

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 727040

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 INFORI	MATION	method	limit/base	current	history1	history2					
Sample Number		Client Info		GFL0091524	GFL0091552	GFL0082807					
Sample Date		Client Info		14 Sep 2023	12 Sep 2023	16 Jun 2023					
Machine Age	hrs	Client Info		14696	14953	14282					
Oil Age	hrs	Client Info		600	600	600					
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		NEG	NEG	NEG					
WEAR METALS method limit/base current history1 history2											
Iron	ppm	ASTM D5185m	>120	1	5	4					
Chromium	ppm	ASTM D5185m	>20	<1	0	<1					
Nickel	ppm	ASTM D5185m	>5	<1	0	0					
Titanium	ppm	ASTM D5185m	>2	0	<1	0					
Silver	ppm	ASTM D5185m	>2	0	0	0					
Aluminum	ppm	ASTM D5185m	>20	0	4	<1					
Lead	ppm	ASTM D5185m	>40	0	1	<1					
Copper	ppm	ASTM D5185m	>330	0	<1	<1					
Tin	ppm	ASTM D5185m	>15	<1	<1	<1					
Vanadium	ppm	ASTM D5185m		0	<1	0					
Cadmium	ppm	ASTM D5185m		0	0	0					
		ام م مالا م میں	limit/base		1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	history2					
ADDITIVES		method	iimii/base	current	history1	nistory2					
Boron	ppm	ASTM D5185m	0	current 4	history1 2	4					
	ppm ppm										
Boron		ASTM D5185m	0	4	2	4					
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	4 0	2 0	4					
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 58	2 0 60	4 0 59					
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 58 <1	2 0 60 <1	4 0 59 <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	4 0 58 <1 950	2 0 60 <1 1053	4 0 59 <1 955					
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	4 0 58 <1 950 1113	2 0 60 <1 1053 1211	4 0 59 <1 955 1049					
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	4 0 58 <1 950 1113 1067	2 0 60 <1 1053 1211 1050	4 0 59 <1 955 1049 1015					
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	4 0 58 <1 950 1113 1067 1276	2 0 60 <1 1053 1211 1050 1348	4 0 59 <1 955 1049 1015 1270					
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	4 0 58 <1 950 1113 1067 1276 3950	2 0 60 <1 1053 1211 1050 1348 3717	4 0 59 <1 955 1049 1015 1270 3538					
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	4 0 58 <1 950 1113 1067 1276 3950 current	2 0 60 <1 1053 1211 1050 1348 3717 history1	4 0 59 <1 955 1049 1015 1270 3538 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 1010 1070 1150 1270 2060	4 0 58 <1 950 1113 1067 1276 3950 current 3	2 0 60 <1 1053 1211 1050 1348 3717 history1 3	4 0 59 <1 955 1049 1015 1270 3538 history2 3					
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 >25	4 0 58 <1 950 1113 1067 1276 3950 current 3 2	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 3					
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 >25 >20	4 0 58 <1 950 1113 1067 1276 3950 current 3 2 2 2	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4 8	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 0					
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 <u>limit/base</u> >20	4 0 58 <1 950 1113 1067 1276 3950 current 3 2 2 2 2	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4 8 8	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 0 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 2060 225 >25 >20 <u>limit/base</u> >20	4 0 58 <1 950 1113 1067 1276 3950 <u>current</u> 3 2 2 2 <u>current</u> 0.1	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4 8 <u>history1</u> 0.2	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 0 history2 0.2					
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> >25 >20 <i>limit/base</i> >4 >20	4 0 58 <1 950 1113 1067 1276 3950 current 3 2 2 2 current 0.1 4.5	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4 8 <u>history1</u> 0.2 7.9	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 0 history2 0.2 8.0					
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 20 225 20 imit/base >20 20 20	4 0 58 <1 950 1113 1067 1276 3950 current 3 2 2 2 2 current 0.1 4.5 17.1	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4 8 <u>history1</u> 0.2 7.9 19.0	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 0 history2 0.2 8.0 19.5					
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 ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 220 220 220 220 230 20 20 20 20 20 20 20 20 20 20 20 20 20	4 0 58 <1 950 1113 1067 1276 3950 current 3 2 2 2 current 0.1 4.5 17.1 current	2 0 60 <1 1053 1211 1050 1348 3717 history1 3 4 8 history1 0.2 7.9 19.0 history1	4 0 59 <1 955 1049 1015 1270 3538 history2 3 3 0 history2 0.2 8.0 19.5 history2					



13 Abnormal

12 11 Aug11/21.

OIL ANALYSIS REPORT

scalar

*Visual

scalar *Visual

NONE

NONE

NONE

NONE

NONE

NONE

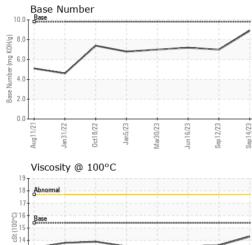
NONE

NONE

VISUAL

White Metal

Yellow Metal



0ct18/22

Jan31/22

			oratory ple No.	No. : GFL0091524 nber : 05956965 umber : 10658178 ckage : FLEET eport, contact Customer Set				501 Madison Ave., Cary, NC 27513Received: 20 Sep 2023Diagnosed: 21 Sep 2023Diagnostician: Wes Davisvice at 1-800-237-1369.17025 scope of accreditation.					GFL Environmental - 465 - Pontiac 888 Baldwin Pontiac, MI US 48340 Contact: Ricky Matthews rickymathews@gflenv.com T: (586)825-9514						
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Jan5/23 -	Mar30/23 -	Jun16/23 -	Sep12/23 -		Appeara				*Visual	NOR		IORML		NOF			NORML	_	
					Sand/Dir	t			*Visual	NONE		IONE		NON			NONE		
					Silt Debris				*Visual *Visual	NONE		IONE		NON NON			NONE		
					Precipita	ite			*Visual	NONE				NON			NONE		

Submitted By: Ricky Matthews

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