

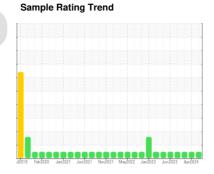
# **OIL ANALYSIS REPORT**



**G.LOPES CONSTRUCTION INC./Off-Road** 

L336 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

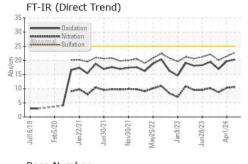
### **Fluid Condition**

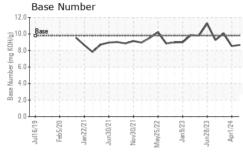
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

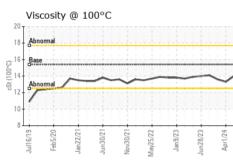
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0122983	PCA0023323	PCA0109813
Sample Date		Client Info		18 Jun 2024	01 Apr 2024	07 Nov 2023
Machine Age	hrs	Client Info		9919	9919	9487
Oil Age	hrs	Client Info		5145	5577	5470
Oil Changed		Client Info		N/A	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
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	20	13	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	<1	1	2
Lead	ppm	ASTM D5185m	>40	2	0	0
Copper	ppm	ASTM D5185m	>330	4	4	3
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	2	6	4
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m		2 0	6	4 2
Barium	ppm	ASTM D5185m ASTM D5185m	0	0	0	2
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	0	0 67	0 66	2 61
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0	0 67 <1	0 66 0	2 61 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010	0 67 <1 1032	0 66 0 945	2 61 <1 881
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070	0 67 <1 1032 1286	0 66 0 945 1229	2 61 <1 881 947
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150	0 67 <1 1032 1286 1112	0 66 0 945 1229 1039	2 61 <1 881 947 1021
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 60 0 1010 1070 1150 1270	0 67 <1 1032 1286 1112 1364	0 66 0 945 1229 1039 1230	2 61 <1 881 947 1021 1219
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 60 0 1010 1070 1150 1270 2060	0 67 <1 1032 1286 1112 1364 3774	0 66 0 945 1229 1039 1230 3645	2 61 <1 881 947 1021 1219 2865
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 60 0 1010 1070 1150 1270 2060	0 67 <1 1032 1286 1112 1364 3774	0 66 0 945 1229 1039 1230 3645 history1	2 61 <1 881 947 1021 1219 2865 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060	0 67 <1 1032 1286 1112 1364 3774 current	0 66 0 945 1229 1039 1230 3645 history1	2 61 <1 881 947 1021 1219 2865 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base	0 67 <1 1032 1286 1112 1364 3774 current 4	0 66 0 945 1229 1039 1230 3645 history1 5 46	2 61 <1 881 947 1021 1219 2865 history2 6 16
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 67 <1 1032 1286 1112 1364 3774 current 4 29	0 66 0 945 1229 1039 1230 3645 history1 5 46	2 61 <1 881 947 1021 1219 2865 history2 6 16 6
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	0 60 0 1010 1070 1150 1270 2060 limit/base >25	0 67 <1 1032 1286 1112 1364 3774 current 4 29 11	0 66 0 945 1229 1039 1230 3645 history1 5 46 18	2 61 <1 881 947 1021 1219 2865 history2 6 16 6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	0 67 <1 1032 1286 1112 1364 3774 current 4 29 11 current	0 66 0 945 1229 1039 1230 3645 history1 5 46 18 history1	2 61 <1 881 947 1021 1219 2865 history2 6 16 6 history2
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  method ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m  *ASTM D5185m  *ASTM D7624  *ASTM D7624  *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	0 67 <1 1032 1286 1112 1364 3774 current 4 29 11 current 0.6	0 66 0 945 1229 1039 1230 3645 history1 5 46 18 history1 0.4 10.3	2 61 <1 881 947 1021 1219 2865 history2 6 16 6 history2 0.4 8.7
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  method ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m ASTM D5185m  *ASTM D5185m  *ASTM D5185m  *ASTM D7624  *ASTM D7624  *ASTM D76145	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30	0 67 <1 1032 1286 1112 1364 3774 current 4 29 11 current 0.6 10.6 22.8	0 66 0 945 1229 1039 1230 3645 history1 5 46 18 history1 0.4 10.3 21.4	2 61 <1 881 947 1021 1219 2865 history2 6 16 6 history2 0.4 8.7 20.1
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  Method  *ASTM D5185m  *ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415  Method	0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	0 67 <1 1032 1286 1112 1364 3774 current 4 29 11 current 0.6 10.6 22.8	0 66 0 945 1229 1039 1230 3645 history1 5 46 18 history1 0.4 10.3 21.4	2 61 <1 881 947 1021 1219 2865 history2 6 16 6 history2 0.4 8.7 20.1 history2



## **OIL ANALYSIS REPORT**





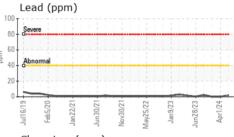


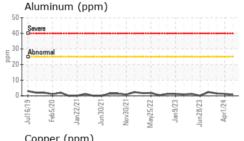
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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

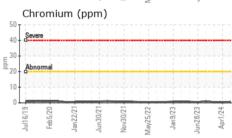
FLUID PROPI	ERITES	method	ilmit/base		nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.3	13.6

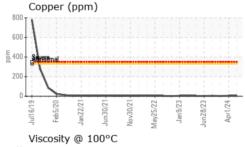
Sever	e		1 1		1 1		1	
Abno	rmal							
0								
6	0.2	21-	21	21-	22	33	23	47
Jul16/19	Feb5/20	Jan 22/	Jun30/	Nov30/7	May25/22	Jan9/2	Jun28/23	Apr1/24
3	1	- P	3	2	No.	-	=	⋖

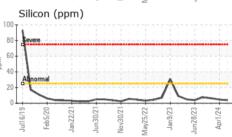
**GRAPHS** 

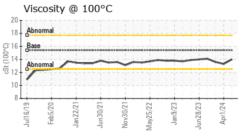


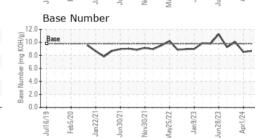
















Certificate 12367

Laboratory Sample No.

Lab Number : 06215933 Unique Number : 11088797

: PCA0122983 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 20 Jun 2024 **Tested** : 22 Jun 2024

Diagnosed

: 22 Jun 2024 - Wes Davis

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)

**G LOPES CONSTRUCTION** 

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Contact: BUTCH MCGRATH bmcgrath@glopes.com

T:

F: Submitted By: MATT MANOLI