

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id 388041

Component Diesel Engine

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

# 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.

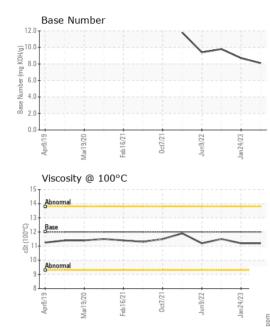
#### Fluid Condition

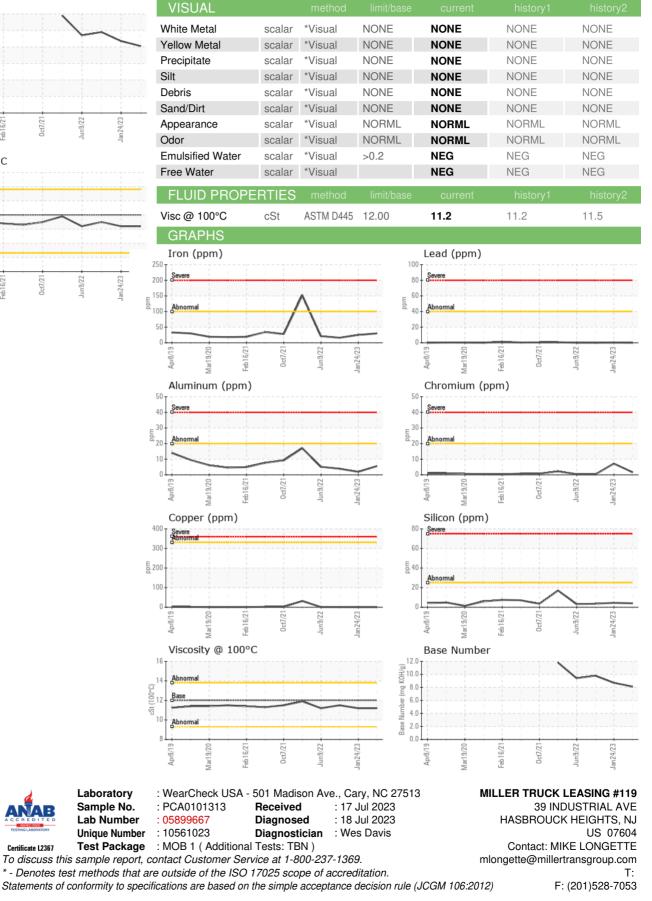
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Apr2019	Mar2020 Feb2021	Oct2021 Jun2022 Ja	12023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0101313	PCA0089643	PCA0080729
Sample Date		Client Info		06 Jul 2023	24 Jan 2023	03 Oct 2022
Machine Age	mls	Client Info		94016	89054	86196
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	30	25	16
Chromium	ppm	ASTM D5185m	>20	2	7	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	2	4
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m	210	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES						
		method				history2
	maa		limit/base			
Boron	ppm mag	ASTM D5185m	2	13	20	17
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	13 0	20 0	17 2
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	13 0 64	20 0 66	17 2 87
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	13 0 64 <1	20 0 66 <1	17 2 87 <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	13 0 64 <1 828	20 0 66 <1 896	17 2 87 <1 907
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	13 0 64 <1 828 1131	20 0 66 <1 896 1166	17 2 87 <1 907 1138
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	13 0 64 <1 828 1131 1011	20 0 66 <1 896 1166 1004	17 2 87 <1 907 1138 1040
Boron 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 ASTM D5185m	2 0 50 0 950 1050 995 1180	13 0 64 <1 828 1131 1011 1175	20 0 66 <1 896 1166 1004 1225	17 2 87 <1 907 1138 1040 1224
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	13 0 64 <1 828 1131 1011 1175 3105	20 0 66 <1 896 1166 1004 1225 3603	17 2 87 <1 907 1138 1040 1224 3604
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base	13 0 64 <1 828 1131 1011 1175 3105 current	20 0 66 <1 896 1166 1004 1225 3603 history1	17 2 87 <1 907 1138 1040 1224 3604 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 limit/base	13 0 64 <1 828 1131 1011 1175 3105 current 4	20 0 66 <1 896 1166 1004 1225 3603 history1 4	17 2 87 <1 907 1138 1040 1224 3604 history2 4
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	13 0 64 <1 828 1131 1011 1175 3105 <u>current</u> 4 0	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1	17 2 87 <1 907 1138 1040 1224 3604 <b>history2</b> 4 0
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	13 0 64 <1 828 1131 1011 1175 3105 current 4 0 6	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5	17 2 87 <1 907 1138 1040 1224 3604 history2 4 0 14
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	13 0 64 <1 828 1131 1011 1175 3105 current 4 0 6 current	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5 5 history1	17 2 87 <1 907 1138 1040 1224 3604 <b>history2</b> 4 0 14 <b>history2</b>
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 >3	13 0 64 <1 828 1131 1011 1175 3105 <b>current</b> 4 0 6 <b>current</b> 0.3	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5 <u>history1</u> 0.3	17 2 87 <1 907 1138 1040 1224 3604 <b>history2</b> 4 0 14 <b>history2</b> 0.5
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 0 950 1050 995 1180 2600 limit/base >25 .20 limit/base >3 >20	13 0 64 <1 828 1131 1011 1175 3105 current 4 0 6 current 0.3 7.8	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5 history1 0.3 6.5	17 2 87 <1 907 1138 1040 1224 3604 history2 4 0 14 history2 0.5 7.9
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 50 950 1050 995 1180 2600 <b>imit/base</b> >25 	13 0 64 <1 828 1131 1011 1175 3105 current 4 0 6 current 0.3 7.8 18.4	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5 <u>history1</u> 0.3 6.5 17.9	17 2 87 <1 907 1138 1040 1224 3604 <b>history2</b> 4 0 14 <b>history2</b> 0.5 7.9 20.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	2 0 50 0 950 1050 995 1180 2600 imit/base >25 	13 0 64 <1 828 1131 1011 1175 3105 current 4 0 6 current 0.3 7.8 18.4 current	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5 <u>history1</u> 0.3 6.5 17.9 history1	17 2 87 <1 907 1138 1040 1224 3604 history2 4 0 14 history2 0.5 7.9 20.0 history2
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 imit/base >25 	13 0 64 <1 828 1131 1011 1175 3105 current 4 0 6 current 0.3 7.8 18.4	20 0 66 <1 896 1166 1004 1225 3603 history1 4 1 5 <u>history1</u> 0.3 6.5 17.9	17 2 87 <1 907 1138 1040 1224 3604 <b>history2</b> 4 0 14 <b>history2</b> 0.5 7.9 20.0



# **OIL ANALYSIS REPORT**





Certificate L2367

Laboratory

Sample No.

Lab Number

Unique Number

Contact/Location: MIKE LONGETTE - MILRUT