

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 411041

Fluid

Component Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- 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

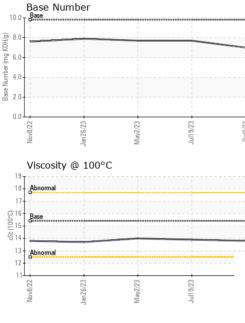
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0084545	GEL0089490	GFL0078787
Sample Date		Client Info		03 Oct 2023	19 Jul 2023	02 May 2023
Machine Age	hrs	Client Info		6363	5780	5249
Oil Age	hrs	Client Info		6363	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method	20.0	NEG	NEG	NEG
	0		11 11 11			
WEAR METAL	S	method	limit/base		history1	history2
Iron	ppm		>120	8	8	9
Chromium	ppm	ASTM D5185m		<1	<1	<1
Nickel	ppm	ASTM D5185m		<1	<1	1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	1	2
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	2	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 0	history2 2
	ppm ppm					
Boron		ASTM D5185m	0	0	0	2
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	0	2 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 62	0 0 65	2 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 62 <1	0 0 65 <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	0 0 62 <1 963	0 0 65 <1 1058	2 0 60 <1 1008
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	0 0 62 <1 963 1053	0 0 65 <1 1058 1157	2 0 60 <1 1008 1092
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 62 <1 963 1053 972	0 0 65 <1 1058 1157 1042	2 0 60 <1 1008 1092 1027
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 62 <1 963 1053 972 1191 2547	0 0 65 <1 1058 1157 1042 1303	2 0 60 <1 1008 1092 1027 1324
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 0 1010 1070 1150 1270 2060	0 0 62 <1 963 1053 972 1191 2547	0 0 65 <1 1058 1157 1042 1303 3328	2 0 60 <1 1008 1092 1027 1324 3481
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	0 0 60 0 1010 1070 1150 1270 2060	0 0 62 <1 963 1053 972 1191 2547 current	0 0 65 <1 1058 1157 1042 1303 3328 history1	2 0 60 <1 1008 1092 1027 1324 3481 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	0 0 60 0 1010 1070 1150 1270 2060 Limit/base >25	0 0 62 <1 963 1053 972 1191 2547 current 4	0 0 65 <1 1058 1157 1042 1303 3328 history1 3	2 0 60 <1 1008 1092 1027 1324 3481 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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 >25	0 0 62 <1 963 1053 972 1191 2547 current 4 7 <1	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	0 0 62 <1 963 1053 972 1191 2547 Current 4 7 <1	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5 0	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	0 0 62 <1 963 1053 972 1191 2547 <u>current</u> 4 7 <1 <u>current</u>	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5 0 0	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3 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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	0 0 62 <1 963 1053 972 1191 2547 <u>current</u> 4 7 <1 <u>current</u> 0.5	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5 0 history1 0.5	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3 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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >4 >20	0 0 62 <1 963 1053 972 1191 2547 <u>current</u> 4 7 <1 <u>current</u> 0.5 8.0 19.5	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5 0 history1 0.5 8.1	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3 2 <u>history2</u> 0.6 8.8
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 D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	0 0 62 <1 963 1053 972 1191 2547 Current 4 7 <1 Current 0.5 8.0 19.5 Current	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5 0 history1 0.5 8.1 19.4 history1	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3 2 history2 0.6 8.8 20.5 history2
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	0 0 0 1010 1070 1150 1270 2060 2060 225 25 20 220 imit/base >4 >20 >30	0 0 62 <1 963 1053 972 1191 2547 <u>current</u> 4 7 <1 <u>current</u> 0.5 8.0 19.5	0 0 65 <1 1058 1157 1042 1303 3328 history1 3 5 0 history1 0.5 8.1 19.4	2 0 60 <1 1008 1092 1027 1324 3481 history2 4 3 2 <u>history2</u> 0.6 8.8 20.5



OIL ANALYSIS REPORT

VISUAL



********************		VISUAL		method	limit/base	current	nistory i	nistory2
		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
May2/23	Jul19/23 . Oct3/23 .	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
May	Juli	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
		Free Water	scalar	*Visual		NEG	NEG	NEG
		FLUID PROPE		method	limit/base	current	history1	history2
		Visc @ 100°C	cSt	ASTM D445		13.8	13.9	14.0
		GRAPHS	001	No Thi D440	10.4	10.0	10.0	14.0
		Ferrous Alloys						
		¹²		1				
May2/23	Jul19/23	10-						
Mar	lu l	8-		-				
		ق 6-						
		4						
		2						
		**************************************			********			
		3/22	2/23 -					
		Nov8/22 Jan 26/23	May2/23	Jul19/23	0ct3/23			
		Non-ferrous Meta	als					
		¹⁰ T						
		8 - copper						
		enseesses tin		I I				
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		udd						
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		Sea and and and and and and and and and an						
			23	23	23			
		Nov8/22 Jan 26/23	May2/23	Jul19/23	0ct3/23			
		Viscosity @ 100°		,				
		¹⁹ T		I I	10.0	Base Number		
		18 Abnormal						
					B/HO)			
		Base		*****	<u> </u>)		
		() 16 Base () 15 () 15		1				
		12			(Å)/HO) Bayes Mumber (må) Bayes Mumber (må)			
		Abnormal	1	l I	⁶⁶ 2.0)		
		11						
		Nov8/22	2/23	9/23 -	0ct3/23		2/23 -	Jul19/23 -
		Nov8/22 Jan26/23	May2/23	Jul19/23	Oct	Nov8/22 Jan26/23	May2/23	Jul19/23
	Laboratory Sample No.	: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0084545 Received : 16 Oct 2023 : 05979281 Diagnosed : 16 Oct 2023 : 10696576 Diagnostician : Wes Davis : FLEET contact Customer Service at 1-800-237-1369.				GFL Environmental - 918 - Hartland H 630 E Industrial Driv Hartland, V US 5302 Contact: David McC david.mccall@gflenv.co		
ING LABORATORY	Lab Number Unique Number Test Package	r : 10696576	-				Contac	US 5302