

OIL ANALYSIS REPORT

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NORMAL

Machine Id

FES TYSNRH B309 (S/N 2512317)

Refrigeration Compressor

USPI 1009-68 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 component. The amount and size of particulates present in the system is acceptable.

Fluid Condition

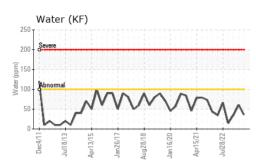
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

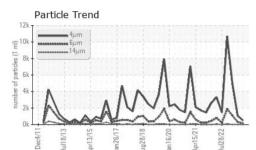
SAMPLE INFORMATION method Imit/base current History1 History2 Sample Date Client Info 11 Jul 2024 11 Apr 2024 15 Jan 2024 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 0 Sample Status Imit/base current NIA N/A N/A WEAR METALS method Imit/base current history1 history2 Iron ppm ASTM 05185m >8 <1 <1 <1 Vickel ppm ASTM 05185m >2 0 <1 0 Silver ppm ASTM 05185m >2 0 1 0 Copper ppm ASTM 05185m >2 0 1 0 Vanadium ppm ASTM 05185m 2 0 1 0 Vanadium ppm ASTM 05185m 0 1 0 0 <tr< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></tr<>							
Sample Date Client Info 11 Jul 2024 11 Apr 2024 15 Jan 2024 Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A NA NA Sample Status method limit/base current history1 history2 Iron ppm ASTM 05155m >8 <1 <1 <1 Chromium ppm ASTM 05155m >2 0 <1 0 Nickel ppm ASTM 05155m >2 0 <1 0 Lead ppm ASTM 05155m >2 0 1 0 Vanadium ppm ASTM 05155m >2 0 1 0 Vanadium ppm ASTM 05155m 0 1 0 1 Vanadium ppm ASTM 05155m 0 1 0 1 Vanadium ppm	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
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Oil Changed Sample Status Client Info N/A N/A N/A N/A N/A WEAR METALS method imil/base current history1 history2 Iron ppm ASTM D5185m >8 <1 <1 <1 Chromium ppm ASTM D5185m >8 <1 <1 <1 Nickel ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 <1 0 Lead ppm ASTM D5185m >2 0 1 0 Cadmium ppm ASTM D5185m >2 0 1 0 Cadmium ppm ASTM D5185m >4 <1 1 0 Cadmium ppm ASTM D5185m 0 <1 0 0 Cadmium ppm ASTM D5185m 0 <1 0 0 Roren ppm ASTM D5185m 0 <1 <	0	hrs	Client Info		-	-	
Sample Status Normal NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >8 <1 <1 <1 Chromium ppm ASTM D5185m >2 0 <1 0 Nickel ppm ASTM D5185m >2 0 <1 0 Aluminum ppm ASTM D5185m >2 0 <1 0 Auminum ppm ASTM D5185m >2 0 <1 0 Copper ppm ASTM D5185m >2 0 <1 0 Copper ppm ASTM D5185m 0 <1 0 0 Cadmium ppm ASTM D5185m 0 0 1 0 ADDITIVES method imit/base current history1 history2 Boron ppm ASTM D5185m 0 0 1 0	-	hrs			-	÷	
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Iron ppm ASTM D5185m >8 <1	Sample Status				NORMAL	NORMAL	NORMAL
Chromium ppm ASTM D5185m >2 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m 0 <1	Iron	ppm	ASTM D5185m	>8	<1	<1	<1
Titanium ppm ASTM D5185m 0 <1	Chromium	ppm	ASTM D5185m	>2	0	<1	<1
Silver ppm ASTM D5185m >2 0 <1	Nickel	ppm	ASTM D5185m		0	<1	0
Atuminum ppm ASTM D5185m >3 <1	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >2 0 1 0 Copper ppm ASTM D5185m >8 0 <1 0 Tin ppm ASTM D5185m >4 <1 1 0 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Marganese ppm ASTM D5185m 0 <1 0 0 Marganese ppm ASTM D5185m 0 <1 <1 1 Calcium ppm ASTM D5185m 0 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >8 0 <1	Aluminum	ppm	ASTM D5185m	>3	<1	1	0
Tin ppm ASTM D5185m >4 1 0 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 <1 0 0 Manganese ppm ASTM D5185m 0 <1 0 0 Manganesium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Potassium ppm ASTM D5185m <2 2 3 3 Sodium	Lead	ppm	ASTM D5185m	>2	0	1	0
Vanadium ppm ASTM D5185m 0 <1	Copper	ppm	ASTM D5185m	>8	0	<1	0
Cadmium ppm ASTM D5185m 0 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 1 0 0 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 <1 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >20 <1 1 <1 Vater % ASTM D5185m >20 <1 1 <1	Tin	ppm	ASTM D5185m	>4	<1	1	0
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Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m 0 1 0 Molybdenum ppm ASTM D5185m 0 <1 0 Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 <1 0 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 0 0 Zinc ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 Sulfur ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >20 <1 1 <1 Vater % ASTM D5185m >20 <1 1 <1 Vater % ASTM D6304 <t< th=""><th>Cadmium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>1</th><th>0</th></t<>	Cadmium	ppm	ASTM D5185m		0	1	0
Barium ppm ASTM D5185m 0 1 0 Molybdenum ppm ASTM D5185m 0 <1 0 Maganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 0 <1 <1 Calcium ppm ASTM D5185m 0 0 0 0 Calcium ppm ASTM D5185m 0 0 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 2 2 3 Sodium ppm ASTM D5185m >20 <1 1 <1 Water % ASTM D5185m >20 <1 1 <1 Water ppm	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 <1	Boron	ppm	ASTM D5185m		0	0	0
Manganese ppm ASTM D5185m 0 <1	Barium	ppm	ASTM D5185m		0	1	0
Magnesium ppm ASTM D5185m 0 <1	Molybdenum	ppm	ASTM D5185m		0	<1	0
Calcium ppm ASTM D5185m 0 0 0 0 Phosphorus ppm ASTM D5185m 0 0 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 2 2 3 Sodium ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >20 <1 1 <1 Water % ASTM D5044 >0.01 0.003 0.006 0.003 ppm Water ppm ASTM D7647 490 1074 4978 Particles >4µm ASTM D7647 >2500 143 306 1088 Particles >6µm ASTM D7647 >20 5 24 23	Manganese	ppm	ASTM D5185m		0	<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 2 2 3 Sodium ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m		0	<1	<1
Zinc ppm ASTM D5185m 0 0 0 0 Sulfur ppm ASTM D5185m 50 0 0 0 0 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >20 <1	Calcium	ppm	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 2 2 3 Sodium ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >20 <1 0 0 Potassium ppm ASTM D6304 >0.01 0.003 0.006 0.003 ppm Water ppm ASTM D6304 >100 36 61 35 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 2500 143 306 1088 Particles >6µm ASTM D7647 >20 5 24 23 Particles >1µm ASTM D7647 >80 1 5 3 Particles >38µm ASTM D7647 >20 0 0 0	Phosphorus	ppm	ASTM D5185m		0	0	0
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m >15 2 2 3 Potassium ppm ASTM D5185m >20 <1 1 <1 Water % ASTM D50304 >0.01 0.003 0.006 0.003 ppm Water ppm ASTM D6304 >100 36 61 35 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 490 1074 4978 Particles >6µm ASTM D7647 >2500 143 306 1088 Particles >14µm ASTM D7647 >20 5 24 23 Particles >21µm ASTM D7647 >20 0 0 0 Particles >38µm ASTM D7647 20 0 0 0 0	Zinc	ppm	ASTM D5185m		0	0	0
Silicon ppm ASTM D5185m >15 2 2 3 Sodium ppm ASTM D5185m <10	Sulfur	ppm	ASTM D5185m	50	0	0	0
Sodium ppm ASTM D5185m <1	CONTAMINANTS	6	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>15	2	2	3
Water % ASTM D6304 >0.01 0.003 0.006 0.003 ppm Water ppm ASTM D6304 >100 36 61 35 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 490 1074 4978 Particles >6µm ASTM D7647 >2500 143 306 1088 Particles >6µm ASTM D7647 >320 5 24 23 Particles >21µm ASTM D7647 >80 1 5 3 Particles >38µm ASTM D7647 >20 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		<1	0	0
ppm Water ppm ASTM D6304 >100 36 61 35 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 490 1074 4978 Particles >6µm ASTM D7647 >2500 143 306 1088 Particles >6µm ASTM D7647 >320 5 24 23 Particles >14µm ASTM D7647 >80 1 5 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 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	<1	1	<1
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 490 1074 4978 Particles >6µm ASTM D7647 >2500 143 306 1088 Particles >6µm ASTM D7647 >320 5 24 23 Particles >14µm ASTM D7647 >80 1 5 3 Particles >21µm ASTM D7647 >80 1 5 3 Particles >38µm ASTM D7647 >20 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.01	0.003	0.006	0.003
Particles >4μm ASTM D7647 490 1074 4978 Particles >6μm ASTM D7647 >2500 143 306 1088 Particles >14μm ASTM D7647 >320 5 24 23 Particles >21μm ASTM D7647 >80 1 5 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 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>100	36	61	35
Particles >6µm ASTM D7647 >2500 143 306 1088 Particles >14µm ASTM D7647 >320 5 24 23 Particles >21µm ASTM D7647 >80 1 5 3 Particles >21µm ASTM D7647 >80 1 5 3 Particles >38µm ASTM D7647 >20 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	NESS	method	limit/base	current	history1	history2
Particles >14µm ASTM D7647 >320 5 24 23 Particles >21µm ASTM D7647 >80 1 5 3 Particles >38µm ASTM D7647 >20 0 0 0 Particles >38µm ASTM D7647 >20 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647		490	1074	4978
Particles >21μm ASTM D7647 >80 1 5 3 Particles >38μm ASTM D7647 >20 0 0 0 Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>2500	143	306	1088
Particles >38μm ASTM D7647 >20 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>320	5	24	23
Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>80	1	5	3
Oil Cleanliness ISO 4406 (c) >/18/15 16/14/10 17/15/12 19/17/12 FLUID DEGRADATION method limit/base current history1 history2	Particles >38µm		ASTM D7647	>20	0	0	0
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>4	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>/18/15	16/14/10	17/15/12	19/17/12
Acid Number (AN) mg KOH/g ASTM D974 0.005 0.014 0.014 0.014	FLUID DEGRADA		method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D974	0.005	0.014	0.014	0.014

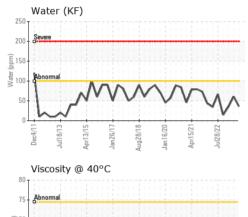
Contact/Location: JOHN MORGAN - TYSNORTX

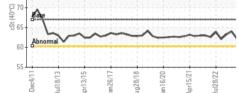


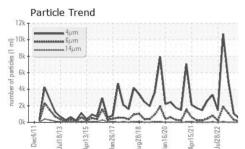
OIL ANALYSIS REPORT



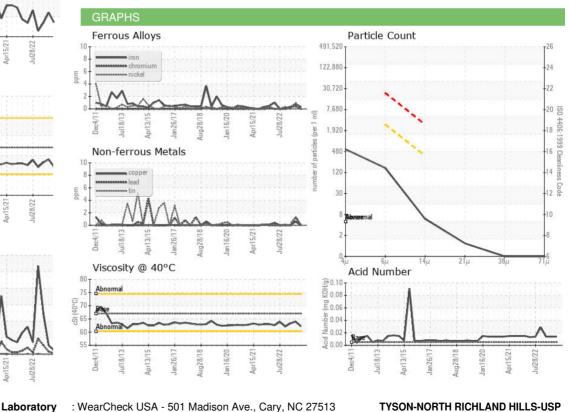








VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	67	62.2	64.0	63.3
SAMPLE IMAGES	6	method	limit/base	current	history1	history2
Color						
Bottom				\bigcirc		



: 11 Jul 2024

: 15 Jul 2024

: 15 Jul 2024 - Doug Bogart



: USP0012193 Sample No. Lab Number : 06233889 Unique Number : 11122723 Test Package : IND 2 Certificate 12367

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Received

Diagnosed

Tested

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

T: (817)514-3519 F:

6350 BLOWN CT

NORTH RICHLAND HILLS, TX

Contact: JOHN MORGAN

Report Id: TYSNORTX [WUSCAR] 06233889 (Generated: 07/15/2024 11:08:22) Rev: 1

Contact/Location: JOHN MORGAN - TYSNORTX

US 76180