

# Understanding an Oil Analysis Report



**BUREAU VERITAS**



**1** Bureau Veritas - Oil Analysis  
12715 Royal Drive, Stafford, TX, 77477  
800 - 248 - 7778

**2** Sample Analysis Report  
Status:

Account Information	Sample Information	Other Sample Information
<b>3</b> Customer ID #: 288623 Company Name: ACME - 288623 Company Worksite: Demo Site #12 Company Address: 12345 Main Street Houston, TX 77086	<b>4</b> Lab #: 201705260886 Sample Tracking #: S22434208234 Sample Date: May 16, 2017 Received Date: May 18, 2017 Completed Date: May 20, 2017	<b>5</b> PO #: 87654321 Work Order #: 12345678
Unit Information	Component Information	Fluid Information
Unit ID: 81629 Unit Mfr: International, 2007 Unit Model: IH7400 TAN RL Unit Serial #: 1HTWGAZT87J445473 Unit Worksite: Demo Site #12	Component Description: NATURAL GAS ENGINE Component Mfr: Cummins Component Model: ISL-G Component Serial #: 2134108 Component Type: Engine	<b>6</b> Fluid Mfr: CASTROL Fluid Brand / Product: DURATECES Fluid Grade: 15W40

**7** Maintenance Recommendations for Lab #: 201705260886  
 Sodium level is elevated. Viscosity is not in grade. See measured value in test result. Water level elevated. Potassium is elevated. --RECOMMENDATIONS --Refer to the trend graphing options to assist monitoring of unit / component. Suggest resampling at earliest possible convenience as a precaution. Evaluated By: Smith, Clark

SPECTROCHEMICAL ANALYSIS (D5185) IN PARTS PER MILLION																						
		<b>8</b> WEAR METALS								CONTAMINANTS								<b>10</b> ADDITIVES				
LAB #	SAMPLE DRAWN	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony	Vanadium
0435	05/10/17	24	1	1	3	3	20	<1	<0.1	1	3	383*	501*	9	172	737	890	1877	<1	55	<1	<1
0548	02/23/17	24*	2	1	2	<1	2	<1	<0.1	<1	4	347*	457*	9	155	697	908	2181	<1	36	<1	<1
0351	12/24/16	2	<1	<1	1	<1	<1	<1	<0.1	<1	2	13	2	83	102	712	745	1702	<1	74	<1	<1
0718	11/09/16	4	<1	<1	1	<1	1	7	<0.1	<1	2	40	28	91	102	676	915	1921	<1	51	<1	<1
0580	09/17/16	8	<1	<1	1	4	4	<1	0.9	<1	2	41	38	80	140	761	956	2261	<1	35	<1	<1
0569	07/06/16	7	1	<1	<1	1	1	<1	<0.1	<1	2	43	43	66	107	729	858	1972	<1	14	<1	<1

TIME ON UNIT/FLUID						
LAB #	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHANGE	LUBE SERVICE
0435	05/10/17	9440	650	Hours	YES	C
0548	02/23/17	9004	401	Hours	YES	C
0351	12/24/16	8503	270	Hours	YES	C
0718	11/09/16	8233	327	Hours	YES	C
0580	09/17/16	7906	440	Hours	YES	C
0569	07/06/16	7566	364	Hours	YES	C

FLUID PROPERTIES / CONTAMINANTS						
VISCOSITY 100 °C	VISC GRADE	OX ABS/CM	NT R ABS/CM	GLY TEST	WATER %	TAN MG_KOH_G
12.4*	30	11	7	NEG	<0.5*	1.35
12.9	0	11	8	NEG	<0.1	1.35
14.2	40	9	5	NEG	0.2	1.91
13.4	40	10	6	NEG	<0.1	1.35
13.6	40	11	7	NEG	0.1	1.35
14.0	40	10	6	NEG	<0.1	0.79

**KEY:** UoM - UNIT OF MEASURE Y - YES N - NO > - GREATER THAN < - LESS THAN N/R - NOT REPORTED

Testing performed by Bureau Veritas, an ISO/IEC 17025:2005 accredited laboratory L-A-B Accredited Certificate Number XXXX Testing (\*) - Not in scope of accreditation.  
 Notice: This analysis is intended as an aid in predicting mechanical wear. Test results, maintenance recommendations and accuracy are affected by customer-provided samples, equipment identification, maintenance history and apply only to this sample as provided. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof. The ultimate responsibility for the maintenance of this piece of equipment and all of its components is the responsibility of the equipment owner. See full terms and conditions at: [www.bureauveritas.com/oil-analysis.aspx](http://www.bureauveritas.com/oil-analysis.aspx)

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**LOAMS**<sup>™</sup>  
Lube Oil Analysis Management System

