

# **OIL ANALYSIS REPORT**

Sample Number

# Sample Rating Trend

Client Info

# **NORMAL**



PCA0086248

# KEMP QUARRIES / PRYOR STONE [69235] **WP067**

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (--- GAL)

# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: PM performed. Engine oil sample taken. Engine oil, and all filters changed.)

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the

### **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.

AL)	1 May2021 Nov2021 Aug2022 De2023 Feb2024
STONE [69235]	
TONE [60225]	
SIS REPORT	

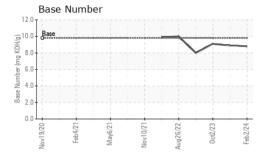
PCA0086269

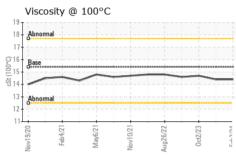
PCA0084398

Oample Number		Olient Info		00 Fall 0004	1 OA0004330	00.0xt.0000
Sample Date		Client Info		02 Feb 2024	20 Dec 2023	02 Oct 2023
Machine Age	hrs	Client Info		5348	5052	4728
Oil Age	hrs	Client Info		296	324	339
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	3	9	18
Chromium	ppm	ASTM D5185m	>20	0	0	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	<1	1
Lead	ppm	ASTM D5185m	>40	2	3	3
Copper	ppm	ASTM D5185m	>330	0	2	<1
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	3	1	<1
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	58	64	59
Manganese	ppm	ASTM D5185m	0	<1	0	<1
Magnesium	ppm	ASTM D5185m	1010	960	1059	964
Calcium	ppm	ASTM D5185m	1070	1021	1140	1083
Phosphorus	ppm	ASTM D5185m	1150	1071	1107	1001
Zinc	ppm	ASTM D5185m	1270	1290	1354	1294
Sulfur	ppm	ASTM D5185m	2060	3227	3352	3064
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon					1010171	
	ppm	ASTM D5185m	>25	2	3	4
Sodium	ppm		>25	2 <1	•	4
Sodium Potassium		ASTM D5185m ASTM D5185m	>25		3	
	ppm	ASTM D5185m ASTM D5185m		<1	3 <1	1
Potassium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>20	<1 <1	3 <1 0	1 2
Potassium INFRA-RED	ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	>20 limit/base >3	<1 <1 current	3 <1 0 history1	1 2 history2
Potassium INFRA-RED Soot %	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	>20 limit/base >3	<1 <1 current 0.1	3 <1 0 history1 0.1	1 2 history2 0.4
Potassium INFRA-RED Soot % Nitration	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415	>20 limit/base >3 >20	<1 <1 current 0.1 5.7	3 <1 0 history1 0.1 5.8	1 2 history2 0.4 6.3
Potassium  INFRA-RED  Soot %  Nitration  Sulfation	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415	>20 limit/base >3 >20 >30	<1 <1 current 0.1 5.7 17.9	3 <1 0 history1 0.1 5.8 18.0	1 2 history2 0.4 6.3 18.6
Potassium  INFRA-RED  Soot %  Nitration  Sulfation  FLUID DEGRAD	ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844 *ASTM D7624 *ASTM D7415 method	>20 limit/base >3 >20 >30 limit/base	<1 <1 current 0.1 5.7 17.9 current	3 <1 0 history1 0.1 5.8 18.0 history1	1 2 history2 0.4 6.3 18.6 history2



# **OIL ANALYSIS REPORT**





VISUAL		method				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
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

I LOID I ITOI	LITTLO					
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.4	14.7

•	130 @ 100 0		7.0	I IVI DTTO	10.7	17.7			7.7		17.7			
	GRAPHS													
250	Iron (ppm)					Lead	(ppm)							
200	Severe					80 Severe				1				
돌 150·						60 Abnorm								
	Abnormal	/			-	40 + 0	al							
50				\	_	0								
	Nov19/20 Feb4/21	May6/21	Aug26/22	0ct2/23	Feb2/24	Nov19/20	Feb4/21	May6/21	Nov10/21	Aug26/22	Oct2/23	Feb2/24		
	≥ Aluminum (p	-	Au	0	ш.		mium (		2	Ani	0	ш.		
50	T1	philit				50 T 7		ppiii)						
40	Severe					40 Severe								
B 20	Abnormal					20 Abnorm	al							
10						10								
0 -	720	/21	22	73	24	20 0	-12/	12/	121	727	.73	724		
	Nov19/20 Feb4/21	May6/21	Aug26/22	0ct2/23	Feb2/24	Nov19/20	Feb4/21	May6/21	Nov10/21	Aug26/22	Oct2/23 ·	Feb2/24		
400	Copper (ppn	n)					Silicon (ppm) <sup>80</sup> <sub>T</sub> Severe							
300	Severe Pabnonnal					60 Severe								
튎 200						E 40								
100						Abnorm	al			********				
0.						0								
	Nov19/20	May6/21	Aug26/22.	0ct2/23	Feb2/24	Nov19/20	Feb4/21	May6/21-	Nov10/21.	Aug26/22.	Oct2/23 -	Feb2/24		
	Viscosity @ :		Aug	0	Œ.	_	Numbe		N.	Aug	0	Œ.		
20	Viscosity @ .	100-C				12.0 -	Numbe	er 						
18	Abnormal					HOX B 8.0								
cSt (100°C)	Base					6.0								
12	Abnormal					(8/HO) 10.0 Base 8.0 6.0 4.0 4.0								
10	20	21-	22	23	24	0.0	21	21	21	22	23	24		
	Nov19/20 Feb4/21	May6/21	Aug26/22	0ct2/23	Feb2/24	Nov19/20	Feb4/21	May6/21	Nov10/21	Aug26/22	0ct2/23 ·	Feb2/24		





Laboratory Sample No.

: PCA0086269 Lab Number : 06088088

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

Received **Tested** Unique Number : 10875533

: 13 Feb 2024 : 14 Feb 2024 Diagnosed

: 15 Feb 2024 - Don Baldridge

Kemp Quarries - Pryor Stone - Pryor 1050 E 520 Rd Pryor, OK

US 74361 Contact: PRYOR NOTIFICATIONS

pryor@pryorstone.com

Test Package: MOB 1 (Additional Tests: TBN) 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)

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F: