

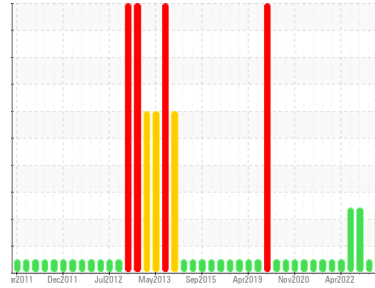


# OIL ANALYSIS REPORT



Area  
**KEMP QUARRIES / MUSKOGEE SAND**  
 Machine Id  
**WL039**  
 Component  
**Diesel Engine**  
 Fluid  
**MOBIL DELVAC 1300 SUPER15W40 (--- GAL)**

Sample Rating Trend



GLYCOL



## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. 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.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>PCA0087121</b>	PCA0087162	PCA0087179
Sample Date	Client Info		<b>15 Jun 2023</b>	20 Mar 2023	22 Feb 2023
Machine Age	hrs	Client Info	<b>59240</b>	58973	58900
Oil Age	hrs	Client Info	<b>500</b>	233	160
Oil Changed	Client Info		<b>Changed</b>	Changed	Not Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	SEVERE

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<b>&lt;1.0</b>	0.8	37.4

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>27</b>	4	8
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>1</b>	<1	<1
Lead	ppm	ASTM D5185m >40	<b>20</b>	<1	1
Copper	ppm	ASTM D5185m >330	<b>15</b>	5	3
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>6</b>	3	1
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 0	<b>89</b>	60	38
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 0	<b>1029</b>	983	583
Calcium	ppm	ASTM D5185m	<b>1203</b>	1109	723
Phosphorus	ppm	ASTM D5185m	<b>1084</b>	1095	598
Zinc	ppm	ASTM D5185m	<b>1357</b>	1312	788
Sulfur	ppm	ASTM D5185m	<b>4005</b>	3864	2081

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>10</b>	5	4
Sodium	ppm	ASTM D5185m	<b>▲ 402</b>	11	19
Potassium	ppm	ASTM D5185m >20	<b>▲ 23</b>	<1	2
Glycol	%	*ASTM D2982	<b>NEG</b>	NEG	NEG

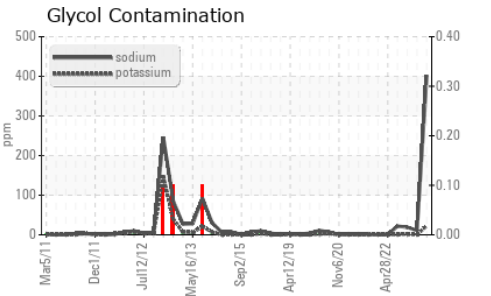
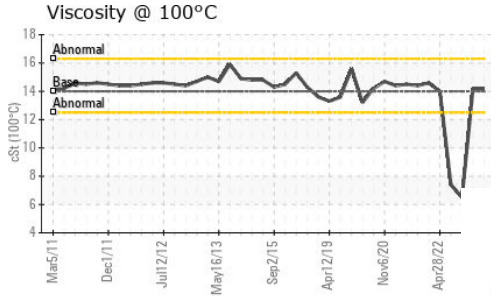
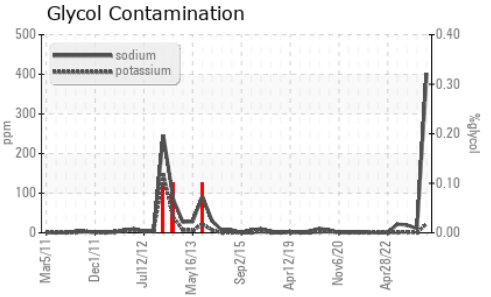
## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.2</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	<b>8.7</b>	5.1	6.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.4</b>	17.2	15.8

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>15.5</b>	12.3	10.9
Base Number (BN)	mg KOH/g	ASTM D2896 9.4	<b>10.2</b>	9.9	7.2

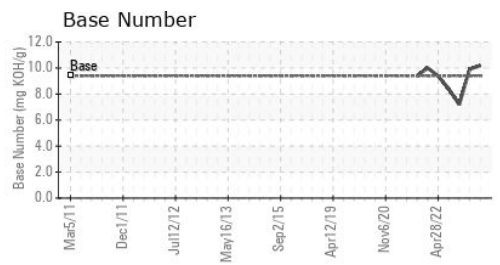
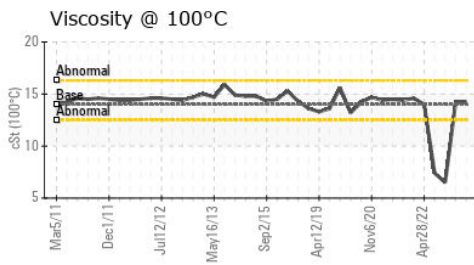
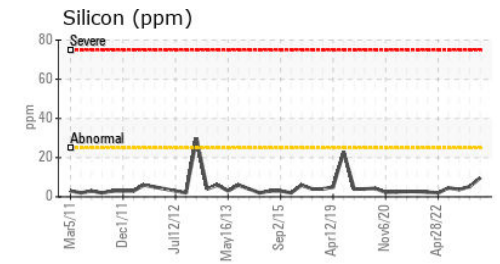
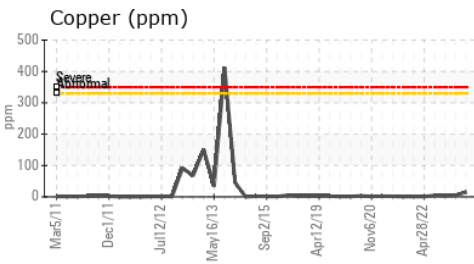
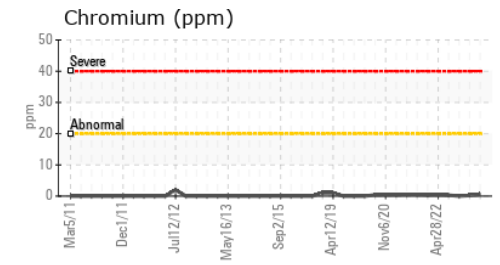
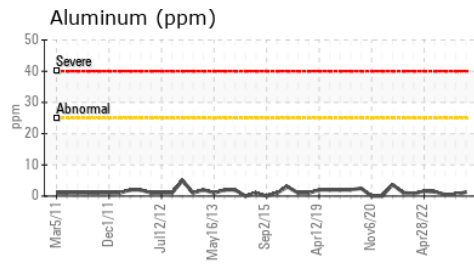
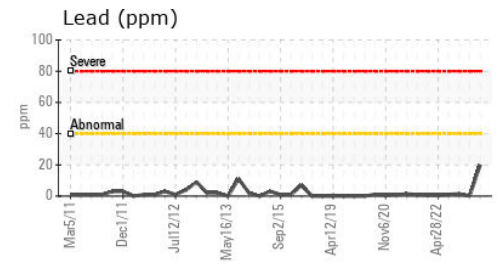
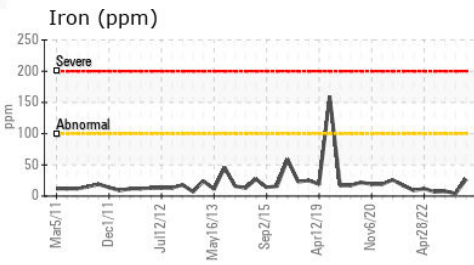
# OIL ANALYSIS REPORT



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	14	14.2	▲ 6.5

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0087121 **Received** : 17 Jul 2023  
**Lab Number** : 05900606 **Diagnosed** : 20 Jul 2023  
**Unique Number** : 10561962 **Diagnostician** : Jonathan Hester  
**Test Package** : MOB 1 ( Additional Tests: Glycol, TBN )

**Kemp Quarries - Muskogee Sand**  
 3395 W 50th St N  
 Porter, OK  
 US 74454  
 Contact:  
 muskogee@muskogeessand.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)