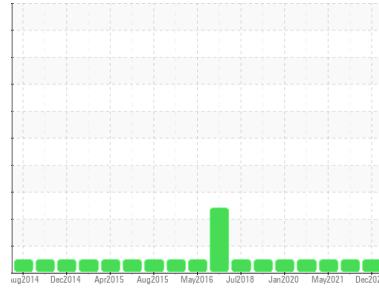


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / BCS - MILL CREEK [68018]
Machine Id
WL087
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: PM-2 changed fluid and filters)

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 acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PCA0070584	PCA0038173	PCA0037964
Sample Date	Client Info		01 Dec 2023	25 Oct 2021	19 May 2021
Machine Age	hrs	Client Info	16002	15752	15377
Oil Age	hrs	Client Info	16002	0	0
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	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

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	42	18	36
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	0	<1
Titanium	ppm	ASTM D5185m >2	<1	<1	<1
Silver	ppm	ASTM D5185m >2	0	0	<1
Aluminum	ppm	ASTM D5185m >25	1	2	2
Lead	ppm	ASTM D5185m >40	3	2	4
Copper	ppm	ASTM D5185m >330	7	4	3
Tin	ppm	ASTM D5185m >15	1	<1	<1
Antimony	ppm	ASTM D5185m	---	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	4	12	8
Barium	ppm	ASTM D5185m 0	11	0	0
Molybdenum	ppm	ASTM D5185m 60	63	58	59
Manganese	ppm	ASTM D5185m 0	<1	<1	<1
Magnesium	ppm	ASTM D5185m 1010	952	870	917
Calcium	ppm	ASTM D5185m 1070	1053	1020	1088
Phosphorus	ppm	ASTM D5185m 1150	984	933	1038
Zinc	ppm	ASTM D5185m 1270	1215	1171	1207
Sulfur	ppm	ASTM D5185m 2060	3579	2551	2702

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	5	4	4
Sodium	ppm	ASTM D5185m	0	2	1
Potassium	ppm	ASTM D5185m >20	2	0	<1

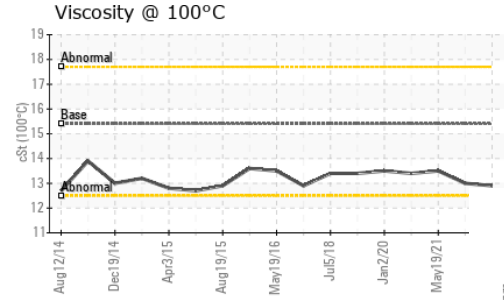
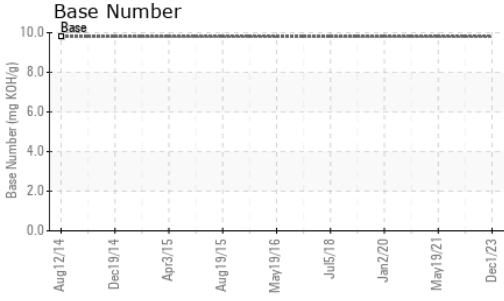
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.8	0.6	0.7
Nitration	Abs/cm	*ASTM D7624 >20	6.8	6.1	8
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.6	18.6	20.9

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	13.8	13.5	16.2
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.2	---	---

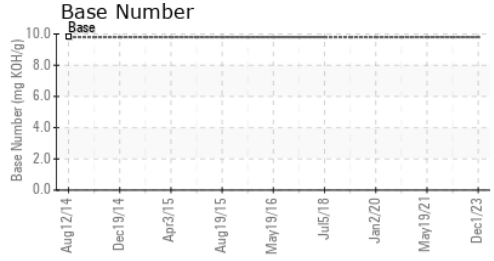
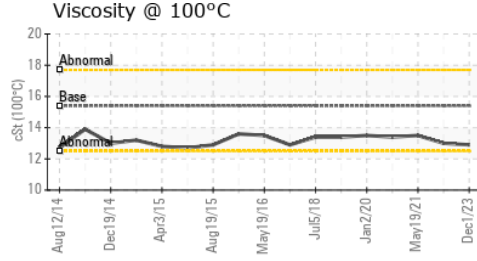
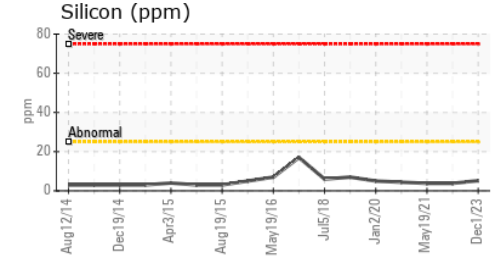
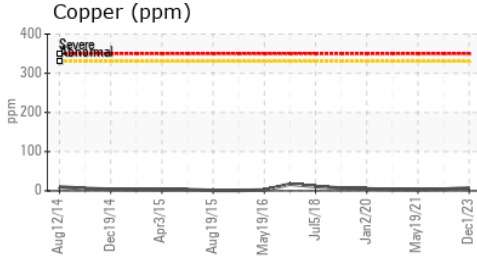
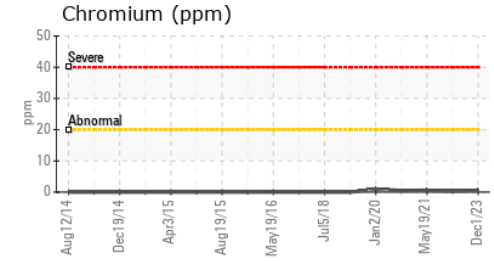
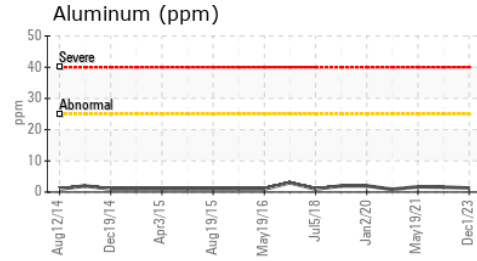
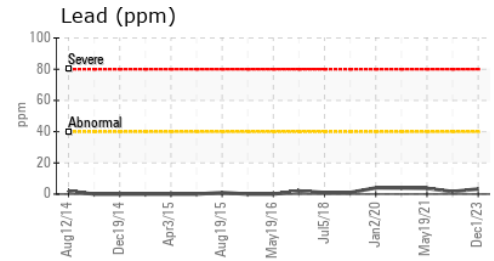
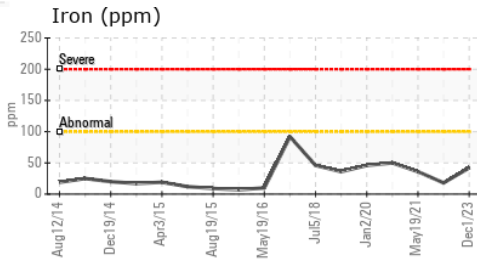
OIL ANALYSIS REPORT



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 PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	13.0	13.5

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0070584 **Received** : 12 Dec 2023
Lab Number : 06032694 **Diagnosed** : 15 Dec 2023
Unique Number : 10782485 **Diagnostician** : Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

Kemp Quarries - BCS-Mill Creek
 609 Lazy E Rd
 Noel, MO
 US 64854
 Contact: TRAVIS ELLIS
 tellis@kempquarries.com

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)

T:
F: