Report of the Month

Metals went up, then back down again in this IO-520-K.
Can you tell what was going on?
To learn more about where the elements are coming from, click here.

ELEMENTS IN PARTS PER MILLION								
	MI/HR on Oil	25	UNIT/ LOCATION AVERAGES	26	27	17	12	UNIVERSAL AVERAGES
	MI/HR on Unit	125		80	56	29	12	
	Sample Date	4/1/2018		12/15/2017	10/17/2017	6/23/2017	4/30/2017	
	ALUMINUM	13	20	20	43	9	15	8
	CHROME	15	17	31	26	4	9	7
	IRON	29	53	51	91	42	52	39
	COPPER	6	12	10	11	8	24	4
	LEAD	2866	1939	2921	2684	659	567	3509
	TIN	1	2	2	4	1	4	1
	MO LYBDENUM	9	11	17	19	3	6	2
	NICKEL	2	3	4	5	1	2	5
	PO TASSIUM	0	1	0	1	0	2	1
	BORON	3	2	1	1	1	2	1
	SILICON	8	11	12	15	10	12	6
	SODIUM	2	1	1	0	0	1	1
	CALCIUM	9	4	7	2	0	0	27
	MAGNESIUM	1	1	0	1	0	1	1
	PHOSPHORUS	3	3	4	0	0	8	232
	ZINC	2	2	1	0	0	7	8
	BARIUM	1	0	0	0	0	0	0

PROPERTIES			Should Be*				
	SUS Viscosity @210°F	98.4	86-105	95.7	95.9	99.2	100.8
	cSt Viscosity @ 100°C	19.99	17.0-21.8	19.35	19.38	20.16	20.54
	Flashpoint in °F	435	>430	465	465	515	505
	Fuel %	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5
	Antifreeze %	-	-	-	-	-	-
	Water %	0.0	0.0	0.0	0.0	0.0	0.0
	Insolubles %	0.4	<0.6	0.3	0.3	0.5	0.5
	TBN						
	TAN						
	ISO Code						

*THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

It's normal to see metal after an overhaul (April 2017), but wear should improve as time goes on, and in this engine, wear was getting worse. After the sample from October with alarmingly high wear, the owner discovered that the spring on the air door had no tension and that was allowing the door to open upon take-off. The owner suspected that was allowing the engine to ingest sand or dirt (silicon), which was causing a lot of wear. Once the problem was repaired, wear levels started improving back towards normal.