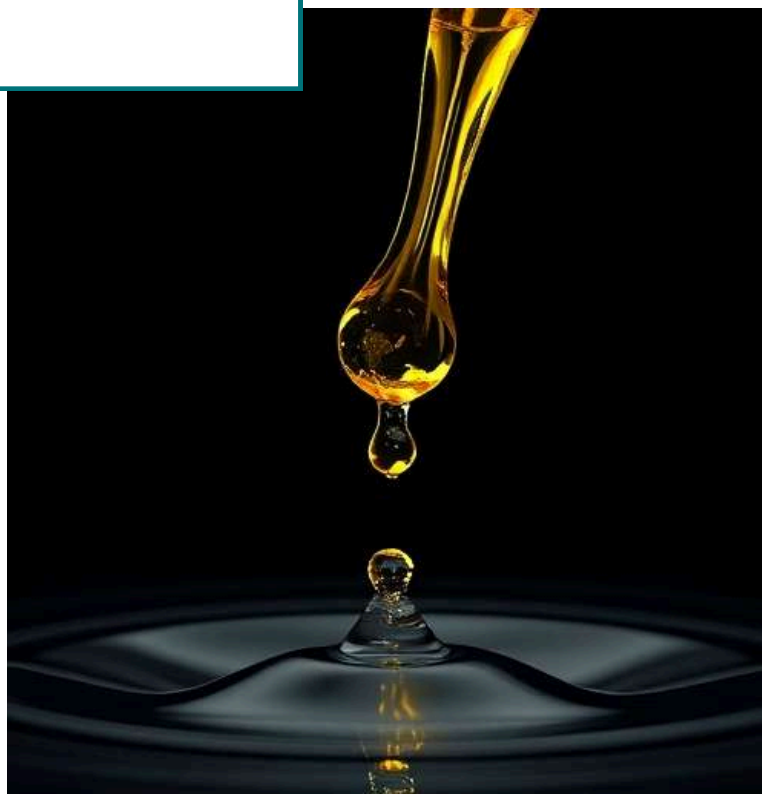
FANPRO®
LUBRICANT ANALYSIS

OIL ANALYSIS REPORT



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FanPro Reports – accurate and fast

FanPro testing facilities are ISO 17025 A2LA accredited. Your fluid analysis program is supported by a documented quality system you can depend on to deliver superior testing and customer service.

After your FanPro samples have been logged, you can track their progress through the laboratory at www.eoilreports.com . After sample processing is completed, results are soon available. HORIZON® (online reporting software program), available at www.eoilreports.com, will show you how to get the most from your data through management reports that allow you to effectively:

- keep sampling schedules on track,
- identify bottlenecks in turnaround time,
- track unit and fluid performance
- influence purchasing decisions.

Lots of important data and recommendations for identifying/correcting root causes of abnormal conditions are produced. Read the explanations below to better understand your results.

FANPRO

Lubricant Analysis Report

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information	Component Information	Sample Information
Account Number:	Component ID:	Tracking Number:
Company Name:	Secondary ID:	Lab Number:
Contact:	Component Type:	Lab Location:
Address:	Manufacturer:	Data Analyst:
	Model:	Sampled:
	Application:	Received:
Phone Number:	Sump Capacity:	Completed:

Filter Information	Miscellaneous Information	Product Information
Filter Type: Missing Information	Miscellaneous:	Product Manufacturer:
Micron Rating: Missing Information		Product Name:
		Viscosity Grade:

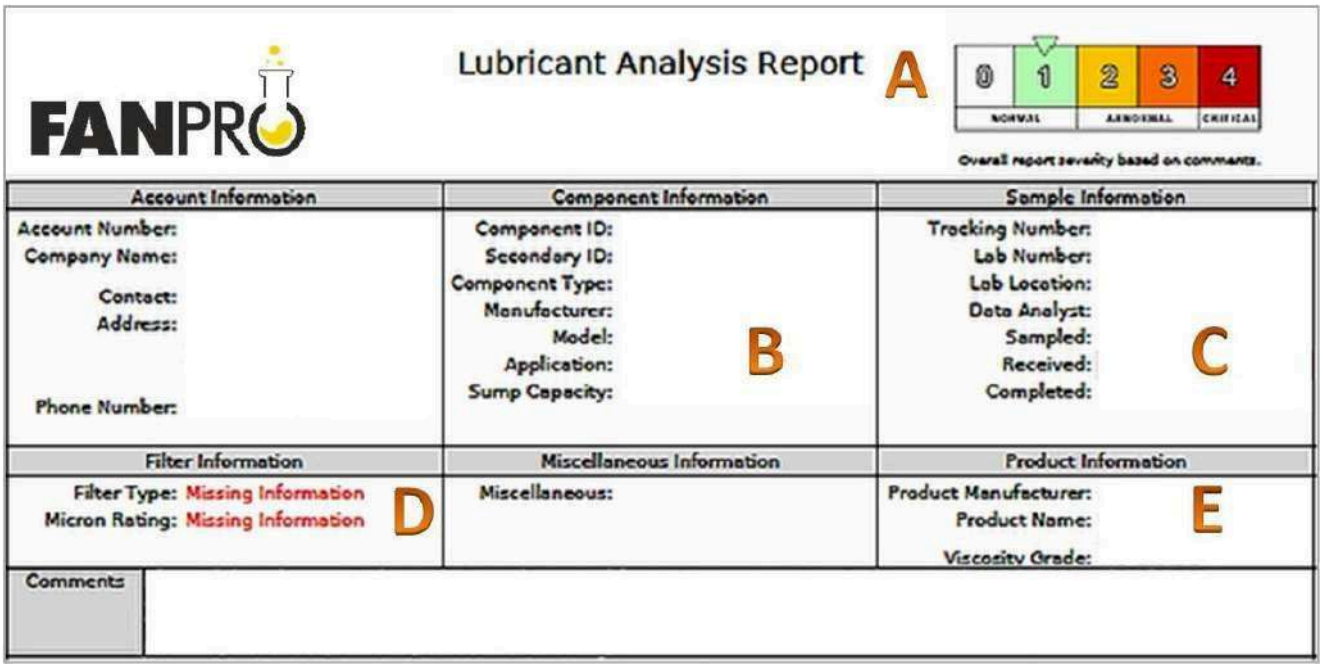
Comments	

	Wear Metals (ppm)										Contaminant Metals (ppm)			Multi-Source Metals (ppm)						Additive Metals (ppm)				
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorous	Zinc
1		0	0				0	0	0	0			0	0		0		0		0				
2		0	0				0	0	0	0			0	0		0				0		0		
3		0	0			0	0	0	0	0			0	0	0	0	0	0		0		0		
4		0	0				0	0	0	0				0	0	0	0	0				0		
5		0	0			0	0	0	0	0			0	0	0	0		0		0		0		

	Sample Information							Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time unk	Unit Time unk	Lube Change	Lube Added gal	Filter Change	Fuel Dilution % Vol	Soot % Vol	Water % Vol	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH/g	Base Number mg KOH/g	Oxidation abs/cm	Nitration abs/cm
1					Yes		No			<.1 - FTIR						
2					Unk		Unk			<.1 - FTIR						
3					Unk		Unk			<.1 - FTIR						
4					Unk		Unk			<.1 - Hotplate						
5					Unk		Unk			<.1 - Hotplate						

	Particle Count (particles/mL)										Additional Testing	
Sample #	ISO Code Based On 4/6/14	> 4 µm	> 6 µm	> 10 µm	> 14 µm	> 21 µm	> 38 µm	> 70 µm	> 100 µm	Test Method	Analytical Ferrography	Particle Quantifier Index
1												
2				5658					0			
3												
4												
5												

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing fluid or component information limits the evaluation. No warranty is expressed or implied.



Lubricant Analysis Report A

0 1 2 3 4

NORMAL ABNORMAL CRITICAL

Overall report severity based on comments.

Account Information	Component Information	Sample Information
Account Number: Company Name: Contact: Address: Phone Number:	Component ID: Secondary ID: Component Type: Manufacturer: Model: Application: Sump Capacity: B	Tracking Number: Lab Number: Lab Location: Data Analyst: Sampled: Received: Completed: C
Filter Information	**Miscellaneous Information**	**Product Information**
Filter Type: Missing Information Micron Rating: Missing Information D	Miscellaneous:	Product Manufacturer: Product Name: Viscosity Grade: E
Comments		

A. Severity Status

0 = Results are normal

1 = At least one or more items have violated initial flagging points but are still considered minor.

2 = A trend is developing

3 = Simple maintenance and/or diagnostics are recommended.

4 = Failure is eminent if maintenance is not performed.

B. Component Information

Component ID/Secondary ID

Allow each customer to uniquely identify equipment being tested and its location.

Component Type

Should give as much details as possible (kind of engine, gearbox, compressor etc.). Influences flagging parameters and depth of analysis. Different metallurgies require different lubrication and have great impact on how results are interpreted.

Manufacturer and Model

Can identify OEM's standard maintenance guide-lines and possible wear patterns to expect, as well as the metallurgies involved.

Application

Identifies in what type of environment the equipment operates and is useful in determining exposure to possible contaminants.

Sump Capacity

Identifies the total volume of oil in which wear metals are suspended and is critical when trending wear metal concentrations.

C. Sample Information

Lab Number

Is assigned to the sample upon entry for processing and should be the reference number when having questions.

Data Analyst

Initials

Date Sampled/Received/Completed

Date sampled is the date you take the sample.
Received: date received at Lab.
Completed: testing date completed.

D. Filter Information

Filter Type and Micron Rating

Can be important details for the analyst to assess fluid cleanliness and wear levels

E. Product Information

Product Manufacturer, -Name, Viscosity Rate

Identify a lube's properties and its viscosity and is critical in determining if the right lube is being used.

F. Comments

The job of a data analyst is to explain/recommend actions for rectifying changes in the lubricant or the unit's condition. Before looking at the actual test results, review the comments. It will provide you a road map to the report's most important information.

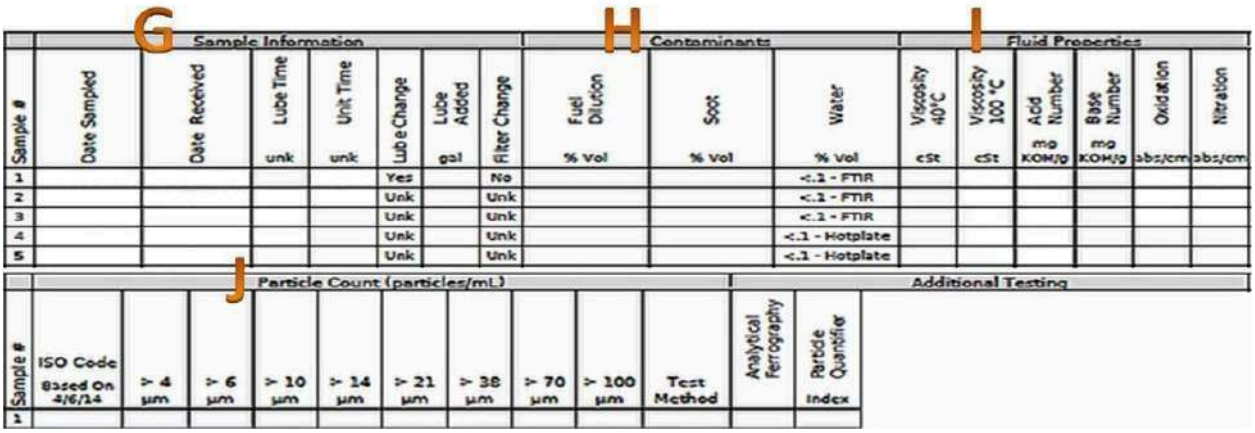
Actions which need to be taken are listed first in order of severity, followed by justifications for recommending those actions.

Comments F	PARTICLE COUNT RESULTS suggest the use of PORTABLE FILTRATION to improve SYSTEM CLEANLINESS; and/or; FILTER CHANGE suggested if not done at sampling time (as applicable). Particle Count is at a SEVERE LEVEL. Viscosity is SLIGHTLY HIGH;

	Particle Count (particles/mL)										Additional Testing
Sample #	ISO Code Based On 4/6/14	> 4 µm	> 6 µm	> 10 µm	> 14 µm	> 21 µm	> 38 µm	> 70 µm	> 100 µm	Test Method	
19	22/22/20	36898	31669	18469	9984	2751	151	9	2	Laser	
18	22/21/18	27074	13091	3453	1462	441	41	3	1	Laser	
17	22/21/18	38134	18477	4653	1764	419	36	4	1	Laser	
16	22/21/17	33486	11315	1995	804	219	10	1	0	Laser	
15	22/21/18	33767	17030	5420	2116	482	35	3	1	Laser	

Test Data

Test results are listed according to age of the sample so that trends are apparent.



	G Sample Information							H Contaminants			I Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time unk	Unit Time unk	Lube Change	Lube Added gal	Filter Change	Fuel Dilution % Vol	Soot % Vol	Water % Vol	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH/g	Base Number mg KOH/g	Oxidation abs/cm	Nitration abs/cm
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	J Particle Count (particles/mL)										Additional Testing	
Sample #	ISO Code Based On 4/6/14	> 4 µm	> 6 µm	> 10 µm	> 14 µm	> 21 µm	> 38 µm	> 70 µm	> 100 µm	Test Method	Analytical Ferrography	Particle Quantifier Index
1												

G. Sample Information Date sampled

Samples are listed by Date Sampled in the Lab.

Sample Number

They are also assigned a Sample Number for easy internal tracking. Important to note is whether or not the Lube has been changed since the last sample was taken.

Unit Time

Is the age of the equipment.

Lube Time

Is how long the oil has been used.

H. Contaminants

Fuel and Soot

Are reported in % of volume. High fuel dilution decreases unit load capacity. Excessive soot is a sigh of reduced combustion efficiency (only tested on engine oil samples).

Water

Water in oil decreases lubricity, prevents additives from working and furthers oxidation. Its presence can be determined by crackle or FTIR and is reported in % of volume. Water by Karl Fischer ASTM D1744 determines the amount of water present. These results appear in the Additional Testing section of your report.

I. Fluid Properties

Viscosity

Measures a lubricant's resistance to flow a temperature and is considered its most important physical property. Depending on lube grade, it is tested at 40 and/or 100□ Centigrade and reported in Centistokes.

J. Particle Count (particles/ml)

Particle Count

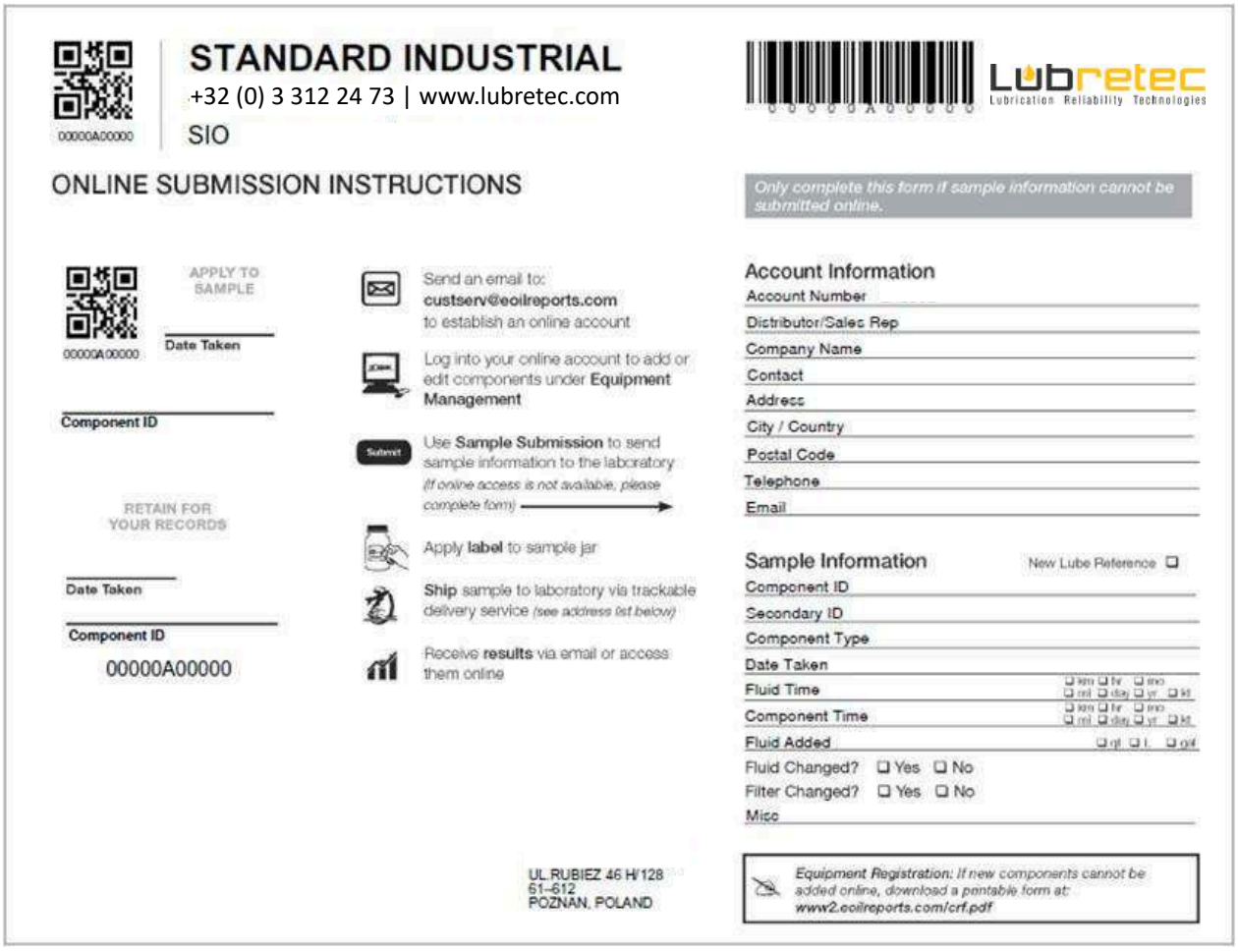
The particle count is a cumulative range between 4 and 100 microns. This test is valuable in determining large particle wear in filtered systems.

ISO code

The ISO Code is an index numberthat represents a range of particles within a specificmicron range, i.e. 4, 6, 14. Each class designatesarange of measured particles per one ml ofsample.

Sample Information/Component Registration Forms

A Sample Information/Component Registration Form is included with every sample kit. Fill it out only when sampling a new component for the first time or to notify the laboratory of a change in component or fluid information already registered with the laboratory. Complete, up-to-date information ensures that you receive the proper testing and an accurate analysis of the results.



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SIO

Lubretec
Lubrication Reliability Technologies

ONLINE SUBMISSION INSTRUCTIONS

Only complete this form if sample information cannot be submitted online.

APPLY TO SAMPLE
Date Taken
Component ID
RETAIN FOR YOUR RECORDS
Date Taken
Component ID
00000A00000

Send an email to: **custserv@eoilreports.com** to establish an online account
Log into your online account to add or edit components under **Equipment Management**
Use **Sample Submission** to send sample information to the laboratory *(If online access is not available, please complete form)*
Apply **label** to sample jar
Ship sample to laboratory via trackable delivery service *(see address list below)*
Receive **results** via email or access them online

Account Information
Account Number
Distributor/Sales Rep
Company Name
Contact
Address
City / Country
Postal Code
Telephone
Email

Sample Information
New Lube Reference ❑
Component ID
Secondary ID
Component Type
Date Taken
Fluid Time
Component Time
Fluid Added
Fluid Changed? ❑ Yes ❑ No
Filter Changed? ❑ Yes ❑ No
Misc

UL. RUBIEŻ 46 H/128
61-612
POZNAN, POLAND

Equipment Registration: If new components cannot be added online, download a pentable form at: www2.eoilreports.com/crf.pdf

- Fill out the Sample Information/Component Registration Form completely and accurately.
- Use this form for first-time samples, changes in unit or fluid information previously submitted, requests for additional testing, and requests that a sample be expedited (rush request).
- Include it in the mailing envelope with the sample jar.

Sample Labels

Two barcode labels are provided with every Sample Information/Component Registration Form. Every sample submitted to the laboratory must have a barcode attached to the bottle. Make sure the Component ID is listed on both the barcode label and the paperwork. If your sample is submitted online, you will still need to attach a barcode label – with the Component ID written on it – to the sample bottle.

- Attach one barcode sticker label to sample jar and retain the second barcode sticker label for your records.

Sampling and Shipping

Attach the return address label for the laboratory location to the mailing envelope. Apply the appropriate postage and ship. It is highly recommended that a trackable delivery service be used for shipping samples to the laboratory.
Log on to www.eoilreports.com and enter the tracking number just below the barcode to track your sample's progress once it arrives at the laboratory.

Summary

- Take representative samples.
- Complete and attach the return address label to the mailing envelope.
- Include sample jar and component registration form, if applicable, in mailing envelope.
- Ship by trackable delivery service such as FedEx or OPS.
- Track sample progress through laboratory at www.eoilreports.com.

Test Reports and Data Management

FanPro's free online reporting option - HORIZON® - is fast, bringing you test results almost immediately afterprocessing is complete. HORIZON® management reports allow you to make positive changes in your daily maintenance practices by keeping sampling on track, identifying bottlenecks in turnaround time that are costing you money and summarizing unit problems that could influence future purchasing decisions. Control over an extensive host of personal application settings and preferences gives you the power to access the information you need most.

Summary

- Get test results in a timely manner – free at www.eoilreports.com.
- Make positive changes in your daily maintenance practices.
- Keep sampling schedules on track.
- Identify bottlenecks in sample turnaround time.
- Influence future purchasing decisions.
- Be the first to get the information you need most.