

OIL ANALYSIS REPORT

Sample Rating Trend



945015-260272

Component Natural Gas Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: OIL SAMPLE)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

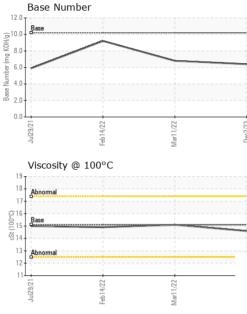
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

(GAL)		Jul2021 Feb2022 Mur2022 Dec2023					
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		GFL0092071	GFL0048695	GFL0045841	
Sample Date		Client Info		02 Dec 2023	11 Mar 2022	14 Feb 2022	
Machine Age	hrs	Client Info		27404	27404	27224	
Oil Age	hrs	Client Info		13219	0	0	
Oil Changed		Client Info		Not Changd	Not Changd	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	8	10	5	
Chromium	ppm	ASTM D5185m	>4	<1	2	<1	
Nickel	ppm	ASTM D5185m	>2	0	0	0	
Titanium	ppm	ASTM D5185m		0	0	0	
Silver	ppm	ASTM D5185m	>3	0	0	0	
Aluminum	ppm	ASTM D5185m	>9	1	4	1	
Lead	ppm	ASTM D5185m	>30	0	<1	<1	
Copper	ppm	ASTM D5185m	>35	17	1	2	
Tin	ppm	ASTM D5185m	>4	0	<1	<1	
Antimony	ppm	ASTM D5185m				<1	
Vanadium	ppm	ASTM D5185m		0	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
ADDITIVES		method	limit/base	current	history1	history2	
ADDITIVES		methou	iiiiii/base	Current	TIStOryT	motory	
Boron	ppm	ASTM D5185m	50	25	16	40	
	ppm ppm						
Boron		ASTM D5185m	50	25	16	40	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	25 2	16 0	40 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	25 2 51	16 0 53	40 0 51	
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	25 2 51 0	16 0 53 <1	40 0 51 <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	25 2 51 0 538	16 0 53 <1 592	40 0 51 <1 580	
Boron 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	25 2 51 0 538 1469	16 0 53 <1 592 1657	40 0 51 <1 580 1586	
Boron 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	25 2 51 0 538 1469 668	16 0 53 <1 592 1657 782	40 0 51 <1 580 1586 768	
Boron Barium 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 ASTM D5185m	50 5 50 0 560 1510 780 870	25 2 51 0 538 1469 668 884 2363	16 0 53 <1 592 1657 782 1035	40 0 51 <1 580 1586 768 913	
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 ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040	25 2 51 0 538 1469 668 884 2363	16 0 53 <1 592 1657 782 1035 2250	40 0 51 <1 580 1586 768 913 2149	
Boron Barium 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 ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040	25 2 51 0 538 1469 668 884 2363 current	16 0 53 <1 592 1657 782 1035 2250 history1	40 0 51 <1 580 1586 768 913 2149 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 ASTM D5185m	50 5 50 560 1510 780 870 2040 Limit/base	25 2 51 0 538 1469 668 884 2363 current 4	16 0 53 <1 592 1657 782 1035 2250 history1 4	40 0 51 <1 580 1586 768 913 2149 history2 4	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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 ASTM D5185m	50 5 50 560 1510 780 870 2040 Limit/base	25 2 51 0 538 1469 668 884 2363 current 4 8 2	16 0 53 <1 592 1657 782 1035 2250 history1 4 1	40 0 51 <1 580 1586 768 913 2149 history2 4 3	
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	50 50 0 560 1510 780 870 2040 limit/base >+100	25 2 51 0 538 1469 668 884 2363 current 4 8 2	16 0 53 <1 592 1657 782 1035 2250 history1 4 1 <1	40 0 51 <1 580 1586 768 913 2149 history2 4 3 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 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	25 2 51 0 538 1469 668 884 2363 current 4 8 2 2 current	16 0 53 <1 592 1657 782 1035 2250 history1 4 1 <1 <1 history1	40 0 51 <1 580 1586 768 913 2149 history2 4 3 0 bistory2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	25 2 51 0 538 1469 668 884 2363 <u>current</u> 4 8 2 2 <u>current</u> 0	16 0 53 <1 592 1657 782 1035 2250 history1 4 1 <1 <1 kistory1 0	40 0 51 <1 580 1586 768 913 2149 history2 4 3 0 history2 0	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc 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 limit/base >+100 20 limit/base	25 2 51 0 538 1469 668 884 2363 <u>current</u> 4 8 2 2 <u>current</u> 0 8.3 20.1	16 0 53 <1 592 1657 782 1035 2250 history1 4 1 <1 <1 history1 0 10.7	40 0 51 <1 580 1586 768 913 2149 history2 4 3 0 history2 0 7.7	
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 Iimit/base >+100 520 Iimit/base >20	25 2 51 0 538 1469 668 884 2363 <u>current</u> 4 8 2 2 <u>current</u> 0 8.3 20.1	16 0 53 <1 592 1657 782 1035 2250 history1 4 1 <1 <1 history1 0 10.7 21.3	40 0 51 <1 580 1586 768 913 2149 history2 4 3 0 history2 0 7.7 20.6	
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	50 50 560 1510 780 870 2040 limit/base >+100 20 limit/base >20 30	25 2 51 0 538 1469 668 884 2363 Current 4 8 2 Current 0 8.3 20.1 Current	16 0 53 <1 592 1657 782 1035 2250 history1 4 1 <1 istory1 0 10.7 21.3 history1	40 0 51 <1 580 1586 768 913 2149 history2 4 3 0 history2 0 7.7 20.6 history2	



OIL ANALYSIS REPORT

VISUAL



TICOTIL				,	,
White Metal	scalar *Vis	ual NONE	NONE	NONE	NONE
Yellow Metal	scalar *Vis	ual NONE	NONE	NONE	NONE
Precipitate	scalar *Vis	ual NONE	NONE	NONE	NONE
Silt	scalar *Vis	ual NONE	NONE	NONE	NONE
Debris	scalar *Vis	ual NONE	NONE	NONE	NONE
Sand/Dirt	scalar *Vis	ual NONE	NONE	NONE	NONE
Appearance	scalar *Vis		NORML	NORML	NORML
Odor	scalar *Vis	ual NORML	NORML	NORML	NORML
Emulsified Water	scalar *Vis		NEG	NEG	NEG
Free Water	scalar *Vis		NEG	NEG	NEG
FLUID PROPE	ERTIES me	thod limit/base	current	history1	history2
Visc @ 100°C	cSt AST	M D445 15.1	14.6	15.1	14.9
GRAPHS					
Ferrous Alloys					
10iron	\wedge				
8 - nickel					
6					
4					
2	and the second second				
****Lassestatestatestate	NAMES OF THE OWNER	A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PROPERTY A REAL PRO			
5 51		53			
Jul29/21	Mar11/22	Dec2/23			
Non-ferrous Meta					
¹⁸					
16 - copper					
14					
E ¹⁰ 8		1			
6		/			
4	/				
Jul29/21	1/22 -	Dec2/23			
Jul2 Feb1	Mar11/22	Dec			
Viscosity @ 100°	С		Base Numbe	r	
19 T		12	2.0 T		
18 - Abnormal		10	Base		
17-		(B/HC			
() 16 00 15 75 75 14		ng KG	8.0		
215 - 9		uper (5.0		
		Base Number (mg KOH(g)	4.0		
13 Abnormal	1	Bas	2.0 -		
12					
	22 -		0.0 2	- 22 -	+
Jul29/21	Mar11/22	Dec2/23	Jul29/21	Feb14/22	Mart 1/22
, e	ž	1	~	ц,	2
: WearCheck USA - : GFL0092071 : 06025595	501 Madison A Received Diagnosed	ve., Cary, NC 275 ⁻ : 05 Dec 2023 : 07 Dec 2023	13 GFL En	vironmental - 856 8515 H	- Houston S lighway 6 S Houstor
r : 10770095	Diagnostician				US 77
e : FIFFT	•			Contact: A	olinar Zaca



Test Package : FLEET 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) Contact: Apolinar Zacarias

pzacariascano@gflenv.com

T:

F: