



MOBILE OIL ANALYSIS REPORT

CONTAMINATION	NORMAL
OIL CONDITION	NORMAL
WEAR	NORMAL

ZBF123165 - Diesel Engine

Unit Make : CASE INTERATIONAL

Unit Model : 535 STEIGER

Serial No : ZBF123165

Date Rec'd : Nov 17, 2016

Comp Make : CUMMINS

Cust. Ref No. : {n/a}

Sample Date : Nov 8, 2016

Comp Model : QSX-15

Stub No. : KL-MFA12345

Diagnostician : Wes Davis

RECOMMENDATION

Resample at the next service interval to monitor.

Sample Date	06/17/16	07/26/16	09/06/16	Current	UOM
Time on Unit	6396	6604	6828	7171	hrs
Time on Oil	3675	208	432	775	hrs
Time on Fltr	292	208	224	343	hrs
Oil Maint.	changed	not chg	not chg	n/a	---
Filter Maint.	changed	changed	changed	changed	---

CONTAMINATION

There is no indication of any contamination in the component.

Sample Date	06/17/16	07/26/16	09/06/16	Current	Abn
Silicon	15	8.1	5.5	5.8	25
Fuel (%)	<2.0	<2.0	<2.0	<2.0	3.0
Glycol	---	---	---	---	0.06
Water (%)	<0.1	<0.1	<0.1	<0.1	0.2
Soot (%)	0.5	0.4	1.1	1.1	6
>4µm(c)	---	---	---	---	---
>6µm(c)	---	---	---	---	---
>14µm(c)	---	---	---	---	---
>21µm(c)	---	---	---	---	---
>38µm(c)	---	---	---	---	---
>70µm(c)	---	---	---	---	---
ISO 4406(c)	---	---	---	---	---

OIL CONDITION

Oil Type: 12 QTS of KENDALL SUPER-D XA 15W40

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date	06/17/16	07/26/16	09/06/16	Current	Base
Potassium	2.6	2.7	0.9	0.9	
Boron	35	40	27	32	50
Barium	0.0	0.0	0.0	0.0	
Calcium	2301	2116	1883	1948	1900
Magnesium	356	316	288	298	270
Molybdenum	1.8	0.3	0.0	0.0	
Sodium	9.3	6.5	4.6	6.5	
Phosphorus	987	950	948	940	1000
Sulfur	3553	4103	4089	3933	3400
Zinc	1292	1193	1055	1090	1260
Visc 100°C (cSt)	17.7	15.00	16.25	16.72	15.3
BN (mg/KOH/g)	12.10	9.97	6.00	6.99	9.5

WEAR

All component wear rates are normal.

Sample Date	06/17/16	07/26/16	09/06/16	Current	Abn
White Metal	NONE	NONE	NONE	NONE	---
Babbitt	NONE	NONE	NONE	NONE	---
PQ	---	---	---	---	---
Iron	147	40	47	83	90
Nickel	0.2	0.0	0.0	0.3	2
Chromium	2.3	0.8	0.9	1.5	20
Titanium	118	112	97	98	2
Copper	1.1	0.0	7.8	74	330
Aluminum	2.7	2.1	2.3	3.1	20
Tin	8.8	7.1	0.7	3.5	15