

# **OIL ANALYSIS REPORT**

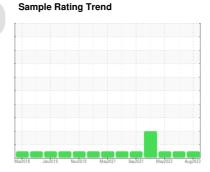


G.LOPES CONSTRUCTION INC./Off-Road

**L43** 

Component **Diesel Engine** 

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





### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

### **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.

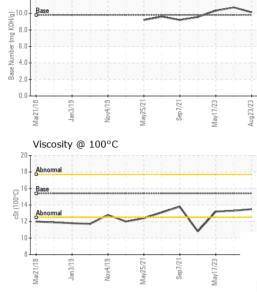
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0098400	PCA0098314	PCA0098559
Sample Date		Client Info		23 Aug 2023	28 Jun 2023	17 May 2023
Machine Age	hrs	Client Info		24210	24210	24210
Oil Age	hrs	Client Info		18062	18062	18062
Oil Changed		Client Info		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
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	63	43	49
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	1	0	1
Lead	ppm	ASTM D5185m	>40	1	<1	2
Copper	ppm	ASTM D5185m	>330	8	6	10
Tin	ppm	ASTM D5185m	>15	1	<1	2
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 28	history1 41	history2 52
	ppm	ASTM D5185m				
Boron		ASTM D5185m	0	28	41	52 0 63
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	28 1	41 0	52 0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	28 1 64	41 0 64	52 0 63
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	28 1 64 <1	41 0 64 <1	52 0 63 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	28 1 64 <1 887 1201 1076	41 0 64 <1 971 1208 1135	52 0 63 1 895 1169 1019
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	28 1 64 <1 887 1201 1076 1292	41 0 64 <1 971 1208 1135 1382	52 0 63 1 895 1169 1019
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	0 0 60 0 1010 1070 1150	28 1 64 <1 887 1201 1076	41 0 64 <1 971 1208 1135	52 0 63 1 895 1169 1019
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 ASTM D5185m	0 0 60 0 1010 1070 1150 1270	28 1 64 <1 887 1201 1076 1292	41 0 64 <1 971 1208 1135 1382	52 0 63 1 895 1169 1019
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	28 1 64 <1 887 1201 1076 1292 3479	41 0 64 <1 971 1208 1135 1382 4107	52 0 63 1 895 1169 1019 1230 3363
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	28 1 64 <1 887 1201 1076 1292 3479 current	41 0 64 <1 971 1208 1135 1382 4107 history1	52 0 63 1 895 1169 1019 1230 3363 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	28 1 64 <1 887 1201 1076 1292 3479 current	41 0 64 <1 971 1208 1135 1382 4107 history1	52 0 63 1 895 1169 1019 1230 3363 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	28 1 64 <1 887 1201 1076 1292 3479  current 7	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1	52 0 63 1 895 1169 1019 1230 3363 history2 10 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	28 1 64 <1 887 1201 1076 1292 3479 current 7 0	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1	52 0 63 1 895 1169 1019 1230 3363 history2 10 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	28 1 64 <1 887 1201 1076 1292 3479 current 7 0 1	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1 0	52 0 63 1 895 1169 1019 1230 3363 history2 10 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	28 1 64 <1 887 1201 1076 1292 3479	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1 0 history1 0.5	52 0 63 1 895 1169 1019 1230 3363 history2 10 2 0 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D7844  *ASTM D7624  *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	28 1 64 <1 887 1201 1076 1292 3479 current 7 0 1 current 0.8 7.3	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1 0 history1 0.5 7.3	52 0 63 1 895 1169 1019 1230 3363 history2 10 2 0 history2 0.5 7.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D7844  *ASTM D7624  *ASTM D76145	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	28 1 64 <1 887 1201 1076 1292 3479	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1 0 history1 0.5 7.3 20.5	52 0 63 1 895 1169 1019 1230 3363 history2 10 2 0 history2 0.5 7.4 20.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  method  *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	28 1 64 <1 887 1201 1076 1292 3479 current 7 0 1 current 0.8 7.3 20.5 current	41 0 64 <1 971 1208 1135 1382 4107 history1 7 <1 0 history1 0.5 7.3 20.5	52 0 63 1 895 1169 1019 1230 3363 history2 10 2 0 history2 0.5 7.4 20.6 history2



Base Number

## **OIL ANALYSIS REPORT**

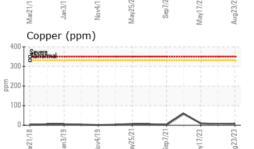
**GRAPHS** 

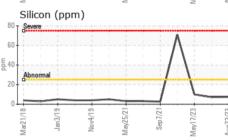


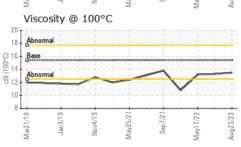
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2

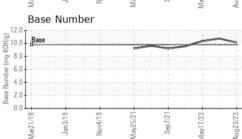
Visco 0 10000		LITTIE					
VISC @ 100°C	isc @ 100°C	cSt	ASTM D445	15.4	13.5	13.3	13.2

Iron (ppm)		100	Lead (ppm)
250 200 Severe			Severe
150			
100 - Abnormal		E 40	Abnormal
50		20	)+
Jan3/19	May25/21	May17/23 +	Jan3/19 Jan3/19 Nov4/19
Aluminum (ppm)		50	Chromium (ppm)
40 Severe		40	Severe
Abnormal		E 30	Abnormal
20		20	J - Q











Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 2

: 05935641 : 10620912

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0098400

Received Diagnosed Diagnostician : Wes Davis

: 25 Aug 2023 : 28 Aug 2023

Contact: BUTCH MCGRATH bmcgrath@glopes.com

**G LOPES CONSTRUCTION** 

T: F:

565 WINTHROP ST

TAUNTON, MA

US 02780

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)