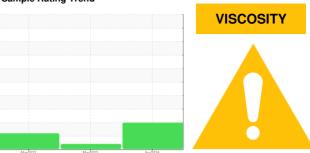


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

KAESER SK20 7347944 (S/N 1618)

Component Compressor

KAESER SIGMA (OEM) M-460 (--- QTS)

DIAGNOSIS

Recommendation

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

There is a high amount of particulates present in the oil.

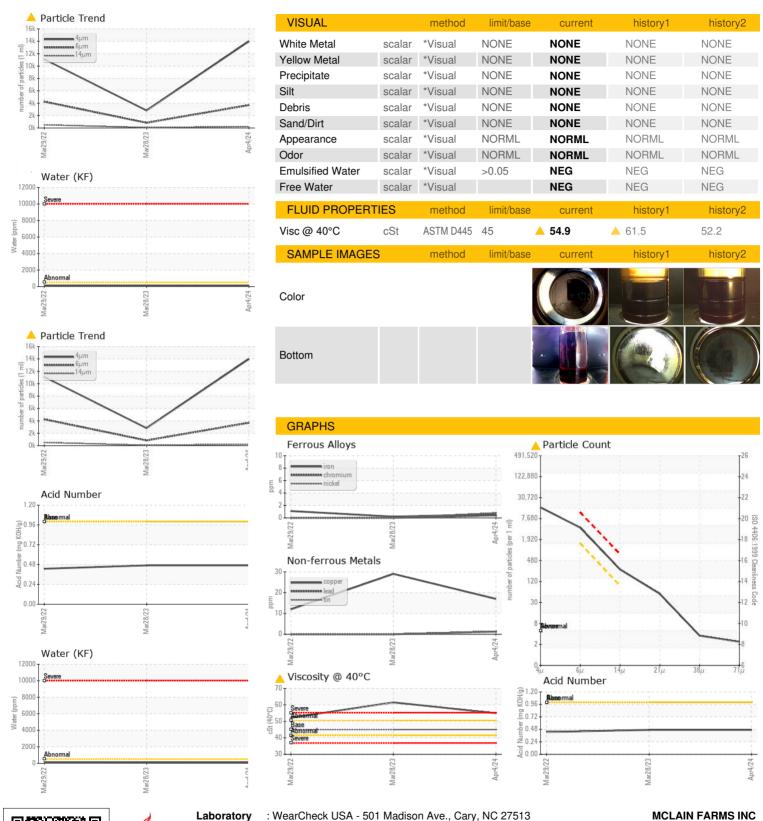
Fluid Condition

The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

Sample Date Client Info Q4 Apr 2024 28 Mar 2023 29 Mar 2022 20 Mar 2022 29 Mar 2022 20 Mar 2023 20 Mar 2022			Ma	2022	Mar2023 Apr203	24	
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date Client Info Q4 Apr 2024 28 Mar 2023 29 Mar 2022 20 Mar 2022 29 Mar 2022 20 Mar 2023 20 Mar 2022	Sample Number		Client Info		KCPA016121	KCPA001135	KCP44459
Machine Age hrs Client Info 30309 23005 15594 Dil Age hrs Client Info 7304 0 0 Dil Changed Sample Status Client Info Changed N/A Not Changed ABNORMAL ABNORMAL ABNORMAL ABNORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 <1 <1 1 Chromium ppm ASTM D5185m >3 <1 0 0 Nickel ppm ASTM D5185m >3 <1 0 0 Silver ppm ASTM D5185m >10 1 0 0 Aluminum ppm ASTM D5185m >10 1 0 0 Copper ppm ASTM D5185m >10 1 0 <1 Vanadium ppm ASTM D5185m >10 1 0 0 Bariu			Client Info		04 Apr 2024	28 Mar 2023	29 Mar 2022
Dil Age	Machine Age	hrs	Client Info		-	23005	15594
Client Info	Oil Age	hrs	Client Info		7304	0	0
Manages Man	Oil Changed		Client Info		Changed	N/A	Not Changd
Chromium	Sample Status					ABNORMAL	_
Chromium ppm ASTM D5185m >10 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	<1	<1	1
Silver	Chromium	ppm	ASTM D5185m	>10	<1	0	0
Silver	Nickel	ppm	ASTM D5185m	>3	<1	0	0
Aluminum ppm ASTM D5185m >10 1 0 0 0 Copper ppm ASTM D5185m >10 1 0 0 0 Copper ppm ASTM D5185m >10 1 0 0 0 Cadmium ppm ASTM D5185m >10 1 0 0 0 Cadmium ppm ASTM D5185m >10 1 0 0 0 Cadmium ppm ASTM D5185m >10 1 0 0 0 Cadmium ppm ASTM D5185m >10 1 0 0 0 Cadmium ppm ASTM D5185m >10 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 0 0 Barium ppm ASTM D5185m 90 <1 0 0 0 Molybdenum ppm ASTM D5185m 10 0 0 0 Manganese ppm ASTM D5185m 10 0 2 3 22 Calcium ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 1 0 0 Calcium ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 1 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 1 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 5 1 0 0 Phosphorus ppm ASTM D5185m 0 1 0 0 0 Phosphorus ppm ASTM D5185m 0 1 0 0 0 Phosphorus ppm ASTM D5185m 0 1 0 0 0 5 CONTAMINANTS method limit/base current history1 history2 Water 9% ASTM D5185m 0 0 0 5 Potassium ppm ASTM D6304 >500 78 84.1 76.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >1300 A 3686 838 A 4259 Particles >6μm ASTM D7647 >4 3 0 2 Particles >14μm ASTM D7647 >4 3 0 0 2 Particles >14μm ASTM D7647 >4 3 0 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 A 21/19/15 19/17/13 A 19/16	Titanium	ppm	ASTM D5185m	>3	<1	0	0
Lead ppm ASTM D5185m >10 1 0 0 Copper ppm ASTM D5185m >50 17 29 12 Tin ppm ASTM D5185m >50 17 29 12 Tin ppm ASTM D5185m >10 1 0 <1	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >50 17 29 12 Tin ppm ASTM D5185m >10 1 0 <1 Vanadium ppm ASTM D5185m >10 1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 90 <1 0 0 Molybdenum ppm ASTM D5185m 90 <1 0 0 Magnesium ppm ASTM D5185m 0 1 <1 0 Magnesium ppm ASTM D5185m 100 2 3 22 Calcium ppm ASTM D5185m 0 5 1 0 Phosphorus ppm ASTM D5185m 0 3 4 0 Zinc ppm ASTM D5185m 0 1 <1	Aluminum	ppm	ASTM D5185m	>10	1	0	<1
Copper ppm ASTM D5185m >50 17 29 12 Tin ppm ASTM D5185m >10 1 0 <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 0 0 0 Barium ppm ASTM D5185m 90 <1 0 0 Molydedenum ppm ASTM D5185m 90 <1 0 0 Magnesium ppm ASTM D5185m 0 1 <1 0 0 Magnesium ppm ASTM D5185m 100 2 3 22 2 Calcium ppm ASTM D5185m 0 5 1 0 0 0 2 3 22 0 1 <1	Lead	ppm	ASTM D5185m	>10	1	0	0
Tin	Copper		ASTM D5185m	>50	17	29	12
Vanadium ppm ASTM D5185m <1	Tin		ASTM D5185m	>10	1	0	<1
Cadmium ppm ASTM D5185m <1	Vanadium		ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Cadmium		ASTM D5185m			0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Barium	Boron	mqq	ASTM D5185m	0	0	0	0
Molybdenum ppm ASTM D5185m 0 1 0 0 Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 100 2 3 22 Calcium ppm ASTM D5185m 0 5 1 0 Phosphorus ppm ASTM D5185m 0 3 4 0 Zinc ppm ASTM D5185m 0 1 <1 29 Sulfur ppm ASTM D5185m 0 1 <1 29 Sulfur ppm ASTM D5185m 0 1 <1 29 Sulfur ppm ASTM D5185m >25 0 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 <1 2 Water % ASTM D5185m >20 <1 <1 2 Water % ASTM D6185m >20 <1 <1	Barium	ppm		90	<1	0	0
Manganese ppm ASTM D5185m <1	Molybdenum	ppm	ASTM D5185m	0	1	0	0
Magnesium ppm ASTM D5185m 100 2 3 22 Calcium ppm ASTM D5185m 0 5 1 0 Phosphorus ppm ASTM D5185m 0 3 4 0 Zinc ppm ASTM D5185m 0 1 <1		ppm	ASTM D5185m		<1	<1	0
Calcium ppm ASTM D5185m 0 5 1 0 Phosphorus ppm ASTM D5185m 0 3 4 0 Zinc ppm ASTM D5185m 0 1 <1	Magnesium	ppm	ASTM D5185m	100	2	3	22
Phosphorus ppm ASTM D5185m 0 3 4 0 Zinc ppm ASTM D5185m 0 1 <1	Calcium		ASTM D5185m	0	5	1	0
Zinc ppm ASTM D5185m 0 1 <1	Phosphorus			0	3	4	0
Sulfur ppm ASTM D5185m 23500 18233 17644 17254 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 0 <1 <1 Sodium ppm ASTM D5185m >20 <1 <1 2 Potassium ppm ASTM D6304 >0.05 0.007 0.008 0.007 water % ASTM D6304 >500 78 84.1 76.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >1300 3686 838 Δ 4259 Particles >94μm ASTM D7647 >80 Δ 235 62 Δ 507 Particles >21μm ASTM D7647 >20 Δ 47 15 Δ 71 Particles >71μm ASTM D7647 >3 2 0 0 0 Oil	Zinc		ASTM D5185m	0	1	<1	29
Silicon ppm ASTM D5185m >25 0 <1	Sulfur				18233		17254
Sodium ppm ASTM D5185m 0 0 5 Potassium ppm ASTM D5185m >20 <1 <1 2 Water % ASTM D6304 >0.005 0.007 0.008 0.007 opm Water ppm ASTM D6304 >500 78 84.1 76.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 14000 2825 11100 Particles >6μm ASTM D7647 >1300 3686 838 Δ4259 Particles >14μm ASTM D7647 >80 235 62 Δ507 Particles >21μm ASTM D7647 >20 Δ47 15 Δ71 Particles >38μm ASTM D7647 >3 2 0 0 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 19/17/13 19/16	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 0 0 5 Potassium ppm ASTM D5185m >20 <1 <1 2 Water % ASTM D6304 >0.005 0.007 0.008 0.007 opm Water ppm ASTM D6304 >500 78 84.1 76.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 14000 2825 11100 Particles >6μm ASTM D7647 >1300 3686 838 Δ4259 Particles >14μm ASTM D7647 >80 235 62 Δ507 Particles >21μm ASTM D7647 >20 Δ47 15 Δ71 Particles >38μm ASTM D7647 >3 2 0 0 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 19/17/13 19/16	Silicon	maa	ASTM D5185m	>25	0	<1	<1
Potassium ppm ASTM D5185m >20 <1	Sodium						
Water % ASTM D6304 > 0.05 0.007 0.008 0.007 opm Water ppm ASTM D6304 > 500 78 84.1 76.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 14000 2825 11100 Particles >6μm ASTM D7647 > 1300 3686 838 4259 Particles >14μm ASTM D7647 > 80 235 62 507 Particles >21μm ASTM D7647 > 20 47 15 71 Particles >38μm ASTM D7647 > 4 3 0 2 Particles >71μm ASTM D7647 > 3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 19/17/13 19/16 FLUID DEGRADATION method limit/base current history1 history2	Potassium			>20			
opm Water ppm ASTM D6304 >500 78 84.1 76.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 14000 2825 11100 Particles >6μm ASTM D7647 >1300 3686 838 Δ259 Particles >14μm ASTM D7647 >80 Δ235 62 Δ507 Particles >21μm ASTM D7647 >20 Δ47 15 Λ71 Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ21/19/15 19/17/13 Δ19/16 FLUID DEGRADATION method limit/base current history1 history2	Water						
Particles >4μm ASTM D7647 14000 2825 11100 Particles >6μm ASTM D7647 >1300 3686 838 4259 Particles >14μm ASTM D7647 >80 235 62 507 Particles >21μm ASTM D7647 >20 47 15 71 Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 21/19/15 19/17/13 19/16 FLUID DEGRADATION method limit/base current history1 history2	ppm Water						
Particles >6μm ASTM D7647 >1300 Δ 3686 838 Δ 4259 Particles >14μm ASTM D7647 >80 Δ 235 62 Δ 507 Particles >21μm ASTM D7647 >20 Δ 47 15 Δ 71 Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 21/19/15 19/17/13 Δ 19/16 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >6μm ASTM D7647 >1300 Δ 3686 838 Δ 4259 Particles >14μm ASTM D7647 >80 Δ 235 62 Δ 507 Particles >21μm ASTM D7647 >20 Δ 47 15 Δ 71 Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 21/19/15 19/17/13 Δ 19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647		14000	2825	11100
Particles >14μm ASTM D7647 >80 Δ 235 62 Δ 507 Particles >21μm ASTM D7647 >20 Δ 47 15 Δ 71 Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 Δ 21/19/15 19/17/13 Δ 19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>1300	△ 3686	838	4259
Particles >21μm ASTM D7647 >20 47 15 71 Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 19/17/13 ▲ 19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>80		62	
Particles >38μm ASTM D7647 >4 3 0 2 Particles >71μm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 19/17/13 ▲ 19/16 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm						
Particles >71µm ASTM D7647 >3 2 0 0 Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 19/17/13 ▲ 19/16 FLUID DEGRADATION method limit/base current history1 history2	·						
Oil Cleanliness ISO 4406 (c) >/17/13 ▲ 21/19/15 19/17/13 ▲ 19/16 FLUID DEGRADATION method limit/base current history1 history2							
	Oil Cleanliness						
	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
ACIG Number (AIV) highory ASTW DOV45 1.0 0.47 0.47	Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.47	0.47	0.43



OIL ANALYSIS REPORT





Certificate 12367

Laboratory Sample No.

Lab Number

: KCPA016121 : 06146622 Unique Number : 10976700

Test Package : IND 2 (Additional Tests: KF, PrtCount)

Received : 11 Apr 2024 **Tested** Diagnosed

: 12 Apr 2024

: 16 Apr 2024 - Angela Borella

To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - 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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