



PERFORMANCE  
UNDER  
PRESSURE

OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>MARGINAL</b>



Machine Id  
**CATERPILLAR RIG 55-B PARKER WELLBORE 059024 (S/N LLR00594)**  
Component  
**Diesel Engine**  
Fluid  
**PROTEK ELITE 15W40 SYN BLEND (--- GAL)**

**RECOMMENDATION**

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>RP0031800</b>	RP0028043	RP0022132
Sample Date		Client Info		<b>02 Jun 2024</b>	07 Oct 2022	25 Jun 2022
Machine Age	hrs	Client Info		<b>11450</b>	8992	8195
Oil Age	hrs	Client Info		<b>815</b>	0	814
Filter Age	hrs	Client Info		<b>815</b>	0	814
Oil Changed		Client Info		<b>Changed</b>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>MARGINAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>8</b>	4	4
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>1</b>	1	2
Lead	ppm	ASTM D5185m	>40	<b>1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>20</b>	2	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	2	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

Fuel content negligible. There is no indication of any contamination in the oil.

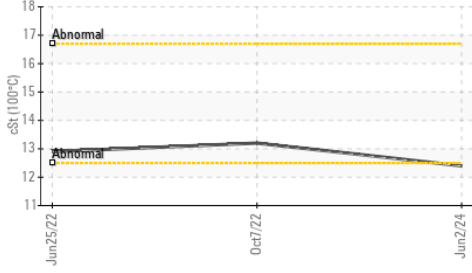
Silicon	ppm	ASTM D5185m	>25	<b>3</b>	2	4
Potassium	ppm	ASTM D5185m	>20	<b>16</b>	<1	1
Fuel	%	ASTM D3524	>5	<b>0.7</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.8</b>	7.9	7.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.1</b>	21.8	21.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

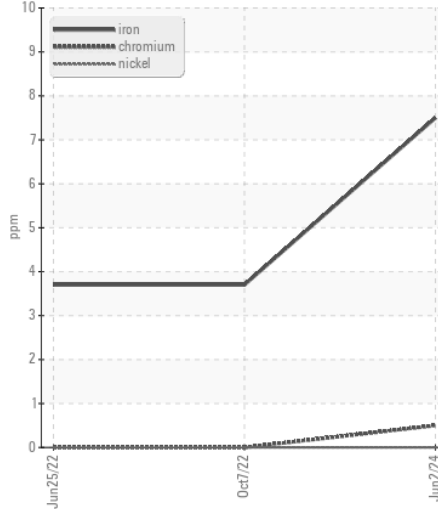
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<b>6</b>	0	2
Boron	ppm	ASTM D5185m		<b>4</b>	159	404
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>65</b>	29	85
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>1002</b>	171	373
Calcium	ppm	ASTM D5185m		<b>1270</b>	1868	1419
Phosphorus	ppm	ASTM D5185m		<b>1135</b>	928	1020
Zinc	ppm	ASTM D5185m		<b>1337</b>	1118	1224
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.0</b>	17.3	15.5
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.96</b>	6.97	6.29
Visc @ 100°C	cSt	ASTM D445		<b>▲ 12.4</b>	13.2	12.9

▲ Viscosity @ 100°C



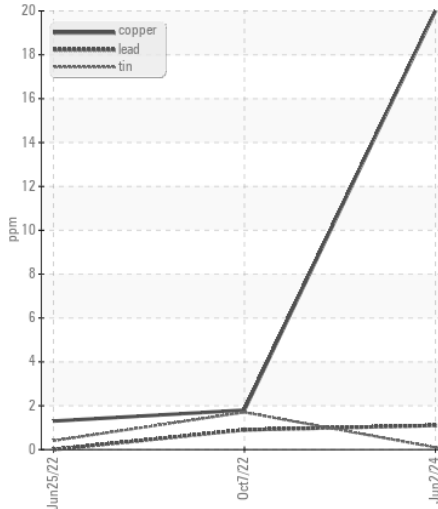
Ferrous Alloys



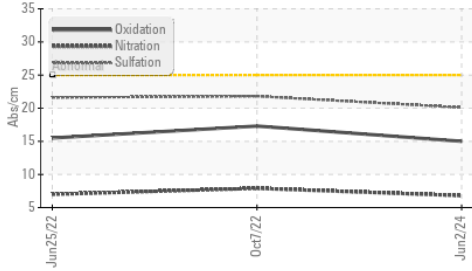
Fuel Dilution



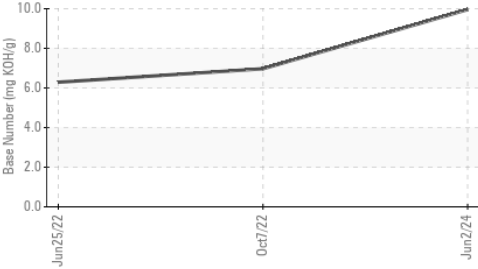
Non-ferrous Metals



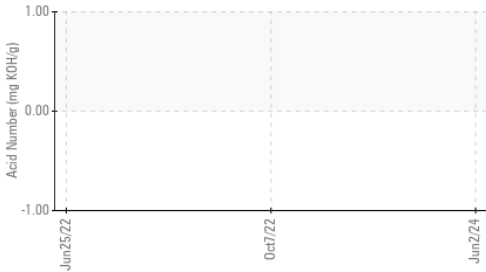
FT-IR (Direct Trend)



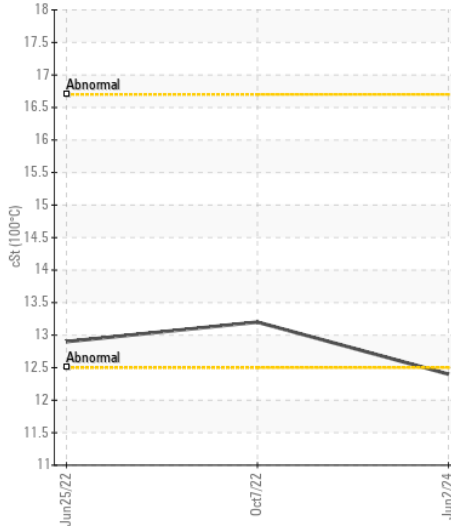
Base Number



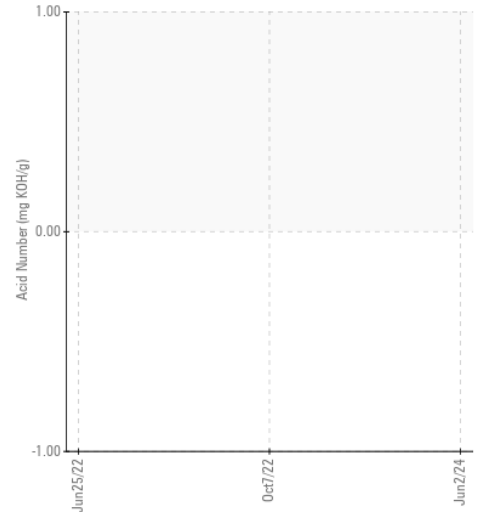
Acid Number



▲ Viscosity @ 100°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : RP0031800

Lab Number : 06217045

Unique Number : 11089909

Test Package : IND 2 ( Additional Tests: FT-IR, FuelDilution, KV100, PercentFuel, TBN )

Received : 21 Jun 2024

Tested : 26 Jun 2024

Diagnosed : 26 Jun 2024 - Jonathan Hester

PARKER WELLBORE

1110 UNIFAB RD

NEW IBERIA, LA

US 70560

Contact: BRENT CARLINE

brent.carline@parkerwellbore.com

T: (337)364-3122

F: (337)364-0232

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)