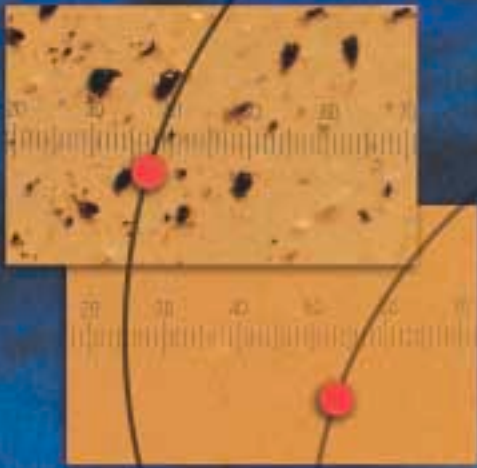


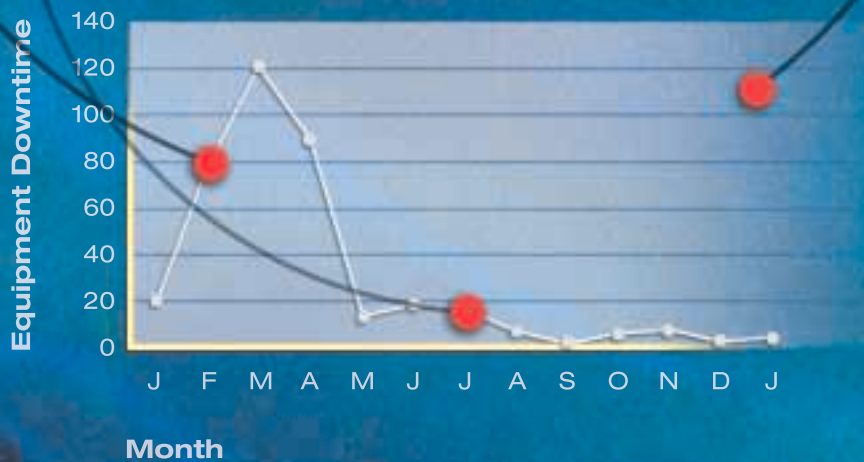


Pall Corporation

PALLSCOPE™ Fluid Analysis Service...



Manage Fluid Cleanliness
to Increase Equipment
Up-time and Reliability



PALLSCOPE Fluid Analysis Service

Why Monitor?

Modern industrial equipment is more demanding than ever, and requires clean lubricants to maintain proper operation. Tolerances are tighter, pressures and temperatures are higher, and continuous operation without failure is demanded. Reliability centered maintenance programs require monitoring the condition of critical fluid systems. In order to monitor fluid condition, a fluid analysis program is necessary.

What is PALLSCOPE?

PALLSCOPE is Pall Corporation's premier fluid analysis program in North America, which includes not only the fluid analysis, but also a detailed report and recommendations for action as a result of the analysis. PALLSCOPE Fluid Analysis can be the single most effective tool to monitor the health of your lube and hydraulic systems as well as engines.

PALLSCOPE Fluid Analysis should be a key component in your comprehensive preventative maintenance program, providing you with the trend data necessary to make informed decisions about repair, rebuild, or replacement of critical machinery. PALLSCOPE data can also be used to set fluid change intervals.

Why PALLSCOPE?

PALLSCOPE Fluid Analysis is unique in scope and contains many features not found in most routine oil analysis packages.

- A modern state-of-the-art laboratory fully qualified to the strict quality requirements of ISO 17025.
- Results are extremely quick — you can have data and recommendations in hand within 24-48 hours after our laboratory receives your sample.

- Real-time, web-based reporting on a secure, password protected internet site ensures that you have virtually instantaneous access to data for both new samples and your full sample history.
- Our PC-based software program, Compass, helps you to put the data to work for you, rather than just storing it as datasheets in a binder.
- In addition to an actual particle count and ISO Code, PALLSCOPE hydraulic and lube reports contain a photomicrograph depicting representative contaminants found in your fluid, for a quick “look” inside your system.
- PALLSCOPE Fluid Analysis is the only service whereby you have access to the vast expertise of Pall Corporation, the world leader in filtration and cleanliness management.

How Does the Program Work?

Using PALLSCOPE Fluid Analysis is as simple as 1-2-3


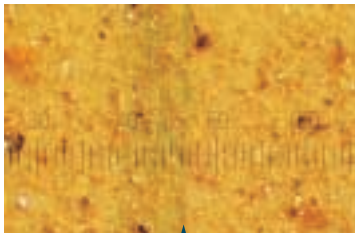
- 1.** Simply take a sample in one of our prepaid sample kits and mail it to our laboratory in the pre-addressed mailer.
- 2.** Our modern laboratory will conduct the fluid analysis and develop specific comments and recommendations.
- 3.** A complete report is sent immediately by e-mail and a link is provided for the complete web-based data (www.pall.com/pallscope).



The PALLSCOPE Analysis Report

Shown below is a typical hydraulic or lube report. Highlighted on the report are some of the features that make our report unique, and provide superior benefits to you.

3

UNIT ID: 06 H		 Pall Corporation		ABC Manufacturing John Smith 888-555-1212 9109 Blossom Dr Centerville, OH 45458																			
SECOND ID HYDRAULIC TANK																							
UNIT TYPE APPLICATION MODEL		FORKLIFT HYDRAULIC SYSTEM HEAVY LIFTER		← System Information		MFR LUBE/FLUID MFR RELIABLE MFG GOOD LUBRICANTS																	
LUBE TYPE	GOOD OIL	SUMP CAPACITY	00750	LUBE TIME		DATE SAMP.	12/13/2004	SEVERITY	3														
GRADE	ISO 32	HYD SYS PRESS	3000	UNIT		DATE REC.	12/17/2004	ACCOUNT No.															
FILTER TYPE	RETURN	MICRON RATING	010	↓ Observations and recommendations based on analysis of data and system parameters			/2004	Loc Lab No.	529810 JJS														
		COMMENTS Filter change suggested if not done at sampling time (as applicable); Chrome is at a SIGNIFICANT LEVEL; CHROMIUM in hydraulic systems could possibly be pistons/rods (if piston), gears or bearings (if gear pump); Iron is at a MODERATE LEVEL; IRON in hydraulic systems could possibly be pistons/rods (if piston pump), gears or bearings (if gear pump), or fluid conductors such as piping, tubing or steel fittings; Copper is at a MINOR LEVEL; Lead is at a MINOR LEVEL; Viscosity is SLIGHTLY HIGH.		ISO CODE: 23 22 20 Volume: 25mL Magnification: 100 X Scale: 10 micrometers p		↓ Spectrometric analysis performed by state-of-the-art inductively coupled plasma emission spectrometer																	
VALUES EXPRESSED IN PARTS PER MILLION (PPM) BY WEIGHT																							
WEAR METALS					CONTAMINANT METALS			MULTI-SOURCE METALS		ADDITIVE METALS													
Fe	Cr	Ni	Al	Cu	Pb	Sn	Cd	Ag	Ti	V	Si	Na	K	Mo	Sb	Mn	Li	B	Mg	Ca	Ba	P	Zn
3	2	0	2	4	3	0	0	0	0	0	2	2	88	5	0	0	0	1	27	249	1	430	482
2	1	0	3								3	2	1	4	0	0	0	1	20	268	0	412	466
											2	2	0	5	0	0	0	2	24	267	0	442	486
											2	1	0	6	0	0	0	2	26	257	1	409	422
↓ Results for the current sample and previous 5 analyses provide quick access to trend data		↓ Each sample is also analyzed for water content, viscosity, and acid number		↓ Particle counts and ISO 4406 cleanliness level is reported																			
TEST DATA	LUBE UNIT	LC UH B A N E N G E D	W A T E R P P M	W A T E R % SAT	V I S C O S I T Y cSt	T A N Total Acid No.	I S O C O D E	4 M I C R O N	6 M I C R O N	10 M I C R O N	14 M I C R O N	21 M I C R O N	38 M I C R O N	70 M I C R O N	100 M I C R O N								
SAMPLED RECEIVED																							
09/03/2004		N		43	36.8	0.52	19 18 15	3224	1295	292	163	82	8	1	0								
09/07/2004																							
10/06/2004		N		78	35.8	0.55	18 17 15	2080	907	386	220	63	14	2	0								
10/08/2004																							
								16	6529	3402	1109	543	149	32	9	0							
								220	63130	24845	12605	6605	2231	417	22	2							
12/17/2004								AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA								

What Analyses Do You Get With Your Report?

Standard analyses of hydraulic and lube oil samples include:

- Particle count by automatic counter with size calibration per ISO 11171
- Photomicrograph taken at 100 X magnification for visual image of contamination
- Analysis of 24 chemical elements by ICP
- Water content – either % saturation, or Karl Fischer if saturation is above 100%
- Total acid number
- Viscosity at 40°C

Standard engine sample analyses include:

- Analysis of 24 chemical elements by ICP
- Fuel dilution %
- Soot %
- Water determination by crackle test
- Total base number
- Viscosity at 40°C
- Oxidation/Nitration

PALLSCOPE Fluid Analysis Service

Getting Started:

To start a PALLSCOPE Fluid Analysis program with your company, simply contact your Pall representative. We can provide assistance and training on sampling methods and locations, recommended sampling frequency, and interpretation of the results.

Important: The quality of your oil analysis can only be as good as the quality of your sample. It is critical to take a sample that is representative of the fluid contained in your

system. For a discussion of proper sampling procedures, visit our website (www.pall.com/pallscope).

In order for our experts to properly interpret the condition of your fluid, and make specific comments or recommendations, it is important to fill in as much of the sample submittal form as possible. A detailed form is required to register a particular machine or system the first time a sample is taken. Future samples from that system can simply be identified with your company name, the system number and date.



PALLSCOPE Kit No. 1303582

For use with:

- Hydraulic fluids
- Gear lubes
- Bearing lubes
- Compressor lubes
- Powershift transmissions
- Hydrostatic systems
- Differential systems
- Fuels (where particle count is needed)



PALLSCOPE Vacuum Pump Sampling Kit, No. 1303583

Kit contains one vacuum pump to fit PALLSCOPE sample bottles, and two 54" lengths of tubing for sampling.

PALLSCOPE Kit No. 1303584

For use with:

- Engine lube
- Fuels

Each PALLSCOPE Kit Contains:

- A pre-cleaned sample bottle
- Bottle label
- Mailing label
- Plastic mailer



Pall Corporation

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Visit us on the Web at www.pall.com/m&e

Pall Corporation has offices and plants throughout the world in locations including: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, India, Indonesia, Ireland, Italy, Japan, Korea, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Poland, Puerto Rico, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, United States, and Venezuela. Distributors are located in all major industrial areas of the world.