



CONSTRUCTION EQUIPMENT

SWO-069177 TAKEUCHI TL6 406001662 - DIESEL ENGINE



Sample No: VCP444459
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: SWO-069177



SAMPLE INFORMATION

Sample Number	VCP444459	VCP380776	VCP376424	VCP357817
Sample Date	20 Feb 2024	10 Jan 2023	10 Jul 2022	29 Mar 2022
Machine Hours	3140	3027	2241	1812
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	SEVERE	NORMAL	NORMAL

WHITAKER CONTRACTING

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 F:

OIL CONDITION

Visc @ 100°C	cSt	14.2	11.2	14.7	13.9
Base Number (BN)	mg KOH/g	10.2	8.5	9.3	10.4
Oxidation (PA)	%	89	73	102	91

Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. 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.

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.9	1	2	1.3
Nitration (PA)	%	99	88	110	89
Sulfation (PA)	%	67	61	76	72
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	1.6	8.2	<1.0	<1.0
Silicon	ppm	47	27	9	7
Sodium	ppm	4	3	3	2
Potassium	ppm	6	2	0	0

WEAR METALS

Iron	ppm	77	87	45	24
Copper	ppm	6	33	6	4
Lead	ppm	0	<1	<1	<1
Tin	ppm	<1	2	1	<1
Aluminum	ppm	21	44	5	3
Chromium	ppm	3	3	1	<1
Molybdenum	ppm	67	72	53	47
Nickel	ppm	<1	2	1	<1
Titanium	ppm	<1	<1	<1	0
Silver	ppm	0	0	<1	2
Manganese	ppm	<1	2	<1	<1
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	1933	1307	1680	1605
Magnesium	ppm	967	917	626	594
Zinc	ppm	1329	1192	1183	996
Phosphorus	ppm	1137	1002	919	888
Barium	ppm	0	0	0	0
Boron	ppm	27	38	40	62

Depot: WHIGUN
Unique No: 10899514
Signed: Doug Bogart
Report Date: 29 Feb 2024

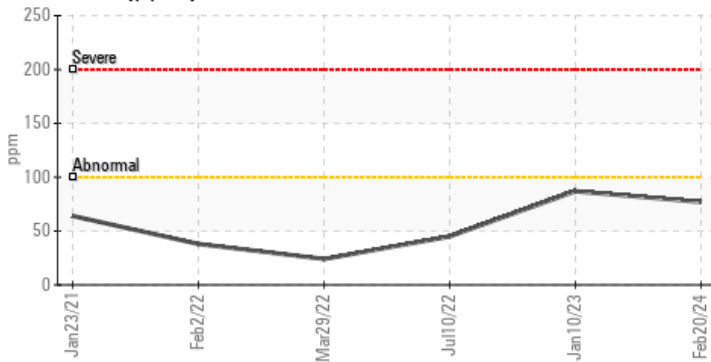


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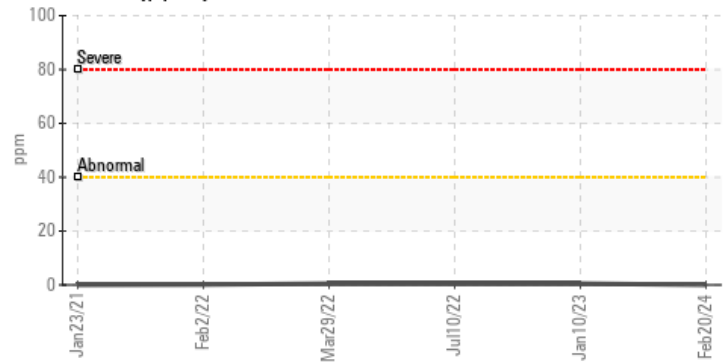


GRAPHS

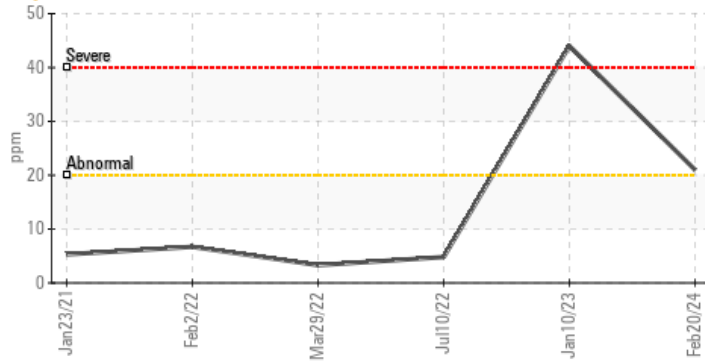
Iron (ppm)



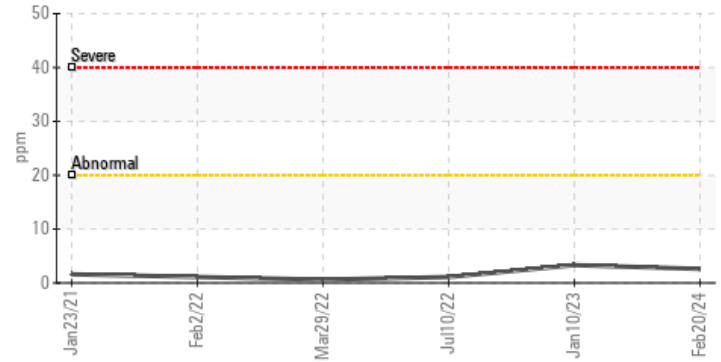
Lead (ppm)



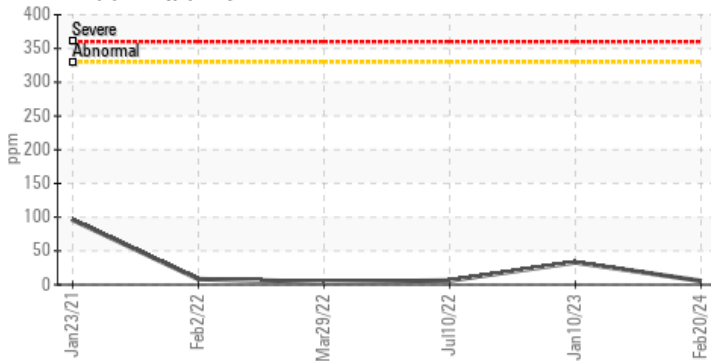
Aluminum (ppm)



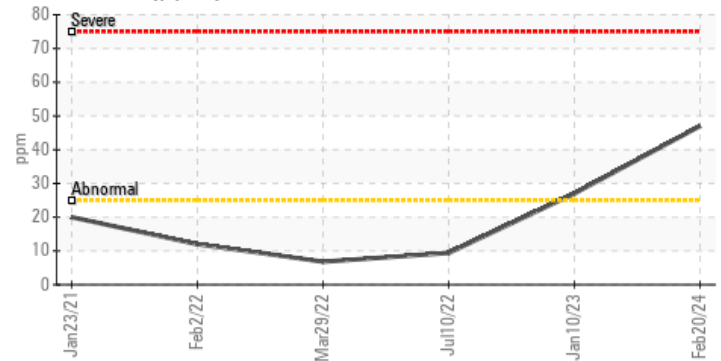
Chromium (ppm)



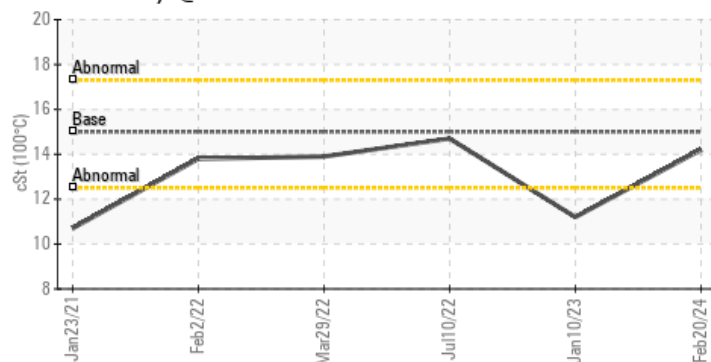
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number

