

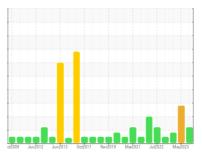
OIL ANALYSIS REPORT



KEMP QUARRIES / MUSKOGEE SAND **ENG021**

Diesel Engine

MOBIL DELVAC 1300 SUPER15W40 (--- GAL)



Sample Rating Trend



DIAGNOSIS

Recommendation

Check for low coolant level. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

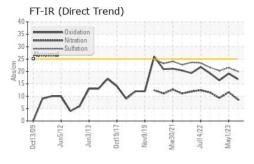
Fluid Condition

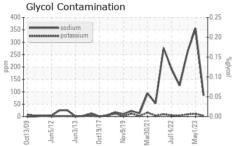
The condition of the oil is acceptable for the time in service.

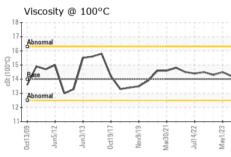
SAMPLE INFORMATION method limit/base current history1 bistory2			<u> </u>				
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 7179 6095 5958 Oil Age hrs Client Info 0 435 298 Oil Changed Client Info Changed Changed Not Changed Sample Status Brown Imitibase current bistory1 bistory2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG WEAR METALS method Imitibase current bistory1 bistory2 Iron ppm ASTM D5185m >20 <1 0 <1 Iron ppm ASTM D5185m >20 <1 0 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Sample Number		Client Info		PCA0085603	PCA0087183	PCA0087163
Oil Age hrs Client Info Changed 435 298 Oil Changed Changed Not Chang	Sample Date		Client Info		20 May 2024	01 May 2023	23 Mar 2023
Oil Changed Sample Status Client Info Changed ATTENTION Changed ATTENTION Not Changed ABNORMAL ABNORMAL ABNORMAL CONTAMINATION method limi/base current history1 history2 Fuel WC Method >5. <1.0	Machine Age	hrs	Client Info		7179	6095	5958
Sample Status	Oil Age	hrs	Client Info		0	435	298
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <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 >20 <1 0 <1 Nickel ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 1 0 0 Copper ppm ASTM D5185m >40 10 ASS 51 Copper ppm ASTM D5185m >40 10 ASS 51 Copper ppm ASTM D5185m 0 0 0 <td< th=""><th>Oil Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th>Not Changd</th></td<>	Oil Changed		Client Info		Changed	Changed	Not Changd
Fuel WC Method S5	Sample Status				ATTENTION	ABNORMAL	ABNORMAL
Water WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 25 27 22 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history2 Iron ppm ASTM D5185m >100 25 27 22 Chromium ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >2 0 0 0 Titanium ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >40 10 A 52 A 51 Lead ppm ASTM D5185m >40 10 A 52 A 51 Copper ppm ASTM D5185m >40 10 A 52 A 51 Copper ppm ASTM D5185m >15 0 1 <1 <1 Vanadium ppm ASTM D5185m 0 0	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >2 0 <1	Iron	ppm	ASTM D5185m	>100	25	27	22
Titanium ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >25 1 <1 <1 Lead ppm ASTM D5185m >40 10 ▲ 52 ▲ 51 Copper ppm ASTM D5185m >40 10 ▲ 52 ▲ 51 Copper ppm ASTM D5185m >15 0 1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 8 Barium ppm ASTM D5185m 0 68 84 78 Magnesium ppm ASTM D5185m 0 1159 956<	Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Silver ppm ASTM D5185m >2 <1	Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum ppm ASTM D5185m >25 1 <1	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >40 10 ▲ 52 ▲ 51 Copper ppm ASTM D5185m >330 32 ▲ 113 88 Tin ppm ASTM D5185m >15 0 1 <1	Silver	ppm	ASTM D5185m	>2	<1	0	0
Copper ppm ASTM D5185m >330 32 ▲ 113 88 Tin ppm ASTM D5185m >15 0 1 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 68 84 78 Manganese ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376	Aluminum	ppm	ASTM D5185m	>25	1	<1	<1
Tin ppm ASTM D5185m >15 0 1 <1	Lead	ppm	ASTM D5185m	>40	10	<u></u> 52	<u></u> ▲ 51
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 8 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 68 84 78 Manganese ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 25 8 6 6 Sodium ppm ASTM D5185m 25 8 6 6 Sodium	Copper	ppm	ASTM D5185m	>330	32	<u></u> 113	88
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 8 Barium ppm ASTM D5185m 0 68 84 78 Manganese ppm ASTM D5185m 0 68 84 78 Magnesium ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 225 8	Tin	ppm	ASTM D5185m	>15	0	1	<1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 8 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 68 84 78 Manganese ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6	Vanadium	ppm	ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 68 84 78 Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 NEG 0.0	ADDITIVEC						111
Molybdenum ppm ASTM D5185m 0 68 84 78 Manganese ppm ASTM D5185m <1	ADDITIVES		method	limit/base	current	history1	history2
Manganese ppm ASTM D5185m <1		ppm					
Magnesium ppm ASTM D5185m 0 1159 956 982 Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 0.3 0.2 <	Boron	• • •	ASTM D5185m	0	0	5	8
Calcium ppm ASTM D5185m 1276 1076 1052 Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 11 9	Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	0 0	5	8
Phosphorus ppm ASTM D5185m 1233 999 1064 Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3<	Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0 0 68	5 0 84	8 0 78
Zinc ppm ASTM D5185m 1499 1258 1376 Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1	Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 68 <1	5 0 84 <1	8 0 78 <1
Sulfur ppm ASTM D5185m 4069 3168 3823 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m >20 3 11 9 Potassium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9	Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 68 <1 1159	5 0 84 <1 956	8 0 78 <1 982
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m ≥25 8 356 262 Potassium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 68 <1 1159 1276	5 0 84 <1 956 1076	8 0 78 <1 982 1052
Silicon ppm ASTM D5185m >25 8 6 6 Sodium ppm ASTM D5185m ● 85 ▲ 356 262 Potassium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 68 <1 1159 1276 1233	5 0 84 <1 956 1076 999	8 0 78 <1 982 1052 1064
Sodium ppm ASTM D5185m ■ 85 ■ 356 262 Potassium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 68 <1 1159 1276 1233 1499	5 0 84 <1 956 1076 999 1258	8 0 78 <1 982 1052 1064 1376
Potassium ppm ASTM D5185m >20 3 11 9 Glycol % *ASTM D2982 NEG NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 0	0 0 68 <1 1159 1276 1233 1499 4069	5 0 84 <1 956 1076 999 1258 3168	8 0 78 <1 982 1052 1064 1376 3823
Glycol % *ASTM D2982 NEG NEG 0.0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 0 0	0 0 68 <1 1159 1276 1233 1499 4069	5 0 84 <1 956 1076 999 1258 3168 history1	8 0 78 <1 982 1052 1064 1376 3823 history2
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 0 0	0 0 68 <1 1159 1276 1233 1499 4069 current	5 0 84 <1 956 1076 999 1258 3168 history1	8 0 78 <1 982 1052 1064 1376 3823 history2
Soot % % *ASTM D7844 >3 0.3 0.2 Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 0 0 limit/base >25	0 0 68 <1 1159 1276 1233 1499 4069 current 8	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262
Nitration Abs/cm *ASTM D7624 >20 8.7 11.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 0 0 limit/base >25	0 0 68 <1 1159 1276 1233 1499 4069 current 8 85 3	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9
Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185m method ASTM D5185m	0 0 0 0 limit/base >25 >20	0 0 68 <1 1159 1276 1233 1499 4069 current 8 8 85 3 NEG	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11 NEG	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9 0.0
Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.5 20.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185m *ASTM D2982 method	0 0 0 0 	0 0 68 <1 1159 1276 1233 1499 4069 current 8 85 3 NEG	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11 NEG	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9 0.0 history2
Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.1 16.4	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot %	ppm	ASTM D5185m *ASTM D2982 *Method *ASTM D7844	0 0 0 0 0 limit/base >25 >20 limit/base >3	0 0 68 <1 1159 1276 1233 1499 4069 current 8 85 3 NEG	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11 NEG history1 0.3	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9 0.0 history2 0.2
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration	ppm	ASTM D5185m *ASTM D7844 *ASTM D7844	0 0 0 0 0 limit/base >25 >20 limit/base >3 >20	0 0 68 <1 1159 1276 1233 1499 4069 current 8 85 3 NEG current 0.3 8.7	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11 NEG history1 0.3 11.6	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9 0.0 history2 0.2 9.3
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 0 limit/base >25 >20 limit/base >3 >20 >30	0 0 68 <1 1159 1276 1233 1499 4069 current 8 85 3 NEG current 0.3 8.7 20.0	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11 NEG history1 0.3 11.6 21.5	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9 0.0 history2 0.2 9.3 20.3
	Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m *ASTM D2982 *ASTM D7844 *ASTM D7624 *ASTM D7415 *Method	0 0 0 0 0 	0 0 68 <1 1159 1276 1233 1499 4069 current 8 85 3 NEG current 0.3 8.7 20.0 current	5 0 84 <1 956 1076 999 1258 3168 history1 6 ▲ 356 11 NEG history1 0.3 11.6 21.5 history1	8 0 78 <1 982 1052 1064 1376 3823 history2 6 262 9 0.0 history2 0.2 9.3 20.3 history2

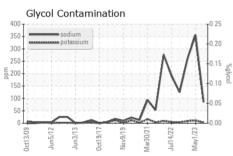


OIL ANALYSIS REPORT





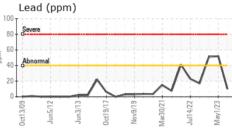


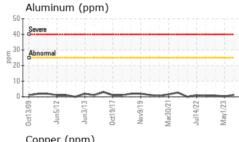


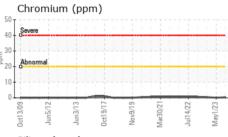
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

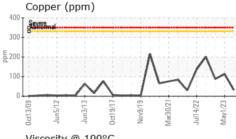
FLUID PROPE	ERITES					
Visc @ 100°C	cSt	ASTM D445	14	14.2	14.5	14.3

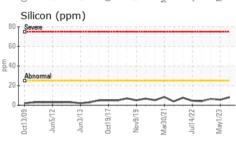
Iron (p	om)					
Severe		777				
150						
100 Abnormal		A .				
50		$^{\prime}$			~	
09	· ·		- 6	21+	- 52	33

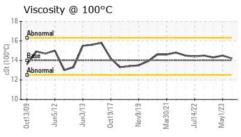


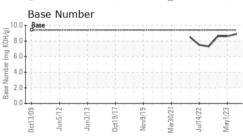
















Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0085603 Lab Number : 06193292

Received **Tested** Diagnosed

: 28 May 2024 : 30 May 2024

: 30 May 2024 - Sean Felton

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

Certificate 12367

Unique Number : 11050044 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. muskogee@muskogeesand.com

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: KEMPOR [WUSCAR] 06193292 (Generated: 05/30/2024 21:03:00) Rev: 1

Submitted By:

T:

F: