

# **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# KENWORTH 470681

Diesel Engine

## PETRO CANADA DURON SHP 10W30 (22 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.

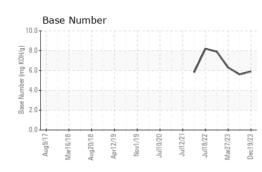
			N	OF
ug2017 Mar2i	018 Aug2018 Apr2019 Nov2	019 Jul2020 Jul2021 Jul2022 M	ar2023 Dec202	
method	limit/base	current	history1	
Client Info		PCA0113651	PCA0100919	P
Client Info		19 Dec 2023	08 Aug 2023	27
Client Info		0	199624	0
Client Info		0	20000	0
Client Info		Changed	Changed	CI

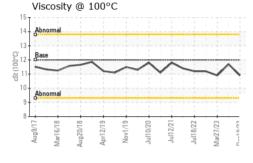


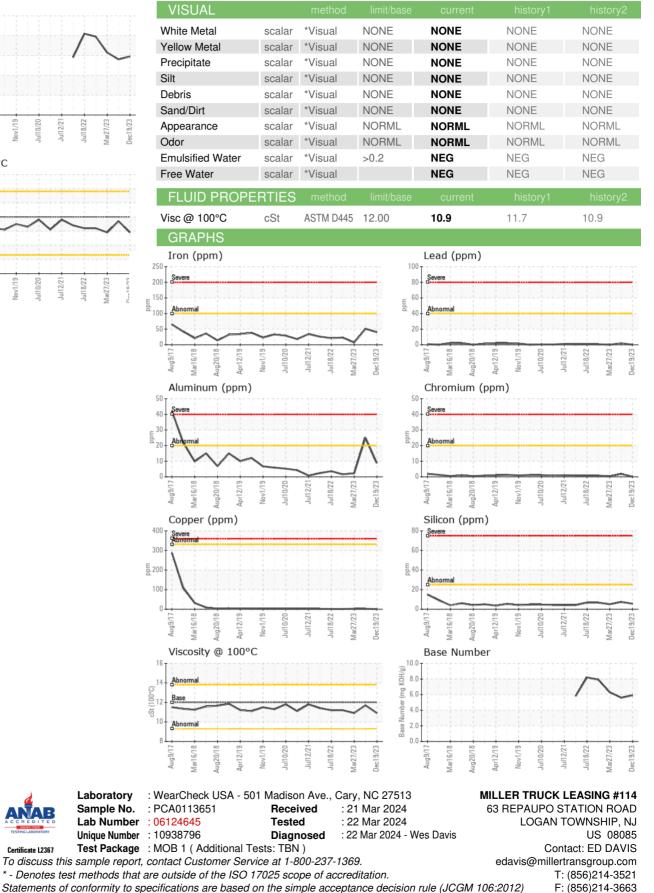
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0113651	PCA0100919	PCA0094519
Sample Date		Client Info		19 Dec 2023	08 Aug 2023	27 Mar 2023
Machine Age	mls	Client Info		0	199624	0
Oil Age	mls	Client Info		0	20000	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
				NOTIMAL		
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	40	51	7
Chromium	ppm	ASTM D5185m	>20	<1	2	<1
Nickel	ppm		>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	9	25	2
Lead	ppm		>40	0	2	0
Copper	ppm	ASTM D5185m		۰ <1	2	2
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m	210	0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
Cadiman	ppm	AO INI DO IOSIII		v		0
		mathad	limit/booo	ourropt	biotorut	history()
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	4	7	53
Boron Barium	ppm ppm		2 0	4 0	7 2	53 0
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	4	7 2 73	53 0 44
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50 0	4 0	7 2 73 1	53 0 44 1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	4 0 64	7 2 73	53 0 44
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	4 0 64 0	7 2 73 1	53 0 44 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	4 0 64 0 1011	7 2 73 1 978	53 0 44 1 567
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	4 0 64 0 1011 1365	7 2 73 1 978 1325	53 0 44 1 567 1710
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 0 950 1050 995	4 0 64 0 1011 1365 1117	7 2 73 1 978 1325 1055	53 0 44 1 567 1710 982
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	4 0 64 0 1011 1365 1117 1456	7 2 73 1 978 1325 1055 1387	53 0 44 1 567 1710 982 1166
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	4 0 64 0 1011 1365 1117 1456 3931	7 2 73 1 978 1325 1055 1387 3808	53 0 44 1 567 1710 982 1166 3594
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 0 950 1050 995 1180 2600 limit/base	4 0 64 0 1011 1365 1117 1456 3931 current	7 2 73 1 978 1325 1055 1387 3808 history1	53 0 44 1 567 1710 982 1166 3594 history2
Boron 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 <b>method</b>	2 0 50 0 950 1050 995 1180 2600 limit/base	4 0 64 0 1011 1365 1117 1456 3931 current 6	7 2 73 1 978 1325 1055 1387 3808 history1 7	53 0 44 1 567 1710 982 1166 3594 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	4 0 64 0 1011 1365 1117 1456 3931 current 6 3	7 2 73 1 978 1325 1055 1387 3808 history1 7 6	53 0 44 1 567 1710 982 1166 3594 history2 5 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	4 0 64 0 1011 1365 1117 1456 3931 current 6 3 3 17	7 2 73 1 978 1325 1055 1387 3808 history1 7 6 51	53 0 44 1 567 1710 982 1166 3594 history2 5 3 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	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 >3	4 0 64 0 1011 1365 1117 1456 3931 current 6 3 17 current	7 2 73 1 978 1325 1055 1387 3808 history1 7 6 51 51 history1	53 0 44 1 567 1710 982 1166 3594 history2 5 3 6 history2
Boron 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	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	4 0 64 0 1011 1365 1117 1456 3931 <i>current</i> 6 3 17 <i>current</i> 0.9	7 2 73 1 978 1325 1055 1387 3808 history1 7 6 51 51 history1 1.2	53 0 44 1 567 1710 982 1166 3594 history2 5 3 6 history2 0.8
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	ASTM D5185m ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 <b>limit/base</b> >20	4 0 64 0 1011 1365 1117 1456 3931 current 6 3 17 6 3 17 current 0.9 13.3	7 2 73 1 978 1325 1055 1387 3808 history1 7 6 51 51 history1 1.2 13.7	53 0 44 1 567 1710 982 1166 3594 history2 5 3 6 history2 0.8 11.1
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 <b>limit/base</b> >25 -20 <b>limit/base</b> >3 >20 >30	4 0 64 0 1011 1365 1117 1456 3931 <i>current</i> 6 3 3 17 <i>current</i> 0.9 13.3 24.5	7 2 73 1 978 1325 1055 1387 3808 history1 7 6 51 7 6 51 1.2 1.2 13.7 26.2 history1	53 0 44 1 567 1710 982 1166 3594 history2 5 3 6 <u>history2</u> 0.8 11.1 20.1
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 D7844 *ASTM D7624	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 	4 0 64 0 1011 1365 1117 1456 3931 <b>current</b> 6 3 17 <b>current</b> 0.9 13.3 24.5	7 2 73 1 978 1325 1055 1387 3808 history1 7 6 51 7 6 51 history1 1.2 1.2 13.7 26.2	53 0 44 1 567 1710 982 1166 3594 history2 5 3 6 6 history2 0.8 11.1 20.1 history2



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Certificate L2367

Laboratory

Sample No.

Contact/Location: ED DAVIS - MILLOG