

Overall Information

Table1- Overall Information

Vehicle plate number	33572 (28958)
CPK data logger number	LN: 001521, DN: 1995, Sim Number +989218469643
Bus line	Number 2 (west to east bus line)
Bus Terminals	Khavaran Bus Terminal - Western Bus Terminal
Total path distance	19 km
DPF producer company	HJS_03 (active system with FBC – electrical heater)
Installation date	19/Feb/2015
Report period	01/Jul/2015 – 15/Jul/2015 (fifteen days)
K value - DPF upstream	2.00 [1/m]
K value – DPF downstream	0.06 [1/m]

Table 2- DPF Maintenance History

Filter maintenance date	DPF has been working from installation date until now without any cleaning.
Dosing status	Dosing value has been kept constant from installation date until now.

Table 3- Fuel and Additive Consumption Information

Bus mileage (from DPF installation date)	21063 km
Bus mileage over the period	2351 km
Working days over the period	15 days
Stop days	0 day
Data logger working days	15 days
Working hours over the period	188 hours 37 minutes
Average working hours per day (including stop days)	12 hours 34 minutes
Bus average speed	12.47 km/hr
Idle speed time to all working time ration	56%*
Total Bus fuel consumption over the period	1413 lit
Fuel consumption per hour	7.5 lit/hr
Average fuel consumption	0.60 lit/km
Total Bus additive consumption over the period	0.580 lit
Average additive consumption	246 cc/km
Additive consumption to fuel ration	410 cc per 1000 lit (batch dosing with tank level)

*Notice: Due to rpm sensor problem during this period, temperature data were used for idle working time measurement.

Temperature, Pressure and Engine Speed Overview

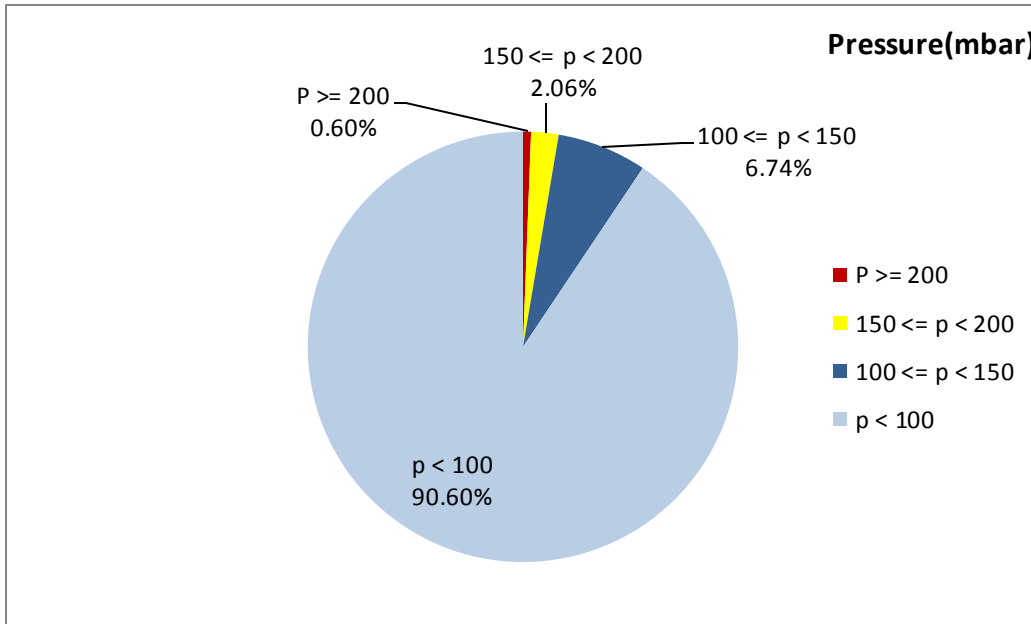


Figure 1- Pressure distribution over the working hours

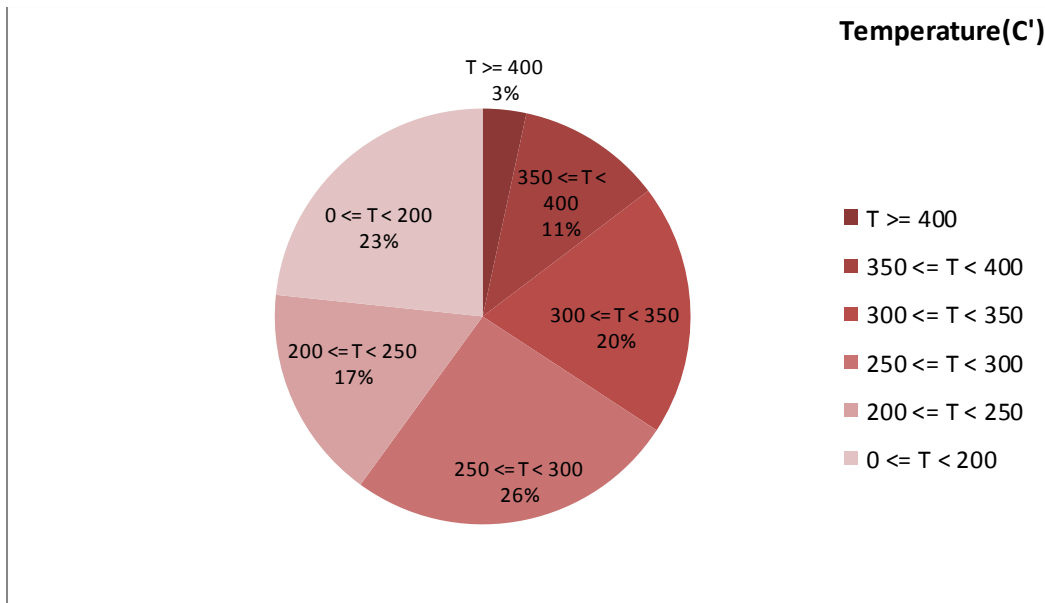


Figure 2-Temperature distribution over the working hours

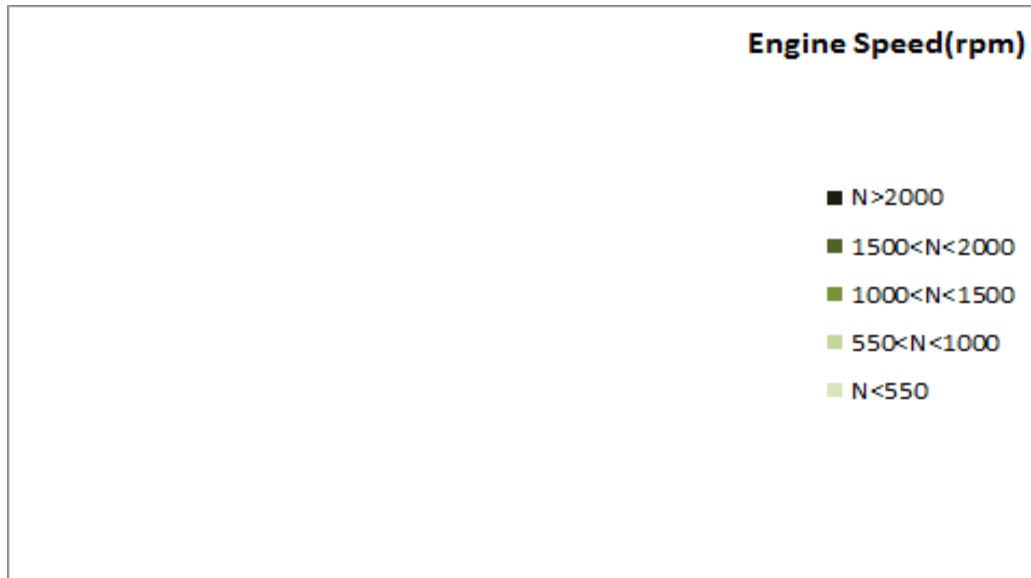


Figure 3- Engine speed distribution over the working hours

Notice: RPM sensor got problem on Jul 7th and showed zero number. This problem was fixed on 13th. Due to loss of some data, figure 3 is blank.

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
264.32	38.26	-

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
307.90	50.39	-

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
550-50	387-0	-

Notice: Due to RPM sensor problem, engine speed parts are blank.

Detailed Pressure Analysis

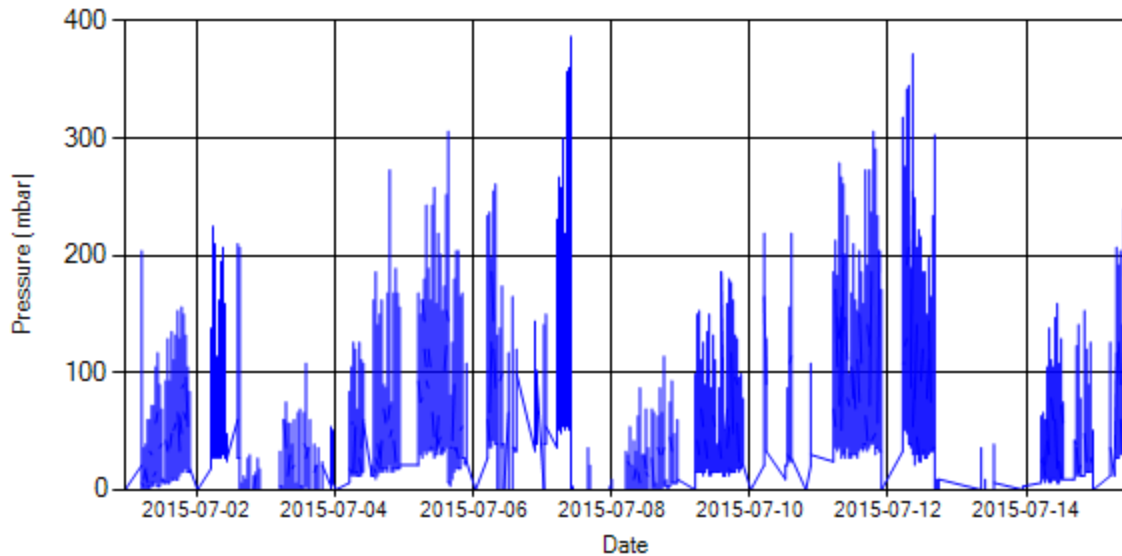


Figure 4- Pressure distribution over the period

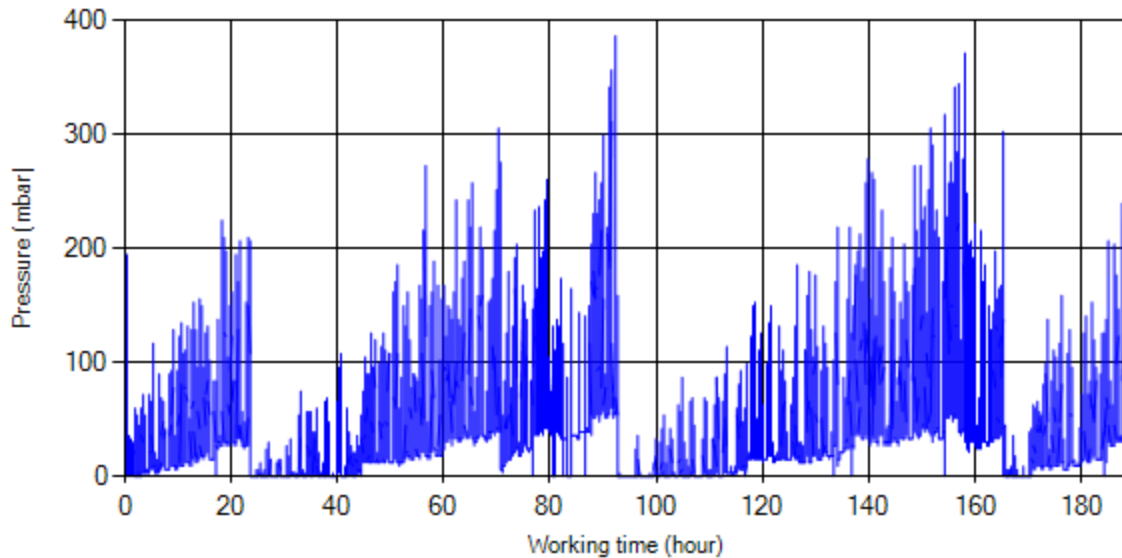


Figure 5- Pressure vs. working hours

Notice: backpressure distribution was shown into two diagrams. As obvious in figure 5, stop-working periods were eliminated and pressure was displayed along working hours.

