

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR HSE55 184606 (S/N 124606) - Diesel Engine

Sample No: LH0265988

Oil Type: PETRO CANADA 10W40



SAMPLE INFORMATION

Sample Number	LH0265988	LH0270246	LH0234990	LH0195772
Sample Date	16 Jan 2024	15 Sep 2023	21 Jul 2022	30 Apr 2021
Machine Hours	35913	35581	33904	31565
Oil Hours	0	0	0	0
Oil Changed	Not Chngd	Changed	N/A	Changed
Sample Status	MARGINAL	ABNORMAL	SEVERE	ABNORMAL

HIGGS & HIGGS

RR # 4

ST THOMAS, ON

CA N5P 3S8

Contact: Bernie Higgs



OIL CONDITION

Visc @ 40°C	cSt	---	---	48.7	---
Visc @ 100°C	cSt	14.6	14.8	8.4	15.8
Viscosity Index (VI)	Scale	---	---	148	---
Oxidation (PA)	%	54	66	49	76

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CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0	0.4	0	0.6
Nitration (PA)	%	41	66	51	81
Sulfation (PA)	%	50	57	49	65
Glycol	%	0.016	0.048	NEG	NEG
Fuel	%	<1.0	2.4	20	<1.0
Silicon	ppm	5	4	4	6
Sodium	ppm	2	4	1	4
Potassium	ppm	0	0	0	<1

Diagnosis

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition. All component wear rates are normal. Test for glycol is positive. There is a light concentration of glycol present in the oil. The condition of the oil is acceptable for the time in service. The oil is no longer serviceable due to the presence of contaminants.



WEAR METALS

Iron	ppm	5	26	5	50
Copper	ppm	<1	<1	<1	3
Lead	ppm	0	<1	<1	<1
Tin	ppm	0	0	0	<1
Aluminum	ppm	1	1	<1	2
Chromium	ppm	0	<1	0	1
Molybdenum	ppm	55	65	45	78
Nickel	ppm	0	<1	0	<1
Titanium	ppm	0	<1	0	<1
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1083	1186	820	1408
Magnesium	ppm	933	1076	741	1282
Zinc	ppm	1147	1272	887	1605
Phosphorus	ppm	1011	1107	746	1204
Barium	ppm	0	0	0	0
Boron	ppm	1	7	6	8

Depot: HIGSTT

Unique No: 5710283

Signed: Kevin Marson

Report Date: 18 Jan 2024



GRAPHS

