

# **OIL ANALYSIS REPORT**

## Sample Rating Trend

## NORMAL

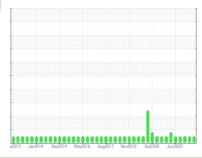


# KEMP QUARRIES / HULBERT Machine Id OHT047

Component

Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)





## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil

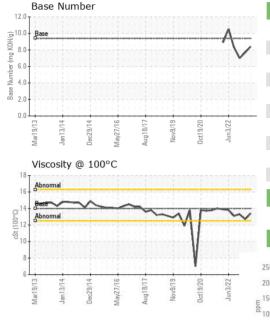
#### **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0109294	PCA0086853	PCA0086138
Sample Date		Client Info		06 Jan 2024	15 Sep 2023	08 Apr 2023
Machine Age	hrs	Client Info		37484	37028	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	15	33	22
Chromium	ppm	ASTM D5185m		0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm		>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	4	1
Lead	ppm		>40	4	16	4
Copper	ppm	ASTM D5185m		2	4	4
Tin	ppm		>15	1	2	0
Vanadium	ppm	ASTM D5185m	710	0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	<1	0	0
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	51	54	55
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium					0	< 1
Magnosium	ppm	ASTM D5185m	0	868	846	907
Calcium	ppm	ASTM D5185m ASTM D5185m	0			
	ppm		0	868	846	907
Calcium	ppm ppm	ASTM D5185m	0	868 979	846 959	907 1022
Calcium Phosphorus	ppm	ASTM D5185m ASTM D5185m	0	868 979 975	846 959 918	907 1022 1006
Calcium Phosphorus Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 limit/base	868 979 975 1118	846 959 918 1118	907 1022 1006 1240
Calcium Phosphorus Zinc Sulfur	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method		868 979 975 1118 2830	846 959 918 1118 2696	907 1022 1006 1240 3551
Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base	868 979 975 1118 2830 current	846 959 918 1118 2696 history1	907 1022 1006 1240 3551 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base	868 979 975 1118 2830 current	846 959 918 1118 2696 history1	907 1022 1006 1240 3551 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base >25	868 979 975 1118 2830 current 4	846 959 918 1118 2696 history1 9	907 1022 1006 1240 3551 history2 3
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25 >20	868 979 975 1118 2830 current 4 8	846 959 918 1118 2696 history1 9	907 1022 1006 1240 3551 history2 3 13 <1
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	868 979 975 1118 2830 current 4 8 2	846 959 918 1118 2696 history1 9 9	907 1022 1006 1240 3551 history2 3 13 <1
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  *ASTM D5185m	limit/base >25 >20 limit/base >3	868 979 975 1118 2830 current 4 8 2 current	846 959 918 1118 2696 history1 9 9 3 history1 0.6	907 1022 1006 1240 3551 history2 3 13 <1 history2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm TS ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D7415	limit/base >25 >20 limit/base >3 >20	868 979 975 1118 2830 current 4 8 2 current 0.3 7.1	846 959 918 1118 2696 history1 9 9 3 history1 0.6 8.4	907 1022 1006 1240 3551 history2 3 13 <1 history2 0.4 8.2
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm TS ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D7844  *ASTM D7624  *ASTM D7415	limit/base >25 >20 limit/base >3 >20 >30	868 979 975 1118 2830 current 4 8 2 current 0.3 7.1 18.7	846 959 918 1118 2696 history1 9 9 3 history1 0.6 8.4 19.6	907 1022 1006 1240 3551 history2 3 13 <1 history2 0.4 8.2 17.8
Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method  *ASTM D7844 *ASTM D7624 *ASTM D7415  Method	limit/base >25 >20 limit/base >3 >20 >30 limit/base	868 979 975 1118 2830 current 4 8 2 current 0.3 7.1 18.7 current	846 959 918 1118 2696 history1 9 9 3 history1 0.6 8.4 19.6 history1	907 1022 1006 1240 3551 history2 3 13 <1 history2 0.4 8.2 17.8 history2



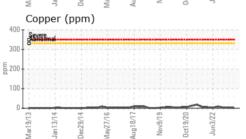
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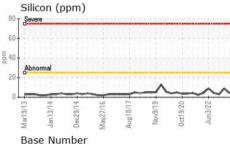


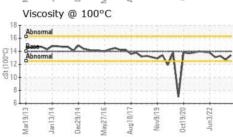
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/hase	current	history1	history2

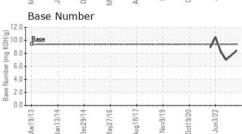
I LOID I HOI						
Visc @ 100°C	cSt	ASTM D445	14	13.4	12.7	13.3

GRAPHS		
Iron (ppm)		Lead (ppm)
Severe		80 Severe
0 - Abnomal		E 40 Abnormal
50	~~~	20
Mar19/13	Aug18/17 Nov9/19 Oct19/20	Mart 9/13 - Jan 13/14 - Jan 13/14 - May 27/16 - Aug 18/17 - Aug 18/17 - Nov 9/19 - H
Aluminum (ppm)		Chromium (ppm)
Severe		Severe
Abnormal		E 20 Abnomal
0	^	10











Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: PCA0109294 : 06069842

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved Diagnosed : 10846519

: 24 Jan 2024

: 26 Jan 2024 Diagnostician : Don Baldridge

Test Package : MOB 1 (Additional Tests: 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)

Kemp Quarries - Kemp Stone - Hulbert

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Contact:

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T: F: