

OIL ANALYSIS REPORT

Sample Rating Trend



933050 Component Natural Gas Engine Fluid

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Machine Id

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

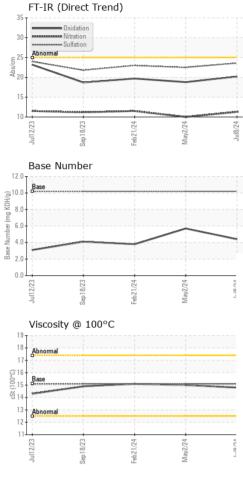
Fluid Condition

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

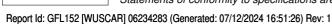
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0106051	GFL0105940	GFL0106114
Sample Date		Client Info		08 Jul 2024	02 May 2024	21 Feb 2024
Machine Age	hrs	Client Info		3319	2777	2237
Oil Age	hrs	Client Info		600	2777	600
Oil Changed		Client Info		Changed	Changed	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	10	15	11
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m	>5	0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>25	4	4	4
Lead	ppm	ASTM D5185m	>40	<1	2	<1
Copper	ppm	ASTM D5185m	>150	1	2	2
Tin	ppm	ASTM D5185m	>4	0	1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	50	2	history1 6	8
	ppm ppm				6 0	8 0
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	2	6	8 0 59
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	2 0	6 0	8 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	2 0 54	6 0 56 1 593	8 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	2 0 54 <1	6 0 56 1	8 0 59 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	2 0 54 <1 582	6 0 56 1 593	8 0 59 1 614
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	50 5 50 0 560 1510	2 0 54 <1 582 1853	6 0 56 1 593 1684	8 0 59 1 614 1780 749 1030
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	2 0 54 <1 582 1853 774	6 0 56 1 593 1684 709	8 0 59 1 614 1780 749
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 50 0 560 1510 780 870 2040 Iimit/base	2 0 54 <1 582 1853 774 997 2768 current	6 0 56 1 593 1684 709 959 2748 history1	8 0 59 1 614 1780 749 1030 2534 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 method	50 5 50 0 560 1510 780 870 2040	2 0 54 <1 582 1853 774 997 2768 current 5	6 0 56 1 593 1684 709 959 2748 kistory1 5	8 0 59 1 614 1780 749 1030 2534 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 0 560 1510 780 870 2040 Iimit/base	2 0 54 <1 582 1853 774 997 2768 current	6 0 56 1 593 1684 709 959 2748 history1	8 0 59 1 614 1780 749 1030 2534 history2 5 9
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	50 50 0 560 1510 780 870 2040 limit/base >25	2 0 54 <1 582 1853 774 997 2768 current 5	6 0 56 1 593 1684 709 959 2748 kistory1 5	8 0 59 1 614 1780 749 1030 2534 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 limit/base >25	2 0 54 <1 582 1853 774 997 2768 current 5 10	6 0 56 1 593 1684 709 959 2748 history1 5 8 5 5 history1	8 0 59 1 614 1780 749 1030 2534 history2 5 9 5 5 9 5 5 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 50 0 560 1510 780 870 2040 Imit/base >25 >20	2 0 54 <1 582 1853 774 997 2768 <u>current</u> 5 10 4 <u>current</u> 0	6 0 56 1 593 1684 709 959 2748 history1 5 8 5 8 5 5 8 5 5 history1 0.4	8 0 59 1 614 1780 749 1030 2534 history2 5 9 5 9 5 9 5 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 >25 >20	2 0 54 <1 582 1853 774 997 2768 current 5 10 4 current	6 0 56 1 593 1684 709 959 2748 history1 5 8 5 5 history1	8 0 59 1 614 1780 749 1030 2534 history2 5 9 5 5 9 5 5 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 50 0 560 1510 780 870 2040 Imit/base >25 >20	2 0 54 <1 582 1853 774 997 2768 <u>current</u> 5 10 4 <u>current</u> 0	6 0 56 1 593 1684 709 959 2748 history1 5 8 5 8 5 5 8 5 5 history1 0.4	8 0 59 1 614 1780 749 1030 2534 history2 5 9 5 9 5 9 5 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 0 560 1510 780 870 2040 Iimit/base >25 20 Iimit/base	2 0 54 <1 582 1853 774 997 2768 <i>current</i> 5 10 4 <i>current</i> 0 11.3	6 0 56 1 593 1684 709 959 2748 history1 5 8 5 8 5 5 history1 0.4 10.0	8 0 59 1 614 1780 749 1030 2534 history2 5 9 5 9 5 history2 0 11.5
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 50 560 1510 780 870 2040 Iinit/base >25 Iinit/base >20	2 0 54 <1 582 1853 774 997 2768 <u>current</u> 5 10 4 <u>current</u> 0 11.3 23.6	6 0 56 1 593 1684 709 959 2748 history1 5 8 5 8 5 5 history1 0.4 10.0 22.5	8 0 59 1 614 1780 749 1030 2534 history2 5 9 5 9 5 history2 0 11.5 23.0



