

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Natural Gas Engine

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

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.

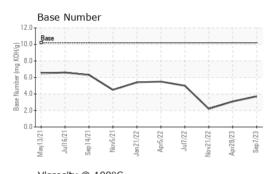
Fluid Condition

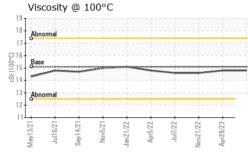
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089755	GFL0077350	GFL0063846
Sample Date		Client Info		07 Sep 2023	28 Apr 2023	21 Nov 2022
Machine Age	hrs	Client Info		19403	18324	17240
Oil Age	hrs	Client Info		1079	1084	1150
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
WEAR METAL	S .	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	13	11	15
Chromium	ppm	ASTM D5185m	>4	2	1	2
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	0	2
Lead	ppm	ASTM D5185m	>30	2	2	7
Copper	ppm	ASTM D5185m	>35	<1	1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	<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	50	5	3	4
Barium	ppm	ASTM D5185m	5	0	0	0
Molybdenum	ppm	ASTM D5185m	50	55	53	55
Manganese	ppm	ASTM D5185m	0	1	<1	<1
Magnesium	ppm	ASTM D5185m	560	630	500	571
	ppiii	ASTIVI DJIOJIII	500	630	536	
Calcium	ppm	ASTM D5185m	1510	1686	1574	1652
						1652 709
Calcium	ppm	ASTM D5185m	1510	1686	1574	
Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1510 780	1686 749	1574 698	709
Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870	1686 749 1058	1574 698 992	709 962
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870 2040	1686 749 1058 3082	1574 698 992 2275	709 962 2811
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1510 780 870 2040 limit/base	1686 749 1058 3082 current	1574 698 992 2275 history1	709 962 2811 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	1510 780 870 2040 limit/base >+100	1686 749 1058 3082 current 5	1574 698 992 2275 history1 7	709 962 2811 history2 4
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870 2040 limit/base >+100	1686 749 1058 3082 current 5 13	1574 698 992 2275 history1 7 9	709 962 2811 history2 4 12
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870 2040 <i>limit/base</i> >+100 >20	1686 749 1058 3082 current 5 13 4	1574 698 992 2275 history1 7 9 2	709 962 2811 history2 4 12 0
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870 2040 <i>limit/base</i> >+100 >20	1686 749 1058 3082 current 5 13 4 current	1574 698 992 2275 history1 7 9 2 2 history1	709 962 2811 history2 4 12 0 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870 2040 limit/base >+100 >20 limit/base	1686 749 1058 3082 current 5 13 4 current 0.1	1574 698 992 2275 history1 7 9 2 2 history1 0	709 962 2811 history2 4 12 0 history2 0.1
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1510 780 870 2040 <i>limit/base</i> >+100 >20 <i>limit/base</i>	1686 749 1058 3082 <u>current</u> 5 13 4 <u>current</u> 0.1 10.9	1574 698 992 2275 history1 7 9 2 2 history1 0 10.7	709 962 2811 history2 4 12 0 history2 0.1 12.6
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	1510 780 870 2040 limit/base >20 limit/base >20 >30	1686 749 1058 3082 current 5 13 4 current 0.1 10.9 23.4	1574 698 992 2275 history1 7 9 2 history1 0 10.7 21.6	709 962 2811 history2 4 12 0 history2 0.1 12.6 26.2

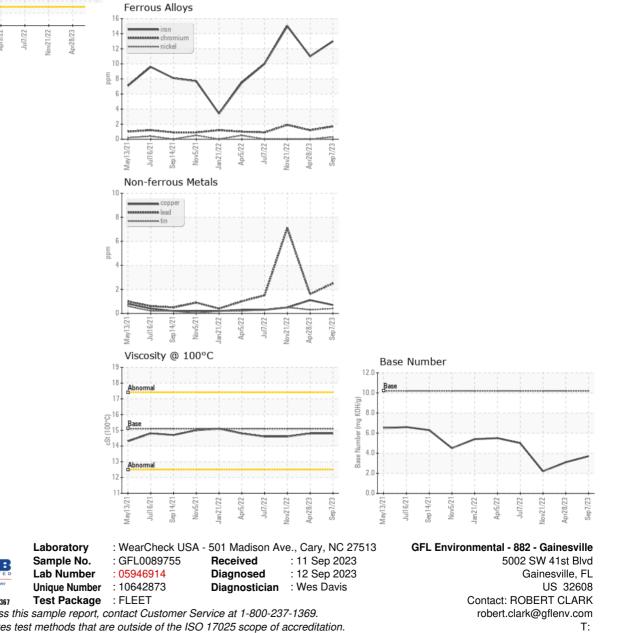


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	14.8	14.8	14.6
GRAPHS						





Submitted By: STEPHEN WEIL

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