



## Kenworth Prime Mover Engine : Joiner Construction, New Mexico

### Joiner Construction New Mexico

Joiner Construction recently purchased a Kenworth Prime Mover for hauling their equipment to and from job sites in and around Albuquerque New Mexico.

Due to success they have had using FTA fuel and oil filters on there other equipment it was decided to install the FTA fuel and oil filters to the CAT C15 Powered Kenworth.

The CAT C15 engine had 1,232 hours on it before the filter were installed. At the time of installation a download was taken on engine ECM to be able to access if there would be any improvement in fuel economy by the addition of FTA's Oil and Fuel filters.

The next download was taken at 1,029.05 hours after installing the FTA filter systems. The readings before and after FTA were taken in Gallons Per Hour (GPH) to ensure a fair comparison.

Before filters the C15 had 1,232 Hours and used 3,702.3 gallons of fuel, subtracting idle time of 620.30 Hours where 255.5 Gallons was used = 3,447 Driving Gallons in 611.35 Hours.

3,447 Gallons divided by 611.35 Driving Hours = **5.64GPH Burnt.**

After the FTA OIL & FUEL Filters were installed, the download taken at 1,029.05 hours, the C15 had used 2,805.00 gallons total, subtract idle time of 526.15 hours where 170.6 Gallons was used = 2,634.4 Driving Gallons in 502.85 Hours.

2,634.4 Gallons divided by 502.85 = **5.23 GPH Burnt.**

**Saving of 7.26% GPH or 184gal/ 696 litres in this period of 502.85 hours driving.**

**The Idle economy improved from .42 GPH to .33 GPH a saving of 21% or 17gal/68 litres in 110.3 hours Idling.**



**Driving economy improved 3.17% from 5.8 MPG to 5.99 MPG.**

**Overall Economy improved 3.9% from 5.4 MPG to 5.62 MPG.**

Joiners Construction have now purchased a JQ440 fuel pump system.

Due to these results they have also fitted their mobile home powered by a Detroit Series 60 and have noticed an increase in performance as well as a noticeable reduction in smoke.

The oil report attached has seen the oil drains extended from 250 to 350 hours at this point, Sample E was at 122 hours when the filters were fitted and the ISO 22/19/15. Sample B was the first run with FTA filters and the ISO was 19/16/11 when the oil was changed, Sample A is a further 343 hours and the oil is ISO 19/18/13 a 80% reduction in Particulate Contamination at 4um with 221 more run time hours on the engine. (See Report Below)

There has been a reduction in all wear metals and large reductions in Cutting, Sliding, Fatigue and Non Metallic wear in the oil.

Sample E is the result at 122 hours done before installing FTA filters.  
Sample A & B are at 345 and 322 Hours with FTA Oil and Fuel filters added

Fluid Trend Analysis  
01/19/2005

600 Glendale Ave. • Sparks, NV 89431 • 775-332-2477

**Normal**

REPRINT

Customer Unit ID	Make	Model	Serial	Compartment
56	CAT	C15	MBN25948	Engine

Oil Sample Information		Miscellaneous				Infrared Analysis % Allowable				Prior Interpretation Codes						
Control #	Date Taken	Fluid Status	Fluid Add	SMR	Fluid Run Time	A/F	Fuel	H2O	Viscosity 100C	TBN	TAN	Soot	Oxi	Nit	Sul	
E-14820040823	07/30/2004	Sampled	0.0	1219	122	N	N	N	14.5	12.9	0.00	21	16	18	16	200
D-20820040818	08/13/2004	Sampled	0.0	1296	199	N	N	N	14.2	11.5	0.00	28	52	14	8	200
C-01120040831	08/27/2004	Sampled	0.0	1386	289	N	N	N	14.4	12.3	0.00	39	51	19	10	200
B-18620040928	09/24/2004	Sampled	0.0	1529	322	N	N	N	14.6	11.6	0.00	55	48	36	29	200
A-26020050118	12/14/2004	Sampled	0.0	1900	343	N	N	N	13.9	12.00	0.00	37	63	67	40	

Fluid: SHELL ROTELLA 15W40

Filter Changed A		Wear Metals (Parts per Million)															
		Copper	Iron	Chrom	Lead	Alum	Silicon	Molybdm	Sodium	Magnesi	Tin	Zinc	Nickel	Potasiu	Calcium	Phospho	Boron
E-	2	11	0	0	1	5	0	4	11	0	1317	0	4	3055	1056	0	
D-	3	15	0	0	2	5	0	3	12	0	1267	0	4				
C-	4	22	0	0	2	8	0	5	12	0	1321	0	4				
B-	14	41	0	1	3	10	0	11	13	0	1358	0	6				
A-	4	20	0	0	3	6	0	2	69	0	1316	0	4				

Overall Status	Particle Counts (per Milliliter)								ISO
	4u	6u	14u	20u	25u	50u	75u	100u	
E- Normal	25198	4669	296	32	11	5	0	0	22/19/15
D- Normal	8773	1894	52	6	8	0	0	0	20/18/13
C- Normal	6980	731	63	5	11	0	0	0	20/17/13
B- Normal	4204	586	15	3	5	0	0	0	19/16/11
A- Normal	4991	1408	58	6	3	0	0	0	19/18/13

Custom Tests >>>	Cutting	Sliding	Fatigue	NonMetalic	Fibers	Total / ml
E-	17	37	141	77		25509
D-	4	13	11	15		8783
C-		11	11	19		6981
B-	2	2	3	9	3	4205
A-	2	6	17	17	3	4973

**Send Analysis To:**

OMO Equipment  
Bill Reinier  
P.o. Box 44277  
Rio Rancho, NM 87174-4277

**Comments**

E- Oil Changed at 1097 hours.  
D- Fta filters installed at 1219 hours oil not changed.  
C-  
B-  
A-

**Thank You for Choosing Cashman Equipment**

*This analysis is intended as an aid in predicting mechanical wear. No guarantee, expressed or implied, is made against failure of this component.*

FTA FILTERS

900000598 (C)