

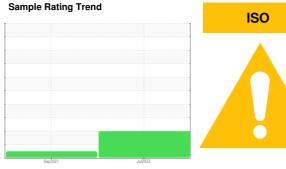
# **OIL ANALYSIS REPORT**

[73059605] 5518025 (S/N 1205)

Component

Compressor

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



## **DIAGNOSIS**

### Recommendation

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

## Contamination

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

### **Fluid Condition**

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

Sample Date   Client Info   26 Jul 2022   17 Sep 2021				Sep2021	Jul2022		
Sample Date   Client Info   26 Jul 2022   17 Sep 2021	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   54293   46831       Oil Age   hrs   Client Info   3000   3000       Oil Changed   Client Info   Changed   Chan	Sample Number		Client Info		KCP40648	KCP36615	
Oil Age         hrs         Client Info         3000         3000	Sample Date		Client Info		26 Jul 2022	17 Sep 2021	
Cilient Info   Changed   Changed	Machine Age	hrs	Client Info		54293	46831	
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         0         0            Chromium         ppm         ASTM D5185m         >10         0         0            Nickel         ppm         ASTM D5185m         >3         0         0            Titanium         ppm         ASTM D5185m         >3         0         0            Silver         ppm         ASTM D5185m         >2         0         <1	Oil Age	hrs	Client Info		3000	3000	
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         0         0	Oil Changed		Client Info		Changed	Changed	
Iron	Sample Status				ABNORMAL	NORMAL	
Chromium         ppm         ASTM D5185m         >10         0         0	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >3 0 0 0  Titanium ppm ASTM D5185m >2 0 0 0  Silver ppm ASTM D5185m >2 0 0 0 0  Silver ppm ASTM D5185m >2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Iron	ppm	ASTM D5185m	>50	0	0	
Titanium ppm ASTM D5185m >3 0 0 0  Silver ppm ASTM D5185m >2 0 0 1  Aluminum ppm ASTM D5185m >10 0 0  Lead ppm ASTM D5185m >10 0 0  Copper ppm ASTM D5185m >10 0 0  Tin ppm ASTM D5185m >10 0 0  Antimony ppm ASTM D5185m >10 0 0  Antimony ppm ASTM D5185m 0 0 0  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 0  Manganese ppm ASTM D5185m 0 0 0  Phosphorus ppm ASTM D5185m 0 0 0  Sulfur ppm ASTM D5185m 0 0 0  Sulfur ppm ASTM D5185m 0 0 0  CONTAMINANTS method limit/base current history1 history2  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m	Chromium	ppm	ASTM D5185m	>10	0	0	
Silver	Nickel	ppm	ASTM D5185m	>3	0	0	
Aluminum ppm ASTM D5185m >10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Titanium	ppm	ASTM D5185m	>3	0	0	
Lead         ppm         ASTM D5185m         >10         0         0            Copper         ppm         ASTM D5185m         >50         7         4            Tin         ppm         ASTM D5185m         >10         0         0            Antimony         ppm         ASTM D5185m         0         0         0            Vanadium         ppm         ASTM D5185m         0         0         0            Cadmium         ppm         ASTM D5185m         0         0         0            Boron         ppm         ASTM D5185m         0         0         <1	Silver	ppm	ASTM D5185m	>2	0	<1	
Copper         ppm         ASTM D5185m         >50         7         4            Tin         ppm         ASTM D5185m         >10         0         0            Antimony         ppm         ASTM D5185m          0            Vanadium         ppm         ASTM D5185m         0         0            Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         -1            Barium         ppm         ASTM D5185m         90         2         0            Molybdenum         ppm         ASTM D5185m         0         0         0            Manganese         ppm         ASTM D5185m         0         0         0            Manganesium         ppm         ASTM D5185m         0         0         0            Calcium         ppm         ASTM D5185m         0         0         0	Aluminum	ppm	ASTM D5185m	>10	0	0	
Tin ppm ASTM D5185m >10 0 0  Antimony ppm ASTM D5185m 0 0  Cadmium ppm ASTM D5185m 0 0 0  ADDITIVES method limit/base current history1 history2  Boron ppm ASTM D5185m 0 0 0  Barium ppm ASTM D5185m 0 0 0  Molybdenum ppm ASTM D5185m 0 0 0  Manganese ppm ASTM D5185m 0 0 0 0  Manganese ppm ASTM D5185m 0 0 0 0  Manganesium ppm ASTM D5185m 0 0 0 0  Manganesium ppm ASTM D5185m 0 0 0 0  Magnesium ppm ASTM D5185m 0 0 0 0  Calcium ppm ASTM D5185m 0 0 0  Silico ppm ASTM D5185m 0 0 0 0  Zinc ppm ASTM D5185m 0 0 0  Sulfur ppm ASTM D5185m 0 0 0  Sulfur ppm ASTM D5185m 0 0 0 0  Function ppm ASTM D5185m 0 0 0 0  Sodium ppm ASTM D5185m 23500 17293 14822  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m >25 <1 0  Sodium ppm ASTM D5185m >20 0 <1  Potassium ppm ASTM D5185m >20 0 <1  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D6304 >500 53.2 96.3  FLUID CLEANLINESS method limit/base current history1 history2  Particles >6μm ASTM D7647 >80 Δ255 6  Particles >9μm ASTM D7647 >80 Δ255 6  Particles >21μm ASTM D7647 >20 Δ86 2  Particles >21μm ASTM D7647 >3 1 0  Particles >71μm ASTM D7647 >3 1 0  Particles >71μm ASTM D7647 >3 1 0  Particles >71μm ASTM D7647 >3 1 0  Cill Cleanliness ISO 4406 (c) >/17/13 Δ20/18/15 12/10	Lead	ppm	ASTM D5185m	>10	0	0	
Tin ppm ASTM D5185m	Copper	ppm	ASTM D5185m	>50	7	4	
Vanadium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         <1            Barium         ppm         ASTM D5185m         90         2         0            Molybdenum         ppm         ASTM D5185m         0         0         0            Manganese         ppm         ASTM D5185m         0         0         0            Magnesium         ppm         ASTM D5185m         0         0         0            Calcium         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         148	Tin	ppm	ASTM D5185m	>10	0	0	
Cadmium         ppm         ASTM D5185m         0         0            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         <1	Antimony	ppm	ASTM D5185m			0	
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	0	
Boron ppm ASTM D5185m 0 0 0  Barium ppm ASTM D5185m 90 2 0 0  Manganese ppm ASTM D5185m 0 0 0  Magnesium ppm ASTM D5185m 100 0 1  Magnesium ppm ASTM D5185m 0 0 0  Magnesium ppm ASTM D5185m 0 0 0  Calcium ppm ASTM D5185m 0 0 0  Phosphorus ppm ASTM D5185m 0 4 5  Zinc ppm ASTM D5185m 0 0 0 0  Sulfur ppm ASTM D5185m 23500 17293 14822  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m >25 <1 0  Sodium ppm ASTM D5185m >20 0 <1  Potassium ppm ASTM D5185m >20 0 <1  Full CLEANLINESS method limit/base current history1 history2  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D7647 >1300  1823 36  Faticles >14μm ASTM D7647 >1300  1823 36  Particles >21μm ASTM D7647 >20  86 2  Particles >21μm ASTM D7647 >20  86 2  Particles >38μm ASTM D7647 >4 12 0  Particles >71μm ASTM D7647 >3 1 0  Oil Cleanliness ISO 4406 (c) >/17/13  20/18/15 12/10	Cadmium	ppm	ASTM D5185m		0	0	
Barium         ppm         ASTM D5185m         90         2         0            Molybdenum         ppm         ASTM D5185m         0         0         0            Manganese         ppm         ASTM D5185m         0         0         0            Magnesium         ppm         ASTM D5185m         100         0         1            Calcium         ppm         ASTM D5185m         0         0         0            Phosphorus         ppm         ASTM D5185m         0         0         0            Zinc         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         14822            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         0	Boron	ppm	ASTM D5185m	0	0	<1	
Manganese         ppm         ASTM D5185m         0         0            Magnesium         ppm         ASTM D5185m         100         0         1            Calcium         ppm         ASTM D5185m         0         0         0            Phosphorus         ppm         ASTM D5185m         0         0         0            Zinc         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         14822            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Barium	ppm	ASTM D5185m	90	2	0	
Magnesium         ppm         ASTM D5185m         1 00         0         1            Calcium         ppm         ASTM D5185m         0         0         0            Phosphorus         ppm         ASTM D5185m         0         4         5            Zinc         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         14822            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Molybdenum	ppm	ASTM D5185m	0	0	0	
Calcium         ppm         ASTM D5185m         0         0         0            Phosphorus         ppm         ASTM D5185m         0         4         5            Zinc         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         14822            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Manganese	ppm	ASTM D5185m		0	0	
Phosphorus         ppm         ASTM D5185m         0         4         5            Zinc         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         14822            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Magnesium	ppm	ASTM D5185m	100	0	1	
Zinc         ppm         ASTM D5185m         0         0         0            Sulfur         ppm         ASTM D5185m         23500         17293         14822            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Calcium	ppm	ASTM D5185m	0	0	0	
Sulfur ppm ASTM D5185m 23500 17293 14822  CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m >25 <1 0  Sodium ppm ASTM D5185m >20 0 <1  Potassium ppm ASTM D5185m >20 0 <1  Water % ASTM D6304 >0.05 0.005 0.009  ppm Water ppm ASTM D6304 >500 53.2 96.3  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D7647 5616 246  Particles >6μm ASTM D7647 >1300 1823 36  Particles >14μm ASTM D7647 >80 255 6  Particles >21μm ASTM D7647 >20 86 2  Particles >38μm ASTM D7647 >4 12 0  Particles >71μm ASTM D7647 >3 1 0  Oil Cleanliness ISO 4406 (c) >/17/13 20/18/15 12/10	Phosphorus	ppm	ASTM D5185m	0	4	5	
CONTAMINANTS method limit/base current history1 history2  Silicon ppm ASTM D5185m >25 <1 0  Sodium ppm ASTM D5185m >20 0 <1  Potassium ppm ASTM D5185m >20 0 <1  Water % ASTM D6304 >0.05 0.005 0.009  ppm Water ppm ASTM D6304 >500 53.2 96.3  FLUID CLEANLINESS method limit/base current history1 history2  Particles >4μm ASTM D7647 5616 246  Particles >6μm ASTM D7647 >1300 1823 36  Particles >14μm ASTM D7647 >80 255 6  Particles >21μm ASTM D7647 >20 86 2  Particles >38μm ASTM D7647 >4 12 0  Particles >71μm ASTM D7647 >3 1 0  Oil Cleanliness ISO 4406 (c) >/17/13 20/18/15 12/10	Zinc	ppm	ASTM D5185m	0	0	0	
Silicon       ppm       ASTM D5185m       >25       <1       0          Sodium       ppm       ASTM D5185m       <1       0          Potassium       ppm       ASTM D5185m       >20       0       <1          Water       %       ASTM D6304       >0.05       0.005       0.009          ppm Water       ppm       ASTM D6304       >500       53.2       96.3          FLUID CLEANLINESS       method       limit/base       current       history1       history2         Particles >4µm       ASTM D7647       5616       246          Particles >6µm       ASTM D7647       >1300       1823       36          Particles >14µm       ASTM D7647       >80       255       6          Particles >21µm       ASTM D7647       >20       86       2          Particles >38µm       ASTM D7647       >4       12       0          Particles >71µm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       20/18/15       12/10	Sulfur	ppm	ASTM D5185m	23500	17293	14822	
Sodium         ppm         ASTM D5185m         <1         0            Potassium         ppm         ASTM D5185m         >20         0         <1	CONTAMINANTS	6	method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         0         <1            Water         %         ASTM D6304         >0.05         0.005         0.009            ppm Water         ppm         ASTM D6304         >500         53.2         96.3            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         5616         246            Particles >6μm         ASTM D7647         >1300         1823         36            Particles >14μm         ASTM D7647         >80         255         6            Particles >21μm         ASTM D7647         >20         86         2            Particles >38μm         ASTM D7647         >4         12         0            Particles >71μm         ASTM D7647         >3         1         0            Oil Cleanliness         ISO 4406 (c)         >/17/13         20/18/15         12/10	Silicon	ppm	ASTM D5185m	>25	<1	0	
Water         %         ASTM D6304         >0.05         0.005         0.009            ppm Water         ppm         ASTM D6304         >500         53.2         96.3            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         5616         246            Particles >6μm         ASTM D7647         >1300         1823         36            Particles >14μm         ASTM D7647         >80         255         6            Particles >21μm         ASTM D7647         >20         86         2            Particles >38μm         ASTM D7647         >4         12         0            Particles >71μm         ASTM D7647         >3         1         0            Oil Cleanliness         ISO 4406 (c)         >/17/13         20/18/15         12/10	Sodium	ppm	ASTM D5185m		<1	0	
Water         %         ASTM D6304         >0.05         0.005         0.009            ppm Water         ppm         ASTM D6304         >500         53.2         96.3            FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         5616         246            Particles >6μm         ASTM D7647         >1300         1823         36            Particles >14μm         ASTM D7647         >80         255         6            Particles >21μm         ASTM D7647         >20         86         2            Particles >38μm         ASTM D7647         >4         12         0            Particles >71μm         ASTM D7647         >3         1         0            Oil Cleanliness         ISO 4406 (c)         >/17/13         20/18/15         12/10	Potassium	ppm	ASTM D5185m	>20	0	<1	
FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4μm         ASTM D7647         5616         246            Particles >6μm         ASTM D7647         >1300         1823         36            Particles >14μm         ASTM D7647         >80         255         6            Particles >21μm         ASTM D7647         >20         86         2            Particles >38μm         ASTM D7647         >4         12         0            Particles >71μm         ASTM D7647         >3         1         0            Oil Cleanliness         ISO 4406 (c)         >/17/13         20/18/15         12/10	Water		ASTM D6304	>0.05	0.005	0.009	
Particles >4μm       ASTM D7647       5616       246          Particles >6μm       ASTM D7647       >1300       1823       36          Particles >14μm       ASTM D7647       >80       255       6          Particles >21μm       ASTM D7647       >20       86       2          Particles >38μm       ASTM D7647       >4       12       0          Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       20/18/15       12/10	ppm Water	ppm	ASTM D6304	>500	53.2	96.3	
Particles >6μm       ASTM D7647       >1300       ▲ 1823       36          Particles >14μm       ASTM D7647       >80       ▲ 255       6          Particles >21μm       ASTM D7647       >20       ▲ 86       2          Particles >38μm       ASTM D7647       >4       ▲ 12       0          Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 20/18/15       12/10	FLUID CLEANLIN	NESS	method	limit/base	current	history1	history2
Particles >14μm       ASTM D7647       >80       Δ 255       6          Particles >21μm       ASTM D7647       >20       Δ 86       2          Particles >38μm       ASTM D7647       >4       Δ 12       0          Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       Δ 20/18/15       12/10	Particles >4µm		ASTM D7647		5616	246	
Particles >21μm       ASTM D7647       >20       ▲ 86       2          Particles >38μm       ASTM D7647       >4       ▲ 12       0          Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 20/18/15       12/10	Particles >6µm		ASTM D7647	>1300	<u> </u>	36	
Particles >38μm       ASTM D7647       >4       ▲ 12       0          Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 20/18/15       12/10	Particles >14μm		ASTM D7647	>80	<b>255</b>	6	
Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 20/18/15       12/10	Particles >21μm		ASTM D7647	>20	<u>^</u> 86	2	
Particles >71μm       ASTM D7647       >3       1       0          Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 20/18/15       12/10	Particles >38µm		ASTM D7647	>4	<u> </u>	0	
	Particles >71μm		ASTM D7647	>3	1	0	
FLUID DEGRADATION method limit/base current history1 history2	Oil Cleanliness		ISO 4406 (c)	>/17/13	<u>^</u> 20/18/15	12/10	
	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2

Acid Number (AN)

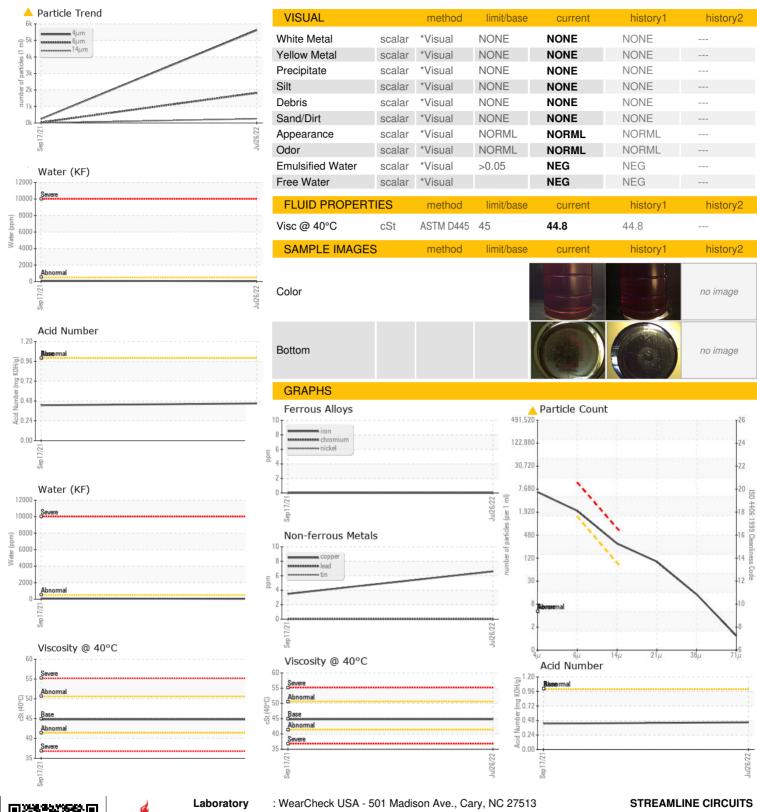
mg KOH/g ASTM D8045 1.0

Contact/Location: SEAN NEVOLI - STRSAN

0.429



# **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number Unique Number

ory : WearCheck No. : KCP40648 nber : 05604493

: NCP40648 : 05604493 : 10073974

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

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)

1410 MARTIN AVE

SANTA CLARA, CA US 95050

Contact: SEAN NEVOLI SEANNEVOLI@SUMMIT-PCB.COM

T: 12) F:

Report Id: STRSAN [WUSCAR] 05604493 (Generated: 02/02/2024 09:45:00) Rev: 1

Contact/Location: SEAN NEVOLI - STRSAN