

**Notice: System was working without DPF during this period**

## Overall Information

*Table1- Overall Information*

Vehicle plate number	78524
CPK data logger number	LN: 001443, DN: 1930, Sim +989218786219
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	PURltech (Passive system with FBC)
Installation date	28/Jan/2015
Report period	16/Oct/2015 – 31/Oct/2015 (sixteen days)
K value – DPF upstream	1.85 [1/m]
K value – DPF downstream	0.02 [1/m]

*Table 2- DPF Maintenance History*

Filter maintenance date	<p>DPF core was removed on Jul 22<sup>nd</sup> and was cleaned on Aug 12<sup>th</sup> for the first time.</p> <p>Considering system relatively high backpressure, filter isolation defect and air filter's deformation, DPF core was removed on Sep 16<sup>th</sup> and will be installed on system after cleaning and improving isolation system.</p>
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)	41660 km
Bus mileage over the period	2457 km
Working days over the period	10 days
Stop days	5 days
Data logger working days	10 days
Working hours over the period	204 hours 43 minutes
Average working hours per day (including stop days)	12 hours 2 minutes
Bus average speed	12 km/hr
idle speed time to all working time ration	- %
Total Bus fuel consumption over the period	1537 lit
Fuel consumption per hour	7.51 lit/hr
Average fuel consumption	0.63 lit/km
Total Bus additive consumption over the period	- lit
Average additive consumption	- cc/km
Additive consumption to fuel ration	- cc/1000lit

**Notice:** Due to some technical problem related to data logger, rpm data were missing. So related parameters like idling speed were left blank.

**Notice:** DPF core was removed on Sep 16<sup>th</sup> and additive system was disconnected, so additive consumption during this period was zero.

**Notice:** Considering data logger problem and stop days with switch on, working hours and its related parameters were unreliable.

### Temperature, Pressure and Engine Speed Overview

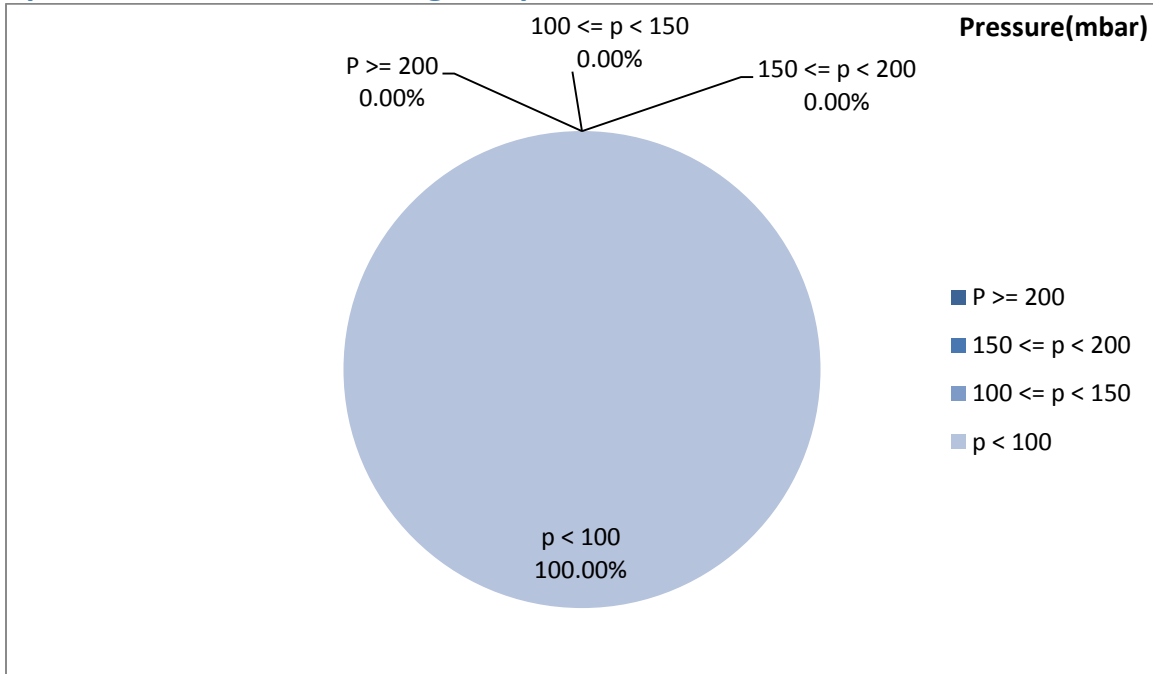


Figure 1- Pressure distribution over the working hours

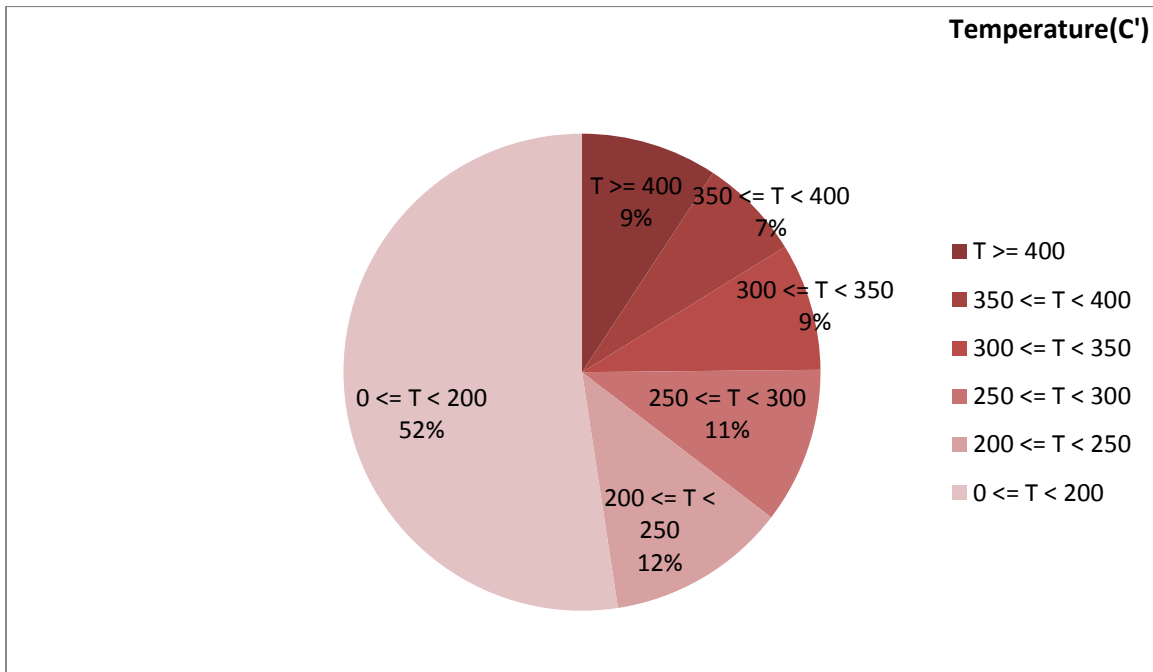
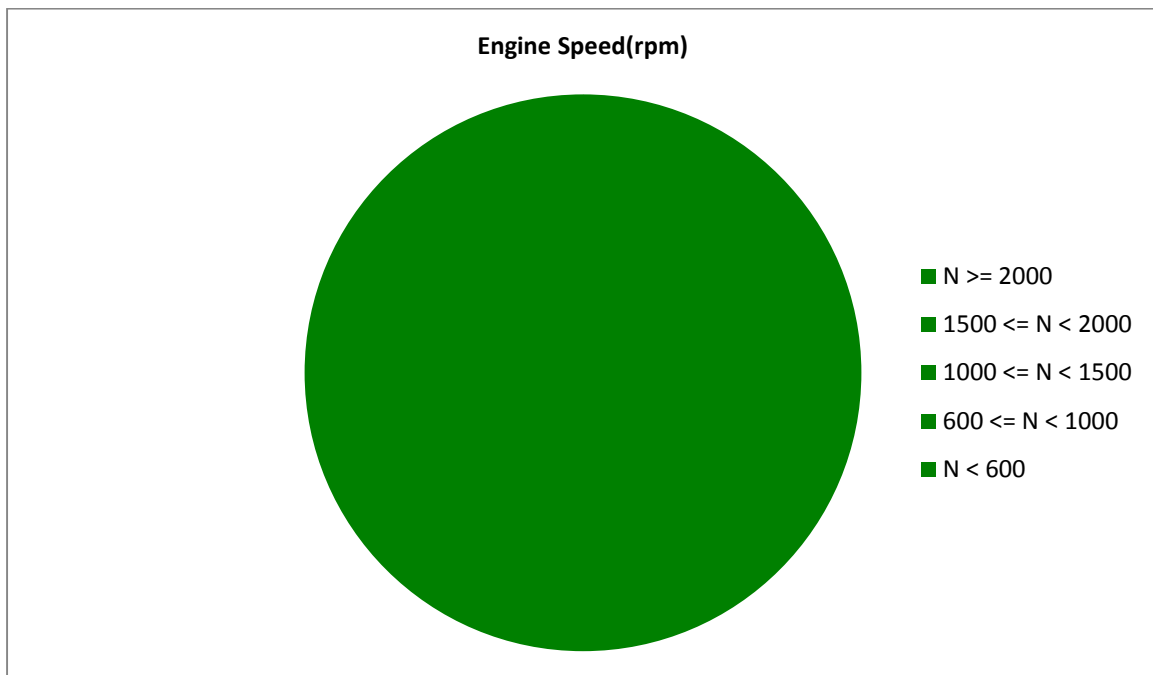


