

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

528032-110

Diesel Engine Fluid

PETRO CANADA DURON SHP 15W40 (--- LTR)

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 INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0108509	GFL0108482	GFL0066105
Sample Date		Client Info		06 May 2024	11 Mar 2024	10 Apr 2023
Machine Age	mls	Client Info		0	0	0
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	12	16	21
Chromium	ppm	ASTM D5185m	>5	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	5	5	5
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>150	4	8	13
Tin	ppm	ASTM D5185m	>5	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 3	history1 <1	history2 22
	ppm ppm		0			
Boron		ASTM D5185m	0	3	<1	22
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	3 0	<1 0	22 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	3 0 54	<1 0 59	22 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	3 0 54 <1	<1 0 59 0	22 0 63 <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	3 0 54 <1 687	<1 0 59 0 987	22 0 63 <1 834
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	3 0 54 <1 687 1596	<1 0 59 0 987 1175	22 0 63 <1 834 1397
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	3 0 54 <1 687 1596 1085	<1 0 59 0 987 1175 968	22 0 63 <1 834 1397 994
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	3 0 54 <1 687 1596 1085 1284	<1 0 59 0 987 1175 968 1245	22 0 63 <1 834 1397 994 1252
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	3 0 54 <1 687 1596 1085 1284 3478	<1 0 59 0 987 1175 968 1245 2782	22 0 63 <1 834 1397 994 1252 2959
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 0 1010 1070 1150 1270 2060	3 0 54 <1 687 1596 1085 1284 3478 current	<1 0 59 0 987 1175 968 1245 2782 history1	22 0 63 <1 834 1397 994 1252 2959 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 1010 1070 1150 1270 2060 kimit/base >20	3 0 54 <1 687 1596 1085 1284 3478 current 6	<1 0 59 0 987 1175 968 1245 2782 history1 5	22 0 63 <1 834 1397 994 1252 2959 history2 8
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 1010 1070 1150 1270 2060 kimit/base >20	3 0 54 <1 687 1596 1085 1284 3478 <u>current</u> 6 4	<1 0 59 0 987 1175 968 1245 2782 history1 5 2	22 0 63 <1 834 1397 994 1252 2959 history2 8 13
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 0 1010 1070 1150 1270 2060 limit/base >20	3 0 54 <1 687 1596 1085 1284 3478 current 6 4 4	<1 0 59 0 987 1175 968 1245 2782 history1 5 2 2 1	22 0 63 <1 834 1397 994 1252 2959 history2 8 13 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 2060 220 20 20 20 20	3 0 54 <1 687 1596 1085 1284 3478 current 6 4 <1 current	<1 0 59 0 987 1175 968 1245 2782 history1 5 2 2 1 history1	22 0 63 <1 834 1397 994 1252 2959 history2 8 13 7 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >20 <i>limit/base</i> >20	3 0 54 <1 687 1596 1085 1284 3478 <i>current</i> 6 4 <1 <i>current</i> 0.7	<1 0 59 0 987 1175 968 1245 2782 history1 5 2 2 1 history1 1.2	22 0 63 <1 834 1397 994 1252 2959 history2 8 13 7 history2 1.2
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> >20 <i>limit/base</i> >20	3 0 54 <1 687 1596 1085 1284 3478 <i>current</i> 6 4 <1 <i>current</i> 0.7 9.1	<1 0 59 0 987 1175 968 1245 2782 history1 5 2 2 1 5 2 1 history1 1.2 9.9	22 0 63 <1 834 1397 994 1252 2959 history2 8 13 7 history2 1.2 1.2 1.2
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 imit/base >20 imit/base >3 >20 >30	3 0 54 <1 687 1596 1085 1284 3478 <u>current</u> 6 4 <1 current 0.7 9.1 21.2	<1 0 59 0 987 1175 968 1245 2782 history1 5 2 2 1 1 history1 1.2 9.9 23.1	22 0 63 <1 834 1397 994 1252 2959 history2 8 13 7 <u>history2</u> 1.2 1.2 10.5 24.1
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 D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200	3 0 54 <1 687 1596 1085 1284 3478 <i>current</i> 6 4 <1 <i>current</i> 0.7 9.1 21.2 <i>current</i>	<1 0 59 0 987 1175 968 1245 2782 history1 5 2 1 history1 1.2 9.9 23.1 history1	22 0 63 <1 834 1397 994 1252 2959 history2 8 13 7 history2 1.2 10.5 24.1 history2



