

Area
KEMP QUARRIES / RIVER VALLEY BACKBONE

Machine Id
WL140

Component
Diesel Engine

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

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PCA0108588	PCA0062106	PCA0049019
Sample Date		Client Info		28 Jun 2024	07 Dec 2022	25 Oct 2022
Machine Age	hrs	Client Info		2785	2330	2330
Oil Age	hrs	Client Info		300	2388	202
Filter Age	hrs	Client Info		0	0	202
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	SEVERE	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	79	▲ 260	▲ 777
Chromium	ppm	ASTM D5185m	>20	2	8	▲ 22
Nickel	ppm	ASTM D5185m	>4	0	0	2
Titanium	ppm	ASTM D5185m		<1	3	9
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	● 12	● 65	● 213
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	1	4	10
Tin	ppm	ASTM D5185m	>15	0	<1	2
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

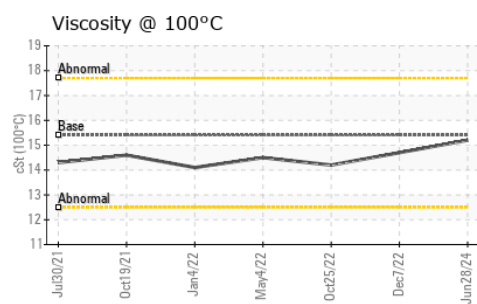
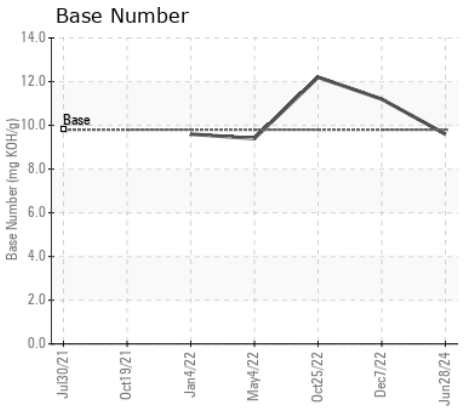
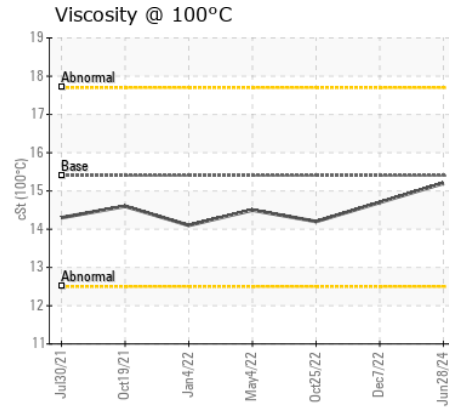
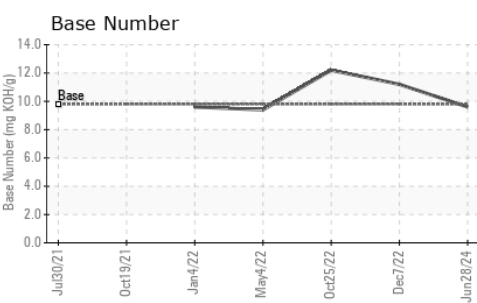
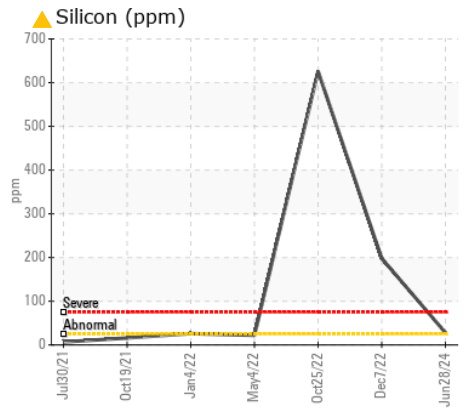
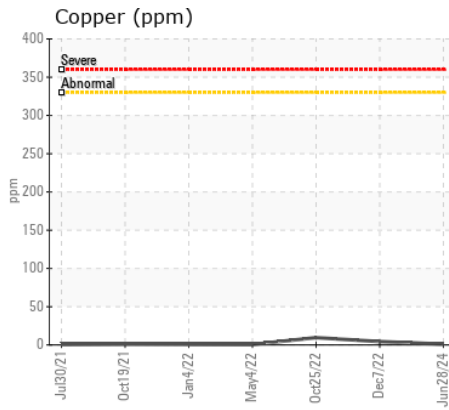
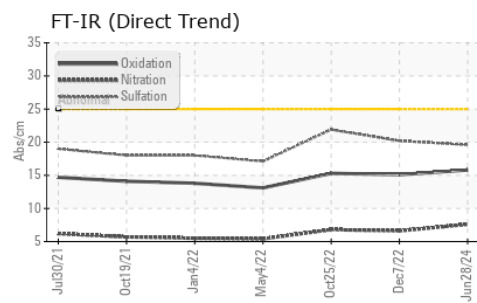
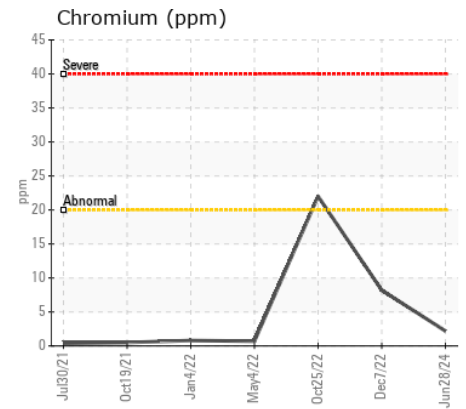
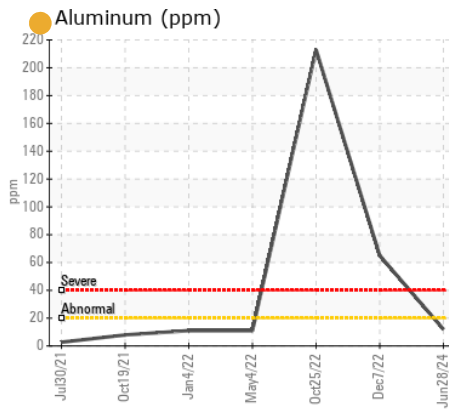
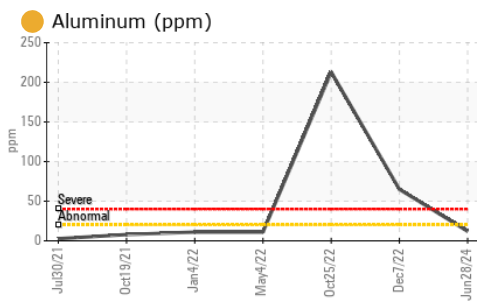
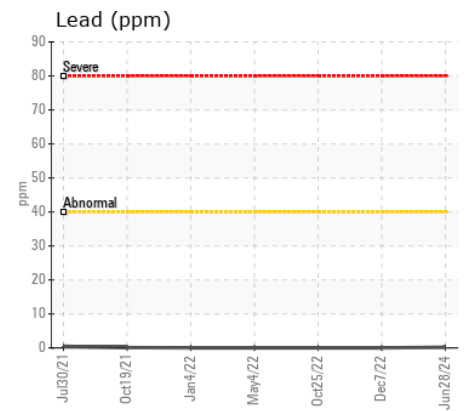
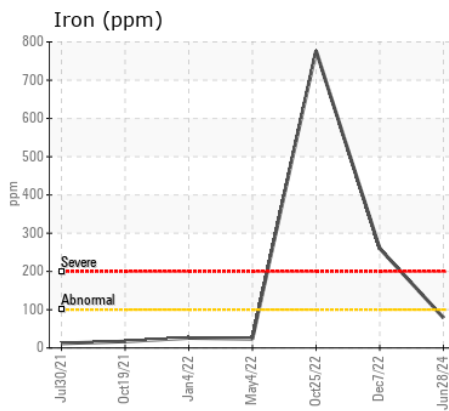
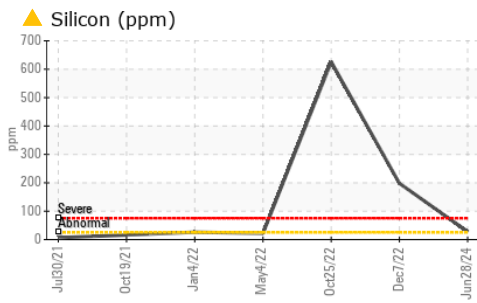
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	▲ 28	▲ 198	▲ 626
Potassium	ppm	ASTM D5185m	>20	2	10	▲ 44
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.6	6.6	6.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	20.2	21.9
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
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

