Lubricant Analysis Report

Oil Analyzers INC.

North America: +1-877-458-3315

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

Overall report severity based on comments.

Account Information		Component Information		Sample Information	
Account Number:	[redacted]	Equipment ID:	RANGER	Tracking Number:	25139[redacted]
Company Name:	J[redacted]	Secondary ID:		Lab Number:	I-436[redacted]
Contact:		Component Type:	UNLEADED GASOLINE ENGINE	Lab Location:	Indianapolis
Address:	[redacted] US	Manufacturer:	FORD	Data Analyst:	SNG
Phone Number:	[redacted]	Model:	RANGER 2.7L	Sampled:	29-Mar-2026
		Application:	AUTOMOTIVE	Submitted:	30-Mar-2026
		Sump Capacity:	6 qt	Received:	06-Apr-2026
				Completed:	09-Apr-2026

Filter Information		Miscellaneous Information		Product Information	
Filter Type:	CARTRIDGE	Miscellaneous:	[redacted]538034/	Product Manufacturer:	AMSOIL
Micron Rating:	20			Product Name:	ASL SIG. SERIES SYN. MOTOR OIL
				Viscosity Grade:	SAE 5W30

Comments Maintenance action indicated at time of submission (fluid/filter change , filtration, etc.) will have corrected the issue this system is exhibiting. No further maintenance action is recommended at this time. However; OXIDATION is at a SIGNIFICANT level. Drain interval may be over-extended, or unit may be running too hot. FUEL DILUTION is at a MODERATE LEVEL; FUEL DILUTION has caused viscosity to decrease slightly below grade; FUEL DILUTION possibly caused by excessive idling; Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Lubricant and filter change acknowledged. For further information on flagged data and guidance on resampling interval, please call 715-395-0222.

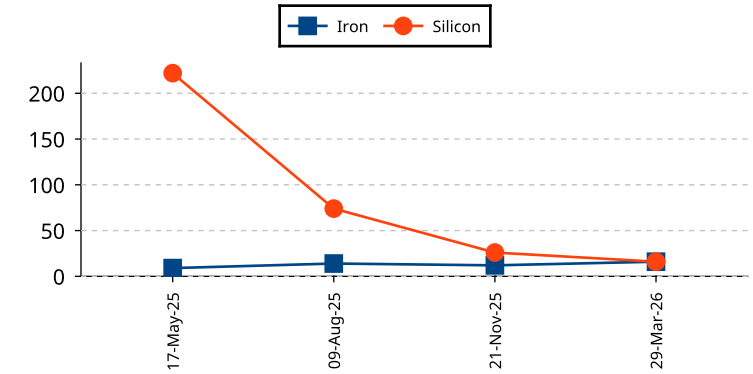
	Wear Metals (ppm)										Contaminant Metals (ppm)				Multi-Source Metals (ppm)							Additive Metals (ppm)	
Sample #	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
BL	1	0	0	1	0	0	0	0	0	0	4	6	0	0	232	0	0	1	353	948	1313	0	742	823
1	9	0	0	1	29	0	3	0	0	0	222	9	1	0	79	0	4	2	225	532	966	3	748	790
2	14	1	0	2	17	0	1	0	0	0	74	8	0	0	193	0	3	0	155	857	1190	1	743	814
3	12	1	0	4	8	0	0	0	0	0	26	7	0	0	208	1	2	0	162	875	1188	0	694	769
4	16	1	0	4	5	0	0	0	0	0	16	6	0	0	215	0	1	0	166	897	1224	0	696	779

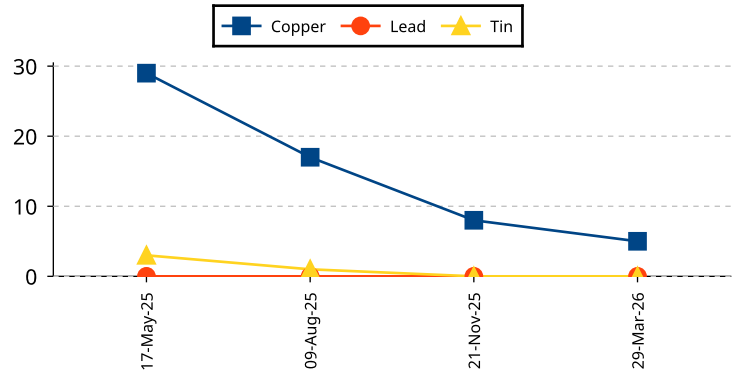
	Sample Information							Contaminants			Fluid Properties					
Sample #	Date Sampled	Date Received	Lube Time mi	Unit Time mi	Lube Change	Lube Added qt	Filter Change	Fuel Dilution %	Soot %	Water %	Viscosity 40°C cSt	Viscosity 100 °C cSt	Acid Number mg KOH / g	Base No. D4739 mg KOH / g	Oxidation abs / cm	Nitration abs / 0.1mm
BL	17-May-2025	20-May-2025	0	0	Unk	0	Unk			<.1 - FTIR		10.0	1.61		33	5
1	17-May-2025	02-Jun-2025	572	572	Yes	0	Yes	4.0 - GC	<.1 - E2412	<.1 - FTIR		8.6		5.95	6	5
2	09-Aug-2025	18-Aug-2025	4457	5029	Yes	0	Yes	2.3 - GC	<.1 - E2412	<.1 - FTIR		9.2		5.84	36	10
3	21-Nov-2025	26-Nov-2025	4146	9175	Yes	0	Yes			<.1 - FTIR		9.0		5.55	51	12
4	29-Mar-2026	06-Apr-2026	4745	13920	Yes	0	Yes	3.1 - GC	<.1 - E2412	<.1 - FTIR		9.2		4.68	51	13

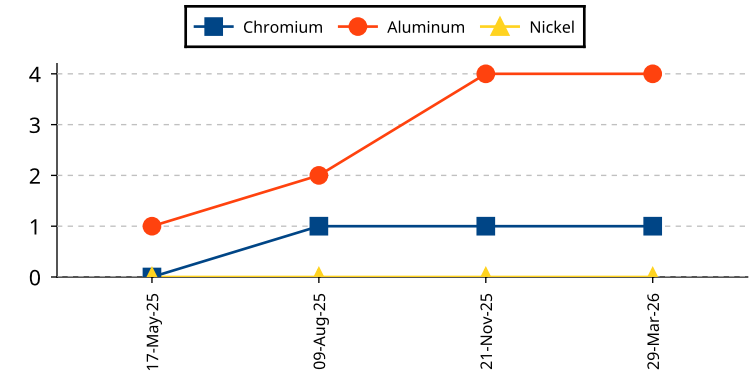
	Particle Count (particles/mL)										Additional Testing
Sample #	ISO Code Based On 4/6/14	> 4 particles / mL	> 6 particles / mL	> 10 particles / mL	> 14 particles / mL	> 21 particles / mL	> 38 particles / mL	> 70 particles / mL	> 100 particles / mL	Test Method	
BL	/ /										
1	/ /										
2	/ /										
3	/ /										
4	/ /										

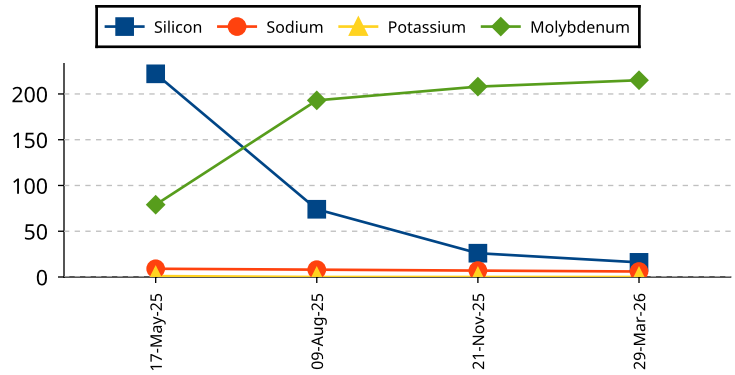
Comments are advisory only and are based on the sample information provided by the customer being valid. Results related only to the items tested. Missing fluid or component information limits the evaluation. No warranty is expressed or implied. Measurement uncertainty available upon request.

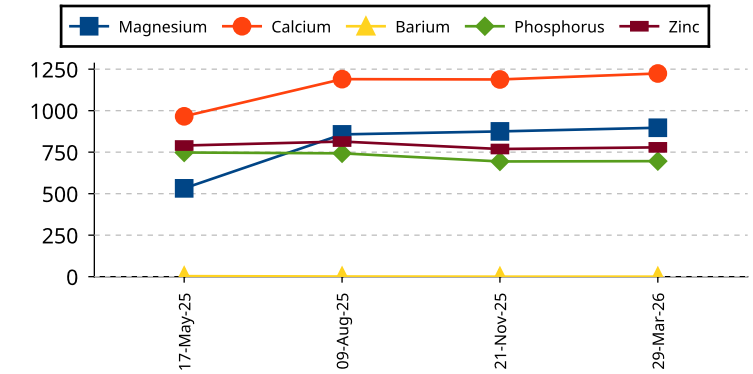
Historical Comments		
	1	For further information on flagged data and guidance on resampling interval, please call 715-395-0222. FLAGGED values are much higher than expected for new/overhauled unit; Silicon/Dirt may be present due to new unit contamination; Fuel dilution is at a SIGNIFICANT LEVEL; However; Since unit is new, rings may not be completely seated and allowing fuel to get by the piston rings. Levels should reduce with future oil changes. FUEL DILUTION has caused viscosity to decrease moderately; Tin is at a MODERATE LEVEL; Suspect most of the copper may be coming from the lubricant cooler and/or EGR cooler (as applicable). Flagged additives do not match current baseline reference for the specified product (this does not imply the lubricant does not meet proper API, SAE, or ISO classifications). Maintenance action indicated at time of submission (fluid/filter change , filtration, etc.) will have corrected the issue this system is exhibiting. No further maintenance action is recommended at this time.
	2	Flagged data does not indicate an immediate need for maintenance action. Continue to observe the trend and monitor equipment and fluid conditions. SILICON is high, however, there does not appear to be any wear as a result. SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; FUEL DILUTION is at a MINOR LEVEL. FUEL DILUTION has caused viscosity to decrease slightly below grade; Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Please provide COMPONENT MANUFACTURER and MODEL to compare data to the correct standards for this component. Lubricant and filter change acknowledged. Oil is suitable for continued use. Observe trends in future tests.
	3	Maintenance action indicated at time of submission (fluid/filter change , filtration, etc.) will have corrected the issue this system is exhibiting. No further maintenance action is recommended at this time. However; OXIDATION is at a SIGNIFICANT level. Drain interval may be over-extended, or unit may be running too hot. Silicon is at a MINOR LEVEL; SILICON sources can be abrasives (dirt, Alumina Silica), seals and gasket material, lube additive or lube supplement, and/or environmental contaminant; Viscosity is SLIGHTLY LOW. Causes include contamination, incorrectly identified viscosity grade, or adding a different viscosity grade to the component. Boron is slightly low for this lubricant. Boron levels may naturally decline with use so this is not a cause for concern. Lubricant and filter change acknowledged. Oil was suitable for continued use at the time of sampling.

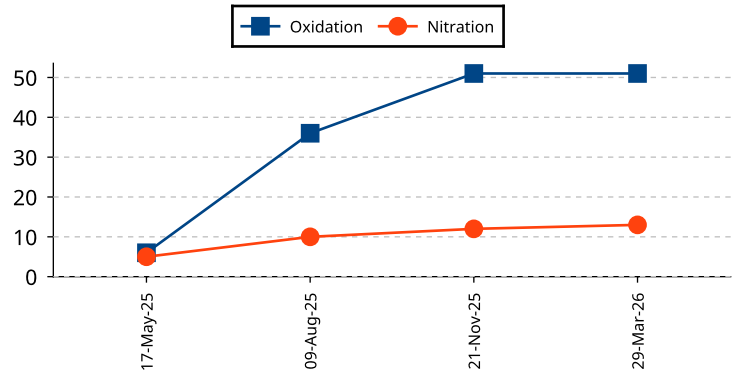

Iron
Silicon
200
150
100
50
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26

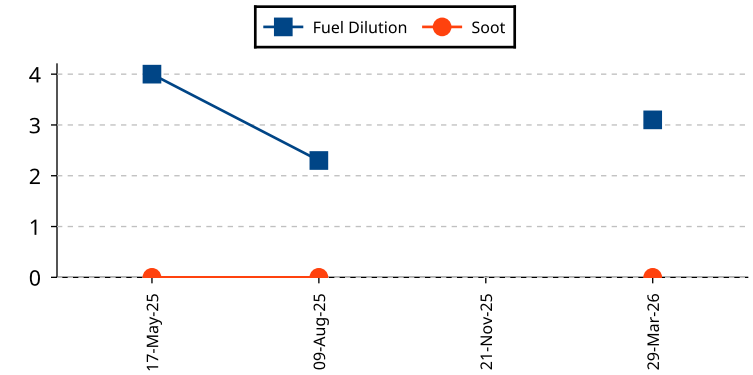

Copper
Lead
Tin
30
20
10
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26

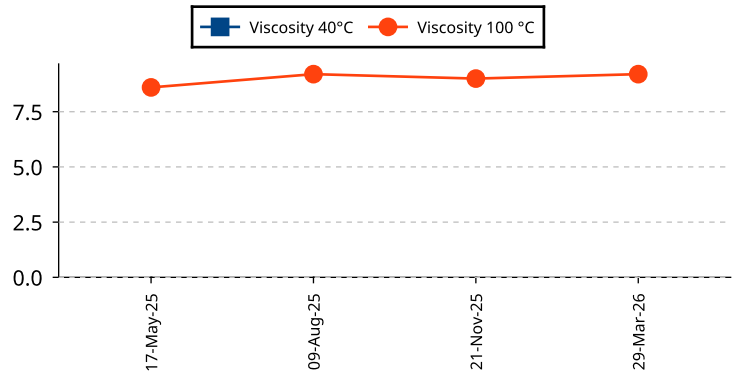

Chromium
Aluminum
Nickel
4
3
2
1
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26

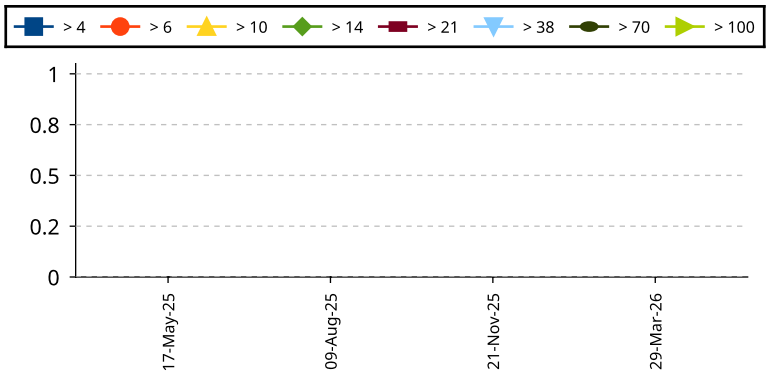

Silicon
Sodium
Potassium
Molybdenum
200
150
100
50
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26

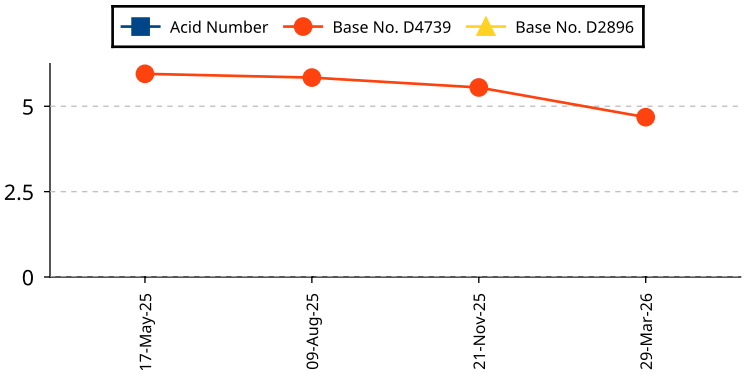

Magnesium
Calcium
Barium
Phosphorus
Zinc
1250
1000
750
500
250
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26


Oxidation
Nitration
50
40
30
20
10
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26


Fuel Dilution
Soot
4
3
2
1
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26


Viscosity 40°C
Viscosity 100 °C
7.5
5.0
2.5
0.0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26


> 4
> 6
> 10
> 14
> 21
> 38
> 70
> 100
1
0.8
0.5
0.2
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26


Acid Number
Base No. D4739
Base No. D2896
5
2.5
0
17-May-25
09-Aug-25
21-Nov-25
29-Mar-26