Detailed Temperature Analysis

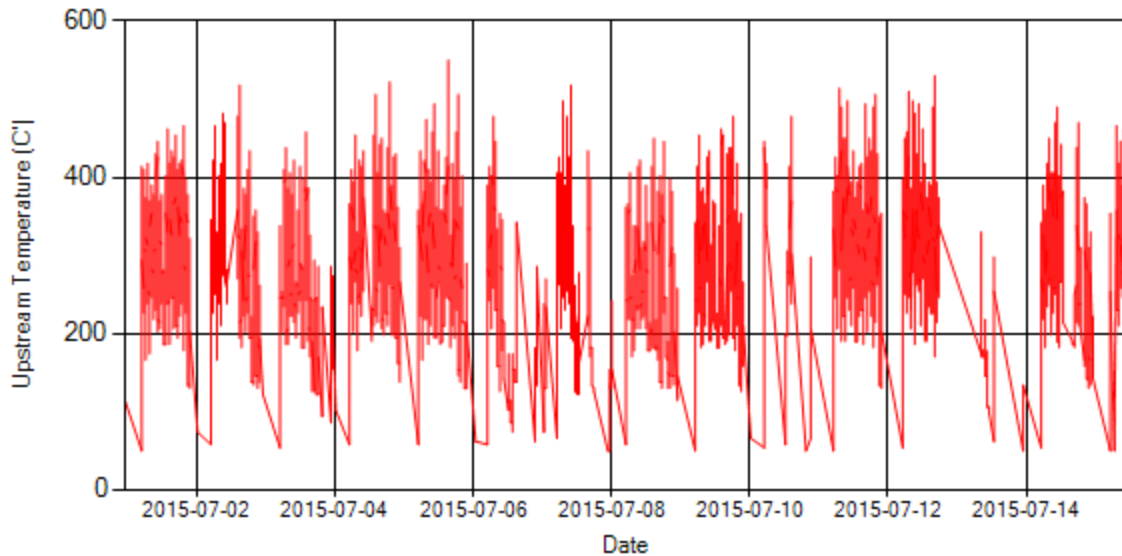


Figure 6- Temperature distribution over the period

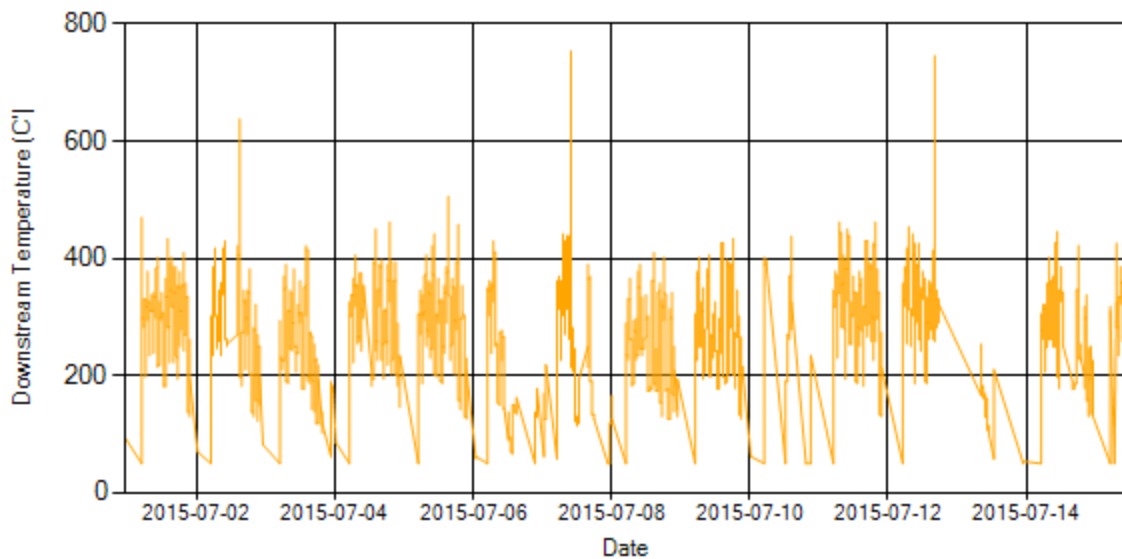


Figure 7- Temperature distribution over the period

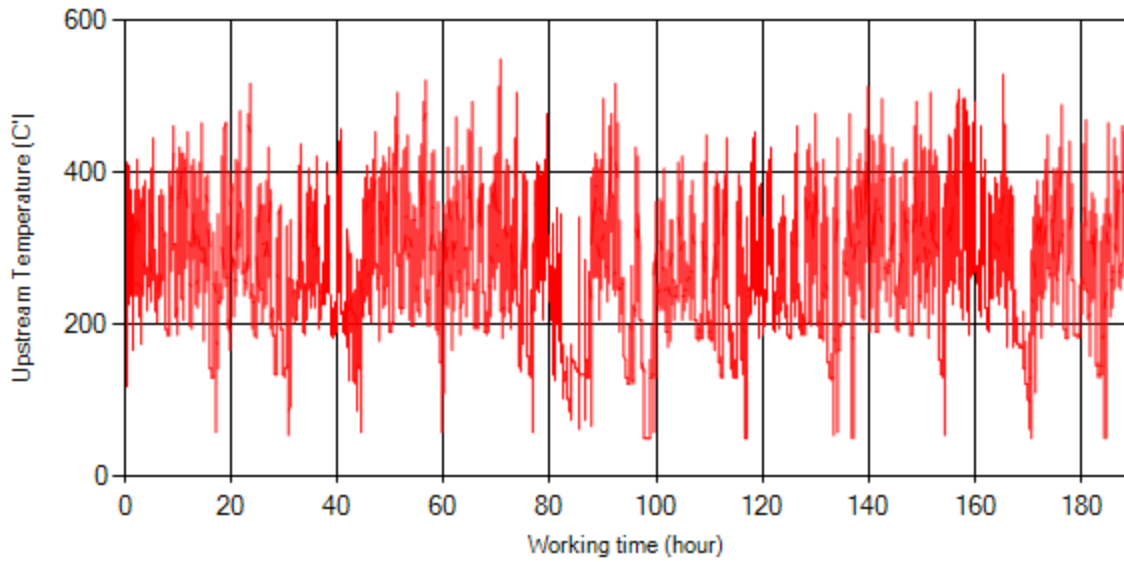


Figure 8- Temperature vs. working hours

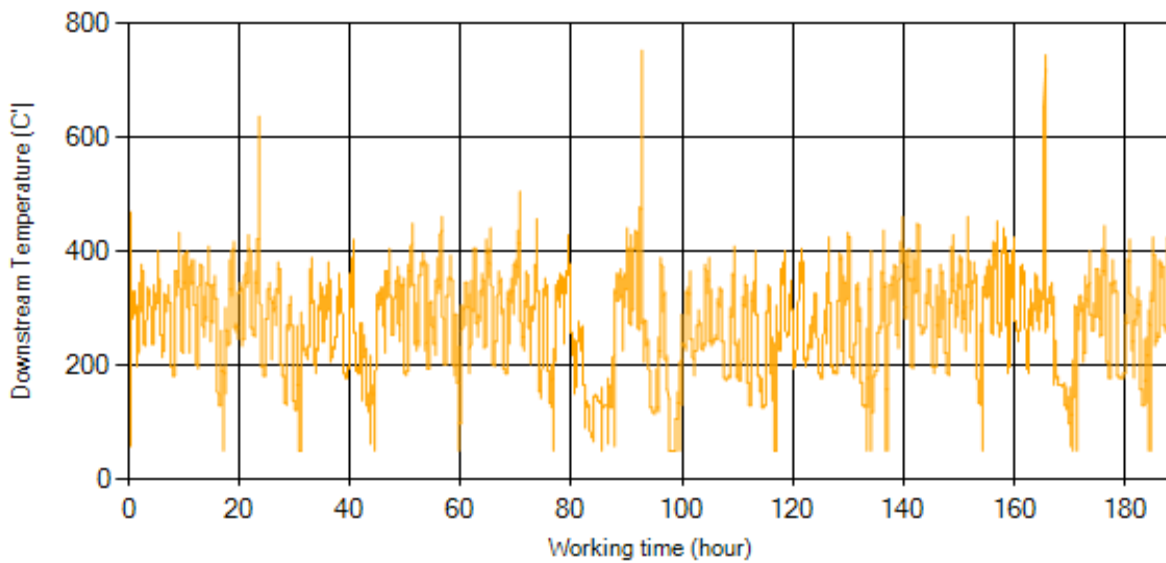


Figure 9- Temperature vs. working hours

Engine Speed Diagrams

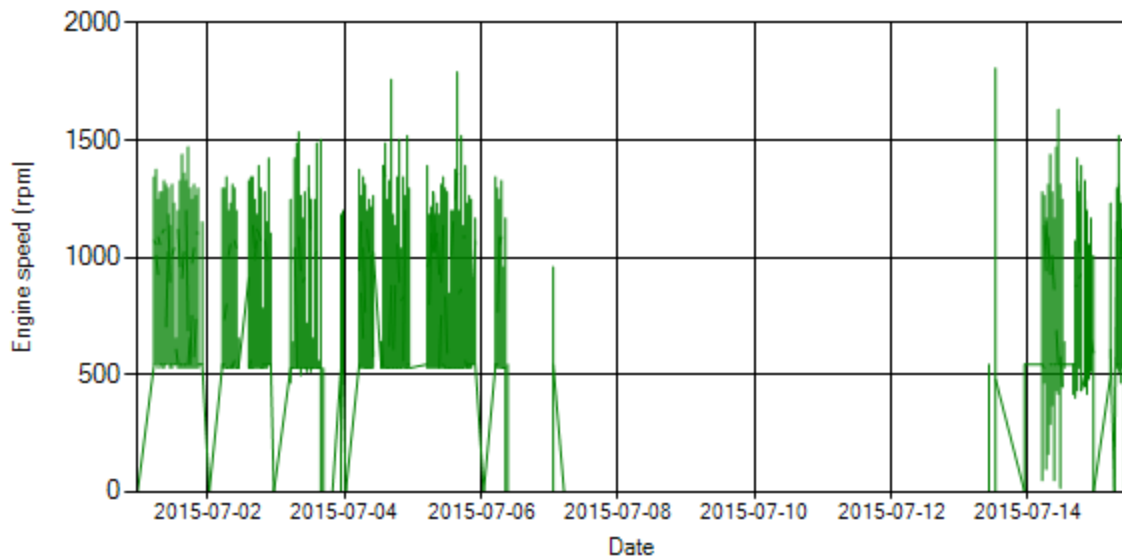


Figure 10- Engine speed distribution over the period

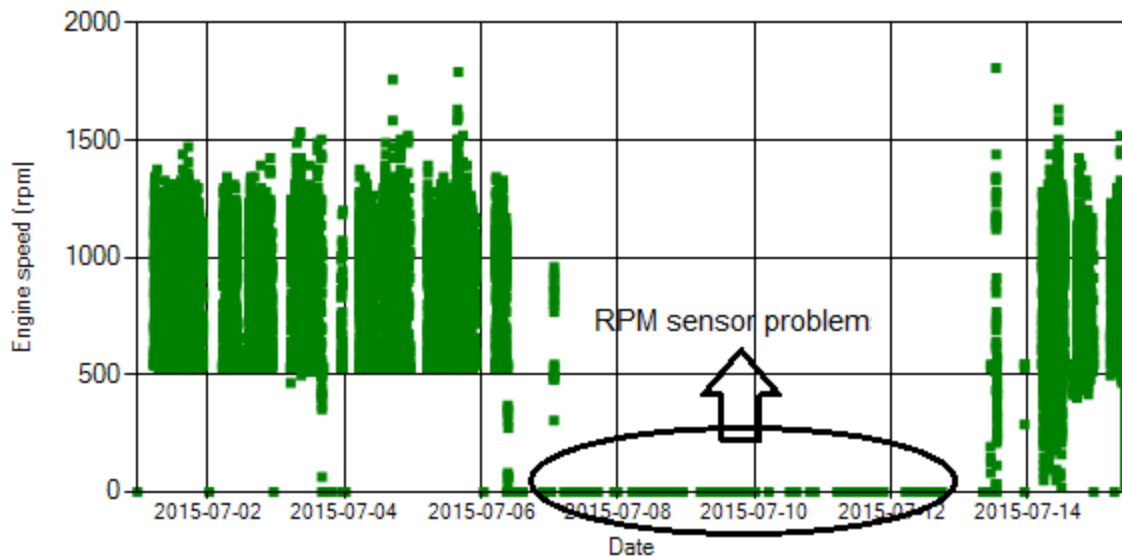


Figure 11- Engine speed diagram for calculating CPK's working days

Notice: RPM sensor had problem and showed zero values from Jul 7th until Jul 13th.

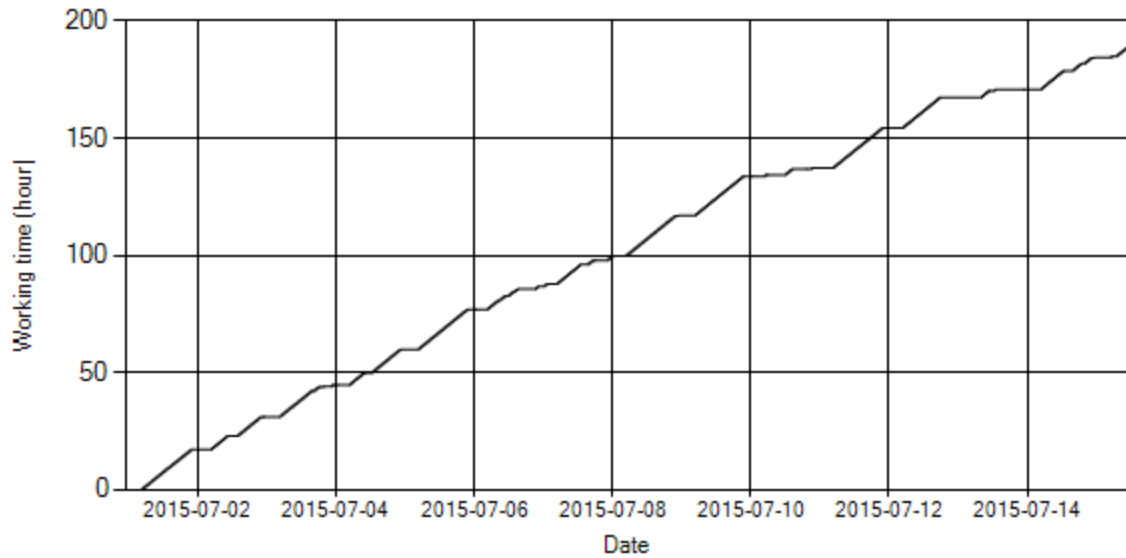


Figure 12- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 12. The lines parallel with Date axis show days without data logger data. As depicted in Figure 12, bus was working all days during this period.

Pressure-Engine Speed diagrams

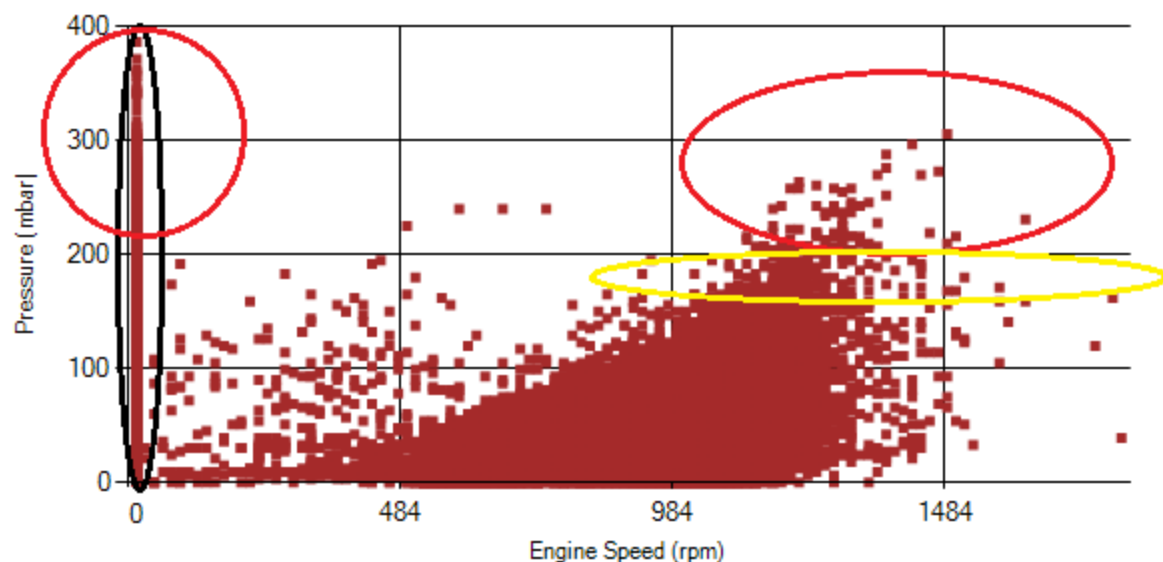


Figure 13- Pressure against engine speed

Notice: Red alarm (pressure > 200 mbar) and yellow alarm (200 > pressure > 150) ranges were indicated in figure 13. The line parallels with pressure axis is due to rpm sensor problem (black region).

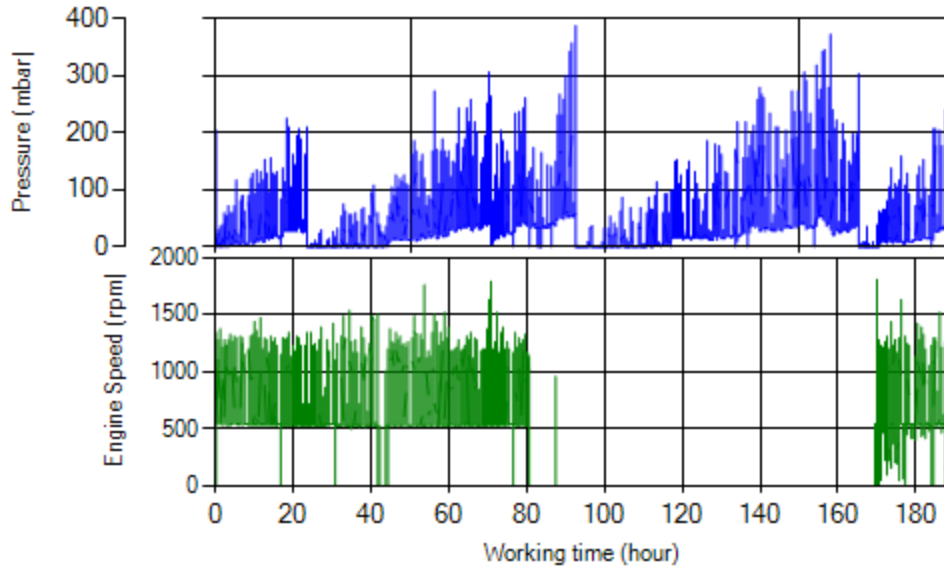


Figure 14- P, N distribution vs. working hours

Notice: RPM sensor had problem and showed zero value from Jul 7th until Jul 13th.

