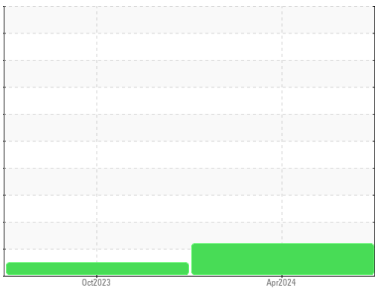
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
ENDEAVOR
Component
Center Main Engine
Fluid
TITAN 15W40 (9 GAL)

DIAGNOSIS

Recommendation
We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0834576**	WC0847403	---
Sample Date		Client Info		**26 Apr 2024**	21 Oct 2023	---
Machine Age	hrs	Client Info		**9707**	9413	---
Oil Age	hrs	Client Info		**169**	384	---
Oil Changed		Client Info		**Not Changd**	Not Changd	---
Sample Status				**ABNORMAL**	NORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	**5**	7	---
Chromium	ppm	ASTM D5185m	>8	**<1**	0	---
Nickel	ppm	ASTM D5185m	>2	**0**	0	---
Titanium	ppm	ASTM D5185m	>3	**2**	3	---
Silver	ppm	ASTM D5185m	>2	**0**	0	---
Aluminum	ppm	ASTM D5185m	>15	**<1**	1	---
Lead	ppm	ASTM D5185m	>18	**1**	1	---
Copper	ppm	ASTM D5185m	>80	**<1**	2	---
Tin	ppm	ASTM D5185m	>14	**0**	<1	---
Vanadium	ppm	ASTM D5185m		**0**	<1	---
Cadmium	ppm	ASTM D5185m		**<1**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**30**	101	---
Barium	ppm	ASTM D5185m		**0**	0	---
Molybdenum	ppm	ASTM D5185m		**14**	59	---
Manganese	ppm	ASTM D5185m		**<1**	<1	---
Magnesium	ppm	ASTM D5185m		**115**	433	---
Calcium	ppm	ASTM D5185m		**2337**	1872	---
Phosphorus	ppm	ASTM D5185m		**916**	1038	---
Zinc	ppm	ASTM D5185m		**1081**	1302	---
Sulfur	ppm	ASTM D5185m		**4058**	3718	---

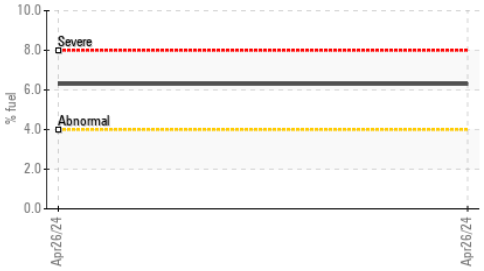
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**3**	3	---
Sodium	ppm	ASTM D5185m	>75	**2**	1	---
Potassium	ppm	ASTM D5185m	>20	**1**	2	---
Fuel	%	ASTM D3524	>4.0	**6.3**	<1.0	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**7.8**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.1**	---	---

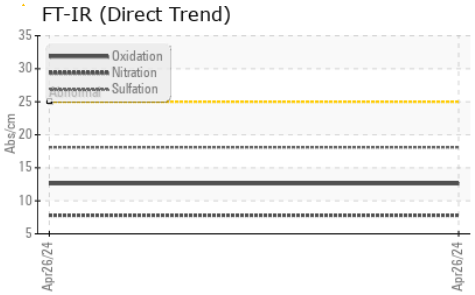
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**12.6**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		**7.2**	---	---

OIL ANALYSIS REPORT

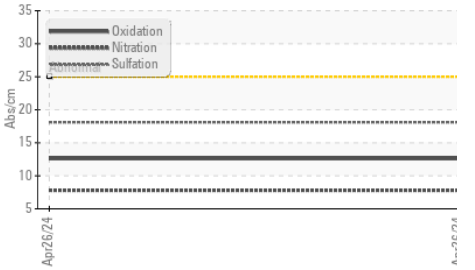
Fuel Dilution



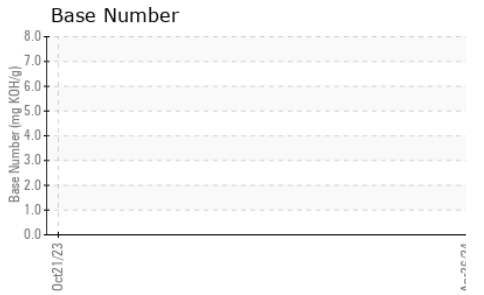
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

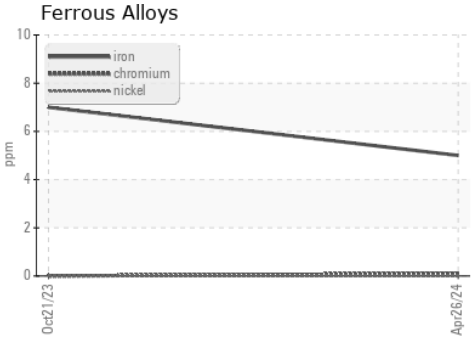


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt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

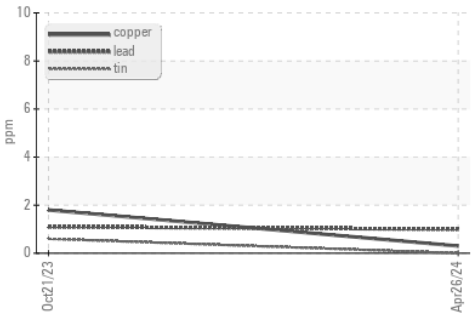
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		▲ **11.7**	---	---

GRAPHS

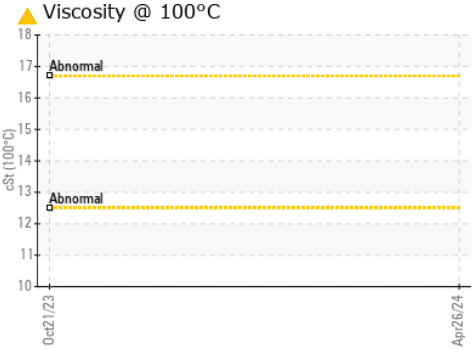
Ferrous Alloys



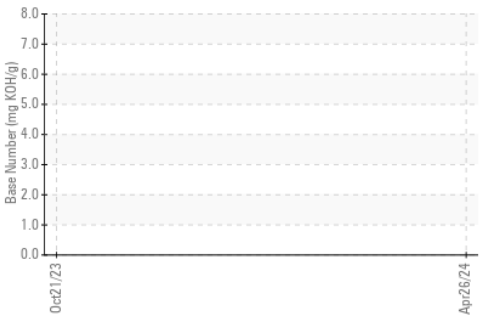
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0834576 **Received** : 13 May 2024
Lab Number : 06176943 **Tested** : 16 May 2024
Unique Number : 11022996 **Diagnosed** : 16 May 2024 - Wes Davis
Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

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

CITY EXPERIENCES - SEAWARD EXPLORER
2825 5TH AVENUE
SAN DIEGO, CA
US 92103
Contact: PETER CHARBONNET
T: (985)290-6777
F:

Report Id: CITSANUS [WUSCAR] 06176943 (Generated: 05/16/2024 16:54:35) Rev: 1
Contact/Location: PETER CHARBONNET - CITSANUS