

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id **121377** Component

Diesel Engine

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

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

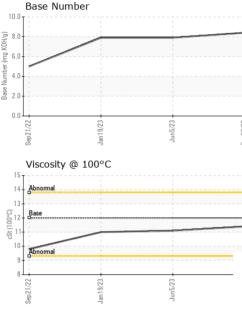
#### Fluid Condition

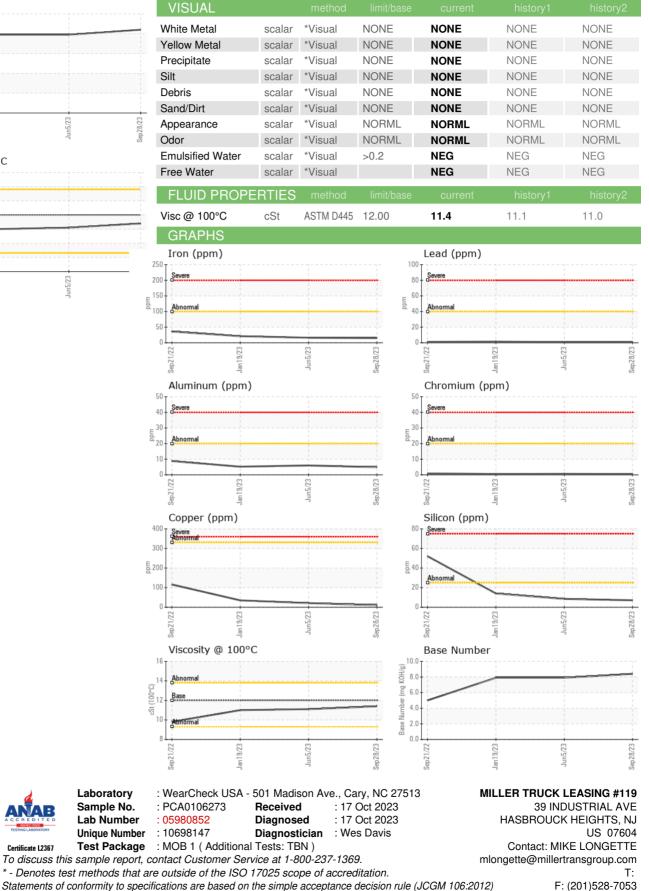
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

TS)		Sep202	2 Jan2023	Jun2023 Se	p2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0106273	PCA0097984	PCA0088153
Sample Date		Client Info		28 Sep 2023	05 Jun 2023	19 Jan 2023
Machine Age	mls	Client Info		0	11190	7251
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Changed
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	15	16	21
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	5	6	5
Lead	ppm	ASTM D5185m	>40	1	<1	1
Copper	ppm	ASTM D5185m	>330	11	21	35
Tin	ppm	ASTM D5185m	>15	1	2	2
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
-				•		
Boron	ppm	ASTM D5185m	2	0	16	30
	ppm ppm	ASTM D5185m ASTM D5185m		0	16 0	30 3
Barium						
Barium Molybdenum	ppm	ASTM D5185m	0 50	0	0	3
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 65	0 62	3 49
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 65 <1	0 62 1	3 49 <1
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 65 <1 1086	0 62 1 965	3 49 <1 689
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050	0 65 <1 1086 1162	0 62 1 965 1219	3 49 <1 689 1029
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 65 <1 1086 1162 1208	0 62 1 965 1219 1104	3 49 <1 689 1029 902
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	0 50 0 950 1050 995 1180	0 65 <1 1086 1162 1208 1517	0 62 1 965 1219 1104 1378	3 49 <1 689 1029 902 1100
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600	0 65 <1 1086 1162 1208 1517 3658	0 62 1 965 1219 1104 1378 4063	3 49 <1 689 1029 902 1100 3243
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base	0 65 <1 1086 1162 1208 1517 3658 current	0 62 1 965 1219 1104 1378 4063 history1	3 49 <1 689 1029 902 1100 3243 history2
Boron Barium Molybdenum Magnese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	0 50 0 950 1050 995 1180 2600 limit/base >25	0 65 <1 1086 1162 1208 1517 3658 current 7	0 62 1 965 1219 1104 1378 4063 history1 8	3 49 <1 689 1029 902 1100 3243 history2 14
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	0 50 0 950 1050 995 1180 2600 limit/base >25	0 65 <1 1086 1162 1208 1517 3658 current 7 0	0 62 1 965 1219 1104 1378 4063 history1 8 1	3 49 <1 689 1029 902 1100 3243 history2 14 3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	0 65 <1 1086 1162 1208 1517 3658 <u>current</u> 7 0 0	0 62 1 965 1219 1104 1378 4063 history1 8 1 2	3 49 <1 689 1029 902 1100 3243 history2 14 3 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3	0 65 <1 1086 1162 1208 1517 3658 current 7 0 0 0	0 62 1 965 1219 1104 1378 4063 history1 8 1 2 history1	3 49 <1 689 1029 902 1100 3243 history2 14 3 2 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 TS ppm ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3	0 65 <1 1086 1162 1208 1517 3658 <u>current</u> 7 0 0 0 <u>current</u> 0.4	0 62 1 965 1219 1104 1378 4063 history1 8 8 1 2 2 history1 0.3	3 49 <1 689 1029 902 1100 3243 history2 14 3 2 history2 0.3
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 >20	0 65 <1 1086 1162 1208 1517 3658 <u>current</u> 7 0 0 0 <u>current</u> 0.4 8.4	0 62 1 965 1219 1104 1378 4063 history1 8 1 2 history1 0.3 8.5	3 49 <1 689 1029 902 1100 3243 history2 14 3 2 history2 0.3 8.4
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	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20 >30	0 65 <1 1086 1162 1208 1517 3658 <u>current</u> 7 0 0 0 0 <u>current</u> 0.4 8.4 18.9	0 62 1 965 1219 1104 1378 4063 history1 8 1 2 history1 0.3 8.5 19.7	3 49 <1 689 1029 902 1100 3243 history2 14 3 2 history2 0.3 8.4 19.6



# **OIL ANALYSIS REPORT**





Certificate L2367

Contact/Location: MIKE LONGETTE - MILRUT