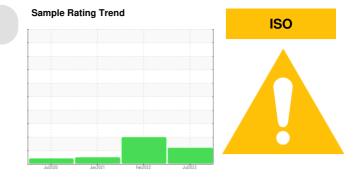


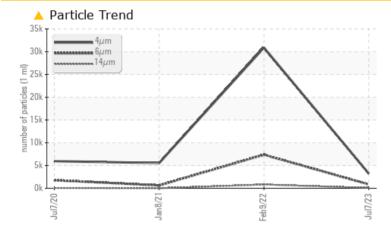
# **PROBLEM SUMMARY**



# Machine Id 3223717 (S/N 1433) Component

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

# COMPONENT CONDITION SUMMARY



# 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.

PROBLEMATIC T	EST RESULTS				
Sample Status			ATTENTION	ABNORMAL	NORMAL
Particles >14µm	ASTM D7647	>80	<u> </u>	<b>8</b> 24	16
Particles >21µm	ASTM D7647	>20	<u> </u>	<b>1</b> 71	4
Oil Cleanliness	ISO 4406 (c)	>/17/13	<u> </u>	<u> </u>	16/11

Customer Id: BACCAN Sample No.: KCPA001943 Lab Number: 05899346 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 jhester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

es >14μm       ASTM D7647       >80       ▲ 82       ▲ 824       16         es >21μm       ASTM D7647       >20       ▲ 28       ▲ 171       4         eanliness       ISO 4406 (c)       >/17/13       ▲ 19/17/14       ▲ 22/20/17       16/11
· · · · · · · · · · · · · · · · · · ·
eanliness ISO 4406 (c) >/17/13 🔺 19/17/14 🔺 22/20/17 16/11

### **RECOMMENDED ACTIONS**

There are no recommended actions for this sample.

### HISTORICAL DIAGNOSIS

# 09 Feb 2022 Diag: Angela Borella



The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

#### 08 Jan 2021 Diag: Jonathan Hester



 $\checkmark$ 

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

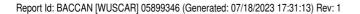


view report

07 Jul 2020 Diag: Doug Bogart

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.







# **OIL ANALYSIS REPORT**

# Sample Rating Trend ISO

Machine Id 3223717 (S/N 1433) Component

Compressor Fluid KAESER SIGMA (OEM) S-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 moderate 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.

