

You don't see gear oil from a 1936 Cat bulldozer very often!

To learn where the elements are coming from, [click here](#) and scroll down.

UNIT	MAKE/MODEL: Differential	OIL TYPE & GRADE: Gear Lube
	FUEL TYPE:	OIL USE INTERVAL:
	ADDITIONAL INFO: 1936 Cat RD-4 Bulldozer/Crawler, Trans/Rear End	

COMMENTS Wow, this rear end lube looks as gnarly in analysis as it does in Kyle's video. Insolubles made up 10% of the sample so this oil was heavily oxidized. Enough water was present to cause the sample to boil, preventing us from obtaining the flashpoint. Contamination certainly played a role in the oxidization of the oil too. Silicon may be from dirt/debris if not from a harmless source like lube or sealer. On the wear front, we found a lot of excess metal. Steel wear (iron/nickel) is the most notable. Best of luck restoring this old Cat, guys! Pet the shop dogs for me! -Miranda

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil		UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	MI/HR on Unit								
	Sample Date	4/9/2022							
	Make Up Oil Added								
ALUMINUM	18								5
CHROMIUM	2								2
IRON	1020								260
COPPER	3								12
LEAD	13								4
TIN	1								1
MOLYBDENUM	1								7
NICKEL	29								2
MANGANESE	7								7
SILVER	0								0
TITANIUM	2								0
POTASSIUM	7								30
BORON	10								146
SILICON	144								46
SODIUM	35								12
CALCIUM	24								620
MAGNESIUM	6								47
PHOSPHORUS	179								1128
ZINC	83								307
BARIUM	12								13



PROPERTIES	SUS Viscosity @ 210°F	108.0	UNIT / LOCATION AVERAGES						UNIVERSAL AVERAGES
	cSt Viscosity @ 100°C	22.22							
Flashpoint in °F	BOIL								
Fuel %	-								
Antifreeze %	-								
Water %	POS	0.0							
Insolubles %	10.0	<0.6							
TBN									
TAN									
ISO Code									

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

Kyle Christ, the owner, posted a series of videos on the process of rehabbing this bulldozer. This oil was the consistency of tar! You can see it at about the 6:10-minute mark here: youtu.be/4o623Xcx9PM