

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id 812017 AUTOCAR ACX64 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.

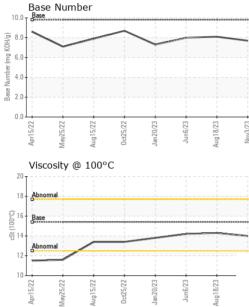
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0094664	GFL0089356	GFL0056702
Sample Date		Client Info		03 Nov 2023	18 Aug 2023	06 Jun 2023
Machine Age	hrs	Client Info		4773	4177	3622
Oil Age	hrs	Client Info		596	555	1043
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	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	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	19	17	9
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	- T	0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	13	23	6
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m		<1	0	0
Tin	ppm		>15	<1	0	0
Vanadium	ppm	ASTM D5185m	>15	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ррпі			U	-	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	6	4	<1
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	6 0	4	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 0 63	4 0 74	<1 0 59
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 0 63 <1	4 0 74 0	<1 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	6 0 63 <1 961	4 0 74 0 1120	<1 0 59 <1 999
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 0 63 <1 961 1122	4 0 74 0 1120 1326	<1 0 59 <1 999 1039
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	6 0 63 <1 961 1122 1067	4 0 74 0 1120 1326 1212	<1 0 59 <1 999 1039 1066
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	6 0 63 <1 961 1122 1067 1304	4 0 74 0 1120 1326 1212 1631	<1 0 59 <1 999 1039 1066 1339
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	6 0 63 <1 961 1122 1067	4 0 74 0 1120 1326 1212	<1 0 59 <1 999 1039 1066
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	6 0 63 <1 961 1122 1067 1304	4 0 74 0 1120 1326 1212 1631 4657 history1	<1 0 59 <1 999 1039 1066 1339
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	6 0 63 <1 961 1122 1067 1304 2977	4 0 74 0 1120 1326 1212 1631 4657	<1 0 59 <1 999 1039 1066 1339 3888
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	6 0 63 <1 961 1122 1067 1304 2977 current	4 0 74 0 1120 1326 1212 1631 4657 history1	<1 0 59 <1 999 1039 1066 1339 3888 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 <b>method</b> ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	6 0 63 <1 961 1122 1067 1304 2977 current 4	4 0 74 0 1120 1326 1212 1631 4657 history1 3	<1 0 59 <1 999 1039 1066 1339 3888 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 <b>method</b> ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 <b>limit/base</b>	6 0 63 <1 961 1122 1067 1304 2977 current 4 5	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 4
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 <b>limit/base</b> >25 >20	6 0 63 <1 961 1122 1067 1304 2977 current 4 5 18	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2 29	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 4 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	6 0 63 <1 961 1122 1067 1304 2977 current 4 5 18 2000 0000000000000000000000000000000	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2 29 history1	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 4 11 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 ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	6 0 63 <1 961 1122 1067 1304 2977 <u>current</u> 4 5 18 <u>current</u> 0.7	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2 29 history1 0.6	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 4 11 11 history2 0.3
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> >3 >20	6 0 63 <1 961 1122 1067 1304 2977 <i>current</i> 4 5 18 <i>current</i> 0.7 9.5	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2 29 history1 0.6 9.0	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 3 4 11 history2 0.3 7.2
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 2060 225 20 225 20 20 3 20 3 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	6 0 63 <1 961 1122 1067 1304 2977 <i>current</i> 4 5 18 <i>current</i> 0.7 9.5 20.5	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2 29 history1 0.6 9.0 20.3	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 4 11 history2 0.3 7.2 20.0
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 TS ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7414	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 20 3 3 20 20 20 20 20 20 20 20 20 20 20 20 20	6 0 63 <1 961 1122 1067 1304 2977 current 4 5 18 current 0.7 9.5 20.5	4 0 74 0 1120 1326 1212 1631 4657 history1 3 2 29 history1 0.6 9.0 20.3 history1	<1 0 59 <1 999 1039 1066 1339 3888 history2 3 4 11 history2 0.3 7.2 20.0 history2



Mav25/22

# **OIL ANALYSIS REPORT**

VISUAL



CAREAD TESTING LABORATORY	Laboratory Sample No. Lab Number Unique Number	: GFL0094664 : <mark>05998640</mark>	501 Madison Ave., Cary, NC 27513 <b>Received</b> : 06 Nov 2023 <b>Diagnosed</b> : 06 Nov 2023 <b>Diagnostician</b> : Wes Davis <i>vice at 1-800-237-1369.</i>			GFL Envi	GFL Environmental - 001 - Raleigh(CNG 3741 Conquest Drive Garner, NC US 27529 Contact: Craig Johnsor craig.johnson@gflenv.com			
		Viscosity @ 100°C	0cr25/22 Jan20/23	Jun623	0.0 Base Mumber (mg K0H(d) 0.0 Base Mumber (mg K0H(d) 0.0 0.0 0.0		Oct25/22	Jun6/23 +		
0ct25/22 +	Jun6/23	GRAPHS Ferrous Alloys	CSI	ASTM D445	15.4	14.0	14.3	14.2		
		FLUID PROPE Visc @ 100°C	RTIES cSt	method ASTM D445	limit/base	current 14.0	history1 14.3	history2 14.2		
0ct25/22 Jan20/23	Jun6/23 Aug18/23	Odor Emulsified Water Free Water	scalar scalar scalar	*Visual *Visual *Visual	NORML >0.2	NORML NEG NEG	NORML NEG NEG	NORML NEG NEG		
22-	2333 -	Precipitate Silt Debris Sand/Dirt Appearance	scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual	NONE NONE NONE NORE	NONE NONE NONE NONE NORML	NONE NONE NONE NORE	NONE NONE NONE NONE NORML		
-		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		

Report Id: GFL001 [WUSCAR] 05998640 (Generated: 11/06/2023 15:54:58) Rev: 1

Submitted By: Craig Johnson

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