



OIL REPORT

LAB NUMBER: L61341

UNIT ID: 99 MARQUIS

REPORT DATE: 10/1/2019

CLIENT ID: 149038

CODE: 20/32

PAYMENT: CC: Visa

UNIT

MAKE/MODEL: Cat C-12

FUEL TYPE: Diesel

ADDITIONAL INFO: Reman Eng

OIL TYPE & GRADE: Shell Rotella T 15W/40

OIL USE INTERVAL: 9,800 Miles

CLIENTRICHARD DANIELS
13013 LITTLE HOLLAND RD
MANHATTAN, MT 59741-8647PHONE: (406) 461-8326
FAX:
ALT PHONE:
EMAIL: rick@rickdaniels.com**COMMENTS**

RICK: We can go with engine mileage if you want, or we can go with chassis mileage, if that's easier. Either way, this is a pretty nice first sample from your C-12. The wear metals are more or less in the average range, with the averages for this engine type being based on about 13,000 miles on the oil. If anything, iron is a smidge high, but that might reflect the type of driving this engine does or it may even be normal. It isn't far enough out of line that we think it's a problem, but we'll watch it. No contamination was found. This oil could run a bit longer, if you wanted.

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	9,800	UNIT / LOCATION AVERAGES							UNIVERSAL AVERAGES
	MI/HR on Unit	37,933								
	Sample Date	9/18/2019								
	Make Up Oil Added	0 qts								
	ALUMINUM	2		2						
	CHROMIUM	1		1						
	IRON	37		37						
	COPPER	3		3						
	LEAD	0		0						
	TIN	0		0						
	MOLYBDENUM	56		56						
	NICKEL	0		0						
	MANGANESE	0		0						
	SILVER	0		0						
	TITANIUM	0		0						
	POTASSIUM	0		0						
	BORON	145		145						
	SILICON	3		3						
	SODIUM	10		10						
	CALCIUM	1731		1731						
	MAGNESIUM	403		403						2357
	PHOSPHORUS	1063		1063						296
	ZINC	1198		1198						1030
	BARIUM	0		0						1225
										1

Values
Should Be*

PROPERTIES	SUS Viscosity @ 210°F	73.2	69-80					
	cSt Viscosity @ 100°C	13.80	12.7-15.8					
	Flashpoint in °F	415	>410					
	Fuel %	<0.5	<2.0					
	Antifreeze %	0.0	0					
	Water %	0.0	0.0					
	Insolubles %	0.3	<0.6					
	TBN							
	TAN							
	ISO Code							

* THIS COLUMN APPLIES ONLY TO THE CURRENT SAMPLE

416 E. PETTIT AVE. FORT WAYNE, IN 46806 (260) 744-2380 www.blackstone-labs.com