

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend





#### Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

#### 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.

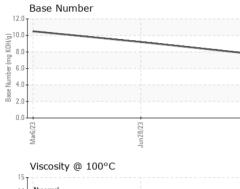
### Fluid Condition

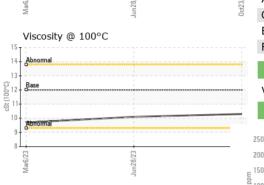
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0110433	PCA0101299	PCA0094265
Sample Date		Client Info		23 Oct 2023	28 Jun 2023	06 Mar 2023
Machine Age	mls	Client Info		17064	12508	6722
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	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	e	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	132	110	76
Chromium	ppm	ASTM D5185m	>20	2	2	<1
Nickel	ppm	ASTM D5185m	>4	2	2	<1
Titanium	ppm	ASTM D5185m	0	<1	0	<1
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>20	17	14	8
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm		>330	71	63	60
Tin	ppm	ASTM D5185m	>15	7	6	5
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
						biotom 0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 23	history1 41	50
	ppm ppm					
Boron		ASTM D5185m	2	23	41	50
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0	23 <1	41 0	50 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	23 <1 53	41 0 51	50 0 48
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	23 <1 53 11	41 0 51 10	50 0 48 9
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	23 <1 53 11 570	41 0 51 10 575	50 0 48 9 536
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	23 <1 53 11 570 1721	41 0 51 10 575 1672	50 0 48 9 536 1692
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	2 0 50 0 950 1050 995	23 <1 53 11 570 1721 787	41 0 51 10 575 1672 830	50 0 48 9 536 1692 749
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	2 0 50 0 950 1050 995 1180	23 <1 53 11 570 1721 787 1018	41 0 51 10 575 1672 830 1005	50 0 48 9 536 1692 749 925
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	2 0 50 950 1050 995 1180 2600	23 <1 53 11 570 1721 787 1018 2541	41 0 51 10 575 1672 830 1005 2446	50 0 48 9 536 1692 749 925 2559
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	2 0 50 950 1050 995 1180 2600	23 <1 53 11 570 1721 787 1018 2541 current	41 0 51 10 575 1672 830 1005 2446 history1	50 0 48 9 536 1692 749 925 2559 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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	23 <1 53 11 570 1721 787 1018 2541 2541 ucurrent 13	41 0 51 10 575 1672 830 1005 2446 history1 11	50 0 48 9 536 1692 749 925 2559 history2 10
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	23 <1 53 11 570 1721 787 1018 2541 current 13 1	41 0 51 10 575 1672 830 1005 2446 history1 11 5	50 0 48 9 536 1692 749 925 2559 <b>history2</b> 10 5
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	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 -20 <b>limit/base</b>	23 <1 53 11 570 1721 787 1018 2541 2541 13 1 20	41 0 51 10 575 1672 830 1005 2446 history1 11 5 14	50 0 48 9 536 1692 749 925 2559 history2 10 5 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	23 <1 53 11 570 1721 787 1018 2541 current 13 1 20 current	41 0 51 10 575 1672 830 1005 2446 history1 11 5 14 history1	50 0 48 9 536 1692 749 925 2559 history2 10 5 7 7 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	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	23 <1 53 11 570 1721 787 1018 2541 <b>current</b> 13 1 20 <b>current</b> 0.7	41 0 51 10 575 1672 830 1005 2446 history1 11 5 14 history1 0.4	50 0 48 9 536 1692 749 925 2559 history2 10 5 7 7 history2 0.2
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i>	23 <1 53 11 570 1721 787 1018 2541 <i>current</i> 13 1 20 <i>current</i> 0.7 12.5	41 0 51 10 575 1672 830 1005 2446 history1 11 5 14 history1 0.4 10.5	50 0 48 9 536 1692 749 925 2559 history2 10 5 7 history2 0.2 7.8
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	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	23 <1 53 11 570 1721 787 1018 2541 <i>current</i> 13 1 20 <i>current</i> 0.7 12.5 23.9	41 0 51 10 575 1672 830 1005 2446 history1 11 5 14 history1 0.4 10.5 23.4	50 0 48 9 536 1692 749 925 2559 history2 10 5 7 7 history2 0.2 7.8 22.2
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	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	23 <1 53 11 570 1721 787 1018 2541 current 13 1 20 current 0.7 12.5 23.9 current	41 0 51 10 575 1672 830 1005 2446 history1 11 5 14 history1 0.4 10.5 23.4 history1	50 0 48 9 536 1692 749 925 2559 history2 10 5 7 history2 0.2 7.8 22.2 history2



# **OIL ANALYSIS REPORT**





VISUAL \*Visual NONE NONE NONE White Metal scalar NONE NONE NONE NONE NONE Yellow Metal scalar \*Visual NONE Precipitate scalar \*Visual NONE NONE NONE Silt scalar \*Visual NONE NONE NONE NONE NONE NONE Debris \*Visual NONE NONE scalar NONE Sand/Dirt scalar \*Visual NONE NONE NONE NORML Appearance NORML NORML NORML scalar \*Visua NORML Odor scalar \*Visual NORML NORML NORML **Emulsified Water** scalar \*Visual >0.2 NEG NEG NEG Free Water scalar \*Visual NEG NEG NEG **FLUID PROPERTIES** Visc @ 100°C cSt ASTM D445 12.00 10.3 10.1 9.7 GRAPHS Iron (ppm) Lead (ppm) 100 80 150 60 ppm ppm 100 40 50 20 128/23 0ct23/23 . Aluminum (ppm) Chromium (ppm) 50 5 40 40 30 31 Silicon (ppm) Copper (ppm) 400 80 300 6 la 200 ۲,40 Ab 100 20 Π Viscosity @ 100°C Base Number 16 12. (B)H0.0 (mg K 8 ( 100 6.0 ž 4.0 Base 2.0 0.0 8 Jun28/23 un28/23 **MILLER TRUCK LEASING #119** : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received : 13 Nov 2023 **39 INDUSTRIAL AVE** : PCA0110433 Lab Number HASBROUCK HEIGHTS, NJ : 06005354 Diagnosed : 15 Nov 2023 Unique Number : 10739116 Diagnostician : Jonathan Hester US 07604 Test Package : MOB 1 (Additional Tests: TBN) Contact: MIKE LONGETTE mlongette@millertransgroup.com 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. T:

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

Certificate L2367

Laboratory

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