

## Overall Information

*Table1- Overall Information*

Vehicle plate number	78514
CPK data logger number	LN: 001496, DN: 1914, Sim +989218355923
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	HJS_01 (Passive system with FBC)
Installation date	10/Sep/2014
Report period	16/Jun/2016 – 30/Jun/2016 (fifteen days)
K value - DPF upstream	2.00 [1/m]
K value – DPF downstream	0.02 [1/m]

*Table 2- DPF Maintenance History*

Filter maintenance date	DPF core was cleaned on Jun 13 <sup>th</sup> .
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)	82530 km
Bus mileage over the period	1211 km
Working days over the period	8 days
Stop days	7 days
Data logger working days	8 days
Working hours over the period	74 hours 38 minutes
Average working hours per day (including stop days)	5 hours 44 minutes
Bus average speed	16.2 km/hr
idle speed time to all working time ration	32.87 %
Total Bus fuel consumption over the period	727 lit
Fuel consumption per hour	9.72 lit/hr
Average fuel consumption	0.6 lit/km
Total Bus additive consumption over the period	0.348 lit
Average additive consumption	288 cc/km
Additive consumption to fuel ration	480 cc/1000lit

## Temperature, Pressure and Engine Speed Overview

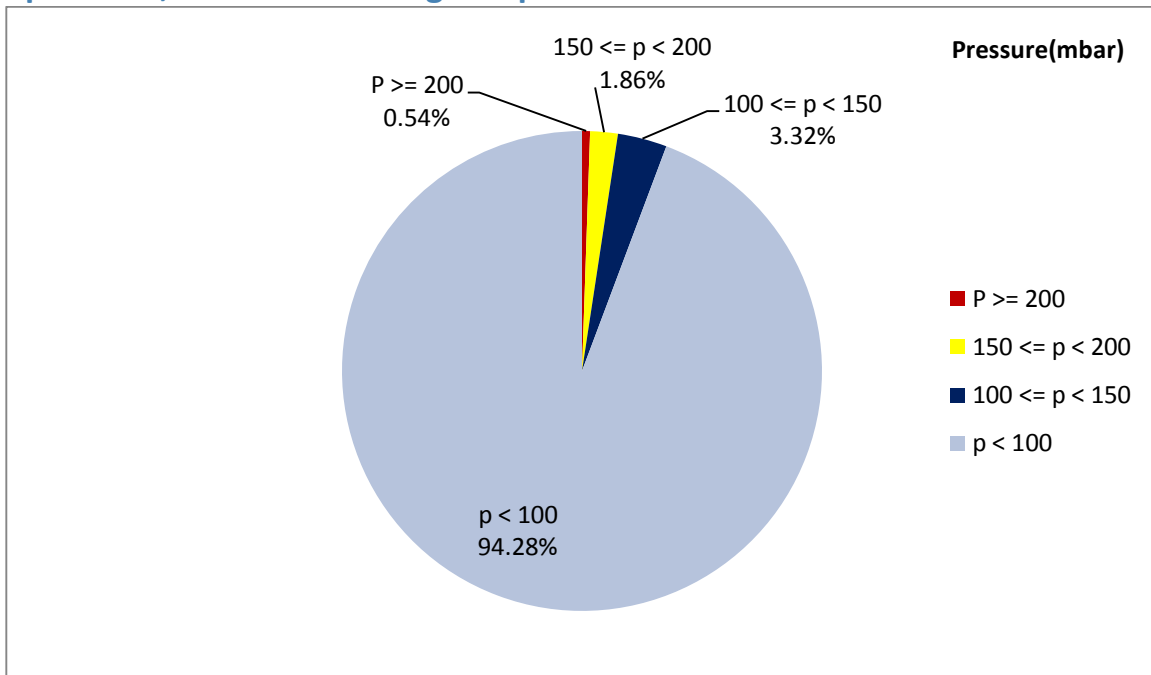


Figure 1- Pressure distribution over the working hours

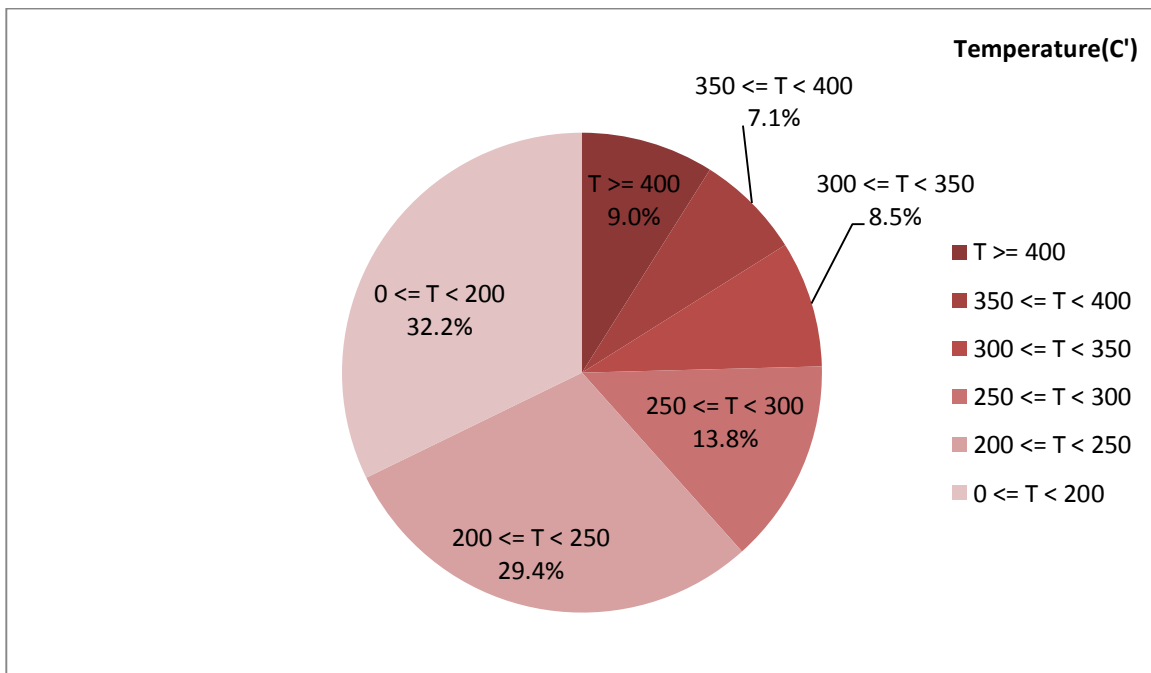


Figure 2-Temperature distribution over the working hours

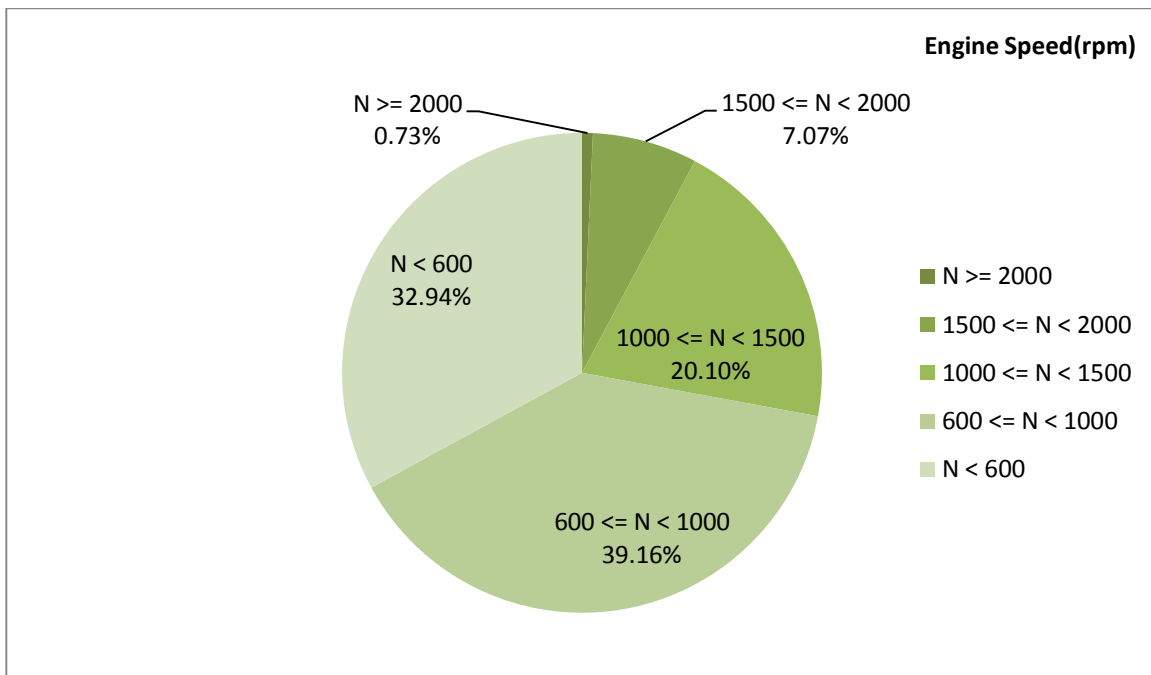


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
247.41	25.46	870

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
277.58	35.28	1028

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
538-50	234-0	2160-256

## Detailed Pressure Analysis

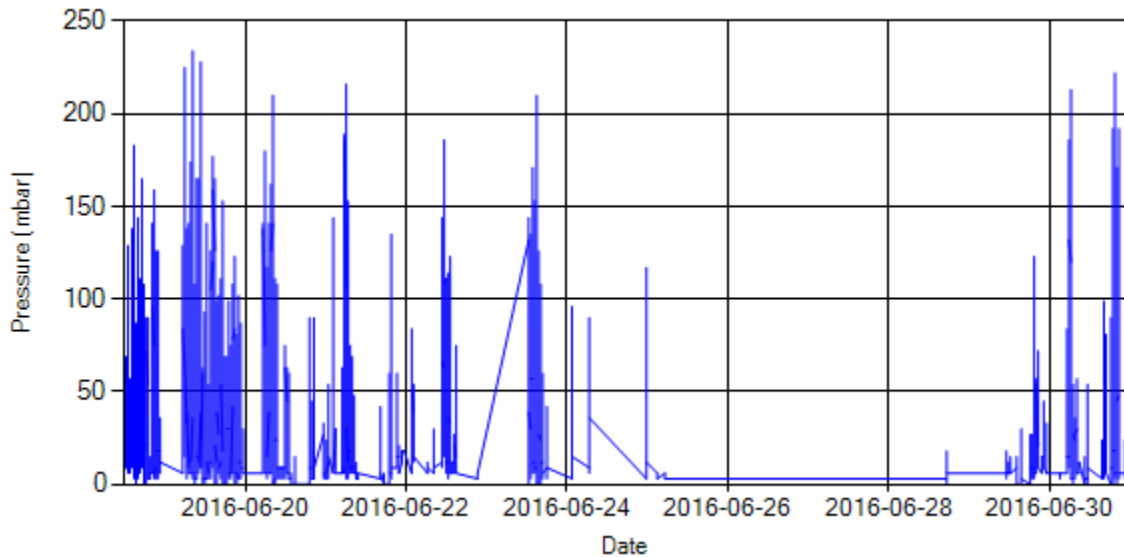


Figure 4- Pressure distribution over the period

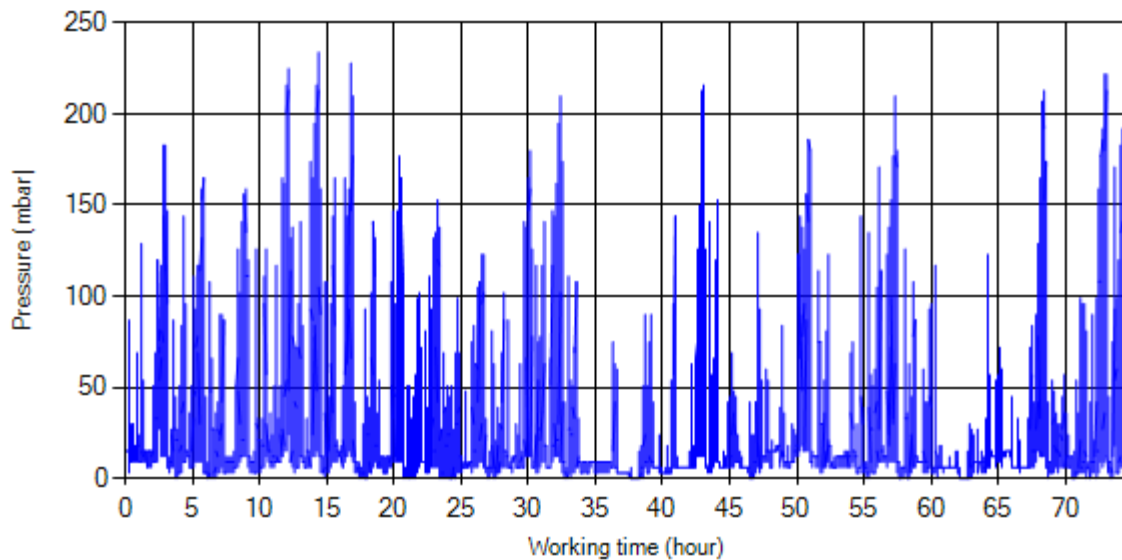


Figure 5- Pressure vs. working hours

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

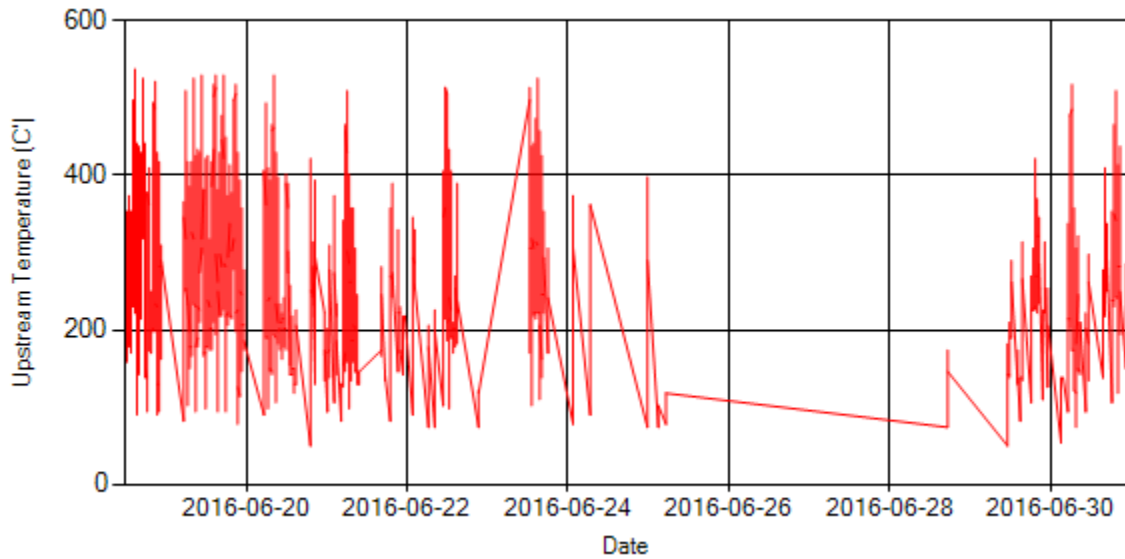


Figure 6- Temperature distribution over the period

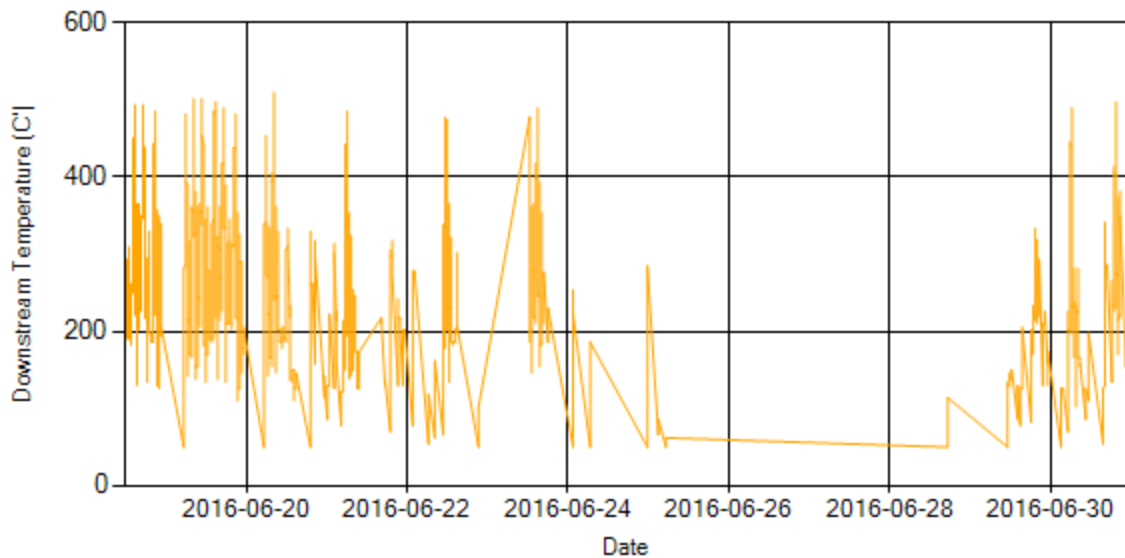
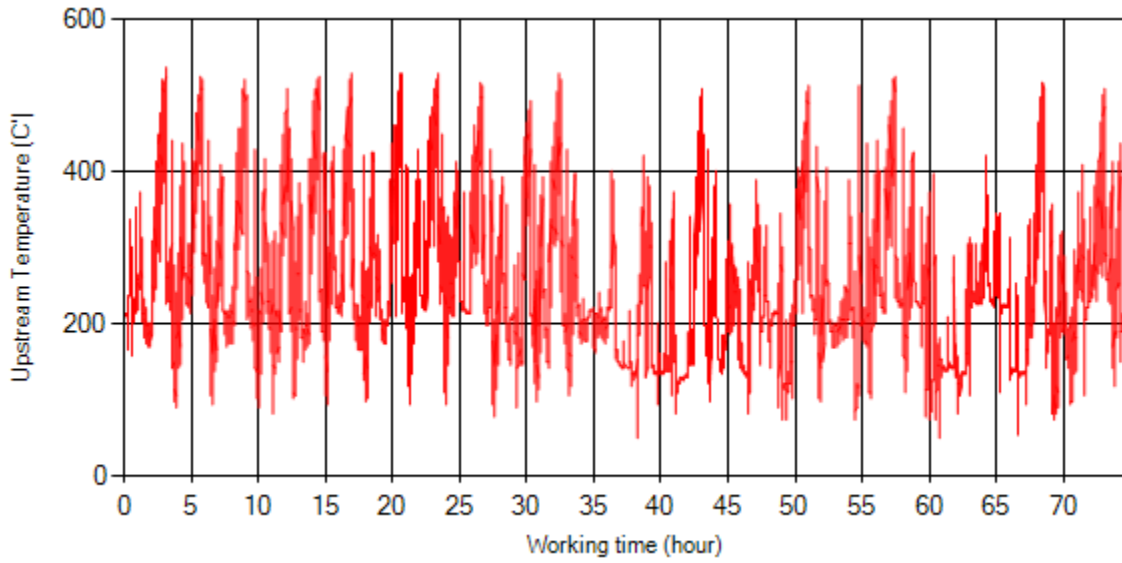
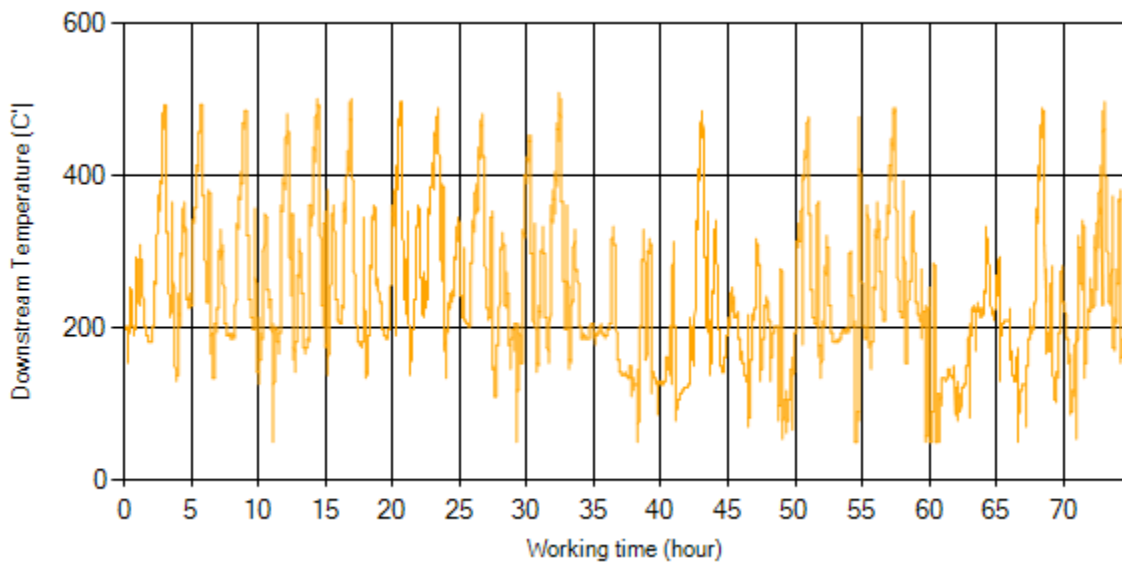


Figure 7- Temperature distribution over the period



*Figure 8- Temperature vs. working hours*



*Figure 9- Temperature vs. working hours*

## Engine Speed Diagrams

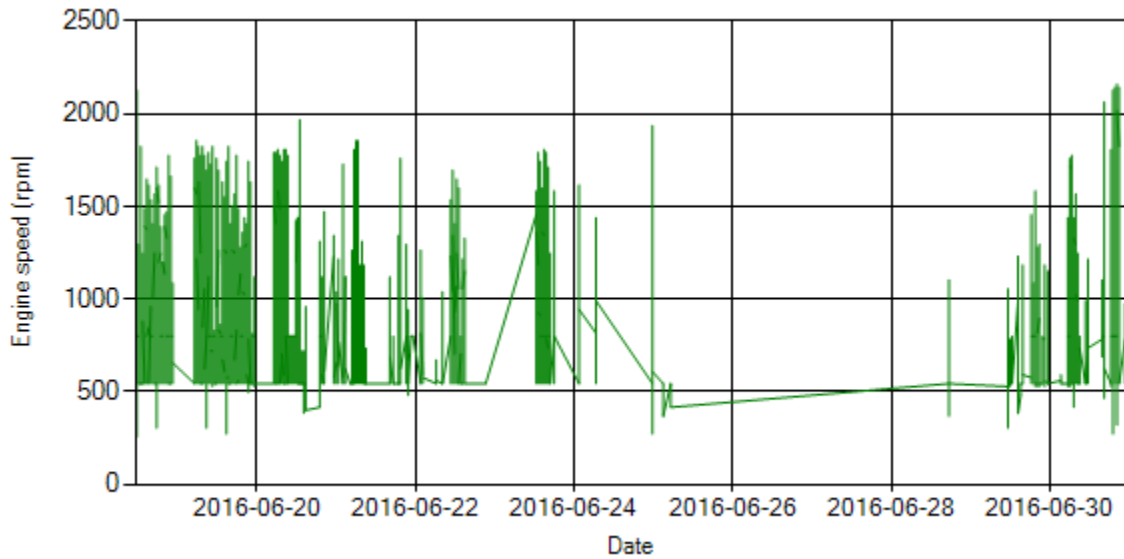


Figure 10- Engine speed distribution over the period

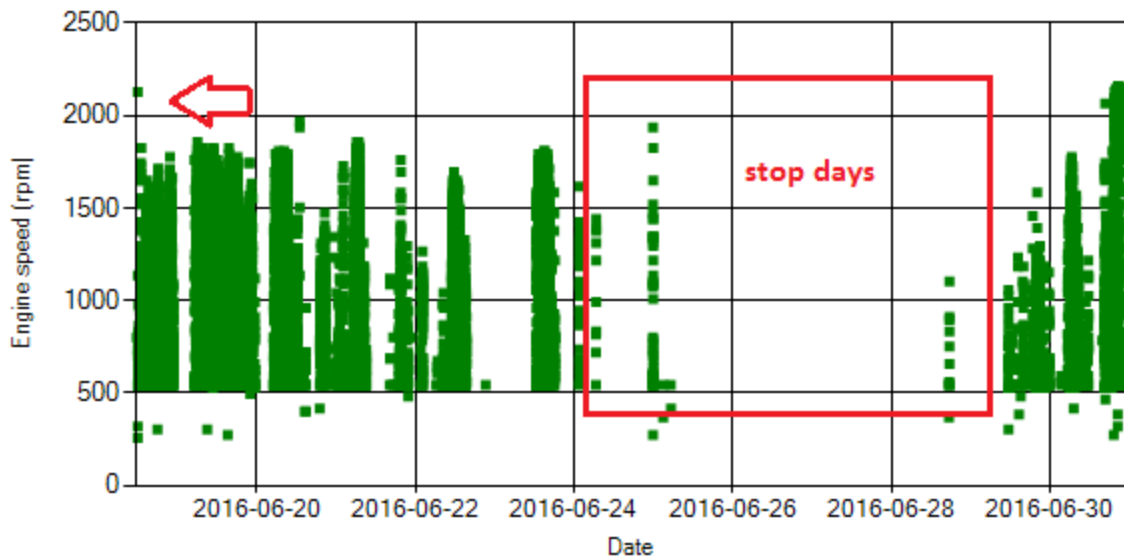


Figure 11- Engine speed diagram for calculating CPK's working days



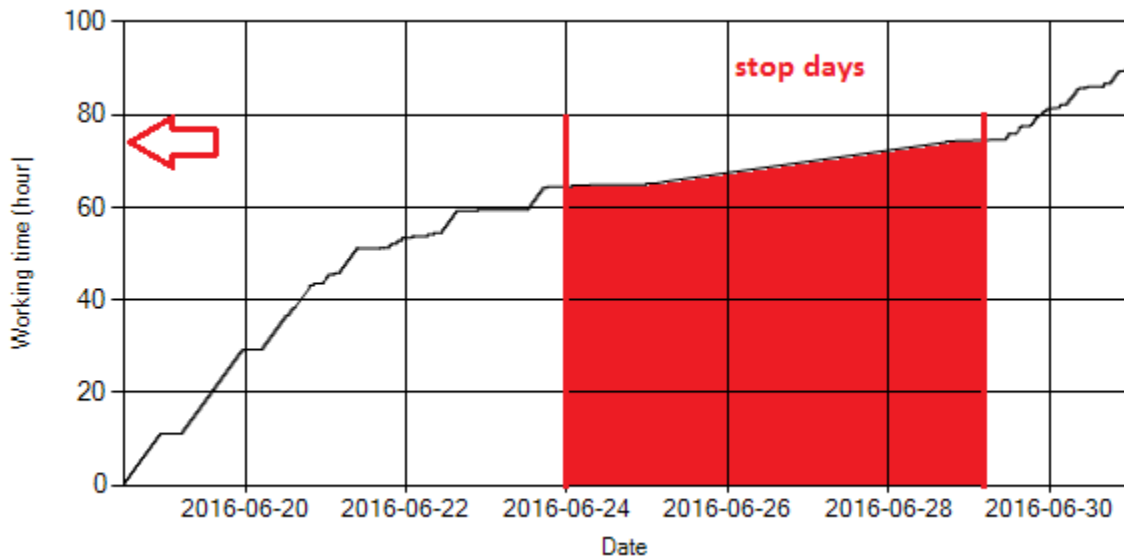


Figure 12- Time diagram for calculating CPK's working days

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 system was stationary for 7 days.

### Pressure-Engine Speed diagrams

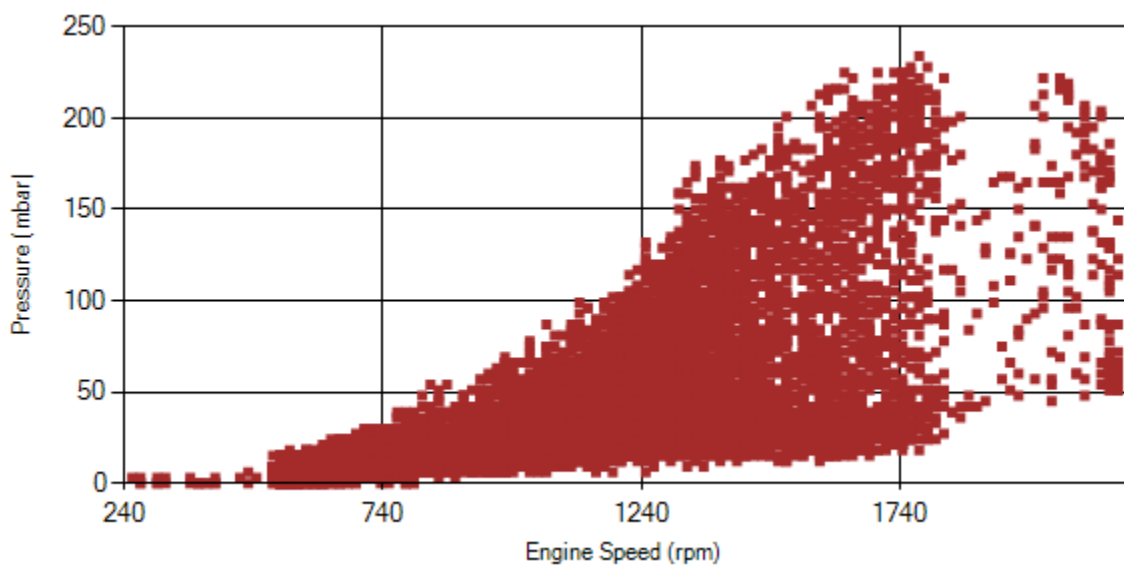


Figure 13- Pressure against engine speed

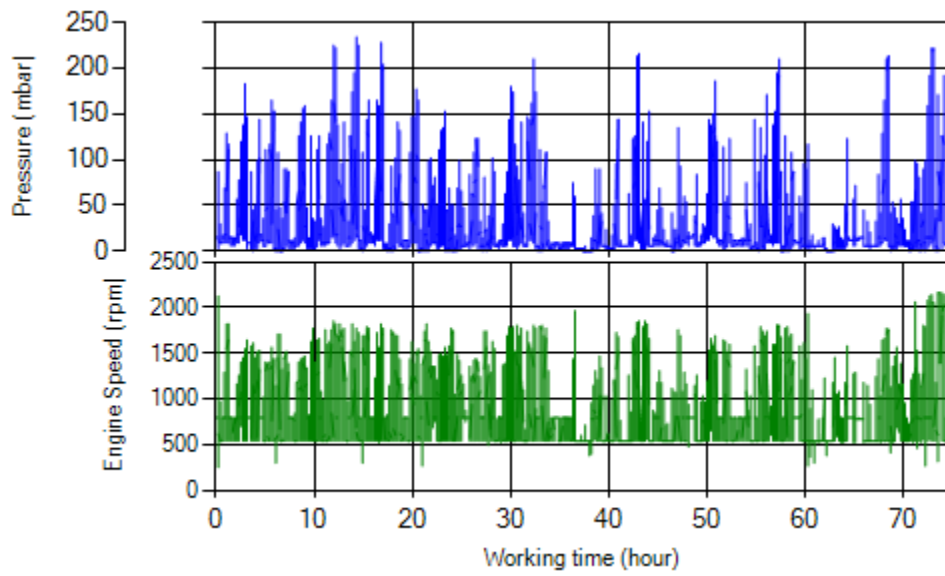


Figure 14- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

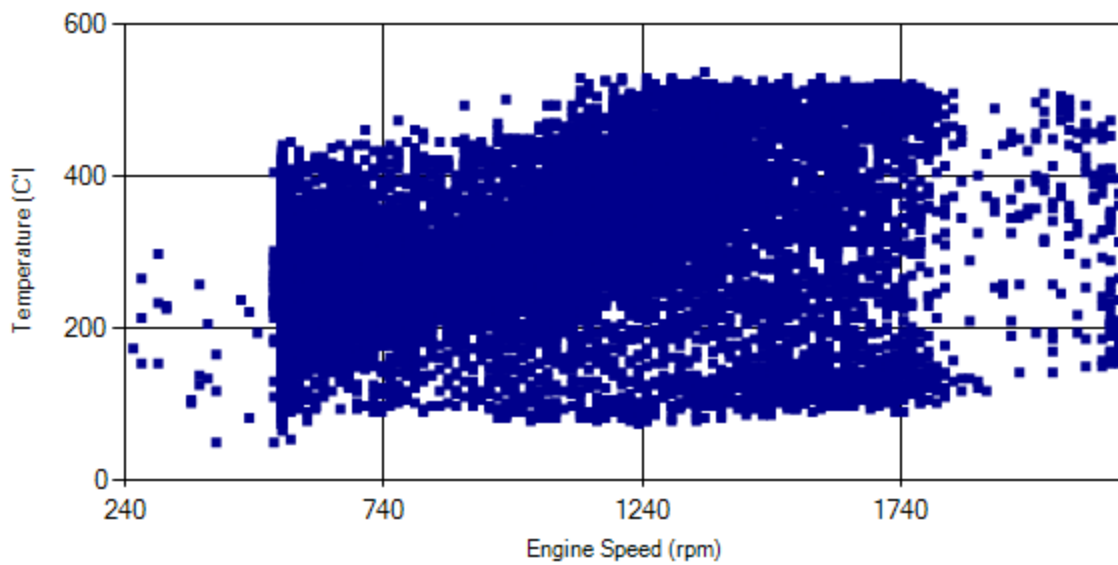


Figure 15- Temperature against engine speed

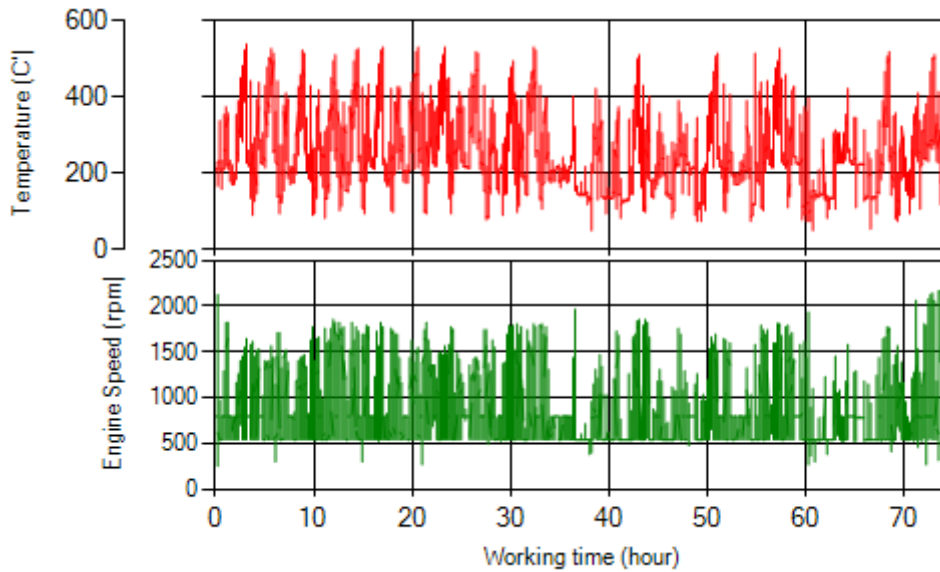


Figure 16- T, N distribution vs. working hours

### Filter Operation Analysis

- As depicted in Figure 1, 0.54% of working time pressure was above 200 mbar and 2.4% of working time was above 150 mbar.
- Figure 2 displays flow temperature before the DPF. It can be obviously observed that 9% of total working time temperature is above 400 °C and 16.1% above 350°C.
- Considering available data DPF operation was good during the period.

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