

## **OIL ANALYSIS REPORT**

### Sample Rating Trend



#### Machine Id **TL-8** Component **Diesel Engine** Fluid **PETRO CANADA DURON HP 15W40 (--- GAL)**

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

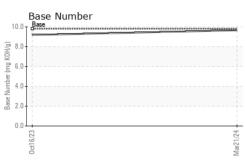
#### Fluid Condition

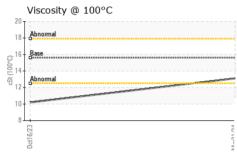
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

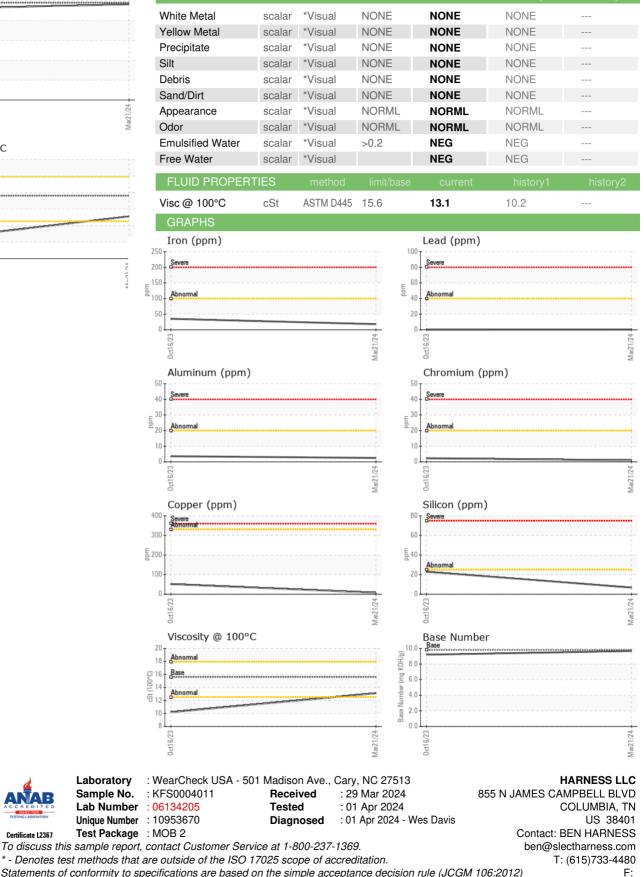
SAMPLE INFORM		method	limit/base	ourropt	biotory 1	history2
	ATION		IIIIII/Dase	current	history1	mstory2
Sample Number		Client Info		KFS0004011	KFS0003979	
Sample Date		Client Info		21 Mar 2024	16 Oct 2023	
Machine Age	hrs	Client Info		789	361	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	ABNORMAL	
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<b>3</b> .1	
Water		WC Method	>0.2	NEG	NEG	
Glycol		WC Method		NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	35	
Chromium	ppm	ASTM D5185m	>20	1	2	
Nickel	ppm	ASTM D5185m	>4	<1	2	
Titanium	ppm	ASTM D5185m		<1	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m	>20	2	4	
Lead	ppm	ASTM D5185m	>40	<1	<1	
Copper	ppm	ASTM D5185m	>330	8	52	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		<1	0	
Cadmium	ppm	ASTM D5185m		<1	<1	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1 93	history2
	ppm ppm		limit/base	current		
Boron		ASTM D5185m	limit/base	current 6	93	
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	current 6 0	93 0	
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current 6 0 66	93 0 144	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 6 0 66 <1 853 1290	93 0 144 2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	Current 6 0 66 <1 853 1290 996	93 0 144 2 84 2552 440	
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	limit/base	current           6           0           66           <1           853           1290           996           1185	93 0 144 2 84 2552 440 606	
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	limit/base	Current 6 0 66 <1 853 1290 996	93 0 144 2 84 2552 440	   
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	limit/base	current           6           0           66           <1           853           1290           996           1185	93 0 144 2 84 2552 440 606	
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		current           6           0           66           <1           853           1290           996           1185           3253           current           7	93 0 144 2 84 2552 440 606 3603 history1 23	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	current           6           0           66           <1           853           1290           996           1185           3253           current	93 0 144 2 84 2552 440 606 3603 history1	    history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	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	limit/base	current           6           0           66           <1           853           1290           996           1185           3253           current           7	93 0 144 2 84 2552 440 606 3603 history1 23	    history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	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	limit/base	current           6           0           66           <1           853           1290           996           1185           3253           current           7           2	93 0 144 2 84 2552 440 606 3603 history1 23 3	     history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	current           6           0           66           <1           853           1290           996           1185           3253           current           7           2           13	93 0 144 2 84 2552 440 606 3603 history1 23 3 3 133	     history2  
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	current         6         0         66         <1         853         1290         996         1185         3253         current         7         2         13         current	93 0 144 2 84 2552 440 606 3603 history1 23 3 3 133 history1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	current         6         0         66         <1         853         1290         996         1185         3253         current         7         2         13         current         0.4	93 0 144 2 84 2552 440 606 3603 history1 23 3 3 133 history1 0.4	    history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	current         6         0         66         <1         853         1290         996         1185         3253         current         7         2         13         current         0.4         7.9	93 0 144 2 84 2552 440 606 3603 history1 23 3 3 133 133 history1 0.4 9.1	     history2   history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >20 >3 >20 >30	current         6         0         66         <1         853         1290         996         1185         3253         current         7         2         13         current         0.4         7.9         18.7	93 0 144 2 84 2552 440 606 3603 <b>history1</b> 23 3 3 133 ▲ 133 <b>history1</b> 0.4 9.1 16.7	     history2  history2  history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	limit/base >25 >20 limit/base >3 >20 >30 >30 limit/base	current         6         0         66         <1         853         1290         996         1185         3253         current         7         2         13         current         0.4         7.9         18.7	93 0 144 2 84 2552 440 606 3603 <b>history1</b> 23 3 3 133 <b>1</b> 33 <b>1</b> 33 <b>1</b> 33 <b>1</b> 33 <b>1</b> 33	     history2  history2  history2  history2



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

Certificate L2367