

# **OIL ANALYSIS REPORT**

Sample Rating Trend



# Machine Id 721564

#### 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 acceptable for the time in service.

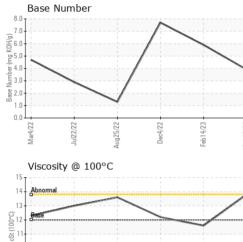
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0106250	PCA0092388	PCA0083601
Sample Date		Client Info		19 Sep 2023	14 Feb 2023	04 Dec 2022
Machine Age	mls	Client Info		0	186556	155227
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Changd	Not Changd
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	64	63	27
Chromium	ppm	ASTM D5185m	>20	3	1	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	6	9	6
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	7	17	11
Tin	ppm	ASTM D5185m	>15	0	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
			line it /le e e e		1 A	histow O
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	ASTM D5185m	limit/base	8	history1 12	15
	ppm ppm					
Boron		ASTM D5185m	2	8	12	15
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	8 0	12 0	15 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	8 0 65	12 0 69	15 0 65
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	8 0 65 1	12 0 69 <1	15 0 65 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	8 0 65 1 964	12 0 69 <1 854	15 0 65 <1 915
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	8 0 65 1 964 1493	12 0 69 <1 854 1218	15 0 65 <1 915 1163
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995	8 0 65 1 964 1493 1246	12 0 69 <1 854 1218 880	15 0 65 <1 915 1163 1026
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	8 0 65 1 964 1493 1246 1596	12 0 69 <1 854 1218 880 1118	15 0 65 <1 915 1163 1026 1255
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	8 0 65 1 964 1493 1246 1596 3016	12 0 69 <1 854 1218 880 1118 2459	15 0 65 <1 915 1163 1026 1255 3613
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	8 0 65 1 964 1493 1246 1596 3016 current	12 0 69 <1 854 1218 880 1118 2459 history1	15 0 65 <1 915 1163 1026 1255 3613 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	8 0 65 1 964 1493 1246 1596 3016 <i>current</i> 5	12 0 69 <1 854 1218 880 1118 2459 history1 5	15 0 65 <1 915 1163 1026 1255 3613 history2 3
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	8 0 65 1 964 1493 1246 1596 3016 <u>current</u> 5 0	12 0 69 <1 854 1218 880 1118 2459 history1 5 1	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1
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 50 950 1050 995 1180 2600 <b>limit/base</b> >25	8 0 65 1 964 1493 1246 1596 3016 current 5 0 7	12 0 69 <1 854 1218 880 1118 2459 history1 5 1 20	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1 10
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>	8 0 65 1 964 1493 1246 1596 3016 current 5 0 7	12 0 69 <1 854 1218 880 1118 2459 history1 5 1 20 history1	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1 10 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 limit/base >25 >20 limit/base >20	8 0 65 1 964 1493 1246 1596 3016 <i>current</i> 5 0 7 <i>current</i> 2	12 0 69 <1 854 1218 880 1118 2459 history1 5 1 20 history1 1.4	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1 10 history2 0.1
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>	8 0 65 1 964 1493 1246 1596 3016 <i>current</i> 5 0 7 <i>current</i> 2 15.2	12 0 69 <1 854 1218 880 1118 2459 history1 5 1 20 history1 1.4 1.4 12.8	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1 10 history2 0.1 9.3
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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	8 0 65 1 964 1493 1246 1596 3016 <i>current</i> 5 0 7 <i>current</i> 2 15.2 31.5 <i>current</i>	12 0 69 <1 854 1218 880 1118 2459 history1 5 1 20 history1 1.4 1.4 12.8 25.2	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1 10 history2 0.1 9.3 20.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 20 20 20 20 20	8 0 65 1 964 1493 1246 1596 3016 <i>current</i> 5 0 7 <i>current</i> 2 15.2 31.5	12 0 69 <1 854 1218 880 1118 2459 history1 5 1 20 history1 1.4 12.8 25.2 history1	15 0 65 <1 915 1163 1026 1255 3613 history2 3 <1 10 history2 0.1 9.3 20.7 history2



Mar4/22

Jul22/22

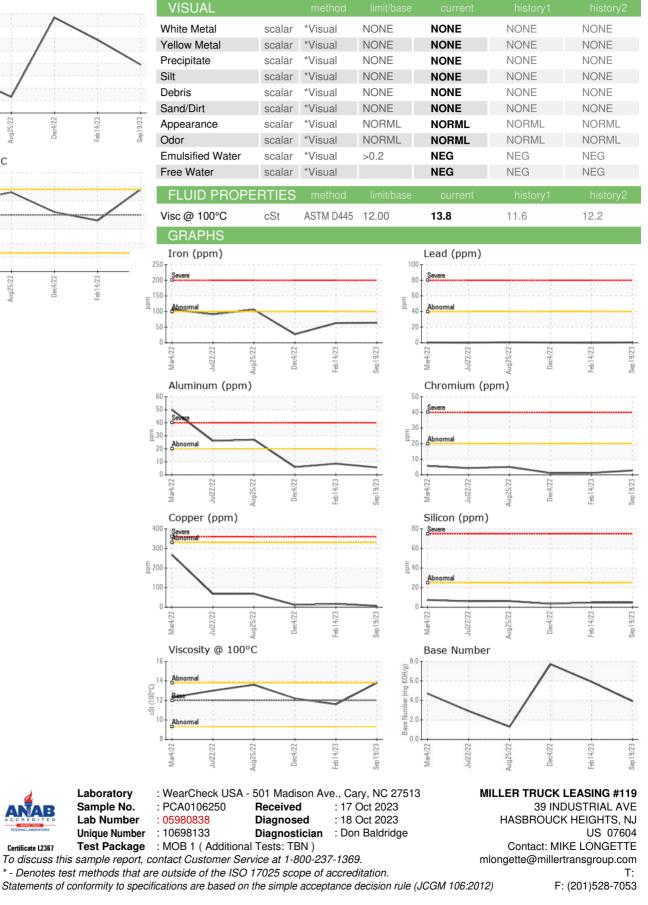
# **OIL ANALYSIS REPORT**



Aug25/22

Dec4/22

Feb14/23



Certificate L2367

Contact/Location: MIKE LONGETTE - MILRUT