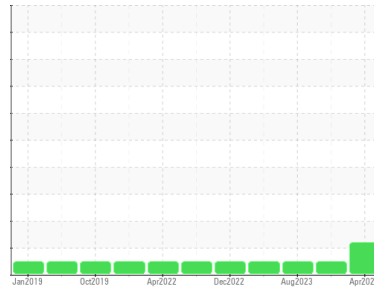


OIL ANALYSIS REPORT

Area
KEMP QUARRIES / RIVER VALLEY ARKOMA
 Machine Id
OHT102
 Component
Diesel Engine
 Fluid
MOBIL DELVAC 1300 SUPER15W40 (--- GAL)

Sample Rating Trend



GLYCOL



DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

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			PCA0034666	PCA0084417	PCA0083933
Sample Date	Client Info			03 Apr 2024	06 Nov 2023	22 Aug 2023
Machine Age	hrs	Client Info		29904	29340	29115
Oil Age	hrs	Client Info		29340	29115	29115
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				ABNORMAL	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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	10	9	15
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	1	<1
Lead	ppm	ASTM D5185m	>40	5	17	2
Copper	ppm	ASTM D5185m	>330	39	144	10
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	50	8	2
Barium	ppm	ASTM D5185m	0	<1	0	2
Molybdenum	ppm	ASTM D5185m	0	59	62	64
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	0	996	1000	955
Calcium	ppm	ASTM D5185m		1153	1059	1114
Phosphorus	ppm	ASTM D5185m		1115	1123	1058
Zinc	ppm	ASTM D5185m		1413	1352	1229
Sulfur	ppm	ASTM D5185m		4240	3328	3314

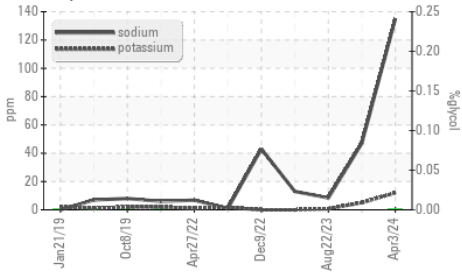
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	6	4	3
Sodium	ppm	ASTM D5185m		▲ 135	47	8
Potassium	ppm	ASTM D5185m	>20	12	5	<1
Glycol	%	*ASTM D2982		0.0	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.4	0.4	0.8
Nitration	Abs/cm	*ASTM D7624	>20	10.2	5.6	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	11.5	17.9	18.6

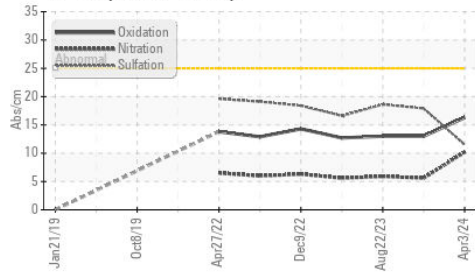
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	13.0	13.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.4	20.1	9.8	9.2

OIL ANALYSIS REPORT

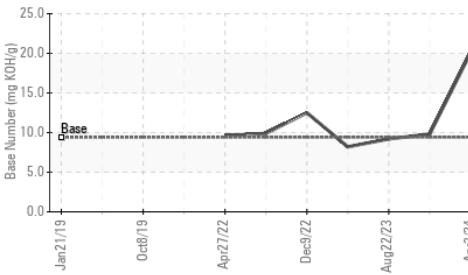
Glycol Contamination



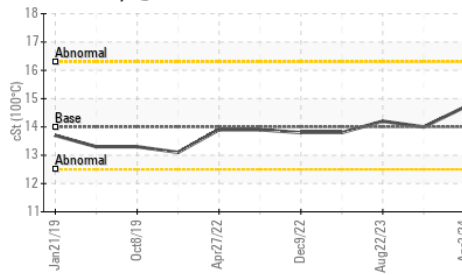
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

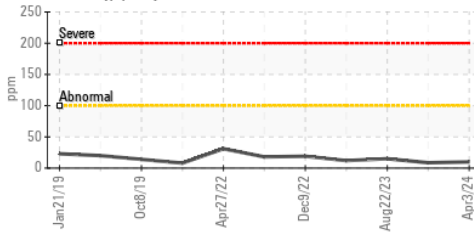


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

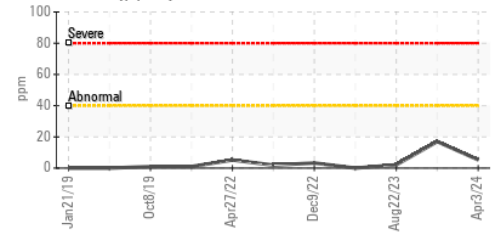
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445 14	14.7	14.0	14.2

GRAPHS

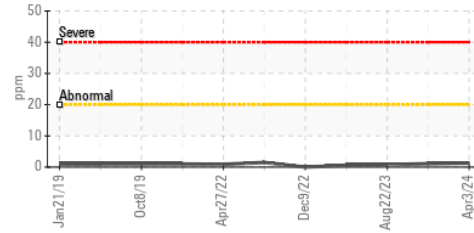
Iron (ppm)



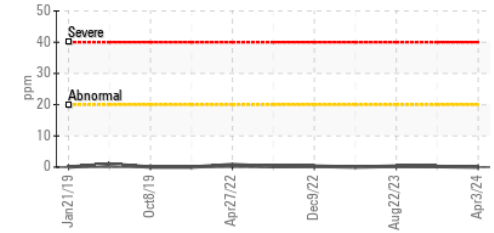
Lead (ppm)



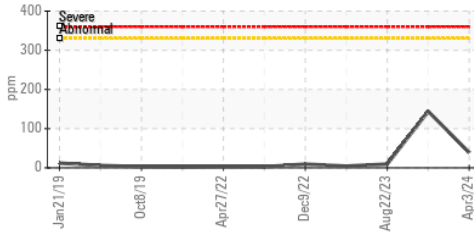
Aluminum (ppm)



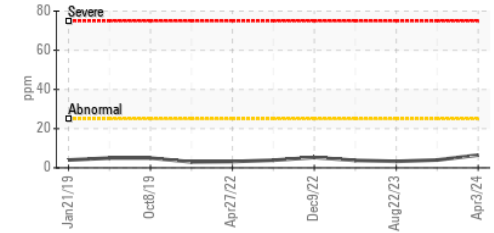
Chromium (ppm)



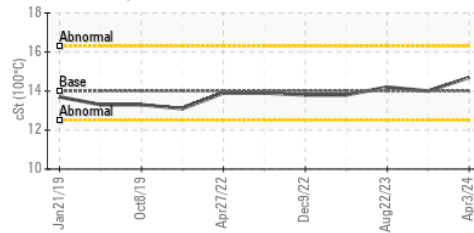
Copper (ppm)



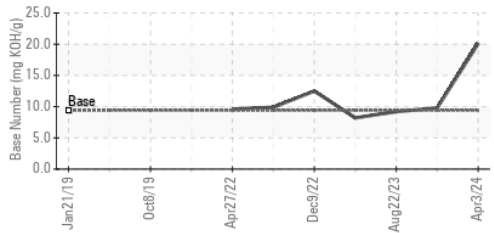
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0034666

Lab Number : 06142082

Unique Number : 10966890

Test Package : MOB 1 (Additional Tests: Glycol, 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)

Received : 08 Apr 2024

Tested : 11 Apr 2024

Diagnosed : 11 Apr 2024 - Jonathan Hester

Kemp Quarries - River Valley - Arkoma

12971 HWY 9a

Shawnee, OK

US 74804

Contact:

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