

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

944032-260231

Component Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (7 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.

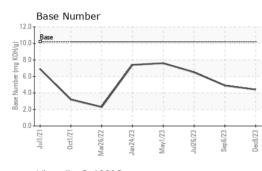
Fluid Condition

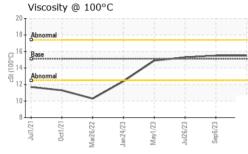
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0081039	GFL0081115	GFL0081060
Sample Date		Client Info		08 Dec 2023	06 Sep 2023	26 Jul 2023
Machine Age	hrs	Client Info		19732	19732	19432
Oil Age	hrs	Client Info		700	1200	703
Oil Changed		Client Info		Not Changd	Changed	Not Changd
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	13	19	16
Chromium	ppm	ASTM D5185m	>4	1	1	1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	3	3	3
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>35	<1	2	3
Tin	ppm	ASTM D5185m	>4	<1	<1	0
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	8	8	18
Barium	ppm	ASTM D5185m	5	0	0	0
Barium Molybdenum		ASTM D5185m ASTM D5185m	5 50	0 55	0 57	0 57
	ppm		50	-		
Molybdenum	ppm ppm	ASTM D5185m	50	55	57	57
Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0	55 <1	57 <1	57 <1
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560	55 <1 580	57 <1 584	57 <1 593
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510	55 <1 580 1649	57 <1 584 1768 759 1054	57 <1 593 1747
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510 780	55 <1 580 1649 748	57 <1 584 1768 759	57 <1 593 1747 841
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	50 0 560 1510 780 870	55 <1 580 1649 748 1038	57 <1 584 1768 759 1054	57 <1 593 1747 841 1073
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 ASTM D5185m	50 0 560 1510 780 870 2040	55 <1 580 1649 748 1038 2572	57 <1 584 1768 759 1054 3064	57 <1 593 1747 841 1073 3157
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	50 0 560 1510 780 870 2040 limit/base	55 <1 580 1649 748 1038 2572 current	57 <1 584 1768 759 1054 3064 history1	57 <1 593 1747 841 1073 3157 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 0 560 1510 780 870 2040 <i>limit/base</i> >+100	55 <1 580 1649 748 1038 2572 current 5	57 <1 584 1768 759 1054 3064 history1 5	57 <1 593 1747 841 1073 3157 history2 6
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510 780 870 2040 <i>limit/base</i> >+100	55 <1 580 1649 748 1038 2572 current 5 12	57 <1 584 1768 759 1054 3064 history1 5 11	57 <1 593 1747 841 1073 3157 history2 6 11
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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 0 560 1510 780 870 2040 2040 >+100 >+100	55 <1 580 1649 748 1038 2572 current 5 12 3	57 <1 584 1768 759 1054 3064 <u>history1</u> 5 11 <1	57 <1 593 1747 841 1073 3157 history2 6 11 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >20 limit/base	55 <1 580 1649 748 1038 2572 current 5 12 3 current	57 <1 584 1768 759 1054 3064 history1 5 11 <1 <1 history1	57 <1 593 1747 841 1073 3157 history2 6 11 <1 <1 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >20 limit/base	55 <1 580 1649 748 1038 2572 current 5 12 3 current 0	57 <1 584 1768 759 1054 3064 history1 5 11 <1 <1 kistory1 0.1	57 <1 593 1747 841 1073 3157 history2 6 11 <1 <1 history2 0.1
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 *ASTM D7844	50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	55 <1 580 1649 748 1038 2572 <u>current</u> 5 12 3 <u>current</u> 0 11.3	57 <1 584 1768 759 1054 3064 <u>history1</u> 5 11 <1 <1 <u>history1</u> 0.1 10.3	57 <1 593 1747 841 1073 3157 history2 6 11 <1 <1 history2 0.1 10.0
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 D7844 *ASTM D7844 *ASTM D7844	50 0 560 1510 780 870 2040 Iimit/base >+100 >20 Iimit/base >20 S	55 <1 580 1649 748 1038 2572 current 5 12 3 current 0 11.3 23.2	57 <1 584 1768 759 1054 3064 history1 5 11 <1 <1 0.1 0.1 10.3 21.7	57 <1 593 1747 841 1073 3157 history2 6 11 <1 <1 history2 0.1 10.0 19.7
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 D7844 *ASTM D7624 *ASTM D7624	50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base >20 s 20	55 <1 580 1649 748 1038 2572 current 5 12 3 current 0 11.3 23.2 current	57 <1 584 1768 759 1054 3064 history1 5 11 <1 <1 history1 0.1 10.3 21.7 history1	57 <1 593 1747 841 1073 3157 history2 6 11 <1 <1 history2 0.1 10.0 19.7 history2



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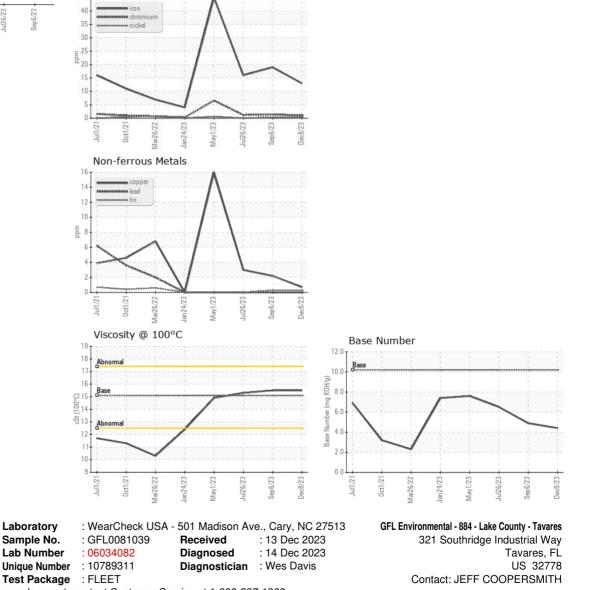




VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	15.5	15.5	15.3
GRAPHS						

Ferrous Alloys

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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)

Certificate L2367

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