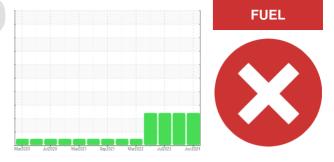


## **OIL ANALYSIS REPORT**

Sample Rating Trend



Wear

breaking in.

Machine Id

**MACK 160-08 Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (11 GAL)

## SAMPLE INFORMATION method DIAGNOSIS PCA0121247 PCA0106851 PCA0082152 Sample Number **Client Info** Recommendation We advise that you check the fuel injection system. Sample Date Client Info 12 Jun 2024 04 Oct 2023 10 Jul 2023 The oil change at the time of sampling has been Machine Age hrs **Client Info** 500 30214 29778 noted. We recommend an early resample to Oil Age hrs Client Info 10000 500 510 monitor this condition. Oil Changed Client Info Changed Changed N/A SEVERE Sample Status SEVERE SEVERE Metal levels are typical for a new component CONTAMINATION Contamination Water WC Method >0.2 NEG NEG NEG There is a high amount of fuel present in the oil. Glycol WC Method NEG NEG NEG Tests confirm the presence of fuel in the oil. WEAR METALS method history? Fluid Condition The BN result indicates that there is suitable Iron ASTM D5185m >120 17 19 12 ppm alkalinity remaining in the oil. Fuel is present in the Chromium ASTM D5185m >20 ppm <1 <1 <1 oil and is lowering the viscosity. The oil is no longer Nickel ASTM D5185m >5 <1 <1 0 ppm serviceable due to the presence of contaminants. ASTM D5185m >2 Titanium ppm <1 <1 <1 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ASTM D5185m >20 2 2 0 ppm ASTM D5185m >40 5 3 3 Lead ppm ASTM D5185m 8 4 Copper ppm >330 6 Tin ppm ASTM D5185m >15 <1 <1 <1 Vanadium ASTM D5185m ppm <1 <1 <1 Cadmium ppm ASTM D5185m <1 <1 0 ADDITIVES method history2 0 3 3 Boron ppm ASTM D5185m 0 Barium ppm ASTM D5185m 0 0 <1 0 ASTM D5185m 60 53 57 55 Molybdenum ppm 0 Manganese ppm ASTM D5185m 0 <1 <1 ASTM D5185m 1010 885 896 901 Magnesium ppm Calcium ASTM D5185m 1070 965 987 1002 ppm 929 Phosphorus ppm ASTM D5185m 1150 970 935 Zinc ppm ASTM D5185m 1270 1158 1189 1111 Sulfur 2060 3322 3130 ppm ASTM D5185m 2776 CONTAMINANTS Silicon ASTM D5185m >25 3 2 2 ppm 2 2 Sodium ASTM D5185m 6 ppm ASTM D5185m Potassium >20 2 2 0 ppm 13.7 11.0 7.1 Fuel % ASTM D3524 >3.0 **INFRA-RED** 0.5 % \*ASTM D7844 >4 0.8 0.4 Soot % Nitration Abs/cm \*ASTM D7624 >20 8.0 7.4 7.7 Sulfation 18.5 19.3 Abs/.1mm \*ASTM D7415 >30 19.0 FLUID DEGRADATION \*ASTM D7414 >25 14.4 14.4 15.4 Oxidation Abs/.1mm

Base Number (BN) mg KOH/g ASTM D2896 9.8

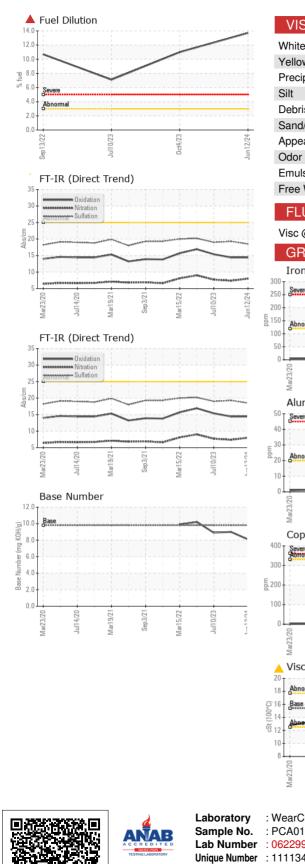
8.9

9.0

8.1



## **OIL ANALYSIS REPORT**



	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Jun12/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Junl	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
and B States in the second	Visc @ 100°C	cSt	ASTM D445	15.4	<b> </b> 10.9	<b>1</b> 1.5	▲ 11.1
	GRAPHS						
And any Addition of the	Iron (ppm)			10	Lead (ppm)		
24	250 Severe			8	Severe		
Jun12/24	200 -						
- -	E 150 Abnormal	L		und 4	Abnormal		
	50			2	0-		
	0			-	0		
	Mar23/20 Jul14/20 Mar19/21	Sep3/21	Mar15/22 Jul10/23	Jun12/24	Mar23/20 Jul14/20	Mar19/21 Sep3/21	Mar15/22 Jul10/23
	Mar2 Jul1	Sel	Mar1 Jul1	Junl	Mar2 Jul1	Ser	Marl
and 2 Water Indian	Aluminum (ppm)				Chromium (	(ppm)	
	50 Severe			5	1 I I I I I I I I I I I I I I I I I I I		
Ridam Badadar	40			4			
5	and a second sec			und 2	0 Abnormal		
0.01-	B <sub>20</sub> Abnormal			<sup>2</sup> 2			
-	10-			1			
	Z0 - Z0 -	/21-	22		20 20	/21-	22 -
	Mar23/20 Jul14/20 Mar19/21	Sep3/21	Mar15/22 Jul10/23	Jun12/24	Mar23/20 Jul14/20	Mar19/21 Sep3/21	Mar15/22 Jul10/23
-	Copper (ppm)		-	,	– Silicon (ppm	1)	-
	400 Severe			8	<sup>0</sup> Severe		
	300			6	0		
	톱 200 -			<u></u>	0-		
					Abnormal		
10	100-			Ζ	0		
10.01	20-0-	21-	22		20 Z0 Z0	21	22
	Mar23/20 Jul14/20 Mar19/21	Sep3/21	Mar15/22 Jul10/23	Jun 12/24	Mar23/20 Jul14/20	Mar19/21 Sep3/21	Mar15/22 Jul10/23
	Viscosity @ 100°C		2 .	7	≥ Base Numb		~ .
	<sup>20</sup> T			=12.	0		
	18 - Abnormal			B/HO)	0 - Base		
	0 16 - Base			(0)HOX Buy Jack Kox HOX Buy Jack Kox HOX Buy Jack Kox HOX HOX HOX HOX HOX HOX HOX HOX HOX HOX	0		
	3 16 - Base 0 14 3 12 - Abaemal			.9 mper			
	10		$\sim$	N 4.	0-		
	8			+ 0.	0		
	Mar23/20 Jul14/20 Mar19/21	Sep3/21	Mar15/22 Jul10/23	Jun12/24	Mar23/20 Jul14/20	Mar1 9/21 Sep 3/21	Mar15/22 Jul10/23
	Mar: Jul' Mar	Se	Mar Jul	Jun	Mar	Se	Mar Jul
ratory ole No.	: WearCheck USA - 50 : PCA0121247 : 06229926	1 Madiso Recei Teste	i <b>ved</b> : 08	, NC 27513 3 Jul 2024 Jul 2024			L <b>L EXCAVATIO</b> 1351 JOLIET F VALPARAISO,
Number					les Davis		
Number e Number		Diagr	nosed : 11	Jul 2024 - W	les Davis		US 4638 MARK STEFFE

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)

Report Id: GEMVAL [WUSCAR] 06229926 (Generated: 07/11/2024 09:57:34) Rev: 1

Certificate 12367

Contact/Location: MARK STEFFEL - GEMVAL

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