OIL ANALYSIS REPORT

Base Number Base 8.0 4.0 0.0	Mar11/24	Free Wa	letal s Metal s ate s rt s ance s ed Water s ater s	scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	limit/base	currentNONENONENONENONENONENONENORMLNORML	history1 NONE NONE NONE NONE NONE NORE NORML	history2 NONE NONE NONE NONE NONE NONE NORML
25 20 15 10 5 8 8 8 8 8 8 8 8 8 8 8 15 10 5 8 8 8 15 10 5 8 8 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 15 10 10 10 10 10 10 10 10 10 10	Mart 1/24	Yellow M Precipita Silt Debris Sand/Din Appeara Odor Emulsifie Free Wa	Metal s ate s ste s rt s ance s ed Water s ater s	scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NORML NORML	NONE NONE NONE NONE NONE NORML	NONE NONE NONE NONE NORML	NONE NONE NONE NONE NONE
Base Number	Mart 1/24	Precipita Silt Debris Sand/Din Appeara Odor Emulsific Free Wa	ate s s rt s ance s ed Water s ater s	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NORML NORML	NONE NONE NONE NORE	NONE NONE NONE NORE	NONE NONE NONE
Base Number	Mar 11/24	Silt Debris Sand/Di Appeara Odor Emulsifie Free Wa	rt s ance s ed Water s ater s	scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NORML NORML	NONE NONE NONE NORML	NONE NONE NORML	NONE NONE NONE
Base Number	Mar 11/24	Debris Sand/Dii Appeara Odor Emulsifie Free Wa	s rt s ance s s ed Water s ater s	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NONE NORML NORML	NONE NONE NORML	NONE NORE NORML	NONE NONE
Base Number	Mart 1224	Sand/Di Appeara Odor Emulsifie Free Wa	rt sance s sed Water s atter s	scalar scalar scalar scalar	*Visual *Visual *Visual	NONE NORML NORML	NONE NORML	NONE NORML	NONE
Base Number	Mai 11/24.	Appeara Odor Emulsifie Free Wa	ance s s ed Water s ater s	scalar scalar scalar	*Visual *Visual	NORML NORML	NORML	NORML	
Base Number	Teo Marine Contraction of the Co	Emulsifie Free Wa	ed Water s ater s	scalar scalar	*Visual	NORML			
		Free Wa	ater s		*Visual			NUNIVIL	NORML
		FLUI		color	* iouui	>0.2	NEG	NEG	NEG
]		-		scaldi	*Visual		NEG	NEG	NEG
			D PROPER	TIES	method	limit/base	current	history1	history2
-		Visc @	100°C c	cSt	ASTM D445	15.4	14.3	14.2	14.2
		GRA	PHS						
			ıs Alloys						
m	*	25	- iron						
Apr1 0/23	Mar1 1/24	20-	nickel						
A	2	15							
Viscosity @ 100°C		m dd				_			
Abnormal	1	10							
P	,	5							
Base		-							
		0		5 ⁺ .		4			
Abnormal		Apr10/23		Mar11/24		May6/24			
				Z		2			
	/24 -	_ ΝΟΠ-ΓΕ δ 14 _T	errous Metals						
Apr10/23	Mar1 1/24	12-	copper lead						
	-	10	- tin						
		8		_					
		bb bb							
		2							
		10/23		11/24		/24			
		Apr10		Mar11		May6			
			ity @ 100°C	-			Base Number		
		¹⁹ T					Base		
		18 - Abnormal							
		17-				(B/H			
		() 16 Base 001) 15 ts 14				9 E 6.0			
		e 15-				ber (r			
						(0/HOX 6.0- 6.0- 6.0- 9.0 gampa 4.0- 888 9 Minutes 4.0-			
		13 - Abnormal				2.0-			
		12-							
		114		24 -			53	24	24
		Apr10/23		Mar11/24		May6/24	Apr10/23	Mar11/24	May6/24
	Unique Num	o. : GFL0108 per : 06178356 ber : 11029682 nge : FLEET	2	Receiv Tested Diagno	ved : 14 d : 14 osed : 14	May 2024 May 2024 May 2024 - We		11888 & 1186 Chip	hippewa Falls HC 3 30th Avenue pewa Falls, WI US 54729 act: Andy Kane

Report Id: GFL904 [WUSCAR] 06178356 (Generated: 05/14/2024 18:35:49) Rev: 1

Submitted By: See also GFL904,A,B,C, 927, 938 - Andy Kane

Page 2 of 2