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.

Sodium	ppm	ASTM D5185m		3	6	18
Boron	ppm	ASTM D5185m	0	2	0	3
Barium	ppm	ASTM D5185m	0	0	2	0
Molybdenum	ppm	ASTM D5185m	60	70	64	65
Manganese	ppm	ASTM D5185m	0	1	3	7
Magnesium	ppm	ASTM D5185m	1010	1244	979	1018
Calcium	ppm	ASTM D5185m	1070	1465	1425	2120
Phosphorus	ppm	ASTM D5185m	1150	1228	1014	1051
Zinc	ppm	ASTM D5185m	1270	1532	1263	1262
Sulfur	ppm	ASTM D5185m	2060	3960	3560	3908
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.8	15.1	15.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.6	11.2	12.2
Visc @ 100°C	cSt	ASTM D445	15.4	15.2	14.7	14.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0108588 **Received** : 08 Jul 2024
Lab Number : 06231035 **Tested** : 10 Jul 2024
Unique Number : 11114528 **Diagnosed** : 10 Jul 2024 - Don Baldridge
Test Package : MOB 1 (Additional Tests: TBN)

Kemp Quarries - River Valley - Backbone
 5600 S Hwy 253
 Huntington, AR
 US 72940
 Contact:
 backbone@rivervalleyquarries.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: