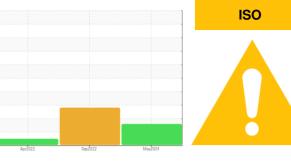


## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# **KAESER 7870119**

### Component Compressor Fluid KAESER SIGMA (OEM) M-460 (--- GAL)

#### DIAGNOSIS

#### Recommendation

No corrective action is recommended at this time. The 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.

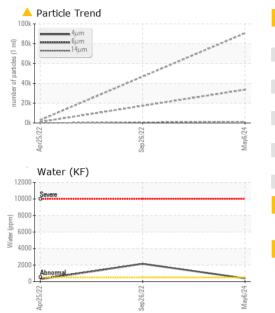
#### Fluid Condition

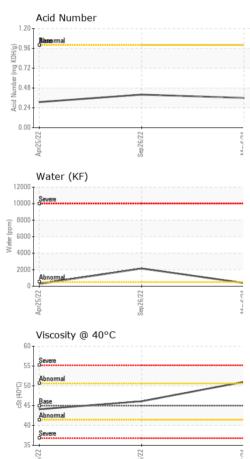
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Machine Age         hrs         Client Info         3737         973         666           Oil Age         hrs         Client Info         Not Changed         SO7         666           Oil Age         Kist         Client Info         Not Changed         Not Changed         Changed           Sample Status         Image         Lint Info         Not Changed         Not Changed         Not Changed           WEAR METALS         method         Imit/base         current         Nistory1         Nistory2           Iron         ppm         ASTM 05185m         >50         1         <1         1           Chromium         ppm         ASTM 05185m         >10         <1         0         0           Silver         ppm         ASTM 05185m         >10         <1         <1         <1           Cadmium         ppm         ASTM 05185m         >10         <1         <1         0         0           ASTM 05185m         >10         <1         <1         0         0         0         0           Cadmium         ppm         ASTM 05185m         0         0         <1         0         0           Manganese         ppm         ASTM 05185m	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age         hrs         Client Info         3737         973         666           Oil Age         hrs         Client Info         2169         307         666           Oil Age         Client Info         Not Changed         Changed         Changed           Sample Status         Image         Limit/base         current         Nato Changed         Nort Changed           WEAR METALS         method         limit/base         current         Nistory1         Nistory2           Iron         ppm         ASTM 05185m         >50         1         <1	Sample Number		Client Info		KCPA016782	KCP47276	KCP45526
Oil Age         hrs         Client Info         2169         307         666           Oil Changed         Client Info         Not Changd         ABNORMAL         ABNORMAL         ABNORMAL         Not Changd           Sample Status         method         limit/base         current         history1         instory2           Iron         ppm         ASTM D5185m         >50         1         <1	Sample Date		Client Info		06 May 2024	26 Sep 2022	25 Apr 2022
Oli Changed     Client Info     Not Changd ABNORMAL     Not Changd ABNORMAL     Changed ABNORMAL     Changed NORMAL       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185n     >50     1     <1	Machine Age	hrs	Client Info		3737	973	666
Sample Status         method         imit/base         current         history1         NORMAL           WEAR METALS         method         imit/base         current         history2         history2           Iron         ppm         ASTM D5185m         >50         1         <1	Oil Age	hrs	Client Info		2169	307	666
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >50         1         <1	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Iron         ppm         ASTM D5185m         >50         1         <1	Sample Status				ABNORMAL	ABNORMAL	NORMAL
Chromium         ppm         ASTM D5185m         >10         <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel         ppm         ASTM D5185m         >3         <1         0         0           Titanium         ppm         ASTM D5185m         >2         <1	Iron	ppm	ASTM D5185m	>50	1	<1	1
Titanium         ppm         ASTM D5185m         >3         <1         0         0           Silver         ppm         ASTM D5185m         >2         <1	Chromium	ppm	ASTM D5185m	>10	<1	0	<1
Silver         ppm         ASTM D5185m         >2         <1         0         <1           Aluminum         ppm         ASTM D5185m         >10         2         <1	Nickel	ppm	ASTM D5185m	>3	<1	0	0
Aluminum         ppm         ASTM D5165m         >10         2         <1         <1           Lead         ppm         ASTM D5165m         >10         <1	Titanium	ppm	ASTM D5185m	>3	<1	0	0
Lead         ppm         ASTM D5185m         >10         <1         <1         <1           Copper         ppm         ASTM D5185m         >50         10         10         1           Tin         ppm         ASTM D5185m         >10         <1	Silver	ppm	ASTM D5185m	>2	<1	0	<1
Copper         ppm         ASTM D5185m         >50         10         10         1           Tin         ppm         ASTM D5185m         >10         <1	Aluminum	ppm	ASTM D5185m	>10	2	<1	<1
Copper         ppm         ASTM D5185m         >50         10         10         1           Tin         ppm         ASTM D5185m         >10         <1	Lead		ASTM D5185m	>10	<1	<1	<1
Tin       ppm       ASTM D5185m       >10       <1       <1       0         Vanadium       ppm       ASTM D5185m       <1       0       0         ADDITIVES       method       limit/base       current       history1       history2         Boron       ppm       ASTM D5185m       0       0       0       0       0         Barium       ppm       ASTM D5185m       0       0       0       0       0         Magnese       ppm       ASTM D5185m       0       <1       0       0         Magnesium       ppm       ASTM D5185m       0       4       3       2         Phosphorus       ppm       ASTM D5185m       0       4       3       2         Sulfur       ppm       ASTM D5185m       0       4       16       2         Sulfur       ppm       ASTM D5185m       0       4       16       2         Sulfur       ppm       ASTM D5185m       0       4       16       2         Sulfur       ppm       ASTM D5185m       25       <1       7       <1         Sulfur       ppm       ASTM D5185m       25       <1       7	Copper		ASTM D5185m	>50	10	10	
Vanadium         ppm         ASTM D5185m         <1         0         <1           Cadmium         ppm         ASTM D5185m         <1			ASTM D5185m	>10	<1	<1	0
Cadmium         ppm         ASTM D5185m         <1         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         0         0         0         0           Barium         ppm         ASTM D5185m         0         <1         0         0           Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         0         <1         0         <1         <1           Magnesium         ppm         ASTM D5185m         0         4         3         2           Calcium         ppm         ASTM D5185m         0         4         3         2           Sulfur         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         225         <1         7         <1           Sodium         ppm         ASTM D5185m         20         10         6	Vanadium		ASTM D5185m		<1	0	<1
Boron         ppm         ASTM D5185m         0         0         0         0         0           Barium         ppm         ASTM D5185m         90         55         20         23           Molybdenum         ppm         ASTM D5185m         0         <1	Cadmium		ASTM D5185m		<1		0
Barium         ppm         ASTM D5185m         90         55         20         23           Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         100         73         84         67           Calcium         ppm         ASTM D5185m         100         73         84         67           Calcium         ppm         ASTM D5185m         0         4         3         2           Phosphorus         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         0.55         <1         7         <1           Solium         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         10         6         14           Water         %         ASTM D5185m         >20         10         6         14           Water         ppm         ASTM D6304         >500         391<	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum         ppm         ASTM D5185m         0         <1         0         0           Manganese         ppm         ASTM D5185m         100         73         84         67           Calcium         ppm         ASTM D5185m         100         73         84         67           Calcium         ppm         ASTM D5185m         0         4         3         2           Phosphorus         ppm         ASTM D5185m         0         0         433         8           Zinc         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Boron	ppm	ASTM D5185m	0	0	0	0
Manganese         ppm         ASTM D5185m         0         <1         <1           Magnesium         ppm         ASTM D5185m         100         73         84         67           Calcium         ppm         ASTM D5185m         0         4         3         2           Phosphorus         ppm         ASTM D5185m         0         0         433         8           Zinc         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Barium	ppm	ASTM D5185m	90	55	20	23
Magnesium         ppm         ASTM D5185m         100         73         84         67           Calcium         ppm         ASTM D5185m         0         4         3         2           Phosphorus         ppm         ASTM D5185m         0         0         43         8           Zinc         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Molybdenum	ppm	ASTM D5185m	0	<1	0	0
Calcium       ppm       ASTM D5185m       0       4       3       2         Phosphorus       ppm       ASTM D5185m       0       0       43       8         Zinc       ppm       ASTM D5185m       0       4       16       2         Sulfur       ppm       ASTM D5185m       23500       23804       24622       11473         CONTAMINANTS       method       limit/base       current       history1       history2         Silicon       ppm       ASTM D5185m       >25       <1	Manganese	ppm	ASTM D5185m		0	<1	<1
Phosphorus         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Magnesium	ppm	ASTM D5185m	100	73	84	67
Zinc         ppm         ASTM D5185m         0         4         16         2           Sulfur         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Calcium	ppm	ASTM D5185m	0	4	3	2
Sulfur         ppm         ASTM D5185m         23500         23804         24622         11473           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1         7         <1           Sodium         ppm         ASTM D5185m         >25         <1         7         <1           Sodium         ppm         ASTM D5185m         >20         10         6         14           Water         %         ASTM D5304         >0.05         0.039         △         0.215         0.028           ppm Water         ppm         ASTM D6304         >500         391         △         2150         283.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         90618          2957           Particles >6µm         ASTM D7647         >1300         A 33648          1095           Particles >1µm         ASTM D7647         >20         183          11           Particles >21µm         ASTM D7647         >3	Phosphorus	ppm	ASTM D5185m	0	0	43	8
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	Zinc	ppm	ASTM D5185m	0	4	16	2
Silicon       ppm       ASTM D5185m       >25       <1       7       <1         Sodium       ppm       ASTM D5185m       29       11       10         Potassium       ppm       ASTM D5185m       >20       10       6       14         Water       %       ASTM D6304       >0.05       0.039       ▲ 0.215       0.028         ppm Water       ppm       ASTM D6304       >500       391       ▲ 2150       283.6         FLUID CLEANLINESS       method       limit/base       current       history1       history2         Particles >4µm       ASTM D7647       90618        2957         Particles >6µm       ASTM D7647       >1300       ▲ 33648        74         Particles >14µm       ASTM D7647       >20       ▲ 183        74         Particles >21µm       ASTM D7647       >20       ▲ 183        11         Particles >38µm       ASTM D7647       >3       0        0         Oil Cleanliness       ISO 4406 (c)       >/17/13       24/22/18        19/17/13         FLUID DEGRADATION       method       limit/base       current       history1 <t< td=""><td>Sulfur</td><td>ppm</td><td>ASTM D5185m</td><td>23500</td><th>23804</th><td>24622</td><td>11473</td></t<>	Sulfur	ppm	ASTM D5185m	23500	23804	24622	11473
Sodium         ppm         ASTM D5185m         29         11         10           Potassium         ppm         ASTM D5185m         >20         10         6         14           Water         %         ASTM D6304         >0.05         0.039         0.215         0.028           ppm Water         ppm         ASTM D6304         >500         391         2150         283.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         90618          2957           Particles >6µm         ASTM D7647         >100         33648          1095           Particles >14µm         ASTM D7647         >80         1459          74           Particles >21µm         ASTM D7647         >20         183          11           Particles >38µm         ASTM D7647         >3         0          0           Oil Cleanliness         ISO 4406 (c)         >/17/13         24/22/18          19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         10         6         14           Water         %         ASTM D6304         >0.05         0.039         △         0.215         0.028           ppm         Water         ppm         ASTM D6304         >500         391         △         2150         283.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         90618          2957           Particles >6µm         ASTM D7647         >1300         △         33648          1095           Particles >14µm         ASTM D7647         >80         △         1459          74           Particles >21µm         ASTM D7647         >20         △         183          11           Particles >38µm         ASTM D7647         >3         O          0           Oil Cleanliness         ISO 4406 (c)         >/17/13         24/22/18          19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2	Silicon	ppm	ASTM D5185m	>25	<1	7	<1
Water         %         ASTM D6304         >0.05         0.039         ▲ 0.215         0.028           ppm Water         ppm         ASTM D6304         >500         391         ▲ 2150         283.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         90618          2957           Particles >6µm         ASTM D7647         >1300         ▲ 33648          1095           Particles >14µm         ASTM D7647         >80         ▲ 1459          74           Particles >21µm         ASTM D7647         >20         ▲ 183          11           Particles >38µm         ASTM D7647         >3         0          0           Oil Cleanliness         ISO 4406 (c)         >/17/13         ▲ 24/22/18          19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2	Sodium	ppm	ASTM D5185m		29	11	10
ppm Water         ppm         ASTM D6304         >500 <b>391</b> ▲ 2150         283.6           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         90618          2957           Particles >6µm         ASTM D7647         >1300         ▲ 33648          1095           Particles >14µm         ASTM D7647         >80         ▲ 1459          74           Particles >21µm         ASTM D7647         >20         ▲ 183          11           Particles >38µm         ASTM D7647         >4         2          1           Particles >71µm         ASTM D7647         >3         0          0           Oil Cleanliness         ISO 4406 (c)        /17/13         24/22/18          19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2	Potassium	ppm	ASTM D5185m	>20	10	6	14
FLUID CLEANLINESS       method       limit/base       current       history1       history2         Particles >4µm       ASTM D7647       90618        2957         Particles >6µm       ASTM D7647       >1300       33648        1095         Particles >14µm       ASTM D7647       >80       1459        74         Particles >21µm       ASTM D7647       >20       183        11         Particles >21µm       ASTM D7647       >4       2        11         Particles >38µm       ASTM D7647       >4       2        1         Particles >71µm       ASTM D7647       >3       0        0         Oil Cleanliness       ISO 4406 (c)       >/17/13       24/22/18        19/17/13         FLUID DEGRADATION       method       limit/base       current       history1       history2	Water	%	ASTM D6304	>0.05	0.039	<b>0.215</b>	0.028
Particles >4μm       ASTM D7647       90618        2957         Particles >6μm       ASTM D7647       >1300       ▲ 33648        1095         Particles >14μm       ASTM D7647       >80       ▲ 1459        74         Particles >21μm       ASTM D7647       >20       ▲ 183        11         Particles >21μm       ASTM D7647       >4       2        11         Particles >38μm       ASTM D7647       >4       2        1         Particles >71μm       ASTM D7647       >3       0        0         Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 24/22/18        19/17/13         FLUID DEGRADATION       method       limit/base       current       history1       history2	ppm Water	ppm	ASTM D6304	>500	391	<b>A</b> 2150	283.6
Particles >6µm       ASTM D7647       >1300       ▲ 33648        1095         Particles >14µm       ASTM D7647       >80       ▲ 1459        74         Particles >21µm       ASTM D7647       >20       ▲ 183        11         Particles >38µm       ASTM D7647       >4       2        1         Particles >38µm       ASTM D7647       >4       2        1         Particles >71µm       ASTM D7647       >3       0        0         Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 24/22/18        19/17/13         FLUID DEGRADATION       method       limit/base       current       history1       history2	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14µm       ASTM D7647       >80       ▲ 1459        74         Particles >21µm       ASTM D7647       >20       ▲ 183        11         Particles >38µm       ASTM D7647       >4       2        1         Particles >38µm       ASTM D7647       >3       0        0         Particles >71µm       ASTM D7647       >3       0        0         Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 24/22/18        19/17/13         FLUID DEGRADATION       method       limit/base       current       history1       history2	Particles >4µm		ASTM D7647				2957
Particles >21μm         ASTM D7647         >20         ▲ 183          11           Particles >38μm         ASTM D7647         >4         2          1           Particles >38μm         ASTM D7647         >4         2          1           Particles >71μm         ASTM D7647         >3         0          0           Oil Cleanliness         ISO 4406 (c)         >/17/13         24/22/18          19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2			ASTM D7647	>1300	<u> </u>		1095
Particles >38μm         ASTM D7647         >4         2          1           Particles >71μm         ASTM D7647         >3         0          0           Oil Cleanliness         ISO 4406 (c)         >/17/13 <b>24/22/18</b> 19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >14µm		ASTM D7647	>80	<u> </u>		74
Particles >71μm         ASTM D7647         >3         0          0           Oil Cleanliness         ISO 4406 (c)         >/17/13         24/22/18          19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >21µm		ASTM D7647	>20	<u> </u>		11
Oil Cleanliness         ISO 4406 (c)         >/17/13 <b>24/22/18</b> 19/17/13           FLUID DEGRADATION         method         limit/base         current         history1         history2			ASTM D7647	>4	2		1
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0		0
	Oil Cleanliness		ISO 4406 (c)	>/17/13	<b>A</b> 24/22/18		19/17/13
Acid Number (AN) mg KOH/g ASTM D8045 1.0 0.36 0.40 0.31	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.36	0.40	0.31



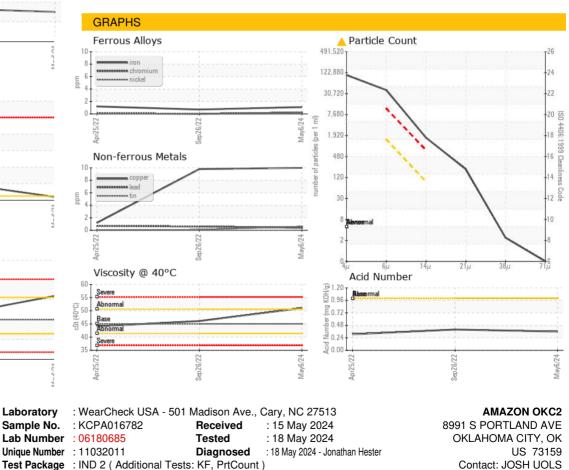
## **OIL ANALYSIS REPORT**





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	🔺 MODER	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	- HAZY	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	NEG	0.2%	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45	51.0	46.1	44.1
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Rottom						

Bottom





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)

Certificate 12367

Laboratory

Contact/Location: JOSH UOLS - AMAOKLOKC2

T:

F:

joshuols@amazon.com