

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Natural Gas Engine Elui

PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.



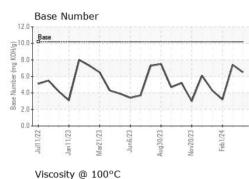


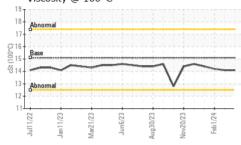
U2027 Jap2023 Mar2023 Lim2027 Aug2023 Cab2024

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114071	GFL0109802	GFL0109815
Sample Date		Client Info		25 Mar 2024	29 Feb 2024	01 Feb 2024
Machine Age	hrs	Client Info		7085	6950	6799
Oil Age	hrs	Client Info		0	0	1200
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	9	6	14
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>9	2	1	3
Lead	ppm	ASTM D5185m	>30	2	<1	11
Copper	ppm	ASTM D5185m	>35	1	0	2
Tin	ppm	ASTM D5185m	>4	1	0	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	50	20	history1 30	8
Boron Barium	ppm ppm		50 5	20 0	30 0	8
Boron Barium Molybdenum		ASTM D5185m	50 5 50	20 0 54	30 0 52	8 0 57
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	50 5 50 0	20 0 54 <1	30 0 52 <1	8 0 57 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	20 0 54 <1 559	30 0 52 <1 636	8 0 57 <1 644
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	20 0 54 <1 559 1650	30 0 52 <1 636 1789	8 0 57 <1 644 1780
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	20 0 54 <1 559 1650 821	30 0 52 <1 636 1789 926	8 0 57 <1 644 1780 839
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870	20 0 54 <1 559 1650 821 1017	30 0 52 <1 636 1789 926 1084	8 0 57 <1 644 1780 839 1067
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	20 0 54 <1 559 1650 821	30 0 52 <1 636 1789 926	8 0 57 <1 644 1780 839
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870	20 0 54 <1 559 1650 821 1017	30 0 52 <1 636 1789 926 1084 2956 history1	8 0 57 <1 644 1780 839 1067 2616 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040	20 0 54 <1 559 1650 821 1017 2695	30 0 52 <1 636 1789 926 1084 2956	8 0 57 <1 644 1780 839 1067 2616 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040	20 0 54 <1 559 1650 821 1017 2695 current	30 0 52 <1 636 1789 926 1084 2956 history1	8 0 57 <1 644 1780 839 1067 2616 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 2040	20 0 54 <1 559 1650 821 1017 2695 current 6	30 0 52 <1 636 1789 926 1084 2956 history1 4	8 0 57 <1 644 1780 839 1067 2616 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 2040	20 0 54 <1 559 1650 821 1017 2695 <u>current</u> 6 6	30 0 52 <1 636 1789 926 1084 2956 history1 4 5	8 0 57 <1 644 1780 839 1067 2616 history2 5 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 imit/base >+100	20 0 54 <1 559 1650 821 1017 2695 current 6 6 6 2 2 current 0	30 0 52 <1 636 1789 926 1084 2956 history1 4 5 0 history1 0	8 0 57 <1 644 1780 839 1067 2616 history2 5 11 <1 <1 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 imit/base >+100	20 0 54 <1 559 1650 821 1017 2695 current 6 6 6 2	30 0 52 <1 636 1789 926 1084 2956 history1 4 5 0 0	8 0 57 <1 644 1780 839 1067 2616 history2 5 11 <1 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	20 0 54 <1 559 1650 821 1017 2695 current 6 6 6 2 2 current 0	30 0 52 <1 636 1789 926 1084 2956 history1 4 5 0 history1 0	8 0 57 <1 644 1780 839 1067 2616 history2 5 11 <1 <1 history2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040 imit/base >+100 20 imit/base	20 0 54 <1 559 1650 821 1017 2695 <i>current</i> 6 6 6 2 2 <i>current</i> 0 9.4	30 0 52 <1 636 1789 926 1084 2956 history1 4 5 0 history1 0 7.8	8 0 57 <1 644 1780 839 1067 2616 history2 5 11 <1 <1 history2 0 12.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 50 150 1510 780 870 2040 imit/base >20 imit/base >20 imit/base	20 0 54 <1 559 1650 821 1017 2695 current 6 6 6 2 2 current 0 9.4 19.5	30 0 52 <1 636 1789 926 1084 2956 history1 4 5 0 0 history1 0 7.8 19.3	8 0 57 <1 644 1780 839 1067 2616 history2 5 11 <1 <1 kistory2 0 12.7 27.1



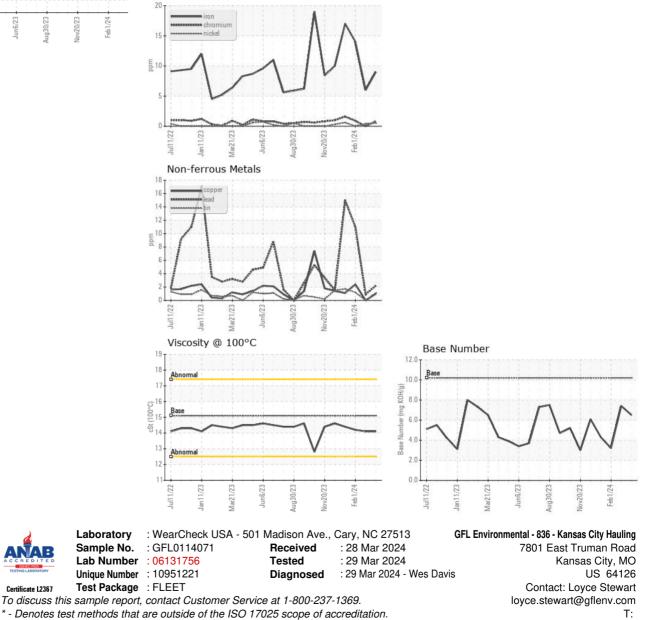
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	>0.1	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	15.1	14.1	14.1	14.2
GRAPHS						

Ferrous Alloys



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: GFL823,834,836,837,840 - Loyce Stewart - GFL836

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