

OIL ANALYSIS REPORT

Sample Rating Trend



912044 AUTOCAR ACX64

Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Elui

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	history 1	history 2
Sample Number		Client Info		GFL0087120	GFL0056585	GFL0056563
Sample Date		Client Info		05 Jul 2023	16 Feb 2023	02 Dec 2022
Machine Age	hrs	Client Info		4160	3029	2377
Oil Age	hrs	Client Info		0	1073	421
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history 1	history 2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>75	11	18	10
Chromium	ppm	ASTM D5185m	>5	2	2	1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	12	19	5
Lead	ppm	ASTM D5185m	>25	0	0	<1
Copper	ppm		>100	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	PP		11 1.0	-	-	
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	2	7	10
Barium	ppm		0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	60	59	63
Manganese	ppm	ASTM D5185m	()	<1		
Magnesium					<1	<1
-	ppm	ASTM D5185m	1010	978	872	941
Calcium	ppm	ASTM D5185m	1010 1070	978 1073	872 1107	941 1106
Calcium Phosphorus	ppm ppm	ASTM D5185m ASTM D5185m	1010 1070 1150	978 1073 1053	872 1107 979	941 1106 1021
Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270	978 1073 1053 1325	872 1107 979 1189	941 1106 1021 1206
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1010 1070 1150	978 1073 1053	872 1107 979	941 1106 1021
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1010 1070 1150 1270 2060 limit/base	978 1073 1053 1325 3839 current	872 1107 979 1189 3148 history 1	941 1106 1021 1206 3689 history 2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	1010 1070 1150 1270 2060 limit/base	978 1073 1053 1325 3839 current 3	872 1107 979 1189 3148 history 1 3	941 1106 1021 1206 3689 history 2 3
Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	978 1073 1053 1325 3839 current 3 3	872 1107 979 1189 3148 history 1 3 3	941 1106 1021 1206 3689 history 2 3 3 3
Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	978 1073 1053 1325 3839 current 3	872 1107 979 1189 3148 history 1 3	941 1106 1021 1206 3689 history 2 3
Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25	978 1073 1053 1325 3839 current 3 3	872 1107 979 1189 3148 history 1 3 3	941 1106 1021 1206 3689 history 2 3 3 3
Calcium Phosphorus Zinc Sulfur CONTAMINAN ^T Silicon Sodium Potassium	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6	978 1073 1053 1325 3839 current 3 3 25	872 1107 979 1189 3148 history 1 3 3 45 history 1 0.5	941 1106 1021 1206 3689 history 2 3 3 3 13
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6	978 1073 1053 1325 3839 current 3 3 25 current	872 1107 979 1189 3148 history 1 3 3 45 history 1	941 1106 1021 1206 3689 history 2 3 3 3 13 history 2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6	978 1073 1053 1325 3839 current 3 3 25 current 0.4	872 1107 979 1189 3148 history 1 3 3 45 history 1 0.5	941 1106 1021 1206 3689 history 2 3 3 13 history 2 0.3
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm TS ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20	978 1073 1053 1325 3839 current 3 3 25 current 0.4 7.1	872 1107 979 1189 3148 history 1 3 3 45 history 1 0.5 7.2	941 1106 1021 1206 3689 history 2 3 3 13 history 2 0.3 7.3
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm TS ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	1010 1070 1150 22060 limit/base >25 >20 limit/base >6 >20 >20 >30	978 1073 1053 1325 3839 current 3 3 25 current 0.4 7.1 19.4	872 1107 979 1189 3148 history 1 3 3 45 history 1 0.5 7.2 18.9	941 1106 1021 1206 3689 history 2 3 3 13 13 history 2 0.3 7.3 19.2

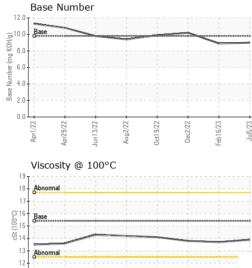


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OIL ANALYSIS REPORT

VISUAL



Jun13/22

Apr29/22

Certificate 12367 Laboratory Sample No. Lab Number Unique Number Test Package	: GFL0087120	501 Madison Ave., Cary, NC 27513 Received : 07 Jul 2023 Diagnosed : 10 Jul 2023 Diagnostician : Wes Davis <i>tice at 1-800-237-1369.</i>			i13 GFL Env	GFL Environmental - 001 - Raleigh(CNG 3741 Conquest Drive Garner, NC US 27529 Contact: Craig Johnson craig.johnson@gflenv.con			
		Apr1/22	Aug2/220ct19/22	Dec2/22 Feb16/23	Jul5/23	Apr1/22 Apr1/22	Aug2/22 Oct19/22	Dec2/22 + Feb16/23	
		17 5 16 0 15 14 13 Abnormal 12			Base Number (mg KOH/g)	8.0 6.0 4.0 2.0		<u> </u>	
		19 18 Abnormal				12.0 Base		_	
		Viscosity @ 100°		- 2		Base Number			
		Apr/12/2012	Aug2/22	Dec2/22	Jul5/23				
		10 copper							
		10 0 10 0 10 10 10 10 10 10 10	Aug2/22	Dec2/22 Feb16/23	Jul5/23				
		50 <u>E</u> 40 30 20							
Aug2/22 +	Dec2/22 +	Ferrous Alloys							
		GRAPHS							
		FLUID PROPE Visc @ 100°C	cSt	method ASTM D445	limit/bas	e current 13.9	history 1 13.7	history 2 13.8	
		Free Water	scalar	*Visual		NEG	NEG	NEG	
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG	
Aug2/22	Appearance Odor	scalar scalar	*Visual *Visual	NORML NORML	NORML NORML	NORML	NORML NORML		
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
	Precipitate Silt	scalar scalar	*Visual *Visual	NONE NONE	NONE NONE	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		

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Submitted By: Craig Johnson

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