Temperature-Engine Speed diagrams

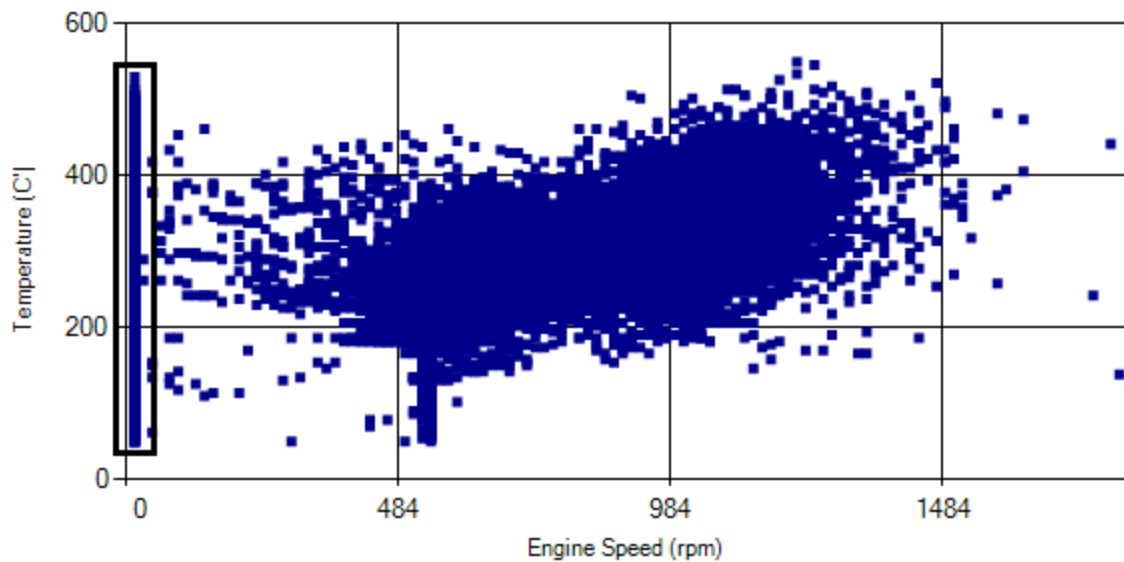


Figure 14- Temperature against engine speed

Notice: The line parallel with temperature axis is due to rpm sensor problem (black region).

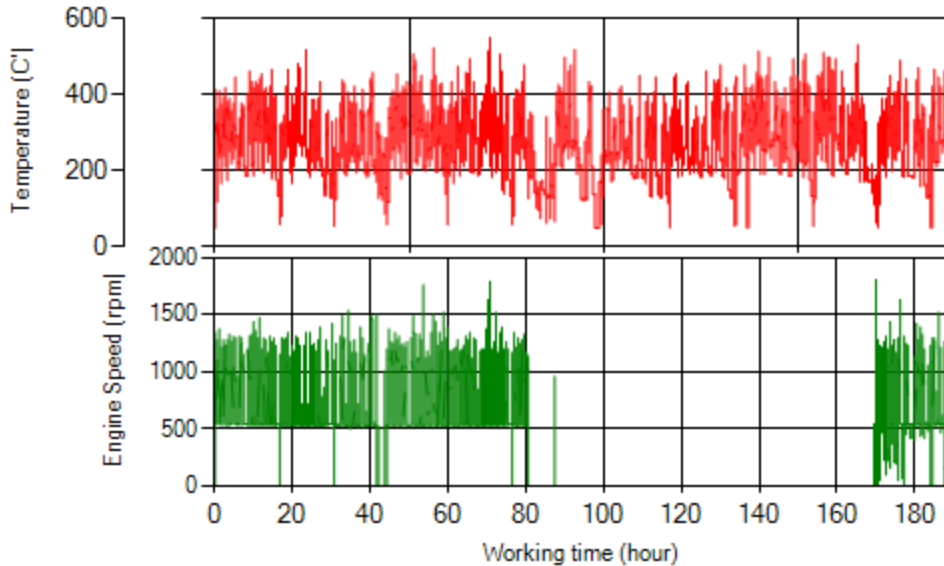


Figure 15- T, N distribution vs. working hours

Filter Operation Analysis

- As depicted in figure 1, 0.60% of total working time pressure is above 200 mbar and 2.66% above 150mbar.
- Figure 2 displays flow temperature distribution for DPF's upstream. It can be obviously observed that 3 % of total working time temperature is above 400°C. Considering line 2 usual temperature distribution (temperature above 400°C < 1 %), it is obvious this rise in temperature was related to pressure increase due to DPF's ash loading.
- This vehicle operates in line 2. Because of smooth path of this line, engine operates in low rotational speed.

Filter operation status	Excellent <input type="checkbox"/>	Good <input checked="" type="checkbox"/>
	Maintenance required <input type="checkbox"/>	Failed <input type="checkbox"/>