

### **OIL ANALYSIS REPORT**

Sample Rating Trend

#### NORMAL

# NOT GIVEN KFS0003807 KFS 0003807

Hydraulic System Fluid NOT GIVEN (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

All component wear rates are normal.

#### Contamination

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

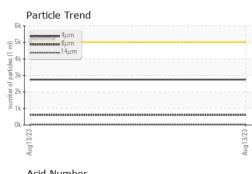
#### Fluid Condition

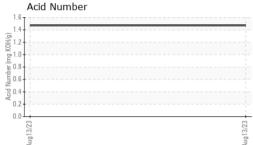
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

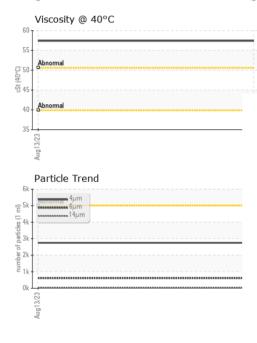
SAMPLE INFORMATION     method     limit/base     current     History1     History2       Sample Number     Client Info     IX Aug 2023         Machine Age     hrs     Client Info     0         Oil Age     hrs     Client Info     0         Oil Age     hrs     Client Info     NAR         Sample Status     Imit/base     current     history1     history2       Iron     ppm     ASTM 05185m     >20     0         WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM 05185m     20     0         Nickel     ppm     ASTM 05185m     20     1         Itanium     ppm     ASTM 05185m     20     1         Galver     ppm     ASTM 05185m     20     -1         Choronium			method		Aug2023	history	history
Sample Date     Client Info     13 Aug 2023         Machine Age     hrs     Client Info     0         Oil Age     hrs     Client Info     0         Sample Status     Client Info     N/A         WEAR METALS     method     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185n<>20     0         Nickel     ppm     ASTM D5185n<>20     0         Nickel     ppm     ASTM D5185n<>20     0         Silver     ppm     ASTM D5185n<>20     0         Lead     ppm     ASTM D5185n<>20     <1         Copper     ppm     ASTM D5185n<>20     <1         Cadmium     ppm     ASTM D5185n<>20     <1         Cadmium     ppm     ASTM D5185n<     0		MATION		limit/base		history1	history2
Machine Age     hrs     Client Info     0         Oil Age     hrs     Client Info     0         Sample Status     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185n     >20     0         WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185n     >20     0         Nickel     ppm     ASTM D5185n     >20     0         Silver     ppm     ASTM D5185n     >20     <1         Lead     ppm     ASTM D5185n     >20     <1         Cadmium     ppm     ASTM D5185n     >20     <1         Cadmium     ppm     ASTM D5185n     0          Cadmium     ppm     ASTM D5185n     0							
Oil Age     hrs     Client Info     0         Sample Status     Client Info     N/A         WEAR METALS     method     Imit/base     current     history1     history2       Iron     ppm     ASTM D518m<>20     0         Okcent     ppm     ASTM D518m     20     0        Nickel     ppm     ASTM D518m     20     0        Nickel     ppm     ASTM D518m     20     0        Aluminum     ppm     ASTM D518m     20     0        Aluminum     ppm     ASTM D518m     20     <1        Lead     ppm     ASTM D518m     20     <1        Copper     ppm     ASTM D518m     20     <1        Cadmium     ppm     ASTM D518m     0         ASTM D518m     0           Manganese					-		
Oil Changed Sample Status     Client Info     N/A         WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     0         Nickel     ppm     ASTM D5185m     >20     0         Nickel     ppm     ASTM D5185m     >20     0         Silver     ppm     ASTM D5185m     >20     0         Lead     ppm     ASTM D5185m     >20     <1         Copper     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     0          Cadmium     ppm     ASTM D5185m     0	0				-		
Sample Status     nethod     Imit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     0         Nickel     ppm     ASTM D5185m     >20     0         Nickel     ppm     ASTM D5185m     >20     0         Silver     ppm     ASTM D5185m     >20     <1         Atuminum     ppm     ASTM D5185m     >20     <1         Atuminum     ppm     ASTM D5185m     >20     <1         Auminum     ppm     ASTM D5185m     >20     <1         Auminum     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     0         Copper     ppm     ASTM D5185m     0	-	hrs			-		
WEAR METALS     method     limit/base     current     history1     history2       Iron     ppm     ASTM D5185m     >20     0         Ochromium     ppm     ASTM D5185m     >20     0         Nickel     ppm     ASTM D5185m     >20     0         Silver     ppm     ASTM D5185m     >20     0         Lead     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     >20     <1         Manganesim     ppm     ASTM D5185m     0          Molydenum     ppm     ASTM D518	-		Client Info				
Iron     ppm     ASTM D5185m     >20     0         Chromium     ppm     ASTM D5185m     >20     <1         Nickel     ppm     ASTM D5185m     >20     0         Titanium     ppm     ASTM D5185m     >20     0         Aluminum     ppm     ASTM D5185m     >20     <1         Lead     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     >20     <1         ADDITIVES     method     imit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     1	Sample Status				NORMAL		
Chromium     ppm     ASTM D5185m     >20     <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel     ppm     ASTM D5185m     >20     0         Titanium     ppm     ASTM D5185m     <1         Silver     ppm     ASTM D5185m     0         Aluminum     ppm     ASTM D5185m     >20     <1         Lead     ppm     ASTM D5185m     >20     <1         Copper     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     >20     <1         ADDTVES     method     imili/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Magnaese     ppm     ASTM D5185m     0         Magnaesium     ppm     ASTM D5185m     358         Sulfur	Iron	ppm	ASTM D5185m	>20	0		
Titanium     ppm     ASTM D5185m     c1         Aluminum     ppm     ASTM D5185m     20     <1         Aluminum     ppm     ASTM D5185m     >20     <1         Lead     ppm     ASTM D5185m     >20     0         Copper     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     0          ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Magnaese     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     <1         Calcium     ppm     ASTM D5185m     <1         Sulfu	Chromium	ppm	ASTM D5185m	>20	<1		
Silver     ppm     ASTM D5185m     0         Aluminum     ppm     ASTM D5185m     >20     <1         Lead     ppm     ASTM D5185m     >20     <1         Copper     ppm     ASTM D5185m     >20     <1         Tin     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     >20     <1         Cadmium     ppm     ASTM D5185m     0          ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Maganese     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     1         Sulfur     ppm     ASTM D5185m     20    Sulfur <td>Nickel</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;20</td> <th>0</th> <td></td> <td></td>	Nickel	ppm	ASTM D5185m	>20	0		
Aluminum     ppm     ASTM D5185m     >20     <1	Titanium	ppm	ASTM D5185m		<1		
Lead     ppm     ASTM D5185m     >20     0         Copper     ppm     ASTM D5185m     >20     <1         Tin     ppm     ASTM D5185m     >20     <1         Vanadium     ppm     ASTM D5185m     0         Cadmium     ppm     ASTM D5185m     0         ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Malpdenum     ppm     ASTM D5185m     <1         Magnese     ppm     ASTM D5185m     <1         Magnesium     ppm     ASTM D5185m     358         Sulfur     ppm     ASTM D5185m     196         Sulfur     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     <1 </th <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>0</th> <td></td> <td></td>	Silver	ppm	ASTM D5185m		0		
Copper     ppm     ASTM D5185m     >20     <1	Aluminum	ppm	ASTM D5185m	>20	<1		
Tin     ppm     ASTM D5185m     >20     <1	Lead	ppm	ASTM D5185m	>20	0		
Vanadium     ppm     ASTM D5185m     <1	Copper	ppm	ASTM D5185m	>20	<1		
Cadmium     ppm     ASTM D5185m     0         ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Barium     ppm     ASTM D5185m     0         Molybdenum     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     <1         Magnesium     ppm     ASTM D5185m     <1         Phosphorus     ppm     ASTM D5185m     358         Zinc     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     11         Sulfur     ppm     ASTM D5185m     >15     1         Sulfur     ppm     ASTM D5185m     >20     2         Sodium     ppm     ASTM D5185m     >20 <t< th=""><td>Tin</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;20</td><th>&lt;1</th><td></td><td></td></t<>	Tin	ppm	ASTM D5185m	>20	<1		
ADDITIVES     method     limit/base     current     history1     history2       Boron     ppm     ASTM D5185m     0         Barium     ppm     ASTM D5185m     0         Molybdenum     ppm     ASTM D5185m     0         Manganese     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     8         Calcium     ppm     ASTM D5185m     8         Phosphorus     ppm     ASTM D5185m     358         Sulfur     ppm     ASTM D5185m     1196         Sulfur     ppm     ASTM D5185m     1196         Sodium     ppm     ASTM D5185m     20     2         Sodium     ppm     ASTM D5185m     >15     1         Potassium     ppm     ASTM D7647     >5000	Vanadium	ppm	ASTM D5185m		<1		
Boron     ppm     ASTM D5185m     0         Barium     ppm     ASTM D5185m     <1         Molybdenum     ppm     ASTM D5185m     0         Manganese     ppm     ASTM D5185m     0         Magnesium     ppm     ASTM D5185m     <1         Calcium     ppm     ASTM D5185m     <1         Calcium     ppm     ASTM D5185m     358         Zinc     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     1         Sodium     ppm     ASTM D5185m     <1         Potassium     ppm     ASTM D5185m     <20     2         Particles >4µm     ASTM D7647     >5000     2749 <th>Cadmium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th></th> <th></th>	Cadmium	ppm	ASTM D5185m		0		
Barium     ppm     ASTM D5185m     <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum     ppm     ASTM D5185m     0         Manganese     ppm     ASTM D5185m     <1         Magnesium     ppm     ASTM D5185m     8         Calcium     ppm     ASTM D5185m     8         Calcium     ppm     ASTM D5185m     358         Phosphorus     ppm     ASTM D5185m     358         Sulfur     ppm     ASTM D5185m     1196         Sulfur     ppm     ASTM D5185m     1196         Sodium     ppm     ASTM D5185m     >15     1         Potassium     ppm     ASTM D5185m     >20     2         FLUID CLEANLINES     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     >5000     2749         Particles >6µm     ASTM D7647     130	Boron	ppm	ASTM D5185m		0		
Manganese     ppm     ASTM D5185m     <1	Barium	ppm	ASTM D5185m		<1		
Magnesium     ppm     ASTM D5185m     8         Calcium     ppm     ASTM D5185m     <1         Phosphorus     ppm     ASTM D5185m     358         Zinc     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     20         CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >20     2         Potassium     ppm     ASTM D7647     >5000     2749         Particles >4µm     ASTM D7647     >100     607         Particles >6µm     ASTM D7647     >40     9    Particles >38µm     ASTM D7647 <td< th=""><td>Molybdenum</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td></td><td></td></td<>	Molybdenum	ppm	ASTM D5185m		0		
Calcium     ppm     ASTM D5185m     <1	Manganese	ppm	ASTM D5185m		<1		
Phosphorus     ppm     ASTM D5185m     358         Zinc     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     1196         CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >15     1         Potassium     ppm     ASTM D5185m     >20     2         FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     >5000     2749         Particles >6µm     ASTM D7647     >1300     607         Particles >14µm     ASTM D7647     >40     9	Magnesium	ppm	ASTM D5185m		8		
Zinc     ppm     ASTM D5185m     20         Sulfur     ppm     ASTM D5185m     1196         CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >20     2         Potassium     ppm     ASTM D5185m     >20     2         FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     >5000     2749         Particles >6µm     ASTM D7647     >1300     607         Particles >14µm     ASTM D7647     >160     30         Particles >38µm     ASTM D7647     >10     0 <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>&lt;1</th> <td></td> <td></td>	Calcium	ppm	ASTM D5185m		<1		
SulfurppmASTM D5185m1196CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>151SodiumppmASTM D5185m<1PotassiumppmASTM D5185m>202FLUID CLEANLINESSmethodlimit/basecurrenthistory1history2Particles >4µmASTM D7647>50002749Particles >6µmASTM D7647>1300607Particles >6µmASTM D7647>16030Particles >14µmASTM D7647>100Particles >21µmASTM D7647>30Particles >71µmASTM D7647>30Oil CleanlinessISO 4406 (c)>19/17/1419/16/12FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2	Phosphorus	ppm	ASTM D5185m		358		
CONTAMINANTS     method     limit/base     current     history1     history2       Silicon     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     >20     2         Potassium     ppm     ASTM D5185m     >20     2         FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     >5000     2749         Particles >6µm     ASTM D7647     >1300     607         Particles >14µm     ASTM D7647     >160     30         Particles >21µm     ASTM D7647     >40     9         Particles >38µm     ASTM D7647     >3     0         Particles >71µm     ASTM D7647     >3     0	Zinc	ppm	ASTM D5185m		20		
Silicon     ppm     ASTM D5185m     >15     1         Sodium     ppm     ASTM D5185m     <1          Potassium     ppm     ASTM D5185m     >20     2         FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     >5000     2749         Particles >6µm     ASTM D7647     >1300     607         Particles >6µm     ASTM D7647     >160     30         Particles >14µm     ASTM D7647     >40     9         Particles >21µm     ASTM D7647     >10     0         Particles >71µm     ASTM D7647     >3     0         Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	Sulfur	ppm	ASTM D5185m		1196		
Sodium     ppm     ASTM D5185m     <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium     ppm     ASTM D5185m     >20     2         FLUID CLEANLINESS     method     limit/base     current     history1     history2       Particles >4µm     ASTM D7647     >5000     2749         Particles >6µm     ASTM D7647     >1300     607         Particles >6µm     ASTM D7647     >160     30         Particles >14µm     ASTM D7647     >40     9         Particles >21µm     ASTM D7647     >10     0         Particles >38µm     ASTM D7647     >3     0         Particles >71µm     ASTM D7647     >3     0         Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	Silicon	ppm	ASTM D5185m	>15	1		
FLUID CLEANLINESS   method   limit/base   current   history1   history2     Particles >4μm   ASTM D7647   >5000   2749       Particles >6μm   ASTM D7647   >1300   607       Particles >6μm   ASTM D7647   >160   30       Particles >14μm   ASTM D7647   >160   30       Particles >21μm   ASTM D7647   >40   9       Particles >21μm   ASTM D7647   >10   0       Particles >38μm   ASTM D7647   >10   0       Particles >71μm   ASTM D7647   >3   0       Oil Cleanliness   ISO 4406 (c)   >19/17/14   19/16/12       FLUID DEGRADATION   method   limit/base   current   history1   history2	Sodium	ppm	ASTM D5185m		<1		
Particles >4μm   ASTM D7647   >5000   2749       Particles >6μm   ASTM D7647   >1300   607       Particles >14μm   ASTM D7647   >160   30       Particles >14μm   ASTM D7647   >40   9       Particles >21μm   ASTM D7647   >40   9       Particles >38μm   ASTM D7647   >10   0       Particles >71μm   ASTM D7647   >3   0       Oil Cleanliness   ISO 4406 (c)   >19/17/14   19/16/12       FLUID DEGRADATION   method   limit/base   current   history1   history2	Potassium	ppm	ASTM D5185m	>20	2		
Particles >6μm     ASTM D7647     >1300     607         Particles >14μm     ASTM D7647     >160     30         Particles >21μm     ASTM D7647     >40     9         Particles >21μm     ASTM D7647     >40     9         Particles >38μm     ASTM D7647     >10     0         Particles >71μm     ASTM D7647     >3     0         Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14µm   ASTM D7647   >160 <b>30</b> Particles >21µm   ASTM D7647   >40 <b>9</b> Particles >38µm   ASTM D7647   >10 <b>0</b> Particles >38µm   ASTM D7647   >3 <b>0</b> Particles >71µm   ASTM D7647   >3 <b>0</b> Oil Cleanliness   ISO 4406 (c)   >19/17/14 <b>19/16/12</b> FLUID DEGRADATION   method   limit/base   current   history1   history2	Particles >4µm		ASTM D7647	>5000	2749		
Particles >21μm     ASTM D7647     >40     9         Particles >38μm     ASTM D7647     >10     0         Particles >371μm     ASTM D7647     >3     0         Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >6µm		ASTM D7647	>1300	607		
Particles >38μm     ASTM D7647     >10     0         Particles >71μm     ASTM D7647     >3     0         Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >14µm		ASTM D7647	>160	30		
Particles >71 µm     ASTM D7647     >3     0         Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >21µm		ASTM D7647	>40	9		
Oil Cleanliness     ISO 4406 (c)     >19/17/14     19/16/12         FLUID DEGRADATION     method     limit/base     current     history1     history2	Particles >38µm		ASTM D7647	>10	0		
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0		
	Oil Cleanliness		ISO 4406 (c)	>19/17/14	19/16/12		
Acid Number (AN) mg KOH/g ASTM D8045 1.47	FLUID DEGRADA		method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		1.47		

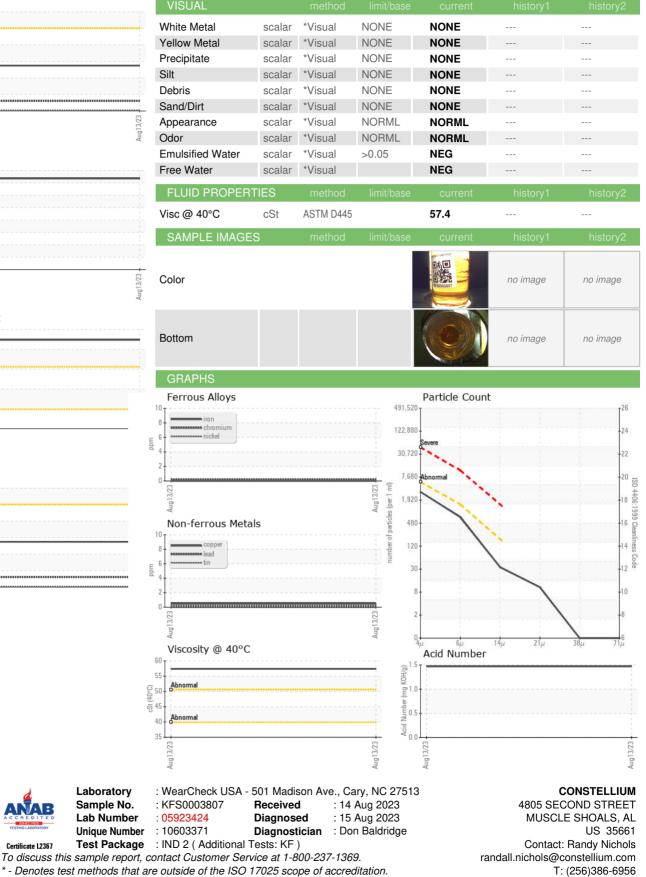


## **OIL ANALYSIS REPORT**









Report Id: CONMUSAL [WUSCAR] 05923424 (Generated: 08/15/2023 12:52:45) Rev: 1

Certificate L2367

Laboratory

Sample No.

Lab Number

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

Contact/Location: CONSTELLIUM - Randy Nichols - CONMUSAL

F: