

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	01/Feb/2016 – 15/Feb/2016 (fifteen days)
K value - DPF upstream	1.80 [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 th .
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)	78465 km
Bus mileage over the period	483 km
Working days over the period	8 days
Stop days	7 days
Data logger working days	8 days
Working hours over the period	52 hours 10 minutes
Average working hours per day (including stop days)	4 hours 0 minutes
Bus average speed	9.25 km/hr
idle speed time to all working time ration	67.79 %
Total Bus fuel consumption over the period	314 lit
Fuel consumption per hour	6 lit/hr
Average fuel consumption	0.65 lit/km
Total Bus additive consumption over the period	0.15 lit
Average additive consumption	310 cc/km
Additive consumption to fuel ration	477 cc/1000lit

Notice: Working hours and days were low due to bus technical problem.

Notice: Due to high idling ratio, average fuel consumption showed high value comparing with usual working period.

Temperature, Pressure and Engine Speed Overview

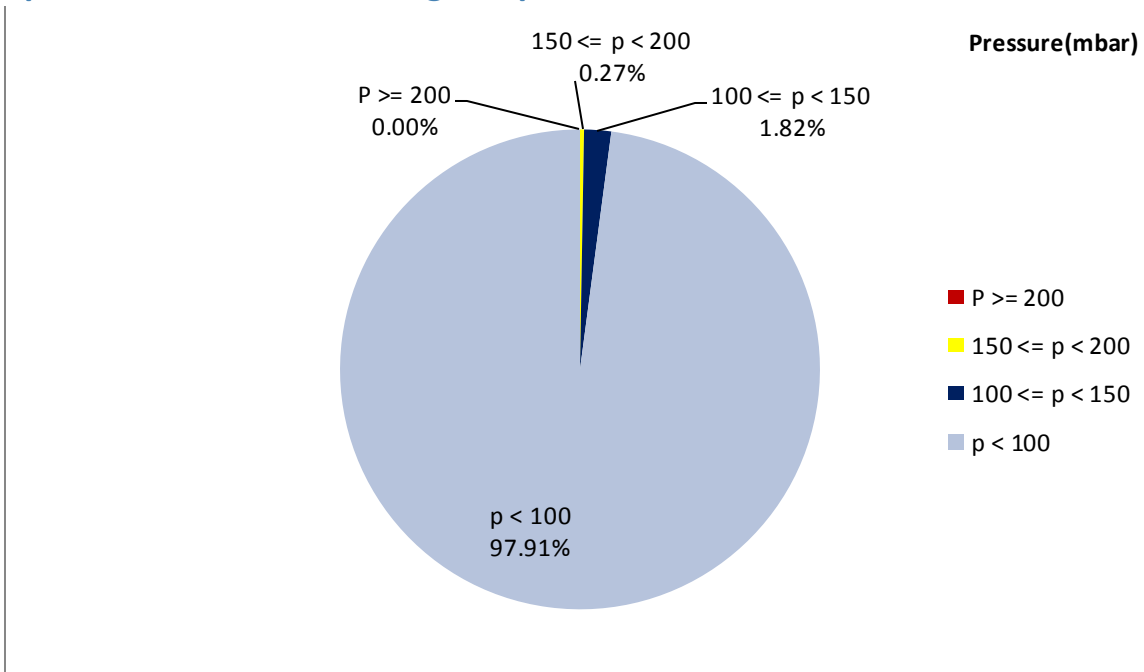


Figure 1- Pressure distribution over the working hours

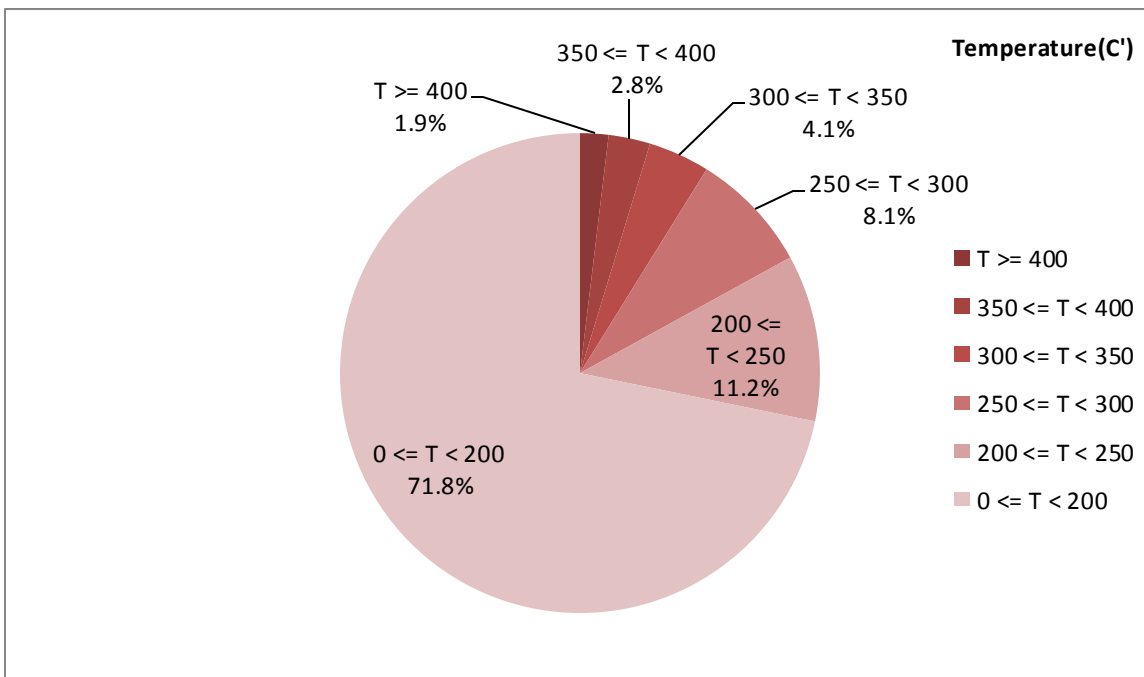


Figure 2-Temperature distribution over the working hours

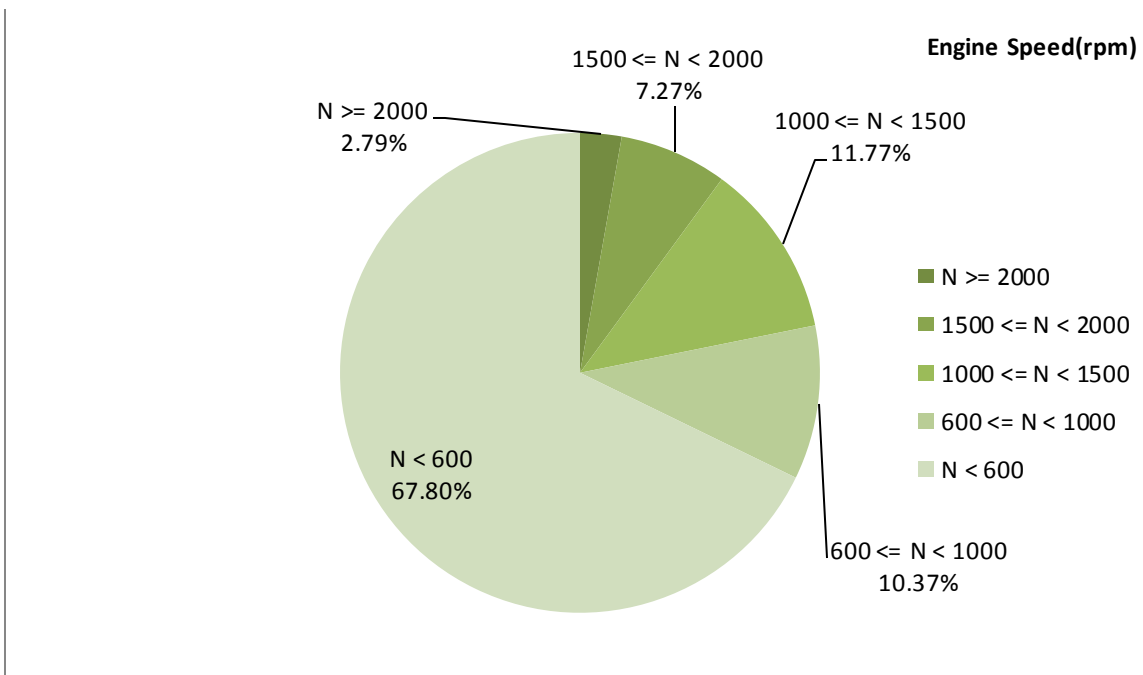


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
176.61	15.37	781

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
249.35	33.89	1277

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
470-50	189-0	2416-304

Detailed Pressure Analysis

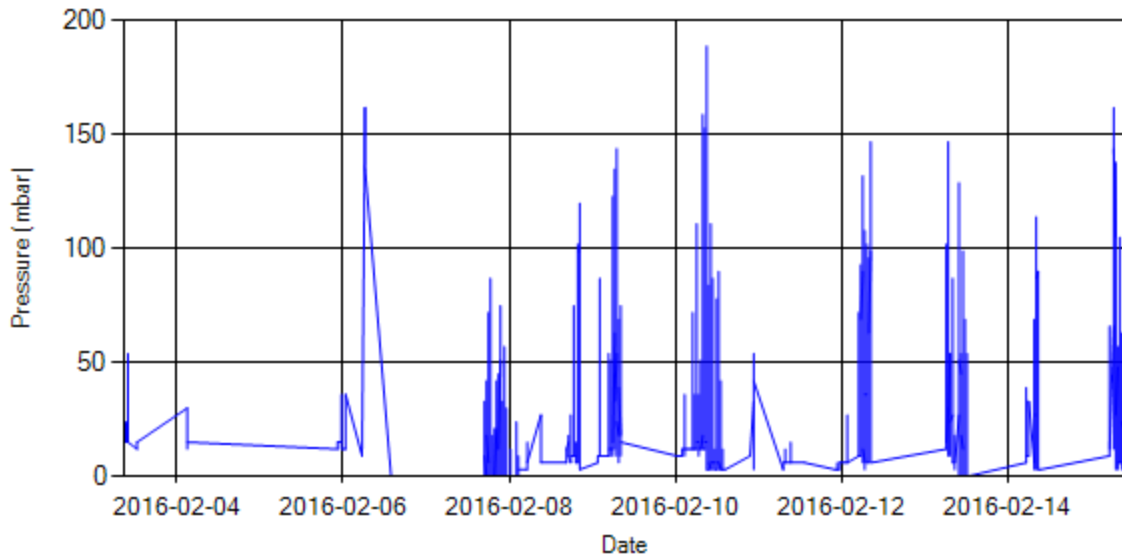


Figure 4- Pressure distribution over the period

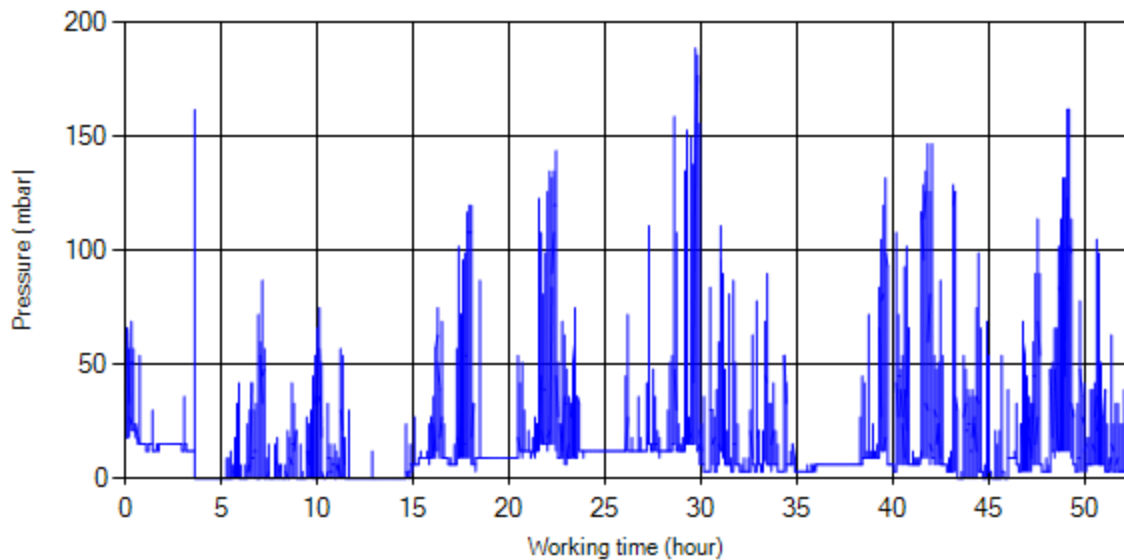


Figure 5- Pressure vs. working hours

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

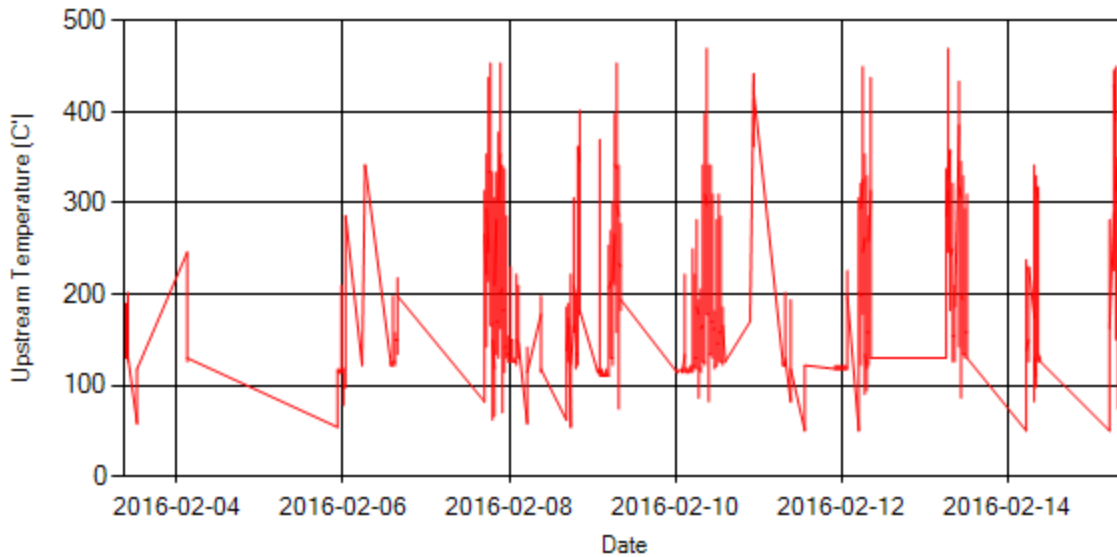


Figure 6- Temperature distribution over the period

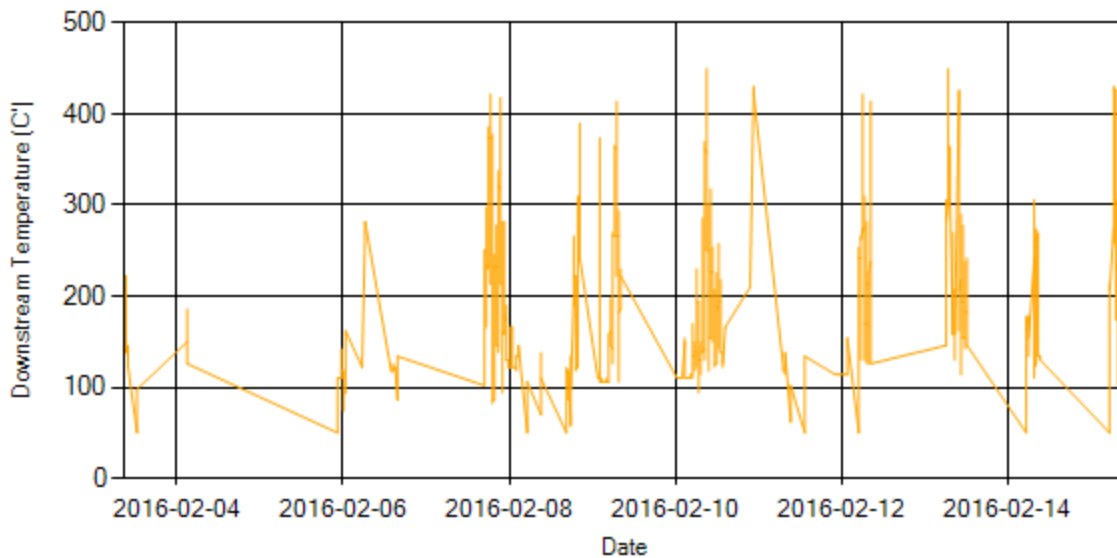


Figure 7- Temperature distribution over the period

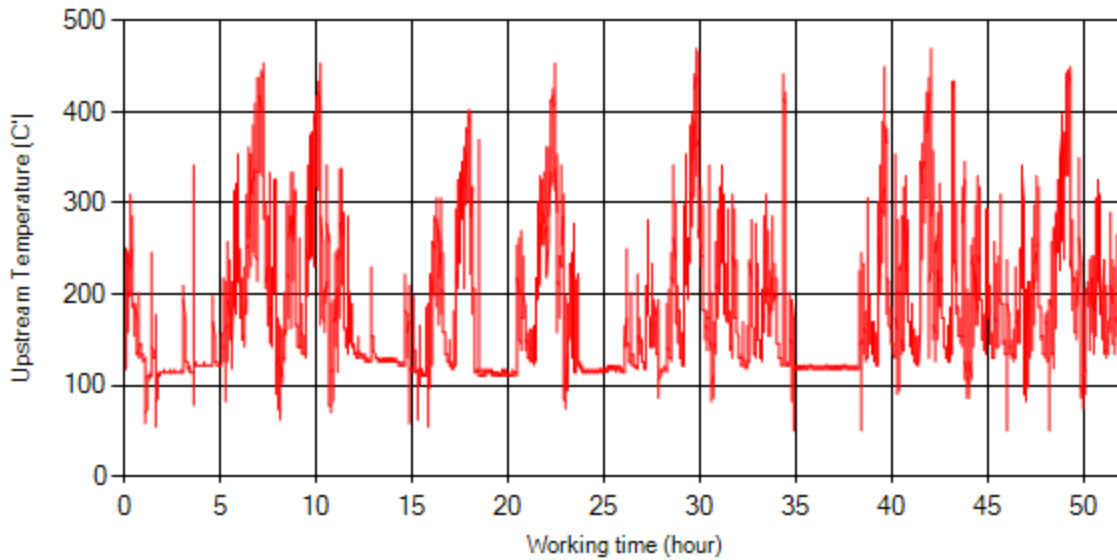


Figure 8- Temperature vs. working hours

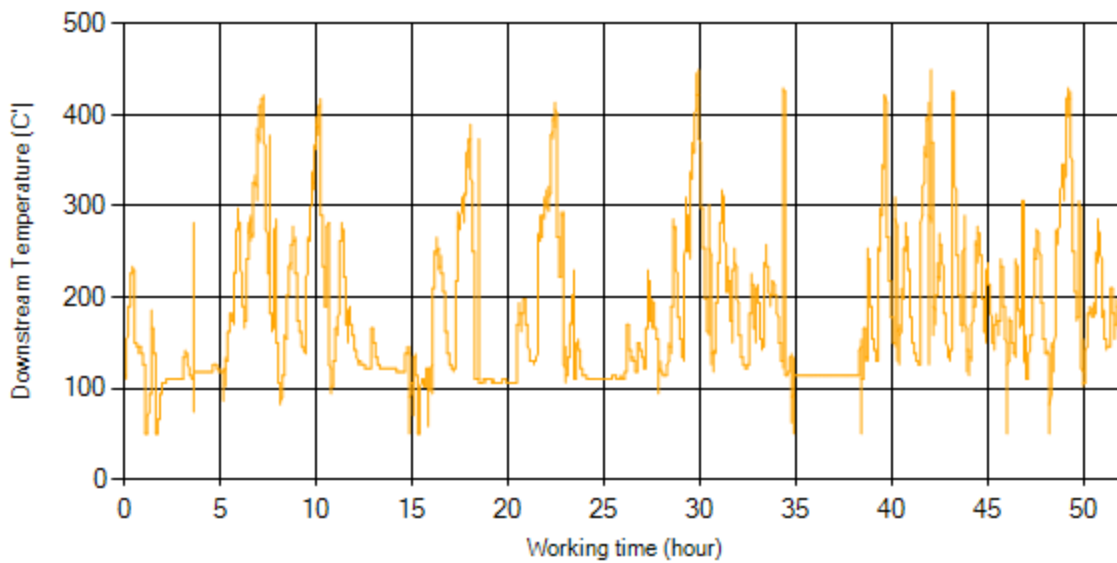


Figure 9- Temperature vs. working hours

