

OIL ANALYSIS REPORT

Sample Rating Trend





Compressor

KAESER SIGMA (OEM) M-460 (--- 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. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sample Number Client Info KCP46445 Sample Date Client Info 25 Oct 2022 Machine Age hrs Client Info 2715 Oil Age Client Info 2000 Oil Changed Client Info Changed Oil Changed Client Info Changed Sample Status method Imilbase current history1 history2 Kronnium ppm ASTM 05165m >10 0 Nickel ppm ASTM 05165m >20 Aluminum ppm ASTM 05165m >10 0 Aluminum ppm ASTM 05165m >10 0 Aluminum ppm ASTM 05165m >10 0 Adagandum ppm ASTM 05	SAMPLE INFORM	IATI <u>ON</u>	method	limit/base	current	history1	history2
Sample Date Client Info 25 Oct 2022 Machine Age hrs Client Info 3715 Oil Age hrs Client Info 2000 Sample Status Client Info Changed WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5155m >50 0 Nickel ppm ASTM D5155m >3 0 Aluminum ppm ASTM D5155m >3 0 Aluminum ppm ASTM D5155m >10 0 Cadmium ppm ASTM D5155m >10 0 ADDITIVES method Imit/base current history1 history2 Barium ppm ASTM D5155m 0 0 Manganese			Client Info				
Machine Age hrs Client Info 3715 Oil Age hrs Client Info 2000 Sample Status Client Info Changed WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM D5165m >50 0 Nickel ppm ASTM D5165m >3 0 Silver ppm ASTM D5165m >3 0 Copper ppm ASTM D5165m >10 0 Cadmium ppm ASTM D5165m >10 0 ADDTIVES method Imit/base current history1 history2 Barium ppm ASTM D5165m 0 ADDTIVES method Imit/base current history1 history2 <t< td=""><td></td><td></td><td></td><td></td><th></th><td></td><td></td></t<>							
Oil Age hrs Client Info 2000 Oil Changed Client Info Changed WEAR METALS method imil/base current history1 history2 Iron ppm ASTM D5185m >50 0 Nickel ppm ASTM D5185m >3 0 Aurminum ppm ASTM D5185m >3 0 Aurminum ppm ASTM D5185m >10 0 Aurminum ppm ASTM D5185m >10 0 Age ppm ASTM D5185m >10 0 Capper ppm ASTM D5185m >10 0 ADDITVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0		hrs					
Chier Info Changed NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 0 Normum ppm ASTM D5185m >50 0 Nickel ppm ASTM D5185m >30 0 Silver ppm ASTM D5185m >30 0 Aluminum ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >10 0 Adamium ppm ASTM D5185m >10 0 ADDITVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 ADITVES method limit/base current history1 history2	•	hrs			2000		
Sample Status method Imit/base current history1 history2 Iron ppm ASTM D5185m >50 0 Chromium ppm ASTM D5185m >30 0 Nickel ppm ASTM D5185m >30 0 Silver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >10 0 Adminum ppm ASTM D5185m 0 0 ADDITVES method Imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0<	0		Client Info				
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 0 Chromium ppm ASTM D5185m >3 0 Nickel ppm ASTM D5185m >3 0 Silver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >10 0 Lead ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >10 0 Admium ppm ASTM D5185m >0 0 Admium ppm ASTM D5185m 0 0 Admound ppm ASTM D5185m 0 0 Admound ppm ASTM D5185m 0 0	•				-		
Iron ppm ASTM D5185m >50 0 Chromium ppm ASTM D5185m >10 0 Nickel ppm ASTM D5185m >3 0 Silver ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >10 0 Cadmium ppm ASTM D5185m >10 0 ADDITIVES method imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0 Sulfor ppm ASTM D5185m 0 <th></th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>historv1</th> <th>history2</th>			method	limit/base	current	historv1	history2
Prom ASTM D5185m >10 0 Nickel ppm ASTM D5185m >3 0 Silver ppm ASTM D5185m >2 0 Silver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >10 0 Aluminum ppm ASTM D5185m >10 0 Quandium ppm ASTM D5185m >10 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0 Solidonum ppm ASTM D5185m 0 0 <t< td=""><td></td><td>nom</td><td></td><td></td><th></th><td></td><td></td></t<>		nom					
Nickel ppm ASTM D5185m >3 0 Titanium ppm ASTM D5185m >3 0 Sliver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >10 0 Lead ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >10 0 Vanadium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 <td< td=""><td>-</td><td></td><td></td><td></td><th>-</th><td></td><td></td></td<>	-				-		
Titanium ppm ASTM 05185m >3 0 Silver ppm ASTM 05185m >2 0 Aluminum ppm ASTM 05185m >10 0 Lead ppm ASTM 05185m >10 0 Copper ppm ASTM 05185m >10 0 Vanadium ppm ASTM 05185m >10 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM 05185m 0 0 Maganese ppm ASTM 05185m 0 0 Maganese ppm ASTM 05185m 0 0 Maganese ppm ASTM 05185m 0 0 Solicoum ppm ASTM 05185m 0 0<					-		
Silver ppm ASTM D5185m >2 0 Aluminum ppm ASTM D5185m >10 0 Lead ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >10 0 Vanadium ppm ASTM D5185m 10 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 100 0 Phosphorus ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 25					-		
Auminum ppm ASTM D5185m >10 0 Lead ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >50 13 Vanadium ppm ASTM D5185m >10 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18					-		
Lead ppm ASTM D5185m >10 0 Copper ppm ASTM D5185m >50 13 Vanadium ppm ASTM D5185m >10 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Malganese ppm ASTM D5185m 0 0 Magneseium ppm ASTM D5185m 0 0 Magneseium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Solium ppm ASTM D5185m 23500 18693 Solium ppm ASTM D5185m <					-		
Copper ppm ASTM D5185m >50 13 Tin ppm ASTM D5185m >10 0 Vanadium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 100 0 Phosphorus ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Soliton ppm ASTM D5185m 23500 18693 Sodium ppm ASTM D5185m					-		
Tin ppm ASTM D5185m >10 0 Vanadium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 3 Calcium ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 20 0 Sulfur ppm ASTM D5185m 20 0 <td< td=""><td></td><td></td><td></td><td></td><th>-</th><td></td><td></td></td<>					-		
Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 90 0 Barium ppm ASTM D5185m 90 0 Maganese ppm ASTM D5185m 0 0 Maganese ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Soliton ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Soliton ppm ASTM D5185m >20 0	••				-		
Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 90 0 Magnaese ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 0 0 Magnese ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 0 3 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 Sodium ppm ASTM D5185m 20 0		ppm		>10	-		
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 0 3 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 20500 18693 Sodium ppm ASTM D5185m 20 0 Sodium ppm ASTM D5185m 20 0 Potassium ppm ASTM D6185m <td< td=""><td>Vanadium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td></td><td></td></td<>	Vanadium	ppm	ASTM D5185m		0		
Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m 90 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 100 0 Calcium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 0 0 Calcium ppm ASTM D5185m 0 0 Stifur ppm ASTM D5185m 23500 18693 Stifur ppm ASTM D5185m >25 <1	Cadmium	ppm	ASTM D5185m		0		
Barium ppm ASTM D5185m 90 0 Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 0 0 Magnesium ppm ASTM D5185m 100 0 Calcium ppm ASTM D5185m 0 3 Calcium ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 Sodium ppm ASTM D5185m >25 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m 100 0 Magnesium ppm ASTM D5185m 100 0 Calcium ppm ASTM D5185m 0 3 Calcium ppm ASTM D5185m 0 3 Calcium ppm ASTM D5185m 0 0 Zinc ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 Sodium ppm ASTM D5185m >25 <1	Boron	ppm	ASTM D5185m	0	0		
Manganesse ppm ASTM D5185m 0 Magnesium ppm ASTM D5185m 100 0 Calcium ppm ASTM D5185m 0 0 Phosphorus ppm ASTM D5185m 0 0 Zinc ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	Barium	ppm	ASTM D5185m	90	0		
Magnesium ppm ASTM D5185m 100 0 Calcium ppm ASTM D5185m 0 0 Phosphorus ppm ASTM D5185m 0 3 Zinc ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	Molybdenum	ppm	ASTM D5185m	0	0		
Magnesium ppm ASTM D5185m 100 0 Calcium ppm ASTM D5185m 0 0 0 Phosphorus ppm ASTM D5185m 0 3 Zinc ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	Manganese	ppm	ASTM D5185m		0		
Calcium ppm ASTM D5185m 0 0 Phosphorus ppm ASTM D5185m 0 3 Zinc ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	-		ASTM D5185m	100	0		
Phosphorus ppm ASTM D5185m 0 3 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 Sodium ppm ASTM D5185m >20 0 Sodium ppm ASTM D5185m >20 0 Potassium ppm ASTM D5185m >20 0 Water % ASTM D6304 >0.05 0.0066 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >5µm ASTM D7647 >1300	Calcium		ASTM D5185m	0	0		
Zinc ppm ASTM D5185m 0 0 Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1	Phosphorus		ASTM D5185m	0	3		
Sulfur ppm ASTM D5185m 23500 18693 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 <1 Sodium ppm ASTM D5185m >25 <1 Sodium ppm ASTM D5185m >20 0 Potassium ppm ASTM D5185m >20 0 Water % ASTM D6304 >0.05 0.006 ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >1µm ASTM D7647 >20 7 <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td>							
Silicon ppm ASTM D5185m >25 <1 Sodium ppm ASTM D5185m >20 0 Potassium ppm ASTM D5185m >20 0 Water % ASTM D6304 >0.05 0.006 opm Water ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >14µm ASTM D7647 >80 17 Particles >21µm ASTM D7647 >20 7 Particles >38µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 Oil Cleanliness							
Sodium ppm ASTM D5185m O Potassium ppm ASTM D5185m >20 O Water % ASTM D6304 >0.05 O.006 ppm Water ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 80 17 Particles >14µm ASTM D7647 >80 17 Particles >21µm ASTM D7647 >20 7 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2 </td <td>CONTAMINANTS</td> <td></td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history2</td>	CONTAMINANTS		method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 0 Potassium ppm ASTM D5185m >20 0 Water % ASTM D6304 >0.05 0.006 opm Water ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >14µm ASTM D7647 >80 17 Particles >14µm ASTM D7647 >20 7 Particles >21µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base <td>Silicon</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>25</td> <th><1</th> <td></td> <td></td>	Silicon	ppm	ASTM D5185m	>25	<1		
Potassium ppm ASTM D5185m >20 0 Water % ASTM D6304 >0.05 0.006 ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >1µm ASTM D7647 >80 17 Particles >21µm ASTM D7647 >20 7 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method	Sodium		ASTM D5185m		0		
Water % ASTM D6304 >0.05 0.006 ppm Water ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >1µm ASTM D7647 >80 17 Particles >21µm ASTM D7647 >20 7 Particles >38µm ASTM D7647 >4 1 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2				>20	-		
ppm Water ppm ASTM D6304 >500 65.4 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >14µm ASTM D7647 >80 17 Particles >14µm ASTM D7647 >20 7 Particles >21µm ASTM D7647 >4 1 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) /17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2					-		
Particles >4µm ASTM D7647 821 Particles >6µm ASTM D7647 >1300 221 Particles >14µm ASTM D7647 >80 17 Particles >14µm ASTM D7647 >80 17 Particles >21µm ASTM D7647 >20 7 Particles >38µm ASTM D7647 >4 1 Particles >38µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2							
Particles >6μm ASTM D7647 >1300 221 Particles >14μm ASTM D7647 >80 17 Particles >21μm ASTM D7647 >20 7 Particles >21μm ASTM D7647 >20 7 Particles >38μm ASTM D7647 >4 1 Particles >38μm ASTM D7647 >3 0 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14µm ASTM D7647 >80 17 Particles >21µm ASTM D7647 >20 7 Particles >38µm ASTM D7647 >4 1 Particles >38µm ASTM D7647 >3 0 Particles >71µm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647		821		
Particles >14μm ASTM D7647 >80 17 Particles >21μm ASTM D7647 >20 7 Particles >38μm ASTM D7647 >4 1 Particles >38μm ASTM D7647 >4 1 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2	•		ASTM D7647	>1300	221		
Particles >21μm ASTM D7647 >20 7 Particles >38μm ASTM D7647 >4 1 Particles >38μm ASTM D7647 >4 1 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2			ASTM D7647	>80	17		
Particles >38μm ASTM D7647 >4 1 Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2			ASTM D7647	>20	7		
Particles >71μm ASTM D7647 >3 0 Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2							
Oil Cleanliness ISO 4406 (c) >/17/13 17/15/11 FLUID DEGRADATION method limit/base current history1 history2	· ·						
	FLUID DEGRADA		method	limi <u>t/base</u>	current	history1	history2



OIL ANALYSIS REPORT







