



3940016734 - PORT IPS

Sample No: VPA026533

Oil Type: MOBIL DELVAC 1 SYNTHETIC GEAR SAE 75W90

Sample Number VPA026533 VPA040286 VPA040284 VPA024167	SAMPLE INFORM	ATION					
Sample Date 13 Apr 2024 23 Oct 2022 23 Oct 2021 11 Oct 2020		ATION	VPA026522	\\D\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\/P\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	VPA024167	
Machine Hours 860 742 661 590 Oil Hours 118 151 71 49 Oil Changed Changed Not Changed Changed Sample Status ATTENTION ABNORMAL NORMAL NORMAL USC @ 40°C CSt ■103 ■110 ■111 ■114 CONTAMINATION Water % NEG ▲ 0.340 NEG NEG Silicon ppm 15 15 10 15 Sodium ppm 0 <1 ■0 ■2 Potassium ppm 1 0 0 ■7 WEAR METALS PQ ■33 ■16 ■26 ■34 Iron ppm 20 ■29 ■208 ■62 ■99 Copper ppm 20 ■19 ■12 ■11 ■1 Lead ppm 1 0 0 0 <td< th=""><th>•</th><th></th><th></th><th></th><th></th><th></th></td<>	•						
118	•		•				
Changed Sample Status							
NORMAL NORMAL NORMAL NORMAL							
DIL CONDITION							
Visc @ 40°C CSt 103 110 111 114 1				7.011011111111	11011111111	1401400	
Value							
Water % NEG ▲ 0.340 NEG NEG Silicon ppm 15 15 10 15 Sodium ppm 0 <1	<td>Visc @ 40°C</td> <td>cSt</td> <td><u>103</u></td> <td><u>110</u></td> <td>111</td> <td><u>114</u></td>	Visc @ 40°C	cSt	<u>103</u>	<u>110</u>	111	<u>114</u>
Silicon	CONTAMINATION						
Sodium	Water	%	NEG	△ 0.340	NEG	NEG	
Potassium ppm 1	Silicon	ppm	15	15	10	15	
WEAR METALS PQ 33 16 26 34 Iron ppm 292 208 62 99 Copper ppm 1 0 -1 0 Lead ppm 1 0 -1 0 Tin ppm 2 3 2 1 Chromium ppm 2 2 -1 1 Chromium ppm 1 <1	Sodium	ppm	0	- <1	□0	2	
PQ	Potassium	ppm	1	0	□ 0	7	
Copper	WEAR METALS						
Copper ppm 20 19 12 11 Lead ppm 1 0 <1 0 Tin ppm <1 0 0 0 Aluminum ppm 2 3 2 1 Chromium ppm 2 2 <1 1 Molybdenum ppm 1 <1 4 0 Nickel ppm 4 1 <1 <1 1 Nickel ppm 4 1 <1 <1 0 Silver ppm 0 0 <1 0 Manganese ppm 4 3 1 2 Vanadium ppm <1 0 0 0 ADDITIVES Calcium ppm 17 5 69 4 Magnesium ppm 2 7 2 Zinc ppm 1390 1334 1380 1	PQ		■33	■16	2 6		
Lead	Iron	ppm	292	208	6 2	■99	
Tin ppm <1 0 0 0 0 Aluminum ppm 2 3 2 1 Chromium ppm 2 2 2 1 1 Molybdenum ppm 1 1 <1 4 0 Nickel ppm 4 1 <1 <1 1 1 Titanium ppm 0 0 0 <1 0 Silver ppm 0 0 0 <1 0 Manganese ppm 4 3 1 2 Vanadium ppm <1 0 0 0 0 ADDITIVES Calcium ppm 1 7 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 2 8 24 27 9 Phosphorus ppm 1 1390 1334 1380 1339 Barium ppm 1 1 0 0 0 0	Copper	ppm	■20	1 9	1 2	1 1	
Aluminum ppm 2 3 2 1 Chromium ppm 2 2 2 2 1 Molybdenum ppm 1 <1 4 0 Nickel ppm 4 1 <1 <1 1 Titanium ppm 0 0 0 <1 0 Manganese ppm 4 3 1 2 Vanadium ppm <1 0 0 0 0 ADDITIVES Calcium ppm 1 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1 390 1334 1380 1339 Barium ppm 1 0 0 0 0 0	Lead	ppm	1	0	<1	0	
Chromium ppm 2 2 <1 1 Molybdenum ppm 1 <1	Tin	ppm	<1		-	0	
Molybdenum ppm 1 <1	Aluminum	ppm	2	-	2	1	
Nickel ppm 4 1 <1 1 Titanium ppm <1	Chromium	ppm	_	2	< 1	1	
Titanium ppm < 1 <1 <1 0 Silver ppm 0 0 0 <1 0 Manganese ppm 4 3 1 2 Vanadium ppm <1 0 0 0 ADDITIVES Calcium ppm 17 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0 0	Molybdenum	ppm	1	<1	4	0	
Silver ppm 0 0 <1 0 Manganese ppm 4 3 1 2 Vanadium ppm <1 0 0 0 ADDITIVES Calcium ppm 17 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0	Nickel	ppm		1	- < 1	1	
Manganese ppm 4 3 1 2 Vanadium ppm <1 0 0 0 ADDITIVES Calcium ppm 17 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0	Titanium	ppm	<1	<1	<1	0	
Vanadium ppm <1 0 0 0 ADDITIVES Calcium ppm 17 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0	Silver	ppm	0	-	<1		
ADDITIVES Calcium ppm 17 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0 0	Manganese	ppm	4	3	1	2	
Calcium ppm 17 5 69 4 Magnesium ppm 6 2 7 2 Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0	Vanadium	ppm	<1	0	0	0	
Magnesium ppm ■6 2 7 2 Zinc ppm ■28 24 27 9 Phosphorus ppm ■1390 1334 1380 1339 Barium ppm ■1 0 0 0	ADDITIVES						
Zinc ppm 28 24 27 9 Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0	Calcium	ppm	17	5	69	4	
Phosphorus ppm 1390 1334 1380 1339 Barium ppm 1 0 0 0	Magnesium	ppm	6	2	7	2	
Barium ppm 1 0 0 0	Zinc	ppm	28	24	27	9	
Barium ppm □1 0 0 0	Phosphorus		1390	1334	1380	1339	
Boron ppm □256 304 304 245	Barium		1	0	0	0	
	Boron	ppm	256	304	304	245	

KENN WOLF 4037 N LOWEL

CHICAGO, IL US 60641 Contact: KENN WOLF kwolf@hfsmaterials.com T: (773)339-0633 F:

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Gear wear is indicated. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot:VPKENCHIUnique No:10983540Signed:Angela BorellaReport Date:22 Apr 2024



OIL ANALYSIS REPORT

