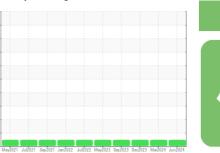


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id
910081
Component
Diesel Engine
Fluid
CASTROL TECT

CASTROL TECTION EXTRA SAE 15W-40 (42 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

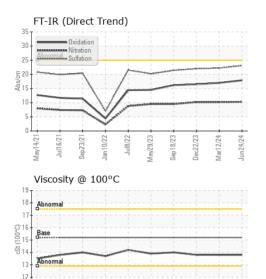
Fluid Condition

The condition of the oil is acceptable for the time in service.

Sample Date		ION method	limit/base	current	history1	history2
Machine Age hrs Client Info 8646 7971 7413 Oil Age hrs Client Info 1200 600 600 Oil Changed Client Info Changed	lumber	Client Info		GFL0118933	GFL0086801	GFL0086775
Oil Age hrs Client Info 1200 600 600 Oil Changed Client Info Changed Call	ate	Client Info		24 Jun 2024	12 Mar 2024	22 Dec 2023
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL 1.0	Age hrs	Client Info		8646	7971	7413
Sample Status	hrs	Client Info		1200	600	600
CONTAMINATION method limit/base current history1 his Fuel WC Method >3.0 <1.0	jed	Client Info		Changed	Changed	Changed
Fuel WC Method Sa.0 Cal.0 Ca	tatus			NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 his NEG NEG NEG NEG NEG NEG WEAR METALS nethod limit/base current hi 1 1 1 0	AMINATION	method	limit/base	current	history1	history2
Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 his Iron ppm ASTM D5185(m) >120 10 11 10 Chromium ppm ASTM D5185(m) >20 <1		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 his Iron ppm ASTM D5185(m) >120 10 11 10 Chromium ppm ASTM D5185(m) >20 <1		WC Method	>0.2	NEG	NEG	NEG
Iron		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185(m) >20 <1 <1 <1 Nickel ppm ASTM D5185(m) >5 0 <1	METALS	method	limit/base	current	history1	history2
Nickel ppm ASTM D5185(m) >5 0 <1 <1 Titanium ppm ASTM D5185(m) >2 <1	ppi	m ASTM D5185(m)	>120	10	11	10
Titanium ppm ASTM D5185(m) >2 <1 <1 0 Silver ppm ASTM D5185(m) >2 0 0 0 Aluminum ppm ASTM D5185(m) >20 2 4 4 Lead ppm ASTM D5185(m) >40 2 1 <1	n ppi	n ASTM D5185(m)	>20	<1	<1	<1
Silver ppm ASTM D5185(m) >2 0 0 0 Aluminum ppm ASTM D5185(m) >20 2 4 4 Lead ppm ASTM D5185(m) >40 2 1 <1 Copper ppm ASTM D5185(m) >330 1 1 1 Tin ppm ASTM D5185(m) >15 <1 <1 <1 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0	ppi	n ASTM D5185(m)	>5	0	<1	
Aluminum ppm ASTM D5185(m) >20 2 4 4 Lead ppm ASTM D5185(m) >40 2 1 <1	ppi	m ASTM D5185(m)	>2	<1	<1	0
Lead ppm ASTM D5185(m) >40 2 1 <1 Copper ppm ASTM D5185(m) >330 1 1 1 Tin ppm ASTM D5185(m) >15 <1 <1 <1 <1 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Magnesium ppm ASTM D5185(m) 110 133 <	ppi	n ASTM D5185(m)	>2			0
Copper ppm ASTM D5185(m) >330 1 1 1 Tin ppm ASTM D5185(m) >15 <1	n ppi	m ASTM D5185(m)	>20	2	4	4
Tin ppm ASTM D5185(m) >15 <1 <1 <1 Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128 <td>ppi</td> <td>m ASTM D5185(m)</td> <td>>40</td> <th>2</th> <td>1</td> <td><1</td>	ppi	m ASTM D5185(m)	>40	2	1	<1
Antimony ppm ASTM D5185(m) 0 0 0 0 Vanadium ppm ASTM D5185(m) 0 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1	ррі	m ASTM D5185(m)	>330	1	1	1
Vanadium ppm ASTM D5185(m) 0 0 0 Beryllium ppm ASTM D5185(m) 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128	ppı	m ASTM D5185(m)	>15	<1	<1	<1
Beryllium ppm ASTM D5185(m) 0 0 0 0 Cadmium ppm ASTM D5185(m) 0 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1	ppı	m ASTM D5185(m)		0	0	0
Cadmium ppm ASTM D5185(m) 0 0 0 ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1	n ppi	m ASTM D5185(m)		0	0	0
ADDITIVES method limit/base current history1 his Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1	ррі	m ASTM D5185(m)		0	0	0
Boron ppm ASTM D5185(m) 30 20 27 23 Barium ppm ASTM D5185(m) 0 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128	ppi	m ASTM D5185(m)		0	0	0
Barium ppm ASTM D5185(m) 0 0 0 Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128	IVES	method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185(m) 87 88 87 Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128	ppı	m ASTM D5185(m)	30	20	27	23
Manganese ppm ASTM D5185(m) <1 0 0 Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128	ppi	m ASTM D5185(m)		0	0	0
Magnesium ppm ASTM D5185(m) 110 133 81 67 Calcium ppm ASTM D5185(m) 2740 1983 2138 2128	um ppi	m ASTM D5185(m)		87	88	87
Calcium ppm ASTM D5185(m) 2740 1983 2138 2129	se ppi	m ASTM D5185(m)		<1	0	0
11	m ppi	m ASTM D5185(m)	110	133	81	67
The state of the s	ppı	(/	2740	1983	2138	2129
Phosphorus ppm ASTM D5185(m) 1240 919 974 938	us ppi	m ASTM D5185(m)	1240	919	974	938
Zinc ppm ASTM D5185(m) 1350 1133 1137 1126	ppi	m ASTM D5185(m)	1350	1133	1137	1126
Sulfur ppm ASTM D5185(m) 3520 2623 2940 2917	ppı	m ASTM D5185(m)	3520	2623	2940	2917
Lithium ppm ASTM D5185(m) <1	ppi	m ASTM D5185(m)		<1	<1	<1
CONTAMINANTS method limit/base current history1 his	AMINANTS	method	limit/base	current	history1	history2
Silicon ppm ASTM D5185(m) >25 4 4 4	ppi		>25			
Sodium ppm ASTM D5185(m) 5 6 4		. ,		5	6	4
Potassium ppm ASTM D5185(m) >20 1 <1 2	n ppi	m ASTM D5185(m)	>20	1	<1	2
INFRA-RED method limit/base current history1 his	-RED	method	limit/base	current	history1	history2
THE MICHOL MINESCO CONTENT MICEORY I	%	ASTM D7844*	>4	0.5	0.4	0.4
·	Abs	/cm ASTM D7624*	>20	10.3	10.2	10.2
Soot %				23.1	22.2	



OIL ANALYSIS REPORT



FLUID DEGRAD	OATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.9	17.0	16.5
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	VLITE		
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	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2

Visc @ 100°C	cSt	ASTM D7279(m)	15.2	13.8	13.8	13.8
GRAPHS						
Iron (ppm) Severe Abnormal	3 22	W. W. 44	4	Lead (ppm) 100 80 Severe 40 Abnormal	3	E. E. 4. 4.
May14/21 Jul16/21 Sep23/21 Jan10/22	Jul8/22 May29/23	Sep18/23 Dec22/23	Jun24/24	May14/21 Jul16/21 Sep23/21	Jan10/22 Jul8/22 May29/23	Sep18/23 Dec22/23 Mar12/24 Jun24/24
Aluminum (ppm 50 Severe 40 Abnormal		8 4		Chromium (_	
Julf6/21— Sep23/21	Jul8/22	Sep18/23 Dec22/23	Jun24/24	Jul16,21 Sep23,721	Jan10/22 Jul8/22 May29/23	Sep18/23 Dec22/23 Mar12/24
Copper (ppm) 400 300 E 200				Silicon (ppm		
May14/21— Jul16/21— Sep23/21	Jul8/22	Sep18/23 Dec22/23	Jun24/24	May14/21	Jan 10/22 Jul8/22 May29/23	Sep18/23 Dec22/23 Mar12/24
Viscosity @ 100°	°C			Soot %		
18 Abnormal (3-001) 18 Abnormal 12 12 10 12757688	Jul8/22 May29/23	Sep18/23	Jun24/24	Severe Sev	Jan10,22 Jul8,72 May29,23	Sep18/23 Dec22/23



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Lab Number : 02643998

Unique Number : 5801537

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Sample No. : GFL0118933

Tested

Received : 25 Jun 2024 : 25 Jun 2024 Diagnosed

: 25 Jun 2024 - Wes Davis

SANDHILL DISPOSAL & RECYCLING DIVIS, 19 COMMERCE ROAD ORANGEVILLE, ON

Contact: GLENN COOK gcook@gflenv.com T: (519)940-4167

GFL Environmental - 222 - Sandhill

Test Package : MOB 1 (Additional Tests: Visual) 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.

Report Id: GFL222 [WCAMIS] 02643998 (Generated: 06/25/2024 15:39:41) Rev: 1

Submitted By: Kim Thompson

CA L9W 3X5