OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine Id
FP-16
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend you service the filters on this component. 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
Oil Cleanliness are abnormally high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. Particles >38µm are abnormally high. Particles >6µm are notably high.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0009705**	---	---
Sample Date		Client Info		**18 Jan 2023**	---	---
Machine Age	hrs	Client Info		**21514**	---	---
Oil Age	hrs	Client Info		**620**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**ABNORMAL**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	---	---
Water		WC Method	>0.2	**NEG**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**12**	---	---
Chromium	ppm	ASTM D5185m	>20	**<1**	---	---
Nickel	ppm	ASTM D5185m	>4	**<1**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m	>3	**0**	---	---
Aluminum	ppm	ASTM D5185m	>20	**1**	---	---
Lead	ppm	ASTM D5185m	>40	**4**	---	---
Copper	ppm	ASTM D5185m	>330	**<1**	---	---
Tin	ppm	ASTM D5185m	>15	**<1**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

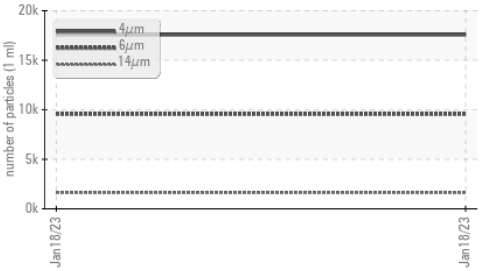
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**253**	---	---
Barium	ppm	ASTM D5185m	10	**0**	---	---
Molybdenum	ppm	ASTM D5185m	100	**61**	---	---
Manganese	ppm	ASTM D5185m		**<1**	---	---
Magnesium	ppm	ASTM D5185m	450	**340**	---	---
Calcium	ppm	ASTM D5185m	3000	**1540**	---	---
Phosphorus	ppm	ASTM D5185m	1150	**844**	---	---
Zinc	ppm	ASTM D5185m	1350	**1028**	---	---
Sulfur	ppm	ASTM D5185m	4250	**3308**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	---	---
Sodium	ppm	ASTM D5185m	>158	**6**	---	---
Potassium	ppm	ASTM D5185m	>20	**3**	---	---

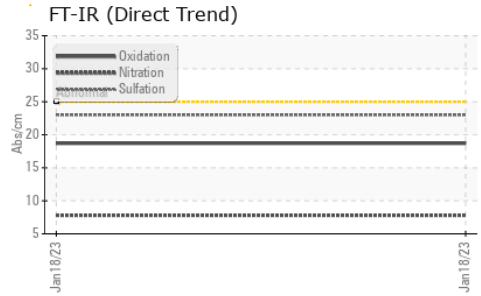
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.5**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**7.8**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.0**	---	---

OIL ANALYSIS REPORT

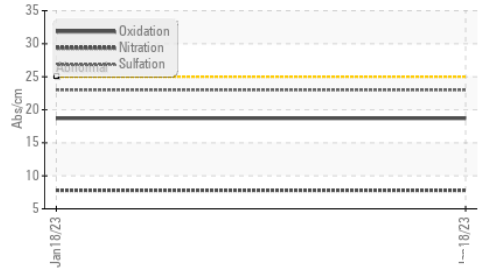
Particle Trend



FT-IR (Direct Trend)

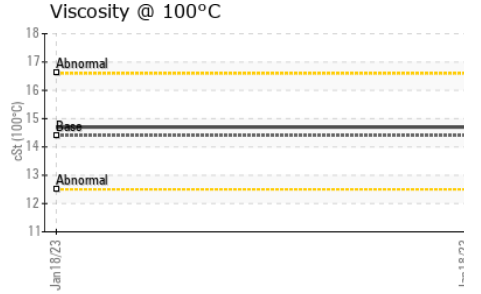


FT-IR (Direct Trend)



Base Number

Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**17567**	---	---
Particles >6µm		ASTM D7647	>5000	**9570**	---	---
Particles >14µm		ASTM D7647	>640	**1629**	---	---
Particles >21µm		ASTM D7647	>160	**549**	---	---
Particles >38µm		ASTM D7647	>40	**85**	---	---
Particles >71µm		ASTM D7647	>10	**9**	---	---
Oil Cleanliness		ISO 4406 (c)	>19/16	**20/18**	---	---

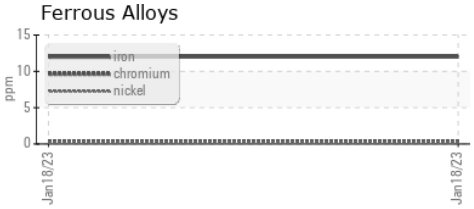
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.7**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**6.28**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	---	---
Appearance	scalar	*Visual	NORML	**NORML**	---	---
Odor	scalar	*Visual	NORML	**NORML**	---	---
Emulsified Water	scalar	*Visual	>0.2	**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

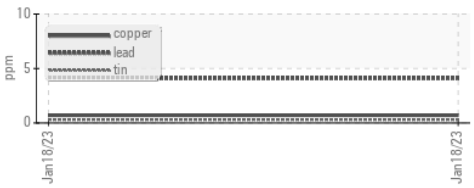
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.7**	---	---

GRAPHS

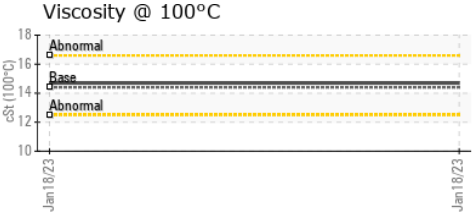
Ferrous Alloys



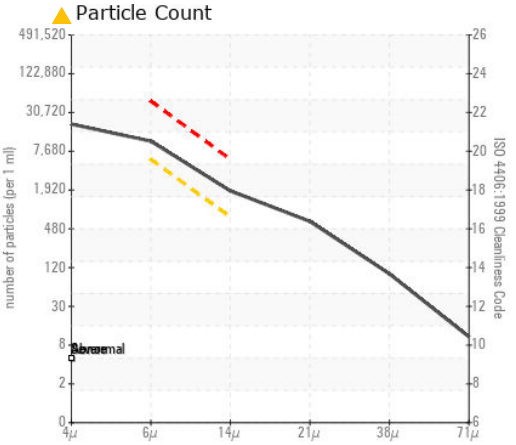
Non-ferrous Metals



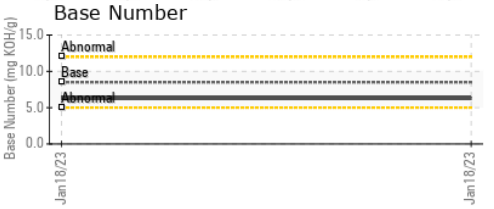
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0009705
Lab Number : 05743673
Unique Number : 10298272
Test Package : MOB 2 (Additional Tests: PrtCount)

Received : 19 Jan 2023
Tested : 20 Jan 2023
Diagnosed : 20 Jan 2023 - Wes Davis

PUREFRAC LLC
13216 TX-191
MIDLAND, TX
US 79707
Contact: Service Manager

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)

T:
F: