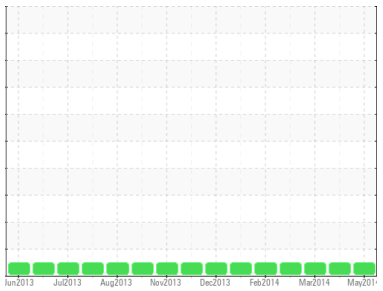
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
RIG 8
Machine Id
DRILLING RIG R8-L-01
Component
Diesel Engine
Fluid
MOBIL 15W40 (10 GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KLM2313490**	KLM2314389	KLM2312308
Sample Date		Client Info		**08 May 2014**	18 Apr 2014	25 Mar 2014
Machine Age	days	Client Info		**41768**	41747	41723
Oil Age	days	Client Info		**29**	8	6
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**23**	24	18
Chromium	ppm	ASTM D5185m	>6	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m		**0**	<1	0
Aluminum	ppm	ASTM D5185m	>30	**2**	2	2
Lead	ppm	ASTM D5185m	>10	**0**	<1	<1
Copper	ppm	ASTM D5185m	>150	**3**	3	3
Tin	ppm	ASTM D5185m	>4	**<1**	0	0
Antimony	ppm	ASTM D5185m		**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

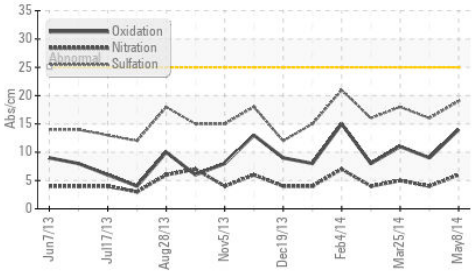
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**104**	117	98
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**28**	28	26
Manganese	ppm	ASTM D5185m		**1**	<1	<1
Magnesium	ppm	ASTM D5185m		**131**	148	132
Calcium	ppm	ASTM D5185m		**1872**	2019	2163
Phosphorus	ppm	ASTM D5185m		**948**	923	987
Zinc	ppm	ASTM D5185m		**1034**	1030	1064
Sulfur	ppm	ASTM D5185m		**1139**	4264	2373

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**2**	3	2
Sodium	ppm	ASTM D5185m		**<1**	1	6
Potassium	ppm	ASTM D5185m	>20	**1**	0	<1

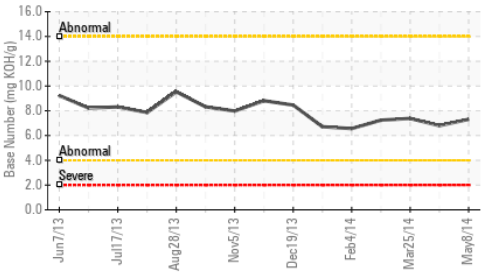
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	0.4	0.4
Nitration	Abs/cm	*ASTM D7624		**6.**	4.	5.
Sulfation	Abs/.1mm	*ASTM D7415		**19.**	16.	18.

OIL ANALYSIS REPORT

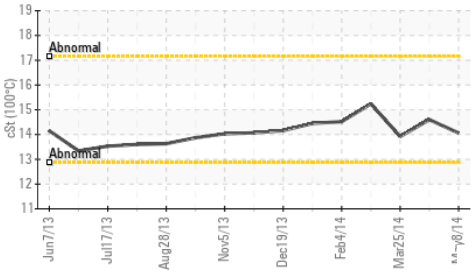
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**179**	179	192
Particles >6µm		ASTM D7647	>5000	**97**	97	104
Particles >14µm		ASTM D7647	>640	**16**	16	17
Particles >21µm		ASTM D7647	>160	**5**	5	6
Particles >38µm		ASTM D7647	>40	**0**	0	0
Particles >71µm		ASTM D7647	>10	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/16	**14/11**	14/11	14/11

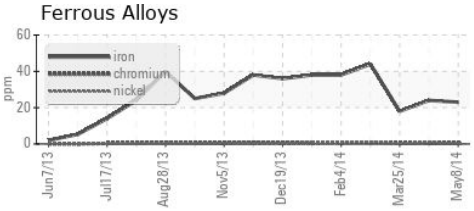
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**14.**	9.	11.
Base Number (BN)	mg KOH/g	ASTM D2896		**7.31**	6.80	7.38

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	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

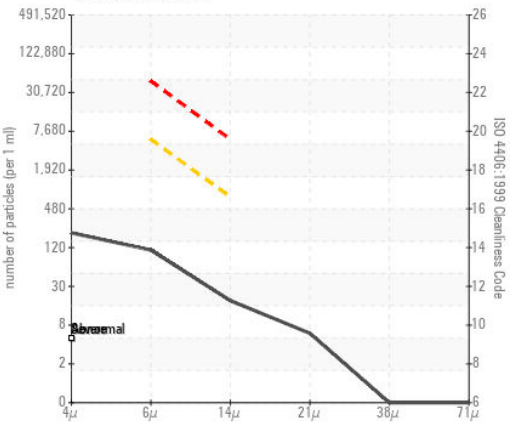
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.06**	14.6	13.92

GRAPHS

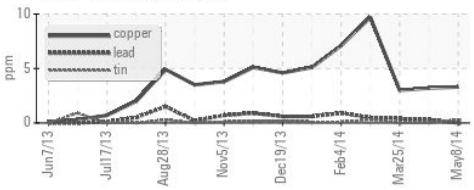
Ferrous Alloys



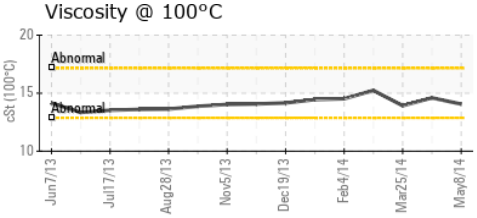
Particle Count



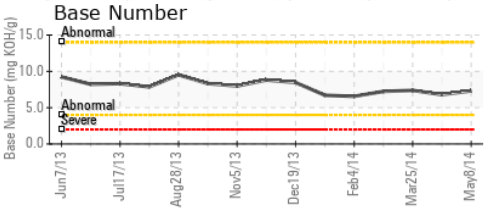
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLM2313490
Lab Number : 03505967
Unique Number : 6623850
Test Package : MOB 2 (Additional Tests: PrtCount)
Received : 16 May 2014
Tested : 20 May 2014
Diagnosed : 20 May 2014 - Doug Bogart

Certificate L2367

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)

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