

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 12035

Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 15W40 (11 GAL)

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

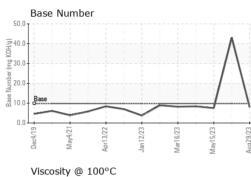
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

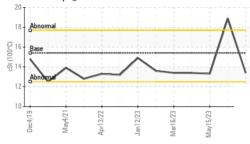
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0089598	GFL0046609	GFL0077901
Sample Date		Client Info		29 Aug 2023	12 Jul 2023	15 May 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	c	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>110	5	20	18
Chromium	ppm	ASTM D5185m		0	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m		2	2	0
Lead	ppm	ASTM D5185m	>45	0	<1	0
Copper	ppm	ASTM D5185m	>85	0	6	<1
Tin	ppm	ASTM D5185m	>4	<1	3	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 8	history1 80	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	8	80	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	8 0	80 0	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	8 0 60	80 0 58	2 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	8 0 60 <1	80 0 58 <1	2 0 60 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	8 0 60 <1 904	80 0 58 <1 645	2 0 60 <1 890
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	8 0 60 <1 904 1026	80 0 58 <1 645 793	2 0 60 <1 890 1044
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	8 0 60 <1 904 1026 998	80 0 58 <1 645 793 771	2 0 60 <1 890 1044 979
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	8 0 60 <1 904 1026 998 1233	80 0 58 <1 645 793 771 1038	2 0 60 <1 890 1044 979 1171
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	0 0 60 1010 1070 1150 1270 2060	8 0 60 <1 904 1026 998 1233 3726	80 0 58 <1 645 793 771 1038 2987	2 0 60 <1 890 1044 979 1171 2855
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	0 0 60 1010 1070 1150 1270 2060	8 0 60 <1 904 1026 998 1233 3726 current	80 0 58 <1 645 793 771 1038 2987 history1	2 0 60 <1 890 1044 979 1171 2855 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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	8 0 60 <1 904 1026 998 1233 3726 current 3	80 0 58 <1 645 793 771 1038 2987 history1 16	2 0 60 <1 890 1044 979 1171 2855 history2 6
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 ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	8 0 60 <1 904 1026 998 1233 3726 current 3 2	80 0 58 <1 645 793 771 1038 2987 history1 16 ▲ 401	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base >30	8 0 60 <1 904 1026 998 1233 3726 current 3 2 4	80 0 58 <1 645 793 771 1038 2987 history1 16 ▲ 401 ▲ 21	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6 6 2
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	0 0 0 1010 1070 1150 1270 2060 Imit/base >30 20 Imit/base	8 0 60 <1 904 1026 998 1233 3726 current 3 2 4 4	80 0 58 <1 645 793 771 1038 2987 history1 16 ▲ 401 ▲ 21 history1 0.7	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6 6 2 2 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >3 >20	8 0 60 <1 904 1026 998 1233 3726 <u>current</u> 3 2 4 <u>current</u> 0.2	80 0 58 <1 645 793 771 1038 2987 history1 16 ▲ 401 ▲ 21 history1	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6 6 2 2 history2 0.6
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 220 imit/base >3 >20	8 0 60 <1 904 1026 998 1233 3726 <i>current</i> 3 2 4 <i>current</i> 0.2 5.3	80 0 58 <1 645 793 771 1038 2987 history1 16 ▲ 401 ▲ 21 history1 0.7 30.8	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6 6 2 2 history2 0.6 9.5
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >30 imit/base >3 20	8 0 60 <1 904 1026 998 1233 3726 current 3 2 4 current 0.2 5.3 16.9	 80 0 58 <1 645 793 771 1038 2987 history1 16 401 21 history1 0.7 30.8 0.0 	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6 6 2 2 history2 0.6 9.5 21.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 2060 200 200 200 200 20	8 0 60 <1 904 1026 998 1233 3726 current 3 2 4 current 0.2 5.3 16.9 current	 80 0 58 <1 645 793 771 1038 2987 history1 16 ▲ 401 ▲ 21 history1 0.7 30.8 0.0 history1 	2 0 60 <1 890 1044 979 1171 2855 history2 6 6 6 6 2 2 history2 0.6 9.5 21.0 history2



OIL ANALYSIS REPORT

VICLIAI





	VISUAL		method	limit/bas	se current	history1	history2	
Λ	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	
May15/23 Aug29/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
May15/23 Aug29/23	Odor	scalar	*Visual	NORML	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	NEG	
<u> </u>	FLUID PROPE	RTIES	method	limit/bas	e current	history1	history2	
/ \	Visc @ 100°C	cSt	ASTM D445	15.4	13.4	18.9	13.3	
/ \	GRAPHS							
	Ferrous Alloys							
	140 iron							
212	120 - chromium	Λ						
M	100	11						
Шdd	80	1						
	60	$I \rightarrow$						
	40	1 1	_					
	20							
	2 2 19	23	23	23				
	Dec4/19 May4/21 Apr13/22	Jan 12/23	Mar16/23 May15/23	Aug29/23				
	Non-ferrous Meta		2 2	A				
	¹⁰ T							
	copper							
	8+ tin							
-	6- /							
aa				Λ				
		Λ	1	1				
	2	11	1/	1				
	0	-	Jan	1				
	Dec4/19 - May4/21 - Apr13/22 -	Jan 12/23	Mar16/23	Aug29/23				
	Der	Jan	Marl	Aug				
	Viscosity @ 100°	C			Base Numb	nber		
	20			45.0 T		4		
	18 - Abnormal			Λ	40.0		Λ	
-	17-			DHOX	30.0			
St (100°C)	16 Base		/	E E	25.0-			
CS CS		\wedge	1		20.0		1	
		$/ \sim$		ase N	35.0 30.0 25.0 20.0 15.0 10.0 Base			
	13 Abnorral				5.0	\sim		
	11				0.0			
	Dec4/19 May4/21 Apr13/22	Jan 12/23	Mar16/23 May15/23	Aug29/23	Dec4/19 May4/21	Apr13/22 Jan12/23 Mar16/23	May15/23 Aug29/23	
	M Api	Jar	Ma	Aug	άŻ	Ap Jair	May	
Laboratory	: WearCheck USA -	501 Madi	son Ave., Ca	ry, NC 27	513 GFL E	nvironmental - 732 - T	homaston Hauling	
Sample No.	: GFL0089598	Received	d : 30 /	Aug 2023			nansville Road	
Lab Number	: 05938147	Diagnos		Aug 2023		٦ آ	homaston, GA	
Unique Number	: 10628759 : FLEET	Diagnost	tician : We	s Davis		Contact: W//	US 30286 LIAM BROWN	
	: FLEE I	ico at 1 C	00 227 1260	n				

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)

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