

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id REC/FRICK TYSRUSD RECO SC2010H (WRV-204) (S/N M412-230-B)

Refrigeration Compressor

Fluid USPI ALT-68 SC (--- GAL)

DIAGNOSIS

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

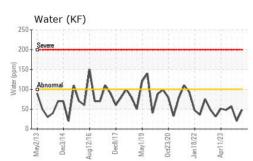
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

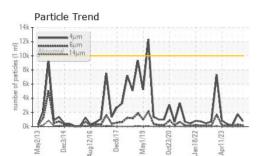
Sample Date Client Info 18 Apr 2024 08 Jan 2024 10 Oct 2023 Machine Age hrs Client Info 114648 112200 110072 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A WEAR METALS method imit/base current history1 Iron ppm ASTM D5185m >8 0 <1 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Cadmium ppm ASTM D5185m >4 <1 0 0 Cadmium ppm ASTM D5185m 0 <1 0 0 Cadmium ppm ASTM D5185m	SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2
Machine AgehrsClient Info114648112200110072Oil AgehrsClient InfoN/AN/AN/AOil ChangedClient InfoN/AN/AN/ASample StatusaImit/basecurrenthistory1VEAR METALSmethodImit/basecurrenthistory1IronppmASTM D5185m>2<10NickelppmASTM D5185m20<1SilverppmASTM D5185m>2000AuminumppmASTM D5185m>2000AuminumppmASTM D5185m>2000AuminumppmASTM D5185m>2000CopperppmASTM D5185m>2000CopperppmASTM D5185m>4<100CopperppmASTM D5185m>4<100CodmiumppmASTM D5185m0000ASTM D5185mImit/base0000ASTM D5185mImit/base0000MagneseppmASTM D5185m0000MagnesiumppmASTM D5185m0000MagnesiumppmASTM D5185m0000MagnesiumppmASTM D5185m0000SulficonppmASTM D5	Sample Number		Client Info		USP0006480	USP214751	USP0001868
Oil Age hrs Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A WEAR METALS method init/base current history1 history2 Iron ppm ASTM D5185m >8 0 <1 <1 Chromium ppm ASTM D5185m >2 <1 0 0 Nickel ppm ASTM D5185m >2 <1 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 AsTM D5185m 0 0 0 0 0 0 <	Sample Date		Client Info		18 Apr 2024	08 Jan 2024	10 Oct 2023
Oil Changed Sample Status Client Info N/A NORMAL N/A NORMAL N/A NORMAL N/A NORMAL N/A NORMAL N/A NORMAL N/A NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >8 0 <1	Machine Age	hrs	Client Info		114648	112200	110072
Sample Status Image and the status NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >8 0 <1 <1 Chromium ppm ASTM D5185m >2 <1 0 0 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >2 0 0 0 Cadmium ppm ASTM D5185m 9 0 0 0 Admium ppm ASTM D5185m 0 0 0 0 Admium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >8 0 <1 <1 Chromium ppm ASTM D5185m >2 <1 0 0 Nickel ppm ASTM D5185m 2 <1 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >3 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0	Oil Changed		Client Info		N/A	N/A	N/A
Iron ppm ASTM D5185m >8 0 <1	Sample Status				NORMAL	NORMAL	NORMAL
Chromium ppm ASTM 05185m >2 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m 0 0 <1	Iron	ppm	ASTM D5185m	>8	0	<1	<1
Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >4 <1 0 0 Vanadium ppm ASTM D5185m >4 <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 1 <1 0 0	Chromium	ppm	ASTM D5185m	>2	<1	0	0
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >8 0 <1 0 Vanadium ppm ASTM D5185m >4 <1 0 0 Vanadium ppm ASTM D5185m >4 <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 0 Valcium ppm ASTM D5185m 0 0 0 0 </th <th>Nickel</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th><1</th>	Nickel	ppm	ASTM D5185m		0	0	<1
Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >8 0 <1 0 Vanadium ppm ASTM D5185m >4 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 0 Maganeses ppm ASTM D5185m 1 <1 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 <th>Titanium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th>0</th> <th>0</th>	Titanium	ppm	ASTM D5185m		0	0	0
Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >8 0 <1 0 Tin ppm ASTM D5185m >4 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Marganese ppm ASTM D5185m 0 0 0 0 Marganese ppm ASTM D5185m 1 <1 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m >15<<<1 <1 <1 1	Silver	ppm	ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >2 0 0 0 Copper ppm ASTM D5185m >8 0 <1 0 Tin ppm ASTM D5185m >4 <1 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Malybenum ppm ASTM D5185m 0 0 0 0 Marganese ppm ASTM D5185m 1 <1 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m >15< <t1< td=""> <1 <1 1<th>Aluminum</th><th>ppm</th><th>ASTM D5185m</th><th>>3</th><th>0</th><th>0</th><th>0</th></t1<>	Aluminum	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >8 0 <1	Lead		ASTM D5185m	>2	0	0	0
Tin ppm ASTM D5185m >4 <1				>8	0	<1	0
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Malganese ppm ASTM D5185m 0 0 0 0 Magnese ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m 515<<<1 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 0 0 Potassium ppm ASTM D5185m >20 <1 <1 <1 <							
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 1 <1							
Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1 <1 0 0 Calcium ppm ASTM D5185m 1 <1 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m >15 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 1 <1 <th></th> <th></th> <th></th> <th></th> <th></th> <th>0</th> <th>0</th>						0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1 <1 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m >15 <1 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 1 <1 <1 Vater % ASTM D5185m >20 <1 1 <1 <1 Water pm ASTM D564 >0.01	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 1 <1	Boron	ppm	ASTM D5185m		0	0	0
Molybdenum ppm ASTM D5185m 0 0 0 Magnese ppm ASTM D5185m 1 <1	Barium		ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m 0 0 0 Magnesium ppm ASTM D5185m 1 <1 0 Calcium ppm ASTM D5185m <1 0 0 Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 1 <1 <1 Water % ASTM D5185m >20 <1 1 <1 <1 Water pm ASTM D6304 >0.01 0.004 0.002 0.005 ppm	Molybdenum		ASTM D5185m		0	0	0
Magnesium ppm ASTM D5185m 1 <1	Manganese		ASTM D5185m		0	0	0
Calcium ppm ASTM D5185m <1	-		ASTM D5185m		1	<1	0
Phosphorus ppm ASTM D5185m 0 0 0 Zinc ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1	Calcium		ASTM D5185m		<1	0	0
Zinc ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 0 0 Potassium ppm ASTM D5185m >20 <1 1 <1 Water % ASTM D6304 >0.01 0.004 0.002 0.005 ppm Water ppm ASTM D6304 >100 48 20 56.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 764 1751 139 Particles >6µm ASTM D7647 >2500 154 277 50 Particles >14µm ASTM D7647 320 12 10	Phosphorus		ASTM D5185m		0	0	0
Sulfur ppm ASTM D5185m 50 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 <1 Sodium ppm ASTM D5185m >15 <1 <1 <1 Sodium ppm ASTM D5185m >20 <1 1 <1 Potassium ppm ASTM D5185m >20 <1 1 <1 Water % ASTM D6304 >0.01 0.004 0.002 0.005 ppm Water ppm ASTM D6304 >100 48 20 56.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 764 1751 139 Particles >6µm ASTM D7647 >2500 154 277 50 Particles >14µm ASTM D7647 >80 3 2	Zinc		ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >15 <1	Sulfur		ASTM D5185m	50	0		
Sodium ppm ASTM D5185m <1	CONTAMINANTS	;	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>15	<1	<1	<1
Water % ASTM D6304 >0.01 0.004 0.002 0.005 ppm Water ppm ASTM D6304 >100 48 20 56.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 764 1751 139 Particles >6µm ASTM D7647 >2500 154 277 50 Particles >14µm ASTM D7647 >320 12 10 9 Particles >21µm ASTM D7647 >20 0 0 0 Particles >38µm ASTM D7647 >20 0 0 0	Sodium	ppm	ASTM D5185m		<1	0	0
ppm Water ppm ASTM D6304 >100 48 20 56.9 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 764 1751 139 Particles >6µm ASTM D7647 >2500 154 277 50 Particles >14µm ASTM D7647 >320 12 10 9 Particles >14µm ASTM D7647 >80 3 2 3 Particles >21µm ASTM D7647 >20 0 0 0 Particles >38µm ASTM D7647 >4 0 0 0	Potassium	ppm	ASTM D5185m	>20	<1	1	<1
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >10000 764 1751 139 Particles >6μm ASTM D7647 >2500 154 277 50 Particles >14μm ASTM D7647 >320 12 10 9 Particles >21μm ASTM D7647 >80 3 2 3 Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0	Water	%	ASTM D6304	>0.01	0.004	0.002	0.005
Particles >4μm ASTM D7647 >10000 764 1751 139 Particles >6μm ASTM D7647 >2500 154 277 50 Particles >14μm ASTM D7647 >320 12 10 9 Particles >14μm ASTM D7647 >80 3 2 3 Particles >21μm ASTM D7647 >20 0 0 0 Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0	ppm Water	ppm	ASTM D6304	>100	48	20	56.9
Particles >6µm ASTM D7647 >2500 154 277 50 Particles >14µm ASTM D7647 >320 12 10 9 Particles >21µm ASTM D7647 >80 3 2 3 Particles >38µm ASTM D7647 >20 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >320 12 10 9 Particles >21μm ASTM D7647 >80 3 2 3 Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0	Particles >4µm		ASTM D7647	>10000	764	1751	139
Particles >21μm ASTM D7647 >80 3 2 3 Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0	Particles >6µm		ASTM D7647	>2500	154	277	50
Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0	Particles >14 μ m		ASTM D7647	>320	12	10	9
Particles >71μm ASTM D7647 >4 0 0 0	Particles >21µm		ASTM D7647	>80	3	2	3
	Particles >38µm		ASTM D7647	>20	0	0	0
Oil Cleanliness ISO 4406 (c) >20/18/15 17/14/11 18/15/10 14/13/10	Particles >71µm		ASTM D7647	>4	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>20/18/15	17/14/11	18/15/10	14/13/10
FLUID DEGRADATION method limit/base current history1 history2	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D974 0.005 0.014 0.014 0.012	Acid Number (AN)	mg KOH/g	ASTM D974	0.005	0.014	0.014	0.012

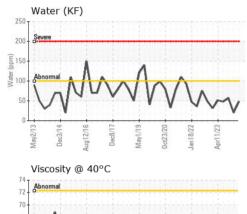
Contact/Location: MARK JOHNSON - TYSRUSD Page 1 of 2

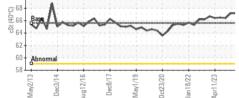


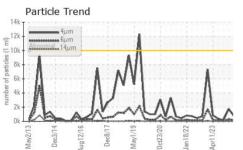
OIL ANALYSIS REPORT



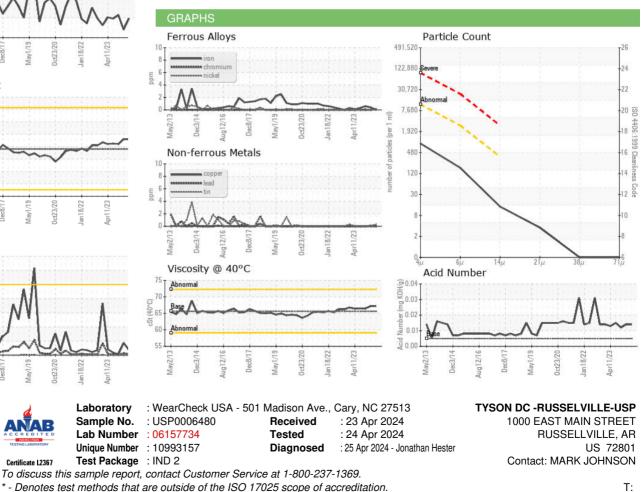








VISUAL		method	limit/base	current	history1	history2
VISUAL		methou	iiiiii/base	Current	TIIStOLYT	TIIStOLYZ
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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 PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	65.6	67.2	67.2	66.4
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color				•	•	
Bottom						



* - 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)

Report Id: TYSRUSD [WUSCAR] 06157734 (Generated: 04/25/2024 20:04:35) Rev: 1

Contact/Location: MARK JOHNSON - TYSRUSD

F: