

OIL ANALYSIS REPORT

Sample Rating Trend



427114

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

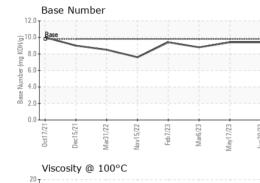
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

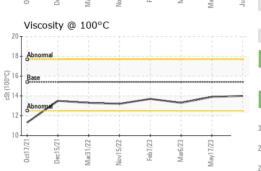
SAMPLE INFORM	/ ATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		GFL0088385	GFL0070039	GFL0070020
Sample Date		Client Info		30 Jun 2023	17 May 2023	06 Mar 2023
Machine Age	hrs	Client Info		18404	18258	18133
Oil Age	hrs	Client Info		18258	18133	0
Oil Changed		Client Info		Not Changd	Changed	Changed
Sample Status				NORMAL	NORMAL	ATTENTION
CONTAMINATI	ON	method	limit/base	current	history 1	history 2
Fuel		WC Method	<u>\</u> 5	<1.0	<1.0	<1.0
Glycol		WC Method	20	NEG	NEG	NEG
WEAR METALS	2		limit/booo	ourropt		
	5	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	7	6	24
Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	1	2
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	<1	0	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES			11 11 11			
		method			history 1	history 2
Boron	ppm		limit/base	current 0	history 1 <1	history 2 6
	ppm ppm		0			
Boron Barium		ASTM D5185m	0	0	<1	6
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 0	<1 0	6 0
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 60	<1 0 58	6 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 60 <1	<1 0 58 0	6 0 61 1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 0 60 <1 979	<1 0 58 0 941	6 0 61 1 849
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	0 0 60 0 1010 1070 1150	0 0 60 <1 979 1071 1022	<1 0 58 0 941 1075 997	6 0 61 1 849 1032 918
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 0 60 <1 979 1071	<1 0 58 0 941 1075	6 0 61 1 849 1032
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	0 0 60 0 1010 1070 1150 1270	0 0 60 <1 979 1071 1022 1256	<1 0 58 0 941 1075 997 1222	6 0 61 1 849 1032 918 1136
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	0 0 60 <1 979 1071 1022 1256 3743	<1 0 58 0 941 1075 997 1222 3713	6 0 61 1 849 1032 918 1136 3101
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	0 0 60 1010 1070 1150 1270 2060 limit/base	0 0 60 <1 979 1071 1022 1256 3743 current	<1 0 58 0 941 1075 997 1222 3713 history 1	6 0 61 1 849 1032 918 1136 3101 history 2
Boron 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 method	0 0 60 1010 1070 1150 1270 2060 limit/base	0 0 60 <1 979 1071 1022 1256 3743 <i>current</i> 3	<1 0 58 0 941 1075 997 1222 3713 history 1 2	6 0 61 1 849 1032 918 1136 3101 history 2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm	ASTM D5185m ASTM D5185m 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 limit/base >25	0 0 60 <1 979 1071 1022 1256 3743 <u>current</u> 3 7	<1 0 58 0 941 1075 997 1222 3713 history 1 2 9	6 0 61 1 849 1032 918 1136 3101 history 2 5 23
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 0 60 <1 979 1071 1022 1256 3743 current 3 7 21	<1 0 58 0 941 1075 997 1222 3713 history 1 2 9 21	6 0 61 1 849 1032 918 1136 3101 history 2 5 23 € 66
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	0 0 60 <1 979 1071 1022 1256 3743 current 3 7 21 current	<1 0 58 0 941 1075 997 1222 3713 history 1 2 9 21 history 1	6 0 61 1 849 1032 918 1136 3101 history 2 5 23 ▲ 66 history 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 .20 limit/base >3 >20	0 0 60 <1 979 1071 1022 1256 3743 <i>current</i> 3 7 21 <i>current</i> 0.3	<1 0 58 0 941 1075 997 1222 3713 history 1 2 9 21 history 1 0.3	6 0 61 1 849 1032 918 1136 3101 history 2 5 23 ▲ 66 history 2 0.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm rS ppm ppm ppm ppm ppm spm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 .20 limit/base >3 >20	0 0 60 <1 979 1071 1022 1256 3743 <i>current</i> 3 7 21 <i>current</i> 0.3 5.6	<1 0 58 0 941 1075 997 1222 3713 history 1 2 9 21 history 1 0.3 5.3	6 0 61 1 849 1032 918 1136 3101 history 2 5 23 ↓ 66 history 2 0.7 6.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm rS ppm ppm ppm ppm ppm spm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >25 	0 0 60 <1 979 1071 1022 1256 3743 <u>current</u> 3 7 21 <u>current</u> 0.3 5.6 18.3	<1 0 58 0 941 1075 997 1222 3713 history 1 2 9 21 history 1 0.3 5.3 18.3	6 0 61 1 849 1032 918 1136 3101 history 2 5 23 ▲ 66 history 2 0.7 6.8 18.9



OIL ANALYSIS REPORT

VISUAL





	White Metal Yellow Metal	scalar *Visual scalar *Visual	NONE NONE	NONE	NONE	
\smile	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	
Nov15/22 Feb7/23 Mar6/23 Jun30/23	Appearance	scalar *Visual	NORML NORML	NORML	NORML	
Nov May May		scalar *Visual	NORML NORML	NORML	NORML	
)°C	Emulsified Water	scalar *Visual	>0.2 NEG	NEG	NEG	
	Free Water	scalar *Visual	NEG	NEG	NEG	
	FLUID PROPE		limit/base current	history 1	history 2	
	Visc @ 100°C	cSt ASTM D445	15.4 14.0	13.9	13.3	
	GRAPHS					
	Ferrous Alloys					
Nov15/22 Feb7/23 Mar6/23	Non-ferrous Metal	Mov15/22 Feb7/23 Mar6/23 May17/23 May17/23	10123			
	Viscosity @ 100°C	_				
	19 T		Base Number			
	18 - Abnormal 17 -	·····	10.0 - Base			
	16 Base		(0)(HO) 8.0	\checkmark		
	() 0 15- 15- t; 14-		ළි ස 6.0 -	Ť		
	10	~~	In the second seco			
	13 Abnormal					
	11		2.0			
		22		22	23	
	0ct17/21 Dec15/21 Mar31/22	Nov15/22 Feb7/23 Mar6/23	Jun30/23 0ct17/21 Dec15/21 Mar31/22	Nov15/22 Feb7/23 Mar6/23	May17/23 Jun30/23	
Laboratory Sample No. Lab Number Unique Number Test Package To discuss this sample report, * - Denotes test methods that	: WearCheck USA - 5 : GFL0088385 : 05890729 r : 10546539 e : FLEET contact Customer Serv	501 Madison Ave., Ca Received : 05 Diagnosed : 06 Diagnostician : We	ry, NC 27513 GFL En Jul 2023 Jul 2023 s Davis 0.	L Environmental - 084 - Clarksville 699 Jack Miller Boulevard Clarksville, TN US 37042 Contact: ROBERT THIBAULT robert.thibault@gflenv.com T: (931)552-7276		
Statements of conformity to spec					31)572-9674	

