

UIN 0605B66

Gasoline Engine

Unit No. 546787

Unit:
Make 2010 Land Rover
Model Model: LR4
Serial No.
Site

Compartment:
Name Gasoline Engine
Make
Model
Serial No.
Capacity:

Customer:

DIAGNOSIS

All wear rates normal. Abrasive and other contaminant levels are acceptable. Viscosity within specified operating range. Action: As oil and filter(s) already changed, resample next service interval to further monitor.

ANALYST: Sam.Smith Kansas City

	LEGEND			
Normal	Severe	Abnormal	Caution	Normal

DATE SAMPLED	30-May-19	12-Aug-17
DATE RECEIVED	27-Jun-19	06-Sep-17
DATE REPORTED	01-Jul-19	07-Sep-17
LAB NO.	43021288290	43021040763
SIF NO.	32370385	14796382
TIME ON UNIT	mi 121000	114000
TIME ON OIL	mi 7000	10000
OIL BRAND	Castrol	Castrol
OIL TYPE	Unidentified	Unidentified
OIL GRADE	SAE 5W20	SAE 5W20
OIL ADDED		
FILTER	7,000	10,000
OIL CHANGED	Changed	Changed
WO NUMBER		
Metals (ppm)		
Iron (Fe)	19	55
Chromium (Cr)	<1	1
Lead (Pb)	<1	<1
Copper (Cu)	1	1
Tin (Sn)	<1	<1
Aluminium (Al)	4	7
Nickel (Ni)	<1	<1
Silver (Ag)	<1	<1
Titanium (Ti)	<1	1
Vanadium (V)	<1	<1
Contaminants (ppm)		
Silicon (Si)	4	7
Sodium (Na)	14	33
Potassium (K)	1	<1
Additives (ppm)		
Magnesium (Mg)	28	23
Calcium (Ca)	3432	3234
Barium (Ba)	<1	<1
Phosphorus (P)	750	801
Zinc (Zn)	865	929
Molybdenum (Mo)	119	102
Boron (B)	22	24
Contaminants		
Water (%)	<0.05	<0.05
Coolant	No	No
Physical Tests		
Viscosity (cSt 100C)	9.2	9.9
Physical / Chemical		
Base Number (mgKOH/g)	2.2	2.4



UIN 0605B66

U.S. Laboratories

- | | |
|--|---|
| Atlanta, Georgia - 420
3121 Presidential Drive
Atlanta, GA 30340
800.394.3669 | Valley View, Ohio - 410
6180 Halle Dr. Suite D
Valley View, OH 44125
800.726.5400 |
| Kansas City, Kansas - 430
935 Sunshine Road
Kansas City, KS 66115
800.332.8055 | Phoenix, Arizona - 440
3319 West Earll Drive
Phoenix, AZ 85017
800.445.7930 |
| Portland, Oregon - 401
4943 NW Front Avenue
Portland, OR 97210
800.770.4128 | |

Canadian Laboratories

- | | |
|---|--|
| Burlington, Ontario - 450
5036 South Service Rd.
Burlington, ON L7L5Y7
905 332 9559 | Edmonton, Alberta - 402
10717-176 Street
Edmonton, AB T5S 1K1
888.489.0057 |
|---|--|

Sales & Marketing

- Houston, Texas**
 10450 Stancliff Road, Suite 210
 Houston, TX 77099
 877.835.8437

International Locations

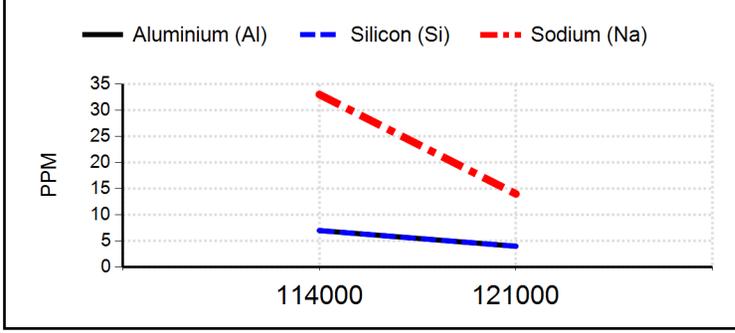
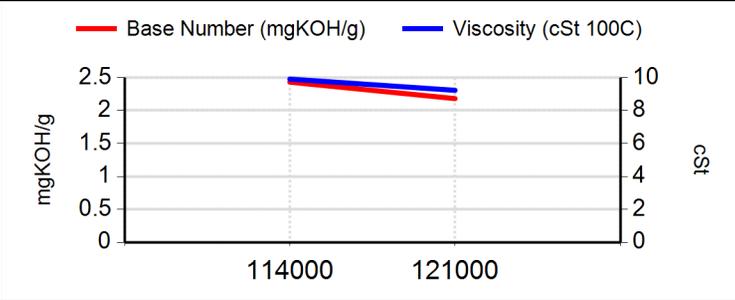
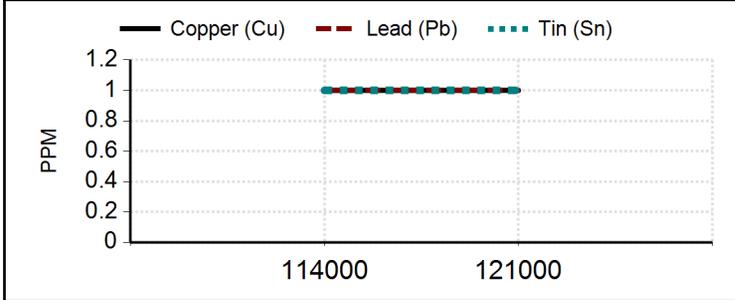
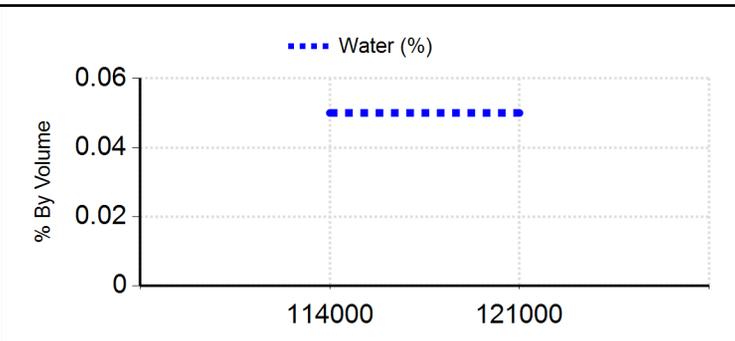
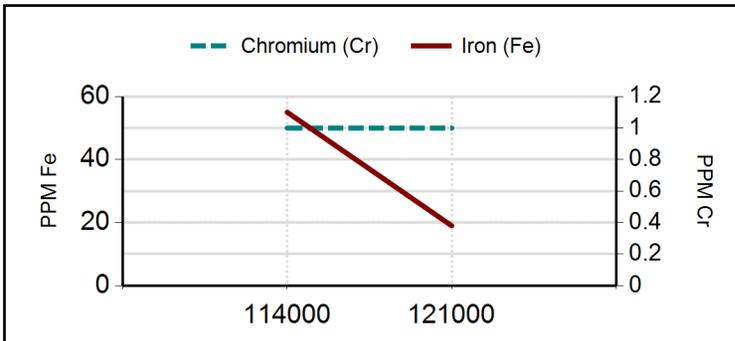
- Australia**
 Brisbane, Perth, Sydney, Muswellbrook
- South America**
 Santiago de Chile, Belo Horizonte, Brazil

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|----------------------------------|--|-------------------------|
| New Zealand
Wellington | Southeast Asia
Kuala Lumpur, Singapore | Europe
Prague |
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TEST METHODS:

Acid Number:	ASTM D974/D664 (*M)
Base Number:	ASTM D4739 (*M)
Base Number (Perchloric):	ASTM D2896 (*M)
Fuel Dilution by GC:	ASTM D7593
Fuel Dilution Visc/Setaflash	In House
Fuel Soot ATR/IR:	ASTM D7686 (*M)
Soot by FTIR:	ASTM D7844
Glycol:	In House
Metals by ICP AES:	ASTM D5185 (*M)
Ox, NOx, SOx, FTIR:	ASTM D7418/D7414/D7415 D7624
PQ Index:	ASTM D8120 (*M)
Particle Count:	ASTM D7647 (*M) / ISO 4406
Viscosity:	ASTM D445 (*M) / D7279 (*M)
Water KF:	D6304C / E203 (*M)
Water Crackle:	In House

*M - Modified Method



Filter Image

Filter patch test is not performed Contact laboratory for more information

Since services are based on samples and information supplied by others, and since corrective actions, if any, are necessarily taken by others, these services are rendered without any warranty or liability of any kind beyond the actual amount paid to ALS Tribology for the services. Reported recommendations are based on interpretations of the generated test results and historical data. Certain test results appearing in this report may have been tested at other ALS laboratories within the Tribology divisional network.

