

OIL ANALYSIS REPORT

Sample Rating Trend





712061 Component Diesel Engine PETRO CANADA DURON SHP 15W40 (--- GAL)

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 INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0121967	GFL0096868	
Sample Date		Client Info		10 Jun 2024	11 Jan 2024	
Machine Age	hrs	Client Info		0	0	
Oil Age	hrs	Client Info		600	600	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	4	14	
Chromium	ppm	ASTM D5185m	>20	0	<1	
Nickel	ppm	ASTM D5185m	>2	0	0	
Titanium	ppm	ASTM D5185m		0	<1	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>20	1	2	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	0	<1	
Tin	ppm	ASTM D5185m	>15	0	<1	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		0	0	
	ppin	no na boroom		U	0	
ADDITIVES	ppm	method	limit/base	current	history1	history2
			limit/base	current	-	
ADDITIVES	ppm	method ASTM D5185m		-	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m	0	current 8	history1 0	history2
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0	current 8 0	history1 0 0	history2
ADDITIVES Boron Barium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	current 8 0 59	history1 0 0 57	history2
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	current 8 0 59 0	history1 0 0 57 0	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	current 8 0 59 0 944	history1 0 0 57 0 903	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	current 8 0 59 0 944 1043	history1 0 0 57 0 903 1066	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	Current 8 0 59 0 944 1043 1066	history1 0 57 0 903 1066 914	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	current 8 0 59 0 944 1043 1066 1261	history1 0 57 0 903 1066 914 1181	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	Current 8 0 59 0 944 1043 1066 1261 3643	history1 0 57 0 903 1066 914 1181 3144	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 8 0 59 0 944 1043 1066 1261 3643 current	history1 0 57 0 903 1066 914 1181 3144 history1	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	current 8 0 59 0 944 1043 1066 1261 3643 current 2	history1 0 0 57 0 903 1066 914 1181 3144 history1 2	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	current 8 0 59 0 944 1043 1066 1261 3643 current 2 2 2	history1 0 0 57 0 903 1066 914 1181 3144 history1 2 2 2	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	current 8 0 59 0 944 1043 1066 1261 3643 current 2 2 2 1	history1 0 0 57 0 903 1066 914 1181 3144 history1 2 2 2 2 2 2 2 2 2 2 2 2 2	history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 8 0 59 0 944 1043 1066 1261 3643 current 2 2 1 2 2 1 current	history1 0 0 57 0 903 1066 914 1181 3144 history1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 history1	history2 history2 history2 history2
ADDITIVES 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 TS ppm ppm	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	current 8 0 59 0 944 1043 1066 1261 3643 current 2 2 <1 current 0.2	history1 0 0 57 0 903 1066 914 1181 3144 history1 2 2 2 2 2 0 0.6	history2 history2 history2 history2
ADDITIVES 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	method ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 imit/base >20 imit/base >20	current 8 0 59 0 944 1043 1066 1261 3643 current 2 2 <1 current 0.2 6.0	history1 0 0 57 0 903 1066 914 1181 3144 history1 2 2 2 2 2 0 0.6 8.8	history2 <tr tr=""></tr>
ADDITIVES 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	method ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 <u>imit/base</u> >6 >20 20	current 8 0 59 0 944 1043 1066 1261 3643 current 2 2 2 2 2 6.0 18.4	history1 0 0 57 0 903 1066 914 1181 3144 history1 2 2 2 history1 0.6 8.8 19.7	history2 history2 history2



OIL ANALYSIS REPORT

FT-IR (Direct Trend)		VISUAL		method	limit/base	current	history1	history2
30 - Oxidation		White Metal	scalar	*Visual	NONE	NONE	NONE	
25 - Sulfation		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
5 20-		Precipitate	scalar	*Visual	NONE	NONE	NONE	
15		Silt		*Visual	NONE	NONE	NONE	
		Debris	scalar	*Visual	NONE	NONE	NONE	
		Sand/Dirt		*Visual	NONE	NONE	NONE	
74	/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	
Jan 11/24	Jun 10/24	Odor	scalar	*Visual	NORML	NORML	NORML	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Base Number		Free Water	scalar	*Visual	20.2	NEG	NEG	
		FLUID PROPE		method	limit/base	current	history1	history2
(b) 8.0 - (b) 80.0 - (b) 400 - (c) -		Visc @ 100°C	cSt	ASTM D445		14.4	14.4	
aa 4.0		GRAPHS			-			
₩ 2.0-		Ferrous Alloys						
0.0 + +	10.01-	12 - iron iron chromium						
J Viscosity @ 100°C		8						
19 18 Abnormal	Ed.	6 -						
17-		4						
© 16 0 15								
ぎ 14		an 11/24			Jun 10/24			
12		Non-ferrous Meta	ls		ſ			
Jan 11/24	10.01	10 copper						
с С	1	8 - tin						
	E	6 -						
	E.d.	4						
		2-						
		0						
		an 11/24			un 10/24			
		→ Viscosity @ 100°(2		- -	Base Number		
		19 18 - Abnormal			10.0	Base		
		17-			(B/HO) By Base Mumura Base Mumura Base 2.0			
	(C)	16 - Base			а б			
	cSt (100°C)	15			er (j			
	53	14			4.0	D		
		13 Abnormal			8ke 2.0			
		12			2.0			
		114						4
		Jan 11/24			Jun 10/24	Jan 11/2 ⁴		Jun 10/24
	Sample No. : (Lab Number : (Unique Number : 1 Test Package : F his sample report, co	11084105 FLEET ontact Customer Serv	Recei Teste Diagr	ved : 17 d : 18 nosed : 18	7 Jun 2024 3 Jun 2024 3 Jun 2024 - W 9.		FOF Contact: Z	N MÁRTIN DŘ T WAYNE, IN US 46806 achory Roehm m@gflenv.com
		e outside of the ISO 1 sifications are based o				rule (JCGM 106	5:2012)	T: F:
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Submitted By: See also GFL401 - ZACHORY ROEHM