PURE

Reliability

Pure Horizon

Oil Condition Monitoring Program

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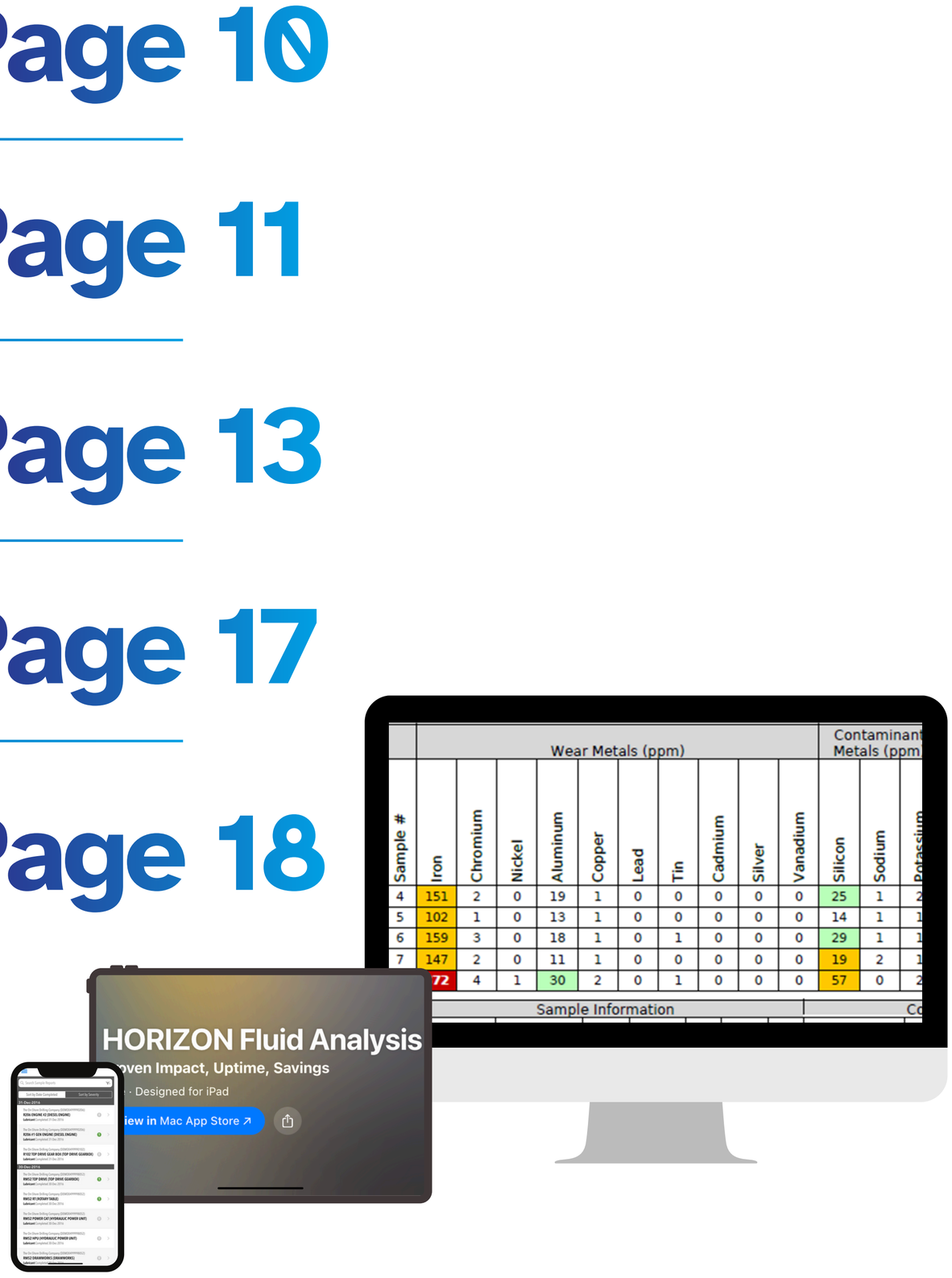


PURE Reliability

Oil Condition Monitoring
The Benefits

Oil condition monitoring is a critical maintenance practice that provides invaluable insights into the condition of machinery and lubricants, enabling proactive maintenance strategies that enhance equipment reliability, performance, and longevity.

1 Cost Saving

Identifying problems early with oil analysis can prevent significant breakdowns that could lead to expensive repairs or the need for new equipment. Additionally, it aids in optimising maintenance schedules, minimising unnecessary maintenance expenses and downtime. Furthermore, it decreases premature oil changes, cutting down on lubricant expenses.

2 Increase Safety

Regular monitoring of equipment condition, which includes oil analysis, is essential for complying with safety regulations. It aids in reducing safety risks for workers and environmental threats by avoiding oil spills and leaks, controlling waste, and mitigating hazards related to reactive maintenance.

3 Environmental Impact

Oil analysis plays a vital role in reducing the environmental impact associated with the operation of machinery and equipment. It aids in preventing oil leaks and spills, reducing equipment failures, extending equipment lifespan, minimising oil wastage, ensuring regulatory compliance, and promotes the organisations overall commitment to sustainability.

4 Equipment Reliability

Oil analysis enhances equipment reliability through proactive maintenance, optimised lubricant performance, and root cause identification. It extends equipment life and minimises unplanned downtime. By leveraging oil analysis insights, you can improve equipment reliability and performance, leading to increased productivity and reduced costs associated with reactive maintenance.

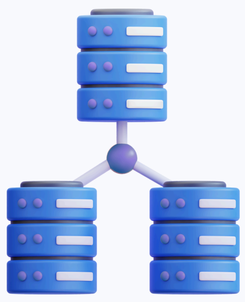
PURE Reliability

Why Should You Choose Pure Horizon Oil Condition Monitoring

Solutions to Save Your Equipment

HORIZON

Mobile, customisable solution to manage your fluid analysis data with speed, flexibility and functionality.



DATACONNECT

Maximise your ROI and quickly submit samples through an automatic import of all your HORIZON data into your own system.

MAINTENANCE TRACKING

The ability to evaluate maintenance trends by tracking the causes of changes identified in test results.

POLARIS LABORATORIES®: Our Trusted Partner

① Innovative Technology Solutions

Manage your fluid analysis program through online sample submission, mobile app, maintenance tracking feature, data alignment and more.

Advanced Consulting ②

Our Technical Business Consultants have more than 30 years of proven results and experience in the fluid analysis, maintenance and field service industries.

③ Comprehensive Partner

We are invested in the success of our customers' fluid analysis program and committed to providing accurate results and maintenance recommendations.

Solution Focused ④

We provide you the tools to drill down into the details of your test results and identify solutions for your equipment's maintenance and reliability.

⑤ Innovative Technology Solutions

PROVEN IMPACT: Better reporting and benchmarking
PROVEN UPTIME: Less unscheduled maintenance
PROVEN SAVINGS: Improve ROI and lower maintenance costs

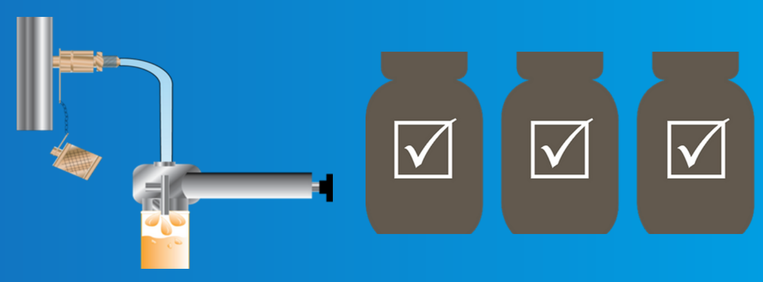
PURE Reliability

Oil Condition Monitoring
The Process

Collect Sample

1

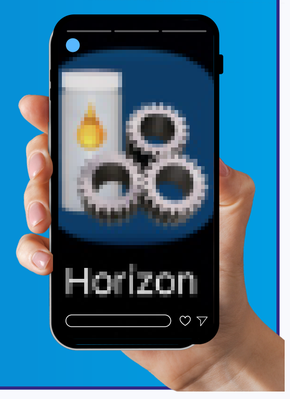
Collect the sample using vacuum pump and hosing provided and by following the quick easy ‘how to’ steps in the sample box. Instructions also available online via QR code.



Submit & Send Sample

2

Samples can be submitted easily via the Horizon app. Simply scan the QR code on the sample bottle and submit in a matter of minutes. Post samples to laboratory for analysis. **Results 24-48h**



Analysis

3

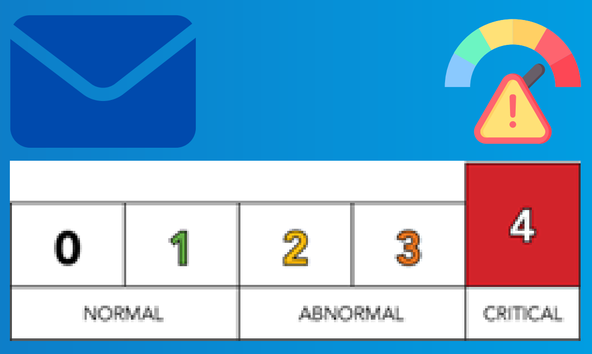
Laboratory processes the sample against database containing over **50 million samples.** Testing is complete, results are analysed, recommendations are made and a report is generated.

			Metals (ppm)			Multi-Source Metals			
Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese
0	0	0	25	1	2	0	0	0	2
0	0	0	14	1	1	0	1	0	2
0	0	0	29	1	1	0	0	0	2
0	0	0	19	2	1	0	0	0	2
0	0	0	57	0	2	0	0	0	3
			Contaminants						

Results

4

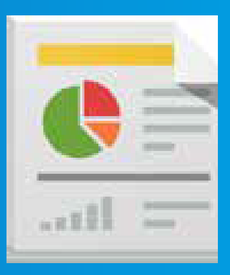
Results are sent to customers via email & accessible as a pdf on the Horizon app. Results graded on severity [1-4]. Clear recommendations made for any remedial actions required.



Remedial Work & Asset History

5

Oil changes/ preventative maintenance work carried out as a result of analysis. Horizon database; sample schedule, sample severity, equipment list & ‘bad actors’.



Pure Horizon Oil Condition Monitoring
Let's Get Started

Welcome!

To get you set up initially on Pure Horizon we will need the name(s) and email address(s) of all those who will want to receive a copy of your sample results along with company name and address for delivery of your sample kits.
This information should be emailed to sales@purelubrication.co.uk

Once we have this information the lab will get your details set up and you will receive a username and password which will then enable you to log in and activate your account in the Pure Horizon portal: HORIZON® Signin

To get your equipment list uploaded into Pure Horizon, complete the template with details of each sample point in the Pure Horizon portal HORIZON® Signin under the Equipment Management dropdown. This can also be done by completing the Equipment List spreadsheet template and emailing this to sales@purelubrication.co.uk

Ordering your boxes of oil samples (10 samples per box) can be done by emailing:

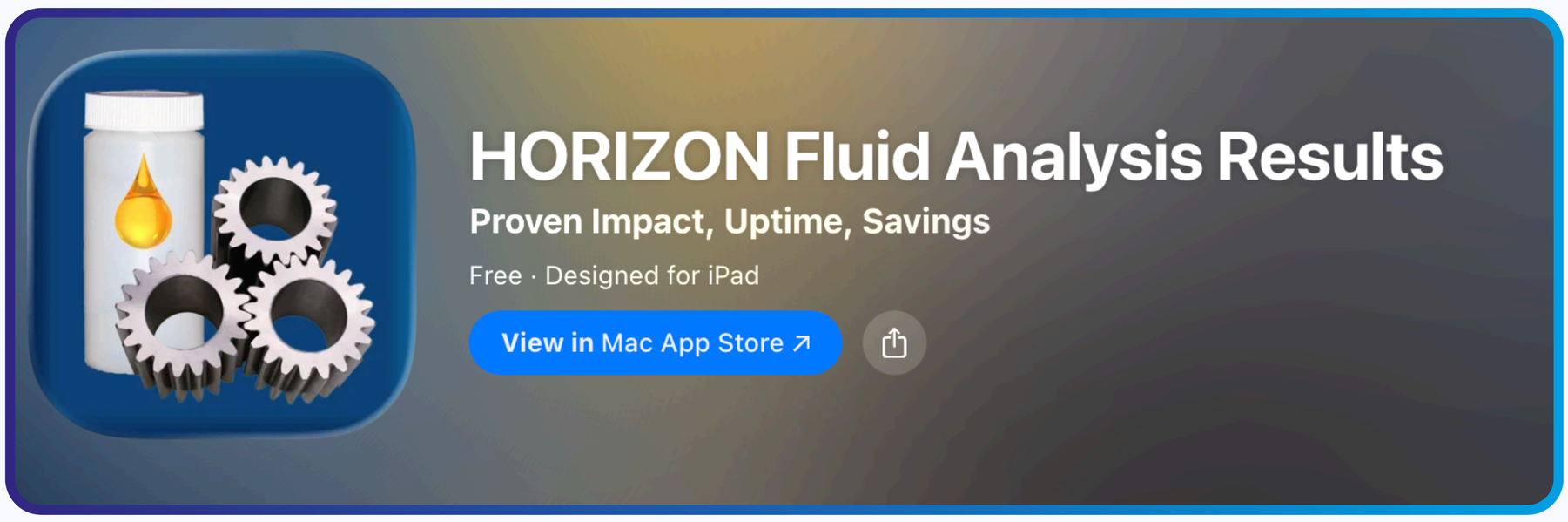
sales@purelubrication.co.uk
or by calling
0800 612 3536.

Pure Horizon Oil Condition Monitoring
Let's Get Started!

Your samples come complete with QR coded labels which you attach to the sample bottles prior to sending to the lab. Further information on this can be found in the How to Use QR Code Sample Labels section of this information pack.

The sample box contains bags and address labels for submitting your samples to the lab. These are not pre-paid labels and sending the samples can be done via your own courier/parcel service or you can contact sales@purelubrication.co.uk to arrange to have these uplifted (costs apply).

We highly recommend downloading the Pure Horizon App: HORIZON Fluid Analysis Results App - App Store where you will have instant access to all your customer information, equipment data, sample results and many fantastic features.



Should you wish to upload historical data from other lab service providers, talk to us and we can discuss options available.

If you have any questions, contact one of the team who will be delighted to help.

How To Take An Oil Sample

Several different sampling methods exist to gather in-service oil, but they are not all the same. Collecting from the wrong place or long after the equipment stopped operations will alter the test results. This could mask damage occurring inside equipment or lead to recommendations for unnecessary maintenance.

Recommendations for All Sampling

Regardless of method, every oil sample should follow these techniques.

Use the following tips to capture the best sample possible:

- Never re-use disposable tubing
- Purge stagnant oil from installed devices and tubing before collecting samples
- Make sure the sample bottle is clean and free of contaminants
- Fill out all equipment and fluid information in the HORIZON® web or mobile app

to eliminate:

  - o Oil spills on paperwork
  - o Handwriting errors
  - o Duplicate equipment
  - o Holds due to missing information
  - o Sending paperwork with the sample

- Send the sample to the lab immediately using a trackable mail service

Choosing the Right Process

The best samples collect the oil circulating through the system during normal operations. System pressure and accessibility might require different equipment and methods to collect samples, so each maintenance program needs to make a decision on the process that is right for them.

How To Take an Oil Sample

Installed Sampling Devices

These permanent devices collect the most representative samples possible in the least amount of time. The two common types differ based on the system pressure, operating environment and clearances.

Sampling with a KP Pushbutton Valve

The KP Series is a push button sampling valve that is installed on a pressurised system. The valve should be installed on a pressurized line with a minimum of 5 psi (.035 MPa) and a maximum of 750 psi (5.17 MPa).

STEP 1 - Have the equipment being sampled at or close to normal operating temperature with the equipment running. Remove the protective cap from the valve and wipe the opening with a clean, dry, lint-free cloth. Place a separate waste under the valve opening. Press the KP Series button and flush at least three times the fluid in the valve into the separate waste container. Dispose the waste oil properly.

STEP 2 – Remove the lid from the sample bottle. Place the sample bottle under the valve opening. Press the KP Series button to dispense fluid into the sample bottle filling it to approximately ¾ full.

STEP 3 – Release the KP Series button to close the valve. Place the protective cap back onto the valve and secure it firmly. Screw the cap onto the sample bottle and tighten securely before wiping the outside of the sample bottle with the cloth.

STEP 4 – Place one barcode label on the sample bottle and submit the sample information online in the HORIZON® web or mobile app.

The KST Series sampling valve is a needle valve that is installed on a pressurised (5 to 4,000 psi / 0.35 to 27.58MPa) systems. Then a needle probe cap [QDCAP] includes everything needed to retrieve samples from pressurised systems (max. 750 psi / 5.17 MPa), which includes a bottle cap, 4" tube with a needle and a vent opening to allow flow.

STEP 1 – Have the equipment being sampled at or close to normal operating temperature with the equipment running. Remove the protective cap and wipe the valve with a clean, dry, lint-free cloth. Hold a separate waste container under the needle valve cap and insert the needle probe into the valve. Flush (at least three times) the fluid in the valve into the container to purge stagnant oil and debris. Remove the needle probe to stop the flow and set the separate container in a safe place.

STEP 2 – Remove the cap from the sample bottle. Place the needle probe cap onto the sample bottle and secure it firmly. Reinsert the needle probe to open the valve. Fill the sample bottle to approximately ¾ full.

STEP 3 – Remove the needle probe to stop the flow. Place the cap onto the sample bottle and tighten securely before wiping the outside of the sample bottle with the cloth.

STEP 4 – Tighten the protective cap back onto the valve. Wipe the valve with a clean rag to remove any excess fluid. Discard the KST Series cap assembly in a safe manner.

STEP 5 – Place one barcode label on sample bottle and submit the sample information online in HORIZON® web or mobile app.

NOTE For sampling pressures above 750 psi use a VCP sampling probe (pressure rated from 750 – 4000 psi / 5.17–27.6 MPa). For unpressurised systems (0-125 psi / 0-0.86 MPa), it is recommended to consider an L/LT style valve and quick connect probe, and if needed, utilise tubing and a vacuum pump to draw fluid from the valve.

How To Take an Oil Sample

Sampling with a Vacuum Pump

MODERATE
REPRESENTATIVE SAMPLE

SLOW
SAMPLE SPEED

The vacuum pump and disposable tubing are used to extract samples from a dipstick or fill port of a shut-down or non-pressurised system.

STEP 1 – Have the equipment being sampled at or close to normal operating temperature with the equipment shut off. Place clean, dry, lint-free cloth on a nearby surface and lay out sampling tools. Remove dipstick and place on the cloth. Lay the tubing along the length of dipstick and make a mark where the tube meets the top of the stick. Measure 12 inches (30 cm) above the mark and cut the tube. If using a sample port without a dipstick, measure the outside of the reservoir tank, measure from the top of the port to halfway down the tank, place a mark at that length from the end of the tube, and cut the tube 12 inches above the mark.

STEP 2 – Ensure the vacuum pump is clean (especially around the mounting area / face for the bottle). Insert the tube through the head of the vacuum pump and tighten lock ring. The tube should extend about one inch (3 cm) beyond the base of the vacuum pump head. Screw in the sample bottle to the bottom of the vacuum pump and tighten securely.

STEP 3 – Place tube into the reservoir. To avoid drawing settled debris into the sample, only insert the tubing until the mark from Step 1 is flush with the top. Do not allow the tubing to contact the bottom of the sump.

STEP 4 – Push and pull the vacuum pump plunger a few times to start the suction. Continue pumping until sample bottle is ¾ full. Hold the pump upright and do not overfill the bottle to avoid contaminating the vacuum pump.

STEP 5 – Unscrew the sample bottle from the vacuum pump to break the suction and continue to hold the pump upright. Seal the bottle with the lid and tighten securely before wiping the outside of the sample bottle with the cloth.

STEP 6 – Drain remaining fluid out of tube into tank and remove tube from the oil. Wipe off the tube where it extended into the sample bottle. Remove the tube from the pump and properly dispose of it. Reusing tubing will contaminate future samples.

STEP 7 – Place one barcode label on the sample bottle and submit the sample information online in the HORIZON® web or mobile app.

Sampling from a Drain

LEAST
REPRESENTATIVE SAMPLE

FASTEST
SAMPLE SPEED

A drain “catch” requires no equipment beyond a sampl bottle, but it produces a sample that is least representative of the fluid circulating in the machine.

STEP 1 – Have the equipment being sampled at or close to normal operating temperature with the equipment shut off. Open the drain and allow approximately 1/3 of the fluid to drain.

STEP 2 – Quickly move an open sample bottle into the oil stream. Fill 3/4 of the bottle before removing it from the stream.

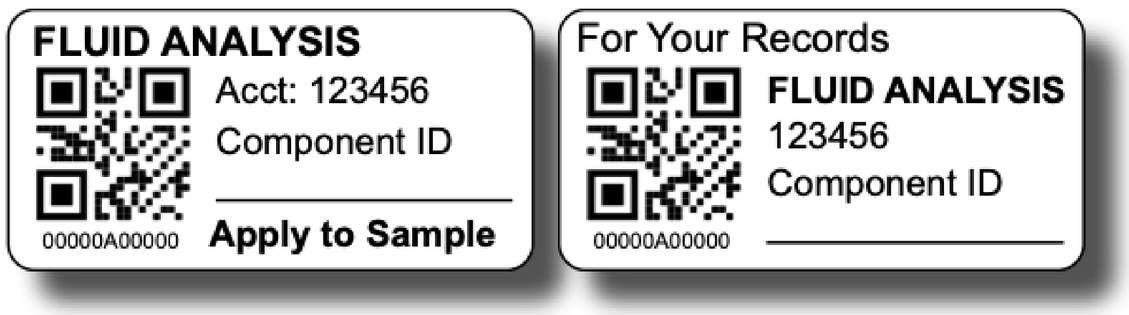
STEP 3 – Screw the cap onto the sample bottle and tighten securely. Wipe the outside of the sample bottle thoroughly with a clean cloth. This allows the sample label to adhere to the bottle securely.

STEP 4 – Place one barcode label on the sample bottle securely and submit the sample information online in the HORIZON® web or mobile app. No paperwork should be sent in for samples whose information was submitted online.

How to Use QR-Code-Only Sample Labels

What is a QR-Code-Only Sample Label?

The QR-code-only sample label is only the quick, convenient and easy-to-read QR code from the sample registration form. The individual sample bottle labels are made for online sample submission only and will arrive as a printed strip of labels (up to 10 per sheet) packed with your sample kits



A unique barcode number for the sample is included under the QR code, alongside the prefilled account number and field to identify your component ID. This newly designed slim QR-code-only label fits precisely along the length of the sample bottle. Once affixed to the jar, proceed with scanning and submit the sample with the mobile app or online as you would normally.

Why Should I Use QR-Code-Only Labels?

Transitioning to QR-code-only sample labels will keep your sample kit costs to a minimum while curbing paper use and its environmental impact. Improving the laboratory and your company's carbon footprint has remained a continuous focus in our commitment to minimise and eliminate waste. More than 1.9 million sample labels are shipped worldwide annually and half of those paper forms go entirely unused.

Primary benefits of utilising QR-code-only sample labels:

- Eliminate the need to handwrite sample information and prevents costly mistakes
- Improve operational efficiency and productivity
- Streamline sample registration at maintenance intervals, saving time
- Save costs and reduce carbon footprint
- Conserve inventory space and mitigate waste

Updating to the New Label

Before updating to the new label, be sure to:•

- Notify all the relevant staff (sites, technicians, assistants, procurement and inventory managers)
- Hold training for field staff on proper label usage (if not already submitting samples electronically)

Making the switch to the new oil-resistant QR-code-only adhesive sample label is easy. Contact our customer experience team for more information.

PURE Reliability

How To Ship Fluid Samples

Packaging and shipping fluid samples is easy! A tight seal and proper labeling are the best ways to ensure your sample arrives at the laboratory intact and on time.

1

Close the sample jar as soon as you collect the sample. Hand-tighten only – the new non-back off cap with a wedge seal makes it so you don't have to use a tool or torque the cap to tighten. It is not necessary nor recommended to do so.

2

Register sample information online using the HORIZON® desktop or mobile apps.

Write the date and component ID on the removable one-time-use sample identification sticker and place it on the outside of the jar.

3

Pack sample jar(s) into an appropriate sized box, envelope mailer or hard plastic mailer. Label the outside of the package with the laboratory address and your return address before applying the appropriate postage.

Note: Do NOT include written paperwork when sample information has been submitted online. It will slow down how quickly your sample is processed at the labs.

PURE Reliability

How To Ship Fluid Samples

Why use a trackable shipping service?

Shipping time is the largest factor in speeding up how quickly a sample report is issued. Using a trackable mail service allows you to see exactly when a package was shipped, where it is in transit, and when it arrives at a laboratory.

This information allows you to discover the fastest method of getting samples to the laboratory.

Track sample status in HORIZON

Available on your HORIZON Dashboard, the “Track My Sample” feature allows you to enter the barcode for the sample to see its status, whether it is in processing, testing or analysis or view the report if the sample has completed testing. For more information, see the Tracking Sample Status in HORIZON technical bulletin.

Note: Do NOT wait until you have a full box to ship the samples. Delays in this step allows damaging wear inside of equipment to continue for days or sometimes weeks.

Are there restrictions shipping lubricants?

There are no restrictions for shipping most new or used lubricants via ground or air mail to our labs located in Canada, Colombia, Guatemala, Poland, and the United States. Most lubricants tested are considered non-hazardous, non-toxic and non-flammable, so your package should fall under the same shipping considerations as most non-toxic fluids. When shipping internationally, be sure to check the local and governmental rules for shipping lubricants to ensure compliance.

DO NOT send in samples that contain gasoline. Our laboratories CANNOT accept or test them.

For more information, review the resources listed below for helpful tips and more specific carrier requirements.

USPS Flammable and Combustible Liquids
UPS Hazardous Materials Service Definition
FedEx Hazardous Materials

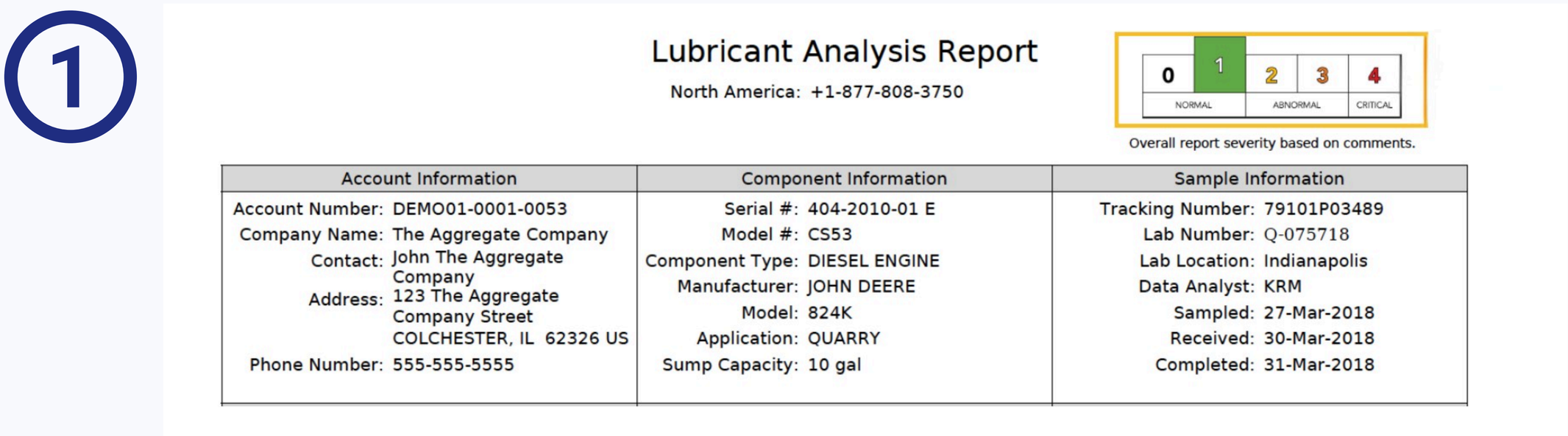
PURE Reliability

How to Read an Oil Report

These instructions will walk you through how to read your sample report, a definition of what each section means and how to interpret the information.

Sample Information and Result Summary

Open a sample report in HORIZON® using one of the methods in the “Find a Sample” instructions.
The top of the report has all of the information you need to take action on the results.



1

Lubricant Analysis Report

North America: +1-877-808-3750

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number:	DEMO01-0001-0053	Serial #:	404-2010-01 E	Tracking Number:	79101P03489
Company Name:	The Aggregate Company	Model #:	CS53	Lab Number:	Q-075718
Contact:	John The Aggregate Company	Component Type:	DIESEL ENGINE	Lab Location:	Indianapolis
Address:	123 The Aggregate Company Street COLCHESTER, IL 62326 US	Manufacturer:	JOHN DEERE	Data Analyst:	KRM
		Model:	824K	Sampled:	27-Mar-2018
		Application:	QUARRY	Received:	30-Mar-2018
Phone Number:	555-555-5555	Sump Capacity:	10 gal	Completed:	31-Mar-2018

1. Severity Scale

The overall sample severity is a color-coded scale to help you assess the internal conditions of the equipment at a glance. The color-coded scale ranges from 0-4 and is based on comments, not individual test results.

SEVERITY 0 - All test parameters including wear metals are within normal limits.

SEVERITY 1 - Test parameters and wear metals are within normal limits but one or more are slightly out of limits but not yet abnormal.
Continue to monitor for changes in upward trends with wear and changes with the fluid properties. In the Data Analyst comments, language used for severity 1 is MINOR.

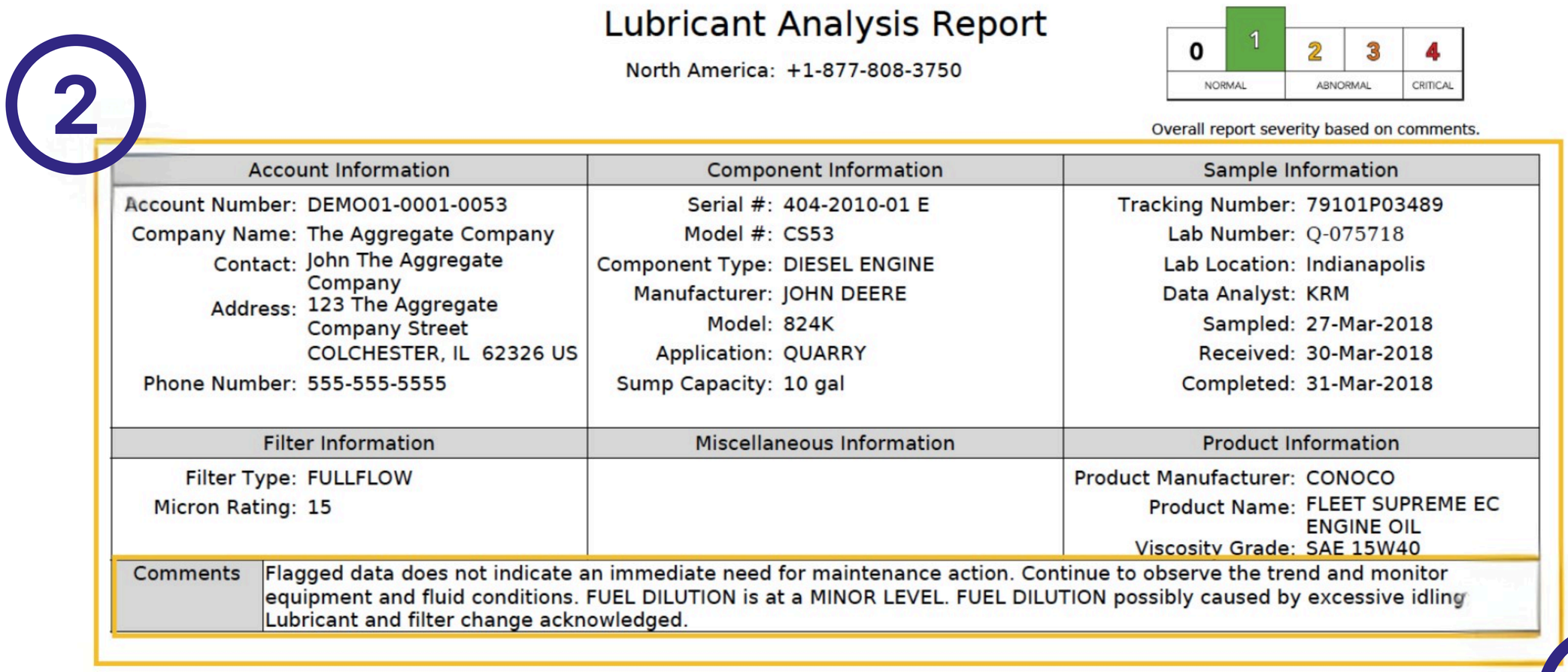
SEVERITY 2 - Test parameters and wear metals are within lower levels of abnormal limits with one or more that are increasingly out of limits. This level of severity brings the oil and equipment into a state of closer monitoring for wear, contamination and/or changes with the fluid properties. In the Data Analyst comments, language used for severity 2 is MODERATE.