Oil Changed Sample StatusClient InfoN/ANot Changed ATTENTIONChanged ABNORMALNORMALWEAR METALSmethodlimit/basecurrenthistory1history2IronppmASTM D5185m>50011ChromiumppmASTM D5185m>30000NickelppmASTM D5185m>3000NickelppmASTM D5185m>3000SilverppmASTM D5185m>2000AluminumppmASTM D5185m>2000AluminumppmASTM D5185m>50924CopperppmASTM D5185m>100<1<1AntimonyppmASTM D5185m>100<1<1AntimonyppmASTM D5185m>100<1<1AntimonyppmASTM D5185m>100<1<1ADDITIVESmethodlimit/basecurrenthistory1history2BoronppmASTM D5185m0000MolybdenumppmASTM D5185m902271444CalciumppmASTM D5185m20200MolybdenumppmASTM D5185m20200MolybdenumppmASTM D5185m209241605115664PhosphorusppmASTM D5185m20924	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Date         Image of the set of the	Sample Number		Client Info		KCPA001943	KCP42383	KCP30850
Machine Age     hrs     Client Info     I1828     9596     7805       Oil Ago     hrs     Client Info     N/A     Not Changed     2700       Sample Status     Image     Client Info     N/A     Not Changed     Nort Changed       Sample Status     Image     Imit/base     Current     Nator Changed     Nort Mathematical Status			Client Info		07 Jul 2023	09 Feb 2022	08 Jan 2021
Oil Age         hrs         Client Info         0         1800         2700           Oil Changed         Client Info         N/A         Not Changed         Changed           Sample Status         Client Info         N/A         Not Changed         Changed           WEAR METALS         method         Imit/base         current         history1         history2           Iron         ppm         ASTM DS185m         >50         0         1         1           Chromium         ppm         ASTM DS185m         >3         0         0         0           Silver         ppm         ASTM DS185m         >3         0         0         0           Silver         ppm         ASTM DS185m         >10         <1		hrs					
Oli Changed Sample Status         Client Info         N/A ATTENTION         Not Changed ABNORMAL         Not MORMAL NORMAL           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185n         >50         0         1         1           Chromium         ppm         ASTM D5185n         >3         0         0         0           Nickel         ppm         ASTM D5185n         >3         0         0         0           Nickel         ppm         ASTM D5185n         >3         0         0         0           Aluminum         ppm         ASTM D5185n         >3         0         0         0           Aduminum         ppm         ASTM D5185n         >10         0         <1	-	hrs	Client Info		0		
Sample Status         method         Imit/base         current         history1         NORMAL           WEAR METALS         method         limit/base         current         history2         history2           Iron         ppm         ASTM D5185m         >50         0         1         1           Chromium         ppm         ASTM D5185m         >3         0         0         0           Nickel         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Auminum         ppm         ASTM D5185m         >10         <1	•				N/A	Not Changd	Changed
Iron         ppm         ASTM D5185n         >550         0         1         1           Chromium         ppm         ASTM D5185n         >10         0         0         0           Nickel         ppm         ASTM D5185n         >3         0         0         0           Silver         ppm         ASTM D5185n         >2         0         0         0           Auminum         ppm         ASTM D5185n         >10         <1         2         7           Lead         ppm         ASTM D5185n         >10         0         <1         1           Copper         ppm         ASTM D5185n         >10         0         <1         1           Copper         ppm         ASTM D5185n         >10         0         <1         1           Antimony         ppm         ASTM D5185n         0         0         0         0         0           Antimony         ppm         ASTM D5185n         0         0         0         0         0           ASTM D5185n         0         0         0         0         0         0         0           Molybdenum         ppm         ASTM D5185n         0	-				ATTENTION	0	
Chromium         ppm         ASTM D5185m         >10         0         0         0           Nickel         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >10         <1	WEAR METALS		method	limit/base	current	history1	history2
Chromium         ppm         ASTM D5185m         >10         0         0         0           Nickel         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >10         <1	Iron	maa	ASTM D5185m	>50	0	1	1
Nickel         ppm         ASTM D5185m         >3         0         0         0           Titanium         ppm         ASTM D5185m         >2         0         0         0           Silver         ppm         ASTM D5185m         >10         <1	-						
Titanium         ppm         ASTM D5185m         >3         0         0         0           Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >10         <1							
Silver         ppm         ASTM D5185m         >2         0         0         0           Aluminum         ppm         ASTM D5185m         >10         <1							
Aluminum         ppm         ASTM D5185m         >10         <1         2         7           Lead         ppm         ASTM D5185m         >10         0         <1					-		
Lead         ppm         ASTM D5185m         >10         0         <1         1           Copper         ppm         ASTM D5185m         >50         9         2         4           Tin         ppm         ASTM D5185m         >10         0         <1							
Copper         ppm         ASTM D5185m         >50         9         2         4           Tin         ppm         ASTM D5185m         >10         0         <1							
Tin       ppm       ASTM D5185m       >10       0       <1       <1         Antimony       ppm       ASTM D5185m        0         Vanadium       ppm       ASTM D5185m       <10       0       0       0         Cadmium       ppm       ASTM D5185m       0       0       0       0         ADDITIVES       method       limit/base       current       history1       history2         Barium       ppm       ASTM D5185m       0       <1       <1       <1         Barium       ppm       ASTM D5185m       0       0       <1       <1       <1         Magnesse       ppm       ASTM D5185m       00       22       71       44         Calcium       ppm       ASTM D5185m       12       6       3       3         Juffur       ppm       ASTM D5185m       14       13       3       3         Sulfur       ppm       ASTM D5185m       20924       16051       15664         CONTAMINANTS       method       limit/base       current       history1       history2         Silicon       ppm       ASTM D5185m       20       1       20       19							
Antimony         ppm         ASTM D5185m           0           Vanadium         ppm         ASTM D5185m         <1					-		
Vanadium         ppm         ASTM D5185m         <1         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         <1           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         90         22         71         44           Magnessium         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         2         0         2         0           Phosphorus         ppm         ASTM D5185m         2         0         2         0           Sulfur         ppm         ASTM D5185m         12         6         3         3           Sulfur         ppm         ASTM D5185m         20         1         4         13         3           Sulfur         ppm         ASTM D5185m         >25         <1         0         0					-		
Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1         <1           Barium         ppm         ASTM D5185m         90         0         0         0         0           Malybdenum         ppm         ASTM D5185m         90         22         71         44           Magnesse         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         12         6         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         20         1         21         0           Sodium         ppm         ASTM D5855m         22         <1         1         0         0	•						
ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         <1							
Boron         ppm         ASTM D5185m         0         <1         <1           Barium         ppm         ASTM D5185m         90         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0           Manganese         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         90         22         0         2         0           Phosphorus         ppm         ASTM D5185m         12         6         3         3           Sulfur         ppm         ASTM D5185m         14         13         3         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         20         1         <1		PPIII		line it /l			
Barium         ppm         ASTM D5185m         90         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0           Marganese         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         90         22         0         2         0           Phosphorus         ppm         ASTM D5185m         2         0         2         0         3           Sulfur         ppm         ASTM D5185m         14         13         3         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >20         1         <1				limit/base			
Molybdenum         ppm         ASTM D5185m         0         0         0           Manganese         ppm         ASTM D5185m         90         22         71         444           Calcium         ppm         ASTM D5185m         90         22         71         444           Calcium         ppm         ASTM D5185m         90         22         71         444           Calcium         ppm         ASTM D5185m         20         0         2         0           Phosphorus         ppm         ASTM D5185m         12         6         3         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1							
Maganese       ppm       ASTM D5185m       <1				90	-		
Magnesium         ppm         ASTM D5185m         90         22         71         44           Calcium         ppm         ASTM D5185m         2         0         2         0           Phosphorus         ppm         ASTM D5185m         2         0         2         0           Zinc         ppm         ASTM D5185m         12         6         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	-						-
Calcium         ppm         ASTM D5185m         2         0         2         0           Phosphorus         ppm         ASTM D5185m         12         6         3           Zinc         ppm         ASTM D5185m         14         13         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	•						
Phosphorus         ppm         ASTM D5185m         12         6         3           Zinc         ppm         ASTM D5185m         14         13         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	J						
Zinc         ppm         ASTM D5185m         14         13         3           Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1		ppm		2	-		
Sulfur         ppm         ASTM D5185m         20924         16051         15664           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1							
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         <1	-	ppm					-
Silicon         ppm         ASTM D5185m         >25         <1         <1         0           Sodium         ppm         ASTM D5185m         11         20         19           Potassium         ppm         ASTM D5185m         >20         1         <1	Sulfur	ppm	ASTM D5185m		20924	16051	15664
Sodium         ppm         ASTM D5185m         11         20         19           Potassium         ppm         ASTM D5185m<>20         1         <1         2           Water         %         ASTM D6304         >0.05         0.016         0.031         0.022           ppm Water         ppm         ASTM D6304         >500         165.3         311.6         220.3           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         3233         30890         5547           Particles >6µm         ASTM D7647         >1300         848         7369         630           Particles >14µm         ASTM D7647         >20         ▲ 82         ▲ 824         16           Particles >21µm         ASTM D7647         >20         ▲ 28         ▲ 171         4           Particles >38µm         ASTM D7647         >3         0         0         0           Particles >71µm         ASTM D7647         >3         0         0         0           OI Cleanliness         ISO 4406 (c)         >/17/13         19/17/14         22/20/17         16/11           FLUID DEGRADATION <th>CONTAMINANTS</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium         ppm         ASTM D5185m         >20         1         <1         2           Water         %         ASTM D6304         >0.05         0.016         0.031         0.022           ppm Water         ppm         ASTM D6304         >500         165.3         311.6         220.3           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         3233         30890         5547           Particles >6µm         ASTM D7647         3200         848         7369         630           Particles >14µm         ASTM D7647         >80         82         824         16           Particles >21µm         ASTM D7647         >20         28         171         4           Particles >38µm         ASTM D7647         >3         0         0         0           Particles >71µm         ASTM D7647         >3         0         0         0         0           Oli Cleanliness         ISO 4406 (c)         >/17/13         19/17/14         22/20/17         16/11	Silicon	ppm	ASTM D5185m	>25	<1	<1	0
Water         %         ASTM D6304         >0.05         0.016         0.031         0.022           ppm Water         ppm         ASTM D6304         >500         165.3         311.6         220.3           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         3233         30890         5547           Particles >6µm         ASTM D7647         >1300         848         7369         630           Particles >14µm         ASTM D7647         >80         82         824         16           Particles >21µm         ASTM D7647         >20         28         171         4           Particles >38µm         ASTM D7647         >3         0         0         0           Particles >71µm         ASTM D7647         >3         0         0         0         0           Oil Cleanliness         ISO 4406 (c)         >/17/13         19/17/14         22/20/17         16/11           FLUID DEGRADATION         method         limit/base         current         history1         history2	Sodium	ppm	ASTM D5185m		11	20	19
ppm Water         ppm         ASTM D6304         >500         165.3         311.6         220.3           FLUID CLEANLINESS         method         limit/base         current         history1         history2           Particles >4µm         ASTM D7647         3233         30890         5547           Particles >6µm         ASTM D7647         >1300         848         7369         630           Particles >14µm         ASTM D7647         >80         82         824         16           Particles >21µm         ASTM D7647         >20         28         171         4           Particles >38µm         ASTM D7647         >4         0         0         0           Particles >71µm         ASTM D7647         >3         0         0         0           Oil Cleanliness         ISO 4406 (c)        /17/13         19/17/14         22/20/17         16/11           FLUID DEGRADATION         method         limit/base         current         history1         history2	Potassium	ppm			1	<1	2
FLUID CLEANLINESS       method       limit/base       current       history1       history2         Particles >4µm       ASTM D7647       3233       30890       5547         Particles >6µm       ASTM D7647       >1300       848       7369       630         Particles >14µm       ASTM D7647       >80       82       824       16         Particles >21µm       ASTM D7647       >20       28       171       4         Particles >38µm       ASTM D7647       >4       0       10       0         Particles >71µm       ASTM D7647       >3       0       0       0         Oil Cleanliness       ISO 4406 (c)       >/17/13       19/17/14       22/20/17       16/11	Water	%	ASTM D6304	>0.05	0.016	0.031	0.022
Particles >4µm       ASTM D7647       3233       30890       5547         Particles >6µm       ASTM D7647       >1300       848       7369       630         Particles >14µm       ASTM D7647       >80       82       824       16         Particles >21µm       ASTM D7647       >20       28       171       4         Particles >21µm       ASTM D7647       >4       0       10       0         Particles >38µm       ASTM D7647       >3       0       0       0         Particles >71µm       ASTM D7647       >3       0       0       0         Oil Cleanliness       ISO 4406 (c)       >/17/13       19/17/14       22/20/17       16/11	ppm Water	ppm	ASTM D6304	>500	165.3	311.6	220.3
Particles >6µm         ASTM D7647         >1300         848         ▲ 7369         630           Particles >14µm         ASTM D7647         >80         ▲ 82         ▲ 824         16           Particles >21µm         ASTM D7647         >20         ▲ 28         ▲ 171         4           Particles >38µm         ASTM D7647         >4         0         ▲ 10         0           Particles >71µm         ASTM D7647         >3         0         0         0           Oil Cleanliness         ISO 4406 (c)         >/17/13         ▲ 19/17/14         ▲ 22/20/17         16/11           FLUID DEGRADATION         method         limit/base         current         history1         history2	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >14µm       ASTM D7647       >80       ▲ 82       ▲ 824       16         Particles >21µm       ASTM D7647       >20       ▲ 28       ▲ 171       4         Particles >38µm       ASTM D7647       >4       0       ▲ 10       0         Particles >71µm       ASTM D7647       >3       0       0       0         Oil Cleanliness       ISO 4406 (c)       >/17/13       ▲ 19/17/14       ▲ 22/20/17       16/11	Particles >4µm		ASTM D7647		3233	30890	5547
Particles >21μm         ASTM D7647         >20         ▲ 28         171         4           Particles >38μm         ASTM D7647         >4         0         ▲ 10         0           Particles >38μm         ASTM D7647         >3         0         0         0           Particles >71μm         ASTM D7647         >3         0         0         0           Oil Cleanliness         ISO 4406 (c)         >/17/13         19/17/14         22/20/17         16/11           FLUID DEGRADATION         method         limit/base         current         history1         history2			ASTM D7647	>1300	848	<b>A</b> 7369	630
Particles >38μm         ASTM D7647         >4         0         ▲ 10         0           Particles >71μm         ASTM D7647         >3         0         0         0           Oil Cleanliness         ISO 4406 (c)         >/17/13         ▲ 19/17/14         ▲ 22/20/17         16/11           FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >14µm		ASTM D7647	>80	<mark>/</mark> 82	<b>A</b> 824	16
Particles >71μm         ASTM D7647         >3         0         0         0           Oil Cleanliness         ISO 4406 (c)         >/17/13         ▲ 19/17/14         ▲ 22/20/17         16/11           FLUID DEGRADATION         method         limit/base         current         history1         history2	Particles >21µm		ASTM D7647	>20	<u> </u>	<b>1</b> 71	4
Oil Cleanliness       ISO 4406 (c) >/17/13   19/17/14   22/20/17       16/11         FLUID DEGRADATION       method       limit/base       current       history1       history2	Particles >38µm		ASTM D7647	>4	0	<b>1</b> 0	0
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>/17/13	<b>19/17/14</b>	▲ 22/20/17	16/11
Acid Number (AN) mg KOH/g ASTM D8045 0.4 0.35 0.36 0.320	FLUID DEGRADA	TION	method	limit/base	current	history1	history2

