

## **OIL ANALYSIS REPORT**

### Sample Rating Trend



## Machine Id MS-2 (S/N 09302-004-1-01-07) Component

**Refrigeration Compressor** USPI ALT-68 SC (--- 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 oil. The amount and size of particulates present in the system are acceptable.

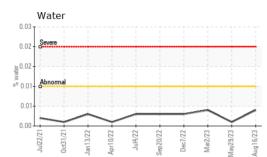
### Fluid Condition

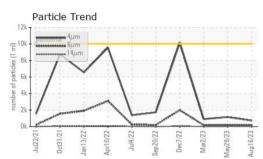
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

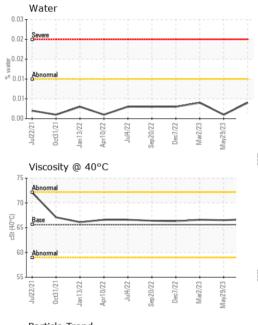
SAMPLE INFORMATIONmethodlimit/basecurrenthistory1Sample NumberClient InfoUSP244627USP245850Sample DateClient Info16 Aug 202329 May 2023Machine AgehrsClient Info00Oil AgehrsClient Info00Oil ChangedClient InfoN/AN/ASample Status-Imit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1NickelppmASTM D5185m>20<1NickelppmASTM D5185m>20<1SilverppmASTM D5185m>20<1CopperppmASTM D5185m>20<1CopperppmASTM D5185m>20<1TinppmASTM D5185m>20<1CopperppmASTM D5185m>20<1CadmiumppmASTM D5185m000CadmiumppmASTM D5185m000BoronppmASTM D5185m000ManganeseppmASTM D5185m000MagnesiumppmASTM D5185m000ManganeseppmASTM D5185m000ManganeseppmASTM D5185m000Mangensiumppm <th>history2 USP247489 02 Mar 2023 0 0</th>	history2 USP247489 02 Mar 2023 0 0
Sample DateIf Client InfoIf Aug 202329 May 2023Machine AgehrsClient Info00Oil AgehrsClient InfoN/AN/ASample StatusIINORMALNORMALSample StatusIImit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1NickelppmASTM D5185m>20<1NickelppmASTM D5185m>20<1SilverppmASTM D5185m>20<1CopperppmASTM D5185m>20<1TinppmASTM D5185m>300CadmiumppmASTM D5185m>20<1PpmASTM D5185m>20<1CopperppmASTM D5185m>20<1CadmiumppmASTM D5185m>400CadmiumppmASTM D5185m00<1BoronppmASTM D5185m000BariumppmASTM D5185m000ManganeseppmASTM D5185m000ManganeseppmASTM D5185m000ManganesiumppmASTM D5185m000ManganesiumppmASTM D5185m000Manganesiumppm <th>02 Mar 2023 0</th>	02 Mar 2023 0
Sample DateClient Info16 Aug 202329 May 2023Machine AgehrsClient Info00Oil AgehrsClient InfoN/AN/ASample StatusIImit/basecurrenthistory1WEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1	0
Machine AgehrsClient Info00Oil AgehrsClient Info00Oil ChangedClient InfoN/AN/ASample StatusIIImit/basecurrenthistory1WEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1	
Oil Changed Sample StatusClient InfoN/AN/ASample StatusClient InfoN/ANORMALNORMALWEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1	0
Sample StatusNORMALNORMALWEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1	
Sample StatusNORMALNORMALWEAR METALSmethodlimit/basecurrenthistory1IronppmASTM D5185m>800ChromiumppmASTM D5185m>20<1	N/A
Iron ppm ASTM D5185m >8 0 0   Chromium ppm ASTM D5185m >2 0 <1	NORMAL
Pr ASTM D5185m >2 0 <1   Nickel ppm ASTM D5185m 0 <1	history2
Nickel ppm ASTM D5185m 0 <1   Titanium ppm ASTM D5185m 0 0   Silver ppm ASTM D5185m >2 0 0   Aluminum ppm ASTM D5185m >2 0 0   Aluminum ppm ASTM D5185m >3 0 0   Lead ppm ASTM D5185m >2 0 <1	0
Titanium ppm ASTM D5185m 0 0   Silver ppm ASTM D5185m >2 0 0   Aluminum ppm ASTM D5185m >3 0 0   Lead ppm ASTM D5185m >2 0 <1	0
Silver ppm ASTM D5185m >2 0 0   Aluminum ppm ASTM D5185m >3 0 0   Lead ppm ASTM D5185m >2 0 <1	0
Aluminum ppm ASTM D5185m >3 0 0   Lead ppm ASTM D5185m >2 0 <1	<1
Lead ppm ASTM D5185m >2 0 <1   Copper ppm ASTM D5185m >8 0 0   Tin ppm ASTM D5185m >4 0 0   Vanadium ppm ASTM D5185m >4 0 0   Vanadium ppm ASTM D5185m 0 0 0   Cadmium ppm ASTM D5185m 0 0 0   ADDITIVES method limit/base current history1   Boron ppm ASTM D5185m 0 0 0   Barium ppm ASTM D5185m 0 0 0   Molybdenum ppm ASTM D5185m 0 0    Magnesium ppm ASTM D5185m 0	0
Copper ppm ASTM D5185m >8 0 0   Fin ppm ASTM D5185m >4 0 0   Vanadium ppm ASTM D5185m >4 0 0   Vanadium ppm ASTM D5185m 0 0 0   Cadmium ppm ASTM D5185m 0 0 0   ADDITIVES method limit/base current history1   Boron ppm ASTM D5185m 0 0   Barium ppm ASTM D5185m 0 0   Molybdenum ppm ASTM D5185m 0 0   Magnesium ppm ASTM D5185m 0 <11	<1
Copper ppm ASTM D5185m >8 0 0   Tin ppm ASTM D5185m >4 0 0   Vanadium ppm ASTM D5185m >4 0 0   Vanadium ppm ASTM D5185m 0 0 0   Cadmium ppm ASTM D5185m 0 0 0   ADDITIVES method limit/base current history1   Boron ppm ASTM D5185m 0 0   Barium ppm ASTM D5185m 0 0   Molybdenum ppm ASTM D5185m 0 0   Magnesium ppm ASTM D5185m 0 <11	0
Fin ppm ASTM D5185m >4 O O   Vanadium ppm ASTM D5185m O O O   Cadmium ppm ASTM D5185m O O O   ADDITIVES method limit/base current history1   Boron ppm ASTM D5185m O O   Barium ppm ASTM D5185m O O   Barium ppm ASTM D5185m O O   Maganese ppm ASTM D5185m O O   Magnesium ppm ASTM D5185m O O	0
VanadiumppmASTM D5185m00CadmiumppmASTM D5185m00ADDITIVESmethodlimit/basecurrenthistory1BoronppmASTM D5185m00BariumppmASTM D5185m00MolybdenumppmASTM D5185m00ManganeseppmASTM D5185m0<1	0
CadmiumppmASTM D5185m00ADDITIVESmethodlimit/basecurrenthistory1BoronppmASTM D5185m00BariumppmASTM D5185m00MolybdenumppmASTM D5185m00ManganeseppmASTM D5185m0<1	0
Boron ppm ASTM D5185m O O   Barium ppm ASTM D5185m O O   Molybdenum ppm ASTM D5185m O O   Manganese ppm ASTM D5185m O <1	0
Barium ppm ASTM D5185m O O   Molybdenum ppm ASTM D5185m O O   Manganese ppm ASTM D5185m O <1	history2
Molybdenum ppm ASTM D5185m O O   Manganese ppm ASTM D5185m O <1   Magnesium ppm ASTM D5185m O <1	0
Manganese ppm ASTM D5185m O <1   Magnesium ppm ASTM D5185m O 0	0
Agnesium ppm ASTM D5185m 0 0	0
	<1
Calcium ppm ASTM D5185m 0 0	0
	0
Phosphorus ppm ASTM D5185m 0 1	0
Zinc ppm ASTM D5185m 0 0	1
Sulfur ppm ASTM D5185m 50 0 0	0
CONTAMINANTS method limit/base current history1	history2
Silicon ppm ASTM D5185m >15 2 <1	1
Sodium ppm ASTM D5185m <1 <1	0
Potassium ppm ASTM D5185m >20 <1 1	0
Nater % ASTM D6304 >0.01 0.004 0.001	0.004
opm Water ppm ASTM D6304 >100 48.1 8.9	42.6
FLUID CLEANLINESS method limit/base current history1	history2
Particles >4μm ASTM D7647 >10000 709 1145	907
Particles >6μm ASTM D7647 >2500 154 201	165
Particles >14μm ASTM D7647 >320 16 17	12
Particles >21μm ASTM D7647 >80 4 4	4
Particles >38μm ASTM D7647 >20 0 1	0
Particles >71μm ASTM D7647 >4 0 0	0
Dil Cleanliness ISO 4406 (c) >20/18/15 17/14/11 17/15/11	17/15/11
FLUID DEGRADATION method limit/base current history1	history2
Acid Number (AN) mg KOH/g ASTM D974 0.005 0.015 0.015	

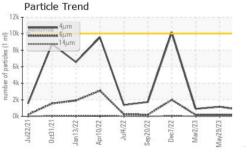


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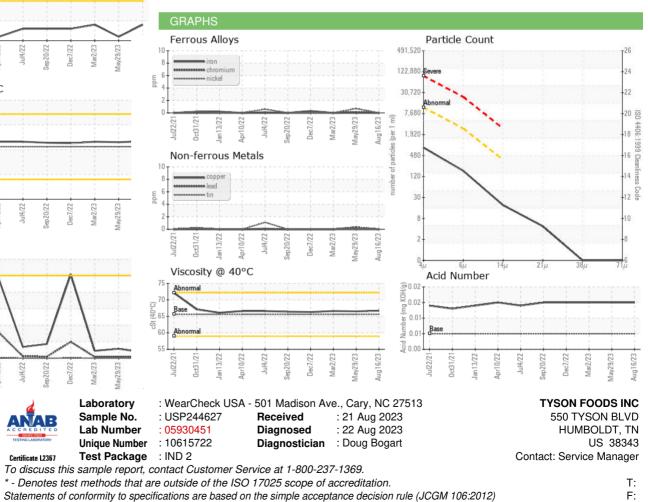






VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.01	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	65.6	66.7	66.5	66.6
SAMPLE IMAGE	S	method	limit/base	current	history1	history2
Color						
Pottom						

Bottom



Contact/Location: Service Manager - TYSHUM