



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
Store 9 - Marietta

Machine Id

1129

Component

Diesel Engine

Fluid

SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0050214	LEC0050625	LEC0049240
Sample Date		Client Info		10 Jun 2024	14 May 2024	17 Apr 2024
Machine Age	hrs	Client Info		1985	1477	1031
Oil Age	hrs	Client Info		400	400	400
Filter Age	hrs	Client Info		400	400	400
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	11	13	21
Chromium	ppm	ASTM D5185m	>20	1	2	1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		2	2	<1
Silver	ppm	ASTM D5185m	>3	<1	1	0
Aluminum	ppm	ASTM D5185m	>20	6	6	10
Lead	ppm	ASTM D5185m	>40	1	2	0
Copper	ppm	ASTM D5185m	>330	2	2	6
Tin	ppm	ASTM D5185m	>15	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

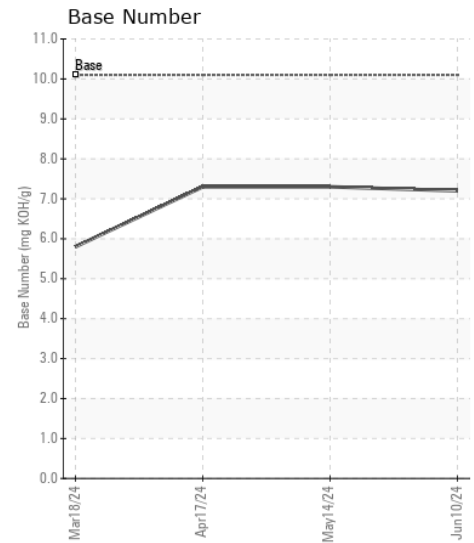
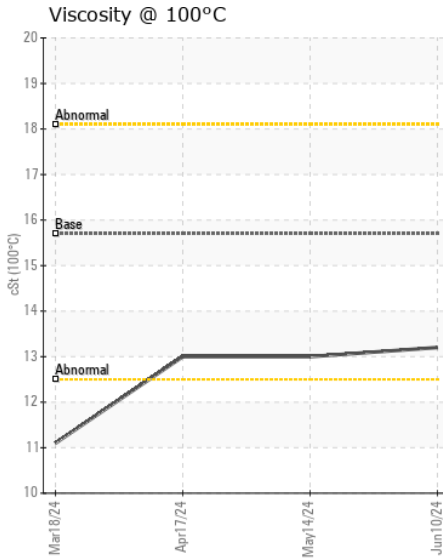
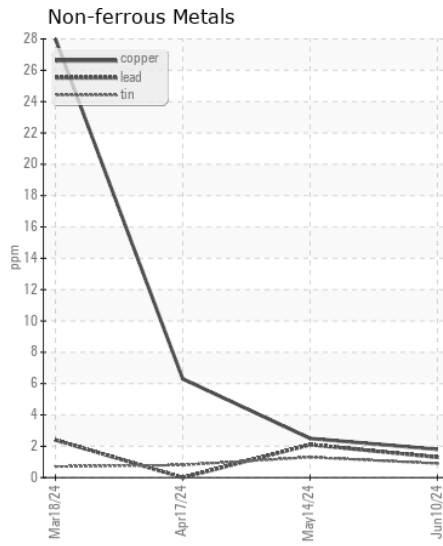
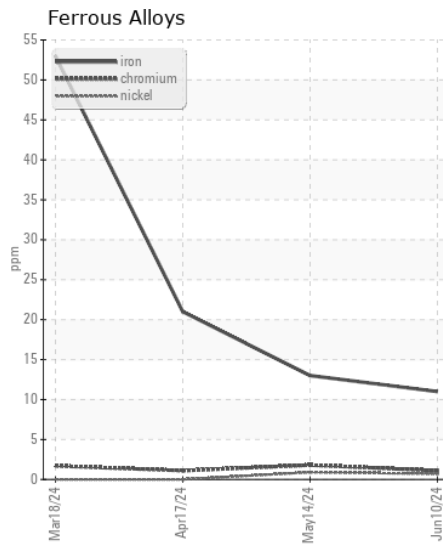
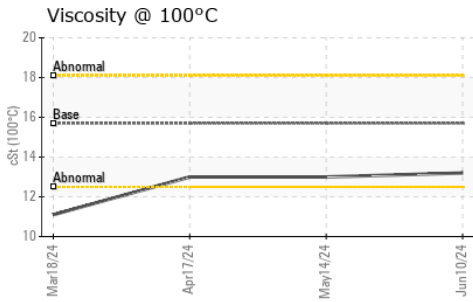
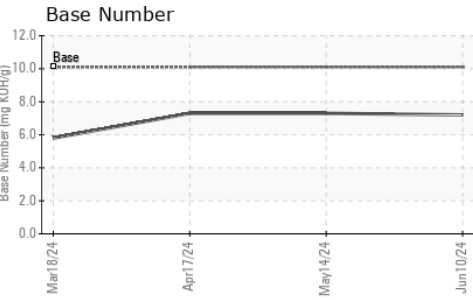
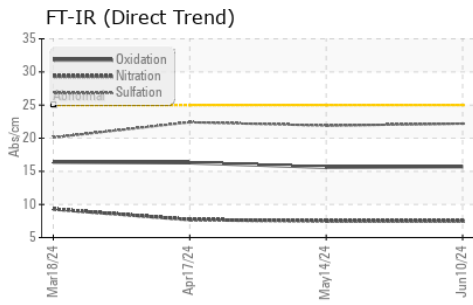
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>120	7	8	12
Potassium	ppm	ASTM D5185m	>20	11	13	25
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.5	7.5	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.2	21.9	22.4
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	1	<1
Boron	ppm	ASTM D5185m	316	313	362	280
Barium	ppm	ASTM D5185m	0.0	1	0	0
Molybdenum	ppm	ASTM D5185m	1.2	88	82	80
Manganese	ppm	ASTM D5185m		<1	1	1
Magnesium	ppm	ASTM D5185m	24	417	448	533
Calcium	ppm	ASTM D5185m	2292	1362	1406	1409
Phosphorus	ppm	ASTM D5185m	1064	914	973	916
Zinc	ppm	ASTM D5185m	1160	1188	1160	1098
Sulfur	ppm	ASTM D5185m	4996	3080	3636	3344
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7	15.6	16.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.2	7.3	7.3
Visc @ 100°C	cSt	ASTM D445	15.7	13.2	13.0	13.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0050214
Lab Number : 06219504
Unique Number : 11097701
Test Package : CONST (Additional Tests: TBN)

Received : 25 Jun 2024
Tested : 26 Jun 2024
Diagnosed : 26 Jun 2024 - Don Baldrige

HALL DRILLING LLC
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 ELLENBORO, WV
 US 26346

Contact: CHRIS PETROVICH
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To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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