Engine Speed Diagrams

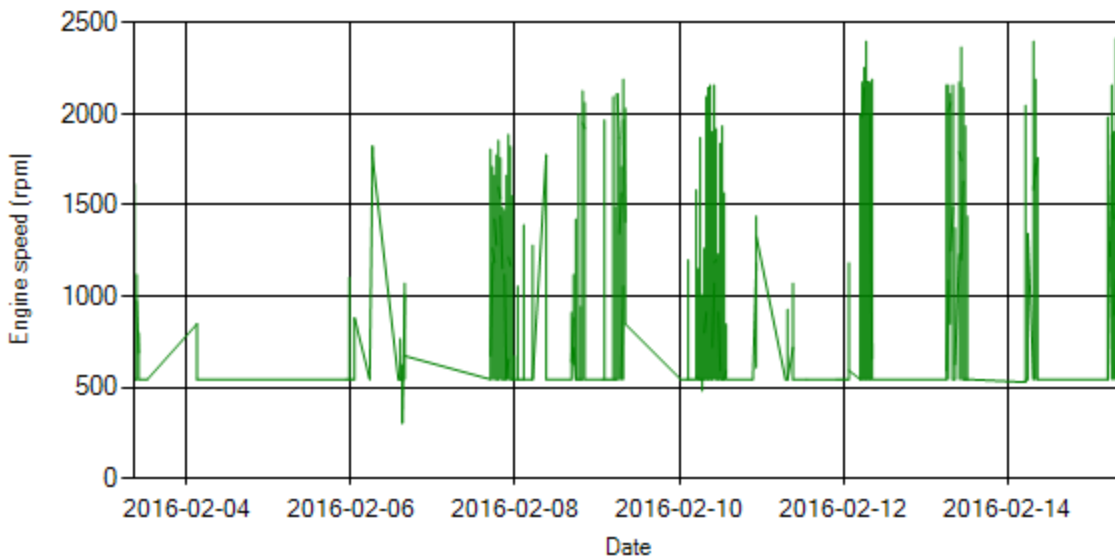


Figure 10- Engine speed distribution over the period

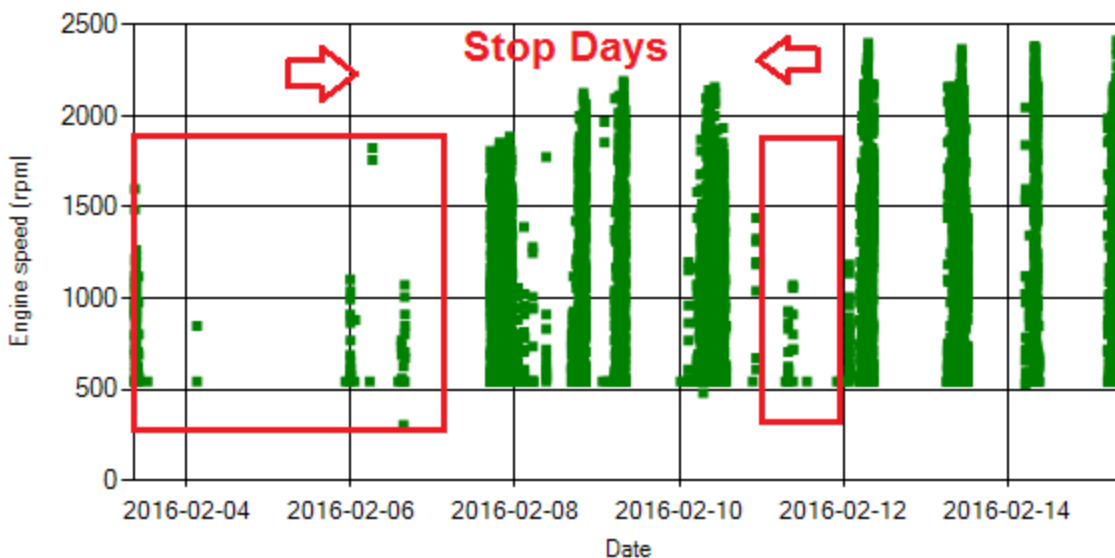


Figure 11- Engine speed diagram for calculating CPK's working days

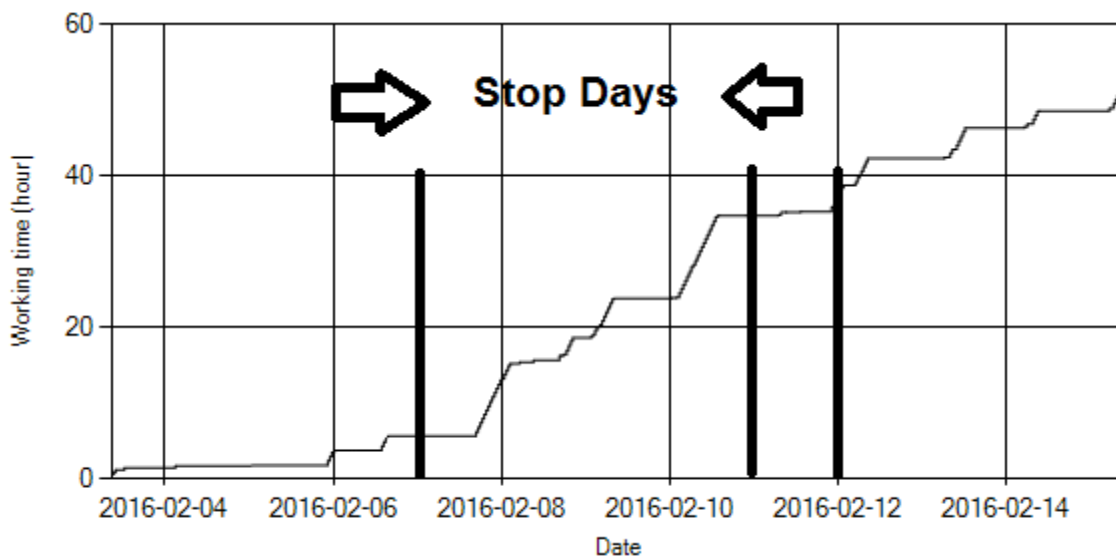


Figure 12- Time diagram for calculating CPK's working days

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, bus was stationary for 7 days during this period.

Pressure-Engine Speed diagrams

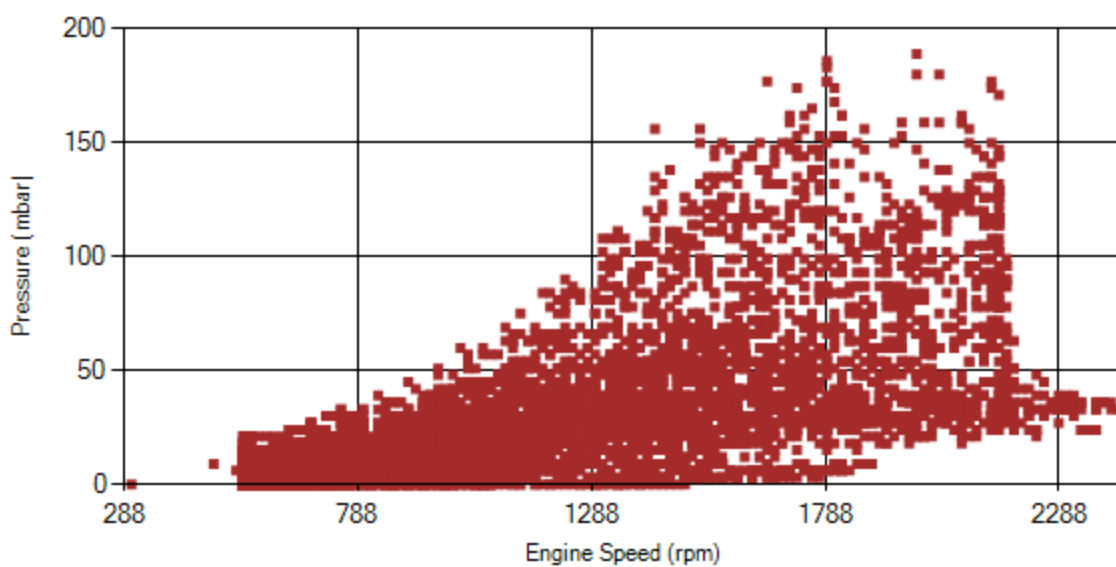


Figure 13- Pressure against engine speed

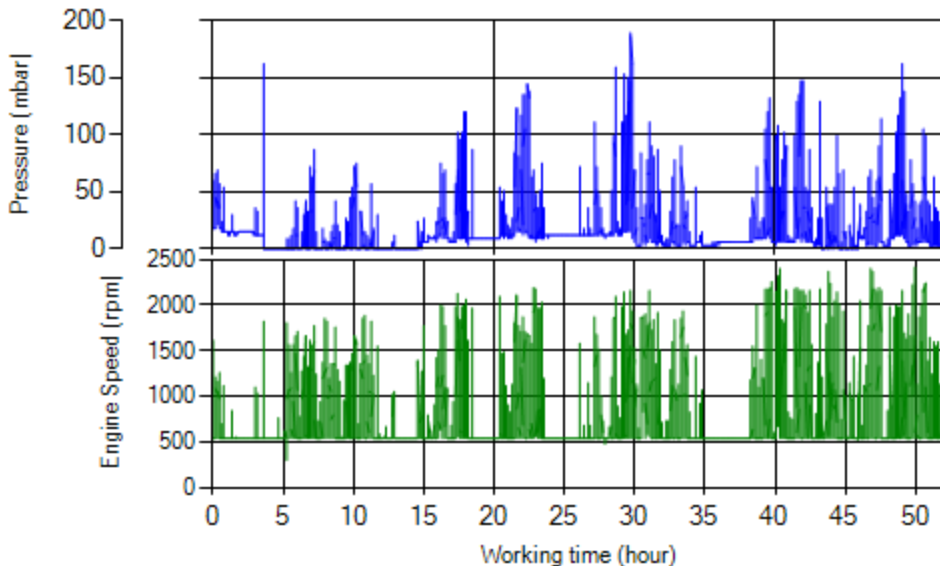


Figure 14- P, N distribution vs. working hours

Temperature-Engine Speed diagrams

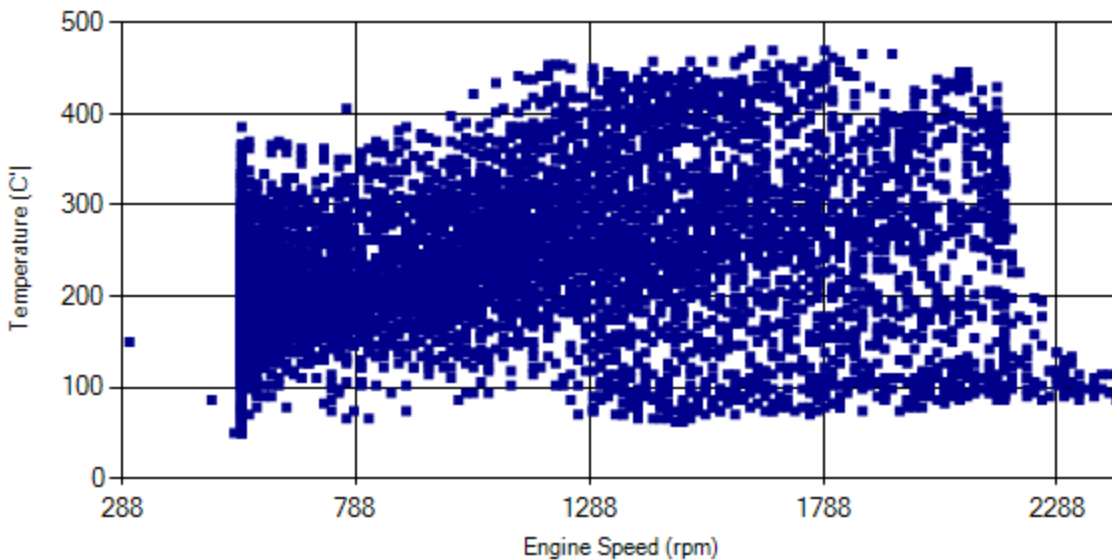


Figure 15- Temperature against engine speed

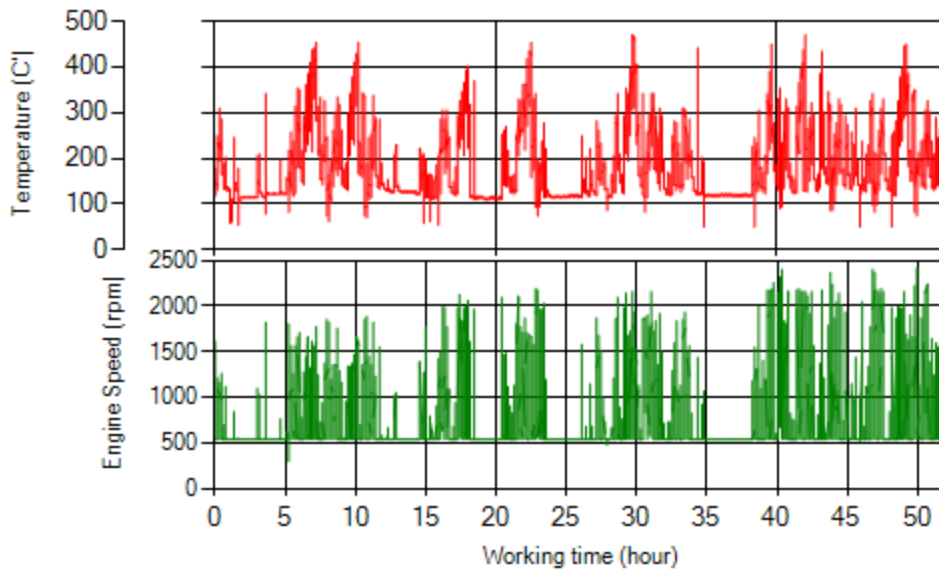


Figure 16- T, N distribution vs. working hours

Filter Operation Analysis

- As depicted in Figure 1, only 0.27% of working time, pressure was above 150 mbar.
- Figure 2 displays flow temperature before the DPF. It can be obviously observed that 1.9% of total working time temperature is above 400 °C and 4.7% above 350°C.
- Low pressure and temperature distribution was because of high idle working of the bus.
- Considering our adjusted parameters for evaluating DPF performance, this DPF was excellent during this period.

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