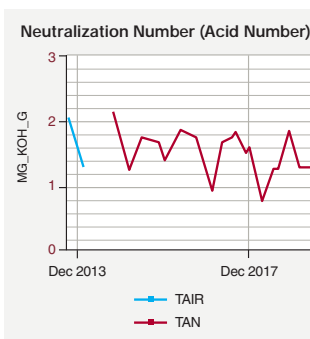
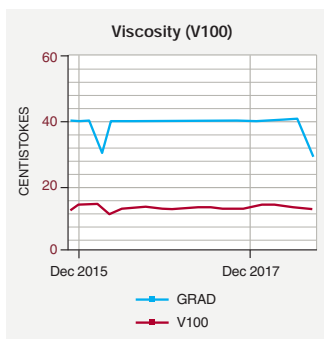
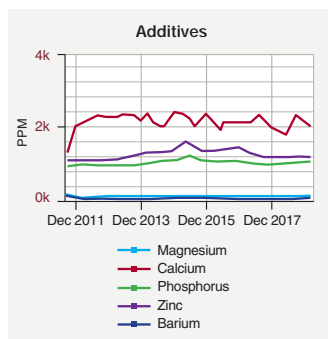
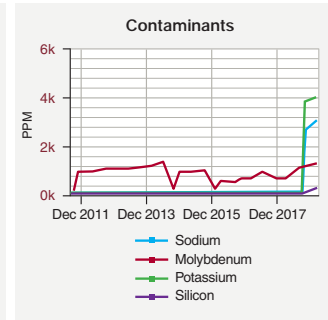
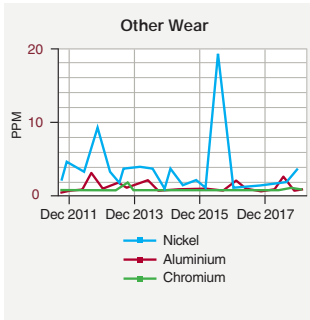
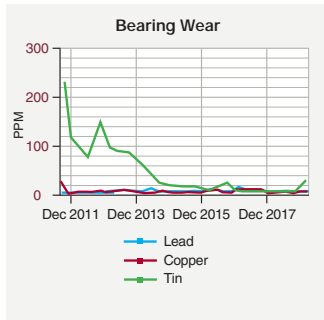
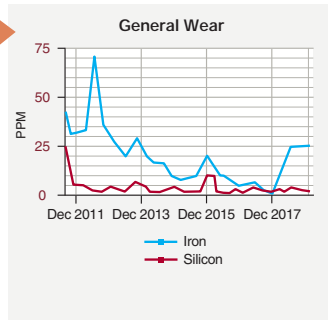
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**Sample Analysis Report**

Status:  
Reason:

## Graphs

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# Oil Analysis Report Explained

1. Address and phone number for the laboratory where the sample was processed.
2. All processed samples are assigned a Status which indicates the severity of the sample's condition: Critical, Abnormal, Monitor or Normal.
3. Client name, address and worksite are those of the sampling account.
4. The difference between the Date Sampled and the Date Received by the laboratory could point to turnaround time issues - samples are stored too long before shipping or there could be shipping services issues. The difference between Date Received and Date Completed represents the laboratory's turnaround time.
5. Track unit oil analysis results by internal company PO and Work Order Numbers.
6. Complete fluid information identifies its specific properties for an accurate analysis of the results and is critical to determining if the correct fluid is being used or if "lube mixing" has occurred.
7. The contact information for the data analyst who reviewed your results is provided so that you can speak directly to them about any questions you might have.
8. Wear metals identified by spectrochemical analysis tell the analyst which components are wearing making unit manufacturer and model essential to the best analysis possible.
9. Results that need immediate attention appear in red. In this case, Status has been elevated to Critical due to the high levels of sodium and potassium - strong evidence of a coolant leak.
10. Additive metals can be present for many reasons as several are used in the formulations of some oils, detergents and dispersants. Knowing lube type and grade can alert an analyst to depletion levels and help in determining if "lube mixing" has occurred.
11. The time on both the oil and the unit and the units of measurement used as well as whether or not there was an oil or filter change can provide an analyst with a much better picture of the results and allow for a more in-depth analysis.
12. Viscosity measures a lubricant's resistance to flow at temperature. Depending on lube grade, it is tested at 40 or 100 degrees Centigrade and is reported in Centistokes.
13. Fluid properties analysis measures the degradation of certain lubricant properties.
14. For engine samples, Fuel, Soot and Water are reported in % volume. High Fuel dilution decreases load capacity. Excessive Soot reduces combustion efficiency. Water decreases lubricity, hinders additives and contributes to oxidation.
15. Any specialty testing results, such as Particle Count, would appear at the end of this section.
16. A second page allows users to view up to eight graphs that can be customized in LOAMS to track trends in specific test results.