

LIEBHERR

CONSTRUCTION EQUIPMENT



46356 - Hydraulic System

Sample No: LH0284399

Oil Type: TOTAL BIOHYDRAN SE 46



SAMPLE INFORMATION

Sample Number	LH0284399	LH	LH0250827	---
Sample Date	31 Jan 2024	03 May 2023	24 Feb 2023	---
Machine Hours	5001	4402	4058	---
Oil Hours	0	0	0	---
Oil Changed	Changed	Not Changd	Not Changd	---
Sample Status	SEVERE	ABNORMAL	ABNORMAL	---

Delsan - American Iron and Metal
 2187 Montee Masson
 Laval, QC
 CA H7B 0A6
 Contact: MANNY MARQUES
 mmarques@delsan-aim.com
 T:
 F:



OIL CONDITION

Visc @ 40°C	cSt	43.6	44.2	44.6	---
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CONTAMINATION

Water	%	0.308	NEG	NEG	---
Particles >4µm		224763	67621	97012	---
Particles >6µm		17756	11921	4771	---
Particles >14µm		18	451	15	---
ISO 4406:1999 (c)		25/21/11	23/21/16	24/19/11	---
Silicon	ppm	4	4	6	---
Sodium	ppm	7	6	6	---
Potassium	ppm	0	2	2	---



WEAR METALS

PQ		0	0	0	---
Iron	ppm	101	66	98	---
Copper	ppm	2	2	2	---
Lead	ppm	<1	<1	1	---
Tin	ppm	<1	<1	1	---
Aluminum	ppm	2	1	2	---
Chromium	ppm	3	<1	1	---
Molybdenum	ppm	0	0	0	---
Nickel	ppm	<1	<1	<1	---
Titanium	ppm	0	0	<1	---
Silver	ppm	0	0	0	---
Manganese	ppm	<1	1	2	---
Vanadium	ppm	0	0	0	---



ADDITIVES

Calcium	ppm	8	8	22	---
Magnesium	ppm	2	2	3	---
Zinc	ppm	64	47	71	---
Phosphorus	ppm	315	317	267	---
Barium	ppm	<1	0	<1	---
Boron	ppm	3	1	2	---

Diagnosis

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The oil change at the time of sampling has been noted. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF). Resample in 30-45 days to monitor this situation. Iron ppm levels are severe. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. There is a high amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Depot: DEL782MON
Unique No: 5733805
Signed: Kevin Marson
Report Date: 21 Feb 2024



GRAPHS

