

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 712011 Component

Fluid

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

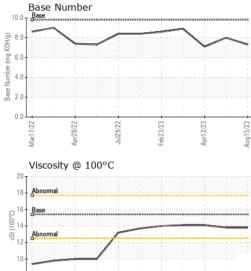
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2			
Sample Number		Client Info	GFL0089526		GFL0067886	GFL0068015			
Sample Date		Client Info	15 Aug 2023		23 May 2023	12 Apr 2023			
Machine Age	hrs	Client Info	3723		2618	2618			
Oil Age	hrs	Client Info	543		1868	1868			
Oil Changed		Client Info	Changed		N/A	N/A			
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 histor									
						4			
Iron	ppm	ASTM D5185m		9	11				
Chromium	ppm	ASTM D5185m		<1 2	<1 5	0			
Nickel	ppm	ASTM D5185m				3			
Titanium	ppm	ASTM D5185m		<1	<1	0			
Silver	ppm	ASTM D5185m		<1	<1	0			
Aluminum	ppm	ASTM D5185m		1	<1	<1			
Lead	ppm	ASTM D5185m	>40	<1	<1	0			
Copper	ppm	ASTM D5185m	>330	2	2	0			
Tin	ppm	ASTM D5185m	>15	<1	<1	0			
Vanadium	ppm	ASTM D5185m		<1	<1	0			
Cadmium	ppm	ASTM D5185m		0	0	0			
ADDITIVES		method				history2			
ADDITIVES		method	initit/base	current	Thistory I	matoryz			
Boron	ppm	ASTM D5185m	0	4	7	7			
	ppm ppm								
Boron		ASTM D5185m	0	4	7	7			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	4 0	7 0	7 0			
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	4 0 62	7 0 60	7 0 51			
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	4 0 62 <1	7 0 60 1	7 0 51 <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 62 <1 995	7 0 60 1 1015	7 0 51 <1 809			
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 62 <1 995 1111	7 0 60 1 1015 1137	7 0 51 <1 809 929			
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 62 <1 995 1111 1024	7 0 60 1 1015 1137 1044	7 0 51 <1 809 929 850			
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 62 <1 995 1111 1024 1279	7 0 60 1 1015 1137 1044 1306	7 0 51 <1 809 929 850 1065			
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	4 0 62 <1 995 1111 1024 1279 3526	7 0 60 1 1015 1137 1044 1306 3436	7 0 51 <1 809 929 850 1065 2793			
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 62 <1 995 1111 1024 1279 3526 current 4	7 0 60 1 1015 1137 1044 1306 3436 history1 4	7 0 51 <1 809 929 850 1065 2793 history2			
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 62 <1 995 1111 1024 1279 3526 current	7 0 60 1 1015 1137 1044 1306 3436 history1	7 0 51 <1 809 929 850 1065 2793 history2 2			
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	0 0 60 0 1010 1070 1150 1270 2060 limit/base	4 0 62 <1 995 1111 1024 1279 3526 current 4 4	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4	7 0 51 <1 809 929 850 1065 2793 history2 2 1			
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 limit/base >25	4 0 62 <1 995 1111 1024 1279 3526 current 4 4 2 2 current	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 2 history1	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 0			
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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 <u>limit/base</u> >20	4 0 62 <1 995 1111 1024 1279 3526 <u>current</u> 4 4 2 <u>current</u> 0.4	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 <u>history1</u> 0.3	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 <i>history2</i> 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 TS 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 62 <1 995 1111 1024 1279 3526 current 4 2 2 current 0.4 8.3	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 <u>history1</u> 0.3 8.4	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 0 history2 0.2 6.6			
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 >4 20 20	4 0 62 <1 995 1111 1024 1279 3526 current 4 4 2 2 current 0.4 8.3 20.1	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 <u>history1</u> 0.3 8.4 20.0	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 0 history2 0.2 6.6 17.2			
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 D7844 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 220 20 20 20 20 20 20 20 20 20 20 20	4 0 62 <1 995 1111 1024 1279 3526 current 4 4 2 2 current 0.4 8.3 20.1 current	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 history1 0.3 8.4 20.0 history1	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 0 history2 0.2 6.6 17.2 history2			
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAM	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7411	0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >4 >20 30 imit/base	4 0 62 <1 995 1111 1024 1279 3526 current 4 4 2 2 current 0.4 8.3 20.1 current 16.5	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 history1 0.3 8.4 20.0 history1 15.8	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 0 history2 0.2 6.6 17.2 history2 14.3			
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 20 20 20 20 20 20 20 20 20 20 20	4 0 62 <1 995 1111 1024 1279 3526 current 4 4 2 2 current 0.4 8.3 20.1 current	7 0 60 1 1015 1137 1044 1306 3436 history1 4 4 2 history1 0.3 8.4 20.0 history1	7 0 51 <1 809 929 850 1065 2793 history2 2 1 0 0 history2 0.2 6.6 17.2 history2			



OIL ANALYSIS REPORT

VISUAL



Apr28/22

Mar17/22

Jul23/22	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NONE NONE NORE	NONE NONE NONE NONE NONE NONE NONE	NONE NONE NONE NONE NONE NONE NORML	NONE NONE NONE NONE NONE NONE NORML
Jul2 Feb2	EZZ LIGY MY Appearance Odor Emulsified Water Free Water	scalar scalar scalar	*Visual *Visual *Visual	NORML >0.2	NORML NEG NEG	NORML NEG NEG	NORML NEG NEG
	FLUID PROPE Visc @ 100°C	CSt	method ASTM D445	limit/base	current 13.8	history1 13.8	history2 14.1
Jul29/22	Non-ferrous Meta	Jul29/22 Feb23/23	Apri223 Apri223	Aug15/23	Base Number		
Certificate L2367 Tes To discuss this sam	poratory : WearCheck USA - nple No. : GFL0089526 Number : 05928595 nue Number : 10608542 t Package : FLEET ple report, contact Customer Serve thods that are outside of the ISO	Received Diagnose Diagnosti	: 18 / ed : 20 / cian : Wes	Aug 2023 Aug 2023 s Davis	Mar17/22	12230 D Contact: (45 - Midlothian eeergrove Road Midlothian, VA US 23112 Corbin Umphlet et@gflenv.com T:

Submitted By: TECHNICIAN ACCOUNT