

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 744010

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.

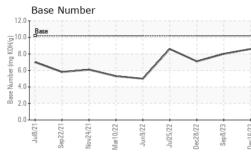
Fluid Condition

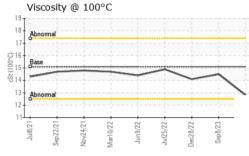
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

· · · · ·			2021 Nov2021 Mar2022	Jun2022 Jul2022 Dec2022 Sep20		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089750	GFL0089707	GFL0066775
Sample Date		Client Info		16 Dec 2023	08 Sep 2023	28 Dec 2022
Machine Age	hrs	Client Info		22185	21810	20572
Oil Age	hrs	Client Info		375	1238	1722
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS	6	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	19	4	6
Chromium	ppm	ASTM D5185m	>4	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	2
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm		>9	<1	<1	1
Lead	ppm	ASTM D5185m	>30	1	0	<1
Copper	ppm	ASTM D5185m	>35	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
						,
Boron	ppm	ASTM D5185m	50	2	27	94
Boron Barium	ppm ppm					
		ASTM D5185m	50	2	27	94
Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	2 0	27 0	94 0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	2 0 56	27 0 51 <1 598	94 0 107 <1 572
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	2 0 56 <1	27 0 51 <1 598 1656	94 0 107 <1 572 1216
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	2 0 56 <1 807	27 0 51 <1 598 1656 794	94 0 107 <1 572 1216 628
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	2 0 56 <1 807 1002	27 0 51 <1 598 1656	94 0 107 <1 572 1216
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	2 0 56 <1 807 1002 892	27 0 51 <1 598 1656 794	94 0 107 <1 572 1216 628
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm 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	2 0 56 <1 807 1002 892 1100	27 0 51 <1 598 1656 794 982	94 0 107 <1 572 1216 628 757
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	2 0 56 <1 807 1002 892 1100 2725	27 0 51 <1 598 1656 794 982 2968	94 0 107 <1 572 1216 628 757 2742
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	2 0 56 <1 807 1002 892 1100 2725 current	27 0 51 <1 598 1656 794 982 2968 history1	94 0 107 <1 572 1216 628 757 2742 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040	2 0 56 <1 807 1002 892 1100 2725 current 3	27 0 51 <1 598 1656 794 982 2968 history1 3	94 0 107 <1 572 1216 628 757 2742 history2 17
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m 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 limit/base >+100	2 0 56 <1 807 1002 892 1100 2725 current 3 17 6	27 0 51 <1 598 1656 794 982 2968 history1 3 5	94 0 107 <1 572 1216 628 757 2742 history2 17 6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040 limit/base >+100	2 0 56 <1 807 1002 892 1100 2725 current 3 17 6	27 0 51 <1 598 1656 794 982 2968 history1 3 5 0	94 0 107 <1 572 1216 628 757 2742 history2 17 6 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 Imit/base >+100 >20 Imit/base	2 0 56 <1 807 1002 892 1100 2725 current 3 17 6	27 0 51 <1 598 1656 794 982 2968 history1 3 5 0 0	94 0 107 <1 572 1216 628 757 2742 history2 17 6 4 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 Imit/base >+100 >20 Imit/base	2 0 56 <1 807 1002 892 1100 2725 <u>current</u> 3 17 6 <u>current</u> 1.4	27 0 51 <1 598 1656 794 982 2968 history1 3 5 0 history1 0.1	94 0 107 <1 572 1216 628 757 2742 history2 17 6 4 4 history2 0.1
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	2 0 56 <1 807 1002 892 1100 2725 <u>current</u> 3 17 6 <u>current</u> 1.4 9.9 20.9	27 0 51 <1 598 1656 794 982 2968 history1 3 5 0 history1 0.1 8.1	94 0 107 <1 572 1216 628 757 2742 history2 17 6 4 4 history2 0.1 5.1
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 50 560 1510 780 870 2040 Iinit/base >20 Iinit/base >20 Iinit/base	2 0 56 <1 807 1002 892 1100 2725 <u>current</u> 3 17 6 <u>current</u> 1.4 9.9 20.9	27 0 51 <1 598 1656 794 982 2968 history1 3 5 0 0 history1 0.1 8.1 18.2	94 0 107 <1 572 1216 628 757 2742 history2 17 6 4 4 history2 0.1 5.1 20.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	50 50 560 1510 780 870 2040 Iimit/base >+100 220 Iimit/base >20 30	2 0 56 <1 807 1002 892 1100 2725 Current 3 17 6 Current 1.4 9.9 20.9 Current	27 0 51 <1 598 1656 794 982 2968 history1 3 5 0 history1 0.1 8.1 18.2 history1	94 0 107 <1 572 1216 628 757 2742 history2 17 6 4 4 history2 0.1 5.1 20.3 history2



OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	history
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	ERTIES	method	limit/base	current	history1	history
/isc @ 100°C	cSt	ASTM D445	15.1	12.8	14.5	14.1
GRAPHS						
iron chromium nickel	\wedge		/			
iron	Jun9/22	JudSk72 Dec28/22 Sep8/23	Dec16/23			
IZ2001 Market		Jul25/22 Dec28/22 Sep8/23	Dec 16/23			
IZ2001 June 100 June		JuldSy22 Dec28/22 Sep8/23	Dec 16/23			
IZUST		Juli25/22 De:28/22 Sap8/23	Deci 6/23			
iron chomium nickel [Z800] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z800] [Z762] [Z7		Juli25/22 Dec28/22 Sep8/23	Dec16/23			
iron chomium nickel 12752as 12757as 12757as Non-ferrous Meta		Jul(25/22 Dec28/22 Sep8/23	Dec 16/23			
iron chomium nickel (ZHZ/2004) (Z	ils		_			
iron nickel 1/2/Ban Non-ferrous Meta	alls	Juli25/22 De:28/22 Sep8/23	Dec16/23			

10.0

8.0 6.0 4.0 Base

2 (

0.0

Jul8/21-

Sep22/21.

Vov24/21

Sep8/23. Dec16/23 -

: 20 Dec 2023

: 21 Dec 2023

Dec28/22

Jul25/22

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Recieved

Diagnosed

Number (mg KOH/g)



Unique Number : 10795578 Diagnostician : Sean Felton Test Package : FLEET (Additional Tests: FT-IR(Diff)) Certificate L2367 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)

17

(100-01) 15 14

12 11-

Laboratory Sample No.

Lab Number

Abno

Jul8/21

Sep22/21

: GFL0089750

: 06040349

Vov24/21 Mar10/22 un9/22 Jun9/22 Jul25/22 Dec28/22 Sep8/23

Mar10/22

Dec16/23 -