

### **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

## SJB2809

**Diesel Engine** Fluid 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.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0121031	PCA0100896	PCA0100864
Sample Date		Client Info		15 May 2024	14 Aug 2023	26 Jun 2023
Machine Age	mls	Client Info		183239	166983	162786
Oil Age	mls	Client Info		7528	7608	3361
Oil Changed		Client Info		Changed	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
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	18	8	9
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	0
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm		limit/base 2	current 0	history1 11	history2 10
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	2	0	11	10
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	0 0	11 0	10 11
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	0 0 61	11 0 58	10 11 64
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	0 0 61 <1	11 0 58 1	10 11 64 <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	0 0 61 <1 995	11 0 58 1 901	10 11 64 <1 917
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	0 0 61 <1 995 1168	11 0 58 1 901 1296	10 11 64 <1 917 1228
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	0 0 61 <1 995 1168 1100	11 0 58 1 901 1296 1083	10 11 64 <1 917 1228 1065
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 50 950 1050 995 1180	0 0 61 <1 995 1168 1100 1313	11 0 58 1 901 1296 1083 1345	10 11 64 <1 917 1228 1065 1301
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	0 0 61 <1 995 1168 1100 1313 3690	11 0 58 1 901 1296 1083 1345 4170	10 11 64 <1 917 1228 1065 1301 3880 history2 3
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	0 0 61 <1 995 1168 1100 1313 3690 current	11 0 58 1 901 1296 1083 1345 4170 history1	10 11 64 <1 917 1228 1065 1301 3880 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 <b>method</b>	2 0 50 950 1050 995 1180 2600	0 0 61 <1 995 1168 1100 1313 3690 current 4	11 0 58 1 901 1296 1083 1345 4170 history1 3	10 11 64 <1 917 1228 1065 1301 3880 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m 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 <b>limit/base</b>	0 0 61 <1 995 1168 1100 1313 3690 current 4 4	11 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 2 history1	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	0 0 61 <1 995 1168 1100 1313 3690 current 4 4 4 <1 current 0.9	11 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 2 history1 0.5	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 history2 0.7
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	0 0 61 <1 995 1168 1100 1313 3690 current 4 4 4 <1 current	11 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 2 history1	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 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	0 0 61 <1 995 1168 1100 1313 3690 current 4 4 4 <1 current 0.9	11 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 2 history1 0.5	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 history2 0.7
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> >3 >20	0 0 61 <1 995 1168 1100 1313 3690 current 4 4 4 <1 current 0.9 9.2	111 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 2 history1 0.5 6.5	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 history2 0.7 7.4
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 D5185m	2 0 50 1050 955 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >3 >30	0 0 61 <1 995 1168 1100 1313 3690 current 4 4 4 -1 current 0.9 9.2 19.6	111 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 history1 0.5 6.5 18.0	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 history2 0.7 7.4 19.8
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 ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	2 0 0 50 0 950 1050 995 1180 2600 2600 255 20 220 20 3 20 20 3 3 20 3 3 20 3 3 20 3 3 3 20 3 3 3 20 3 3 3 20 3 3 3 3	0 0 61 <1 995 1168 1100 1313 3690 current 4 4 4 4 <1 current 0.9 9.2 19.6 current	111 0 58 1 901 1296 1083 1345 4170 history1 3 2 2 history1 0.5 6.5 18.0 history1	10 11 64 <1 917 1228 1065 1301 3880 history2 3 3 <1 history2 0.7 7.4 19.8 history2



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Aug18/22 kor20/22

ar8/77 ar6/73 4/72

# **OIL ANALYSIS REPORT**

Silt

250

200

150

100

50

0. Apr20/22 .

50

40

30

10

0

400

300

la 200

100

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16

St (100°C)

Laboratory

Sample No.

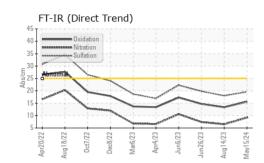
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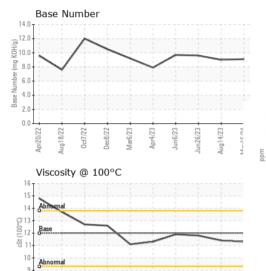
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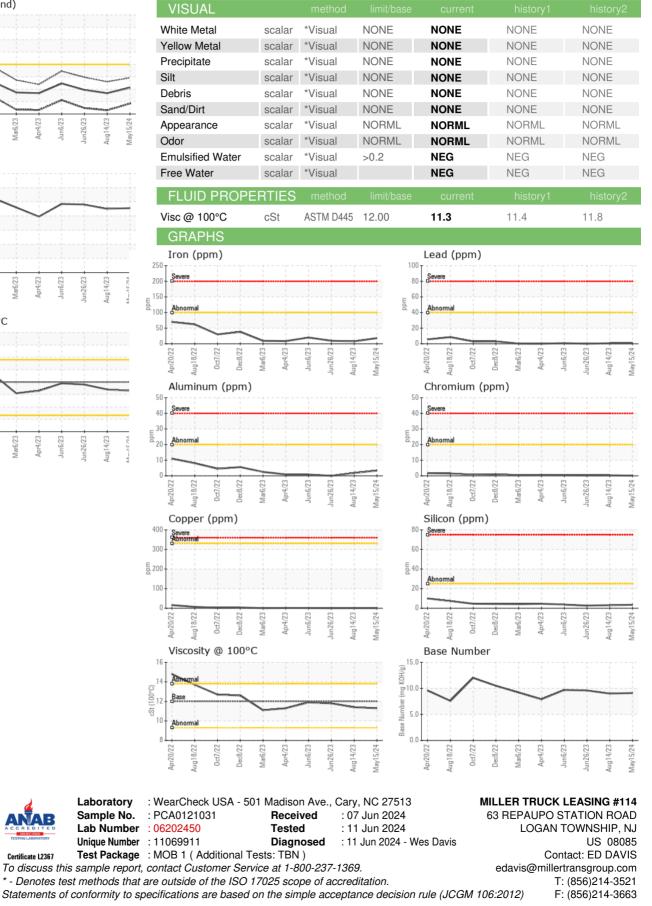
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