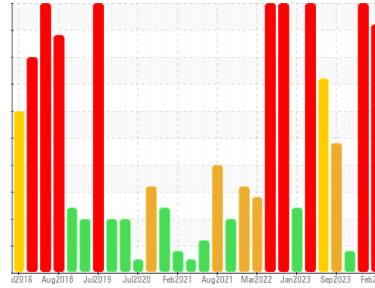


OIL ANALYSIS REPORT



Area
KEMP QUARRIES / RIVER VALLEY ARKOMA
 Machine Id
WL108
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



GLYCOL



DIAGNOSIS

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PCA0084442	PCA0084376	PCA0084174
Sample Date	Client Info			26 Feb 2024	30 Jan 2024	29 Oct 2023
Machine Age	hrs Client Info			47831	47633	47123
Oil Age	hrs Client Info			30	47663	0
Oil Changed	Client Info			Not Chngd	Changed	Changed
Sample Status				SEVERE	SEVERE	ABNORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	22	30	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	2	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	4	3	2
Lead	ppm	ASTM D5185m	>40	3	8	0
Copper	ppm	ASTM D5185m	>330	▲ 621	▲ 413	114
Tin	ppm	ASTM D5185m	>15	1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	<1	4	0
Barium	ppm	ASTM D5185m	0	2	0	0
Molybdenum	ppm	ASTM D5185m	60	117	167	66
Manganese	ppm	ASTM D5185m	0	<1	1	0
Magnesium	ppm	ASTM D5185m	1010	861	742	871
Calcium	ppm	ASTM D5185m	1070	1107	792	969
Phosphorus	ppm	ASTM D5185m	1150	1045	913	866
Zinc	ppm	ASTM D5185m	1270	1181	1050	1162
Sulfur	ppm	ASTM D5185m	2060	3203	2650	2890

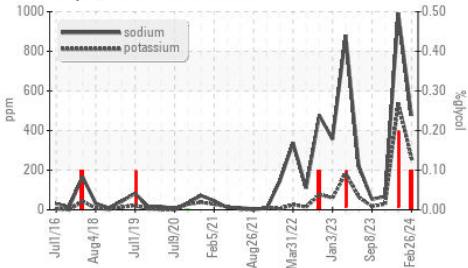
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	6	8	4
Sodium	ppm	ASTM D5185m		▲ 477	▲ 993	68
Potassium	ppm	ASTM D5185m	>20	▲ 262	▲ 539	29
Glycol	%	*ASTM D2982		▲ 0.10	▲ 0.20	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	2	▲ 3	▲ 3.2
Nitration	Abs/cm	*ASTM D7624	>20	9.0	13.1	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.0	23.1	24.3

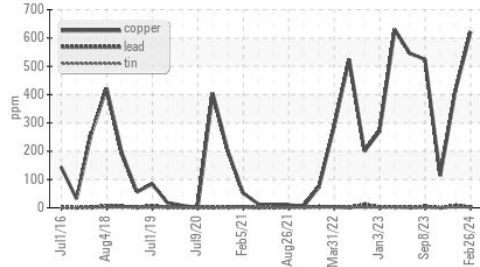
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.9	14.1	14.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	10.8	11.1	7.6

OIL ANALYSIS REPORT

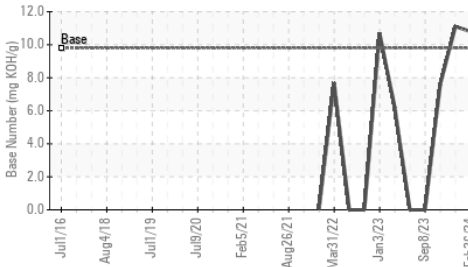
▲ Glycol Contamination



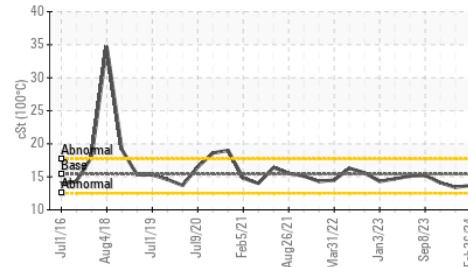
▲ Non-ferrous Metals



Base Number



Viscosity @ 100°C



VISUAL

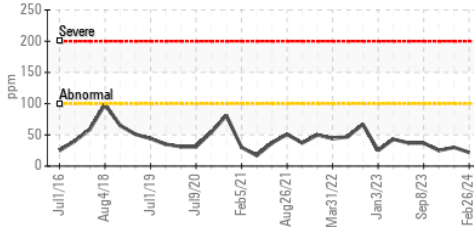
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*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

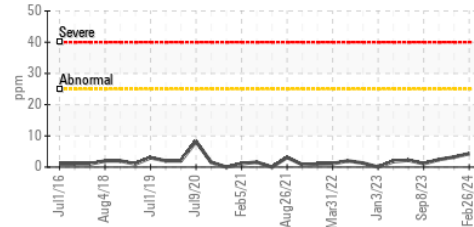
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.4

GRAPHS

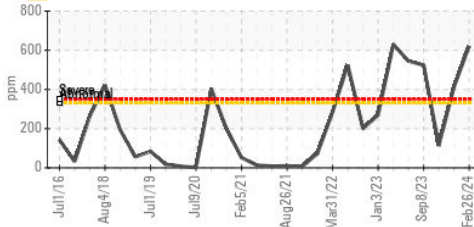
Iron (ppm)



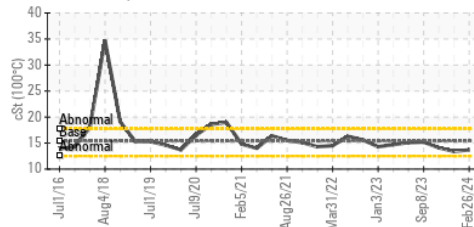
Aluminum (ppm)



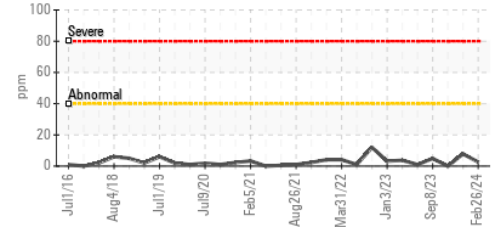
▲ Copper (ppm)



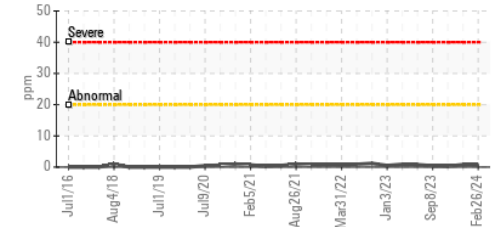
Viscosity @ 100°C



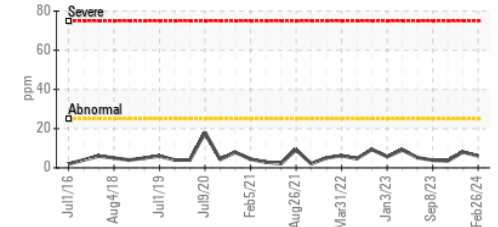
Lead (ppm)



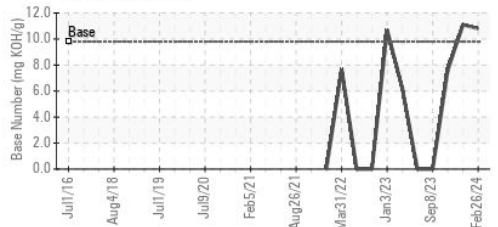
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : PCA0084442

Lab Number : 06128575

Unique Number : 10942726

Test Package : MOB 1 (Additional Tests: TBN)

Received : 25 Mar 2024

Tested : 28 Mar 2024

Diagnosed : 28 Mar 2024 - Don Baldrige

Kemp Quarries - River Valley - Arkoma

12971 HWY 9a

Shawnee, OK

US 74804

Contact:

arkomashop@kempquarries.net

T:

F:

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)