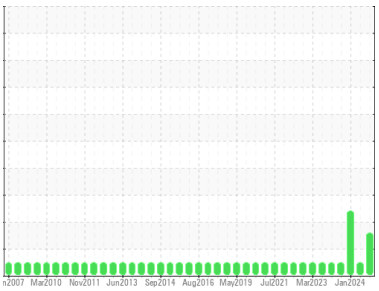
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR PARTICLES

Area
(C-FQMN)
Machine Id
[C-FQMN] DEHAVILLAND DHC-3T PCE-RB0273
Component
Jet Turbine
Fluid
EASTMAN TURBO OIL 2380 (0 LTR)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

Wear particle analysis indicates that the ferrous cutting particles are abnormal. Cutting wear particles are caused by either hard protuberances (mis-aligned components, etc.), or abrasives entering the system and embedding themselves in softer materials (sand, etc.), and gouging out mating surfaces.

Contaminants

The water content is negligible. There is no indication of any contamination in the oil.

Oil Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0944079**	WC0944070	WC0853658
Sample Date		Client Info		**11 Jun 2024**	16 May 2024	25 Jan 2024
TSN	hrs	Client Info		**4478**	4293	0
TSO	hrs	Client Info		**4478**	4293	0
Oil Age	hrs	Client Info		**104**	25	0
Oil Changed		Client Info		**N/A**	Not Changd	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

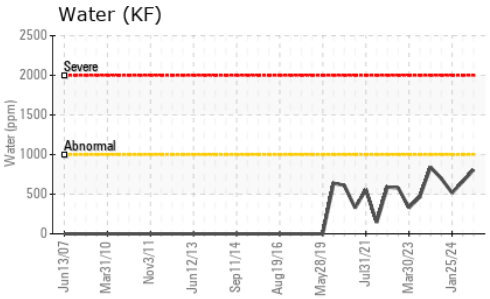
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>8	**0**	0	<1
Chromium	ppm	ASTM D5185(m)	>2	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>2	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>2	**<1**	0	<1
Lead	ppm	ASTM D5185(m)	>3	**0**	0	0
Copper	ppm	ASTM D5185(m)	>3	**0**	0	<1
Tin	ppm	ASTM D5185(m)	>2	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

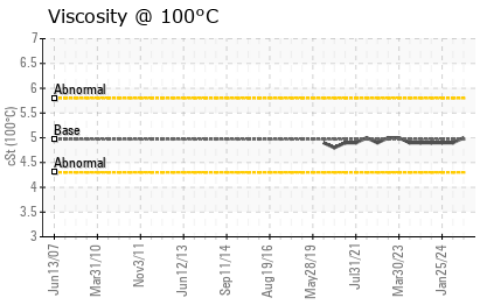
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Calcium	ppm	ASTM D5185(m)	0	**0**	0	0
Phosphorus	ppm	ASTM D5185(m)	2500	**2590**	2620	2729
Zinc	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Sulfur	ppm	ASTM D5185(m)	0	**2**	0	0
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

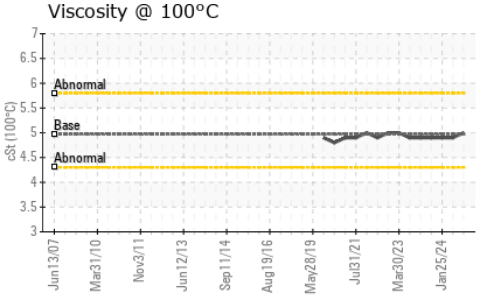
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>8	**0**	0	<1
Sodium	ppm	ASTM D5185(m)		**0**	0	0
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Water	%	ASTM D6304*	>0.1	**0.080**	0.066	0.051
ppm Water	ppm	ASTM D6304*	>1000	**808**	661	517

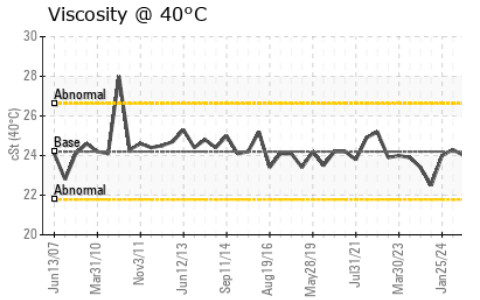
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.43	**0.29**	0.34	0.24

OIL ANALYSIS REPORT



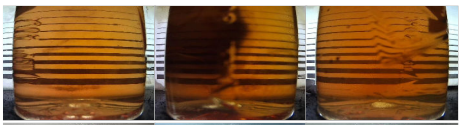




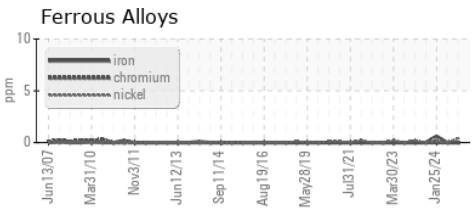


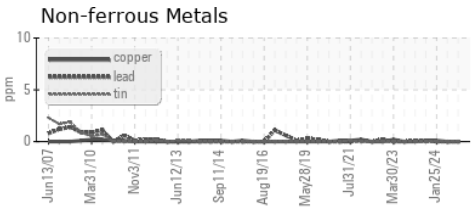
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	VLITE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

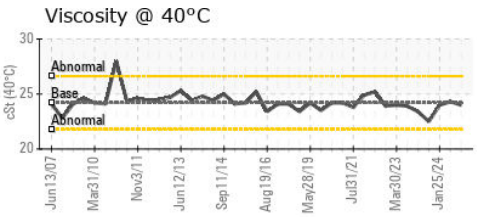
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	24.2	**24.0**	24.3	24.0
Visc @ 100°C	cSt	ASTM D7279(m)	4.97	**5.0**	4.9	4.9
Viscosity Index (VI)	Scale	ASTM D2270*	134	**138**	127	130

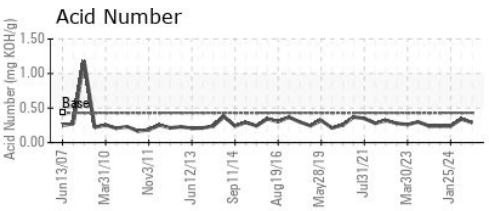
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						

GRAPHS









ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0944079
Lab Number : 02644809
Unique Number : 5802348
Test Package : AVI 3

Received : 02 Jul 2024
Tested : 03 Jul 2024
Diagnosed : 08 Jul 2024 - Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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Contact: Robert Hope
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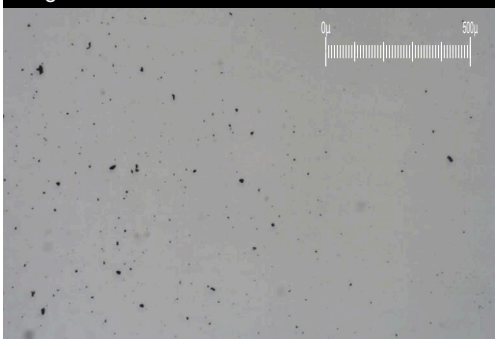
FERROGRAPHY REPORT

Area
(C-FQMN)
Machine Id
[C-FQMN] DEHAVILLAND DHC-3T PCE-RB0273
Component
Jet Turbine
Fluid
EASTMAN TURBO OIL 2380 (0 LTR)

Magn: 200x Illum: BC

Magn: 50x Illum: RW



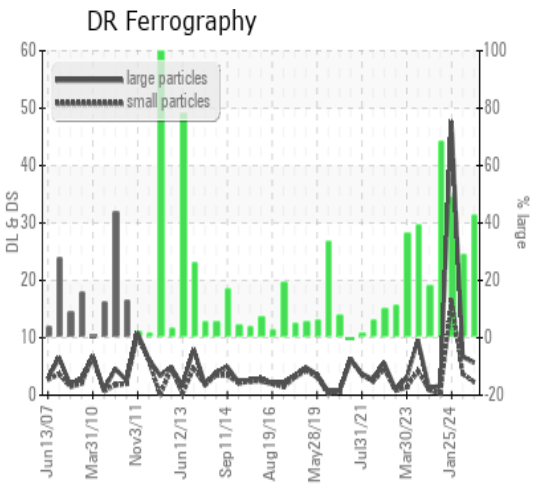
Magn: 100x Illum: RW

DR-FERROGRAPHY		method	limit/base	current	history1	history2
Large Particles		DR-Ferr*		**5.7**	6.7	47.7
Small Particles		DR-Ferr*		**2.3**	3.7	16.5
Total Particles		DR-Ferr*	>---	**8**	10.4	64.2
Large Particles Percentage	%	DR-Ferr*		**42.5**	28.8	48.6
Severity Index		DR-Ferr*		**19**	20	1488

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		**2**	1	4
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*		**1**		
Ferrous Rolling	Scale 0-10	ASTM D7684*		**1**	1	2
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				1
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Lubricant Degradation	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		**1**	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		**1**	1	2

WEAR

Wear particle analysis indicates that the ferrous cutting particles are abnormal. Cutting wear particles are caused by either hard protuberances (mis-aligned components, etc.), or abrasives entering the system and embedding themselves in softer materials (sand, etc.), and gouging out mating surfaces.



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