

## Report of the Month

Motorcycles have problems too, and this Yamaha YZF-R6 engine isn't wearing all that well. Can you tell where the problem is?

To learn more about where the elements are coming from, [click here](#).

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	600	UNIT/ LOCATION AVERAGES	480	174			UNIVERSAL AVERAGES
	MI/HR on Unit			12,104	11,731			
	Sample Date	9/5/2016		6/14/2016	11/25/2015			
	ALUMINUM	60		30	24	5		
	CHROME	1	1	1	0			1
	IRON	24	20	24	13			26
	COPPER	4	4	3	6			11
	LEAD	3	1	0	0			2
	TIN	1	1	1	0			1
	MO LYBDENUM	30	23	26	13			64
	NICKEL	1	1	1	1			1
	POTASSIUM	2	4	2	7			2
	BORON	4	15	10	32			86
	SILICON	35	26	34	9			11
	SODIUM	4	3	4	2			5
	CALCIUM	2396	2367	2481	2224			1932
	MAGNESIUM	11	11	13	9			394
	PHOSPHORUS	1091	1039	1044	981			1082
	ZINC	1248	1197	1278	1066			1237
	BARIUM	1	1	1	0			0



Note the wear on the clutch discs. The owner suspects the discs were wearing on the clutch housing (below), causing the high aluminum.

Values  
Should Be\*

PROPERTIES	SUS Viscosity @210°F	76.2	79-92	64.7	69.0
	cSt Viscosity @ 100°C	14.56	15.3-18.7	11.54	12.68
	Flashpoint in °F	425	>385	440	410
	Fuel %	<0.5	<2.0	<0.5	<0.5
	Antifreeze %	0.0	0.0	0.0	0.0
	Water %	0.0	0.0	0.0	0.0
	Insolubles %	0.2	<0.5	0.1	0.1
	TBN				



When the owner of this bike got our report, it prompted him to cut open the filter, which contained visible aluminum flakes. As you may know, any metal that you can actually see is metal that's too large for our spectrometer to read. When he saw the metal, the owner suspected something was going on so he pulled the clutch. It revealed substantial wear on the clutch housing and friction plates - see the pictures above. He suspects this is where the metal came from. He said he races the bike with very hard downshifting into corners. This is, according to the owner, the likely cause for the excess wear.