OIL ANALYSIS REPORT

RAVEN 502618 VOLVO PENTA 20132126222 - PORT DIESEL ENGINE

Sample No: VPA058481

Oil Type: CHEVRON DELO 400 MULTIGRADE 15W40

Sample Number		VPA058481	VPA034316	
Sample Date		02 Apr 2024	16 Feb 2023	
Machine Hours		119	58	
Oil Hours		61	58	
Oil Changed		Changed	Changed	
Sample Status		NORMAL	ATTENTION	
OIL CONDITION				
Visc @ 100°C	cSt	13.1	12.3	
Base Number (BN)	mg KOH/g	10.0	10.0	
Oxidation (PA)	%	56	54	
CONTAMINATION				
Water	%	NEG	NEG	
Soot %	%	0.1	0.1	
Nitration (PA)	%	40	45	
Sulfation (PA)	%	52	51	
Glycol	%	NEG	NEG	
Fuel	%	<1.0	0.7	
Silicon	ppm	1 0	21	
Sodium	ppm	 <1	1	
Potassium	ppm	10	18	
WEAR METALS				
ron	ppm	6	9	
Copper	ppm	1	3	
_ead	ppm	□ <1	1	
Tin	ppm	□ <1	1	
Aluminum	ppm	4	7	
Chromium	ppm	□ <1	1	
Molybdenum	ppm	66	66	
Nickel	ppm	□ <1	0	
Titanium	ppm	 <1	 < 1	
Silver	ppm	0	0	
Manganese	ppm	 <1	2	
Vanadium	ppm	<1	0	
ADDITIVES				
Calcium	ppm	1233	1403	
Magnesium	ppm	1086	818	
Zinc	ppm	1433	1307	
	ppm	1156	1028	
Phosphorus	ppin			
Barium	ppm	0	0	
Phosphorus Barium Boron				

North Harbor Diesel Inc

720 30Th Street ANACORTES, WA US 98221 Contact: ED MCFARLIN ed@northharbordiesel.com T: F:

Diagnosis

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Report Id: VP179089 [WUSCAR] 06145685 (Generated: 04/14/2024 12:43:16) Rev: 1

 Unique No:
 10970493

 Signed:
 Don Baldridge

 Report Date:
 14 Apr 2024

 Contact/Location: ED MCFARLIN - VP179089

VP179089

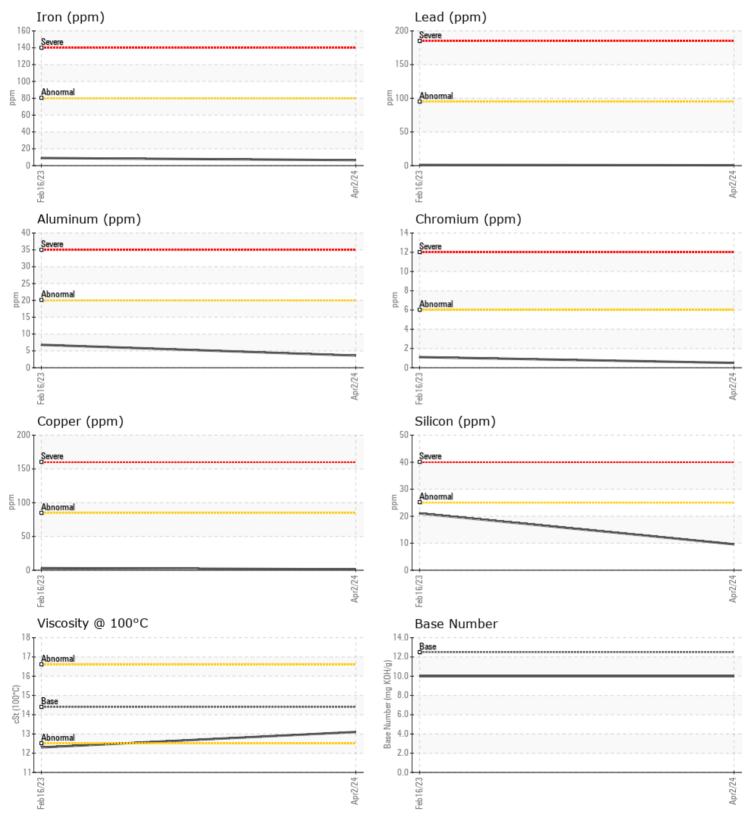
Page 1 of 2



OIL ANALYSIS REPORT



GRAPHS



Report Id: VP179089 [WUSCAR] 06145685 (Generated: 04/14/2024 12:43:18) Rev: 1

Contact/Location: ED MCFARLIN - VP179089