

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 645176

#### Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

### DIAGNOSIS

#### A Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

#### 🔺 Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

#### 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 acceptable for the time in service.

,		-	Nov2023	Mar2024		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0120677	PCA0113354	
Sample Date		Client Info		22 Mar 2024	16 Nov 2023	
Machine Age	mls	Client Info		6974	3559	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Not Changd	Not Changd	
Sample Status				ABNORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	27	14	
Chromium	ppm	ASTM D5185m	>20	1	<1	
Nickel	ppm	ASTM D5185m	>4	<1	<1	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	<1	1	
Aluminum	ppm	ASTM D5185m	>20	7	5	
Lead	ppm	ASTM D5185m	>40	4	0	
Copper	ppm	ASTM D5185m	>330	<u> </u>	76	
Tin	ppm	ASTM D5185m	>15	3	3	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium		ASTM D5185m		0	0	
Gaumum	ppm	ASTIVI DOTODITI		U	0	
ADDITIVES	ррп	method	limit/base	current	history1	history2
ADDITIVES	ppm		limit/base	-	-	
ADDITIVES Boron		method	2	current	history1	history2
ADDITIVES Boron Barium	ppm	method ASTM D5185m	2	current 38	history1 47	history2
ADDITIVES Boron Barium Molybdenum	ppm ppm	method ASTM D5185m ASTM D5185m	2 0 50	current 38 0	history1 47 0	history2
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 38 0 43	history1 47 0 41	history2  
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current           38           0           43           4	history1 47 0 41 3	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 38 0 43 4 537	history1 47 0 41 3 539	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185mASTM D5185m	2 0 50 0 950 1050	current           38           0           43           4           537           1733	history1 47 0 41 3 539 1604	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current           38           0           43           537           1733           761	history1 47 0 41 3 539 1604 780	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180	current           38           0           43           4           537           1733           761           884	history1 47 0 41 3 539 1604 780 945	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base	current           38           0           43           537           1733           761           884           2708	history1 47 0 41 3 539 1604 780 945 2447	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base	current           38           0           43           4           537           1733           761           884           2708           current	history1 47 0 41 3 539 1604 780 945 2447 history1	history2        history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	current           38           0           43           4           537           1733           761           884           2708           current           5	history1           47           0           41           3           539           1604           780           945           2447           history1           5	history2      history2 
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25	current           38           0           43           537           1733           761           884           2708           current           5           6	history1         47         0         41         3         539         1604         780         945         2447         history1         5         5         5	history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	current           38           0           43           4           537           1733           761           884           2708           current           5           6           10	history1           47           0           41           3           539           1604           780           945           2447           history1           5           5           6	history2 history2 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current           38           0           43           4           537           1733           761           884           2708           current           5           6           10           current	history1         47         0         41         3         539         1604         780         945         2447         history1         5         5         6         history1	history2 history2 history2 history2
ADDITIVES Boron 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	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	current           38           0           43           4           537           1733           761           884           2708           current           5           6           10           current           0.5	history1         47         0         41         3         539         1604         780         945         2447         history1         5         6         history1         0.3	history2 history2 history2 history2 history2
ADDITIVES 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	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	current         38         0         43         4         537         1733         761         884         2708         current         5         6         10         current         0.5         9.0	history1         47         0         41         3         539         1604         780         945         2447         history1         5         6         history1         0.3         6.8	history2 history2 history2 history2 history2 history2 history2
ADDITIVES 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	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 	current         38         0         43         4         537         1733         761         884         2708         current         5         6         10         current         0.5         9.0         22.9	history1         47         0         41         3         539         1604         780         945         2447         history1         5         6         history1         0.3         6.8         22.6	history2                           history2            history2            history2            history2                     history2
ADDITIVES 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	method           ASTM D5185m           ASTM D7844           *ASTM D7624           *ASTM D7415           method	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20 >30 limit/base	current         38         0         43         4         537         1733         761         884         2708         current         5         6         10         current         0.5         9.0         22.9         current	history1         47         0         41         3         539         1604         780         945         2447         history1         5         6         history1         0.3         6.8         22.6         history1	history2   history2            history2            history2            history2            history2            history2



15 14

cSt (100°C)

10

2

Jov16/25

# **OIL ANALYSIS REPORT**

scalar

scalar

scalar

scalar

scalar

scalar

scalar

scalar

cSt

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

method

\*Visual

\*Visual

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\*Visual

method

ASTM D445

scalar \*Visual

scalar \*Visual

limit/base

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

limit/base

>0.2

12.00

current

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

curren

NEG

NEG

9.7

history1

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

history

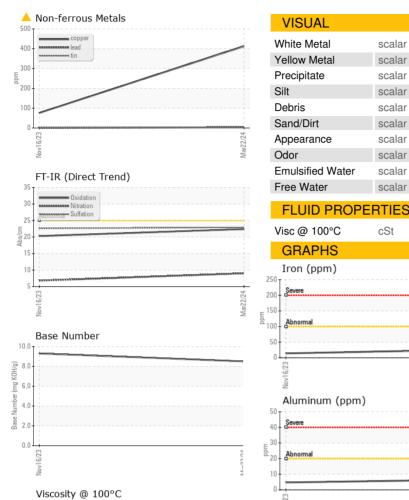
NFG

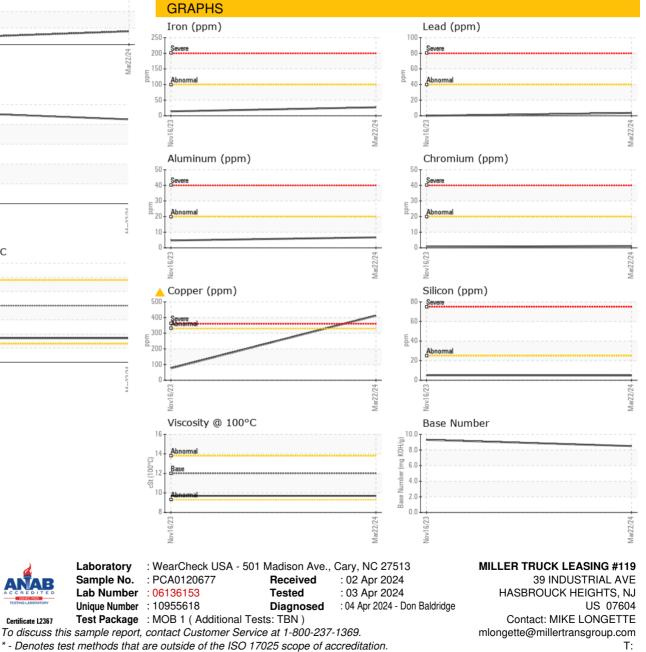
NEG

9.7

history2

history





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Certificate L2367

Laboratory

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