

## Overall Information

*Table1- Overall Information*

Vehicle plate number	78515
CPK data logger number	LN: 001490, DN: 1954, Sim Number +98000000000
Bus line	Number 4 (south to north bus line)
Bus Terminals	Tehran South Bus Terminal - Park Way Bus Terminal
Total path distance	22.8 km
DPF producer company	Dinex_01 (passive system with FBC)
Installation date	22/Oct/2014
Report period	01/Sep/2015 – 15/Sep/2015 (fifteen days)
K value - DPF upstream	1.4 [1/m]
K value – DPF downstream	0.00 [1/m]

*Table 2- DPF Maintenance History*

Filter maintenance date	Filter core was changed on 15/Feb/2015.
Dosing status	Dosing value was reduced by 70% on March February 15 <sup>th</sup> . ( Secondary value/Initial value=0.3)

*Table 3- Fuel and Additive Consumption Information*

Bus mileage (from DPF installation date)	47923 km
Bus mileage over the period	1876 km
Working days over the period	11 days
Stop days	4 days
Data logger working days	11 days
Working hours over the period	144 hours 1 minutes
Average working hours per day (including stop days)	9 hours 35 minutes
Bus average speed	13.03 km/hr
idle speed time to all working time ration	51.39 %
Total Bus fuel consumption over the period	1234 lit
Fuel consumption per hour	8.57 lit/hr
Average fuel consumption	0.66 lit/km
Total Bus additive consumption over the period	0.330 lit
Average additive consumption	176 cc/km
Additive consumption to fuel ration	267 cc per 1000 lit (continuous dosing)

### Temperature, Pressure and Engine Speed Overview

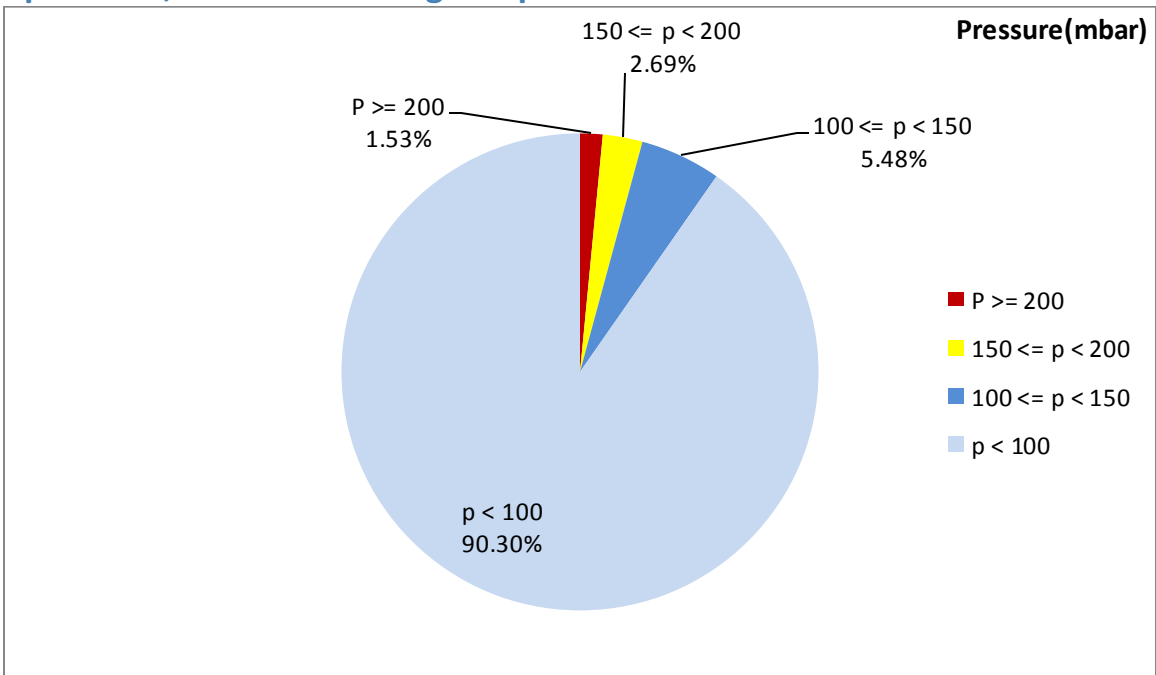


Figure 1- Pressure distribution over the working hours

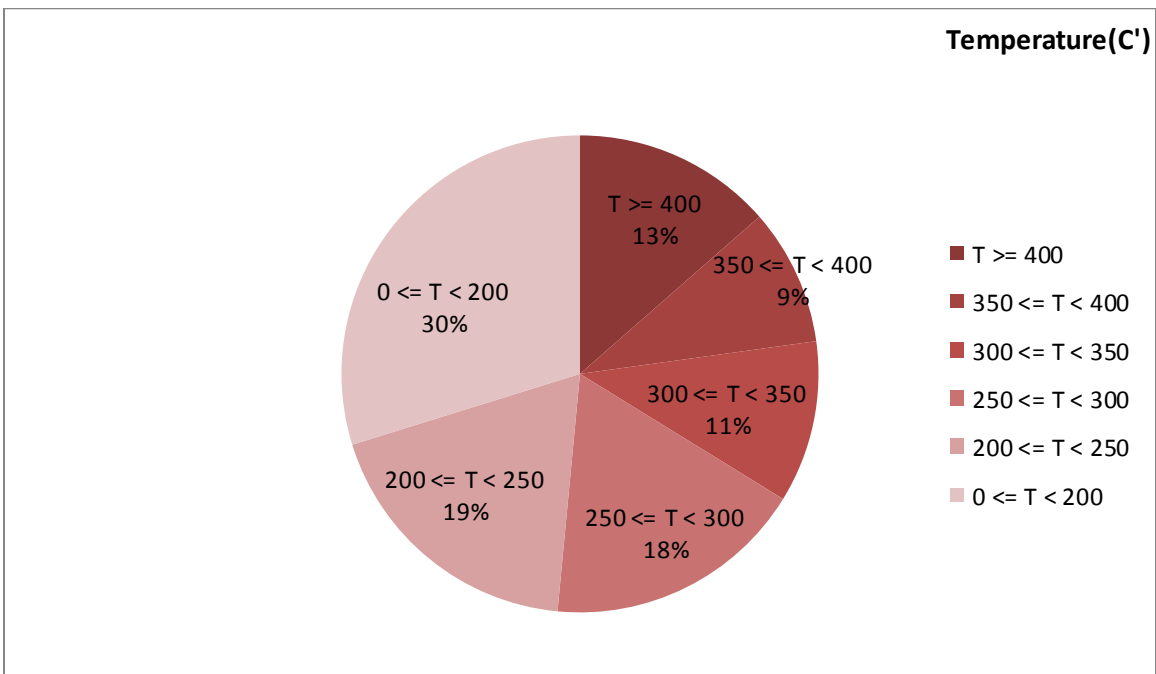


Figure 2-Temperature distribution over the working hours

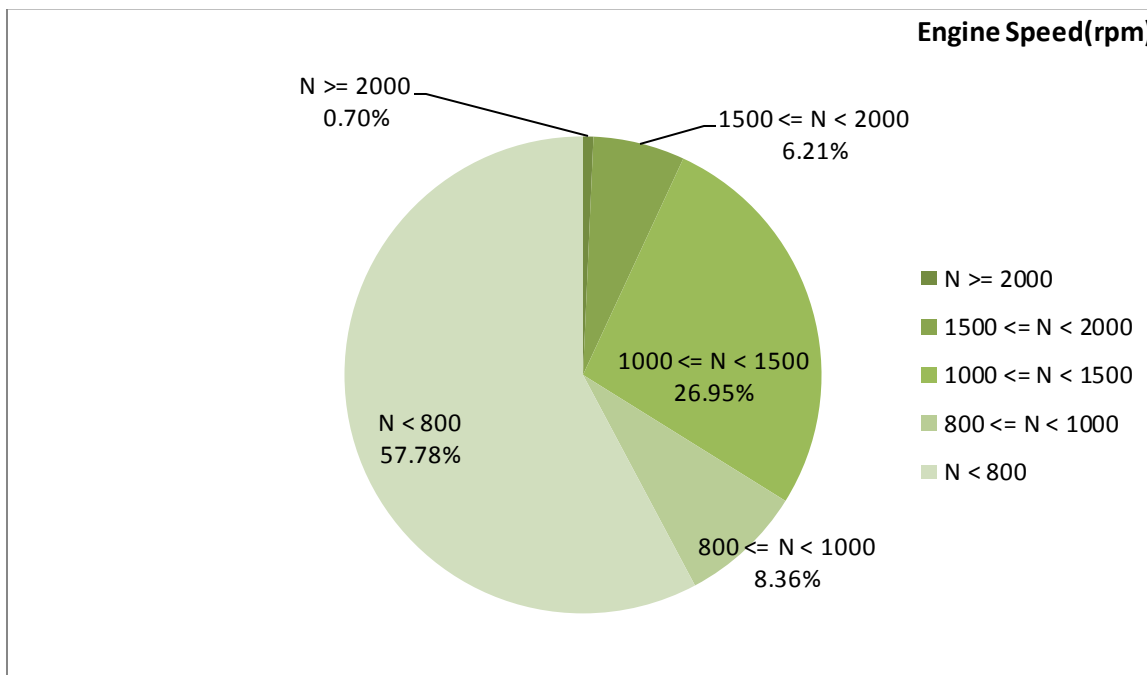


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
269.28	37.7	848

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
322.54	64.37	1160

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
582-50	318-0	2336-272

## Detailed Pressure Analysis

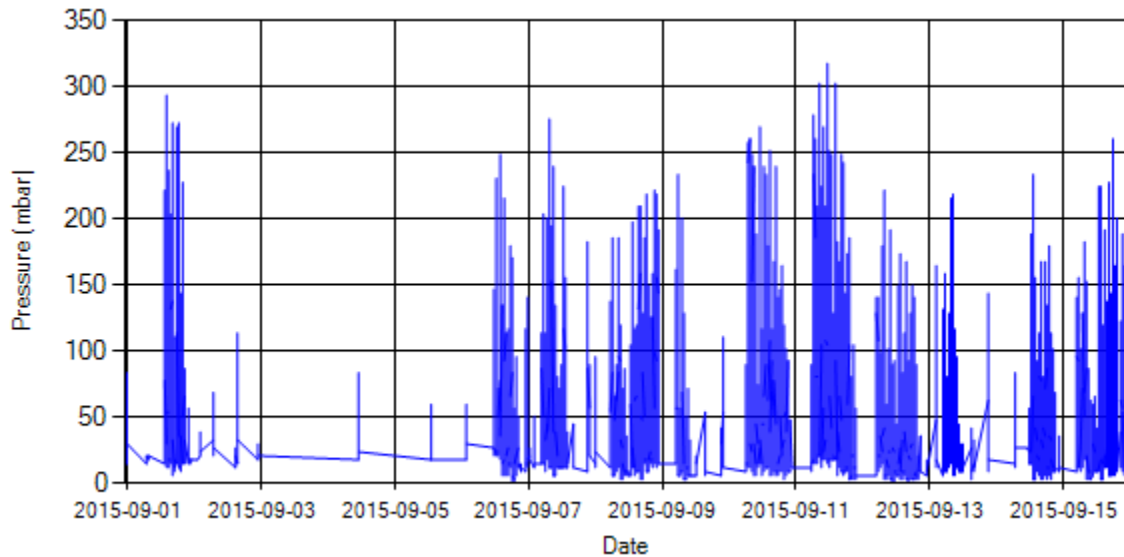


Figure 4- Pressure distribution over the period

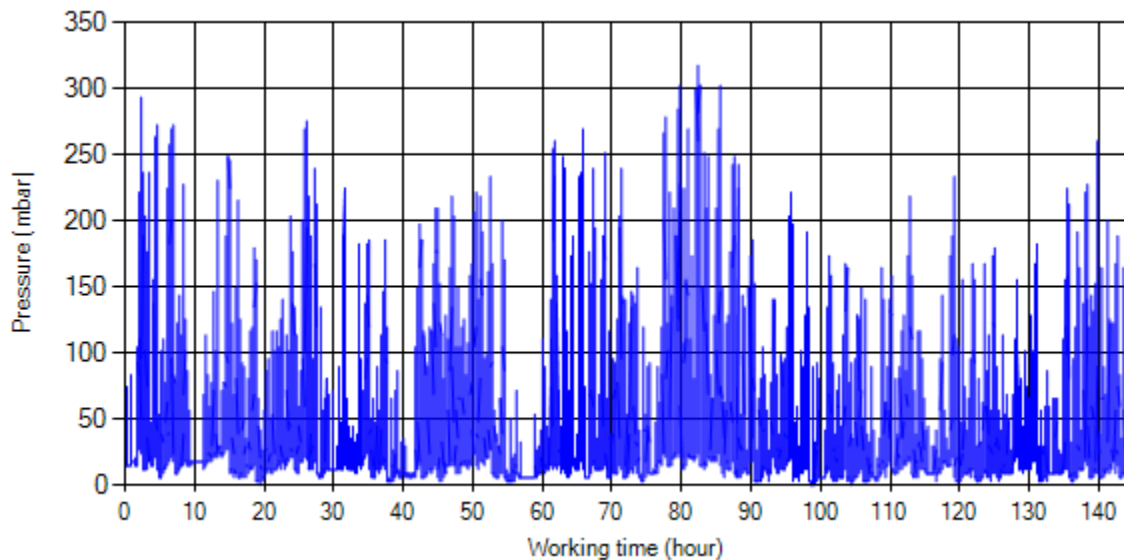


Figure 5- Pressure vs. working hours

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

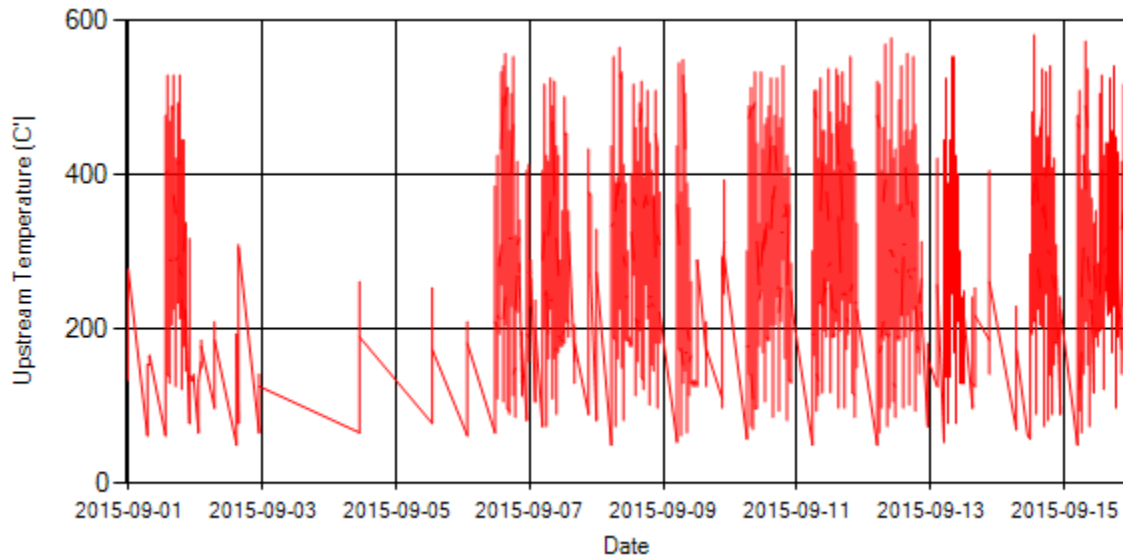


Figure 6- Temperature distribution over the period

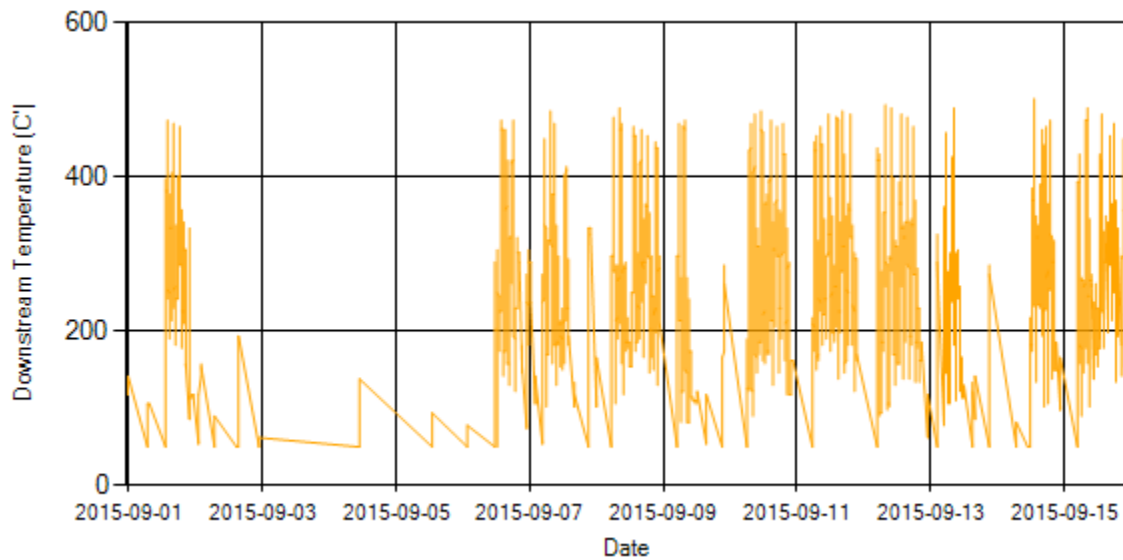
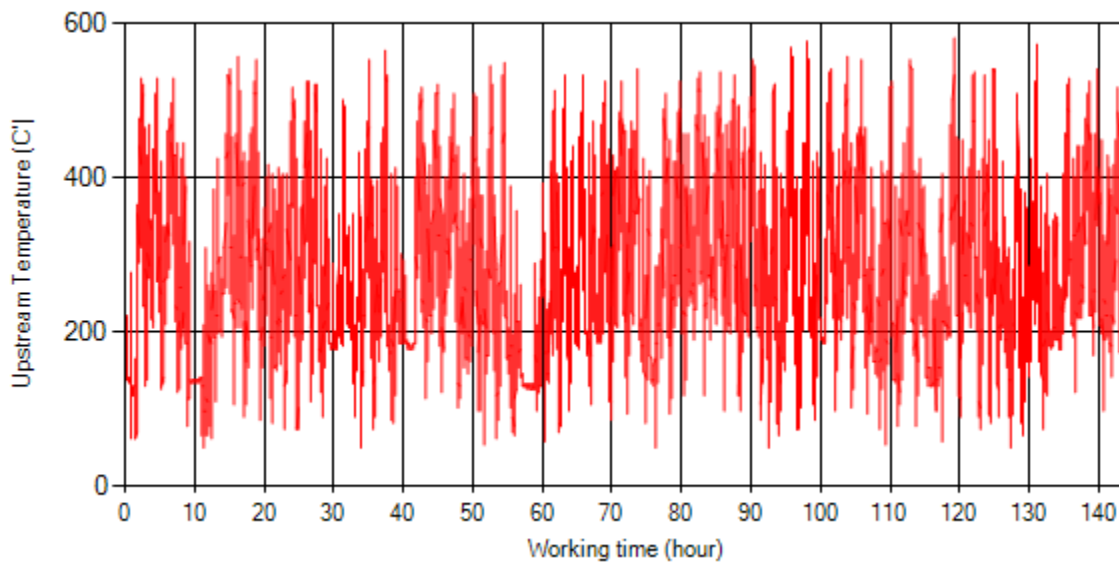
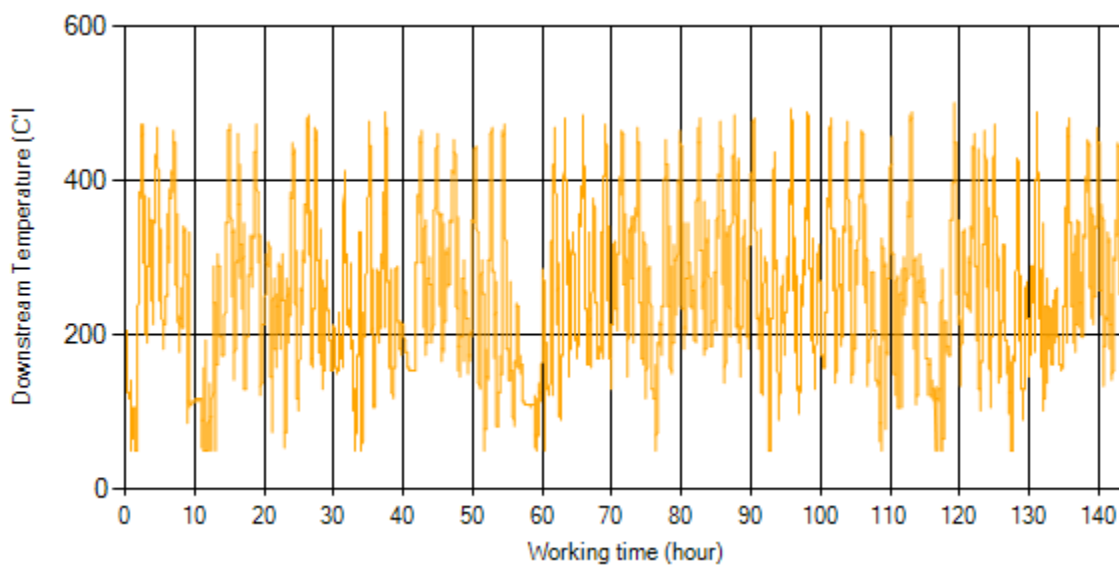


Figure 7- Temperature distribution over the period



*Figure 8- Temperature vs. working hours*



*Figure 9- Temperature vs. working hours*

## Engine Speed Diagrams

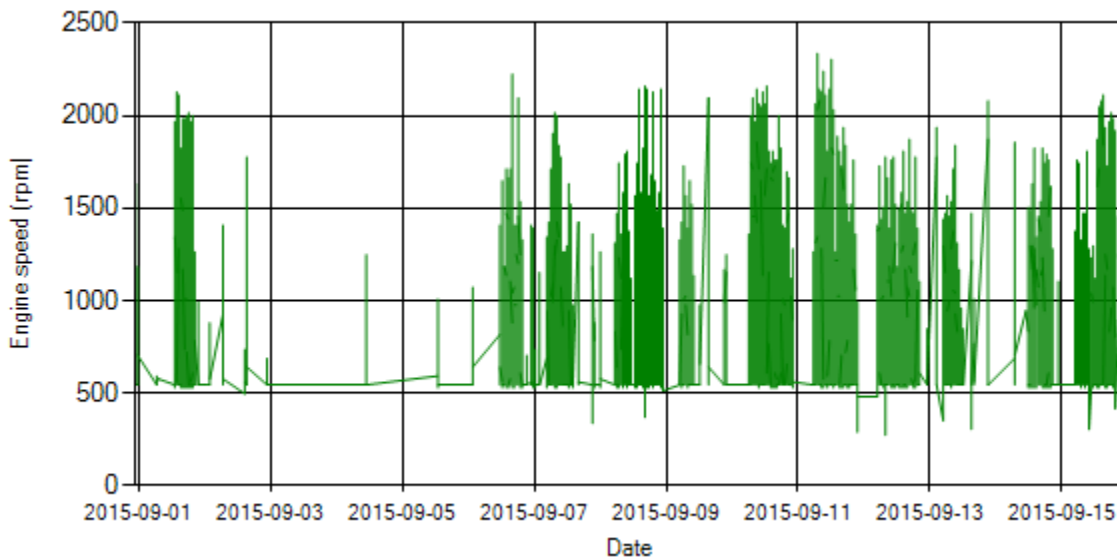


Figure 10- Engine speed distribution over the period

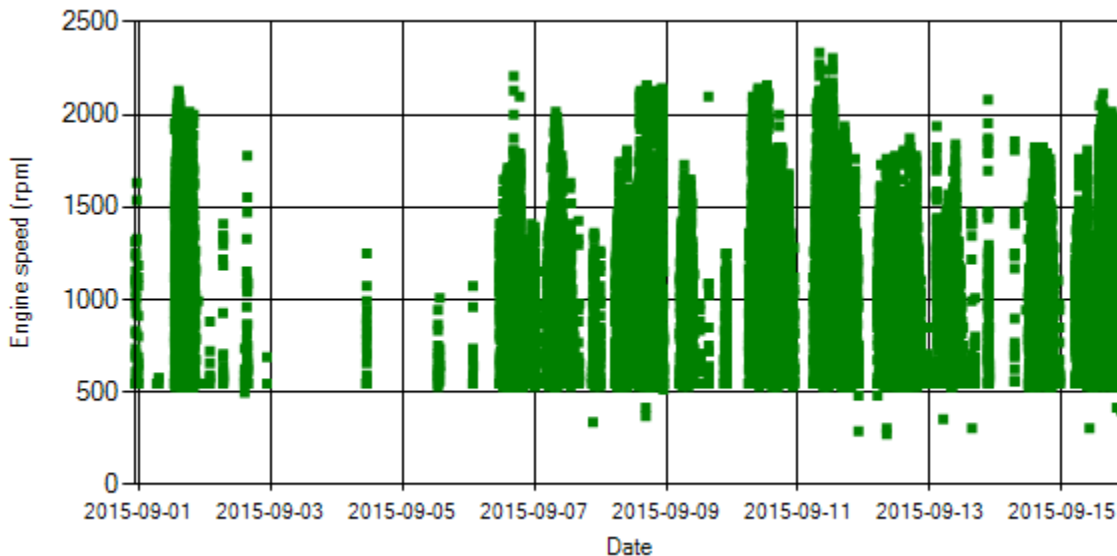


Figure 11- Engine speed diagram for calculating CPK's working days



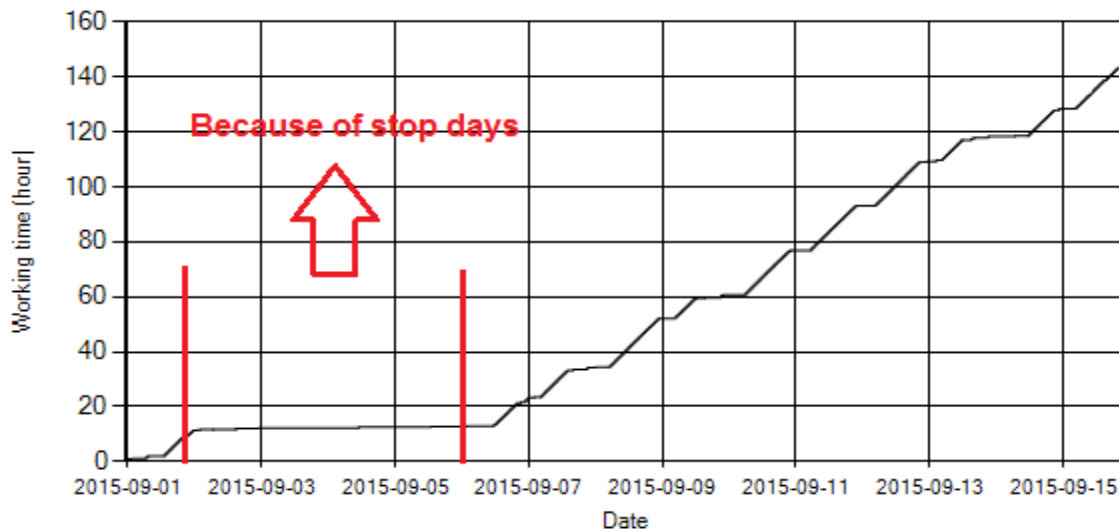


Figure 12- Time diagram for calculating CPK's working days

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, data logger didn't sample from Aug 2<sup>nd</sup> until 5<sup>th</sup> because of stop days.

### Pressure-Engine Speed diagrams

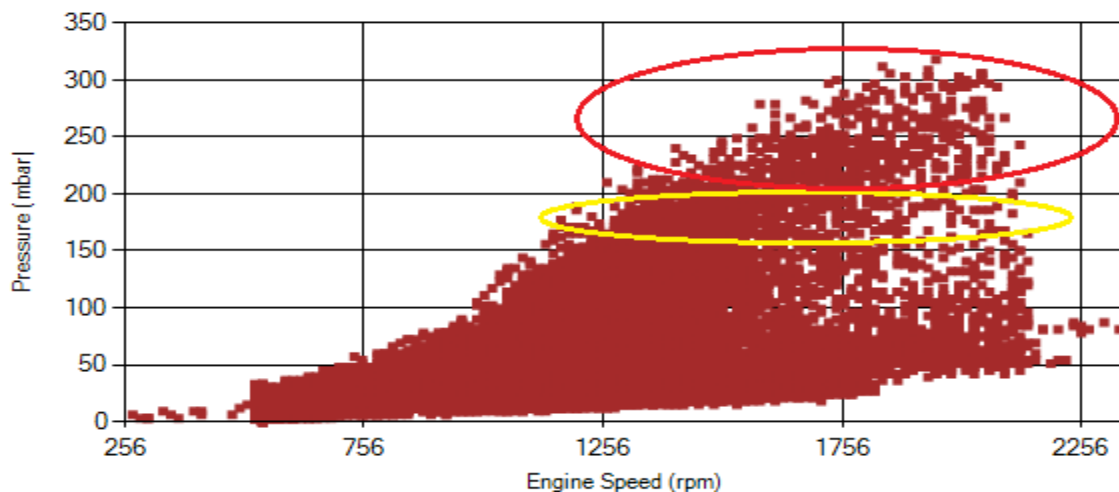


Figure 13- Pressure against engine speed

Notice: Red alarm (pressure > 200 mbar) and yellow alarm (200 > pressure > 150) ranges were indicated in figure 13.

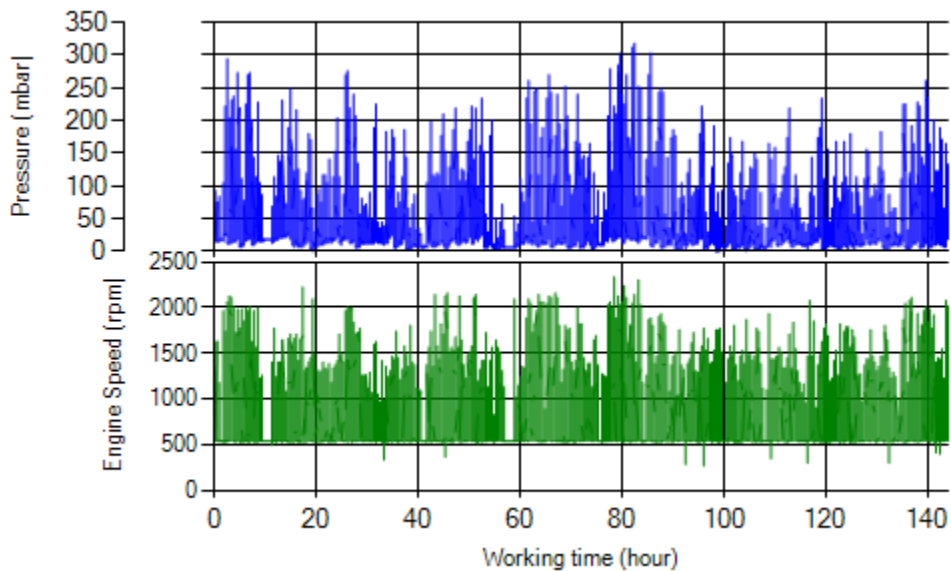


Figure 14- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

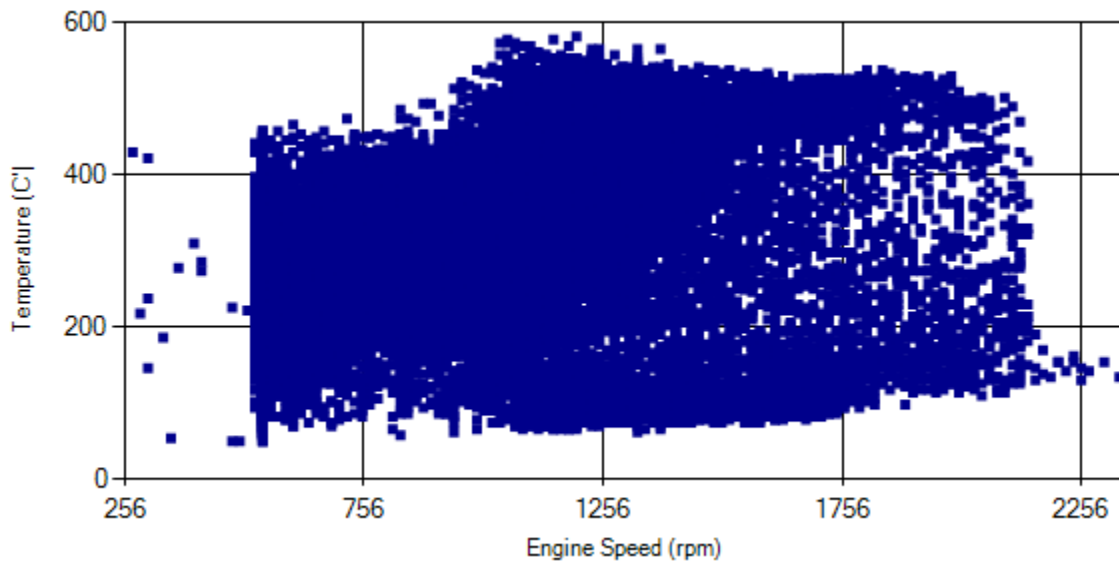


Figure 15- Temperature against engine speed

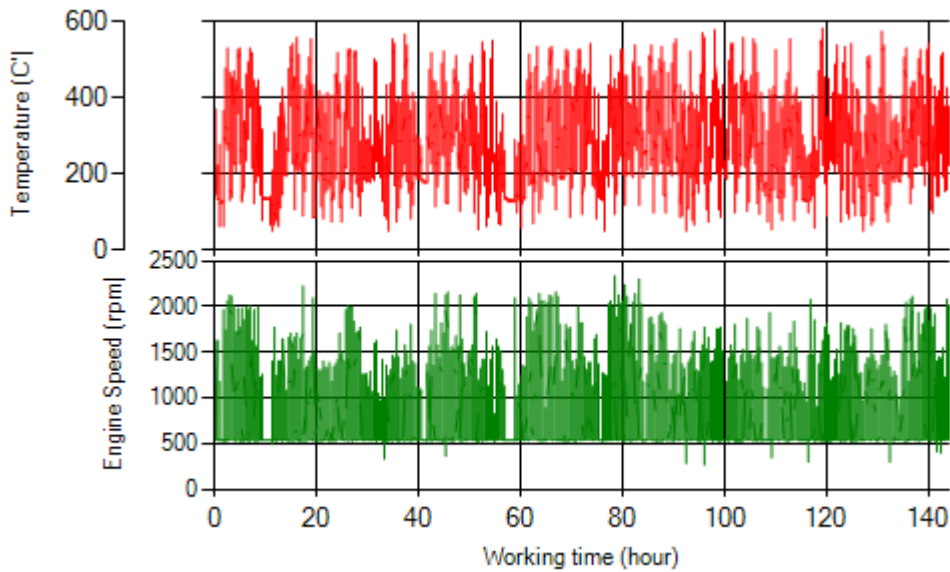


Figure 16- T, N distribution vs. working hours

### Filter Operation Analysis

- As depicted in figure 1, 1.53% of working time pressure was above 200 mbar and only 4.22% above 150mbar.
- Figure 2 displays flow temperature distribution for DPF's upstream. It can be obviously observed that 13% of total working time, temperature is above 400 °C and 22% above 350°C.

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