OIL ANALYSIS REPORT



	VISUAL		method	limit/base	current		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
Rangersantestestestastastast	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
y2/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Ma	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	15.0	15.1
	GRAPHS						
	Ferrous Alloys						
1/24	iron						
May2	annan nickel						
	툍 30						
	20						
· - 4	10			_			
		/24	2/24	3/24			
	Jul12 Sep16	Feb21	May2	Jul			
	Non-ferrous Meta	ls					
May2/24	20 copper						
	15 tin						
	= \						
	ā ¹⁰						
			Statements by Statements	A lost the second second			
	12/23	21/24	y2/24	18/24			
	Sepi	Feb2	Mar	٦			
		2			Base Number		
	18		 		Base		
	17-		· · · · · · · · ·		0-	1	
	ឆ្ ¹⁶			g Ko	0		
	0015 Base			ود الله الله الله الله الله الله الله الل	0		\sim
	⁶³ 14			N N N	0		
	13 Abnormal						
	12						
	11	/24	/24	0		24 -	/24 -
	Jui12/23 Sep18/23	Feb21/24	May2/24	Jul8/24	Jul12/23 Sep18/23	Feb21/24	May2/24
		Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C GRAPHS Ferrous Alloys Ferrous Alloys Non-ferrous Meta	Precipitate scalar Silt scalar Sand/Dirt scalar Appearance scalar Odor scalar Emulsified Water scalar Free Water scalar Free Water scalar Free Water scalar Free Water scalar Free Water scalar Non-ferrous Alloys Terrous Metals Non-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C	Precipitate scalar *Visual Silt scalar *Visual Debris scalar *Visual Sand/Dirt scalar *Visual Appearance scalar *Visual Odor scalar *Visual Emulsified Water scalar *Visual Free Water scalar *Visual FLUID PROPERTIES method Visc @ 100°C cSt ASTM D445 GRAPHS Ferrous Alloys Mon-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C Viscosity @ 100°C	Precipitate scalar *Visual NONE Sit scalar *Visual NONE Sand/Dirt scalar *Visual NONE Appearance scalar *Visual NORML Odor scalar *Visual NORML Emulsified Water scalar *Visual NORML Free Water scalar *Visual NORML GRAPHS Ferrous Alloys Visc @ 100°C cst ASTM D445 15.1 Over the scalar *Visual NORML State ***********************************	Precipitate scalar *Visual NONE NONE Sitt scalar *Visual NONE NONE Sanat/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Odor scalar *Visual NORML NORML Emulsified Water scalar *Visual NORML NORML NORML Direc @ 100°C cst ASTM D445 15.1 14.8 Ferrous Alloys Non-ferrous Metals Viscosity @ 100°C	Precipitate scalar Visual NONE NONE NONE NONE Stat scalar Visual NONE NONE NONE NONE Sand/Dirt scalar Visual NONE NONE NONE NONE Sand/Dirt scalar Visual NORML NORML NORML NORML Appearance scalar Visual NORML NORML NORML NORML Emulsified Water scalar Visual NORML NORML NORML Free Water scalar Visual NORM NORM NORML NORML Visc @ 100°C cSt ASTM D445 15.1 14.8 15.0 GRAPHS Ferrous Alloys Non-ferrous Metals Viscosity @ 100°C Viscosity @ 100°C



ŝ

Submitted By: WITH iNDIANA GFL - Chris Smith