Overall Information

Table1- Overall Information

Vehicle plate number	85182
CPK data logger number	LN: 001502, DN: 1999
Bus line	Number 10 (south to north Bus line)
Bus Terminals	Azadi square - Daneshgah square
Total path distance	10.7 km
DPF producer company	Tehag_01 (Catalyzed DPF)
Installation date	24/Sep/2015
Report period	01/Nov/2015 – 15/Nov/2015 (fifteen days)
K value - DPF upstream	1.70 [1/m]
K value – DPF downstream	0.00 [1/m]

Table 2- DPF Maintenance History

Filter maintenance date	Filter have been working from installation date without any cleaning.
Dosing status	This system doesn't use additive

Table 3- Fuel and Additive Consumption Information

Bus mileage (from DPF installation date)	5132 km
Bus mileage over the period	1361 km
Working days over the period	11 days
Stop days	4 days
Data logger working days	11 days
Working hours over the period	134 hours 28 minutes
Average working hours per day (including stop days)	12 hours 13 minutes
Bus average speed	10.12 km/hr
idle speed time to all working time ration	60.06 %
Total Bus fuel consumption over the period	870 lit
Fuel consumption per hour	6.47 lit/hr
Average fuel consumption	0.64 lit/km
Total Bus additive consumption over the period	- lit
Average additive consumption	- cc/km
Additive consumption to fuel ration	- cc/1000lit

Notice: This system doesn't use additive (CDPF).

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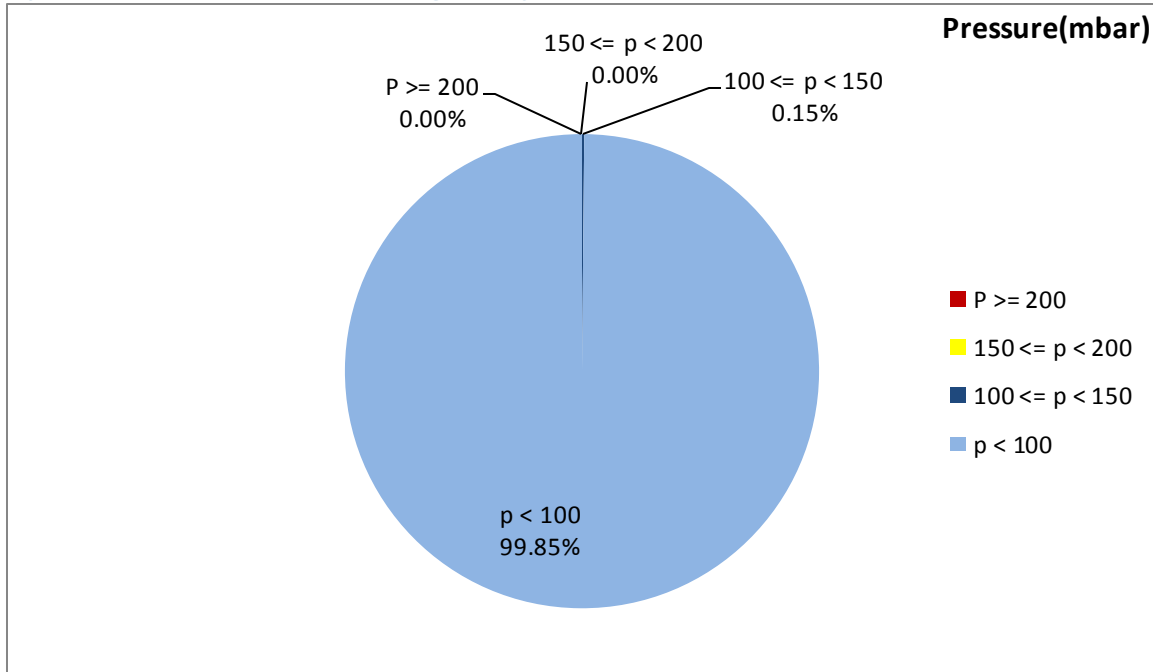## Temperature, Pressure and Engine Speed Overview

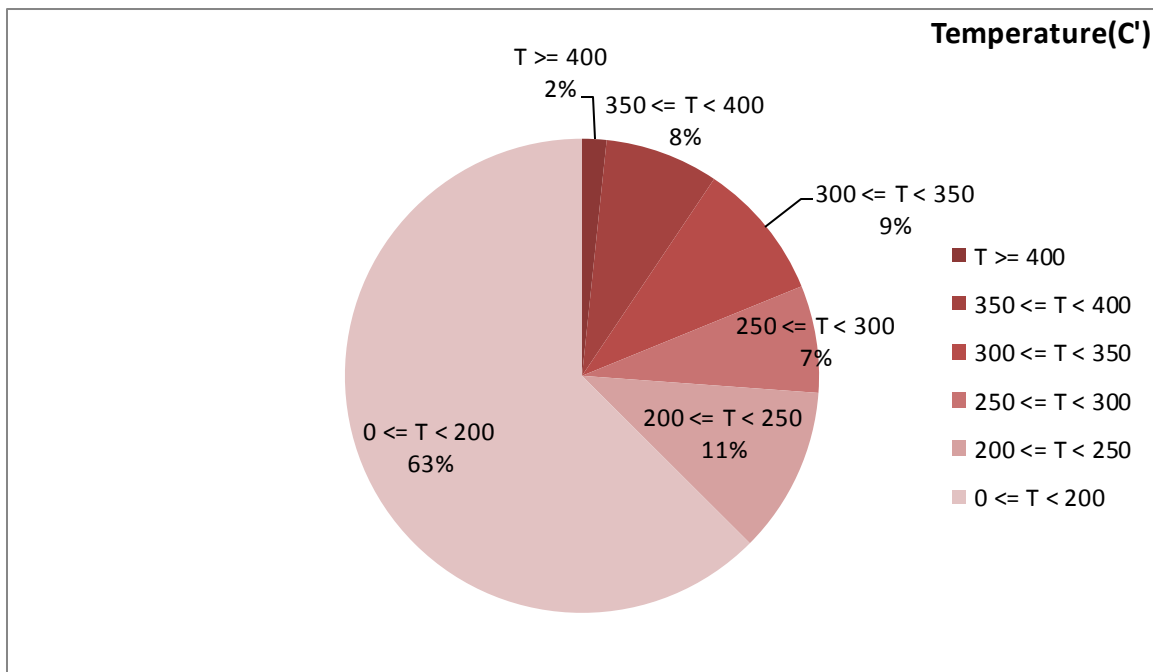*Figure 1- Pressure distribution over the working hours*

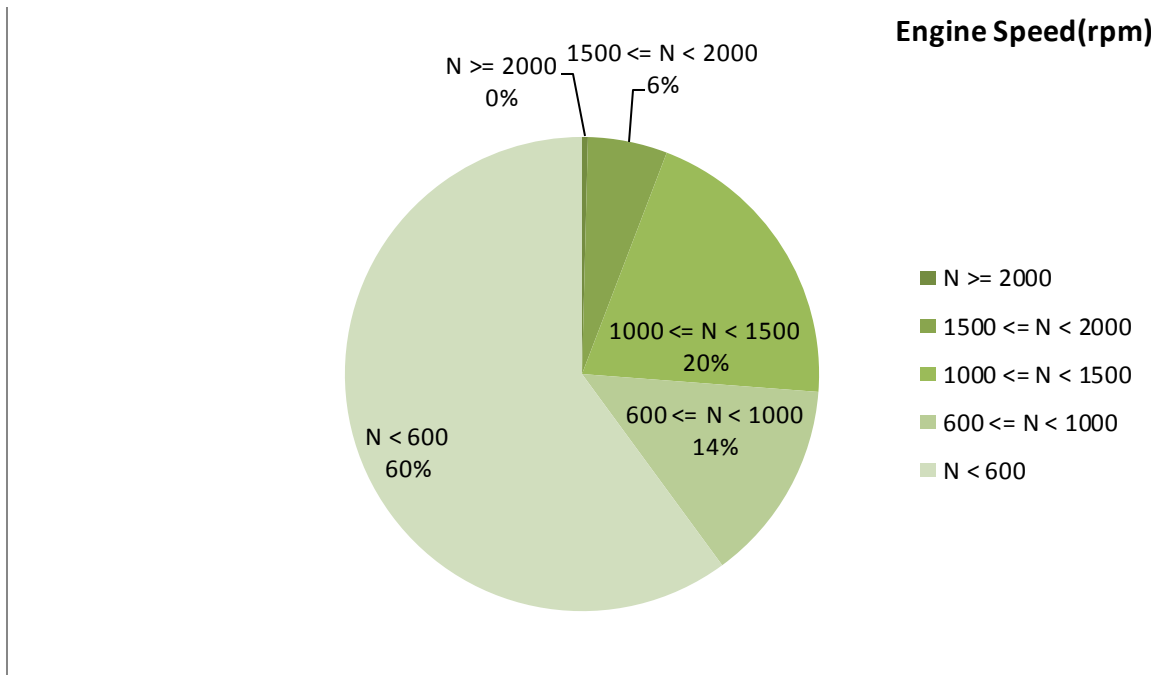*Figure 2-Temperature distribution over the working hours*

Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
205.9	7.76	790

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
250.97	18.47	1147

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
446-50	117-0	2256-288

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Detailed Pressure Analysis
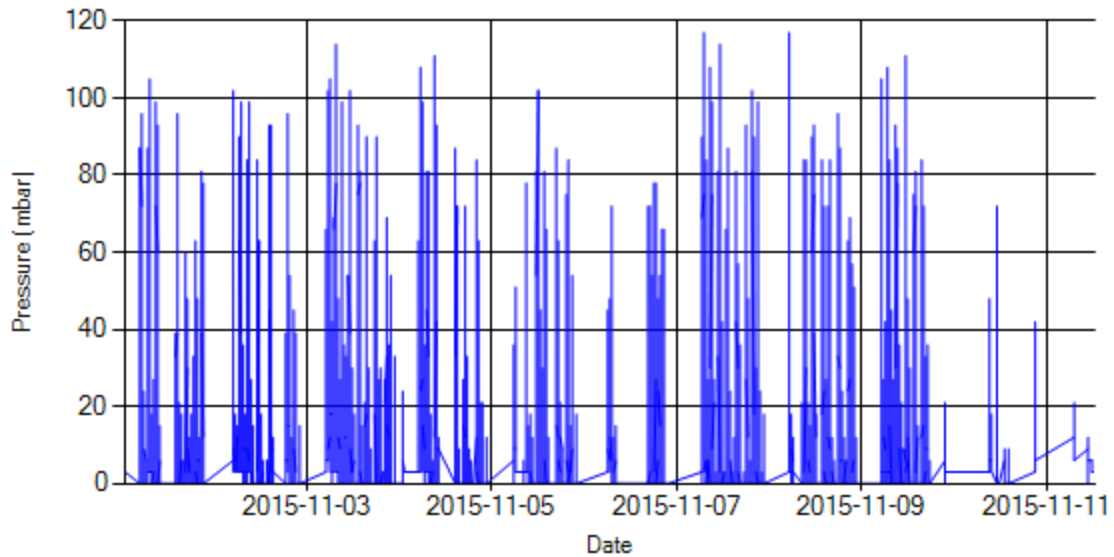
Figure 4- Pressure distribution over the period
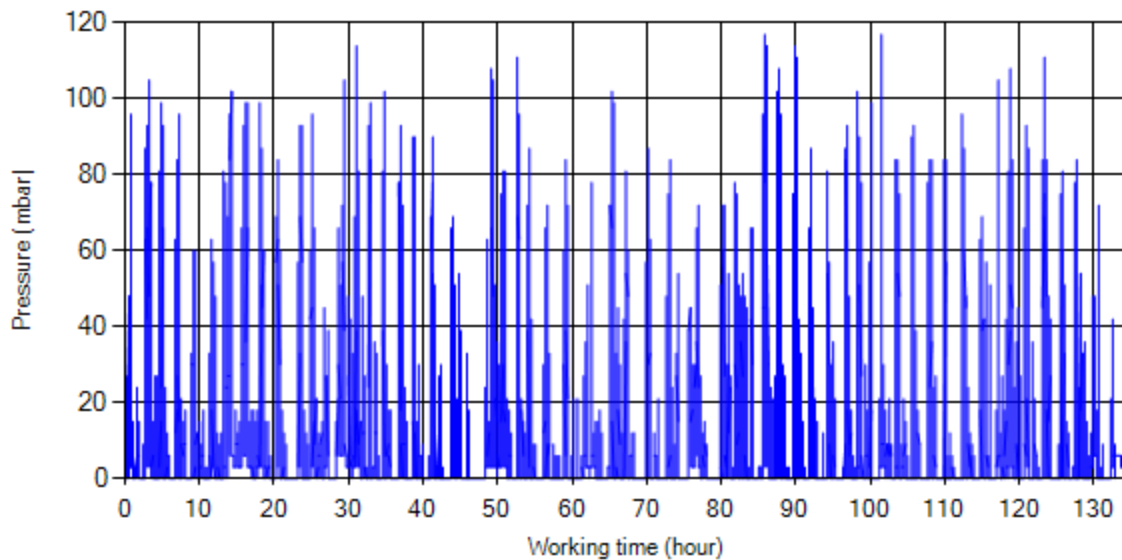
Figure 5- Pressure vs. working hours

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.
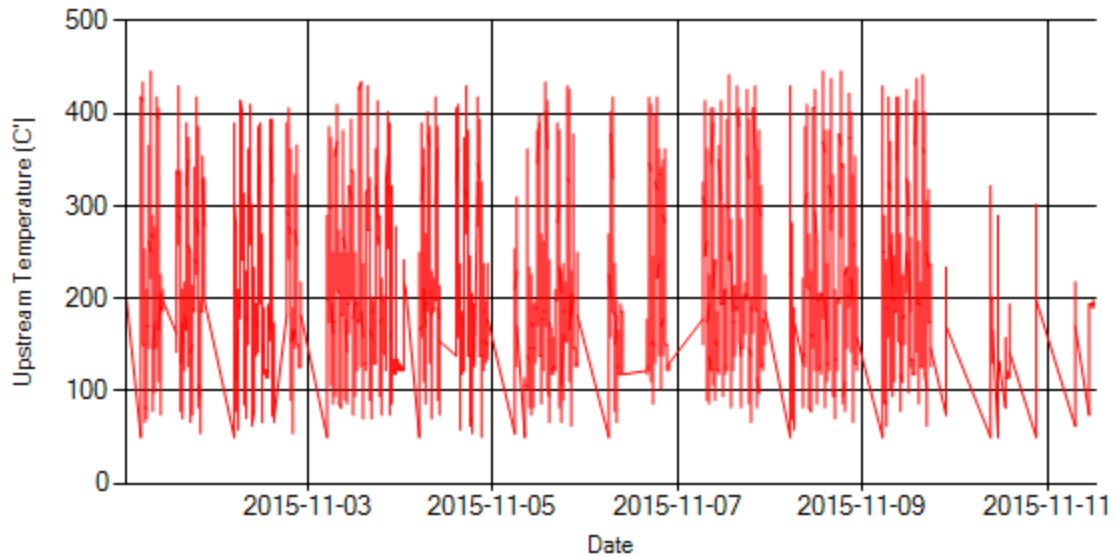
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Detailed Temperature Analysis
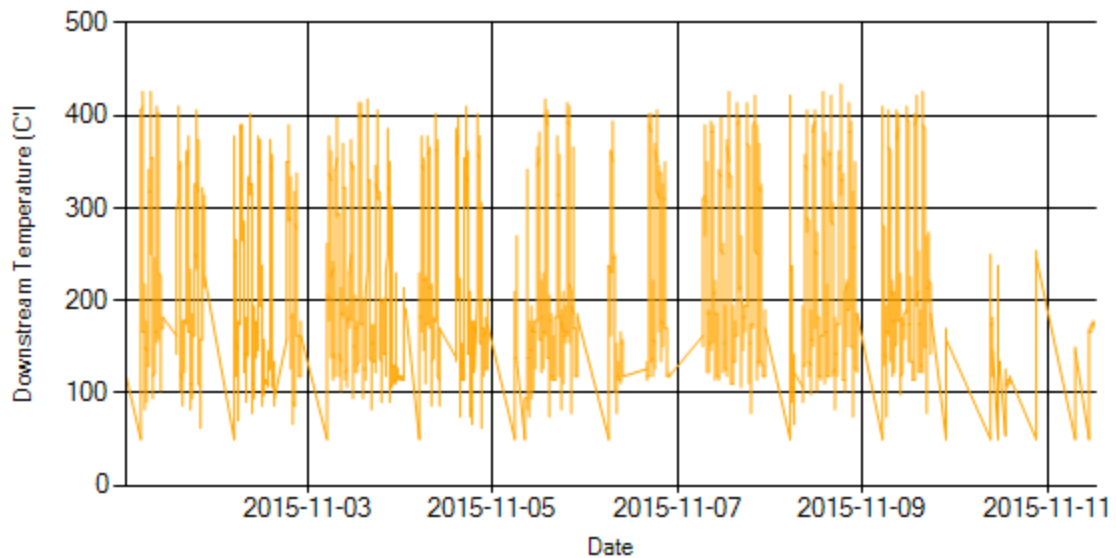

Figure 6- Temperature distribution over the period
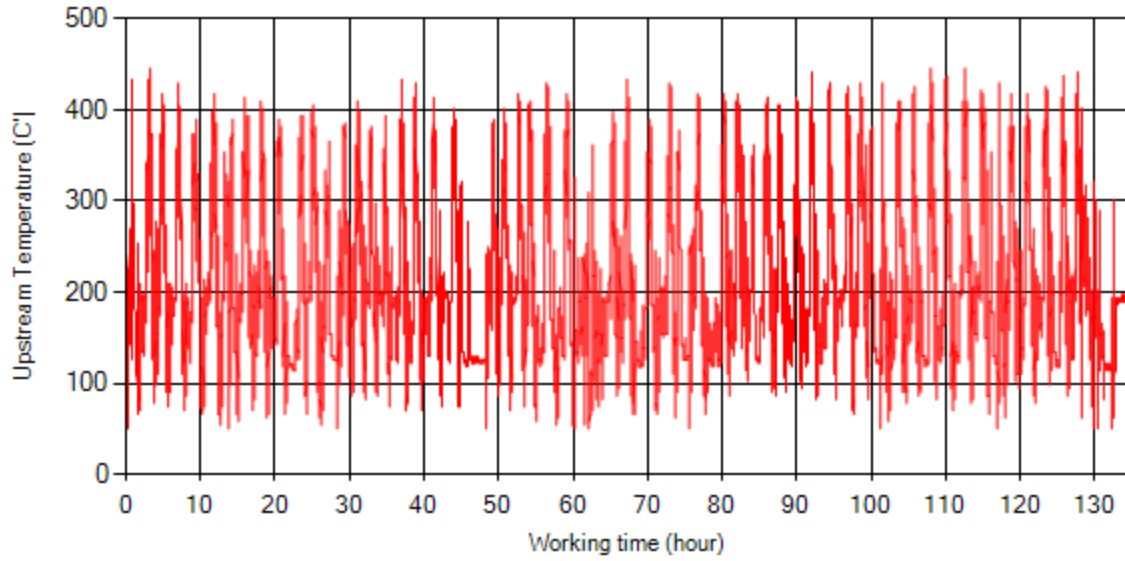

Figure 7- Temperature distribution over the period
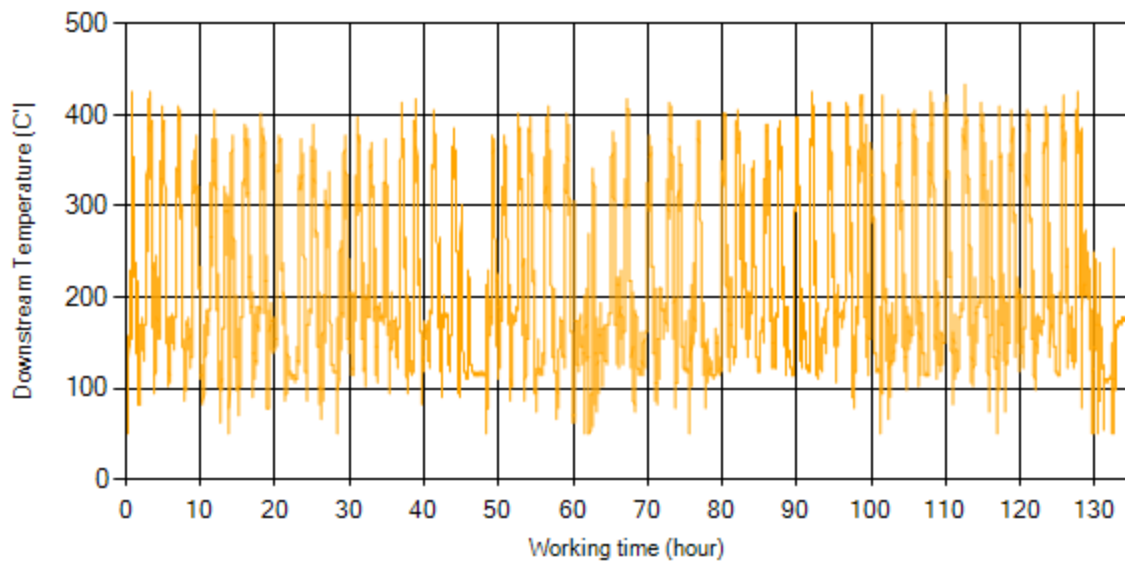
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Figure 8- Temperature vs. working hours

Figure 9- Temperature vs. working hours
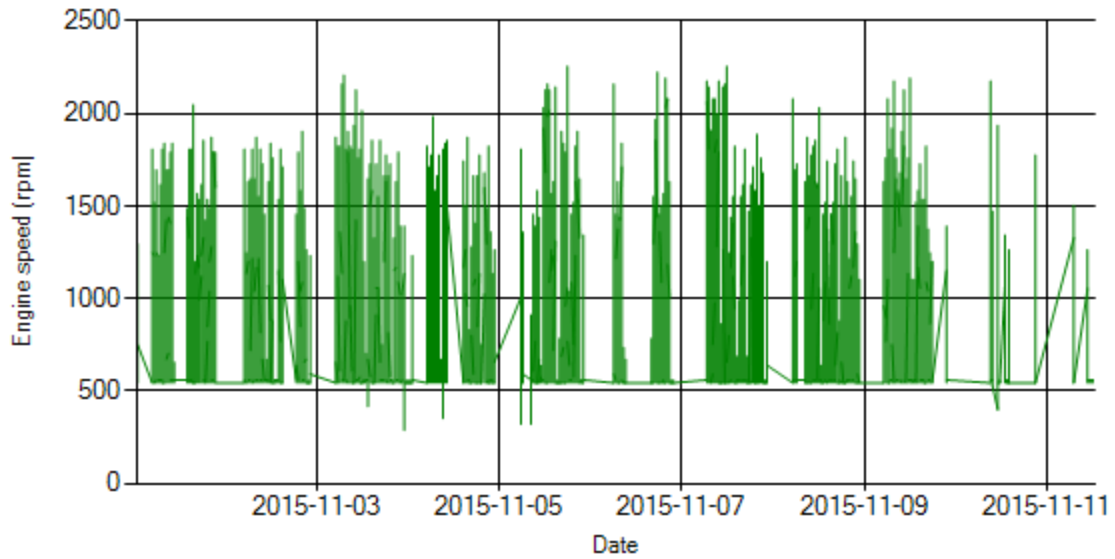
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Engine Speed Diagrams

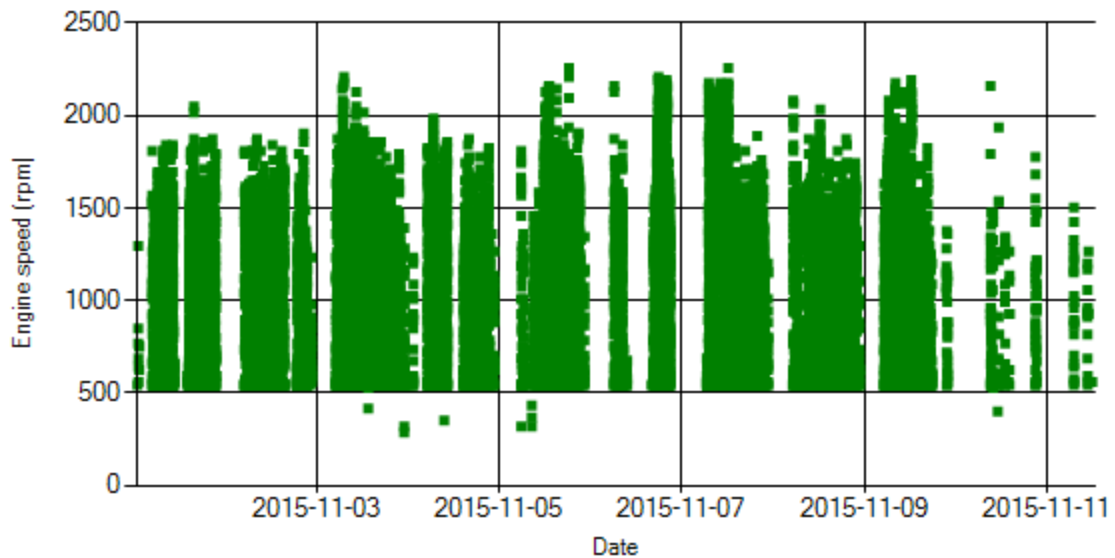*Figure 10- Engine speed distribution over the period*

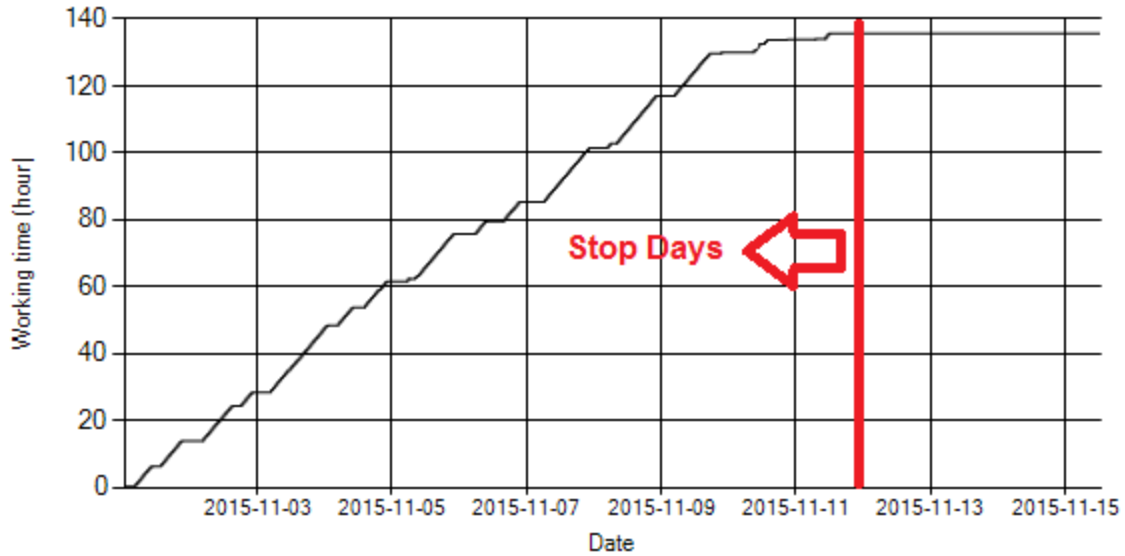*Figure 11- Engine speed diagram for calculating CPK's working days*

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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 4 days during this period.
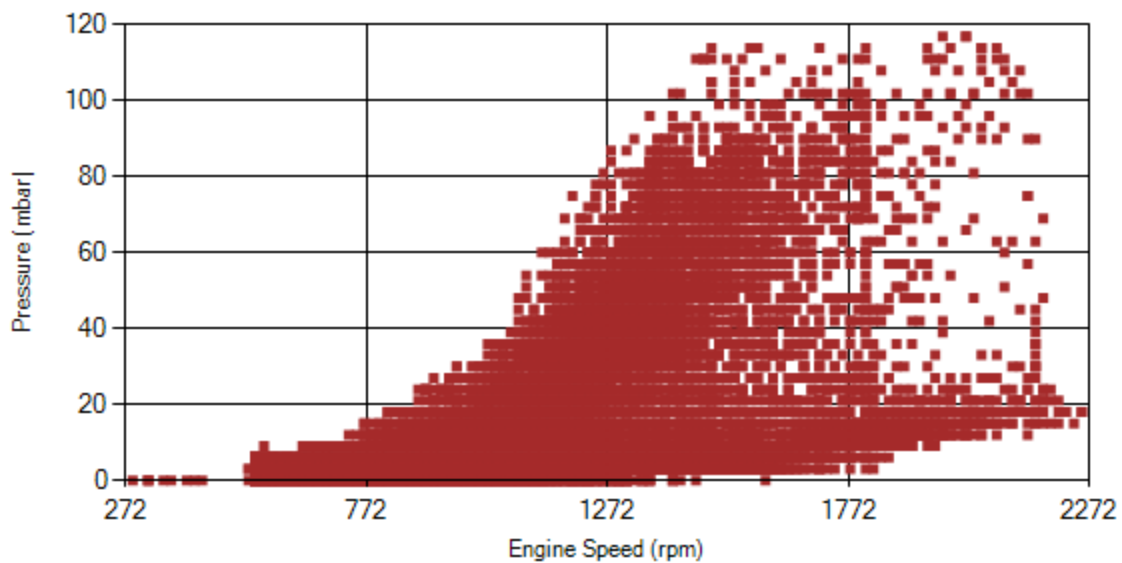
Pressure-Engine Speed diagrams

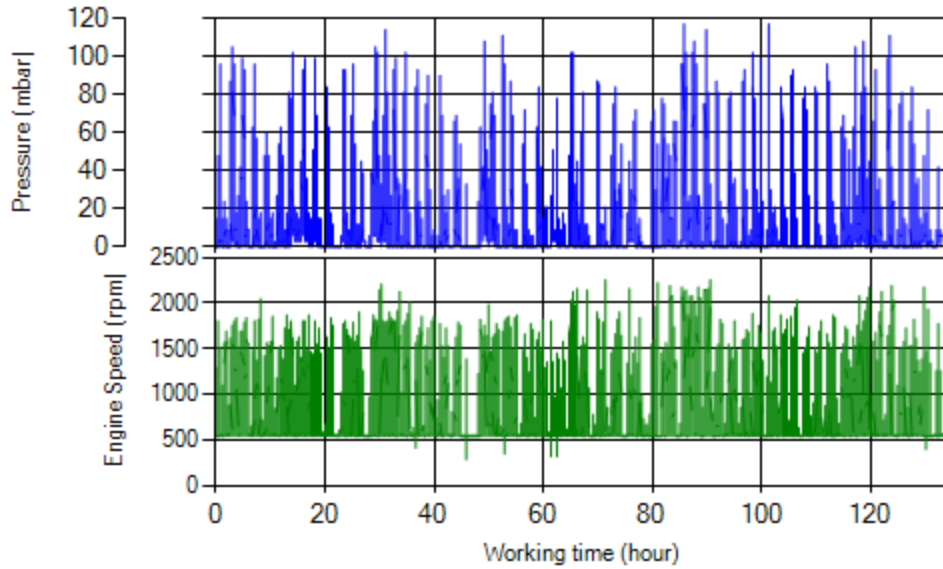*Figure 13- Pressure against engine speed*

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Figure 14- P, N distribution vs. working hours

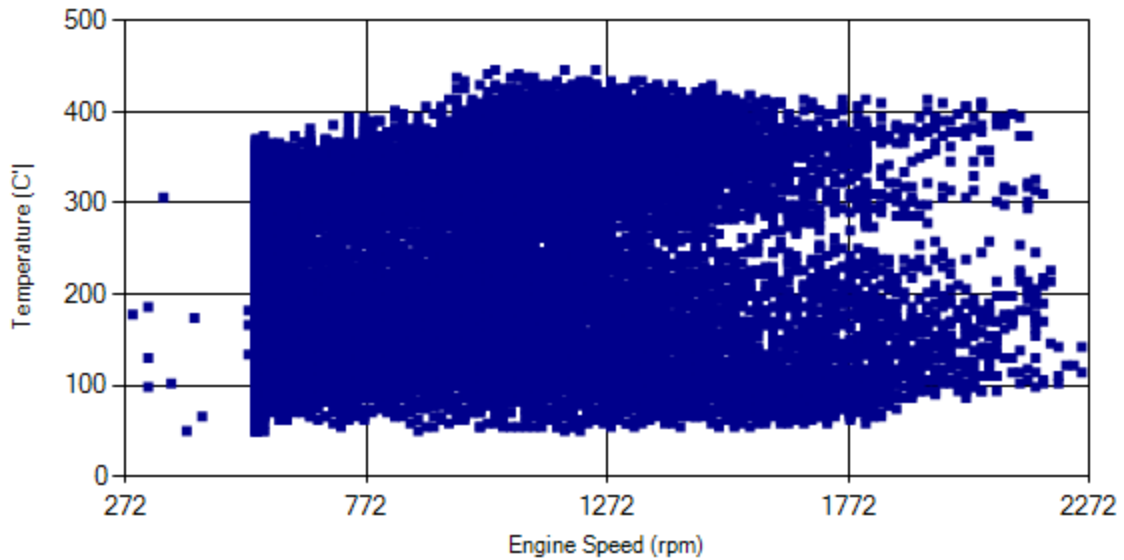## Temperature-Engine Speed diagrams

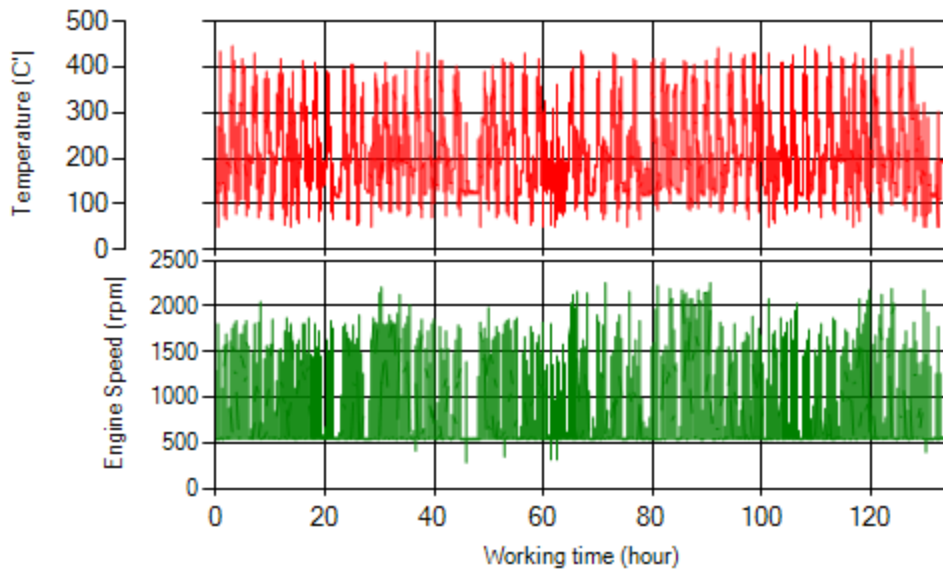*Figure 15- Temperature against engine speed*

Figure 16- T, N distribution vs. working hours

Filter Operation Analysis

- As depicted in figure 1, only 0.15% of working time pressure was above 100 mbar during this period.
- Figure 2, 17 display flow temperature distribution for DPF's upstream. It can be obviously observed that 10% of total working-time temperature is above 350 ℃ and 25.6% above 250℃. Considering DPF company recommended operable situation (30% above 250℃), temperature profile distribution was relatively suitable for the DPF excellent operation.
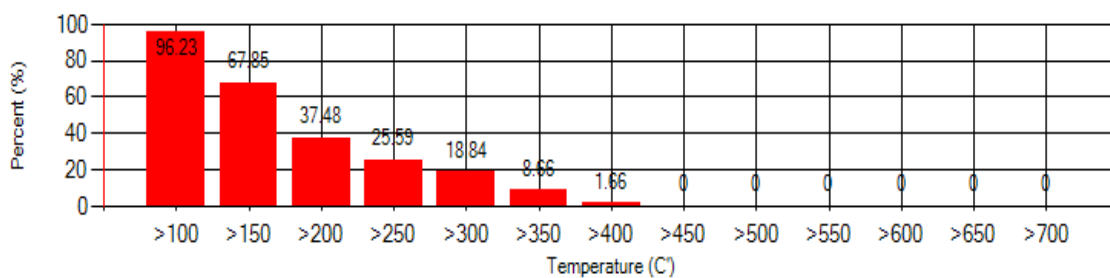

Figure 17. Cumulative diagram of exhaust gas temperature

Filter operation status	Excellent ■	Good ☐
	Maintenance required ☐	Failed☐

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