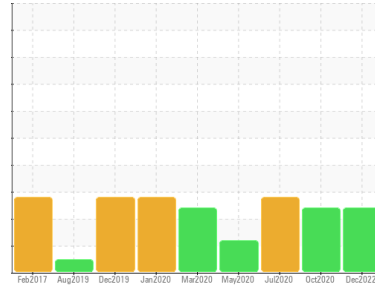


Area
KEMP QUARRIES / MUSKOGEE SAND
Machine Id
GEN023
Component
Diesel Engine
Fluid
MOBIL DELVAC 1300 SUPER15W40 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil 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

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	PCA0070535	PCA0020026	PCA0019996
Sample Date	Client Info	15 Dec 2022	23 Oct 2020	14 Jul 2020
Machine Age	hrs	11000	10115	9520
Oil Age	hrs	885	495	505
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		SEVERE	SEVERE	ABNORMAL

CONTAMINATION

method	limit/base	current	history 1	history 2
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history 1	history 2	
Iron	ppm	ASTM D5185m >100	18	13	10
Chromium	ppm	ASTM D5185m >20	1	<1	<1
Nickel	ppm	ASTM D5185m >4	0	0	0
Titanium	ppm	ASTM D5185m	0	<1	<1
Silver	ppm	ASTM D5185m >3	0	<1	<1
Aluminum	ppm	ASTM D5185m >20	2	<1	0
Lead	ppm	ASTM D5185m >40	3	4	2
Copper	ppm	ASTM D5185m >330	6	4	3
Tin	ppm	ASTM D5185m >15	4	3	2
Antimony	ppm	ASTM D5185m	---	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history 1	history 2	
Boron	ppm	ASTM D5185m 0	<1	8	26
Barium	ppm	ASTM D5185m 0	0	0	<1
Molybdenum	ppm	ASTM D5185m 0	54	55	53
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 0	830	882	830
Calcium	ppm	ASTM D5185m	922	1017	1220
Phosphorus	ppm	ASTM D5185m	826	919	900
Zinc	ppm	ASTM D5185m	1092	1162	1122
Sulfur	ppm	ASTM D5185m	2916	2213	2662

CONTAMINANTS

method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185m >25	5	3	4
Sodium	ppm	ASTM D5185m	2	2	3
Potassium	ppm	ASTM D5185m >20	0	0	<1
Fuel	%	ASTM D3524 >5	18.1	20.6	5.5

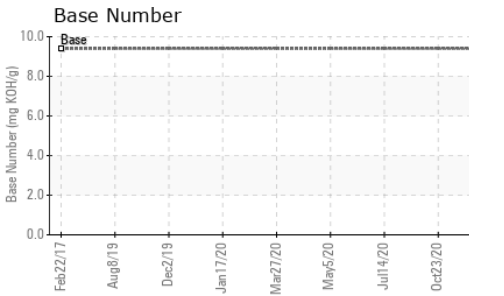
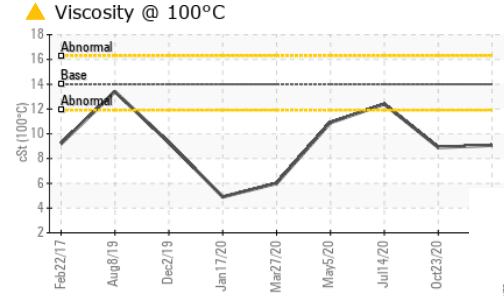
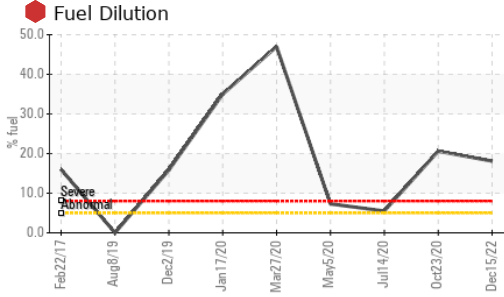
INFRA-RED

method	limit/base	current	history 1	history 2	
Soot %	%	*ASTM D7844 >3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	7.5	7.5	8.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	17.3	18.6	20.2

