

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

2603C PETERBILT 567

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (48 QTS)

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.

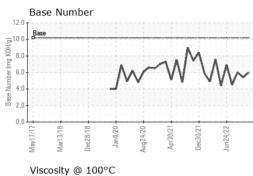


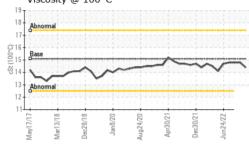
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0103254	GFL0089306	GFL0056661
Sample Date		Client Info		03 Jan 2024	21 Jul 2023	07 Feb 2023
Machine Age	hrs	Client Info		24285	23110	21945
Oil Age	hrs	Client Info		1175	1165	833
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
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	8	16
Chromium	ppm	ASTM D5185m	>4	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>9	4	2	4
Lead	ppm	ASTM D5185m	>30	<1	1	8
Copper	ppm	ASTM D5185m	>35	1	<1	2
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	17	13	15
D 1		AOTH DELOC	5	0	0	<1
Barium	ppm	ASTM D5185m	5	•	0	
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	50	48	52	58
			50	-		
Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50	48	52	58
Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	50 0	48 <1	52 <1	58 <1
Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560	48 <1 561	52 <1 559	58 <1 522
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510	48 <1 561 1489	52 <1 559 1647	58 <1 522 1529
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510 780	48 <1 561 1489 742	52 <1 559 1647 710	58 <1 522 1529 667
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 0 560 1510 780 870	48 <1 561 1489 742 955	52 <1 559 1647 710 953	58 <1 522 1529 667 932
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 0 560 1510 780 870 2040	48 <1 561 1489 742 955 2448	52 <1 559 1647 710 953 2903	58 <1 522 1529 667 932 2874
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	50 0 560 1510 780 870 2040 limit/base	48 <1 561 1489 742 955 2448 current	52 <1 559 1647 710 953 2903 history1	58 <1 522 1529 667 932 2874 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >+100	48 <1 561 1489 742 955 2448 current 7	52 <1 559 1647 710 953 2903 history1 6	58 <1 522 1529 667 932 2874 history2 10
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 method ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >+100	48 <1 561 1489 742 955 2448 current 7 13	52 <1 559 1647 710 953 2903 history1 6 35	58 <1 522 1529 667 932 2874 history2 10 ▲ 289
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 ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >+100	48 <1 561 1489 742 955 2448 <u>current</u> 7 13 4	52 <1 559 1647 710 953 2903 history1 6 35 11	58 <1 522 1529 667 932 2874 history2 10 ▲ 289 ▲ 121
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS 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 >+100	48 <1 561 1489 742 955 2448 current 7 13 4 current	52 <1 559 1647 710 953 2903 history1 6 35 11 history1	58 <1 522 1529 667 932 2874 history2 10 ▲ 289 ▲ 121 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	ASTM D5185m ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >20 limit/base	48 <1 561 1489 742 955 2448 <u>current</u> 7 13 4 <u>current</u> 0	52 <1 559 1647 710 953 2903 history1 6 35 11 history1 0.1	58 <1 522 1529 667 932 2874 10 10 ▲ 289 ▲ 121 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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 0 560 1510 780 870 2040 limit/base >20 limit/base	48 <1 561 1489 742 955 2448 <u>current</u> 7 13 4 <u>current</u> 0 10.4	52 <1 559 1647 710 953 2903 history1 6 35 11 6 35 11 0.1 0.1 10.5	58 <1 522 1529 667 932 2874 10 ▲ 289 ▲ 121 history2 0.1 0.1 11.2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D51854 *ASTM D7844 *ASTM D7624	50 0 560 1510 780 870 2040 imit/base >+100 >20 imit/base >20	48 <1 561 1489 742 955 2448 <u>current</u> 7 13 4 <u>current</u> 0 10.4 21.8	52 <1 559 1647 710 953 2903 history1 6 35 11 6 35 11 0.1 0.1 0.1 10.5 22.3	58 <1 522 1529 667 932 2874 history2 10 ▲ 289 ▲ 121 history2 0.1 11.2 21.8
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm TS ppm 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 ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624	50 0 560 1510 780 870 2040 limit/base >+100 	48 <1 561 1489 742 955 2448 <u>current</u> 7 13 4 <u>current</u> 0 10.4 21.8 <u>current</u>	52 <1 559 1647 710 953 2903 history1 6 35 11 6 35 11 0.1 0.1 10.5 22.3 history1	58 <1 522 1529 667 932 2874 history2 10 ▲ 289 ▲ 121 history2 0.1 11.2 21.8 history2



OIL ANALYSIS REPORT

VISUAL





		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	. M .	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
\sim	VILAN	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
' Y *	• • • • •	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Aug24/20 Apr30/21	Dec30/21 Jun24/22	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Aug	Jun	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	14.4	14.8	14.8
	•••	GRAPHS						
		Ferrous Alloys						
1/20	0/21	50 - iron						
Aug24/20 Apr30/21	Dec30/21 Jun24/22	nickel			A			
		40-						
		톺30-						
		20			1.1.1.1			
		10		M	L			
			\sim					
		Mar13/17 Mar13/18 Dec28/18 Jan8/20	Aug24/20	Apr30/21 Dec30/21				
		May17/1 Mar13/1 Dec28/1	Aug2	Apro Deco				
		Non-ferrous Metal	s					
		50 copper		12201223				
		40 - tin						
					1			
		30 - E						
		30- E 20-						
		20						
		шdd						
			20					
		20	Aug24/20	Apr30/21 Dec30/21				
		und 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Apr30/21		Base Number		
		Uid 20 10 0 10/10/1/NeW 81/81/80 81/81/80 81 81/80 81 81/80 81 81/80 81 81/80 81 81/80 810		Apr30/21	12.0	T 3000000000000000000000000000000000000		
		und 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Apr30/21	12.0	Base		
		Uid 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Apr30/21	12.0	Base		Μ.
		Uid 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Dec30/21	12.0	Base	N	MAA.
		Uiscosity @ 100°C		Dec30/21	12.0	Base	M	Mw
		Uiscosity @ 100°C		Apr30.21	12.0 (0)(10.0 (0)(10.0) (0	Base	M	M
		Uiscosity @ 100°C		Dec30/21	12.0	Base	M	Mw
		Uiscosity @ 100°C		<u>~~~</u>	12.0 (0)(10.0)(10.	Base	20	21- 22-
		Uiscosity @ 100°C		<u>~~~</u>	12.0 (0)(10.0)(10.	Base	Jan 8/20 ug 24/20 Apri30/21	be30/21 un24/22
		Uiscosity @ 100°C		Apr30.21 Dec30.21 Dec30.21 Dec30.21 Dec30.21 Dec30.21	12.0 (0)(10.0)(10.	Base	Jan 8/20	Dec30.21 Jun24/22
4	Laboratory	Uiscosity @ 100°C		- IZ/06/2017 - IZ/06/2017 son Ave., Ca	12.0 10.0	Mar13/17 Mar13/18 Decc28/18	ironmental - 001	- Raleigh(CN
VAB	Sample No.	Uiscosity @ 100°C		10002000 10002000 10002000 10002000 1000200 10000000000	12.0 10.0	Mar13/17 Mar13/18 Dec28/18	ironmental - 001	l - Raleigh(CN Conquest Dri
	Sample No. Lab Number	Uiscosity @ 100°C	or the second seco	404, 2004, 2	12.0 10.0	Mar13/17 Mar13/18 Dec28/18	ironmental - 001	l - Raleigh(CN Conquest Dri ⁻ Garner, N
icate L2367	Sample No.	Uiscosity @ 100°C		404, 2004, 2	12.0 10.0	Mar13/17 Mar13/18 Dec28/18	aronmental - 001 3741 0	l - Raleigh(CN Conquest Dri

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

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