

Report of the Month

This Subaru STi has seen better days. Can you tell what's ailing it?

Hint: There are pictures below that show the damage.

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

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	579	UNIT/ LOCATION AVERAGES	200	2,200	2,223	1,653	UNIVERSAL AVERAGES
	MI/HR on Unit	776		200	22,741	20,541	18,317	
	Sample Date	06/03/13		05/19/13	08/03/12	06/18/12	05/06/12	
	ALUMINUM	5	2	9	2	2	2	4
	CHROME	3	1	3	0	0	0	1
	IRON	12	6	19	4	4	4	9
	COPPER	94	4	6	6	6	3	9
	LEAD	87	295	7	7	10	18	3
	TIN	22	1	11	3	1	0	1
	MO LYBDENUM	25	6	10	1	1	1	72
	NICKEL	1	0	0	0	0	0	0
	POTASSIUM	4	5	6	5	2	6	2
	BORON	7	7	34	1	1	5	46
	SILICON	71	10	248	7	8	9	11
	SODIUM	386	252	34	394	372	369	28
CALCIUM	2211	2151	2389	2402	2224	2186	2003	
MAGNESIUM	16	9	9	11	10	14	371	
PHOSPHORUS	1261	1124	1146	1256	1283	1205	811	
ZINC	1465	1290	1264	1595	1475	1340	961	
BARIUM	0	0	0	0	0	0	0	

Values
Should Be*

PROPERTIES	SUS Viscosity @210°F	60.4	59-65	75.3	89.6	
	cSt Viscosity @ 100°C	10.33	9.9-11.9	14.34	17.88	
	Flashpoint in °F	420	>375	415	420	
	Fuel %	<0.5	<2.0	<0.5	<0.5	
	Antifreeze %	0.0	0.0	0.0	0.0	
	Water %	0.0	0.1	0.0	0.0	0.0
	Insolubles %	0.1	0.6	0.2	0.1	0.3
	TBN					
	TAN					
	ISO Code					



*THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

This STi mostly sees street use, with a little racing thrown in at times. A little bearing wear started showing up in the May 2013 sample, and soon thereafter the owner noticed a 10 psi loss in oil pressure. He was concerned about bearing damage, and indeed, the June report showed much higher levels of copper, lead, and tin. He split the case and found damage to all the bearings (one worse than the others). He also found a small piece of something that looked abrasive in the oil pickup screen, which turned out to be a small piece of Scotch Brite pad. The damage was due to too-tight main bearing clearances for the RPMs he's running, as well as a dirty build -- contamination in the block while the engine was being built. He's rebuilding the engine and hopes to have it running in July.

