

WEAR	
CONTAMINATION	
FLUID CONDITION	NORMAL

Store 9 - Marietta

1129 Component Diesel Engine

SHELL ROTELLA T 15W40 (--- GAL)

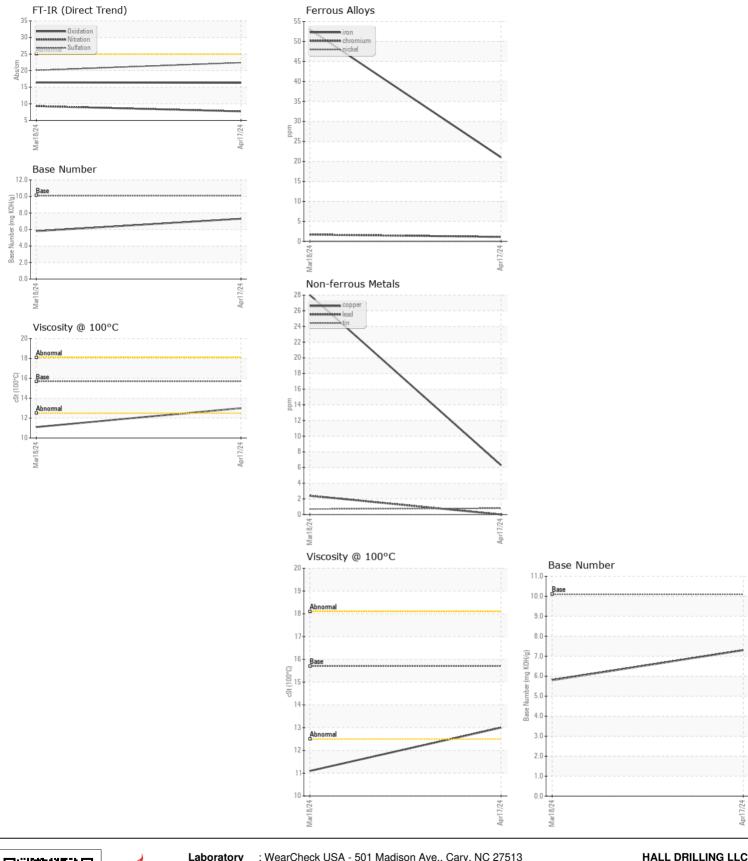
RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		LEC0049240	LEC0048381	
	Sample Date		Client Info		17 Apr 2024	18 Mar 2024	
	Machine Age	hrs	Client Info		1031	556	
	Oil Age	hrs	Client Info		400	400	
	Filter Age	hrs	Client Info		400	400	
	Oil Changed		Client Info		Changed	Changed	
	Filter Changed		Client Info		Changed	Changed	
	Sample Status				NORMAL	ABNORMAL	
WEAR All component wear rates are normal.	Iron	ppm	ASTM D5185m	>100	21	53	
	Chromium	ppm	ASTM D5185m	>20	1	2	
	Nickel	ppm	ASTM D5185m	>4	0	0	
	Titanium	ppm	ASTM D5185m		<1	0	
	Silver	ppm	ASTM D5185m	>3	0	0	
	Aluminum	ppm	ASTM D5185m		10	19	
	Lead	ppm	ASTM D5185m		0	2	
	Copper	ppm	ASTM D5185m	-	6	28	
	Tin	ppm	ASTM D5185m		<1	<1	
	Vanadium	ppm	ASTM D5185m		0	0	
	White Metal	scalar	*Visual	NONE	NONE	NONE	
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
CONTAMINATION	Silicon	ppm	ASTM D5185m	>120	12	▲ 37	
	Potassium	ppm	ASTM D5185m		25	59	
There is no indication of any contamination in the oil.	Fuel	ppiii	WC Method		<1.0	1.1	
	Water		WC Method		NEG	NEG	
	Glycol		WC Method	20.L	NEG	NEG	
	Soot %	%	*ASTM D7844	<u>\</u> 3	0.3	0.3	
	Nitration	Abs/cm	*ASTM D7624	>20	7.7	9.3	
	Sulfation	Abs/.1mm	*ASTM D7415		22.4	20.1	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
	Appearance	scalar	*Visual	NORML	NORML	NORML	
	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water		*Visual	>0.2	NEG	NEG	
FLUID CONDITION	Sodium		ASTM D5185m		<1	4	
	Boron	ppm	ASTM D5185m	316	280	62	
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m		0	5	
	Molybdenum	ppm	ASTM D5185m		80	5 18	
	Manganese	ppm	ASTM D5185m	1.2	1	4	
	•	ppm		24			
	Magnesium	ppm	ASTM D5185m		533 1400	766	
	Calcium	ppm	ASTM D5185m		1409	1385	
	Phosphorus	ppm	ASTM D5185m		916	762	
	Zinc	ppm	ASTM D5185m		1098	877	
	Sulfur	ppm	ASTM D5185m		3344	3307	
	Oxidation	Abs/.1mm	*ASTM D7414		16.3	16.4	
	Base Number (BN)	mg KUH/g	ASTM D2896	10.1	7.3	5.8	

Visc @ 100°C cSt

13.0

11.1

ASTM D445 15.7



HALL DRILLING LLC Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : LEC0049240 Received PO BOX 249 : 23 Apr 2024 Lab Number : 06158386 Tested : 24 Apr 2024 ELLENBORO, WV Unique Number : 10993809 Diagnosed : 25 Apr 2024 - Don Baldridge US 26346 Test Package : CONST (Additional Tests: TBN) Contact: CHRIS PETROVICH Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. chrispetrovich@halldrilling.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (304)869-3404 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (304)869-3408

Contact/Location: CHRIS PETROVICH - HALELLWV