

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

## 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            | 01/Dec/2015 – 15/Dec/2015 (fifteen days)          |
| K value – DPF upstream   | 1.70 [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 installed on Nov 17<sup>th</sup>.</p> <p>The third cleaning was unavoidable after only 6 days working and was done on 29<sup>th</sup> Nov. System only worked for two days and DPF was replaced by muffler on Nov 30<sup>th</sup>.</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)            | 45899 km            |
| Bus mileage over the period                         | 2134 km             |
| Working days over the period                        | 8 days              |
| Stop days   | 7 days              |
| Data logger working days                            | 7 days              |
| Working hours over the period                       | 145 hours 7 minutes |
| Average working hours per day (including stop days) | 9 hours 40 minutes  |
| Bus average speed                                   | 14.71 km/hr         |
| idle speed time to all working time ration          | 57.38 %             |
| Total Bus fuel consumption over the period          | 1280 lit            |
| Fuel consumption per hour                           | 8.83 lit/hr         |
| Average fuel consumption                            | 0.60 lit/km         |
| Total Bus additive consumption over the period      | - lit               |
| Average additive consumption                        | - cc/km             |
| Additive consumption to fuel ration                 | - cc/1000lit        |

### Temperature, Pressure and Engine Speed Overview

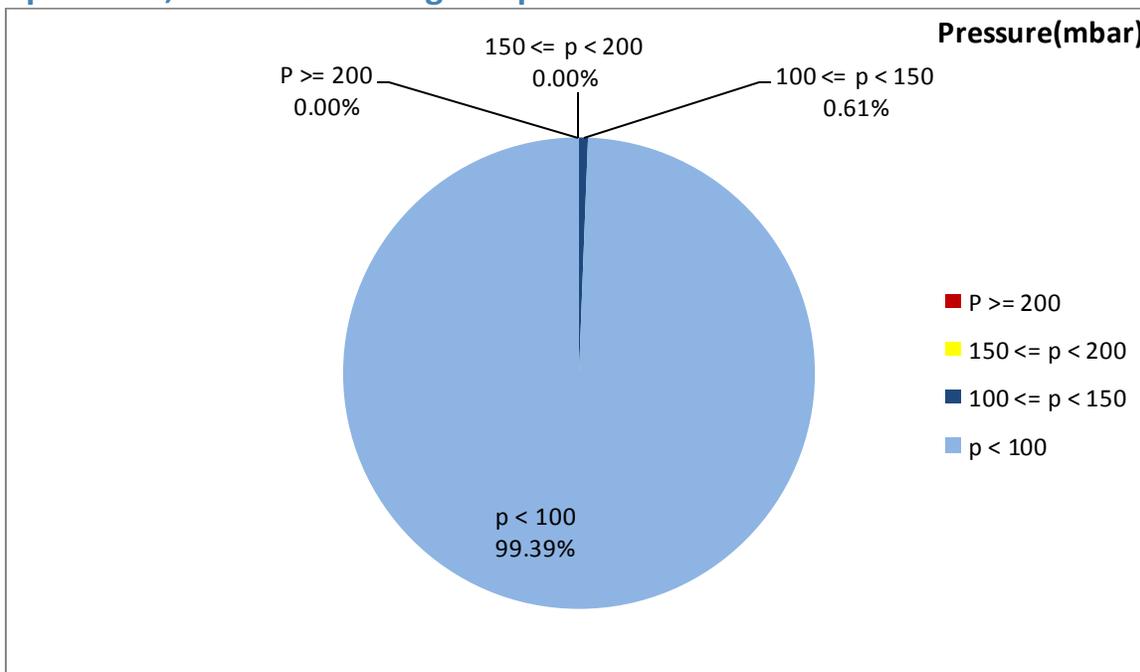


Figure 1- Pressure distribution over the working hours

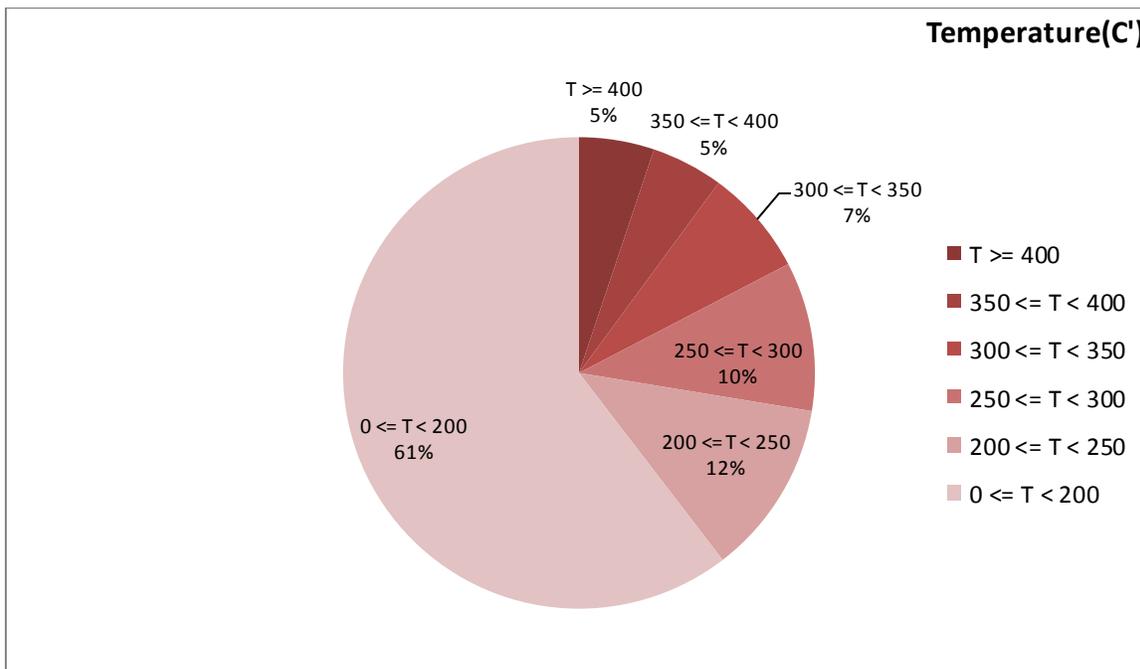


Figure 2-Temperature distribution over the working hours

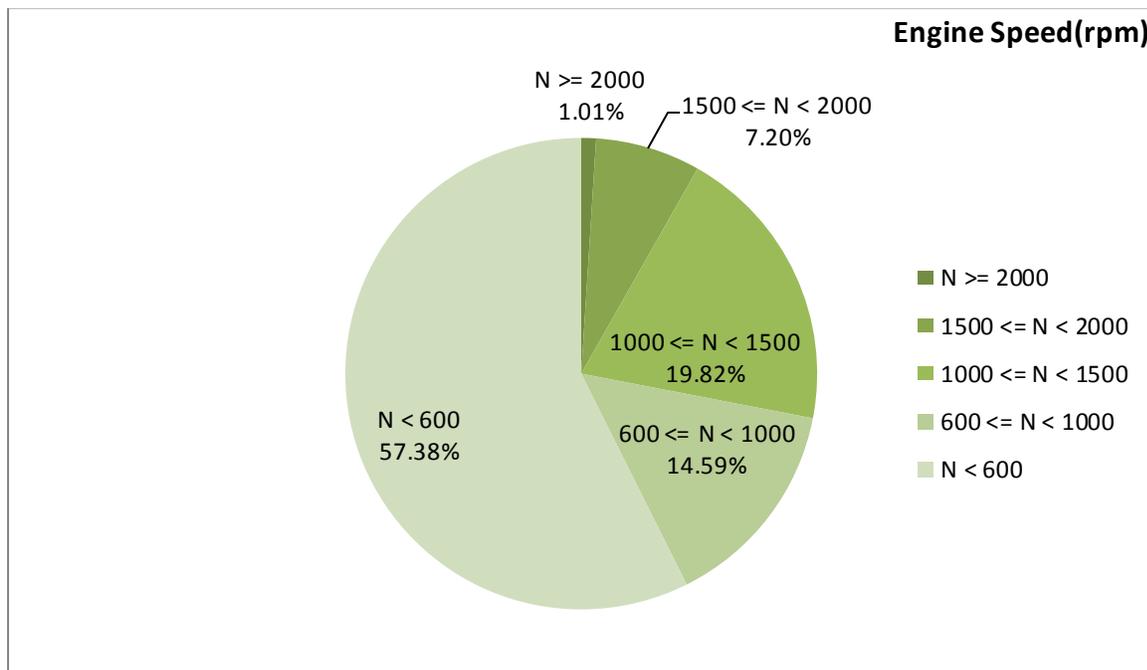


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

| Mean temperature (C) | Mean pressure(mbar) | Mean engine speed(rpm) |
|----------------------|---------------------|------------------------|
| 202.03               | 7.14                | 811                    |

Table 5- Mean values without idling

| Mean temperature (C) | Mean pressure(mbar) | Mean engine speed(rpm) |
|----------------------|---------------------|------------------------|
| 270.07               | 13.84               | 1168                   |

Table 6- Max-min values

| Max-min temperature(C) | Max-min pressure(mbar) | Max-min engine speed(rpm) |
|------------------------|------------------------|---------------------------|
| 522-50                 | 159-0                  | 2224-288                  |

## Detailed Pressure Analysis

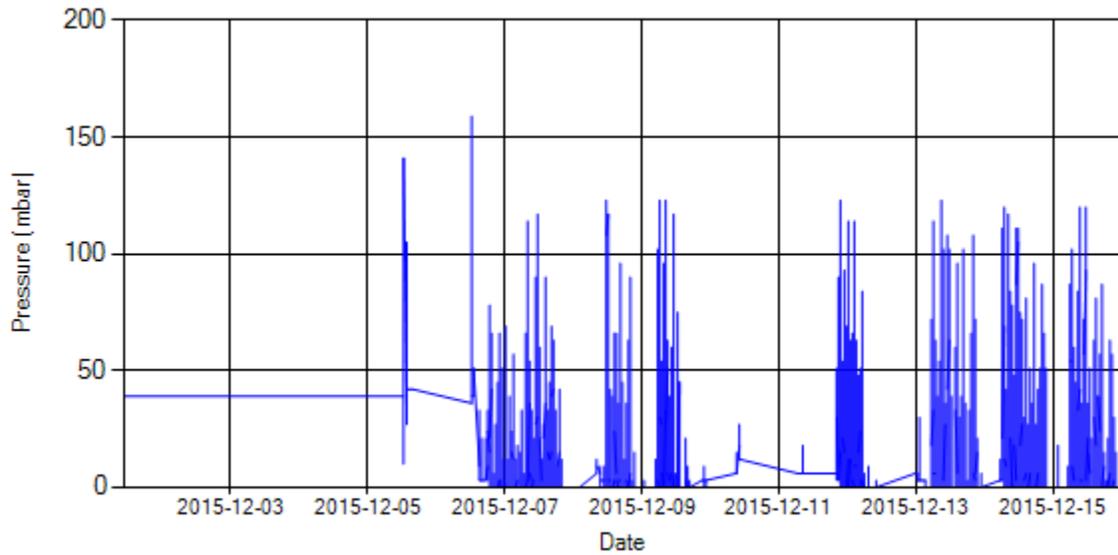


Figure 4- Pressure distribution over the period

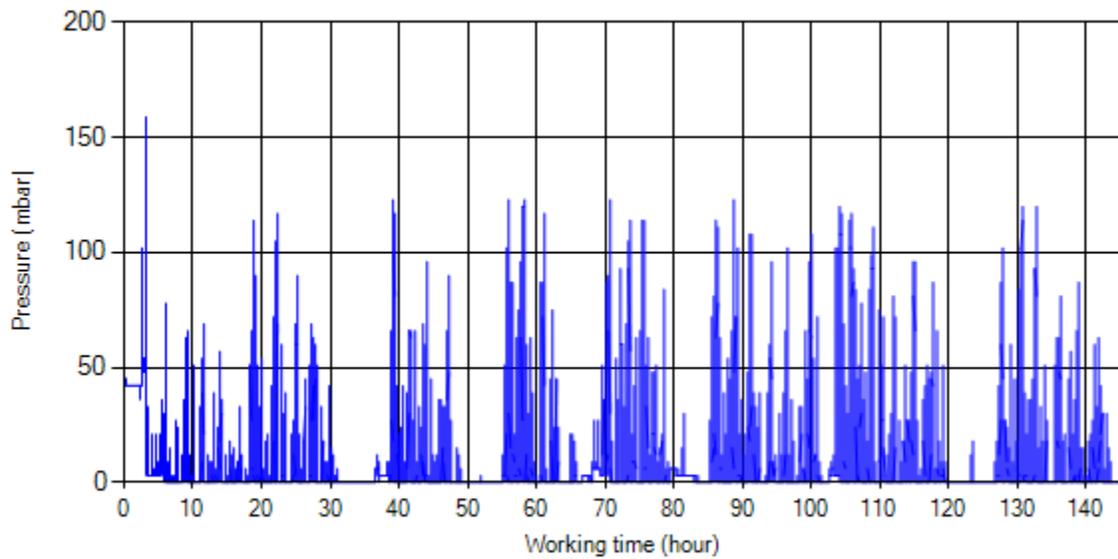


Figure 5- Pressure vs. working hours

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

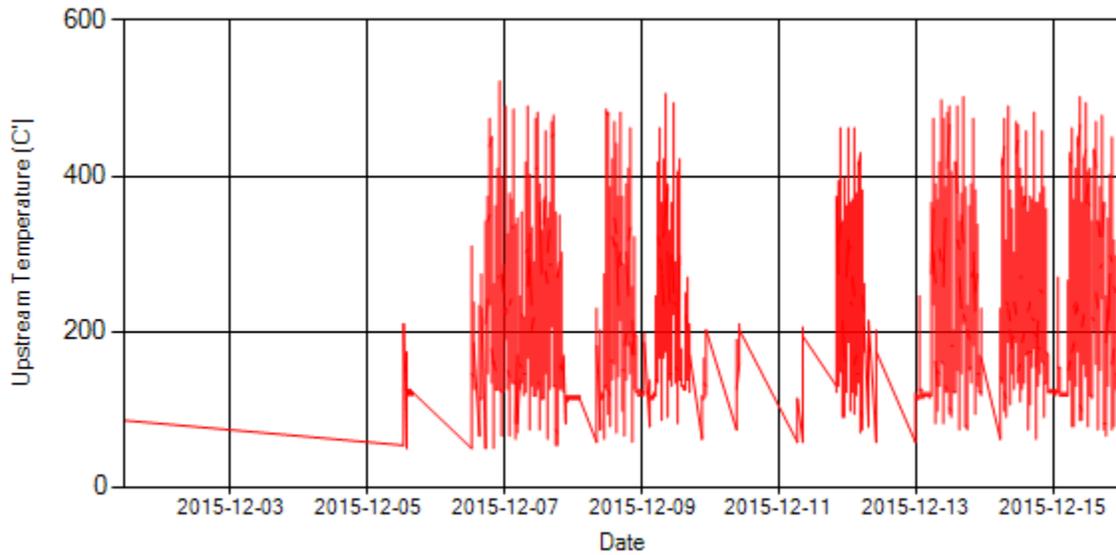


Figure 6- Temperature distribution over the period

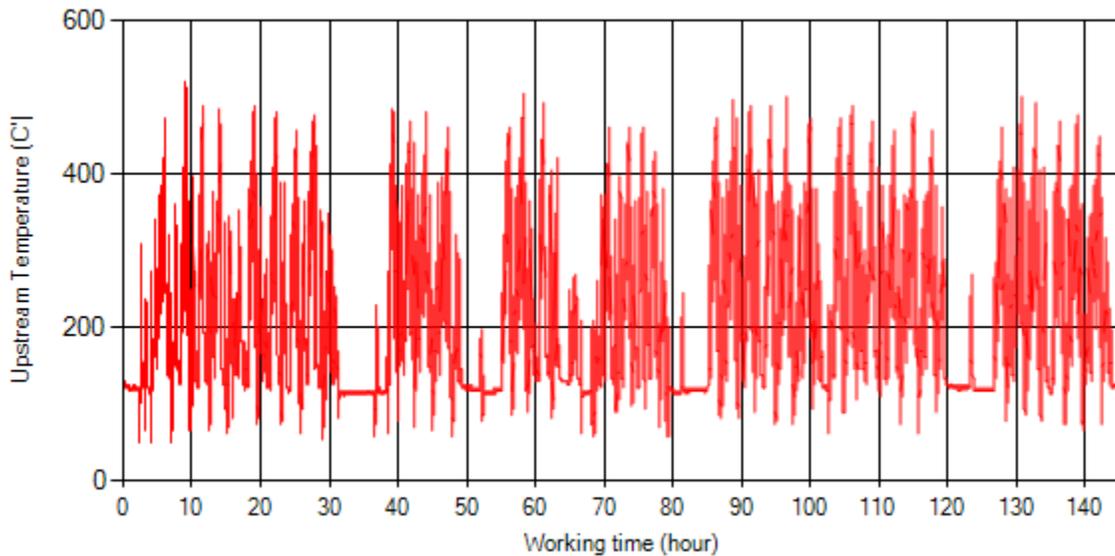


Figure 7- Temperature vs. working hours

## Engine Speed Diagrams

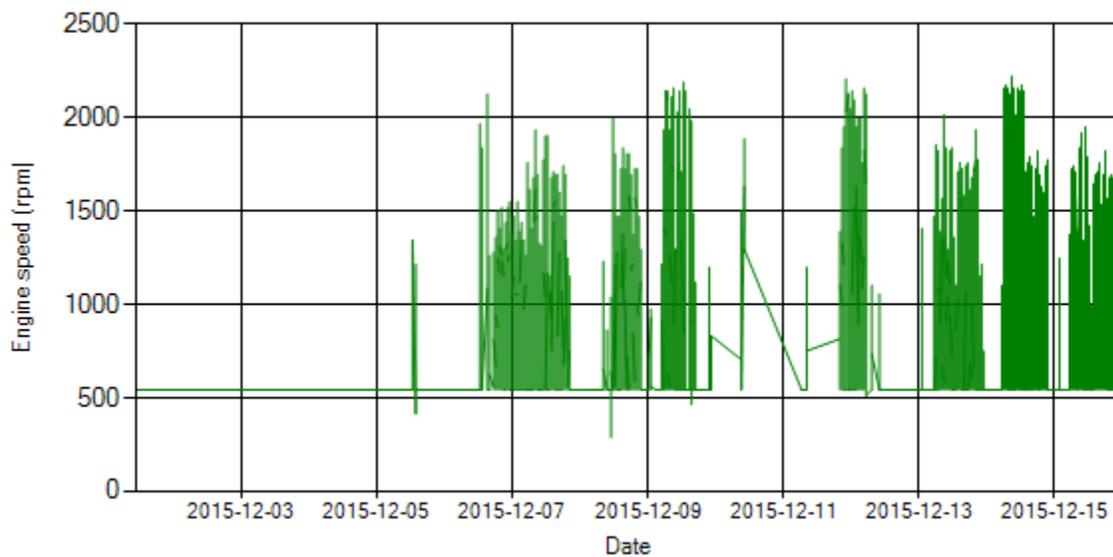


Figure 8- Engine speed distribution over the period

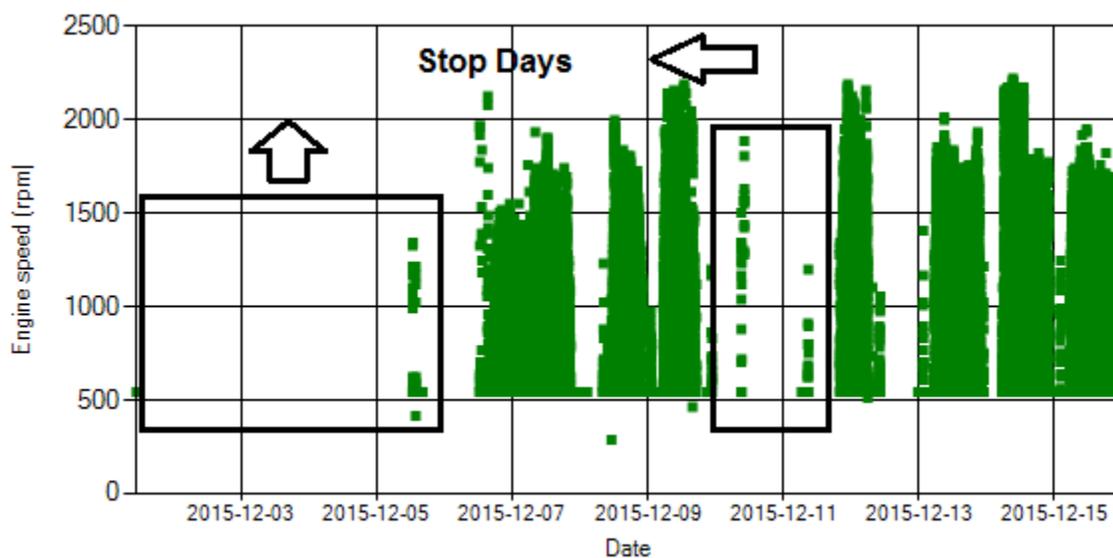


Figure 9- Engine speed diagram for calculating CPK's working days

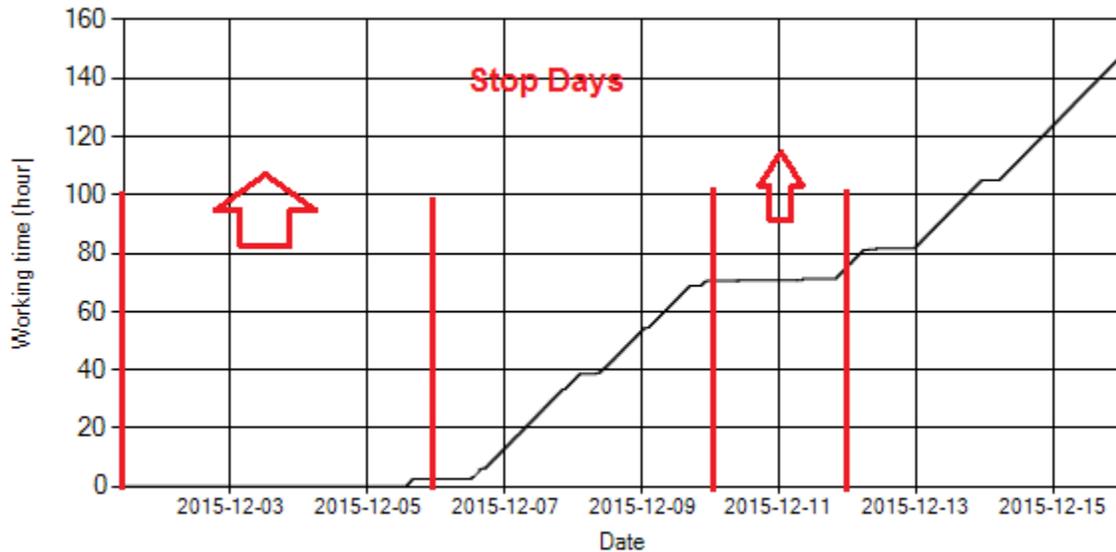


Figure 10- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 12. The lines parallel with Date axis show days without data logger data.

### Pressure-Engine Speed diagrams

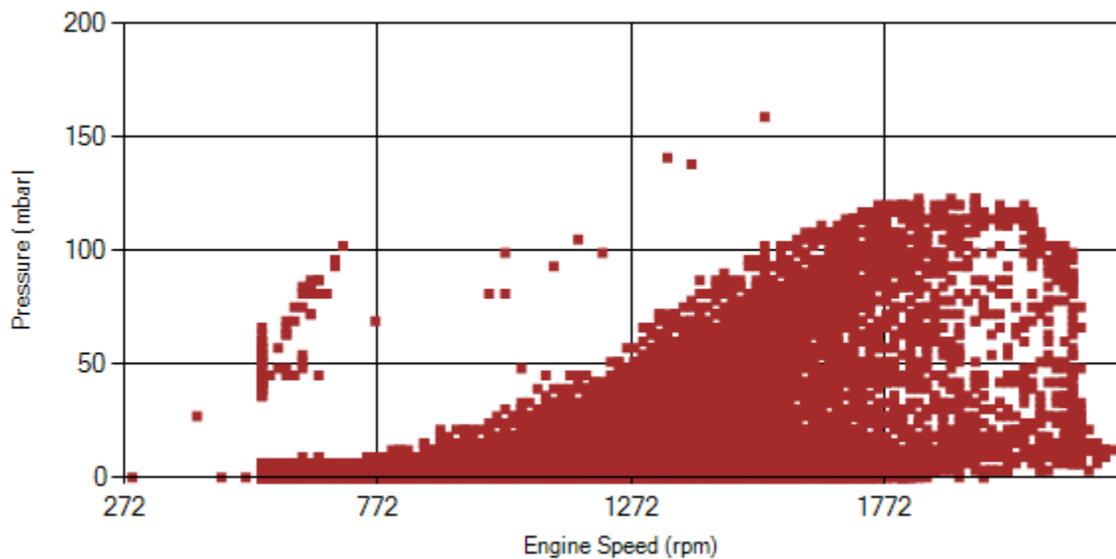


Figure 11- Pressure against engine speed

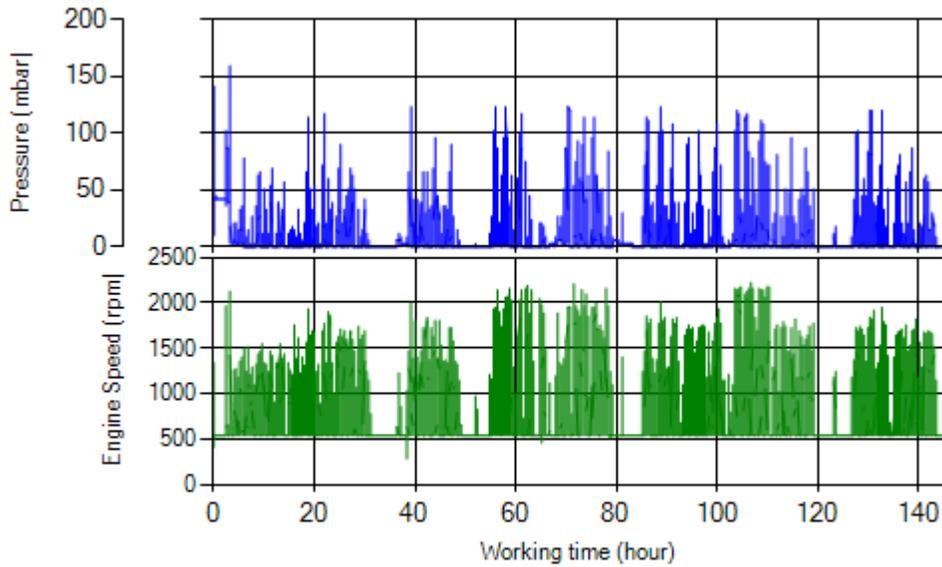


Figure 12- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

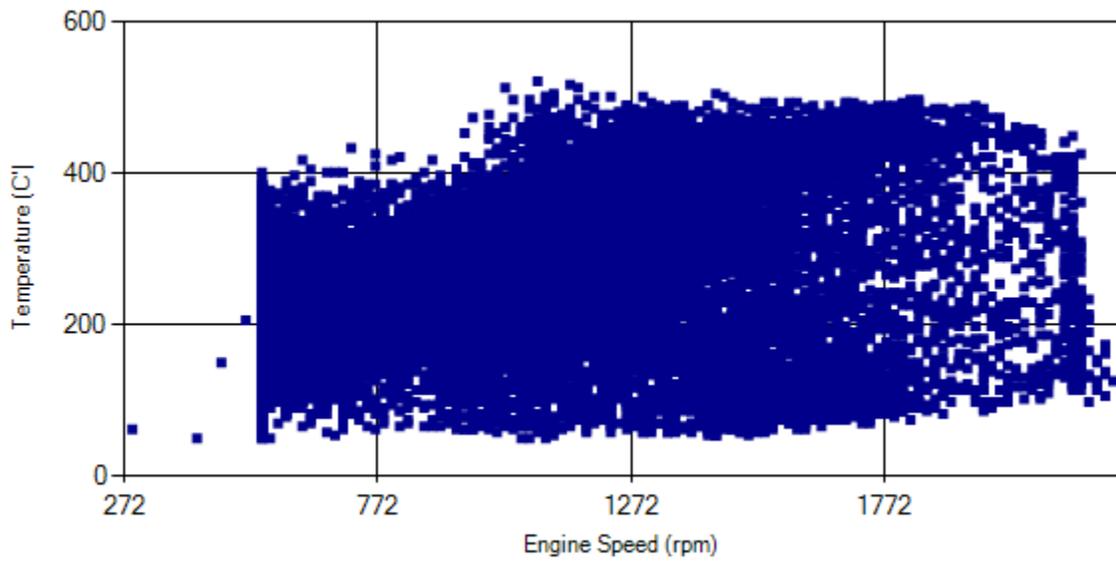
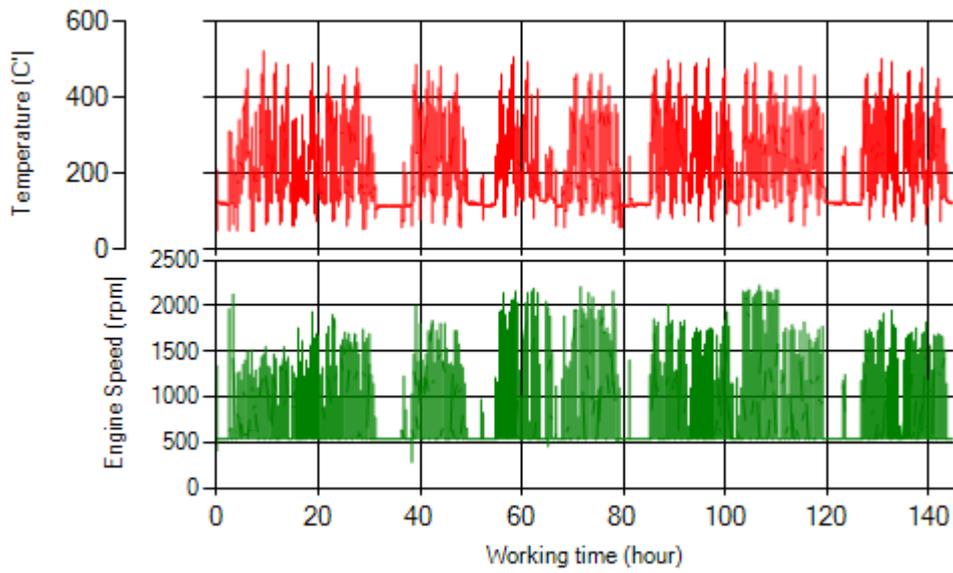


Figure 13- Temperature against engine speed



*Figure 14- T, N distribution vs. working hours*

## Filter Operation Analysis

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