Report of the Month

This O-200 engine has a problem.
Can you figure out what's wrong?

To learn where the elements are coming from, click here and scroll down.

UNIT				
MAKE/MODEL:	Continental O-200-A	OIL TYPE & GRADE:	Phillips XC (A/C) 20W/50	
FUEL TYPE:	Gasoline (Leaded)	OIL USE INTERVAL:	52 Hours	
ADDITIONAL INFO:	Cessna C150			

ELEMENTS IN PARTS PER MILLION		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
MI/HR on Oil	52							
MI/HR on Unit	1,002							
Sample Date	11/18/2022							
Make Up Oil Added	3.5 qts							
ALUMINUM	**14**	14						7
CHROMIUM	**85**	85						4
IRON	**72**	72						35
COPPER	**29**	29						10
LEAD	**6184**	6184						2320
TIN	1	1						1
MOLYBDENUM	2	2						1
NICKEL	3	3						1
MANGANESE	2	2						1
SILVER	0	0						0
TITANIUM	0	0						0
POTASSIUM	0	0						0
BORON	0	0						1
SILICON	7	7						8
SODIUM	1	1						1
CALCIUM	1	1						19
MAGNESIUM	2	2						4
PHOSPHORUS	149	149						407
ZINC	4	4						7
BARIUM	0	0						0

PROPERTIES		Values Should Be*					
SUS Viscosity @ 210°F	94.2	86-105					
cSt Viscosity @ 100°C	18.98	17.0-21.8					
Flashpoint in °F	445	>430					
Fuel %	<0.5	<1.0					
Antifreeze %	-						
Water %	0.0	0.0					
Insolubles %	0.4	<0.6					
TBN							
TAN							
ISO Code							

*** THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE**

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After taking a look at the data, we called the operations manager to give him a heads up. He later responded: Upon further investigation we found that the cylinders are in fact in a set up of 1 steel, 3 chrome, which explains the situation a bit more. After discussing these results by phone, I decided to have the engine scoped immediately. What we found was cylinders 2 and 4 were beyond what I would consider safe to fly and we will be overhauling them. This report very well could have saved me from a catastrophic issue in the air and I appreciate the call as I was heading to the field to fly.