SEVERITY 3 - Test parameters and wear metals are within higher levels of abnormal limits with several or more that are increasingly out of limits. This level of severity brings the oil and equipment into a higher state of closer monitoring and suggested maintenance action(s). In the Data Analyst comments, language used for severity 3 is SIGNIFICANT.

SEVERITY 4 - Test parameters and wear metals are within much higher levels of abnormal limits with several or more that are increasingly out of limits. This level of severity brings the oil and equipment into a highest state of monitoring and suggested maintenance action(s). In the Data Analyst comments, language used for severity 4 is SEVERE.

PURE Reliability

How to Read an Oil Report



2

Lubricant Analysis Report

North America: +1-877-808-3750

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information	Component Information	Sample Information
Account Number: DEMO01-0001-0053	Serial #: 404-2010-01 E	Tracking Number: 79101P03489
Company Name: The Aggregate Company	Model #: CS53	Lab Number: Q-075718
Contact: John The Aggregate Company	Component Type: DIESEL ENGINE	Lab Location: Indianapolis
Address: 123 The Aggregate Company Street COLCHESTER, IL 62326 US	Manufacturer: JOHN DEERE	Data Analyst: KRM
Phone Number: 555-555-5555	Model: 824K	Sampled: 27-Mar-2018
	Application: QUARRY	Received: 30-Mar-2018
	Sump Capacity: 10 gal	Completed: 31-Mar-2018

Filter Information	Miscellaneous Information	Product Information
Filter Type: FULLFLOW		Product Manufacturer: CONOCO
Micron Rating: 15		Product Name: FLEET SUPREME EC ENGINE OIL
		Viscosity Grade: SAE 15W40

Comments	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. FUEL DILUTION is at a MINOR LEVEL. FUEL DILUTION possibly caused by excessive idling Lubricant and filter change acknowledged.

3

2. Information Summary

This area contains information about the account, component, sample, filter, product (fluid) and miscellaneous information. Providing this information is vital for data analysts to correctly apply the specific flagging limits for your equipment.

Filling in miscellaneous information is not required when submitting the sample. Examples of miscellaneous information can include the time the sample was taken or the initials of the person taking the sample.

3. Comments

This section includes the analysis of the test results, including maintenance recommendations and feedback from our data analysis team. These comments, in conjunction with individual test results, determine the overall severity of the report.

5

PURE Reliability

How to Read an Oil Report

Test Results

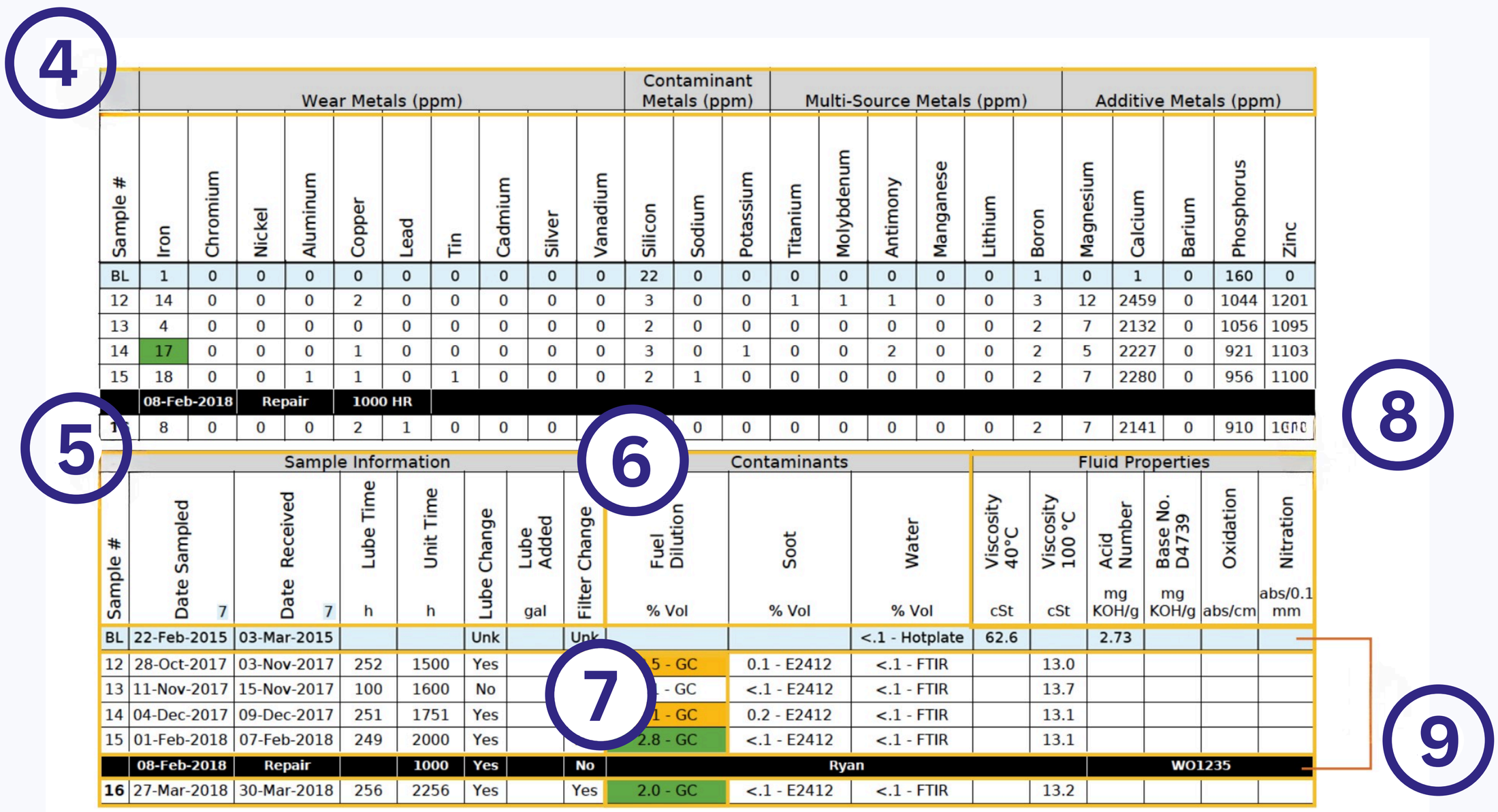
These instructions will walk you through how to read your sample report, a definition of what each section means and how to interpret the information.

4. Elemental Analysis

The elemental analysis data will detect wear particles, contaminants, multi-source metals and additive metals.

5. Sample Information

This area contains information about the sample to be considered by the data analyst (date sampled, date received, lube time, unit time, lube change, lube added and filter change).



	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	Phosphorus	Zinc
BL	1	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	1	0	1	0	160	0
12	14	0	0	0	2	0	0	0	0	0	3	0	0	1	1	1	0	0	3	12	2459	0	1044	1201
13	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	7	2132	0	1056	1095
14	17	0	0	0	1	0	0	0	0	0	3	0	1	0	0	2	0	0	2	5	2227	0	921	1103
15	18	0	0	1	1	0	1	0	0	0	2	1	0	0	0	0	0	0	2	7	2280	0	956	1100
	08-Feb-2018		Repair		1000 HR																			
1	8	0	0	0	2	1	0	0	0			0	0	0	0	0	0	0	2	7	2141	0	910	1000

Sample Information							Contaminants			Fluid Properties					
Sample #	Date Sampled 7	Date Received 7	Lube Time h	Unit Time h	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 No. D4739 mg KOH/g	Oxidation abs/cm	Nitration abs/0.1 mm
BL	22-Feb-2015	03-Mar-2015			Unk		Unk			<.1 - Hotplate	62.6		2.73			
12	28-Oct-2017	03-Nov-2017	252	1500	Yes			5 - GC	0.1 - E2412	<.1 - FTIR		13.0				
13	11-Nov-2017	15-Nov-2017	100	1600	No			- GC	<.1 - E2412	<.1 - FTIR		13.7				
14	04-Dec-2017	09-Dec-2017	251	1751	Yes			- GC	0.2 - E2412	<.1 - FTIR		13.1				
15	01-Feb-2018	07-Feb-2018	249	2000	Yes			2.8 - GC	<.1 - E2412	<.1 - FTIR		13.1				
	08-Feb-2018	Repair		1000	Yes		No	Ryan					WO1235			
16	27-Mar-2018	30-Mar-2018	256	2256	Yes		Yes	2.0 - GC	<.1 - E2412	<.1 - FTIR		13.2				

6. Additional Tests

Additional tests will be performed based on the fluid type and test package ordered.

7. Flagged Results

Results are evaluated individually and are flagged with color-coding that aligns with the severity of the scale at the top of the report.

8. Links to Additional Sources

Test fields with blue font contain a hyperlink to a description and additional information about the test, including possible sources.

9. Baseline Samples and Maintenance Tracking

When a baseline sample is submitted for an account, it appears at the top of the report for components using that lubricant. Maintenance events tracked in HORIZON will also appear in the reports, but will be slotted based on date.

Historical Comments	12	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. FUEL DILUTION is at a MODERATE LEVEL; FUEL DILUTION possibly caused by excessive idling; Lubricant and filter change acknowledged. Report has been regenerated.
	13	Data indicates no abnormal findings. Resample at normal interval.
	14	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. FUEL DILUTION is at a MODERATE LEVEL; FUEL DILUTION possibly caused by excessive idling; Iron is at a MINOR LEVEL. IRON SOURCES in engines can be cylinder liners, iron pistons, hardened steel camshafts, crankshafts, gears, hardened rocker arms, valve bridges,alloyed steel cam follower rollers, etc. Lubricant and filter change acknowledged.
	15	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. FUEL DILUTION is at a MINOR LEVEL. FUEL DILUTION possibly caused by excessive idling; Lubricant and filter change acknowledged.

10

10. Historical Comments

Comments from previous sample reports are included along with the severity of the overall report.

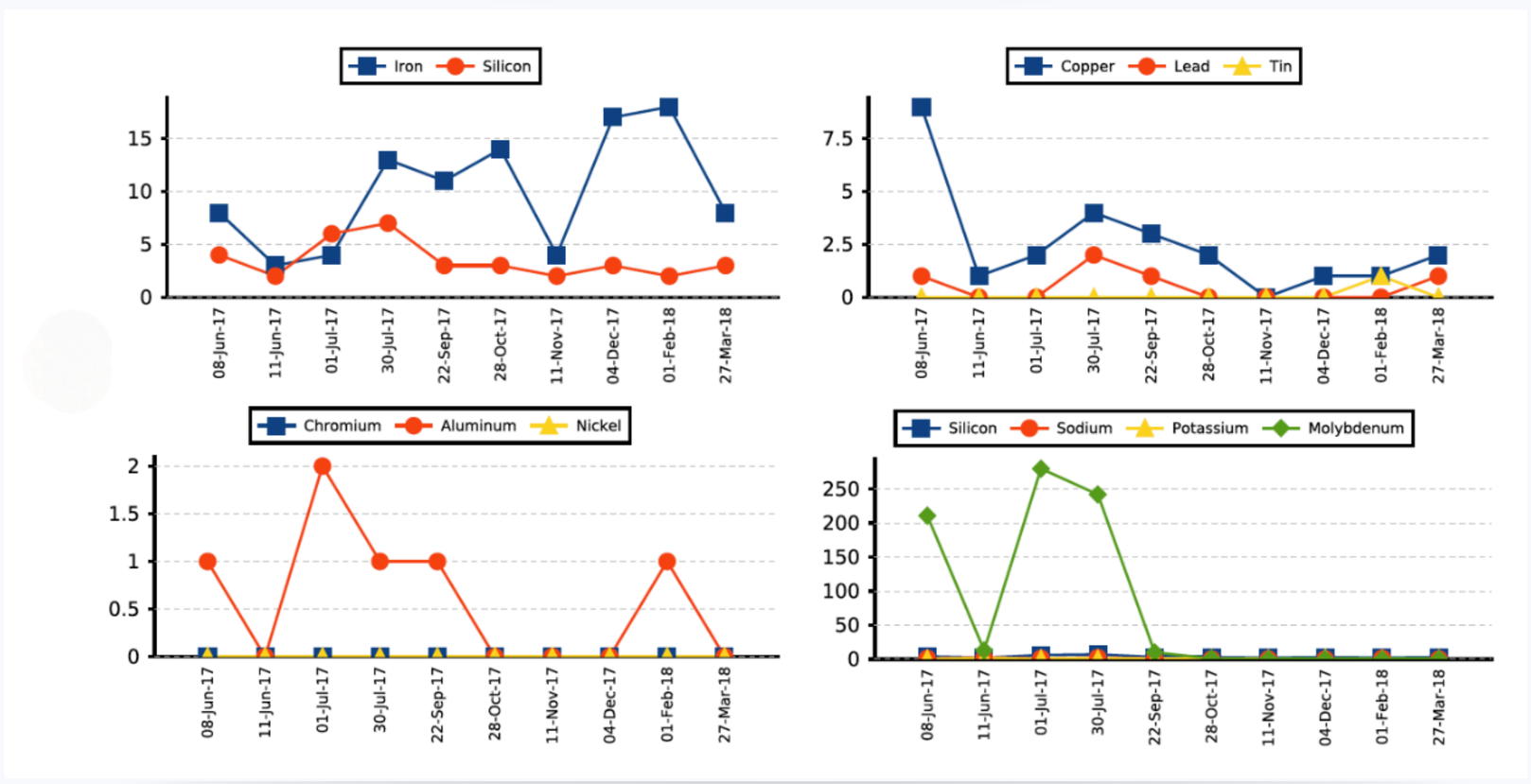
Posted Messages	01-Apr-2019	John Doe	Use kidney loop filter and re-sample.