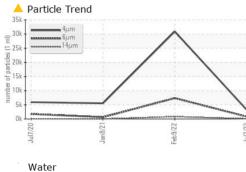
Report Id: BACCAN [WUSCAR] 05899346 (Generated: 07/18/2023 17:31:13) Rev: 1

Contact/Location: N SAWYER - BACCAN

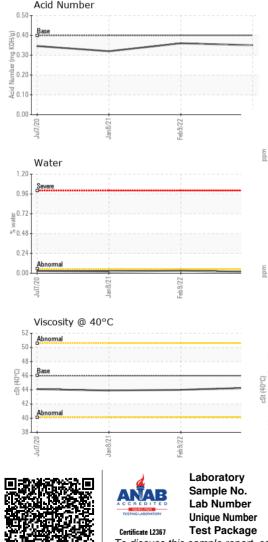
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# **OIL ANALYSIS REPORT**

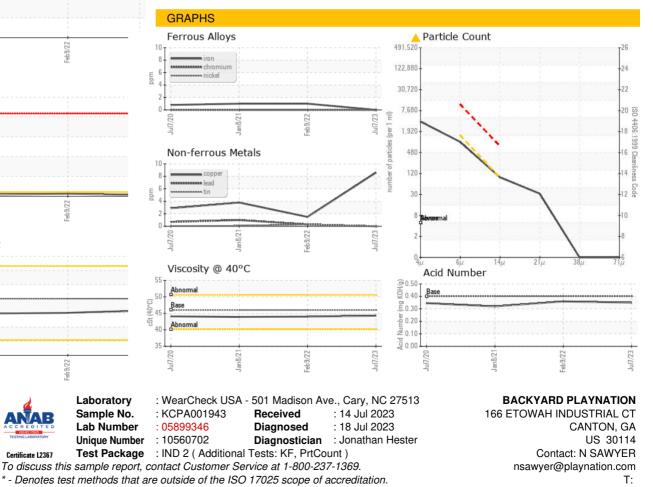






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	VLITE	NONE
Sand/Dirt	scalar	*Visual	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	44.3	44.0	43.9
SAMPLE IMAGES	S	method	limit/base	current	history1	history2
Color						

Bottom



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: N SAWYER - BACCAN

F: