



GEARHEAD

OIL ANALYSIS

1 EXTRACT

Using provided clear bottle, extract engine oil from oil reservoir and fill out data label provided.

2 SEND

Place oil sample in pre-paid shipping container, and send through US Mail. NO POSTAGE NECESSARY!

3 RECEIVE

Lab tech sends detailed analysis report to customer.

John Smith
Location: Main
Unit ID: 819 Transmission
Model: Trans. Auto Powershift
Machine Type: Trans. Auto Powershift

No action recommended - all values are satisfactory
20 May 2013

Sample ID	3F200 (04/09)	50025 (07/10)	41826 (08/10)	50042 (09/10)	25540 (07/12)	
Sampled on	03 May 2013	27 Jan 2013	08 Oct 2012	n.a.	12 Jan 2012	
Received on	18 May 2013	01 Feb 2013	15 Oct 2012	06 Jul 2013	20 Jun 2012	
% Total	50750	44677	43109	40009	40001	
h Oil		218		309	1370	
Top-Up Oil						
	Sample	3F200	50025	41826	50042	25540
Iron	ppm	200	133	110	91	648
Chromium	ppm	24	1	1	<1	<1
Nickel	ppm	34	<1	<1	<1	<1
Molybdenum	ppm	215	<1	<1	1	<1
Aluminum	ppm	28	3	3	2	1
LEAD	ppm	58	<1	1	<1	7
Copper	ppm	829	33	31	31	22
Tin	ppm	24	<1	<1	<1	<1
Silver	ppm	24	<1	<1	<1	<1
Titanium	ppm	24	<1	<1	<1	<1
Silicon	ppm	73	5	5	5	22
SODIUM	ppm	273	4	4	3	13
Calcium	ppm	1200	44	43	42	8
Magnesium	ppm	130	<1	<1	<1	8
Phosphorus	ppm	678	1301	1332	1293	554
Zinc	ppm	6776	49	36	42	23
Barium	ppm	1500	28	23	26	27
Boron	ppm	497	225	220	232	209
Viscosity @ 100°C	cSt	5.5-24.1	11.0	18.3	17.2	15.3
Water	%	1.0	0.0	0.1	0.0	0.0

Date: 03 May 2013 Lab: S-server

Sample Report



RECEIVE YOUR DIAGNOSTICS ELECTRONICALLY FROM THE ROAD.

As any fleet operator understands, saving a few pennies a mile on maintenance costs can add up very quickly, saving thousands of dollars per year.

VISIT US ONLINE FOR OTHER PRODUCTS

WHAT IS OIL ANALYSIS?

Engine oil analysis is a process that involves a sample of engine oil, and analyzing it for various properties and materials in order to monitor wear metals and contamination. By analyzing a sample of used engine oil, you can determine the wear rate, and overall service condition of an engine, along with spotting potential problems and imminent failure before it happens. This has become a critical tool for commercial shipping fleets, where downtime due to engine failure can be costly and potentially dangerous.

GEARHEAD OIL ANALYSIS
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GEARHEAD

OIL ANALYSIS

John Smith

Location:

Main

Unit ID:

8035

Model:

Machine Type:

Engine, Diesel: Liquid-Cooled



Lead level is HIGH, suggesting close monitoring, or possibly maintenance action

Oxidation is HIGH

15 Mar 2014

Oil	Shell Rotella T 15W40	Sample ID	8DBE9 (L1077)	7C349 (K3325)	77979 (K2985)	706D5 (K2457)	6B3A2 (K2101)	
Note:		Sampled on	09 Mar 2014	02 Dec 2013	21 Oct 2013	09 Sep 2013	05 Aug 2013	
		Received on	15 Mar 2014	04 Dec 2013	06 Nov 2013	23 Sep 2013	20 Aug 2013	
		m Total	353381	297684	269013	242066	216000	
		m Oil	162107	106410	67729	50792	26000	
		Top up (l.)						
		Warning Limits						
ASTM D6595-00 WEAR METALS	Iron	ppm	100	79	49	31	19	11
	Chrome	ppm	15	3	3	2	2	1
	Nickel	ppm	24	<1	<1	<1	<1	<1
	Molybdenum	ppm	450	14	17	18	14	12
	Aluminium	ppm	15	8	7	5	5	4
	Lead	ppm	30	32	26	19	10	2
	Copper	ppm	20	10	5	4	4	2
	Tin	ppm	34	<1	<1	<1	<1	<1
	Silver	ppm	24	<1	<1	<1	<1	<1
	Titanium	ppm	150	<1	<1	<1	<1	<1
ASTM D6595-00 CONTAMINANTS	Silicon	ppm	15	12	5	8	7	5
	Sodium	ppm	40	32	28	23	15	11
ASTM D6595-00 ADDITIVES	Calcium	ppm	12000	2756	2785	2678	2662	2604
	Magnesium	ppm	2500	77	90	99	62	56
	Phosphorus	ppm	4158	1655	1436	1265	1118	1362
	Zinc	ppm	4808	1373	1350	1319	1338	1330
	Barium	ppm	273	<1	<1	<1	<1	<1
ASTM D445	Viscosity at 100°C	cSt	7.0 - 21.9	16.2	15.6	15.4	15.5	14.8
Soot	%	5.0	1.5	1.1	0.7	0.5	0.3	
Oxi	abs/mm2	21.0	21.4	18.3	14.0	10.8	7.9	
Nit	abs/mm2	21.0	8.5	7.7	6.3	5.0	3.3	
Antiwear (ZDDP)	abs/mm2		0.0	0.0	0.2	0.0	0.0	
Sulfate By-Products	abs/mm2		20.4	18.1	14.3	10.9	7.1	
TBN	mgKOH/g	<2.0	3.0	2.3	3.0	3.9	6.9	
Glycol	%	5.0	0.0	0.0	0.0	0.0	0.1	
Water	%	0.2	0.0	0.0	0.0	0.0	0.0	
Diesel Fuel	%	5.0	0.0	0.0	0.0	0.0	0.0	

Date 21 Apr 2014 Lab Supervisor _____