



**PERFORMANCE  
UNDER  
PRESSURE**

**OIL ANALYSIS REPORT**

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**CATERPILLAR EMD CAT 3412**

Component  
**Diesel Engine**

Fluid  
**{not provided} (20 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>RP033939</b>	RP033940	RP034583
Sample Date		Client Info		<b>24 Jan 2007</b>	22 Dec 2006	25 Nov 2006
Machine Age	hrs	Client Info		<b>4989</b>	4269	3391
Oil Age	hrs	Client Info		<b>2382</b>	1678	800
Filter Age	hrs	Client Info		<b>720</b>	878	800
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m		<b>76</b>	91	64
Chromium	ppm	ASTM D5185m		<b>8</b>	9	6
Nickel	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m		<b>17</b>	20	14
Lead	ppm	ASTM D5185m		<b>17</b>	11	5
Copper	ppm	ASTM D5185m		<b>30</b>	62	139
Tin	ppm	ASTM D5185m		<b>2</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

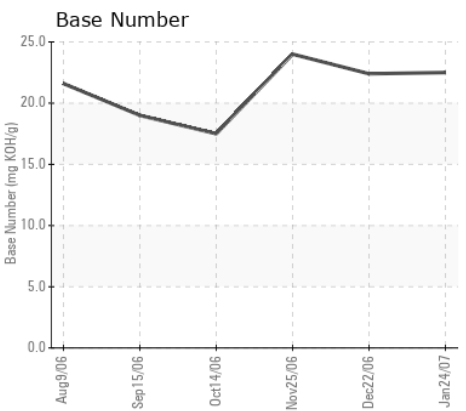
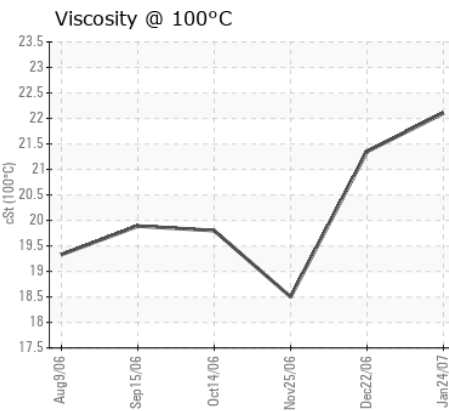
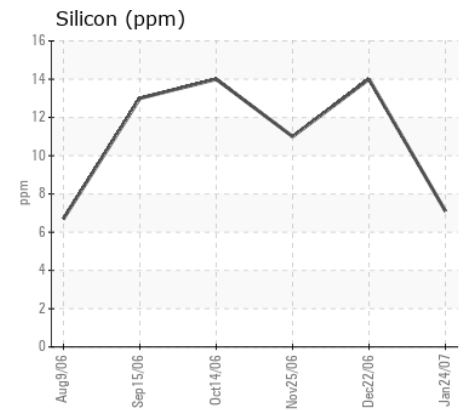
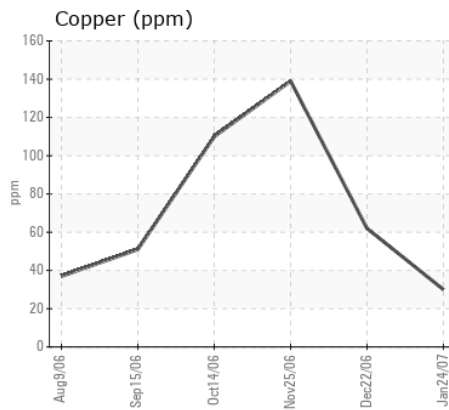
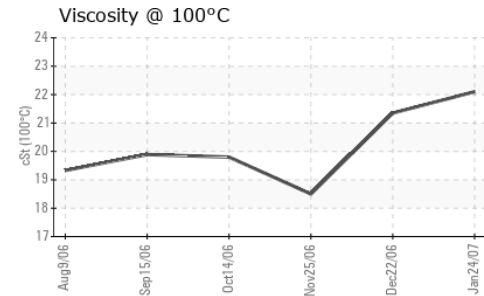
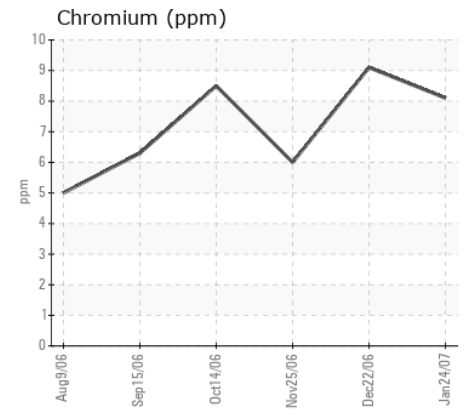
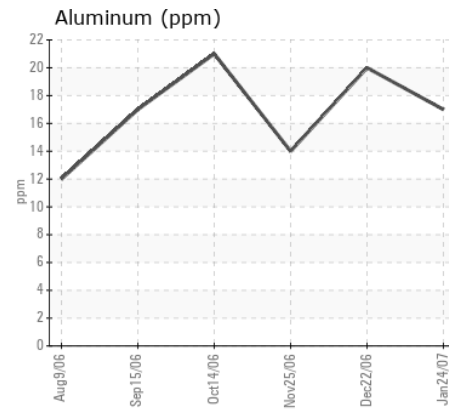
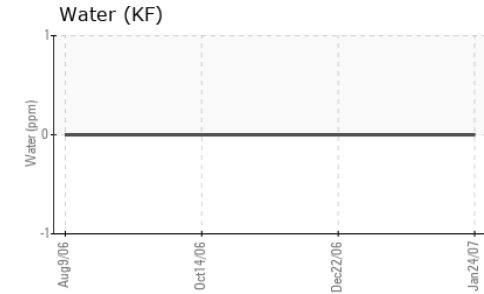
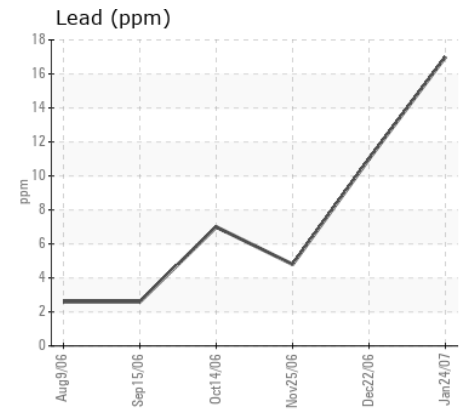
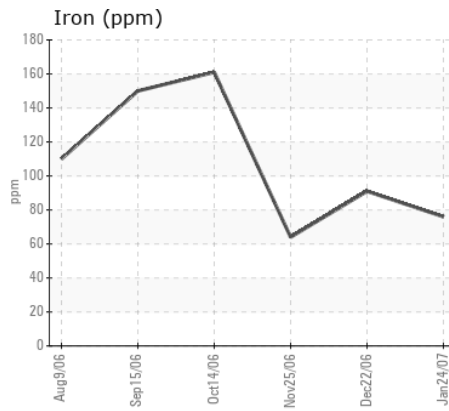
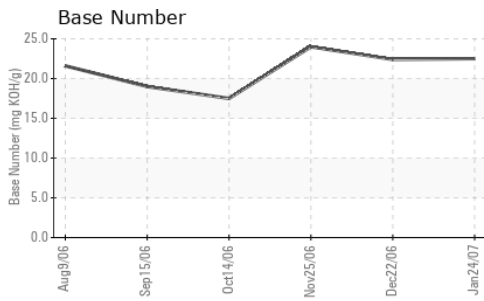
There is no indication of any contamination in the component.

Silicon	ppm	ASTM D5185m		<b>7</b>	14	11
Potassium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Fuel		WC Method		<b>&lt;1.0</b>	<1.0	<1.0
Water	%	ASTM D6304		<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>1.8</b>	▲ 2	1.3
Nitration	Abs/cm	*ASTM D7624		<b>19.</b>	19.	0.75
Sulfation	Abs/.1mm	*ASTM D7415		<b>76.</b>	78.	0.46
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

The condition of oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>6</b>	7	4
Boron	ppm	ASTM D5185m		<b>5</b>	2	1
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>155</b>	182	143
Manganese	ppm	ASTM D5185m		<b>3</b>	2	1
Magnesium	ppm	ASTM D5185m		<b>3429</b>	3952	3871
Calcium	ppm	ASTM D5185m		<b>7500</b>	7743	7204
Phosphorus	ppm	ASTM D5185m		<b>1096</b>	1158	1036
Zinc	ppm	ASTM D5185m		<b>1728</b>	1864	1586
Oxidation	Abs/.1mm	*ASTM D7414		<b>39.</b>	39.	1.37
Base Number (BN)	mg KOH/g	ASTM D2896		<b>22.5</b>	22.4	24.0
Visc @ 100°C	cSt	ASTM D445		<b>22.1</b>	21.35	18.5



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RP033939  
**Lab Number** : 01908009  
**Unique Number** : 4021683  
**Test Package** : MOB 2 ( Additional Tests: KF )

**Received** : 12 Feb 2007  
**Tested** : 13 Feb 2007  
**Diagnosed** :

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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