

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id **1926746** 

#### 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.

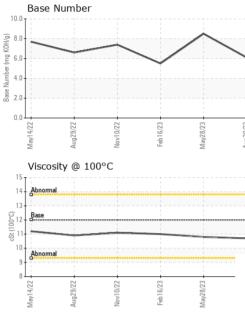
### Fluid Condition

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

		May2022	Aug2022 Nov2022	Feb2023 May2023	Aug2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0104358	PCA0099465	PCA0092295
Sample Date		Client Info		20 Aug 2023	28 May 2023	16 Feb 2023
Machine Age	mls	Client Info		0	0	270728
Oil Age	mls	Client Info		40000	20000	40000
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	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	26	11	33
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel		ASTM D5185m	>20	<1	0	0
	ppm		>4	2		
Titanium	ppm	ASTM D5185m	0		3	17
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	2	4
Lead	ppm	ASTM D5185m	>40	1	1	1
Copper	ppm	ASTM D5185m	>330	7	3	12
Tin	ppm	ASTM D5185m	>15	<1	0	1
Vanadium	ppm	ASTM D5185m		0	0	0
<b>a</b>				_		
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
	ppm ppm		limit/base			-
ADDITIVES	ppm	method ASTM D5185m		current	history1	history2
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 5 0	history1 2 0	history2 3 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 5 0 53	history1 2 0 50	history2 3 0 46
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 5 0 53 <1	history1 2 0 50 <1	history2 3 0 46 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 5 0 53 <1 805	history1 2 0 50 <1 842	history2 3 0 46 <1 798
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 5 0 53 <1 805 1056	history1 2 0 50 <1 842 1090	history2 3 0 46 <1 798 1269
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current     5     0     53     <1     805     1056     935	history1 2 0 50 <1 842 1090 837	history2 3 0 46 <1 798 1269 846
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	2 0 50 0 950 1050 995 1180	current     5     0     53     <1     805     1056     935     1136	history1 2 0 50 <1 842 1090 837 1210	history2     3     0     46     <1     798     1269     846     1172
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	current     5     0     53     <1     805     1056     935	history1 2 0 50 <1 842 1090 837	history2 3 0 46 <1 798 1269 846
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	2 0 50 0 950 1050 995 1180	current     5     0     53     <1     805     1056     935     1136	history1 2 0 50 <1 842 1090 837 1210	history2 3 0 46 <1 798 1269 846 1172
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current     5     0     53     <1     805     1056     935     1136     3108	history1   2   0   50   <1   842   1090   837   1210   3604	history2 3 0 46 <1 798 1269 846 1172 2953
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	current   5   0   53   <1   805   1056   935   1136   3108   current	history1   2   0   50   <1   842   1090   837   1210   3604   history1	history2   3   0   46   <1   798   1269   846   1172   2953   history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current     5     0     53     <1     805     1056     935     1136     3108     current     5	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current     5     0     53     <1     805     1056     935     1136     3108     current     5     7	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13
ADDITIVES 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	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   7   5   7   5   7   5   7   5   7   5   current	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   7   5   0.4	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1   0.2	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2   0.7
ADDITIVES 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	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >20	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   current   0.4   9.3	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1   0   2   6.8	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2   0.7   10.5
ADDITIVES 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 t t t t	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >20 <b>imit/base</b> >3 >20	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   7   5   0.4	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1   0.2   6.8   17.5	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2   0.7   10.5   23.6
ADDITIVES 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 t t t t	method     ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >20	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   current   0.4   9.3	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1   0   2   6.8	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2   0.7   10.5
ADDITIVES 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 t t t t	method     ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 20 >30 30	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   0   0.4   9.3   22.5	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1   0.2   6.8   17.5	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2   0.7   10.5   23.6
ADDITIVES 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	method     ASTM D5185m     ASTM D7185M     ASTM D7624     *ASTM D7624     *ASTM D7415     method	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 imit/base >3 20 >30 30	current   5   0   53   <1   805   1056   935   1136   3108   current   5   7   5   current   0.4   9.3   22.5   current	history1   2   0   50   <1   842   1090   837   1210   3604   history1   3   0   2   history1   0.2   6.8   17.5   history1	history2   3   0   46   <1   798   1269   846   1172   2953   history2   5   13   4   history2   0.7   10.5   23.6   history2

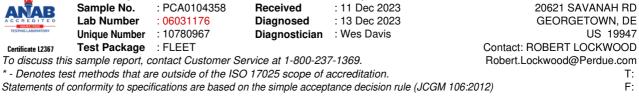


# **OIL ANALYSIS REPORT**



		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	10.7	10.8	11.0
GRAPHS						
0 5 0 5	/		/			
iron nickel	-	E2182/eW	Aug20/23			
Solution important in the second seco	-	May28/23	Aug2023			
Non-ferrous Meta	ls		Aug20/23			





: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Feb16/23

May28/23.

Aug20/23 -

15

14

13

10

8

Laboratory

May14/22

Abnorma

Aug29/22

Nov10/22

cSt (100°C)

Nov10/22

Aug29/22

9.0

8.0 (67.0 6.0 0 Bull 5.0

Jaquan 4.0 3.0

ase 8 2.0

1.0 0.0

4/22

May1.

US 19947

ug20/23

Т:

F:

May28/23

Feb16/23

**PERDUE FARMS - GEORGETOWN**