Figure 2-Temperature distribution over the working hours



*Figure 3- Engine speed distribution over the working hours*

*Table 4- Mean values*

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
217.95	4.01	-

*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)
562-50	96-0	0-0

**Notice:** Due to data logger technical problem, rpm sensor data missed. So engine speed's related parameters were left blank.

### Detailed Pressure Analysis

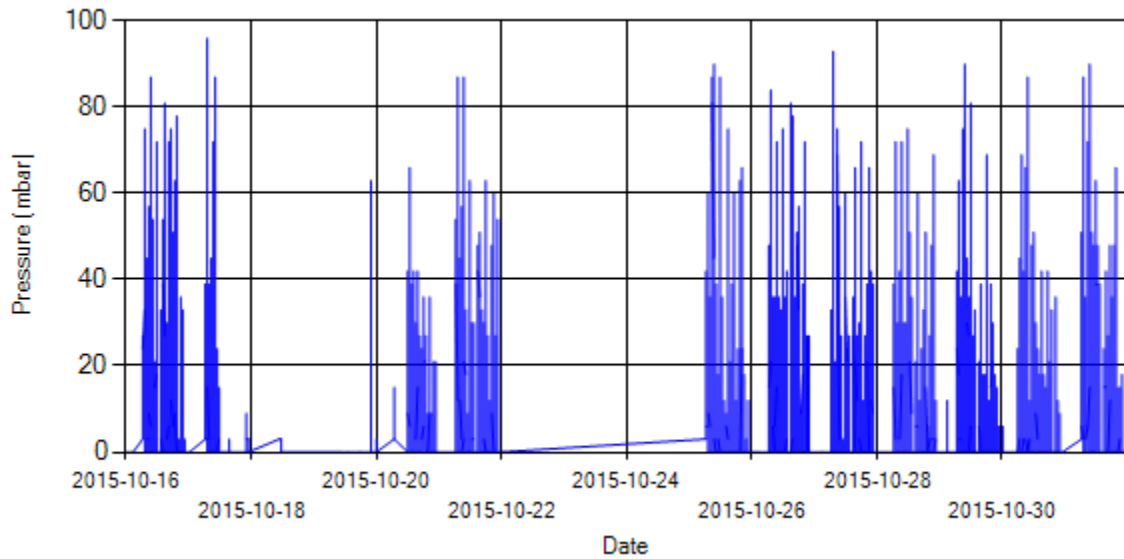


Figure 4- Pressure distribution over the period

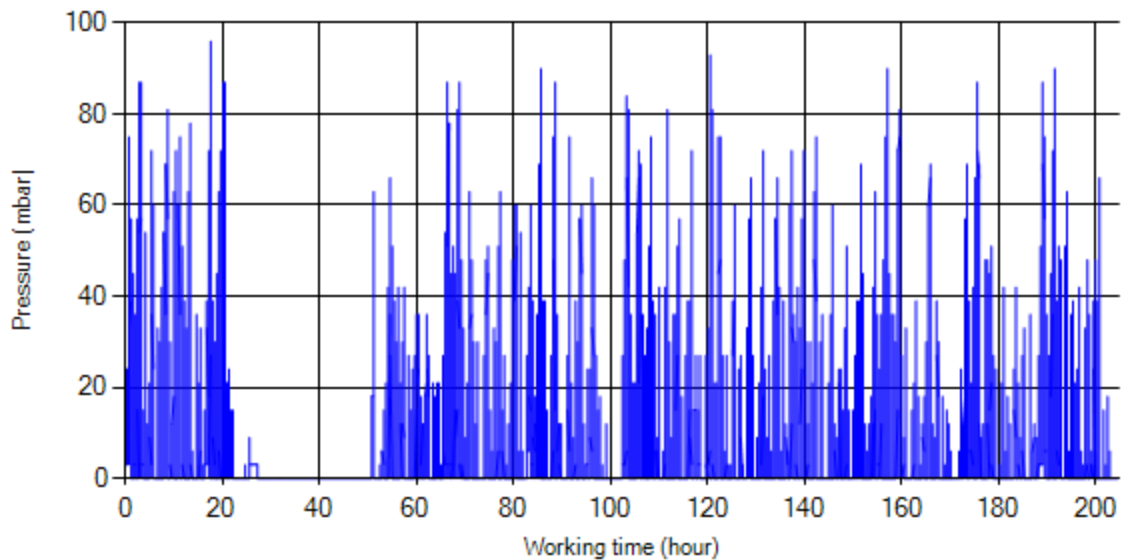


Figure 5- Pressure vs. working hours

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

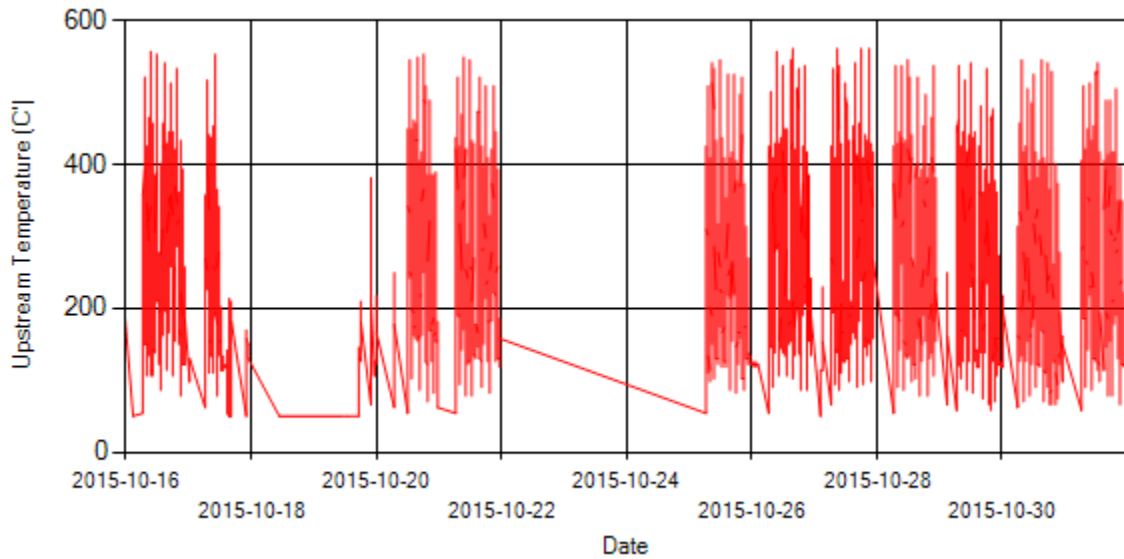


Figure 6- Temperature distribution over the period

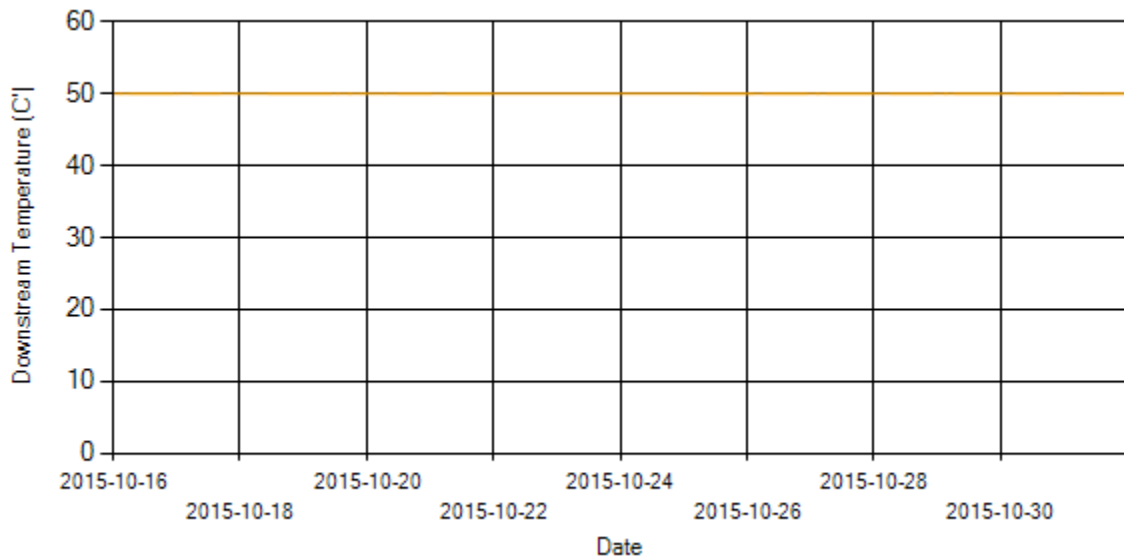
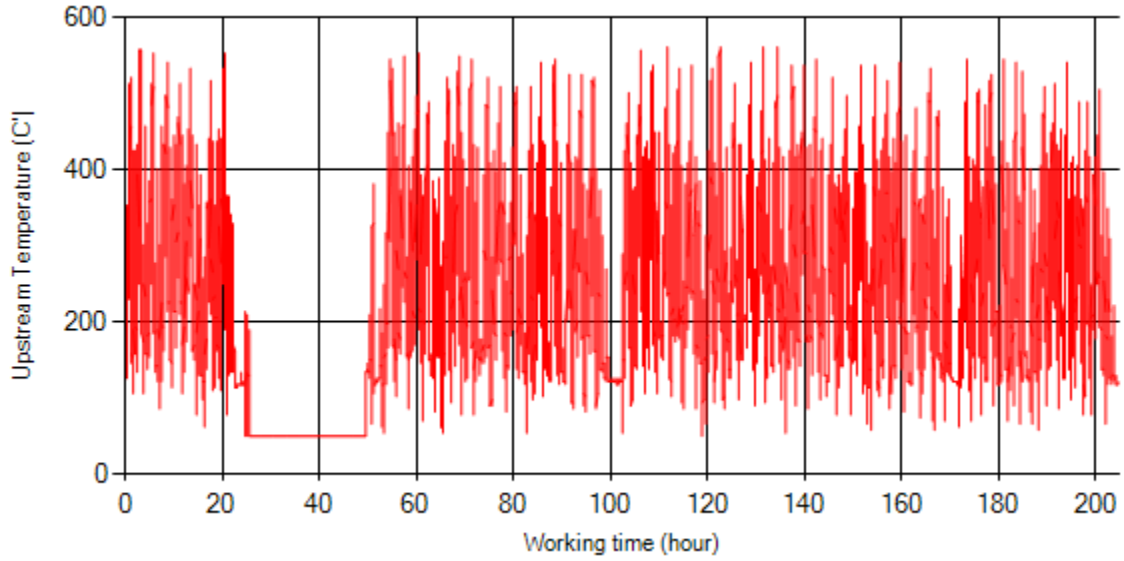
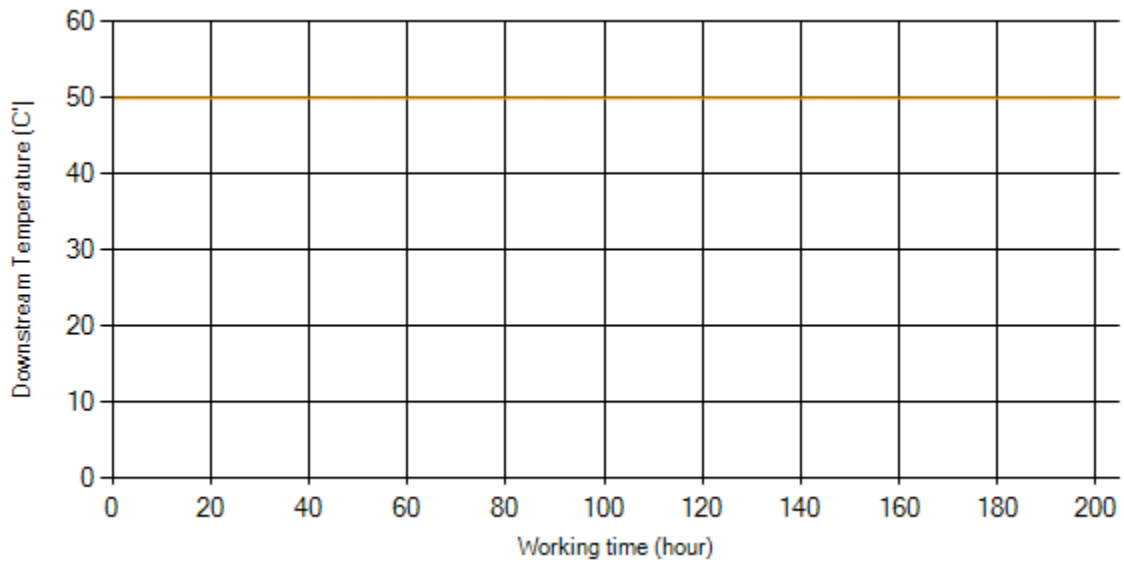


Figure 7- Temperature distribution over the period

**Notice:** Temperature 2 sensor was showing constant value due to data logger problem.



*Figure 8- Temperature vs. working hours*



*Figure 9- Temperature vs. working hours*

## Engine Speed Diagrams

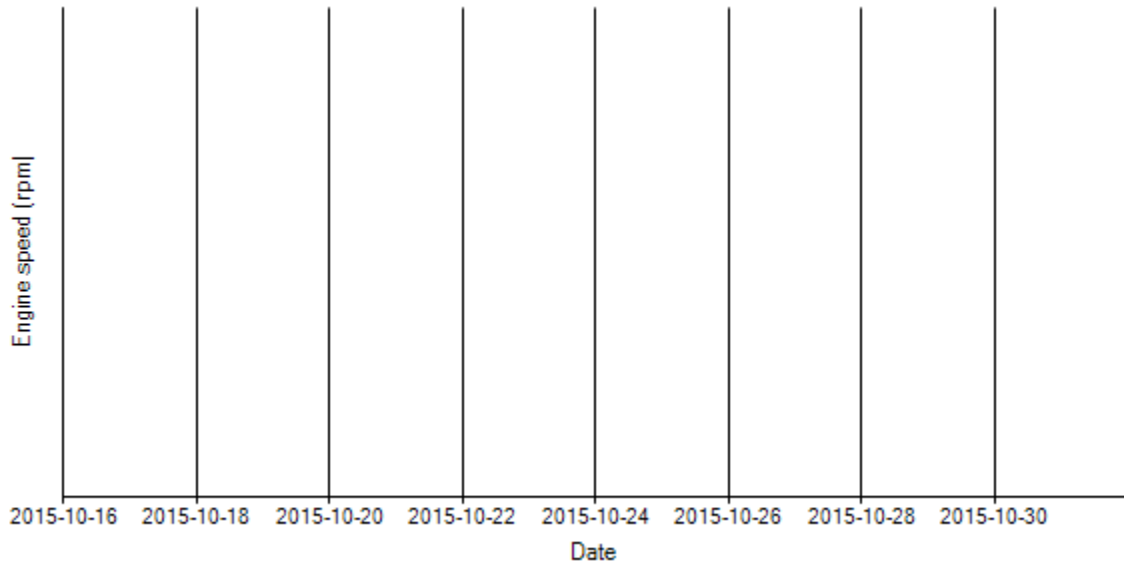


Figure 10- Engine speed distribution over the period

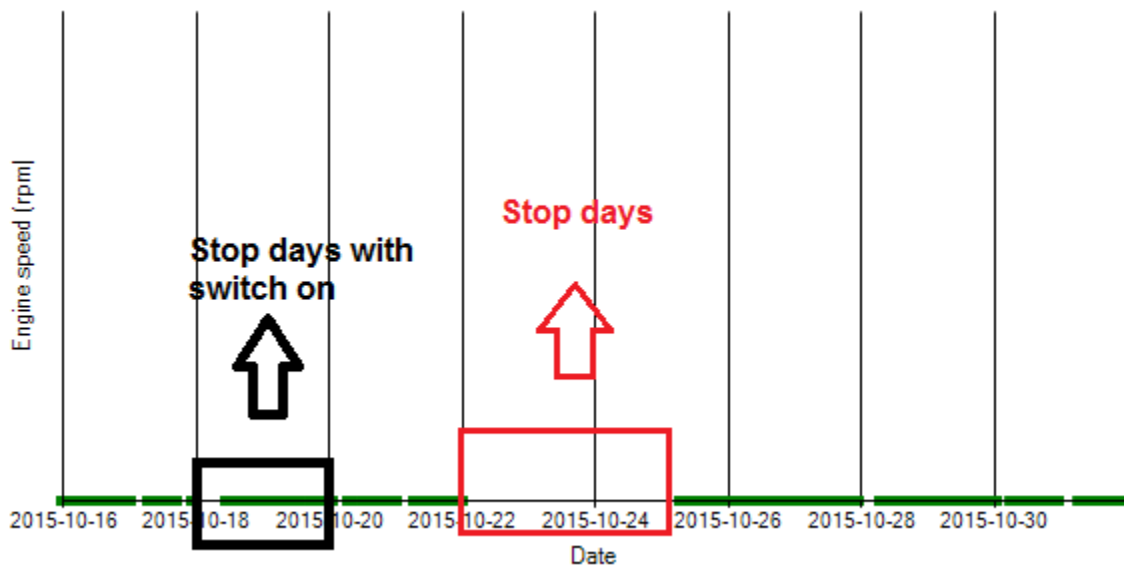


Figure 11- Engine speed diagram for calculating CPK's working days



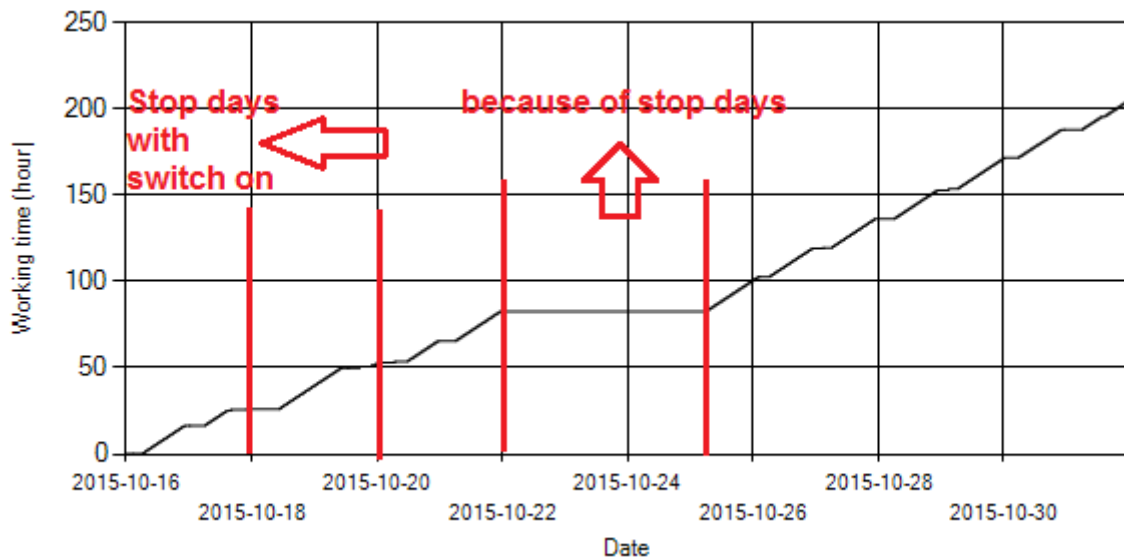


Figure 12- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 12. The lines parallel with Date axis show days without data logger data. Considering figures 4 and 6 beside bus company report, Oct 18<sup>th</sup> and 19<sup>th</sup> were stop days with switch on (RPM=0). But due to data logger problem, it can't be distinguished from working days.

### Pressure-Engine Speed diagrams

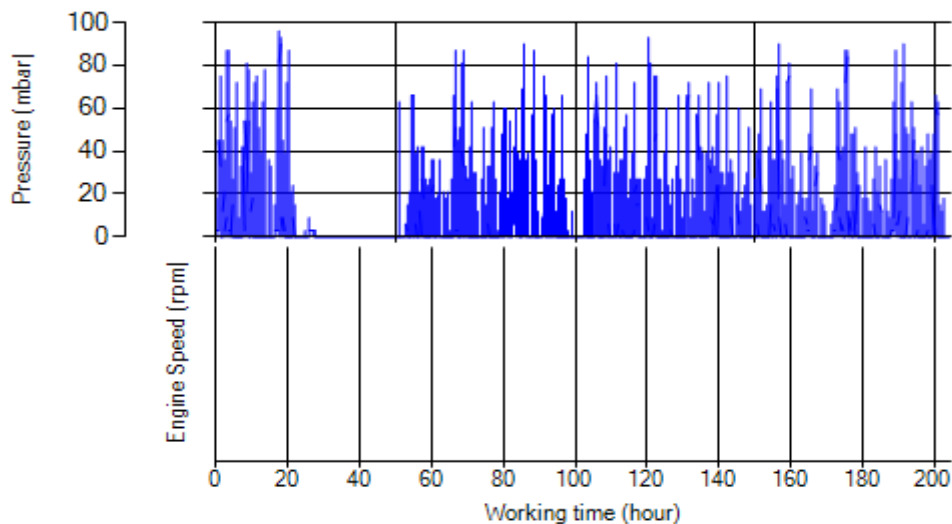


Figure 13- P, N distribution vs. working hours

## Temperature-Engine Speed diagrams

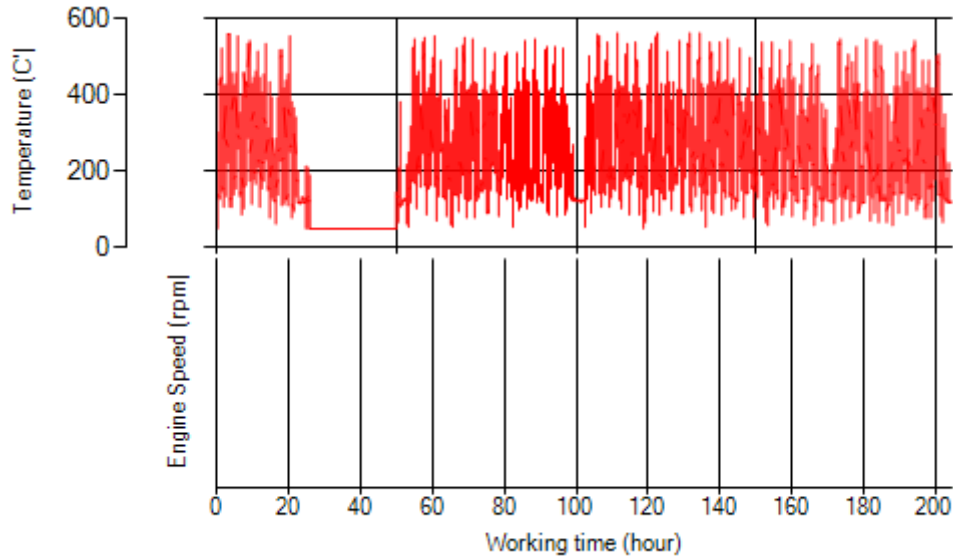


Figure 14- T, N distribution vs. working hours

## Filter Operation Analysis

**Notice: System was working without DPF during this period.**