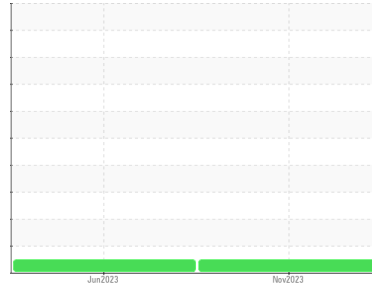




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
LOISELLE [02599167]
 Machine Id
HITACHI ZX135US-6 23HI81801 (S/N HCMDAS60C00519395)
 Component
Hydraulic System
 Fluid
PANOLIN HLP SYNTH 46 (155 LTR)

DIAGNOSIS

Recommendation

Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition.

Wear

Les taux d'usure de tous les composants sont normaux.

Contamination

Il y a une faible concentration (<5.0%) d'huile minérale présente dans le fluide. La propreté du système est acceptable pour votre objectif de propreté ISO 4406. La teneur en eau est négligeable. La propreté du système et du fluide est acceptable.

Fluid Condition

Le AN est acceptable pour ce fluide. L'état de l'huile permet d'en prolonger l'utilisation.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC	WC	---
Sample Date	Client Info		30 Nov 2023	27 Jun 2023	---
Machine Age	hrs	Client Info	725	5	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		N/A	N/A	---
Sample Status			NORMAL	NORMAL	---

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>20	7	<1	---
Chromium	ppm	ASTM D5185(m)	>10	0	0	---
Nickel	ppm	ASTM D5185(m)	>10	0	0	---
Titanium	ppm	ASTM D5185(m)		0	0	---
Silver	ppm	ASTM D5185(m)		<1	0	---
Aluminum	ppm	ASTM D5185(m)	>10	0	<1	---
Lead	ppm	ASTM D5185(m)	>10	<1	0	---
Copper	ppm	ASTM D5185(m)	>75	1	<1	---
Tin	ppm	ASTM D5185(m)	>10	0	0	---
Antimony	ppm	ASTM D5185(m)		0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
Beryllium	ppm	ASTM D5185(m)		0	0	---
Cadmium	ppm	ASTM D5185(m)		0	0	---

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	0	<1	<1	---
Barium	ppm	ASTM D5185(m)	0	<1	0	---
Molybdenum	ppm	ASTM D5185(m)	0	0	0	---
Manganese	ppm	ASTM D5185(m)	0	0	0	---
Magnesium	ppm	ASTM D5185(m)	0	0	<1	---
Calcium	ppm	ASTM D5185(m)	0	<1	<1	---
Phosphorus	ppm	ASTM D5185(m)	1700	1312	1611	---
Zinc	ppm	ASTM D5185(m)	0	26	6	---
Sulfur	ppm	ASTM D5185(m)	1350	1396	1392	---
Lithium	ppm	ASTM D5185(m)		<1	<1	---

CONTAMINANTS

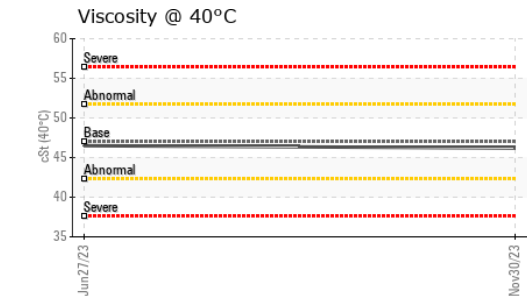
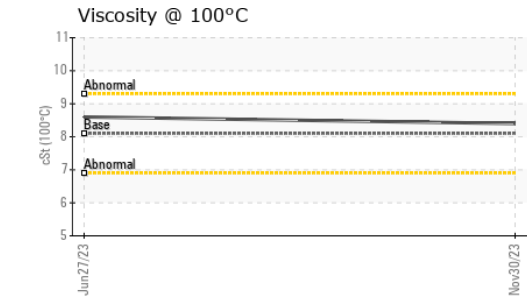
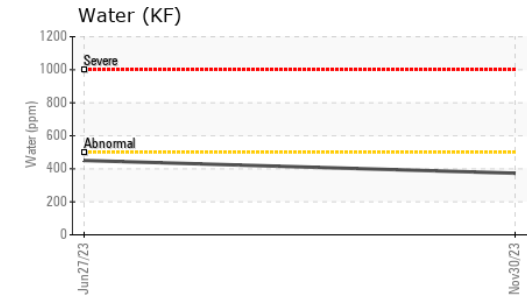
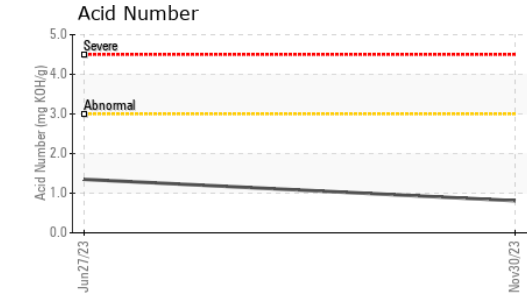
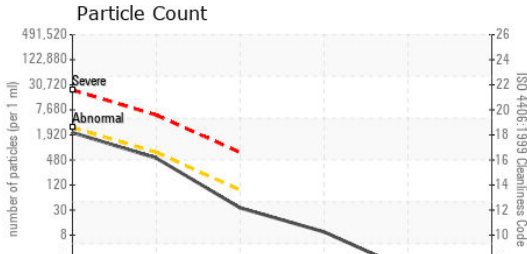
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>20	3	<1	---
Sodium	ppm	ASTM D5185(m)		<1	<1	---
Potassium	ppm	ASTM D5185(m)	>20	0	<1	---
Water	%	ASTM D6304*	>0.05	0.037	0.045	---
ppm Water	ppm	ASTM D6304*	>500	373	450.4	---

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*		0	0	---
Nitration	Abs/cm	ASTM D7624*		4.3	4.2	---
Sulfation	Abs/.1mm	ASTM D7415*		165.4	153.2	---
Mineral Oil Content	%	ASTM D7418*	<5.0%	<5.0	<5.0	---



OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC
Lab Number : 02601091
Unique Number : 5694176
Test Package : MOB 2 (Additional Tests: TAN Man)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

Envirolin Canada
 520 rue Adanac
 Quebec, QC
 CA G1C 7B7
 Contact: Patrick Levesque
 patrick.levesque@envirolin.com
 T: (418)623-1216
 F: (418)660-8889

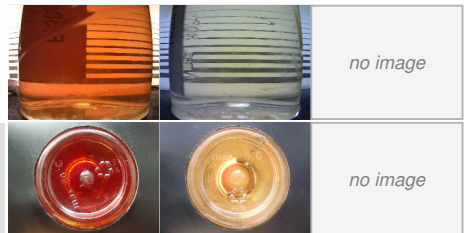
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	1912	1578	---
Particles >6µm	ASTM D7647	>640	467	281	---
Particles >14µm	ASTM D7647	>80	30	31	---
Particles >21µm	ASTM D7647	>20	8	11	---
Particles >38µm	ASTM D7647	>4	1	1	---
Particles >71µm	ASTM D7647	>3	1	0	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	18/16/12	18/15/12	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	156.2	150.9	---
Acid Number (AN)	mg KOH/g	ASTM D974*	0.81	1.35	---

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	---
Emulsified Water	scalar	Visual*	NEG	NEG	---
Free Water	scalar	Visual*	NEG	NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46.2	46.5	---
Visc @ 100°C	cSt	ASTM D7279(m)	8.4	8.6	---
Viscosity Index (VI)	Scale	ASTM D2270*	159	165	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					no image
Bottom					no image





MINERAL OIL CONTENT REPORT

PASS

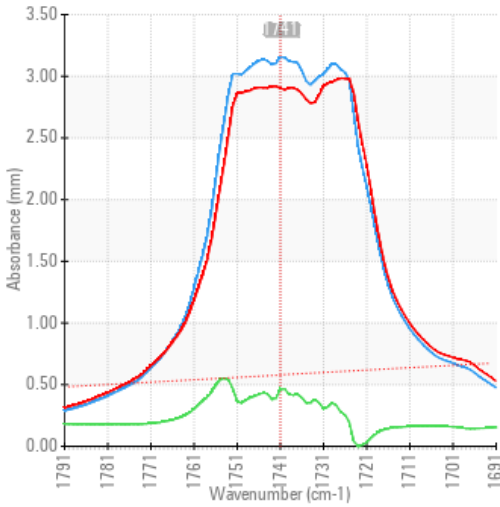


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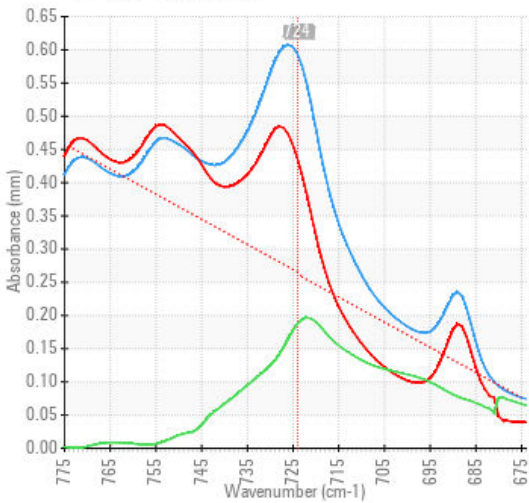
SPECTRAL ANALYSIS

		method	limit/base	current	history1	history2
Zinc	ppm	ASTM D5185(m)	0	26	6	---
Mineral Oil Content	%	ASTM D7418*	<5.0%	<5.0	<5.0	---

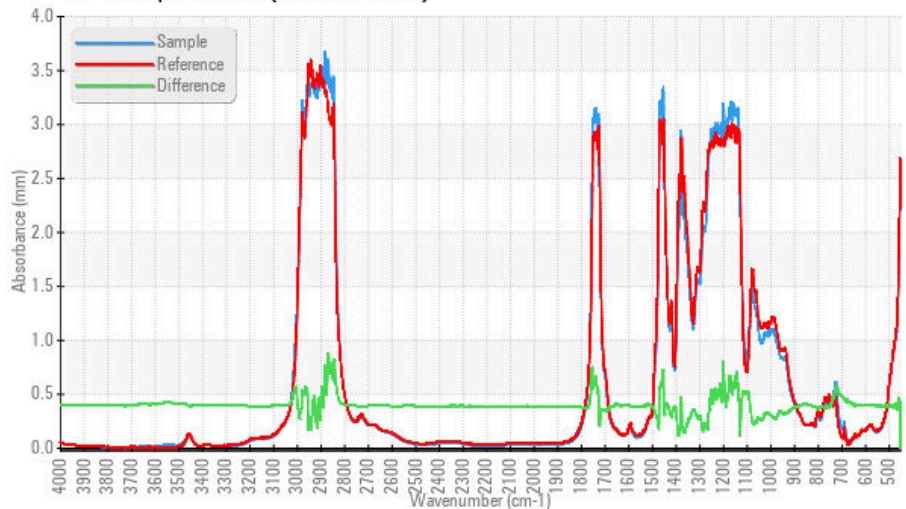
FT-IR - Esters I



FT-IR - Esters II



FT-IR Spectrum (Absorbance)



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC
Lab Number : 02601091
Unique Number : 5694176
Test Package : MOB 2 (Additional Tests: TAN Man)

Received : 05 Dec 2023
Diagnosed : 06 Dec 2023
Diagnostician : Bill Quesnel

Envirolin Canada
 520 rue Adanac
 Quebec, QC
 CA G1C 7B7

Contact: Patrick Levesque
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