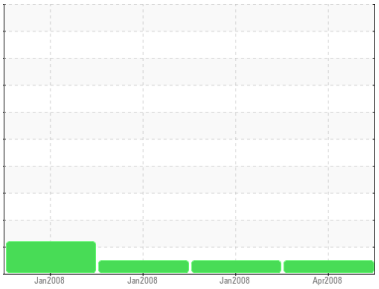
OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
FREIGHTLINER 11386
Component
Front Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (36 LTR)

DIAGNOSIS

Recommendation
We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

▲ Contamination
Sodium and/or potassium levels are high indicating a possible coolant leak. The amount and size of particulates present in the system is acceptable.

Fluid Condition
The condition of oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KLM2200151**	KL02101620	KLM2201931
Sample Date		Client Info		**02 Apr 2008**	21 Jan 2008	09 Jan 2008
Machine Age	mls	Client Info		**233149**	210115	206141
Oil Age	mls	Client Info		**23034**	3634	0
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		**<1.0**	<1.0	<1.0
Water		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m		**39**	7	5
Chromium	ppm	ASTM D5185m		**2**	<1	<1
Nickel	ppm	ASTM D5185m		**1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m		**4**	<1	<1
Lead	ppm	ASTM D5185m		**3**	0	0
Copper	ppm	ASTM D5185m		**7**	2	1
Tin	ppm	ASTM D5185m		**0**	0	0
Antimony	ppm	ASTM D5185m		**8**	5	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

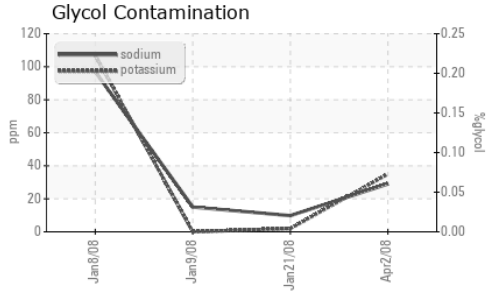
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**<1**	1	3
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**4**	<1	2
Manganese	ppm	ASTM D5185m		**<1**	0	0
Magnesium	ppm	ASTM D5185m		**20**	22	25
Calcium	ppm	ASTM D5185m		**3266**	3033	3640
Phosphorus	ppm	ASTM D5185m		**1147**	1016	1378
Zinc	ppm	ASTM D5185m		**1268**	1084	1344
Sulfur	ppm	ASTM D5185m		**4999**	4868	6364

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m		**2**	7	7
Sodium	ppm	ASTM D5185m		▲ **29**	10	15
Potassium	ppm	ASTM D5185m		▲ **35**	2	0
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

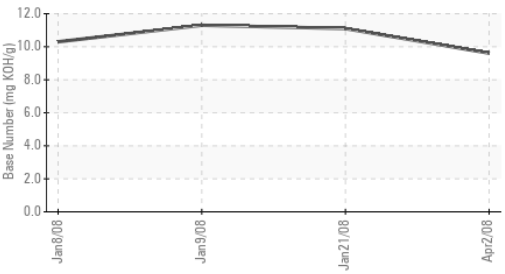
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**1**	0.2	0
Nitration	Abs/cm	*ASTM D7624		**7.**	4.	4.
Sulfation	Abs/.1mm	*ASTM D7415		**20.**	17.	17.

OIL ANALYSIS REPORT

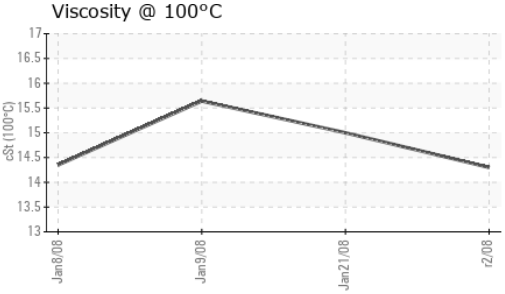
Glycol Contamination



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**628**	461	384
Particles >6µm		ASTM D7647		**342**	251	209
Particles >14µm		ASTM D7647		**58**	42	35
Particles >21µm		ASTM D7647		**19**	14	12
Particles >38µm		ASTM D7647		**3**	2	1
Particles >71µm		ASTM D7647		**0**	0	0
Oil Cleanliness		ISO 4406 (c)		**16/13**	15/13	15/12

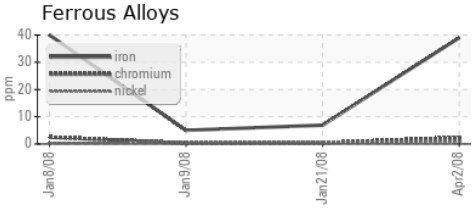
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**11.**	10.	10.
Base Number (BN)	mg KOH/g	ASTM D2896		**9.61**	11.1	11.3

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		**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

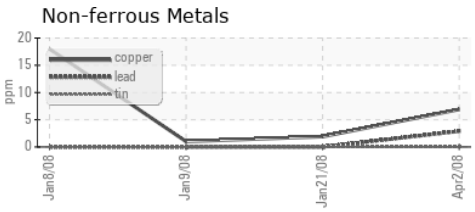
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**14.3**	15.00	15.64

GRAPHS

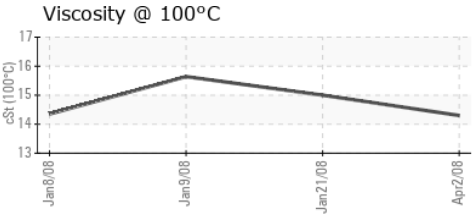
Ferrous Alloys



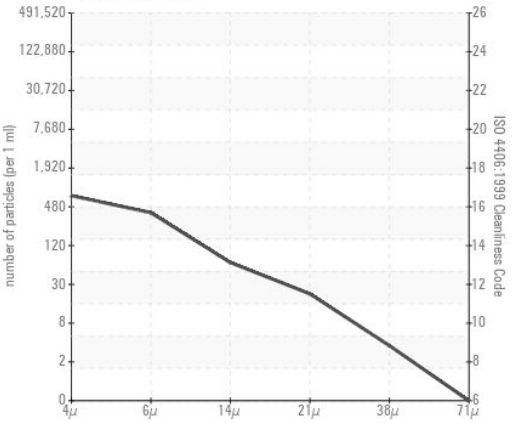
Non-ferrous Metals



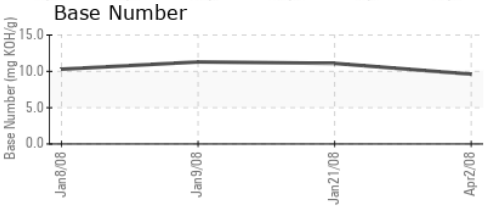
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KLM2200151 **Recieved** : 09 Apr 2008
Lab Number : 02147449 **Diagnosed** : 10 Apr 2008
Unique Number : 4411279 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: Glycol, PrtCount)

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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