11

11. Historical Comments

Messages about the sample will be posted below the comments with a date stamp and the user who posted it.

12



12. Sample Graphs

The graphs that display on the report can be turned on and off using the “Sample Report Display” settings under “My Settings” in your HORIZON account.

If you have additional questions, the Technical Library in HORIZON includes how-to-guides, videos and other resources to help you. You can also contact us at sales@purelubrication.co.uk

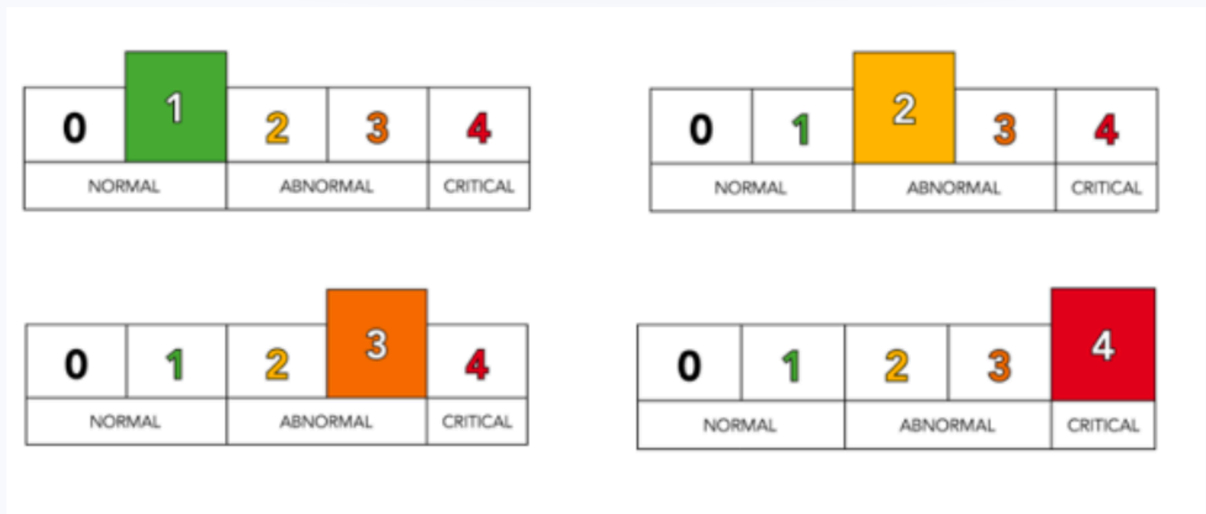
PURE Reliability

Understanding Report Severity Codes

A 5-digit severity sliding scale is designated by the data analyst reviewing the report and are based on multiple inputs; from statistical flagging templates, OEM wear limits and fluid OEM limits, to the commentary with suggested maintenance actions. The full severity code ranges from 0 (normal) to 4 (critical).

The normal range is expanded to include 0 to 1 and the abnormal range from 2 to 3. The mid-range expansion allows for a broader view of oil and machine condition rate of change compared with a narrow mid-range view which may lead to missed opportunities to correct oil degradation or extend oil drain intervals.

The goal is to be more proactive at the mid-range expansion to prevent going into critical severity resulting in a failure.



Severity Scale Interpretation

The severity index with corresponding color codes are highlighted in the corresponding reported oil parameters.

0 **NORMAL**	All test parameters including wear metals are within normal limits.
1 **NORMAL**	Test parameters and wear metals are within normal limits but one or more are slightly out of limits but not yet abnormal. Continue to monitor for changes in upward trends with wear and changes with the fluid properties. In the Data Analyst comments, language used for severity 1 is MINOR
2 **ABNORMAL**	Test parameters and wear metals are within lower levels of abnormal limits with one or more that are increasingly out of limits. This level of severity brings the oil and equipment into a state of closer monitoring for wear, contamination and/or changes with the fluid properties. In the Data Analyst comments, language used for severity 2 is MODERATE
3 **ABNORMAL**	Test parameters and wear metals are within higher levels of abnormal limits with several or more that are increasingly out of limits. This level of severity brings the oil and equipment into a higher state of closer monitoring and suggested maintenance action(s). In the Data Analyst comments, language used for severity 3 is SIGNIFICANT
4 **CRITICAL**	Test parameters and wear metals are within much higher levels of abnormal limits with several or more that are increasingly out of limits. This level of severity brings the oil and equipment into a highest state of monitoring and suggested maintenance action(s). In the Data Analyst comments, language used for severity 4 is SEVERE

Training & Support Options

Getting the most out of your Pure Oil Horizon Oil Condition Monitoring Program starts with understanding how to use it effectively. That's why we offer a range of training options to suit different needs and levels of expertise.

1. Online Training via Horizon Technical Library

- Access: Comprehensive library of videos, PDFs, and guides available through the Pure Horizon website.
- Content Includes:
- How to take a sample correctly
- Adding and editing equipment
- Sample report management
- Problem summary reports and lots lots more
- Benefit: Self-paced learning for your team, accessible anytime.

https://www.eoilreports.com/library/training

2. Introductory Tailored Training from Pure

- Format: On-site or virtual sessions
- Audience: Maintenance teams, operators, supervisors
- Content: Overview of Pure Oil Horizon; Sampling best practices; Understanding reports and corrective actions
- Delivery: Conducted by Pure Reliability specialists
- Customisation: Sessions tailored to your equipment and operational needs (Costs provided upon request)

3. Delivery By Industry Experts

- Format: Bespoke training packages
- Audience: Reliability engineers, planners, technical teams
- Content:

o In-depth oil analysis interpretation

o Root cause analysis and trend monitoring

o Integration with reliability programs

- Delivery: By industry experts
- Pricing: Quoted based on scope and duration (Contact us for details)

Added Value

- Access to training materials and guides
- Ongoing technical support
- Optional refresher courses to keep your team up to date

For more information:

Email: sales@purelubrication.co.uk

Tel: 0800 612 353

PURE
Reliability

Our Pure Promise to You

The Pure team are passionate about our customers and the service we provide. With over 250 years of lubrication experience between us, we fully understand the challenges you face in your business when it comes to lubrication and reliability.

Constantly listening to and working closely with our customers, we provide help and advice and offer individually tailored solutions to make lubrication as easy as possible and ensure your business can operate efficiently, no matter what business you are in.

If you'd like us to visit you on site, great or if you prefer to talk to us over the phone or send us an email, we'd be delighted to hear from you.

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