FLUID DEGRADATION

method	limit/base	current	history 1	history 2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	14.0	15.1	17.7
Base Number (BN)	mg KOH/g	ASTM D2896 9.4	8.3	---	---

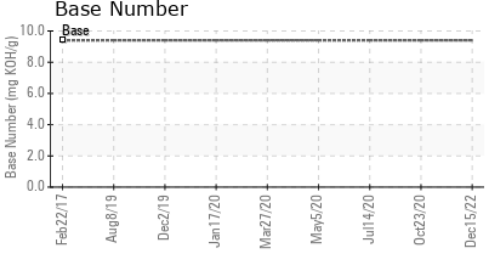
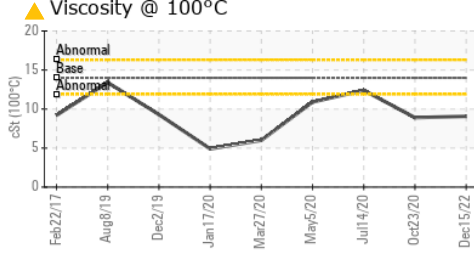
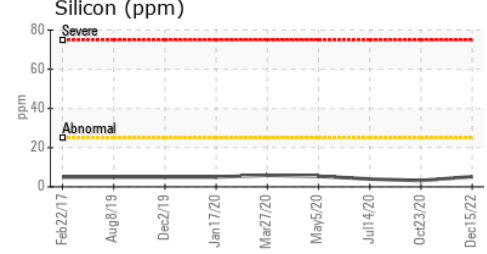
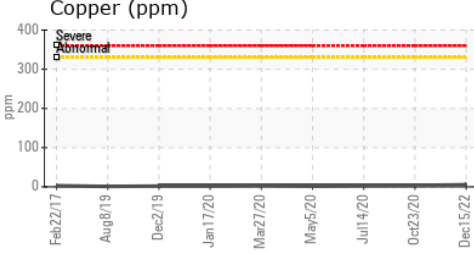
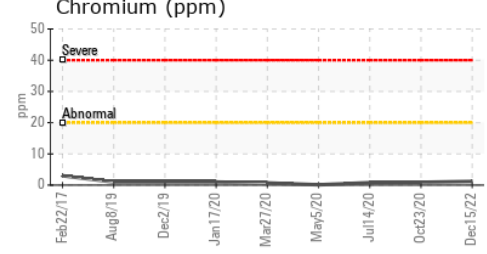
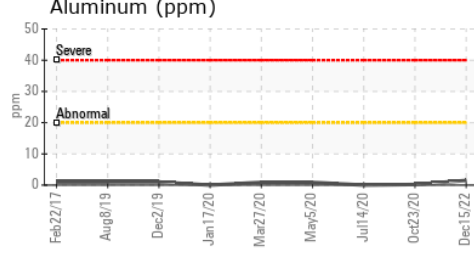
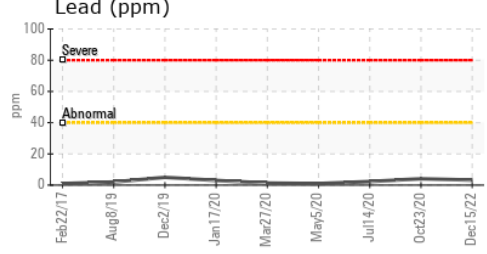
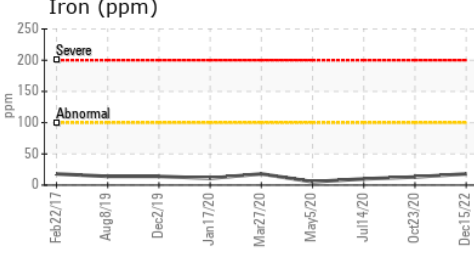
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
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	history 1	history 2
Visc @ 100°C	cSt	ASTM D445 14	▲ 9.07	▲ 8.9	▲ 12.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0070535 **Received** : 17 Feb 2023
Lab Number : 05771154 **Diagnosed** : 22 Feb 2023
Unique Number : 10345771 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: PercentFuel, TBN)

Kemp Quarries - Muskogee Sand
 3395 W 50th St N
 Porter, OK
 US 74454
 Contact:

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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