

## **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Machine Id V3454 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

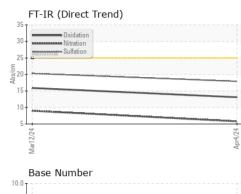
#### Fluid Condition

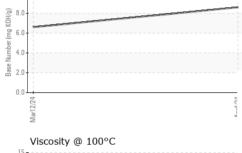
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

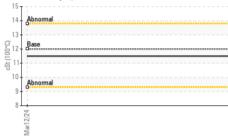
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0112743	PCA0099365	
Sample Date		Client Info		04 Apr 2024	12 Mar 2024	
Machine Age	mls	Client Info		374020	370535	
Oil Age	mls	Client Info		0	0	
Oil Changed		Client Info		Changed	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	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	6	22	
Chromium	ppm	ASTM D5185m	>20	٥ <1	2	
Nickel	ppm	ASTM D5185m	>4	0	<1	
Titanium	ppm	ASTM D5185m	- T	7	<1	
Silver	ppm	ASTM D5185m	>3	0	0	
Aluminum	ppm	ASTM D5185m		4	13	
Lead	ppm	ASTM D5185m	>40	0	0	
Copper	ppm	ASTM D5185m		4	7	
Tin		ASTM D5185m	>15	- <1	<1	
Vanadium	ppm ppm	ASTM D5185m	>15	0	0	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES	ppm	method	limit/base	-	history1	history2
ADDITIVES						
				current		nistory2
Boron	ppm	ASTM D5185m	2	20	2	
Barium	ppm ppm	ASTM D5185m ASTM D5185m	2 0	20 1	2 0	
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	20 1 53	2 0 58	
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	20 1 53 1	2 0 58 <1	
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	20 1 53 1 884	2 0 58 <1 878	
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	20 1 53 1 884 1194	2 0 58 <1 878 1083	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	20 1 53 1 884 1194 1084	2 0 58 <1 878 1083 959	
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	2 0 50 950 1050 995 1180	20 1 53 1 884 1194 1084 1261	2 0 58 <1 878 1083 959 1222	   
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	2 0 50 950 1050 995 1180 2600	20 1 53 1 884 1194 1084	2 0 58 <1 878 1083 959 1222 3038	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	20 1 53 1 884 1194 1084 1261 3838 current	2 0 58 <1 878 1083 959 1222 3038 history1	
Barium Molybdenum Manganese Magnesium Calcium Phosphorus 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	2 0 50 950 1050 995 1180 2600	20 1 53 1 884 1194 1084 1261 3838 current 2	2 0 58 <1 878 1083 959 1222 3038 history1 5	
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	2 0 50 950 1050 995 1180 2600	20 1 53 1 884 1194 1084 1261 3838 current 2 2 2	2 0 58 <1 878 1083 959 1222 3038 history1	
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	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	20 1 53 1 884 1194 1084 1261 3838 current 2	2 0 58 <1 878 1083 959 1222 3038 history1 5	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 -20 <b>limit/base</b>	20 1 53 1 884 1194 1084 1261 3838 current 2 2 2 3 current	2 0 58 <1 878 1083 959 1222 3038 history1 5 <1 10 history1	     history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20	20 1 53 1 884 1194 1084 1261 3838 current 2 2 3 current 0.3	2 0 58 <1 878 1083 959 1222 3038 history1 5 <1 10 history1 0.9	     history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 -20 <b>limit/base</b>	20 1 53 1 884 1194 1084 1261 3838 current 2 2 3 current 0.3 5.8	2 0 58 <1 878 1083 959 1222 3038 history1 5 <1 10 history1 0.9 9.0	     history2  
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b>	20 1 53 1 884 1194 1084 1261 3838 current 2 2 3 current 0.3	2 0 58 <1 878 1083 959 1222 3038 history1 5 <1 10 history1 0.9	     history2  history2  history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	20 1 53 1 884 1194 1084 1261 3838 current 2 2 3 current 0.3 5.8	2 0 58 <1 878 1083 959 1222 3038 history1 5 <1 10 history1 0.9 9.0	     history2    history2
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 TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	20 1 53 1 884 1194 1084 1261 3838 current 2 2 2 3 current 0.3 5.8 17.9	2 0 58 <1 878 1083 959 1222 3038 history1 5 <1 10 history1 0.9 9.0 20.3	     history2  history2  history2



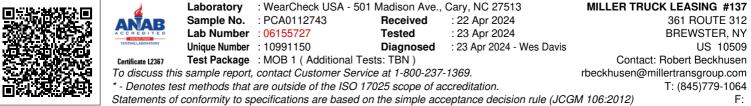
# **OIL ANALYSIS REPORT**







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	20.2	NEG	NEG	
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	11.5	11.5	
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
Severe			80	Severe		
				-		
D - Abnormal			60 E 40	Abnormal		
		*********	40	- 0		
			20			
Mar12/24			Apr4/24	Mar12/24		
			Aŗ			
Aluminum (ppm)			50	Chromium (p	pm)	
D - Severe			40	Severe		
0 Abnormal			<sup>30</sup>			
Abnormal			<sup>2</sup> 20	Abnormal		
D -			10			
54 				24		
Mar12/24			Apr4/24	Mar12/24		
– Copper (ppm)				- Silicon (ppm)		
Severe Abnormal			80	Severe		
			60	1 		
D.			틆 40			
)-			20	Abnormal		
<sup>24</sup>			124	/24 -		
Mar12/24			Apr4/24	Mar1 2/24		
Viscosity @ 100°C				Base Number		
Abnormal			(B/H0 8.0			
			(0, HO) Buy Buy Buy Buy Buy Buy Buy Buy Buy Buy			
2 - Base		*****	a 4.0			
Abnormal						
84			0.0	L		
Mar12/24			Apr4/24	Mar12/24		
· _			de la	1		



Contact/Location: Robert Beckhusen - MILBRENY