



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL



Area
KEMP QUARRIES / NEOSHO [69885]
Machine Id
WL111
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: PM-2 changed fluid and filters)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PCA0108726	PCA0086530	PCA0084711
Sample Date		Client Info		21 May 2024	06 Feb 2024	10 Oct 2023
Machine Age	hrs	Client Info		30720	30222	29750
Oil Age	hrs	Client Info		30720	30222	29750
Filter Age	hrs	Client Info		0	0	0
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	13	2	19
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>25	1	<1	1
Lead	ppm	ASTM D5185m	>40	2	0	4
Copper	ppm	ASTM D5185m	>330	12	3	173
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

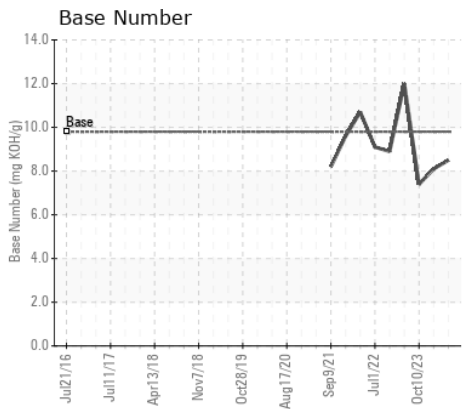
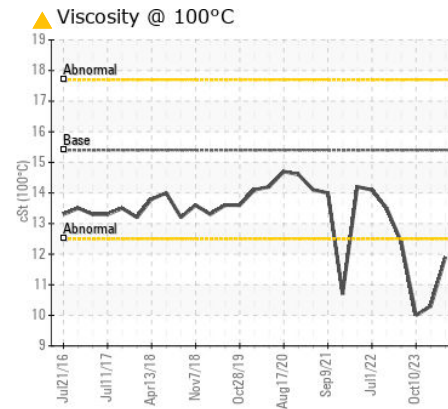
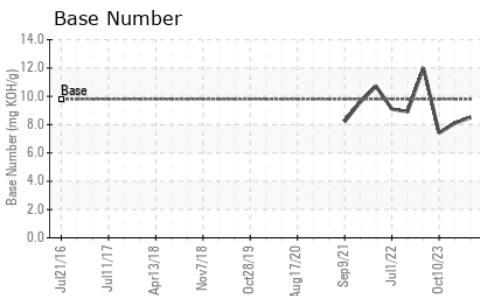
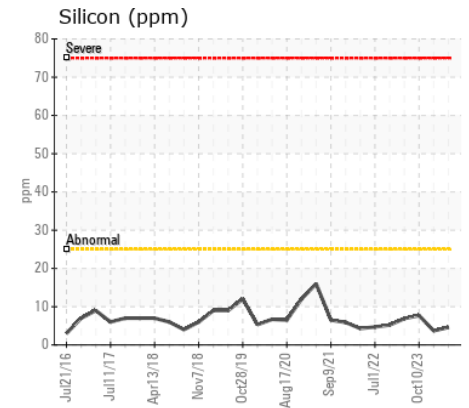
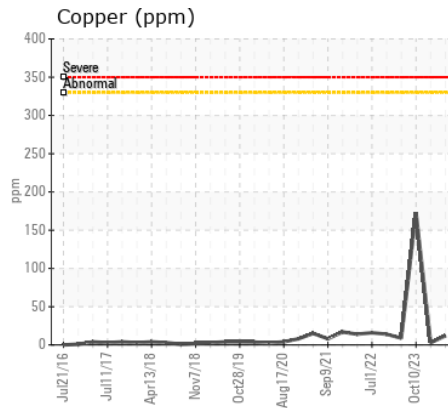
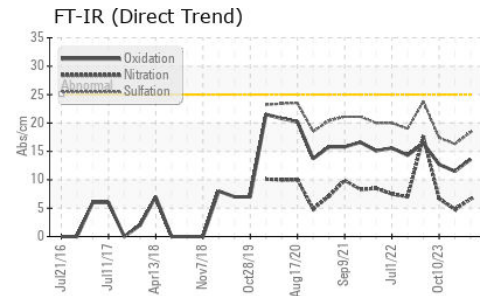
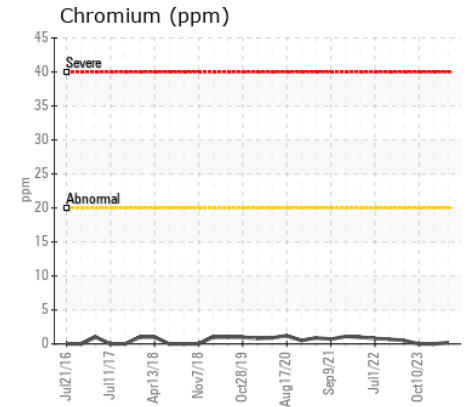
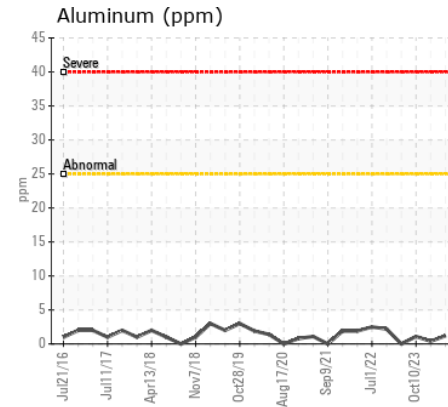
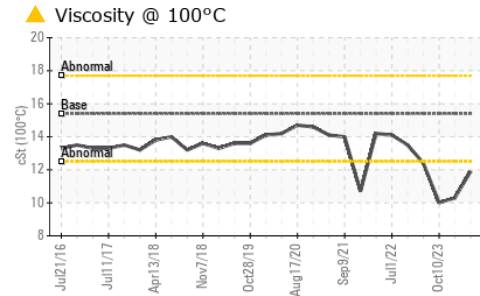
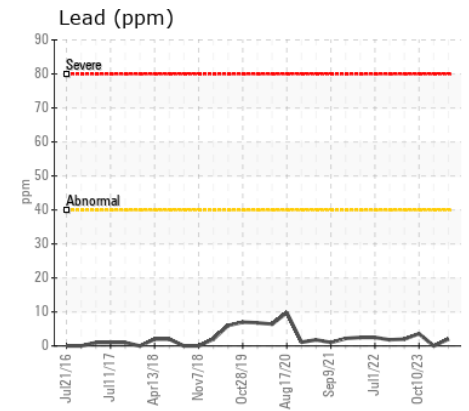
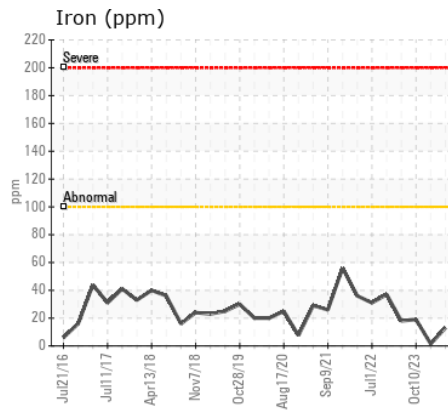
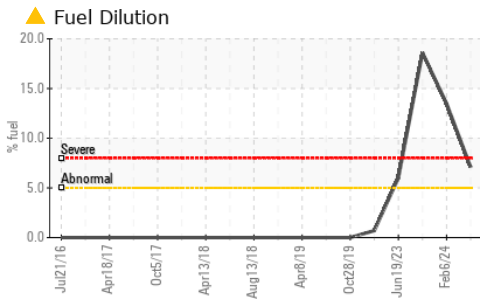
There is a moderate amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	5	4	8
Potassium	ppm	ASTM D5185m	>20	<1	1	3
Fuel	%	ASTM D3524	>5	▲ 7.1	▲ 13.5	▲ 18.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	6.6	4.8	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.4	16.3	17.4
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

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<1	1	2
Boron	ppm	ASTM D5185m	0	0	1	0
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	58	51	51
Manganese	ppm	ASTM D5185m	0	<1	0	0
Magnesium	ppm	ASTM D5185m	1010	1040	838	796
Calcium	ppm	ASTM D5185m	1070	1151	896	861
Phosphorus	ppm	ASTM D5185m	1150	1102	894	850
Zinc	ppm	ASTM D5185m	1270	1370	1077	1029
Sulfur	ppm	ASTM D5185m	2060	3989	2785	2476
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	11.5	12.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.5	8.1	7.4
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 11.9	▲ 10.3	▲ 10.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0108726
Lab Number : 06193188
Unique Number : 11049940
Test Package : MOB 1 (Additional Tests: PercentFuel, TBN)

Kemp Quarries - Kemp Stone - Neosho
 19148 Ingersol Lane
 Neosho, MO
 US 64850
 Contact:
 neosho@kempstone.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)

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F: