

# **OIL ANALYSIS REPORT**

Sample Rating Trend





# Component

Diesel Engine

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.

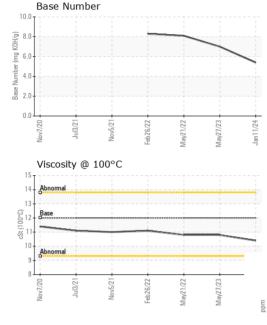
## Fluid Condition

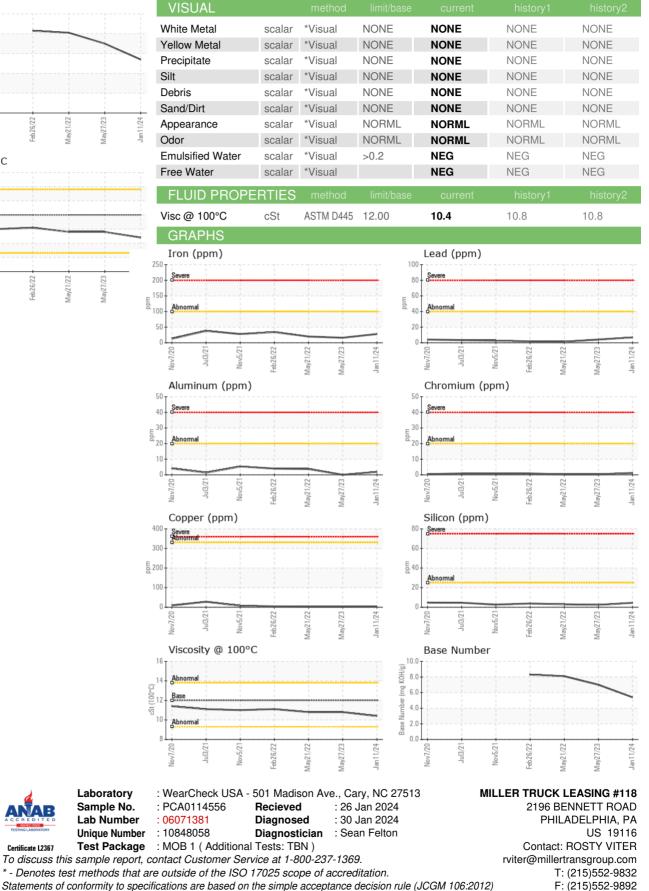
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0114556	PCA0095762	PCA0073237
Sample Date		Client Info		11 Jan 2024	27 May 2023	21 May 2022
	mls	Client Info		89594	78984	62318
Machine Age Oil Age	mls	Client Info		0 0	70904	11000
•	11115			-		
Oil Changed		Client Info		Changed NORMAL	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	28	16	20
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm		>4	0	0	0
Titanium	ppm	ASTM D5185m		2	8	3
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	0	4
Lead	ppm		>40	7	4	1
Copper	ppm		>330	4	3	3
Tin	ppm	ASTM D5185m	>15	1	<1	<1
Vanadium	ppm	ASTM D5185m	10	<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm		limit/base	0 current	-	-
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 5	history1 7	history2 19
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 5 0	history1 7 0	history2 19 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 5 0 54	history1 7 0 53	history2 19 0 56
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	current 5 0 54 <1	history1 7 0 53 <1	history2 19 0 56 <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 54 <1 776	history1 7 0 53 <1 753	history2 19 0 56 <1 744
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	Current 5 0 54 <1 776 1060	history1 7 0 53 <1 753 1169	history2 19 0 56 <1 744 1114
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           54           <1           776           1060           830	history1 7 0 53 <1 753 1169 919	history2 19 0 56 <1 744 1114 948
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180	current           5           0           54           <1           776           1060           830           1043	history1 7 0 53 <1 753 1169 919 1089	history2           19           0           56           <1           744           1114           948           1126
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 1180 2600	Current 5 0 54 <1 776 1060 830 1043 2506	history1 7 0 53 <1 753 1169 919	history2 19 0 56 <1 744 1114 948 1126 2961
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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 ASTM D5185m	2 0 50 950 1050 995 1180	current           5           0           54           <1           776           1060           830           1043	history1 7 0 53 <1 753 1169 919 1089 2924 history1	history2         19         0         56         <1         744         1114         948         1126         2961         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	current           5           0           54           <1           776           1060           830           1043           2506           current           4	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base	current           5           0           54           <1           776           1060           830           1043           2506           current	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1	history2         19         0         56         <1         744         1114         948         1126         2961         history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base	current           5           0           54           <1           776           1060           830           1043           2506           current           4	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 Limit/base	current           5           0           54           <1           776           1060           830           1043           2506           current           4           6	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <b>limit/base</b> >25	current           5           0           54           <1           776           1060           830           1043           2506           current           4           6           1	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1         2         <1         2         <1         2         <1         2         <1         2         <1         2         <1         2	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0         3         0         3         0         3
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 0 950 1050 995 1180 2600 <b>limit/base</b> >25 -20 <b>limit/base</b>	current         5         0         54         <1         776         1060         830         1043         2506         current         4         6         1         current	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1         2         <1         2         history1	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0         3         0         3         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 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >3	current         5         0         54         <1         776         1060         830         1043         2506         current         4         6         1         current         1.4	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1         2         <1         0         0.9	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0         3         1         history2         1
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           ASTM D5185m	2 0 50 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current         5         0         54         <1         776         1060         830         1043         2506         current         4         6         1         current         1.4         13.9	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1         2         <1         0.9         11.5	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0         3         0         3         1         9.9
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAM	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7185           method           *ASTM D7624           *ASTM D7415           method	2 0 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 >20 >30 >30 <b>imit/base</b>	current         5         0         54         <1         776         1060         830         1043         2506         current         4         6         1         current         1.4         13.9         26.2         current	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1         2         <1         2         <1         0.9         11.5         22.4         history1	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0         3         0         3         1         9.9         19.5         history2
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 D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 <b>imit/base</b> >3 >20	current         5         0         54         <1         776         1060         830         1043         2506         current         4         6         1         current         1.4         13.9         26.2	history1         7         0         53         <1         753         1169         919         1089         2924         history1         2         <1         2         history1         0.9         11.5         22.4	history2         19         0         56         <1         744         1114         948         1126         2961         history2         3         0         3         history2         1         9.9         19.5



# **OIL ANALYSIS REPORT**







Laboratory

Sample No.

Lab Number

Unique Number

Contact/Location: ROSTY VITER - MILPHINE