

## 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/Nov/2015 – 15/Nov/2015 (fifteen days)
K value - DPF upstream	1.75 [1/m]
K value – DPF downstream	0.02 [1/m]

*Table 2- DPF Maintenance History*

Filter maintenance date	DPF was cleaned on Oct 5 <sup>th</sup> for the first time.
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)	37432 km
Bus mileage over the period	2607 km
Working days over the period	15 days
Stop days	0 day
Data logger working days	15 days
Working hours over the period	244 hours 58 minutes
Average working hours per day (including stop days)	16 hours 19 minutes
Bus average speed	10.64 km/hr
idle speed time to all working time ration	-
Total Bus fuel consumption over the period	1694 lit
Fuel consumption per hour	6.9 lit/hr
Average fuel consumption	0.65 lit/km
Total Bus additive consumption over the period	0.75 lit
Average additive consumption	288 cc/km
Additive consumption to fuel ration	444 cc/1000lit (batch dosing with tank level)

Notice: RPM sensor got problem on Nov 11<sup>th</sup> . So some engine speed related parameters missed or show unreasonable values (e.g. working hours and related parameters)

### Temperature, Pressure and Engine Speed Overview

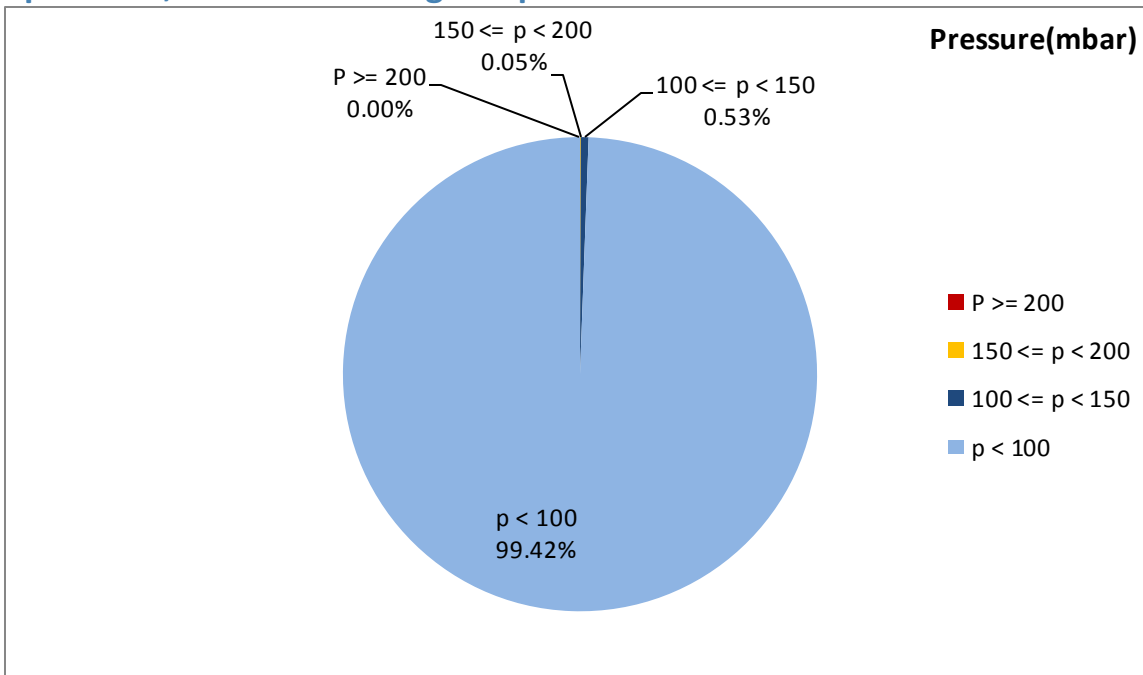


Figure 1- Pressure distribution over the working hours

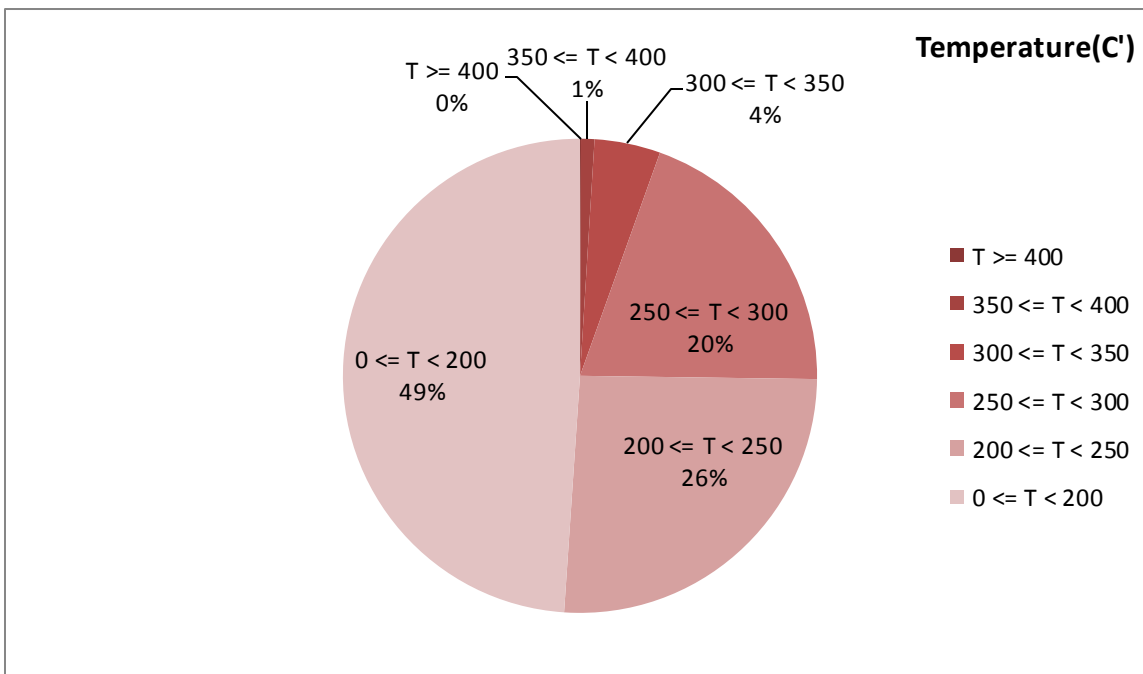


Figure 2-Temperature distribution over the working hours

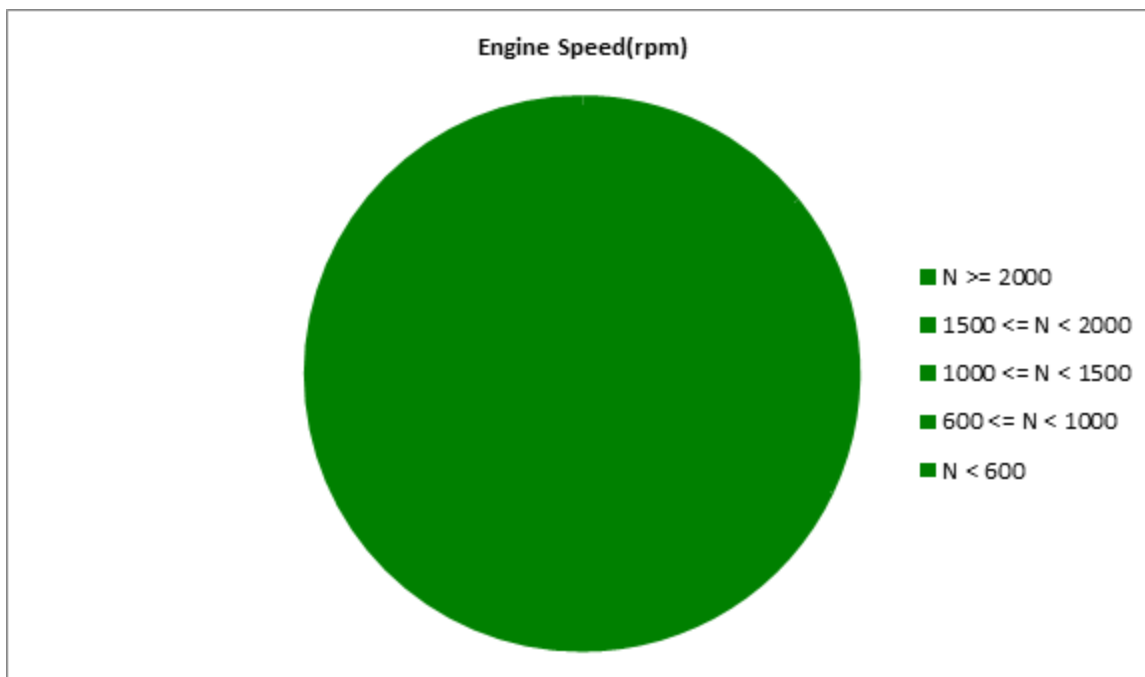


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
198.09	18.29	-

Table 5- Mean values without idling

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

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
450-50	216-0	2096-0

Notice: RPM sensor got problem on Nov 11<sup>th</sup> . So some engine speed related parameters missed or show unreasonable values.

## Detailed Pressure Analysis

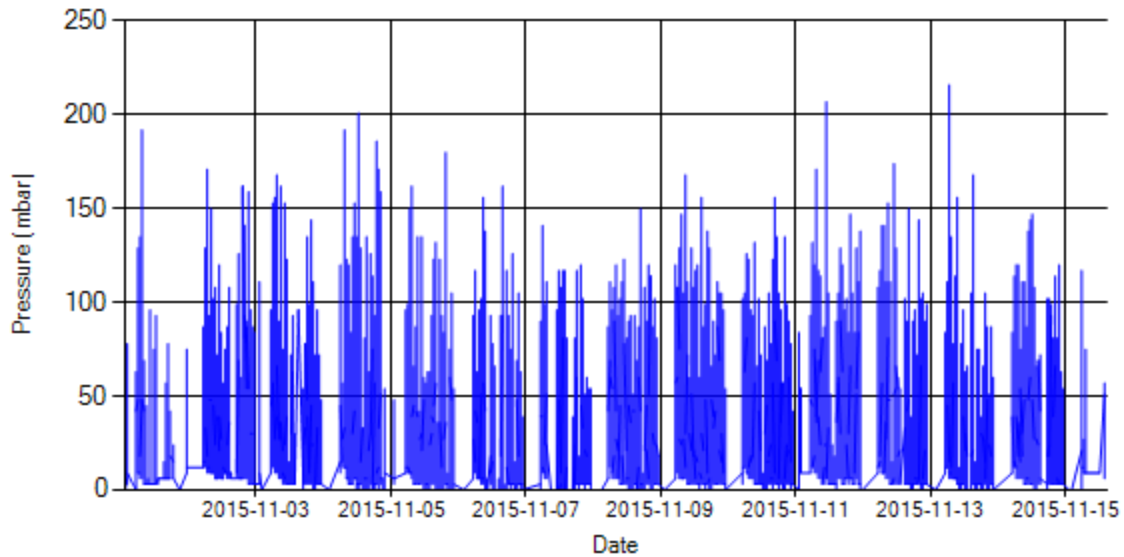


Figure 4- Pressure distribution over the period

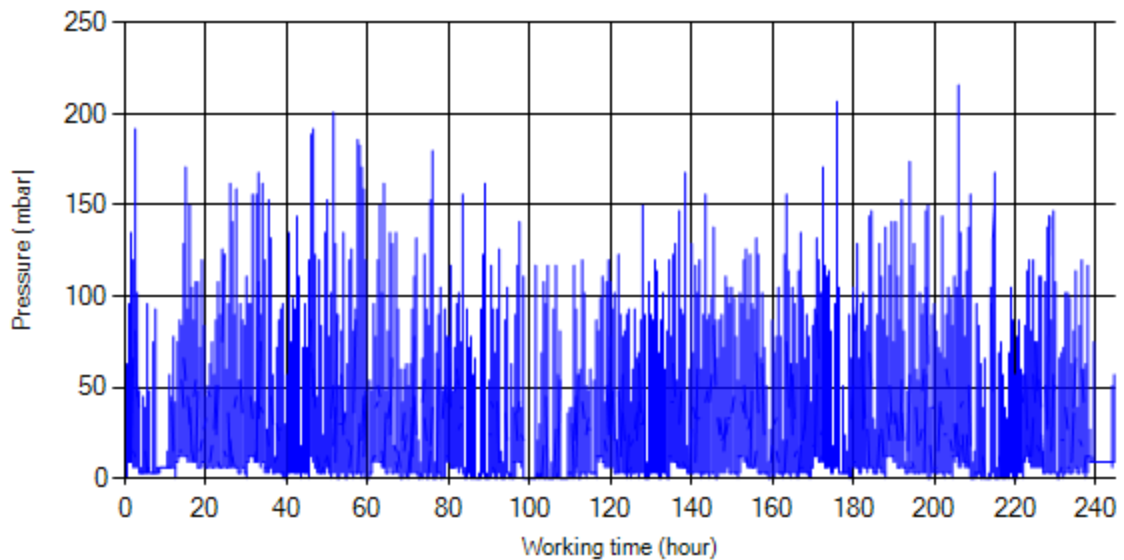


Figure 5- Pressure vs. working hours

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

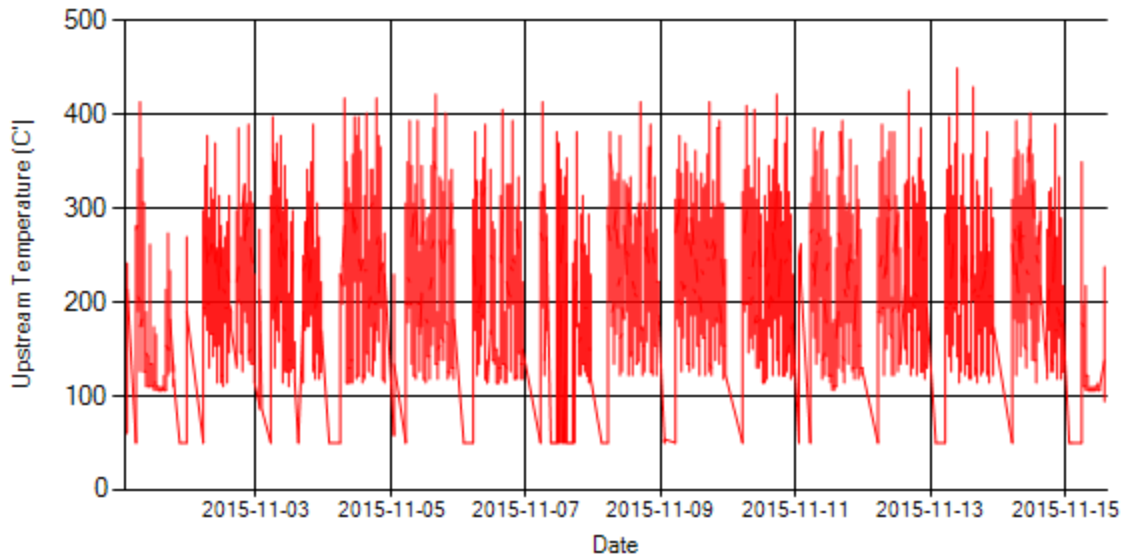


Figure 6- Temperature distribution over the period

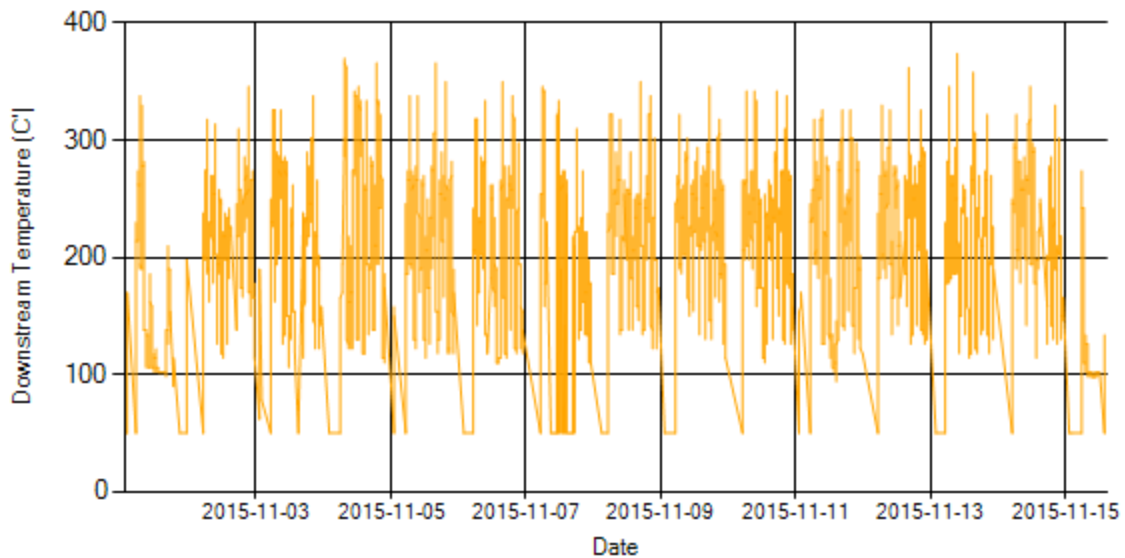
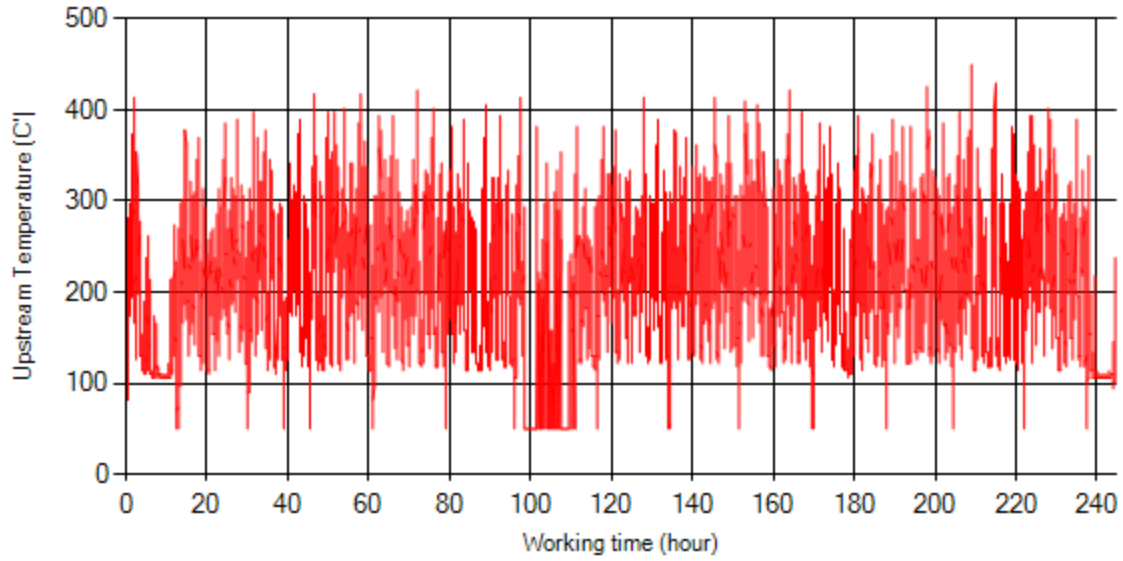
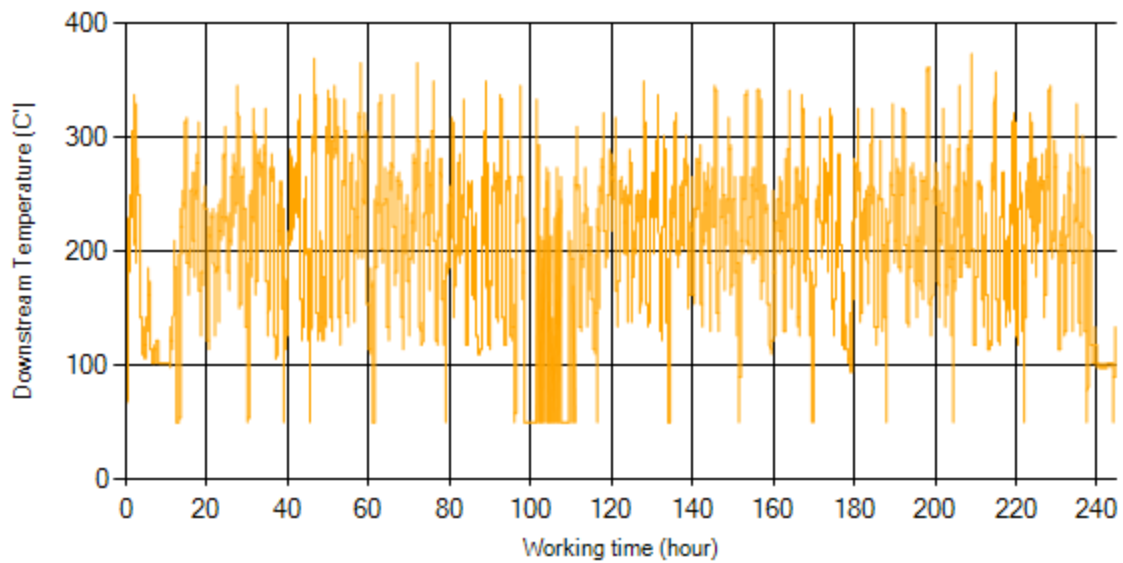


Figure 7- Temperature distribution over the period



*Figure 8- Temperature vs. working hours*



*Figure 9- Temperature vs. working hours*

## Engine Speed Diagrams

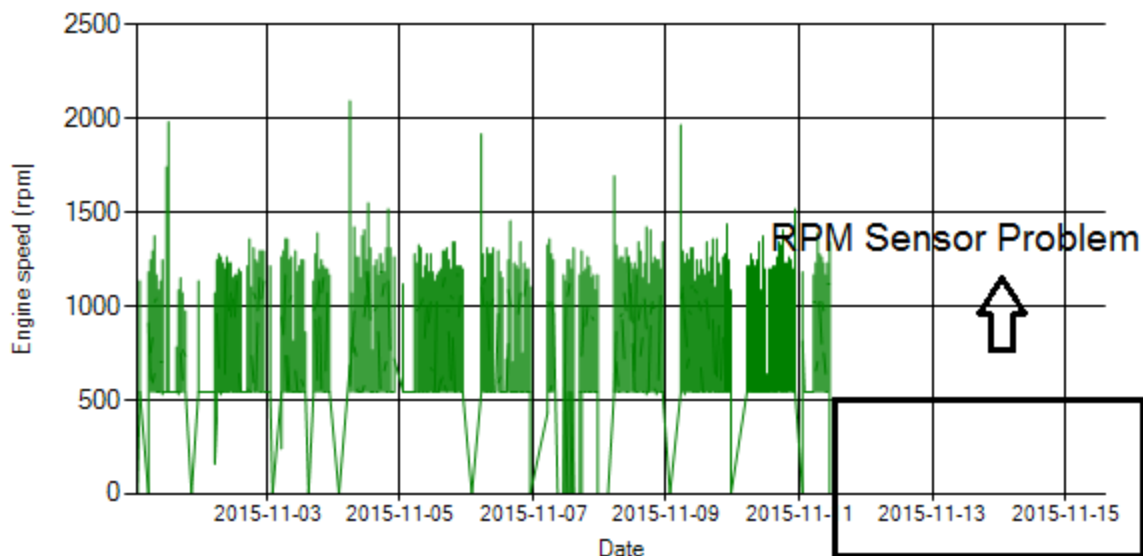


Figure 10- Engine speed distribution over the period

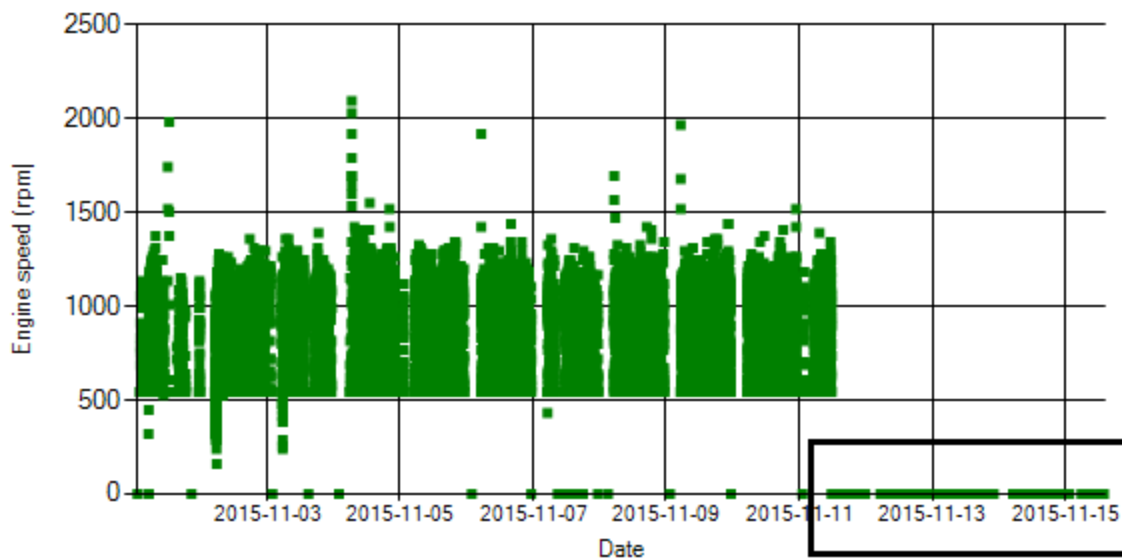


Figure 11- Engine speed diagram for calculating CPK's working days

Notice: RPM sensor got problem on Nov 11<sup>th</sup>. So some engine speed related parameters missed or show unreasonable values.



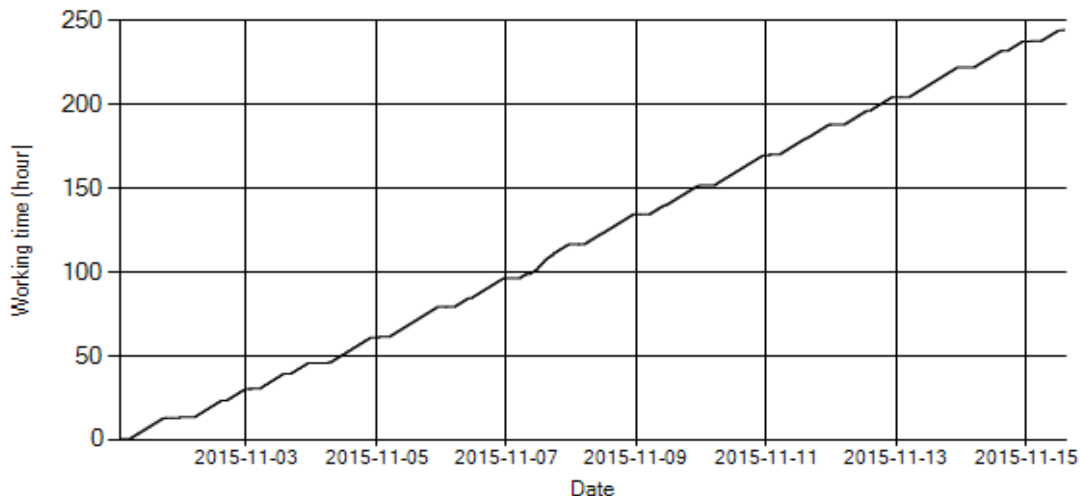


Figure 12- Time diagram for calculating CPK's working days

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, system was working all days during the period.

### Pressure-Engine Speed diagrams

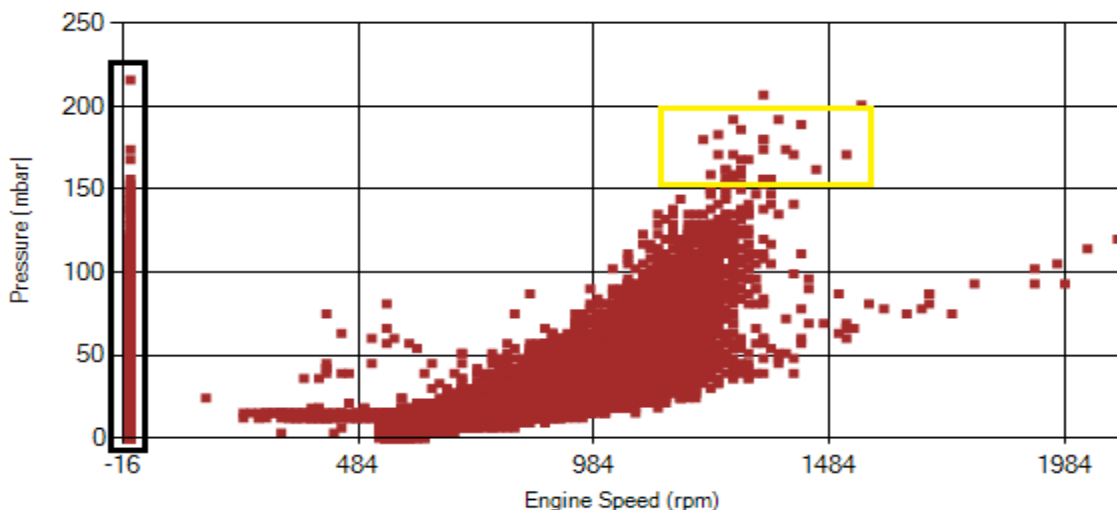


Figure 13- Pressure against engine speed

Notice: Yellow alarm ( $200 > \text{pressure} > 150$ ) range was indicated in figure 13. Straight line (black region) was because of RPM sensor problem.

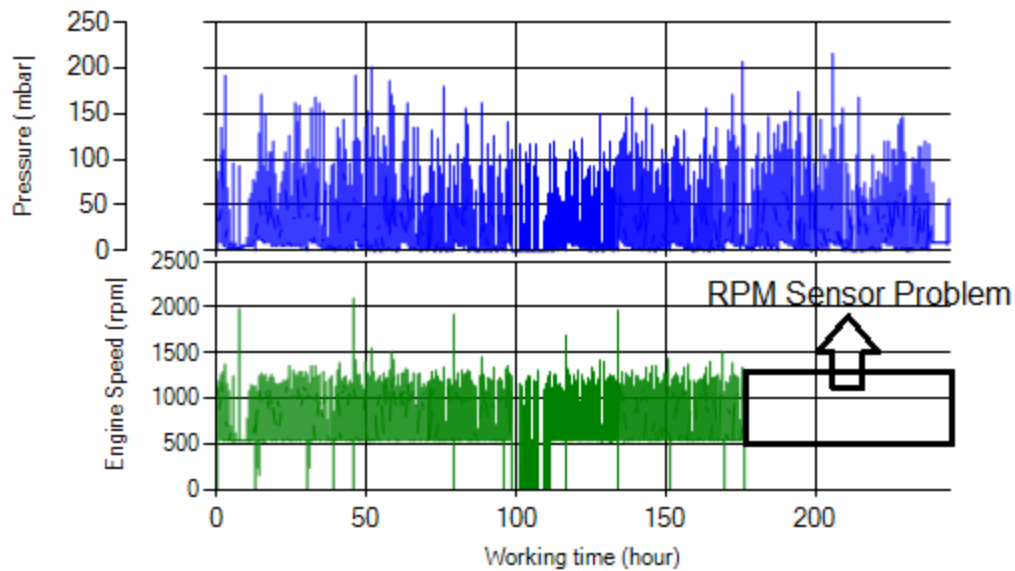


Figure 14- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

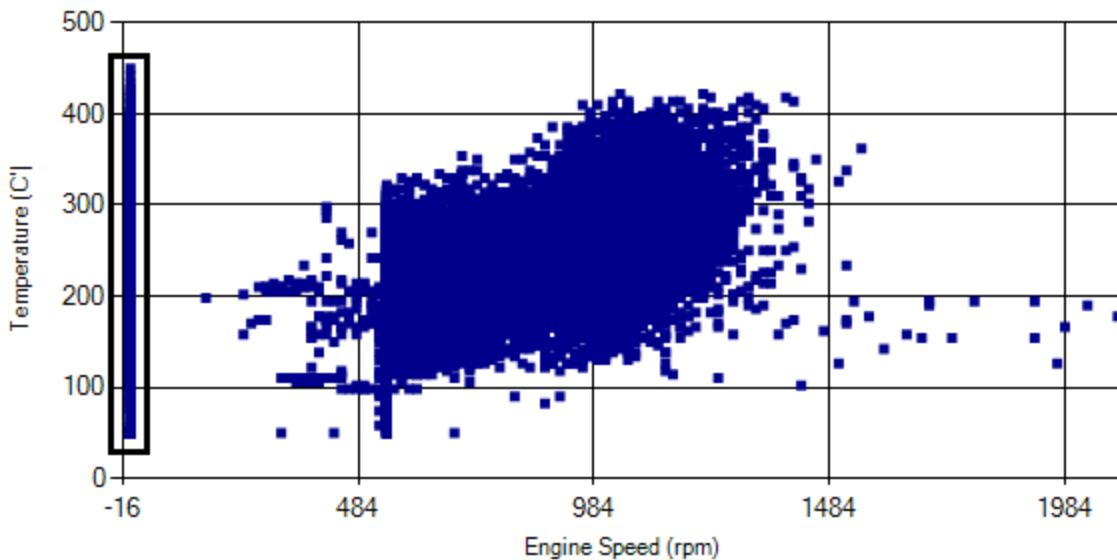


Figure 15- Temperature against engine speed

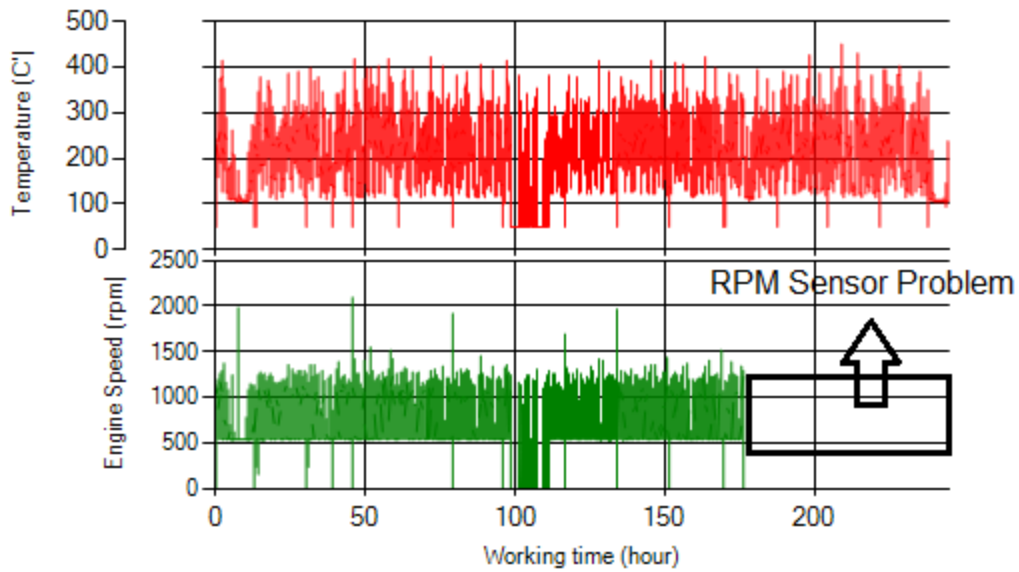


Figure 16- T, N distribution vs. working hours

### Filter Operation Analysis

- As depicted in figure 1, only 0.05% of total working time pressure was above 150 mbar during this period. This low pressure distribution was due to filter cleaning on Oct 5<sup>th</sup>.
- Figure 2 displays flow temperature distribution for DPF's upstream. It can be obviously observed that 1% of total working time temperature is above 350°C.

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