

## **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

# KAESER SM 10 6581125 (S/N 1083)

Component Compressor Fluid

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

#### 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 component. The amount and size of particulates present in the system is acceptable.

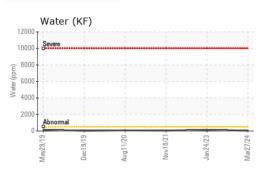
### Fluid Condition

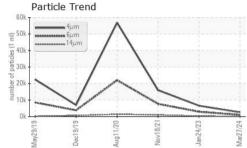
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

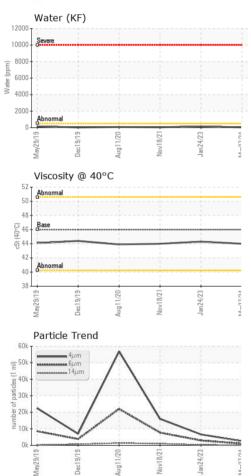
Sample Date     Client Info     27 Mar 2024     24 Jan 2023     18 Nov 2021       Machine Age     hrs     Client Info     22978     17875     12919       Oil Age     hrs     Client Info     0     2596     2782       Oil Changed     Client Info     N/A     Changed     Not Changd       Sample Status     method     limit/base     current     history1     history2       Iron     ppm     ASTM 05185m     >50     0     0     -1       Chromium     ppm     ASTM 05185m     >3     -1     0     0       Nickel     ppm     ASTM 05185m     >3     -1     0     0       Sliver     ppm     ASTM 05185m     >10     0     0     0       Copper     ppm     ASTM 05185m     >10     0     0     0       Antimory     ppm     ASTM 05185m     0     0     0     0       Antimory     ppm     ASTM 05185m     0     0     0     0       Antimor	SAMPLE INFORM	<b>NATION</b>	method	limit/base	current	history1	history2
Machine Age     hrs     Client Info     22978     17875     12919       Oil Age     hrs     Client Info     N/A     Changed     2782       Oil Changed     Client Info     N/A     Changed     Not Changed       Sample Status     Imit/base     current     HalvORMAL     ABNORMAL       VEAR METALS     method     Imit/base     current     history1     History2       Iron     ppm     ASTM 05185n     >50     0     0     <1       Chromium     ppm     ASTM 05185n     >3     <1     0     0       Nickel     ppm     ASTM 05185n     >3     <1     0     0       Silver     ppm     ASTM 05185n     >10     2     0     1       Lead     ppm     ASTM 05185n     >10     <1     0     0       Vanadium     ppm     ASTM 05185n     >10     <1     0     0       Astm 05185n     0     <1     0     0     0     0       Vanadium	Sample Number		Client Info		KC120895	KC102136	KC95868
Oil Age     hrs     Client Info     0     2596     2782       Oil Changed     Client Info     N/A     Changed     Not Changed       Sample Status     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     0     0     <1       Chromium     ppm     ASTM D5185m     >3     0     0     0       Nickel     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >10     2     0     1       Auminum     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >10     0     0     0       Cadmium     ppm     ASTM D5185m     >10     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     0     0	Sample Date		Client Info		27 Mar 2024	24 Jan 2023	18 Nov 2021
Oil Changed Sample Status     Client Info     N/A NORMAL     Changed ABNORMAL     Not Changed ABNORMAL     Not Changed ABNORMAL       WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     0     0     <1       Chromium     ppm     ASTM D5185m     >30     0     0     0       Nickel     ppm     ASTM D5185m     >30     0     0     0       Silver     ppm     ASTM D5185m     >30     0     0     0       Lead     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >10     <1     0     0       Vanadium     ppm     ASTM D5185m     >10     <1     0     0       Vanadium     ppm     ASTM D5185m     0     0     1     1       Barium     ppm     ASTM D5185m     0     0     0     0       Mandanese     ppm     ASTM D5185m     0	Machine Age	hrs	Client Info		22978	17875	12919
Sample Status     method     Imilibase     current     history1     history2       Iron     ppm     ASTM D5185m     >50     0     0     <1       Chromium     ppm     ASTM D5185m     >30     0     0     0       Nickel     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >3     <1     0     0       Silver     ppm     ASTM D5185m     >30     0     0     0       Copper     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >10     <1     0     0       Copper     ppm     ASTM D5185m     >10     <1     0     0       Cadmium     ppm     ASTM D5185m     <1     0     0     0       AstM D5185m     90     <1     0     0     0     0       AstM D5185m     90     <1     1     <1     <1	Oil Age	hrs	Client Info		0	2596	2782
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >50     0     0     <1       Chromium     ppm     ASTM D5185m     >3     0     0     0       Nickel     ppm     ASTM D5185m     >3     <1     0     0       Silver     ppm     ASTM D5185m     >2     <1     0     <1       Auminum     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     >10     0     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Boron     ppm     ASTM D5185m     0     0     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0	Oil Changed		Client Info		N/A	Changed	Not Changd
Iron     ppm     ASTM D5185m     >50     0     0     <1	Sample Status				NORMAL	ABNORMAL	ABNORMAL
Chromium     ppm     ASTM D5185m     >10     <1	WEAR METALS		method	limit/base	current	history1	history2
Chromium     ppm     ASTM D5185m     >10     <1     0     0       Nickel     ppm     ASTM D5185m     >3     0     0     0       Silver     ppm     ASTM D5185m     >2     -1     0     0       Silver     ppm     ASTM D5185m     >2     -1     0     -1       Lead     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >50     4     4     12       Tin     ppm     ASTM D5185m     >10     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Antimony     ppm     ASTM D5185m     0     0     0     0       Barium     ppm     ASTM D5185m     0     0     0     0       Maganesium     ppm     ASTM D5185m     0     0     0     0 <	Iron	ppm	ASTM D5185m	>50	0	0	<1
Nickel     ppm     ASTM D5185m     >3     0     0     0       Titanium     ppm     ASTM D5185m     >3     <1     0     0       Silver     ppm     ASTM D5185m     >2     <1     0     <1       Aluminum     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >10     2     0     0       Copper     ppm     ASTM D5185m     >50     4     4     12       Tin     ppm     ASTM D5185m     0     1     0     0       Vanadium     ppm     ASTM D5185m     0     0     0     0       Cadmium     ppm     ASTM D5185m     0     0     1     1       Barium     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     2     3     0     0	Chromium		ASTM D5185m	>10	<1	0	0
Titanium     ppm     ASTM D5185m     >3     <1	Nickel				0	0	0
Silver     ppm     ASTM D5185m     >2     <1     0     <1       Aluminum     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >10     4     4     12       Tin     ppm     ASTM D5185m     >10     <1	Titanium			>3			0
Aluminum     ppm     ASTM D5185m     >10     2     0     1       Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     4     4     12       Tin     ppm     ASTM D5185m     >10     <1							
Lead     ppm     ASTM D5185m     >10     0     0     0       Copper     ppm     ASTM D5185m     >50     4     4     12       Tin     ppm     ASTM D5185m     >10     <1							
Copper     ppm     ASTM D5185m     >50     4     4     12       Tin     ppm     ASTM D5185m     >10     <1							
Tin     ppm     ASTM D5185m     >10     <1     0     0       Antimony     ppm     ASTM D5185m      0     0     0       Vanadium     ppm     ASTM D5185m     <1							
Antimony     ppm     ASTM D5185m       0       Vanadium     ppm     ASTM D5185m     <1     0     0       Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     1     Basium     ppm     ASTM D5185m     0     0     0       Barium     ppm     ASTM D5185m     90     <1     0     0     0       Magnese     ppm     ASTM D5185m     90     <1     1     <1     <1       Calcium     ppm     ASTM D5185m     0     0     0     0     0       Phosphorus     ppm     ASTM D5185m     2     3     0     0     0     0       Silicon     ppm     ASTM D5185m     2     <1     1     0     0     0     0     0     0     0     0     0     0     0							
Vanadium     ppm     ASTM D5185m     <1				>10			
Cadmium     ppm     ASTM D5185m     0     0     0       ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     1       Barium     ppm     ASTM D5185m     90     <1	•						
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0     0     1       Barium     ppm     ASTM D5185m     90     <1							
Boron     ppm     ASTM D5185m     0     0     1       Barium     ppm     ASTM D5185m     90     <1     0     0       Molybdenum     ppm     ASTM D5185m     0     0     0     0       Manganese     ppm     ASTM D5185m     90     <1     1     <1     <1       Calcium     ppm     ASTM D5185m     90     <1     1     <1     <1       Calcium     ppm     ASTM D5185m     90     <1     1     <1     <1       Calcium     ppm     ASTM D5185m     2     3     0     0     0       Phosphorus     ppm     ASTM D5185m     2     2     7     Zinc     7       Zinc     ppm     ASTM D5185m     25     2     <1     1     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >20     1     1     0       Vater     % </th <th></th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th></th> <th></th>		ppm	ASTM D5185m		0		
Barium     ppm     ASTM D5185m     90     <1	ADDITIVES		method	limit/base		history1	history2
Molybdenum     ppm     ASTM D5185m     0     0     0       Manganese     ppm     ASTM D5185m     90     <1     1     <1       Calcium     ppm     ASTM D5185m     90     <1     1     <1       Calcium     ppm     ASTM D5185m     2     3     0     0       Phosphorus     ppm     ASTM D5185m     2     2     7       Zinc     ppm     ASTM D5185m     2     2     7       Zinc     ppm     ASTM D5185m     2     2     7       Silicon     ppm     ASTM D5185m     2     2     1     1       Sodium     ppm     ASTM D5185m     >20     1     1     0       Water     %     ASTM D6304     >0.05     0.003     0.014     0.004       pm Water     pm     ASTM D7647     2499     6581     15958       Particles >4µm     ASTM D7647     >1300     964     2918     7659       Particles >6µm     ASTM D7647	Boron	ppm					
Manganese     ppm     ASTM D5185m     0     0     0     0       Magnesium     ppm     ASTM D5185m     90     <1     1     <1       Calcium     ppm     ASTM D5185m     2     3     0     0       Phosphorus     ppm     ASTM D5185m     2     2     7       Zinc     ppm     ASTM D5185m     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     2     <1     1       Sodium     ppm     ASTM D5185m     >20     1     1     0       Vater     %     ASTM D6304     >0.05     0.003     0.014     0.004       pm Water     pm     ASTM D7647     2499     6581     15958       Particles >4µm     ASTM D7647     >1300     964     2918     7659       Particles >514µm     ASTM D7647     >80     60     257     1010       Particle	Barium	ppm	ASTM D5185m	90		0	0
Magnesium     ppm     ASTM D5185m     90     <1	Molybdenum	ppm	ASTM D5185m				
Calcium     ppm     ASTM D5185m     2     3     0     0       Phosphorus     ppm     ASTM D5185m     2     2     7       Zinc     ppm     ASTM D5185m     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     2     <1	Manganese	ppm	ASTM D5185m		0	0	0
Phosphorus     ppm     ASTM D5185m     2     2     7       Zinc     ppm     ASTM D5185m     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     2     <1	Magnesium	ppm	ASTM D5185m	90	<1	1	
Zinc     ppm     ASTM D5185m     0     0     0       CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     2     <1     1       Sodium     ppm     ASTM D5185m     >20     1     1     0       Potassium     ppm     ASTM D6304     >0.05     0.003     0.014     0.004       Water     %     ASTM D6304     >500     39     142.4     48.5       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     2499     6581     15958       Particles >6µm     ASTM D7647     >1300     964     2918     7659       Particles >1µm     ASTM D7647     >20     8     47     205       Particles >21µm     ASTM D7647     >20     8     47     205       Particles >38µm     ASTM D7647     >3     0     0     0     0     0	Calcium	ppm	ASTM D5185m	2	3	0	0
CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >25     2     <1     1       Sodium     ppm     ASTM D5185m     >20     1     1     0       Potassium     ppm     ASTM D5185m     >20     1     1     0       Water     %     ASTM D6304     >0.05     0.003     0.014     0.004       ppm Water     ppm     ASTM D6304     >500     39     142.4     48.5       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     2499     6581     15958       Particles >6µm     ASTM D7647     >1300     964     2918     7659       Particles >1µm     ASTM D7647     >20     8     47     205       Particles >21µm     ASTM D7647     >20     8     47     205       Particles >71µm     ASTM D7647     3     0     0     0     0	Phosphorus	ppm	ASTM D5185m		2	2	7
Silicon   ppm   ASTM D5185m<>25   2   <1	Zinc	ppm	ASTM D5185m		0	0	0
Sodium     ppm     ASTM D5185m     0     0     0     0       Potassium     ppm     ASTM D5185m     >20     1     1     0       Water     %     ASTM D6304     >0.05     0.003     0.014     0.004       ppm Water     ppm     ASTM D6304     >500     39     142.4     48.5       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     2499     6581     15958       Particles >6µm     ASTM D7647     >1300     964     2918     7659       Particles >14µm     ASTM D7647     >80     60     257     1010       Particles >21µm     ASTM D7647     >20     8     47     205       Particles >38µm     ASTM D7647     >3     0     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/17/13     20/19/15     20/17       FLUID DEGRADATION     method     limit/base     current     history1     <	CONTAMINANTS	3	method	limit/base	current	history1	history2
Potassium     ppm     ASTM D5185m     >20     1     1     0       Water     %     ASTM D6304     >0.05     0.003     0.014     0.004       ppm     Water     ppm     ASTM D6304     >500     39     142.4     48.5       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     2499     6581     15958       Particles >6µm     ASTM D7647     >1300     964     2918     7659       Particles >14µm     ASTM D7647     >20     8     477     205       Particles >21µm     ASTM D7647     >20     8     477     205       Particles >38µm     ASTM D7647     >3     0     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/17/13     20/19/15     20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2	Silicon	ppm	ASTM D5185m	>25	2	<1	1
Water   %   ASTM D6304   >0.05   0.003   0.014   0.004     ppm Water   ppm   ASTM D6304   >500   39   142.4   48.5     FLUID CLEANLINESS   method   limit/base   current   history1   history2     Particles >4µm   ASTM D7647   2499   6581   15958     Particles >6µm   ASTM D7647   >1300   964   2918   7659     Particles >14µm   ASTM D7647   >20   8   477   205     Particles >21µm   ASTM D7647   >20   8   477   205     Particles >38µm   ASTM D7647   >4   0   2   9     Particles >71µm   ASTM D7647   3   0   0   0     Oil Cleanliness   ISO 4406 (c)   >/17/13   18/17/13   20/19/15   20/17     FLUID DEGRADATION   method   limit/base   current   history1   history2	Sodium	ppm	ASTM D5185m		0	0	0
ppm Water     ppm     ASTM D6304     >500 <b>39</b> 142.4     48.5       FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     2499     6581     15958       Particles >6µm     ASTM D7647     >1300     964     2918     7659       Particles >14µm     ASTM D7647     >80     60     2577     1010       Particles >21µm     ASTM D7647     >20     8     477     205       Particles >38µm     ASTM D7647     >4     0     2     9       Particles >71µm     ASTM D7647     3     0     0     0       Oil Cleanliness     ISO 4406 (c)    /17/13     18/17/13     20/19/15     20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2	Potassium	ppm	ASTM D5185m	>20	1	1	0
FLUID CLEANLINESS   method   limit/base   current   history1   history2     Particles >4µm   ASTM D7647   2499   6581   15958     Particles >6µm   ASTM D7647   >1300   964   2918   7659     Particles >14µm   ASTM D7647   >80   60   257   1010     Particles >21µm   ASTM D7647   >20   8   477   205     Particles >38µm   ASTM D7647   >4   0   2   9     Particles >71µm   ASTM D7647   >3   0   0   0     Oil Cleanliness   ISO 4406 (c)   >/17/13   18/17/13   20/19/15   20/17	Water	%	ASTM D6304	>0.05	0.003	0.014	0.004
Particles >4µm   ASTM D7647   2499   6581   15958     Particles >6µm   ASTM D7647   >1300   964   2918   7659     Particles >14µm   ASTM D7647   >80   60   257   1010     Particles >21µm   ASTM D7647   >20   8   477   205     Particles >21µm   ASTM D7647   >20   8   477   205     Particles >38µm   ASTM D7647   >4   0   2   9     Particles >71µm   ASTM D7647   >3   0   0   0     Oil Cleanliness   ISO 4406 (c)   >/17/13   18/17/13   20/19/15   20/17     FLUID DEGRADATION   method   limit/base   current   history1   history2	ppm Water	ppm	ASTM D6304	>500	39	142.4	48.5
Particles >6µm   ASTM D7647   >1300   964   2918   7659     Particles >14µm   ASTM D7647   >80   60   257   1010     Particles >21µm   ASTM D7647   >20   8   477   205     Particles >38µm   ASTM D7647   >4   0   2   9     Particles >71µm   ASTM D7647   >3   0   0   0     Oil Cleanliness   ISO 4406 (c)   >/17/13   18/17/13   20/19/15   20/17     FLUID DEGRADATION   method   limit/base   current   history1   history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14µm   ASTM D7647   >80   60   ▲ 257   ▲ 1010     Particles >21µm   ASTM D7647   >20   8   ▲ 47   ▲ 205     Particles >38µm   ASTM D7647   >4   0   2   9     Particles >71µm   ASTM D7647   >3   0   0   0     Oil Cleanliness   ISO 4406 (c)   >/17/13   18/17/13   ▲ 20/19/15   ▲ 20/17     FLUID DEGRADATION   method   limit/base   current   history1   history2	Particles >4µm		ASTM D7647		2499	6581	15958
Particles >21μm     ASTM D7647     >20     8     47     205       Particles >38μm     ASTM D7647     >4     0     2     9       Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/17/13     20/19/15     20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >6µm		ASTM D7647	>1300	964	<u> </u>	▲ 7659
Particles >38μm     ASTM D7647     >4     0     2     9       Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/17/13     20/19/15     20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >14µm		ASTM D7647	>80	60	<b>4</b> 257	<b>1</b> 010
Particles >71μm     ASTM D7647     >3     0     0     0       Oil Cleanliness     ISO 4406 (c)     >/17/13     18/17/13     ▲ 20/19/15     ▲ 20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >21µm		ASTM D7647	>20	8	<b>4</b> 7	<b>A</b> 205
Oil Cleanliness     ISO 4406 (c) >/17/13     18/17/13     ▲ 20/19/15     ▲ 20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >38µm		ASTM D7647	>4	0	2	9
Oil Cleanliness     ISO 4406 (c) >/17/13     18/17/13     ▲ 20/19/15     ▲ 20/17       FLUID DEGRADATION     method     limit/base     current     history1     history2			ASTM D7647	>3	0	0	0
					18/17/13	▲ 20/19/15	▲ 20/17
	FLUID DEGRADA		method	limit/base	current	history1	history2
	Acid Number (AN)			0.4	0.31	0.34	



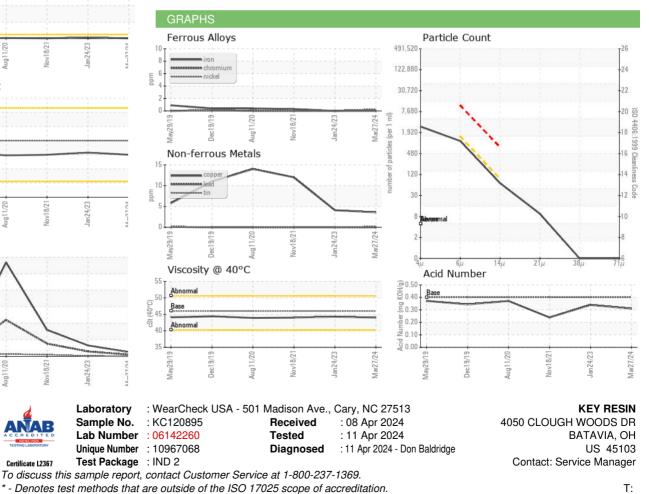
# **OIL ANALYSIS REPORT**







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	LIGHT
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	>0.05	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	44.0	44.3	44.0
Visc @ 40°C SAMPLE IMAGES		ASTM D445 method	46 limit/base	44.0 current	44.3 history1	44.0 history2
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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: KEYBATOH [WUSCAR] 06142260 (Generated: 04/12/2024 07:26:49) Rev: 1

Certificate 12367

Contact/Location: Service Manager - KEYBATOH

F: