Report on Ambient Air Quality and Ambient Noise Monitoring during Diwali, 2021

To study the impact of bursting of crackers and other related activities, the Himachal Pradesh State Pollution Control Board has conducted ambient air quality monitoring on the occasion of Diwali festival 2021 from 28.10.2021 to 03.11.2021 (Pre Diwali monitoring), on 04.11.2021 (Diwali Day monitoring) and 05.11.2021 to 11.11.2021 (Post Diwali monitoring). Ambient air quality monitoring at Shimla, Parwanoo, Dharamshala, Damtal (Jassur), Sunder Nagar, Paonta Sahib, Kala Amb, was carried out for parameters i.e. Respirable Particulate Matter ($PM_{10.}$), Respirable Particulate Matter ($PM_{2.5.}$), Sulphur Dioxide (SO_2), Oxides of Nitrogen (NOx), Ozone (O_3) and Ammonia (NH_3) for 24 hour a day. Ambient air quality monitoring at Una, Baddi & Nalagarh was carried out for parameters i.e. Respirable Particulate Matter ($PM_{10.}$), Respirable Particulate Matter ($PM_{2.5.}$), Sulphur Dioxide (SO_2) & Oxides of Nitrogen (NOx) for 24 hour a day. Ambient air quality monitoring for CO (Carbon Monoxide) was carried out at Shimla, Parwanoo and Dharamshala. Ambient air quality at Manali was carried out for Respirable Particulate Matter ($PM_{10.}$), Respirable Particulate Matter ($PM_{2.5.}$), Sulphur Dioxide (SO_2), Oxides of Nitrogen (NOx) & Ammonia (NH_3) parameters for 24 hour a day. Further, the heavy metal monitoring and analysis was carried out at Shimla for Lead, Nickel, and Arsenic metals in PM_{10}, and Aluminium, Barium and Iron metals in $PM_{2.5}$.The heavy metals monitoring and analysis was also carried out at Parwanoo, Dharamshala, Damtal, Sundernagar, Paonta Sahib and Kala Amb for Lead, Nickel, and Arsenic metals in PM_{10}, and Aluminium and Iron metals in $PM_{2.5}$. Ambient Noise monitoring was carried out at Shimla, Parwanoo, Paonta Shaib, Una, Dharamshala, Baddi, Kullu, Bilaspur, Kinnaur, Rampur and Chamba. The detail of ambient air & noise monitoring data is enclosed at Annexure- I-II & III.

Ambient Air Quality Monitoring report of Himachal Pradesh during Diwali Festival, 2021 are as under:

SHIMLA

The ambient air quality monitoring at Shimla was carried out at one location i.e. Tekka Bench, Shimla. The 24 hour average value of RSPM (PM_{10}) at Tekka Bench was observed 39.9µg/m^3 which is below the standard prescribed limit of 100 µg/m^3 on Diwali day. The concentration of RSPM (PM_{10}) observed at Shimla during Diwali, 2021 was below than the concentration of RSPM (PM_{10}) observed during Diwali last year i.e. 68.3µg/m^3. The maximum concentration of RSPM (PM_{10}) in the ambient air on Diwali day was observed as 53.6µg/m^3 at Tekka Bench, Shimla during 2:00PM-10:00PM. Similarly, 24 hour average value of RSPM ($PM_{2.5}$) at Tekka Bench, Shimla was observed 23.7µg/m^3 respectively which is below than standard prescribed limit of 60µg/m^3 on Diwali day. The concentration of RSPM ($PM_{2.5}$) observed at Shimla during Diwali, 2021 was comparatively lower than the concentration of RSPM ($PM_{2.5}$) observed during Diwali last year i.e. 38µg/m^3. The concentration of SO_2 and NOx was also observed well below the prescribed standards of 80µg/m^3 for 24 hour at both locations. The average concentration of SO_2 and NOx was observed as 2.0µg/m^3 (BDL) & 4.5µg/m^3 (BDL) at Tekka Bench respectively on Diwali day which was well below the prescribed standard limit of 80µg/m^3.

The 8 hour average O_3 concentration at Tekka Bench, Shimla was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali & Post Diwali monitoring. The concentration of NH_3 at Tekka Bench was observed 6.30µg/m^3 during Diwali day which is below the standard prescribed limit of 400µg/m^3. The 8 hour average concentration of CO at Shimla was observed within the standard prescribed limit of 2mg/m^3 during Pre Diwali, Diwali & Post Diwali monitoring.

The concentrations of Lead, Nickel & Arsenic in PM_{10} and Aluminium Barium and Iron in $PM_{2.5}$ at Shimla town were found within the standard prescribed limit during Pre Diwali, Diwali & Post Diwali monitoring.

PARWANOO

The ambient air quality monitoring at Parwanoo was carried out at one locations i.e. Sector-IV Parwanoo. The 24 hour average RSPM (PM_{10}) concentration at Sector-IV Parwanoo on Diwali day was observed 90.2µg/m^3 which is lower than the prescribed standard limit of 100µg/m^3. The value of RSPM (PM_{10}) concentration observed on pre-Diwali & post Diwali are within the prescribed limit, shows the impact of bursting of fire crackers and other activities on the ambient air quality on Diwali festival 2021. The maximum concentration of RSPM (PM_{10}) in the ambient air on Diwali was observed as 138.9µg/m^3 during 10:00PM-06:00AM. The concentration of RSPM(PM_{10}) 90.2µg/m^3 at Sector-IV, Parwanoo was observed comparatively much lower than the concentration of RSPM(PM_{10}) observed during Diwali last year i.e. 113.8µg/m^3. Similarly, 24 hour average RSPM ($PM_{2.5}$) concentration in Parwanoo at Sector-IV was observed 39.8µg/m^3 which is within the standard prescribed limit of 60µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 39.8µg/m^3 at Sector-IV, Parwanoo was observed higher than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 37.7µg/m^3. The average concentration of SO_2 and NOx at Sector-IV, Parwanoo was observed well below the prescribed standards of 80µg/m^3 for 24 hour i.e. 2.0 (BDL) & 13.3µg/m^3 on Diwali day.

The 8 hour average concentration of O_3 at Sector-IV, Parwanoo was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali day & Post Diwali. The value of NH_3 concentration was observed 0.17µg/m^3 on Diwali day are within the prescribed limit of 400µg/m^3. 8 hour average concentration of CO was observed within the standard prescribed limit of 2mg/m^3 during Pre Diwali, Diwali & Post Diwali monitoring.

The concentrations of metals Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ at Parwanoo town were also found within the standard prescribed limit of Lead 1.0µg/m^3, Arsenic 6.0ng/m^3 & Nickel 20.0ng/m^3on Pre Diwali, Diwali & Post Diwali monitoring.

DHARAMSHALA

The ambient air quality monitoring at Dharamshala was carried out at one location i.e. Dari, Dharamshala. The 24 hour average RSPM (PM_{10}) concentration at Dari, Dharamshala was observed below the prescribed standards of 100 µg/m^3 i.e. 77µg/m^3 during Diwali day. The maximum concentration of RSPM (PM_{10}) in the ambient air on Diwali, 2021 was observed as 156µg/m^3 during 2:00PM-10:00PM. The concentration of RSPM (PM_{10}) at Dari, Dharamshala was observed comparatively lower than the concentration of RSPM (PM_{10}) observed during Diwali last year 108µg/m^3. Similarly, 24 hour average RSPM ($PM_{2.5}$) concentration was observed 44µg/m^3 lower than the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM ($PM_{2.5}$) at Dari, Dharamshala was observed comparatively lower than the concentration of RSPM ($PM_{2.5}$) observed during Diwali last year i.e. 64µg/m^3.The average concentration on Diwali day of SO_2 and NOx at Dari, Dharamshala was observed well below the prescribed standards of 80µg/m^3 for 24 hour i.e. 2.0 µg/m^3 (BDL) & 4.5µg/m^3 (BDL) respectively.

The 8 hour average O_3 concentration at Dari, Dharamshala was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali day & Post Diwali. The value of NH_3 concentration was observed 0.79µg/m^3 on Diwali day is within the prescribed limit of 400µg/m^3. 8 hour average concentration of CO at Dari, Dharamshala was observed within the standard prescribed limit of 2mg/m^3 during Pre Diwali, Diwali & Post Diwali monitoring.

The concentrations of metals Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ at Dharamshala town were also found within the standard prescribed limit Lead 1.0µg/m^3, Arsenic 6.0ng/m^3 & Nickel 20.0ng/m^3 on Pre Diwali, Diwali & Post Diwali monitoring.

DAMTAL (JASSUR)

The ambient air quality monitoring at Damtal was carried out at one location i.e. Ram Gopal Mandir, Damtal. The 24 hour average RSPM (PM_{10}) concentration at Damtal, Jassur was observed below the prescribed standards of 100 µg/m^3 i.e. 95µg/m^3 on Diwali day, 2021. The maximum concentration of RSPM (PM_{10}) in the ambient air was observed as 202µg/m^3 on Diwali day during 2:00PM-10:00PM. The concentration of RSPM(PM_{10}) 95µg/m^3 was observed relatively lower than the concentration of RSPM(PM_{10}) observed during Diwali last year 97µg/m^3. Similarly, 24 hour average RSPM ($PM_{2.5}$) concentration at Damtal, Jassur was observed 42µg/m^3 lower than the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 42µg/m^3 was observed relatively lower than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 53µg/m^3. The average concentration of SO_2 and NOx was observed as 2.0µg/m^3 (BDL) and 4.5µg/m^3 (BDL) respectively on Diwali day.

The 8 hour average O_3 concentration at Damtal was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali & Post Diwali monitoring. The value of NH_3 concentration was observed 0.56µg/m^3 on Diwali day is within the prescribed limit of 400µg/m^3.

The concentrations of metals Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ at Damtal town were also found within the standard prescribed limit of Lead 1.0µg/m^3, Arsenic 6.0ng/m^3 & Nickel 20.0ng/m^3on Pre Diwali, Diwali & Post Diwali monitoring.

SUNDER NAGAR

The ambient air quality monitoring at Sunder Nagar was carried out at one location i.e. Regional Office, Sunder Nagar. The 24 hour average RSPM(PM_{10}) concentration at Sunder Nagar was observed within the prescribed standards of 100 µg/m^3 i.e. 62.3µg/m^3 on Diwali day. The concentration of RSPM (PM_{10}) observed during Diwali, 2021 was comparatively much lower than the concentration of RSPM (PM_{10}) observed during Diwali last year 100µg/m^3. The maximum concentration of RSPM (PM_{10}) in the ambient air on Diwali was observed as 70µg/m^3 during 10:00PM-06:00AM. Similarly, 24 hour average RSPM ($PM_{2.5}$) concentration was also observed 27µg/m^3 lower than the standard prescribed limit of 60µg/m^3 on Diwali day. The concentration of RSPM ($PM_{2.5}$) 27µg/m^3 was observed relatively lower than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 67µg/m^3.The concentration of SO_2 and NOx was observed well below the prescribed standards of 80µg/m^3 for 24 hour. The average concentration of SO_2 and NOx was observed as 2.0µg/m^3 (BDL) and 4.5µg/m^3 (BDL) which is below the prescribed standard of 80µg/m^3 for 24 hour.

The 8 hour average O_3 concentration at Sunder Nagar was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali day & Post Diwali. The value of NH_3 concentration was observed 4.61µg/m^3 on Diwali day is within the prescribed limit of 400µg/m^3.

The concentrations of metals Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ at Sunder Nagar town were also found within the standard prescribed limit of Lead 1.0µg/m^3, Arsenic 6.0ng/m^3 & Nickel 20.0ng/m^3on Pre Diwali, Diwali & Post Diwali monitoring.

PAONTA SAHIB

The ambient air quality monitoring at Paonta Sahib was carried out at one location i.e. office building, Shubkhera, Paonta Sahib. The 24 hour average RSPM(PM_{10}) concentration at Paonta Sahib was observed higher than the prescribed standards of 100µg/m^3 i.e. 128.4µg/m^3on Diwali day. The maximum concentration of RSPM(PM_{10}) in the ambient air was observed as 158.4µg/m^3 on Diwali day, 2021 during 10:00PM-06:00PM indicating

the impact of bursting of crackers on the ambient air quality. The concentration of RSPM(PM_{10}) 128.4µg/m^3 was observed relatively lower than the concentration of RSPM(PM_{10}) observed during Diwali last year 150.5µg/m^3. Similarly 24 hour average RSPM($PM_{2.5}$) concentration was also observed 69.9µg/m^3 higher than the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 69.9µg/m^3 was observed relatively lower than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 71.7µg/m^3.The concentration of SO_2 and NOx was observed well below the prescribed standards of 80µg/m^3 for 24 hour. The average concentration of SO_2 and NOx was observed as 8.95µg/m^3 and 21.4µg/m^3 respectively on Diwali day.

The 8 hour average O_3 concentration at Paonta Sahib was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali & Post Diwali monitoring. The value of NH_3 concentration was observed 1.94µg/m^3 on Diwali day is within the prescribed limit of 400µg/m^3.

The concentrations of metals Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ at Paonta Sahib were also found within the standard prescribed limit of Lead 1.0µg/m^3, Arsenic 6.0ng/m^3 & Nickel 20.0ng/m^3 on Pre Diwali, Diwali & Post Diwali monitoring.

KALA AMB

The ambient air quality monitoring at Kala Amb was carried out at one location i.e. Trilokpur. The 24 hour average RSPM(PM_{10}) concentration at Trilokpur was observed lower than the prescribed standards of 100 µg/m^3 i.e. 91.9µg/m^3 on Diwali day. The maximum concentration of RSPM(PM_{10}) was observed as 105µg/m^3 on Diwali, 2021 during 10:00AM-06:00PM.The concentration of RSPM(PM_{10}) 91.9µg/m^3 was observed comparatively lower than the concentration of RSPM(PM_{10}) observed during Diwali last year 102.2µg/m^3. Similarly, 24 hour average RSPM($PM_{2.5}$) concentration was observed 51.6µg/m^3 lower than the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 51.6µg/m^3 was observed relatively lower than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 54.6µg/m^3.The concentration of SO_2 and NOx was observed well below the prescribed standards of 80µg/m^3 for 24 hour. The average concentration of SO_2 and NOx was observed as 9.21µg/m^3 and 19.6µg/m^3 which is below the prescribed standard of 80µg/m^3 for 24 hour.

The 8 hour average O_3 concentration at Trilokpur, Kala Amb was observed within the standard prescribed limit of 100µg/m^3 on Pre Diwali, Diwali day & Post Diwali. The value of NH_3 concentration was observed 1.87µg/m^3 on Diwali day is within the prescribed limit of 400µg/m^3.

The concentrations of metals Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ at Trilokpur town were also found within the standard prescribed

limit of Lead 1.0µg/m^3, Arsenic 6.0ng/m^3 & Nickel 20.0ng/m^3on Pre Diwali, Diwali & Post Diwali monitoring.

UNA

The ambient air quality monitoring at Una was carried out at one location i.e. Regional Office, Una. The 24 hour average RSPM(PM_{10}) concentration at Una was also observed lower than the prescribed standards of 100µg/m^3 i.e. 98.9µg/m^3on Diwali day. The maximum concentration of RSPM(PM_{10}) in the ambient air was observed as 118.2µg/m^3 on Diwali day, 2021 during 10:00PM-6:00AM it indicating the impact of bursting of crackers on the ambient air quality. The concentration of RSPM(PM_{10}) 98.9µg/m^3 was observed comparatively much higher than the concentration of RSPM(PM_{10}) observed during Diwali last year i.e. 85.9µg/m^3.The concentration of RSPM($PM_{2.5}$) 40.8µg/m^3 was observed on Diwali day and is within the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 40.8µg/m^3 was observed comparatively much higher than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 30.4µg/m^3.The concentration of SO_2 and NOx was observed well below the prescribed standards of 80µg/m^3 for 24 hour. The average concentration of SO_2 and NOx was observed as 2.0µg/m^3 (BDL) and 4.5µg/m^3 (BDL) which is below the prescribed standard of 80µg/m^3 for 24 hour.

BADDI

The ambient air quality monitoring at Baddi was carried out at one location i.e. Housing Board, Baddi. The 24 hour average RSPM(PM_{10}) concentration at Housing Board, Baddi was observed higher than the prescribed standards of 100 µg/m^3 i.e. 197µg/m^3 on Diwali day. The concentration of RSPM(PM_{10}) observed during Diwali, 2021 was comparatively much higher than the concentration of RSPM(PM_{10}) observed during Diwali last year i.e. 150µg/m^3. The maximum concentration of RSPM(PM_{10}) in the ambient air on Diwali was observed as 259µg/m^3 during 10:00PM-06:00PM. Similarly 24 hour average RSPM($PM_{2.5}$) concentration was also observed 29.1µg/m^3 lower than the standard prescribed limit of 60µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 29.1µg/m^3 was observed relatively higher than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year 49.8µg/m^3.The average concentration of SO_2 and NOx was observed as 2.0 µg/m^3 (BDL) and 14.0µg/m^3 on Diwali which is below the prescribed standard of 80µg/m^3 for 24 hour.

NALAGARH

The ambient air quality monitoring at Nalagarh was carried out at one location i.e. Durga Devi Temple, Nalagarh. The 24 hour average RSPM(PM_{10}) concentration at Nalagarh was also observed higher than the prescribed standards of 100 µg/m^3 i.e. 115µg/m^3 on Diwali day. The concentration of RSPM(PM_{10}) observed during Diwali, 2021 was comparatively higher than the concentration of RSPM(PM_{10}) observed during Diwali last year 107µg/m^3. The maximum concentration of RSPM(PM_{10}) in the ambient air on Diwali

was observed as 127µg/m^3 during 10:00PM-06:00PM. Further; 24 hour average RSPM($PM_{2.5}$) concentration was observed 29.1µg/m^3 within the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) observed during Diwali, 2021 was comparatively lower than the concentration of RSPM ($PM_{2.5}$) observed during last year i.e. 33.2µg/m^3.The average concentration of SO_2 and NOx was observed as 2.0µg/m^3 (BDL) and 14.5µg/m^3 on Diwali day.

MANALI

The ambient air quality monitoring at Manali was carried out at one location i.e. Hadimba Matta Road, Manali. The 24 hour average RSPM(PM_{10}) concentration at Hadimba Matta Road, Manali was observed lower than the prescribed standards of 100µg/m^3 i.e. 82.5µg/m^3 on Diwali day. The concentration of RSPM(PM_{10}) observed during Diwali, 2021 was comparatively much lower than the concentration of RSPM(PM_{10}) observed during Diwali last year 103.4µg/m^3. The maximum concentration of RSPM(PM_{10}) observed was 112.6µg/m^3 during 2:00PM-10:00PM on Diwali day indicating the impact of bursting of crackers on the ambient air quality. Similarly 24 hour average RSPM($PM_{2.5}$) concentration was observed 23.7µg/m^3 within the standard prescribed limit of 60 µg/m^3 on Diwali day. The concentration of RSPM($PM_{2.5}$) 23.7µg/m^3 was observed relatively lower than the concentration of RSPM($PM_{2.5}$) observed during Diwali last year i.e. 36.4µg/m^3.The concentration of SO_2 and NOx was observed well below the prescribed standards of 80µg/m^3 for 24 hour. The average concentration of SO_2 and NOx was observed as 2.0µg/m^3 (BDL) and 11.2µg/m^3 which is below the prescribed standard of 80µg/m^3 for 24 hour.

The 24 hour average NH_3 concentration at Hadimba Matta Road, Manali was observed 4.32µg/m^3 which is within the prescribed standard limit of 400µg/m^3 on Diwali day.

Ambient Noise monitoring report of Himachal Pradesh during Diwali Festival, 2021 are as under:

Himachal Pradesh State Pollution Control Board has also conducted ambient noise monitoring on the occasion of Diwali festival, 2021, to study the impact of bursting of crackers and other related activities on 29.10.2021 (Normal day monitoring) and 04.11.2021 (Diwali day monitoring). The data of the ambient noise monitoring observed are summarized as Annexure-I.

SHIMLA

The ambient noise level monitoring was conducted at Shimla (BCS Area) during Diwali festival on 29.10.2021 and 04.11.2021. The average ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 50.3 dB(A) and 77.9dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed 109.9dB (A) between 10.00PM to 11.00PM. The

ambient noise level 77.9 dB(A) at Shimla was observed higher than the noise level 77.8 dB(A) observed during Diwali last year.

PARWANOO

The ambient noise level was monitored at Sector IV, Parwanoo during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 49.6 dB(A) and 63.4 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 11:00PM to 12:00PM, where noise level (Leq) of 103.4 dB(A) was observed.

The ambient noise level 63.4 dB (A) at Parwanoo was observed lower than the noise level 67.6 dB(A) observed during Diwali last year.

BILASPUR

The ambient noise level was monitored at Bilaspur town during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 47.2 dB(A) and 57.7 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 09:00PM and ambient noise level of 102.5 dB (A) was observed.

The ambient noise level 57.7 dB(A) at Bilaspur was observed lower than the noise level 61.8 dB(A) observed during Diwali last year.

CHAMBA

The ambient noise level was monitored at Hardaspur Chamba (Residential zone).The ambient noise level (Leq) monitored at Hardaspur, Chamba (Residential zone), from 18:00hrs-24:00hrs on 29.10.2021 and 04.11.2021 was observed as 46.0 dB(A) and 57.0 dB(A) respectively in residential zone. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 10:00PM where noise level (Leq) of 78.2 dB(A) was observed.

The ambient noise level 57 dB(A) at Chamba was observed higher than the noise level 48.5 dB(A) observed during Diwali last year.

PAONTA SAHIB

The ambient noise level was monitored at HIMUDA Colony, Shubkhera, Paonta Sahib during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 49.3 dB(A) and 59.2 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM-09:00PM where noise level (Leq) of 79.7 dB(A) was observed.

The ambient noise level 59.2 dB(A) at Paonta sahib was observed lower than the noise level 62.2 dB(A) observed during Diwali last year.

UNA

The ambient noise level was monitored at Rakkar Colony, Una (Residential zone) on 29.10.2021 and 04.11.2021 (Pre Diwali and Diwali day).

The ambient noise level (Leq) at Rakkar Colony, Una (Residential zone) was monitored from 18:00hrs-24:00hrs on 29.10.2021 and 04.11.2021 and the values were observed as 42.8 dB(A) and 51.3 dB(A) respectively in Residential zone. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 10:00PM where noise level (Leq) of 77.5 dB(A) was observed.

The Ambient noise level 51.3 dB(A) at Una was observed lower than the level 52.4 dB(A) observed during Diwali last year.

BADDI

The ambient noise level was monitored at Phase-I, Baddi during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 57 dB(A) and 66.5 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 09:00PM-10:00PM where noise level (Leq) of 106.5 dB(A) was observed.

The ambient noise level 66.5 dB(A) at Phase-I, Baddi for residential zone was observed lower than the noise level 66.8 dB(A) observed during Diwali last year.

RECONG PEO

The ambient noise level was monitored at Recong Peo, District Kinnaur during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 54.3 dB(A), and 68.9 dB(A) respectively. The maximum impact of bursting of crackers on the ambient

noise level on Diwali day was observed between 08:00PM to 09:00PM where noise level (Leq) of 86.1 dB(A) was observed.

The ambient noise level 68.9 dB(A) at Recong Peo was observed lower than the noise level 83.9 dB(A) observed during Diwali last year.

RAMPUR BUSHAR

The ambient noise level was monitored at Rampur, Distt. Shimla during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 62.8 dB(A) and 79.5 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 09:00PM where noise level (Leq) of 87.2 dB (A) was observed.

The ambient noise level 79.5 dB (A) at Rampur Bushar was also observed lower the noise level 81.2 dB (A) observed during Diwali last year.

DHARAMSHALA

The ambient noise level was monitored on Regional office Dharamshala during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 43.3 dB(A) and 57.0 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 07:00PM to 08:00PM where noise level (Leq) of 82.6 dB(A) was observed.

The ambient noise level 57 dB(A) at Dharamshala was observed lower than the noise level 59.9 dB(A) observed during Diwali last year.

KULLU

The ambient noise level was monitored near Dhalpur Ground, Kullu during Diwali festival on 29.10.2021 and 04.11.2021. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 29.10.2021, 04.11.2021 was observed as 49.4 dB(A) and 64.3 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 09:00PM where noise level (Leq) of 96.6 dB (A) was observed.

The ambient noise level 64.3 dB(A) at near Dhalpur Ground, Kullu was observed lower than the noise level 65.4 dB(A) observed during Diwali last year.

CONCLUSION

The concentration of RSPM (PM_{10} and $PM_{2.5}$), NOx, SO_2, NH_3, O_3 & CO level in the ambient air observed on Diwali, 2021 was comparatively more than the values observed on the normal days which indicates the impact of bursting of fire crackers and other activities on the ambient air quality. During Diwali, 2021 the concentration of SO_2, NOx, NH_3, O_3 & CO were observed within the standard limit in all the monitoring stations whereas, the concentration of **RSPM(PM_{10})** has **exceeded** the prescribed standard limit of 100µg/m^3 for 24 hour at **Paonta Sahib, Baddi & Nalagarh,** however, the RSPM(PM_{10}) concentration was observed within the **prescribed standard at Shimla, Parwanoo, Dharamshala, Damtal, Sundernagar, Kala Amb, Una & Manali on Diwali day**. Further, the concentration of **RSPM(PM_{10})** at **Una, Baddi & Nalagarh** were observed **more** than the concentration observed during **Diwali, 2020,** whereas, concentration of **RSPM(PM_{10})** at **Shimla, Parwanoo, Dharamshala, Damtal, Sundernagar, Paonta Sahib, Kala Amb and Manali** stations were observed comparatively **lower** than the concentration of RSPM observed during Diwali, 2020.

Similarly, the Concentration of RSPM($PM_{2.5}$) has **exceeded** the prescribed standard limit of 60µg/m^3 for 24 hour at **Paonta Sahib**, however, the RSPM($PM_{2.5}$) concentration was observed within the **prescribed standard at Shimla, Parwanoo, Dharamshala, Damtal, Sundernagar, Kala Amb, Una, Baddi, Nalagarh & Manali on Diwali day**.

There was gradual decrease in the concentration of **RSPM (PM_{10} & $PM_{2.5}$), SO_2, NOx, NH_3, O_3 & CO** after Diwali festival at all the monitoring stations.

Further, the **heavy metal analysis were** also carried out in all Laboratories i.e. **Shimla, Parwanoo, Paonta Sahib, Sunder Nagar & Dharamshala.** The concentrations of Lead, Nickel & Arsenic in PM_{10} and Aluminium, Barium and Iron in $PM_{2.5}$ was monitored at State capital **Shimla** for consecutive 15 days and the Lead, Nickel and Arsenic parameters were found within the prescribed limit as per NAAQMS, 2009 on Pre Diwali, Diwali & Post Diwali period.

The concentrations of Lead, Nickel & Arsenic in PM_{10} and Aluminium & Iron in $PM_{2.5}$ except Barium was monitored at Central/Regional Laboratories **Parwanoo, Paonta Sahib, Sunder Nagar & Dharamshala** and found within the standard prescribed limit on Pre Diwali, Diwali & Post Diwali period.

It can be concluded from the ambient air quality monitoring carried out by the State Board that w.r.t. PM_{10} concentration on Diwali day, the **Baddi, Nalagarh & Paonta Sahib towns were highest polluted** and **Shimla was cleanest** town in the State and with respect to RSPM($PM_{2.5}$) concentration **Paonta Sahib was highest polluted and Shimla and Manali were cleanest** towns**.** With respect to **SO_2 & NOx** concentrations all values are within the standard prescribed limit. The **SO_2** concentration was observed highest at **Kala Amb 9.21µg/m^3** and the concentration of **NOx** was observed highest at **Paonta Sahib**

21.4µg/m^3. The concentrations of **NH_3, O_3 and CO** at all locations were observed within the standard prescribed limit on Pre Diwali, Diwali and Post Diwali monitoring. The Concentration of metals in **Shimla, Parwanoo, Paonta Sahib, Dharamshala and Sunder Nagar** was observed within the standard prescribed limit on Pre Diwali, Diwali and Post Diwali monitoring.

ANNEXURE-III

Date	Ridge, Shimla													Date	Parwanoo, Sector-IV												
	Regulatory Parameters							Metals in PM10			Proposed New Parameters				Regulatory Parameters							Metals in PM10			Proposed New Parameters	
											Metals/Elements in PM 2.5 In ug/m3														Metals/Elements in PM 2.5 In ug/m3	
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	CO ug/m3	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Ba	Fe		SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	CO mg/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Fe
28.10.2021	BDL	BDL	19.8	10.1	0.6	9.6	1.70	ND	ND	ND	ND	ND	ND	**28.10.2021**	0.6	BDL	34.8	7.7	0.6	0.6	0.08	**ND**	**ND**	**ND**	**ND**	**ND**
29.10.2021	BDL	BDL	13.1	9.0	1.0	7.3	0.50	ND	ND	ND	ND	ND	ND	**29.10.2021**	0.6	BDL	33.9	5.7	0.5	0.7	0.08	**ND**	**ND**	**ND**	**ND**	**ND**
30.10.2021	BDL	BDL	13.8	6.1	0.2	6.8	0.30	ND	ND	ND	ND	ND	ND	**30.10.2021**	0.8	BDL	32.3	6.1	0.8	0.7	0.17	**ND**	**ND**	**ND**	**ND**	**ND**
31.10.2021	BDL	BDL	44.1	31.0	0.3	7.2	0.40	ND	ND	ND	ND	ND	ND	**31.10.2021**	0.7	BDL	30.3	5.9	0.6	0.6	0.12	**ND**	**ND**	**ND**	**ND**	**ND**
01.11.2021	BDL	BDL	29.3	10.8	0.4	6.8	0.40	ND	ND	ND	ND	ND	ND	**01.11.2021**	0.8	BDL	36.1	6.4	0.7	0.7	0.11	**ND**	**ND**	**ND**	**ND**	**ND**
02.11.2021	BDL	BDL	36.0	13.3	0.7	12.6	1.20	ND	ND	ND	ND	ND	ND	**02.11.2021**	0.7	BDL	35.8	6.0	0.7	0.8	0.11	**ND**	**ND**	**ND**	**ND**	**ND**
03.11.2021	BDL	BDL	27.1	22.9	0.7	6.1	7.10	ND	ND	ND	ND	ND	ND	**03.11.2021**	1.0	BDL	39.4	8.8	1.0	0.7	0.12	**ND**	**ND**	**ND**	**ND**	**ND**
04.11.2021	BDL	BDL	39.9	23.7	0.7	5.9	6.30	ND	ND	ND	ND	0.625	ND	**04.11.2021**	2.0	13.3	90.2	39.8	1.0	0.8	0.17	**ND**	**ND**	**ND**	**ND**	**ND**
05.11.2021	BDL	BDL	24.6	10.9	0.7	11.0	5.10	ND	ND	ND	ND	0.042	ND	**05.11.2021**	1.4	BDL	84.0	30.3	1.0	0.9	0.16	**ND**	**ND**	**ND**	**ND**	**ND**
06.11.2021	BDL	BDL	20.5	18.3	0.8	9.1	3.80	ND	ND	ND	ND	0.708	ND	**06.11.2021**	1.3	9.1	56.2	15.5	0.7	0.8	0.12	**ND**	**ND**	**ND**	**ND**	**ND**
07.11.2021	BDL	BDL	17.0	10.0	0.6	9.0	3.40	ND	ND	ND	ND	ND	ND	**07.11.2021**	0.6	BDL	43.3	10.9	0.7	0.9	0.10	**ND**	**ND**	**ND**	**ND**	**ND**
08.11.2021	BDL	BDL	51.1	26.7	0.7	10.6	3.60	ND	ND	ND	ND	ND	ND	**08.11.2021**	0.8	BDL	41.4	7.5	0.5	0.9	0.10	**ND**	**ND**	**ND**	**ND**	**ND**
09.11.2021	BDL	BDL	29.5	20.0	0.6	12.1	3.90	ND	ND	ND	ND	ND	0.917	**09.11.2021**	0.7	BDL	37.0	6.6	0.6	1.0	0.09	**ND**	**ND**	**ND**	**ND**	**ND**
10.11.2021	BDL	9.4	27.0	20.4	0.6	12.5	3.50	ND	ND	ND	ND	ND	1.100	**10.11.2021**	0.9	BDL	37.0	8.2	1.2	0.9	0.14	**ND**	**ND**	**ND**	**ND**	**ND**
11.11.2021	BDL	9.1	22.2	13.4	0.8	14.0	3.20	ND	ND	ND	ND	0.375	0.183	**11.11.2021**	0.6	BDL	41.1	7.2	1.0	0.9	0.10	**ND**	**ND**	**ND**	**ND**	**ND**

ANNEXURE-III

Date	Residential Building Dari Dharamshala (795)												Date	Ram Gopal Mandir, Damtal										
	Regulatory Parameters							Metals in PM10			Proposed New Parameters			Regulatory Parameters						Metals in PM10			Proposed New Parameters	
											Metals/Elements in PM 2.5 In ug/m3												Metals/Elements in PM 2.5 In ug/m3	
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	CO mg/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Fe		SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Fe
28.10.2021	BDL	BDL	30.0	17.0	1.5	0.1	0.65	ND	ND	ND	ND	ND	**28.10.2021**	BDL	BDL	30.0	16.0	1.6	0.61	ND	ND	ND	ND	ND
29.10.2021	BDL	BDL	35.0	18.0	2.0	0.1	0.52	ND	ND	ND	ND	ND	**29.10.2021**	BDL	BDL	32.0	15.0	2.4	0.78	ND	ND	ND	ND	ND
30.10.2021	BDL	BDL	31.0	19.0	2.0	0.1	0.61	ND	ND	ND	ND	ND	**30.10.2021**	BDL	BDL	42.0	23.0	2.1	0.46	ND	ND	ND	ND	ND
31.10.2021	BDL	BDL	25.0	17.0	2.0	0.5	0.43	ND	ND	ND	ND	ND	**31.10.2021**	BDL	BDL	40.0	22.0	1.7	0.47	ND	ND	ND	ND	ND
01.11.2021	BDL	BDL	31.0	16.0	1.7	0.1	0.26	ND	ND	ND	ND	ND	**01.11.2021**	BDL	BDL	71.0	40.0	1.6	0.31	ND	ND	ND	ND	ND
02.11.2021	BDL	BDL	30.0	15.0	1.4	0.1	0.26	ND	ND	ND	ND	ND	**02.11.2021**	BDL	BDL	44.0	25.0	1.7	0.32	ND	ND	ND	ND	ND
03.11.2021	BDL	BDL	53.0	28.0	2.0	0.1	0.43	ND	ND	ND	ND	ND	**03.11.2021**	BDL	BDL	55.0	31.0	1.9	0.49	ND	ND	ND	ND	ND
04.11.2021	BDL	BDL	77.0	44.0	2.4	0.1	0.79	ND	ND	ND	ND	ND	**04.11.2021**	BDL	BDL	95.0	42.0	2.3	0.56	ND	ND	ND	ND	ND
05.11.2021	BDL	BDL	52.0	32.0	2.2	0.2	0.70	**ND**	**ND**	**ND**	**ND**	**ND**	**05.11.2021**	BDL	BDL	69.0	38.0	2.3	0.52	**ND**	**ND**	**ND**	**ND**	**ND**
06.11.2021	BDL	BDL	46.0	27.0	2.2	0.1	0.43	**ND**	**ND**	**ND**	**ND**	**ND**	**06.11.2021**	BDL	BDL	88.0	40.0	2.0	0.54	**ND**	**ND**	**ND**	**ND**	**ND**
07.11.2021	BDL	BDL	41.0	26.0	2.1	0.1	0.45	**ND**	**ND**	**ND**	**ND**	**ND**	**07.11.2021**	BDL	BDL	78.0	41.0	2.0	0.48	**ND**	**ND**	**ND**	**ND**	**ND**
08.11.2021	BDL	BDL	44.0	25.0	2.0	0.1	0.42	**ND**	**ND**	**ND**	**ND**	**ND**	**08.11.2021**	BDL	BDL	66.0	36.0	2.0	0.43	**ND**	**ND**	**ND**	**ND**	**ND**
09.11.2021	BDL	BDL	35.0	20.0	1.8	0.1	0.39	**ND**	**ND**	**ND**	**ND**	**ND**	**09.11.2021**	BDL	BDL	85.0	34.0	2.0	0.40	**ND**	**ND**	**ND**	**ND**	**ND**
10.11.2021	BDL	BDL	40.0	22.0	1.9	0.1	0.42	**ND**	**ND**	**ND**	**ND**	**ND**	**10.11.2021**	BDL	BDL	51.0	23.0	1.9	0.47	**ND**	**ND**	**ND**	**ND**	**ND**
11.11.2021	BDL	BDL	45.0	24.0	1.7	0.1	0.35	**ND**	**ND**	**ND**	**ND**	**ND**	**11.11.2021**	BDL	BDL	58.0	32.0	1.9	0.39	**ND**	**ND**	**ND**	**ND**	**ND**

ANNEXURE-III

Date	Rgional Office, Sunder Nagar											Date	Office Building, Shubkhera, Poanta Sahib										
	Regulatory Parameters						Metals in PM10			Proposed New Parameters			Regulatory Parameters						Metals in PM10			Proposed New Parameters	
										Metals/Elements in PM 2.5 In ug/m3												Metals/Elements in PM 2.5 In ug/m3	
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Fe		SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Fe
28.10.2021	BDL	BDL	57.0	29.0	2.7	4.80	**ND**	**ND**	**ND**	**ND**	**ND**	**28.10.2021**	BDL	15.1	92.8	-	2.1	1.04	**ND**	**ND**	**ND**	**ND**	**ND**
29.10.2021	BDL	BDL	49.3	17.0	2.6	4.80	**ND**	**ND**	**ND**	**ND**	**ND**	**29.10.2021**	BDL	12.9	98.4	54.1	1.4	0.48	**ND**	**ND**	**ND**	**ND**	**ND**
30.10.2021	BDL	BDL	46.7	16.0	2.4	4.85	**ND**	**ND**	**ND**	**ND**	**ND**	**30.10.2021**	BDL	12.7	111.0	59.6	1.6	0.55	**ND**	**ND**	**ND**	**ND**	**ND**
31.10.2021	BDL	BDL	39.7	15.0	2.2	4.96	**ND**	**ND**	**ND**	**ND**	**ND**	**31.10.2021**	BDL	14.4	66.4	34.2	1.7	0.79	**ND**	**ND**	**ND**	**ND**	**ND**
01.11.2021	BDL	BDL	52.0	17.0	2.6	4.15	**ND**	**ND**	**ND**	**ND**	**ND**	**01.11.2021**	BDL	13.4	72.4	42.0	1.8	0.82	**ND**	**ND**	**ND**	**ND**	**ND**
02.11.2021	BDL	BDL	46.0	15.0	2.6	4.01	**ND**	**ND**	**ND**	**ND**	**ND**	**02.11.2021**	4.8	15.2	92.0	50.2	1.9	1.08	**ND**	**ND**	**ND**	**ND**	**ND**
03.11.2021	BDL	BDL	46.7	16.0	2.6	4.51	**ND**	**ND**	**ND**	**ND**	**ND**	**03.11.2021**	7.2	18.5	96.0	52.2	2.4	1.58	**ND**	**ND**	**ND**	**ND**	**ND**
04.11.2021	BDL	BDL	62.3	27.0	2.7	4.61	**ND**	**ND**	**ND**	**ND**	**ND**	**04.11.2021**	9.0	21.5	128.4	69.9	3.1	1.94	**ND**	**ND**	**ND**	**ND**	**ND**
05.11.2021	BDL	BDL	47.0	16.0	2.4	4.61	**ND**	**ND**	**ND**	**ND**	**ND**	**05.11.2021**	6.3	16.9	96.9	50.3	2.8	1.54	**ND**	**ND**	**ND**	**ND**	**ND**
06.11.2021	BDL	BDL	43.7	17.0	2.5	4.56	**ND**	**ND**	**ND**	**ND**	**ND**	**06.11.2021**	5.0	14.9	74.0	34.1	2.4	1.28	**ND**	**ND**	**ND**	**ND**	**ND**
07.11.2021	BDL	BDL	45.7	25.0	2.3	5.96	**ND**	**ND**	**ND**	**ND**	**ND**	**07.11.2021**	4.3	12.6	83.0	46.0	2.3	1.11	**ND**	**ND**	**ND**	**ND**	**ND**
08.11.2021	BDL	BDL	40.0	26.0	2.4	5.21	**ND**	**ND**	**ND**	**ND**	**ND**	**08.11.2021**	4.4	11.7	113.2	50.6	2.5	1.55	**ND**	**ND**	**ND**	**ND**	**ND**
09.11.2021	BDL	BDL	43.0	15.0	2.4	5.96	**ND**	**ND**	**ND**	**ND**	**ND**	**09.11.2021**	4.1	10.7	105.8	37.8	2.0	0.95	**ND**	**ND**	**ND**	**ND**	**ND**
10.11.2021	BDL	BDL	47.7	20.0	2.4	5.46	**ND**	**ND**	**ND**	**ND**	**ND**	**10.11.2021**	4.8	13.4	74.9	29.6	2.4	0.89	**ND**	**ND**	**ND**	**ND**	**ND**
11.11.2021	BDL	BDL	48.3	22.0	2.5	5.81	**ND**	**ND**	**ND**	**ND**	**ND**	**11.11.2021**	4.0	10.4	76.8	33.5	2.1	0.82	**ND**	**ND**	**ND**	**ND**	**ND**

ANNEXURE-III

Date	Trilokpur, Kala Amb											Date	Regional Office, Una				Housing Board, Baddi			
	Regulatory Parameters						Metals in PM10			Proposed New Parameters			Regulatory Parameters				Regulatory Parameters			
										Metals/Elements in PM 2.5 In ug/m3										
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Al	Fe		SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)
28.10.2021	BDL	12.9	74.9	-	1.9	1.01	**ND**	**ND**	**ND**	**ND**	**ND**	**28.10.2021**	BDL	BDL	54.7	22.5	BDL	13.9	115.0	37.5
29.10.2021	BDL	12.5	56.6	29.5	1.5	0.54	**ND**	**ND**	**ND**	**ND**	**ND**	**29.10.2021**	BDL	BDL	47.0	20.7	BDL	13.1	139.0	45.8
30.10.2021	BDL	12.9	44.6	24.4	1.7	0.57	**ND**	**ND**	**ND**	**ND**	**ND**	**30.10.2021**	BDL	BDL	60.4	25.4	BDL	12.6	112.0	37.3
31.10.2021	BDL	13.2	80.8	42.5	2.0	0.66	**ND**	**ND**	**ND**	**ND**	**ND**	**31.10.2021**	BDL	BDL	59.0	26.2	BDL	13.2	109.0	37.5
01.11.2021	BDL	12.9	64.1	33.7	2.1	0.95	**ND**	**ND**	**ND**	**ND**	**ND**	**01.11.2021**	BDL	BDL	63.7	28.6	BDL	15.2	113.0	29.1
02.11.2021	4.9	16.0	65.3	32.9	2.5	1.11	**ND**	**ND**	**ND**	**ND**	**ND**	**02.11.2021**	BDL	BDL	75.5	29.5	BDL	21.3	106.0	25.0
03.11.2021	8.9	17.8	76.6	37.5	2.7	1.61	**ND**	**ND**	**ND**	**ND**	**ND**	**03.11.2021**	BDL	BDL	72.4	27.8	BDL	12.6	123.0	25.0
04.11.2021	9.2	19.7	91.9	51.6	3.6	1.87	**ND**	**ND**	**ND**	**ND**	**ND**	**04.11.2021**	BDL	BDL	99.0	40.8	BDL	14.0	197.0	29.1
05.11.2021	5.9	16.6	73.6	34.6	3.2	1.65	**ND**	**ND**	**ND**	**ND**	**ND**	**05.11.2021**	BDL	BDL	78.5	31.8	BDL	15.9	119.0	41.1
06.11.2021	4.7	14.6	67.6	34.7	2.8	1.21	**ND**	**ND**	**ND**	**ND**	**ND**	**06.11.2021**	BDL	BDL	63.9	26.8	BDL	13.8	100.0	33.4
07.11.2021	4.8	13.3	86.3	46.3	2.6	1.17	**ND**	**ND**	**ND**	**ND**	**ND**	**07.11.2021**	BDL	BDL	45.0	22.7	BDL	14.5	115.0	37.2
08.11.2021	4.0	12.7	72.0	36.8	3.2	1.01	**ND**	**ND**	**ND**	**ND**	**ND**	**08.11.2021**	BDL	BDL	52.2	23.1	BDL	14.0	108.0	41.6
09.11.2021	BDL	12.9	96.1	46.9	2.5	0.93	**ND**	**ND**	**ND**	**ND**	**ND**	**09.11.2021**	BDL	BDL	60.7	26.7	BDL	15.2	90.0	33.2
10.11.2021	BDL	9.6	53.5	28.3	2.0	0.90	**ND**	**ND**	**ND**	**ND**	**ND**	**10.11.2021**	BDL	BDL	43.6	18.2	BDL	15.5	115.0	37.6
11.11.2021	BDL	9.2	56.6	31.7	2.3	0.85	**ND**	**ND**	**ND**	**ND**	**ND**	**11.11.2021**	BDL	BDL	39.6	19.5	BDL	14.0	114.0	36.8

ANNEXURE-III									
Date	MC, Nalagarh				Nehru Park, Manali				
	Regulatory Parameters				Regulatory Parameters				
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	NH3 ug/m3
28.10.2021	BDL	11.6	70.0	20.8	BDL	BDL	36.0	12.5	2.68
29.10.2021	BDL	15.9	68.0	16.7	BDL	BDL	33.6	14.4	2.34
30.10.2021	BDL	11.9	69.0	20.8	BDL	BDL	27.2	10.0	2.82
31.10.2021	BDL	12.2	84.0	24.9	BDL	BDL	38.6	15.0	3.02
01.11.2021	BDL	15.9	87.0	20.8	BDL	BDL	40.3	15.0	2.68
02.11.2021	BDL	13.8	100.0	37.6	BDL	BDL	45.3	15.8	2.82
03.11.2021	BDL	14.1	85.0	41.5	BDL	BDL	50.0	19.3	3.17
04.11.2021	BDL	14.5	115.0	29.1	BDL	11.2	82.5	23.7	4.32
05.11.2021	BDL	21.3	90.0	33.3	BDL	10.1	66.3	18.9	3.90
06.11.2021	BDL	14.0	105.0	29.1	BDL	BDL	62.6	18.4	3.60
07.11.2021	BDL	13.8	87.0	24.9	BDL	BDL	56.3	18.6	2.68
08.11.2021	BDL	BDL	77.0	29.1	BDL	BDL	41.6	17.4	3.12
09.11.2021	BDL	13.8	77.0	20.8	BDL	BDL	40.7	13.3	3.20
10.11.2021	BDL	BDL	67.0	25.0	BDL	BDL	39.9	14.6	3.33
11.11.2021	BDL	13.6	80.0	25.0	BDL	BDL	42.5	14.8	3.41