

### **OIL ANALYSIS REPORT**

Sample Rating Trend



# KENWORTH V341

Component Diesel Engine

#### Fluid PETRO CANADA DURON SHP 15W40 (11 GAL)

#### 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.

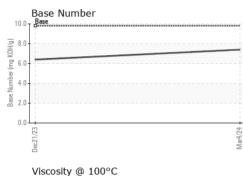
#### Fluid Condition

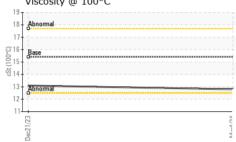
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0112123	PCA0112146	
Sample Date		Client Info		04 Mar 2024	21 Dec 2023	
Machine Age	mls	Client Info		151318	138327	
Oil Age	mls	Client Info		12991	19960	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	15	24	
Chromium	ppm	ASTM D5185m	>20	1	1	
Nickel	ppm	ASTM D5185m	>4	<1	0	
Titanium	ppm	ASTM D5185m		2	1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	7	8	
Lead	ppm	ASTM D5185m	>40	<1	<1	
Copper	ppm	ASTM D5185m	>330	2	2	
Tin	ppm	ASTM D5185m	>15	1	<1	
Vanadium	ppm	ASTM D5185m		<1	<1	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 0	current 14	history1 5	history2
	ppm ppm	ASTM D5185m				history2 
Boron		ASTM D5185m	0	14	5	
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	0 0 60 0	14 <1	5 0 59 <1	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	14 <1 58 <1 873	5 0 59 <1 966	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	14 <1 58 <1 873 1090	5 0 59 <1 966 1191	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	14 <1 58 <1 873 1090 1065	5 0 59 <1 966 1191 1081	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	14 <1 58 <1 873 1090 1065 1148	5 0 59 <1 966 1191 1081 1235	   
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	0 0 60 0 1010 1070 1150	14 <1 58 <1 873 1090 1065	5 0 59 <1 966 1191 1081	   
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	0 0 60 0 1010 1070 1150 1270	14 <1 58 <1 873 1090 1065 1148	5 0 59 <1 966 1191 1081 1235	
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	0 0 60 1010 1070 1150 1270 2060	14 <1 58 <1 873 1090 1065 1148 3184	5 0 59 <1 966 1191 1081 1235 3120	
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	0 00 00 1010 1070 1150 1270 2060	14 <1 58 <1 873 1090 1065 1148 3184 current	5 0 59 <1 966 1191 1081 1235 3120 history1	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus 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 ASTM D5185m ASTM D5185m	0 00 00 1010 1070 1150 1270 2060	14 <1 58 <1 873 1090 1065 1148 3184 <i>current</i> 6	5 0 59 <1 966 1191 1081 1235 3120 history1 6	     history2
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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 kimit/base	14 <1 58 <1 873 1090 1065 1148 3184 current 6 0	5 0 59 <1 966 1191 1081 1235 3120 history1 6 <1	      history2
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	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >25	14 <1 58 <1 873 1090 1065 1148 3184 current 6 0 6	5 0 59 <1 966 1191 1081 1235 3120 history1 6 < 3	     history2  
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Imit/base</b> >25	14 <1 58 <1 873 1090 1065 1148 3184 current 6 0 6 6 0 6	5 0 59 <1 966 1191 1081 1235 3120 history1 6 <1 3 history1	     history2   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 ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >25 >20 Limit/base >20	14 <1 58 <1 873 1090 1065 1148 3184 <i>current</i> 6 0 6 <i>current</i> 0.3	5 0 59 <1 966 1191 1081 1235 3120 history1 6 <1 3 history1 0.4	     history2   history2
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	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <i>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	14 <1 58 <1 873 1090 1065 1148 3184 <i>current</i> 6 0 6 <i>current</i> 0.3 8.4	5 0 59 <1 966 1191 1081 1235 3120 history1 6 <1 3 <i>history1</i> 0.4 9.6	      history2  history2   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	0 0 0 1010 1070 1150 1270 2060 <b>imit/base</b> >25 <b>imit/base</b> >3 >20 >3	14 <1 58 <1 873 1090 1065 1148 3184 <b>current</b> 6 0 6 <b>current</b> 0.3 8.4 17.9	5 0 59 <1 966 1191 1081 1235 3120 history1 6 <1 3 <b>history1</b> 0.4 9.6 19.5	     history2   history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAC	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 33 220 20 330 20 330	14 <1 58 <1 873 1090 1065 1148 3184 <i>current</i> 6 0 6 <i>current</i> 0.3 8.4 17.9 <i>current</i>	5 0 59 <1 966 1191 1081 1235 3120 history1 6 <1 3 history1 0.4 9.6 19.5 history1	    history2  history2  history2  history2   history2



## **OIL ANALYSIS REPORT**





VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
FLUID PROPE	ERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	13.1	
GRAPHS						
Ferrous Alloys						
25 iron						
20 - nickel						
15						
10						
5-						
0						
Jec21/23			Mar4/24			
			ž			
Non-ferrous Meta	ls					
copper						
8 - tin						
6-						
4						
2						
0	*************					

Mar4/24 -

Mar4/24 -

: 27 Mar 2024

: 28 Mar 2024

10.0

8. (mg KOH/g)

6 Number 4 ( Base

0.0

Dec21/23

Base Number



Unique Number : 10949873 Diagnosed : 28 Mar 2024 - Wes Davis Test Package : FLEET Contact: MIKE EMERY Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. memery@voyagertrucking.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (973)589-3444 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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

Received

Tested

Dec21/23

19

18 17

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13 Al 12 11-

Laboratory

Sample No.

Lab Number : 06130408

Dec21/23

: PCA0112123

Viscosity @ 100°C

Contact/Location: MIKE EMERY - VOYNEW

**VOYAGER TRUCKING CORP** 

451 FRELINGHUYSEN AVENUE

NEWARK, NJ

US 07114

**Mar4/24** 

F: