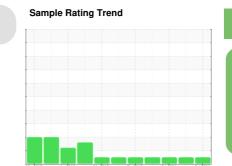


### **OIL ANALYSIS REPORT**

SAMPLE INFORMATION method





NORMAL

# VOLVO 26516 (S/N 4V4NC9EH2HN99182)

Diesel Engine

PETRO CANADA DURON SHP 10W30 (37 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.

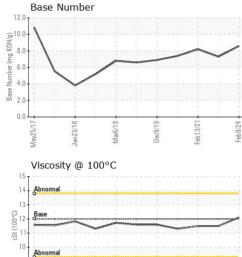
SAMPLE INFORI		method	limit/base	current	history1	history2	
Sample Number		Client Info		PCA0116808	PCA0045768	PCA0027094	
Sample Date		Client Info		09 Feb 2024	24 May 2021	13 Feb 2021	
Machine Age	mls	Client Info		0	0	0	
Oil Age	mls	Client Info		0	0	0	
Oil Changed	1110	Client Info		N/A	N/A	N/A	
Sample Status				NORMAL	NORMAL	NORMAL	
· · · · · · · · · · · · · · · · · · ·				NOTIMAL	NOTIVIAL	NOTIMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2	
Fuel		WC Method	>6.0	<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	30	29	20	
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1	
Nickel	ppm	ASTM D5185m	>2	0	<1	0	
Titanium	ppm	ASTM D5185m		۰ <1	0	<1	
Silver	ppm	ASTM D5185m	>2	0	<1	<1	
Aluminum	ppm	ASTM D5185m	>25	3	3	4	
Lead		ASTM D5185m	>23	ہ <1	2	2	
	ppm			4	7	5	
Copper	ppm	ASTM D5185m	>330				
Tin	ppm	ASTM D5185m	>15	0	1	<1	
Antimony	ppm	ASTM D5185m			0	0	
Vanadium	ppm	ASTM D5185m		<1	0	0	
Cadmium	ppm	ASTM D5185m		0	0	0	
	pp			U	0	÷	
ADDITIVES	ppm	method	limit/base	current	history1	history2	
	ppm		limit/base 2				
ADDITIVES		method		current	history1	history2	
ADDITIVES Boron	ppm	method ASTM D5185m	2	current 3	history1 2	history2 3	
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	2 0	current 3 0	history1 2 0	history2 3 0	
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	current 3 0 60	history1 2 0 62	history2 3 0 62	
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 3 0 60 0	history1 2 0 62 <1	history2 3 0 62 <1	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current 3 0 60 0 830	history1 2 0 62 <1 976 1047	history2 3 0 62 <1 963 1158	
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           3           0           60           0           830           1173           1067	history1 2 0 62 <1 976 1047 981	history2 3 0 62 <1 963 1158 1105	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	current           3           0           60           0           830           1173	history1 2 0 62 <1 976 1047	history2 3 0 62 <1 963 1158	
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 0 950 1050 995 1180 2600	Current 3 0 60 0 830 1173 1067 1267 3469	history1 2 0 62 <1 976 1047 981 1182 2315	history2         3         0         62         <1         963         1158         1105         1292         2774	
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           3           0           60           0           830           1173           1067           1267           3469           current	history1         2         0         62         <1         976         1047         981         1182         2315         history1	history2         3         0         62         <1         963         1158         1105         1292         2774         history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600	current           3           0           60           0           830           1173           1067           1267           3469           current           5	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	current           3           0           60           0           830           1173           1067           1267           3469           current           5           3	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6	
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 >20	current           3           0           60           0           830           1173           1067           1267           3469           current           5           3           3	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6         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 <b>TS</b> ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 -20 <b>Imit/base</b>	current         3         0         60         0         830         1173         1067         1267         3469         current         5         3         3         3         3         current	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6         3         history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> 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         3         0         60         0         830         1173         1067         1267         3469         current         5         3         3         current         0         0.2	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1         0.7	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6         3         history2         0         0.5	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> ppm ppm	method           ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>Imit/base</b> >25 -20 <b>Imit/base</b>	current         3         0         60         0         830         1173         1067         1267         3469         current         5         3         3         3         3         current	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6         3         history2	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm <b>TS</b> 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         3         0         60         0         830         1173         1067         1267         3469         current         5         3         3         current         0         0.2	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1         0.7	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6         3         history2         0         0.5	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Sidium 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 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	current         3         0         60         0         830         1173         1067         1267         3469         current         5         3         current         0.2         7.0	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1         0.7         10.6	history2         3         0         62         <1         963         1158         1292         2774         history2         4         6         3         history2         0.5         9.4	
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRA	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	method           ASTM D5185m           ASTM D7185M           ASTM D7624           *ASTM D7624           *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 2600 25 20 220 20 20 20 20 20 20 20 20 20 20 20	Current         3         0         60         0         830         1173         1067         1267         3469         current         5         3         current         0.2         7.0         19.1         current	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1         0.7         10.6         22.9         history1	history2         3         0         62         <1         963         1158         1292         2774         history2         4         6         3         history2         0.5         9.4         19.8         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 20 <b>imit/base</b> >3 >20 >30	Current         3         0         60         0         830         1173         1067         1267         3469         current         5         3         current         0.2         7.0         19.1	history1         2         0         62         <1         976         1047         981         1182         2315         history1         2         7         3         history1         0.7         10.6         22.9	history2         3         0         62         <1         963         1158         1105         1292         2774         history2         4         6         3         history2         0.5         9.4         19.8	

Submitted By: MICHAEL DAVIS



## **OIL ANALYSIS REPORT**

VISUAL



Mar6/19

Jan23/18

May25/17

Dec9/19 -

Feb13/21	White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 100°C	scalar scalar scalar scalar scalar scalar scalar scalar scalar scalar	*Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Disual	NONE     I       NONE     I       NONE     I       NONE     I       NONE     I       NORML     I       >0.2     I       Imit/base     I	NONE INONE INONE INONE INONE INONE INONE INONE INORML NORML NORML NEG NEG INEG INEG INEG INEG INEG INEG I	NONE // Constant of the second	NONE NONE NONE NONE NORML NORML NEG NEG history2 11.5
Feb13/21	GRAPHS Ferrous Alloys	Dec9/19	Feb13/21	Feb3/24 Feb3/24 Feb3/24	Base Number		
Unique Number Test Package	: WearCheck USA - 50 : PCA0116808 : 06111186 : 10914683	Receiv Testeo Diagn	ved : 07 d : 07 osed : 07	, NC 27513 Mar 2024 Mar 2024 Mar 2024 - Wes	s Davis		DWARE DR EORGE, VA US 23875 HAEL DAVIS

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

Т:

F: