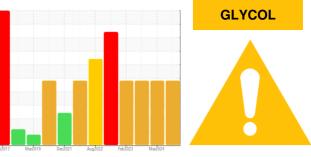


## **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id 8406

Component Natural Gas Engine PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
A Recommendation	Sample Number		Client Info		GFL0112506	GFL0102671	GFL0097607
We advise that you check for the source of the coolant leak. We recommend that you drain the oil	Sample Date		Client Info		22 May 2024	11 Mar 2024	02 Nov 2023
	Machine Age	hrs	Client Info		281009	1067	259149
rom the component if this has not already been	Oil Age	hrs	Client Info		0	0	25750
one. We advise that you flush the component	Oil Changed	1115	Client Info		N/A	Changed	Changed
noroughly before re-filling with oil. We recommend	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
n early resample to monitor this condition.					ABNORMAL	ADNONIMAL	
<b>Vear</b> Il component wear rates are normal.	CONTAMINAT Water	ION	method WC Method	limit/base	current NEG	history1 NEG	history2 NEG
Contamination			WC Method	>0.1	NEG	NLG	NLG
est for glycol is positive. There is a moderate oncentration of glycol present in the oil.	WEAR METAL			limit/base	current	history1	history2
	Iron	ppm	ASTM D5185(m)	>50	18	22	29
Fluid Condition The oil is no longer serviceable due to the presence of contaminants.	Chromium	ppm	ASTM D5185(m)		<1	<1	1
	Nickel	ppm	ASTM D5185(m)	>2	0	<1	<1
	Titanium	ppm	ASTM D5185(m)		0	0	0
	Silver	ppm	ASTM D5185(m)	>3	0	0	0
	Aluminum	ppm	ASTM D5185(m)	>9	1	2	2
	Lead	ppm	ASTM D5185(m)	>30	0	<1	2
	Copper	ppm	ASTM D5185(m)	>35	<1	1	1
	Tin	ppm	ASTM D5185(m)	>4	0	0	<1
	Antimony	ppm	ASTM D5185(m)		0	0	0
	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)	50	2	2	2
	Barium	ppm	ASTM D5185(m)	5	0	0	<1
	Molybdenum	ppm	ASTM D5185(m)	50	60	65	67
	Manganese	ppm	ASTM D5185(m)		<1	0	<1
	Magnesium				495	524	485
	Magnesium	ppiii	ASTIVI DS185(M)	560			400
	÷	ppm ppm	ASTM D5185(m) ASTM D5185(m)				
	Calcium	ppm	ASTM D5185(m)	1510	1456	1461	1452
	Calcium Phosphorus	ppm ppm	ASTM D5185(m) ASTM D5185(m)	1510 780	1456 568	1461 601	1452 578
	Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870	1456 568 798	1461 601 813	1452 578 793
	Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870	1456 568 798 1818	1461 601 813 1929	1452 578 793 1856
	Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870	1456 568 798	1461 601 813	1452 578 793 1856 <1
	Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870 2040 limit/base	1456 568 798 1818 <1	1461 601 813 1929 <1	1452 578 793 1856 <1
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm TS	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870 2040 limit/base	1456 568 798 1818 <1 current	1461 601 813 1929 <1 history1	1452 578 793 1856 <1 history2
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm TS ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) method	1510 780 870 2040 limit/base >+100	1456 568 798 1818 <1 current 3	1461 601 813 1929 <1 history1 3 461	1452 578 793 1856 <1 history2 6 501
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870 2040 limit/base >+100	1456 568 798 1818 <1 current 3 3 350 ▲ 24	1461 601 813 1929 <1 history1 3 ● 461 ▲ 44	1452 578 793 1856 <1 history2 6 501 ▲ 46
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol	ppm ppm ppm ppm ppm TS ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	1510 780 870 2040 limit/base >+100 >20	1456 568 798 1818 <1 <u>current</u> 3 350 ▲ 24 ▲ 0.05	1461 601 813 1929 <1 history1 3 461 ▲ 44 ▲ 0.01	1452 578 793 1856 <1 history2 6 501 ▲ 46 ▲ 0.029
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7922*	1510 780 870 2040 limit/base >+100	1456 568 798 1818 <1 current 3 350 ▲ 24 ▲ 0.05 current	1461 601 813 1929 <1 history1 3 461 ▲ 44 ▲ 0.01 history1	1452 578 793 1856 <1 history2 6 501 ▲ 46 ▲ 0.029 history2
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7922* <b>method</b> ASTM D7844*	1510 780 870 2040 limit/base >+100 >20 limit/base	1456 568 798 1818 <1 current 3 350 ▲ 24 ▲ 0.05 current 0	1461 601 813 1929 <1 <b>history1</b> 3 461 ▲ 44 ▲ 0.01 <b>history1</b> 0	1452 578 793 1856 <1 history2 6 501 ▲ 46 ▲ 0.029 history2 0
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7922* Method ASTM D7844* ASTM D7824*	1510 780 870 2040 imit/base >+100 >20 imit/base	1456 568 798 1818 <1 current 3 350 ▲ 24 ▲ 0.05 current 0 12.2	1461 601 813 1929 <1 <b>history1</b> 3 461 ▲ 44 0.01 <b>history1</b> 0 12.1	1452 578 793 1856 <1 history2 6 501 ▲ 46 ▲ 0.029 history2 0 11.8
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7922* <b>method</b> ASTM D7844*	1510 780 870 2040 imit/base >+100 >20 imit/base	1456 568 798 1818 <1 current 3 350 ▲ 24 ▲ 0.05 current 0	1461 601 813 1929 <1 <b>history1</b> 3 461 ▲ 44 ▲ 0.01 <b>history1</b> 0	1452 578 793 1856 <1 history2 6 501 ▲ 46 ▲ 0.029 history2 0
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm TS ppm ppm ppm %	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7842* ASTM D7844* ASTM D7841*	1510 780 870 2040 imit/base >+100 >20 imit/base	1456 568 798 1818 <1 current 3 350 ▲ 24 ▲ 0.05 current 0 12.2	1461 601 813 1929 <1 <b>history1</b> 3 461 ▲ 44 0.01 <b>history1</b> 0 12.1	1452 578 793 1856 <1 history2 6 501 ▲ 46 ▲ 0.029 history2 0 11.8
	Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm % Abs/cm Abs/cm Abs/1mm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7842* ASTM D7844* ASTM D7841*	1510 780 870 2040 imit/base >+100 >20 imit/base >20 >30 imit/base	1456 568 798 1818 <1 current 3 350 ▲ 24 ▲ 0.05 current 0 12.2 22.3	1461 601 813 1929 <1 history1 3 461 ▲ 44 ▲ 0.01 history1 0 12.1 24.7	1452 578 793 1856 <1 <b>history2</b> 6 501 ▲ 46 ▲ 0.029 <b>history2</b> 0 11.8 23.5

## Report Id: GFL554 [WCAMIS] 02637108 (Generated: 05/24/2024 13:24:08) Rev: 1



60

50

₹ 40

Sdbs

10

70

60

/sqp 30

20

10

20

1

cSt (100°C) 1 Ba Abnorma

10

Apr14/17.

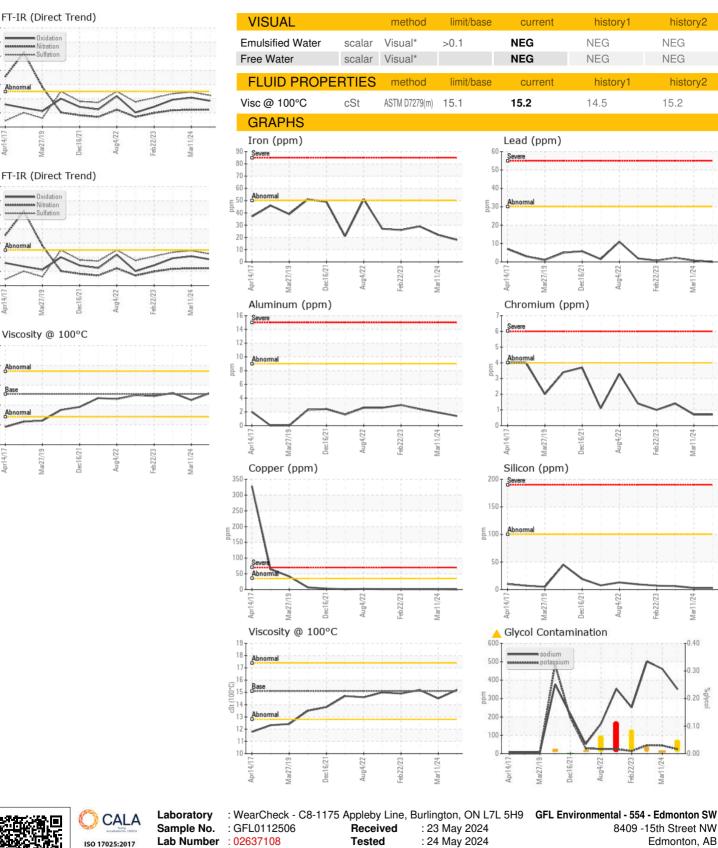
Abn

Apr14/1

Abn 20

Apr14/1

## **OIL ANALYSIS REPORT**





Accredited Laboratory Test Package : MOB 1 (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.

Diagnosed

: 24 May 2024 - Kevin Marson

Unique Number : 5786270

8409 -15th Street NW Edmonton, AB CA T6P 0B8 Contact: Tim Greig tgreig@gflenv.com T: (780)231-0521 E:

Report Id: GFL554 [WCAMIS] 02637108 (Generated: 05/24/2024 13:24:08) Rev: 1

Submitted By: Brian Gagne Page 2 of 2

history2

history2

ar11/24

/ar

Mar11/24

0.40

0.30

0.20

0.10

0.00

15.2