INDIAN SUCROSE LIMITED
CIN - L15424PB1990PLC010903
e-mail : info.isl@yaducorporation.com | Website : www.muksug.com

REF:ISL:AS:2020-21/ 177

Date: 29th August, 2020

Member Secretary,
State Environment Impact Assessment Authority,
Directorate of Environment and Climate Change,
C/o Punjab State Council for Science & Technology,
MGSIPA Complex, Sector-26,
CHANDIGARH – 160019

Subject: Submission of replies for 186th SEAC Meeting held on 26th December 2019 at Sector-26, Chandigarh for the Capacity expansion of sugar mill from 5000 TCD along with 19.5 MW Cogeneration power plant to 12000 TCD along with 59.5 MW cogeneration power plant by M/s Indian Sucrose Ltd. **Reg- Environment Clearance.**

Reference:
i. **187thMOM of SEAC, Punjab, dated 26th February, 2020,**
ii. **ToR Letter No. SEIAA/2018/858, dated 16th July, 2018**
iii. **Proposal No. SIA/PB/IND2/22643/2018, 15th January, 2019**

Category: 5(j) Sugar Industries (Category B)

Respected Sir,

This is in reference to the aforesaid subject, we would like to bring into your kind notice that the case was taken up in 187th meeting of SEAC held on 26.02.2020. During the meeting, the case discussed and some observations were given by SEAC.

We are hereby submitting the replies of the observations for obtaining Environmental Clearance from SEIAA. The replies are as follows:

S. No.	Observations	Replies
1.	i) Submit compliance of TOR no iv-x (b), i.e. in case the existing project has not obtained environment clearance, copies of Consent to Establish/ No Objection Certificate and Consent to Operate obtained from PPCB along with compliance report to the conditions of consents from PPCB	Compliance of ToR has been incorporated in Final EIA copy. Copy of Latest CTO and Compliance of the same is attached as **Annexure-1**
2.	Submit action taken report on the compliance report to the conditions of consents from PPCB	Reply of PPCB is attached as **Annexure-2**
3.	Submit revised rain water recharging proposal based upon the pond adoption as per the design of PPCB. In this	Rain water harvesting has been revised. The project area lies in 'Semi Critical Zone' as per the

	regard, Project Proponent shall also submit NOC/ permission from the rural development authorities.	dynamic groundwater resources of India 2017. The annual run-off generated from the roof top area is 35526.19 m3/year, when annual rainfall is 591.0 mm. The industry has proposed for adoption of ponds outside the industrial premises, in which total 64763.91m3/year recharge will be done. Attached as **Annexure-3.**
4.	Submit revised CER activities as per the OM dated 01.05.2018	Project proponent will provide medical facility, Pond adoption, and Dispensary adoption to the nearby villages. NOC has been already taken from the village dispensary and schools. Total CER cost is **8.4 Crore** Attached as **Annexure-4.**
5.	Submit a copy of the application filed to CGWA for obtaining approval for abstraction of existing ground water. Also submit a copy of revised application filed to CGWA for obtaining approval for the proposed expansion.	Revised application **Number: 21-4/5656/PB/IND/2020 on dated 28.04.2020** for abstraction of **597 KLD (existing and proposed)** freshwater has been filled to CGWA. Copy of application is attached as **Annexure-5.**
6.	Submit revised Water Balance Diagram along with basis/calculation of water requirement.	Total fresh Water requirement for existing and proposed project is 597 KLD out of which 47 for domestic and 550 will be used for industrial purpose. Water balance has been revised attached as **Annexure-6.**
7.	Upload the Final EIA report on the Parivesh portal	Final EIA has been updated as per the MOM and uploaded on Parivesh portal receipt of online submission is attached as **Annexure-7**
8.	Provide waste water treatment details for existing & proposed expansion separately	Waste water treatment details for existing & proposed along with treated water characteristics & design criteria attached as **Annexure-8**
9.	Ground water sampling from State Laboratory i.e PBTI Lab, Mohali as the earlier sample not drawn by M/s PBTI, Lab	Total 3 samples (Chak Alla Baksh, Bishanpur & Ward No.5 Khanpur) were taken from nearby villages. Results of all parameters of ground water sampling are within the permissible limit. Copy of the test report of PBTI Lab is attached as **Annexure-9**

10.	Resubmit the damage assessment studies in compliance to the TOR No. 14	Study of Damage assessment done in the nearby area at the project site. No Environmental damage was observed. Total 45/- Lakhs will be spending as remediation plan. Studies has been updated Attached as **Annexure-10.**
11.	Clarify, project coordinates mentioned in EIA report not matching with the coordinates mentioned in presentation.	It is a typographical error. We ensure it will not repeat correct coordinate mentioned in updated EIA report.

Thanking you,

Yours Sincerely,
M/s Indian Sucrose Ltd.

(Authorized Signatory)

Encl: As above

PUNJAB POLLUTION CONTROL BOARD

ZONAL OFFICE JALANDHAR.

Website:- www.ppcb.gov.in

Office Dispatch No :	**Registered/Speed Post**	**Date:**
Industry Registration ID: *R12HSP41196*		**Application No :** *12558779*

To,

Mr.v. P. Gupta
Sugar Mill Colony
Mukerian,Hoshiarpur-144211

Subject: **Renewal of 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981 for discharge of emissions arising out of premises.**

With reference to your application for obtaining Renewal of 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981, you are hereby, authorized to operate an industrial unit for discharge of the emission(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Air Act, 1981 granted to the industry

Consent to Operate Certificate No.	*CTOA/Renewal/HSP/2020/12558779*
Date of issue :	*06/08/2020*
Date of expiry :	*31/03/2021*
Certificate Type :	*Renewal*
Previous CTO No. & Validity :	*CTOA/Fresh/HSP/2019/9418292* *From:07/10/2016 To:31/03/2020*

2. Particulars of the Industry

Name & Designation of the Applicant	*Mr.v. P. Gupta, (Vice President)*
Address of Industrial premises	*M/s Indian Sucrose Limited, Village - Chak Alla Baksh, G. T. Road, Mukerian, Distt. Hoshiarpur - 144211 Pb., Indian Sucrose Ltd., Mukerian,Hoshiarpur-144211*
Capital Investment of the Industry	*20563.8 lakhs*
Category of Industry	*Red*
Type of Industry	*Sugar*
Scale of the Industry	*Large*
Office District	*Hoshiarpur*
Consent Fee Details	282000/- through RTGS
Raw Materials (Name with Quantity per day)	*SUGAR CANE @ 5000 Metric Tonnes/Day* *LIME @ 10 Metric Tonnes/Day* *SULPHUR @ 4 Metric Tonnes/Day*
Products (Name with Quantity per day)	*SUGAR @ 500 Metric Tonnes/Day*

By-products, if any, (Name with Quantity per day)	*MOLASSES @ 225 Metric Tonnes/Day* *PRESS MUD @ 200 Metric Tonnes/Day* *BAGASSE @ 1400 Metric Tonnes/Day*
Details of the machinery and process	*As per application.*
Quantity of fuel required (in TPD) and capacity of boilers/ Furnace/Thermo heater etc.	*Bagasse for boilers of capacity 38 TPH, 38 TPH & 80 TPH.* *Diesel for DG sets.*
Type of Air Pollution Control Devices to be installed	*Water Scrubber as APCD with Boilers.* *Canopy with DG sets of capacity 500 KVA, 320 KVA, 200 KVA & 25 KVA.*
Stack height provided with each boiler/thermo heater/Furnace etc.	*STACK 140(Ground Level)/20(Roof Level)* *STACK 250(Ground Level)/30(Roof Level)*
Sources of emissions and type of pollutants	*SPM from Boilers & DG sets.*
Standards to be acheived under Air(Prevention & Control of Pollution) Act, 1981	*As prescribed by the Board.*

PUNJAB

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

Environmental Engineer, Regional office, Hoshiarpur.

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Ltd. or for getting loan from the financial institutions.
2. The industry shall apply for renewal /extension of consent at least two months before expiry of the consent.
3. The industry shall not violate any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled / revoked.
4. The achievement of adequacy and efficiency of the air pollution control devices installed shall be the entire responsibility of the industry
5. The authorized fuel being used shall not be changed without the prior written permission of the Board.
6. The industry shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height, as per the norms fixed by the Board from time to time.
7. The industry shall provide port-holes, platforms and/or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets.

   Specifications of the port-holes shall be as under:-

   i) The sampling ports shall be provided atleast 8 times chimney diameter downstream and 2 times upstream from the flow disturbance. For a rectangular cross section the equivalent diameter (De) shall be calculated from the following equation to determine upstream, downstream distance:-

   De = 2 LW / (L+W)

   Where L= length in mts. W= Width in mts.

   ii) The sampling port shall be 7 to 10 cm in diameter

8. The industry shall put display Board indicating environmental data in the prescribed format at the main entrance gate.
9. The industry shall discharge all gases through a stack of minimum height as specified in the following standards laid down by the Board.

   (i) Stack height for boiler plants

S.NO.	Boiler with Steam Generating Capacity	Stack heights
1.	*Less than 2 ton/hr.*	9 meters or 2.5 times the height of neighboring building which ever is more
2.	*More than 2 ton/hr. to 5 ton/hr.*	12 meters
3.	*More than 5 ton/hr. to 10 ton/hr*	15 meters
4.	*More than 10 ton/hr. to 15 ton/hr*	18 meters
5.	*More than 15 ton/hr. to 20 ton/hr*	21 meters
6.	*More than 20 ton/hr. to 25 ton/hr.*	24 meters
7.	*More than 25 ton/hr. to 30 ton/hr.*	27 meters
8.	*More than 30 ton/hr.*	30 meters or using the formula H = 14 Qg0.3or H = 74 (Qp)0.24 Where Qg = Quantity of SO2 in Kg/hr. Qp = Quantity of particulate matter in Ton/day.

Note : Minimum Stack height in all cases shall be 9.0 mtr. or as calculated from relevant formula whichever is more.

(ii) For industrial furnaces and kilns, the criteria for selection of stack height would be based on fuel used for the corresponding steam generation.

(iii) Stack height for diesel generating sets:

Capacity of diesel generating set	Height of the Stack	
0-50 KVA	Height of the building	+ 1.5 mt
50-100 KVA	-do-	+ 2.0 mt.
100-150 KVA	-do-	+ 2.5 mt.
150-200 KVA	-do-	+ 3.0 mt.
200-250 KVA	-do-	+ 3.5 mt.
250-300 KVA	-do-	+ 3.5 mt.

For higher KVA rating stack height H (in meter) shall be worked out according to the formula:

$$H = h+0.2 (KVA)0.5$$

where h = height of the building in meters where the generator set is installed.

10. The pollution control devices shall be interlocked with the manufacturing process of the industry to ensure its regular operation.

11. The existing pollution control equipment shall be altered or replaced in accordance with the directions of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.

12. The industry will provide canopy and adequate stack with the D.G sets so as to comply with the provision of notification No GSR-371 E dated 17-5-2002(amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.

13. The Govt. of Punjab, Department of Science, Technology & Environment vide its notification no.4/46/92-3ST/2839 dt. 29/12/1993 has put prohibition on the use of rice husk as fuel after 1.4.1995 except the following:-

ï¿½In the form of briquettes and use of rice husk in fluidized bed combustion.So the industry shall make the necessary arrangement to comply with the above notification.ï¿½

14. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year

15. That the industry shall submit a yearly certificate to the effect that no addition / up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.

16. a) The industry shall ensure that at any time the emission do not exceed the prescribed emissions standards laid down by the Board from time to time for such type of industry /emissions.

    b) The industry shall ensure that the emissions from each stack shall conform to the following emission standards laid down by the Board in respect of the Industrial Boilers.

Steam Generating capacity A.	*Required particulate matter B.*	
Area upto 5 Km from Other than the periphery of I and Class-II town	*Other than 'A' class*	
Less than 2 ton/hr.	800 mg/NM3	1200 mg/NM3
2 ton to 10 ton/hr.	500 mg/NM3	1000 mg/NM3
Above 10 ton to 15 ton/hr	350 mg/NM3	500 mg/NM3
Above 15 ton/hr	150 mg/NM3	150 mg/NM3

All emissions normalized to 12% carbon dioxide.

17. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of theHazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.

18. The air pollution control equipments shall be kept at all time in good running condition and;

(i) All failures of control equipments.

(ii) The emissions of any air pollutant into the atmosphere in excess of the standards lay down by the Board occurring or being apprehended to occur due to accident or other unforeseen act or event. 'Shall be intimated through fax to the concerned Regional Office as well as to the Director of Factories, Punjab, Chandigarh as required under rule 10 of the Punjab State Board for the Prevention and Control of Air Pollution Rules, 1983'.

19. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.

20. The industry shall submit a site emergency plan approved by the Chief Inspector of Factories, Punjab as applicable.

21. The industry shall comply with the conditions imposed by the SEIAA/MOEF in the Environmental Clearance granted to it as required under EIA notification dated 14/9/06, if applicable.

22. The industry shall make necessary arrangements for the monitoring of stack emissions and shall get its emissions analyzed from lab approved / authorized by the Board:-

(i) Once in Year for Small Scale Industries.

(ii) Twice/thrice/four time in a Year for Large/Medium Scale Industries.

23. The industry shall maintain the following record to the satisfaction of the Board :-

(i) Log books for running of air pollution control devices or pumps/motors used for it.

(ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.

(iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.

24. The industry will install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of air pollution control device so as to the satisfy the Board regarding the regular operation of air pollution control device and monthly reading / record may be sent to the Board by the fifth of the following month.

25. The industry shall provide online monitoring system as applicable, for in stack emission and shall maintain the record of the same for inspection of the Board Officers.

26. The Board reserves the right to revoke the consent granted to the industry at any time, in case the industry is found violating the provisions of Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.

27. The industry shall comply with any other conditions laid down or directions issued in due course by the Board under the provisions of the Air (Prevention & Control of Pollution) Act, 1981.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.

29. Any amendments/revisions made by the Board/CPCB/MOEF in the emission/stack height standards shall be applicable to the industry from the date of such amendments/revisions.

30. The industry shall dispose off its solid waste generated by the burning of fuel in an Environmentally Sound Manner within the premises/outside as approved by the Board, to avoid public nuisance and air pollution problem in the area.

31. The industry shall ensure that no air pollution problem or public nuisance is created in the area due to the discharge of emissions from the industry.

32. The industry shall provide adequate arrangement for fighting the accidental leakage/discharge of any air pollutant/gas/ liquids from the vessels, mechanical equipment's etc, which are likely to cause environmental pollution.

33. The industry shall not change or alter the manufacturing process(es) and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.

34. The industry shall earmark a land within their premises for disposal of boiler ash in an environmentally sound manner, and / or the industry shall make necessary arrangements for proper disposal of fuel ash in a scientific manner and shall maintain proper record for the same, if applicable.

35. The industry shall obtain and submit Insurance cover under the Public Liability Insurance Act, 1991.

36. The industry shall provide proper and adequate air pollution control arrangements for control emission from its fuel handling area, if applicable.

37. The industry shall comply with the code of practice as notified by the Government/Board for the type of industries where the siting guidelines / Code of Practice have been notified.

38. The industry shall not cause any nuisance/traffic hazard in vicinity of the area

39. The industry shall ensure that the noise & air emission from D.G. sets do not exceed the standards prescribed for D.G. sets by the Ministry of Environment & Forests, New Delhi.

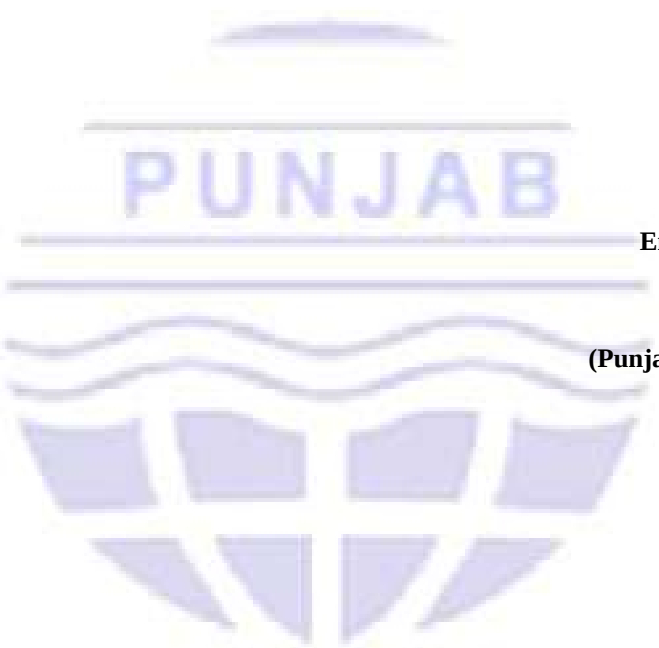
40. The industry shall ensure that there will not be significant visible dust emissions beyond the property line

41. The industry shall provide adequate and appropriate air pollution control devices to contain emissions from handling, transportation and processing of raw material & product of the industry.

42. The Industry shall ensure that its production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board.

B. SPECIAL CONDITIONS

(1)The industry shall not crush sugar cane more than 5000 TCD without getting Environmental Clearance.
(2)The industry shall comply with the guidelines framed for Sugar Mills by Ministry of Environment, Forests & Climate Change.





06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

PUNJAB POLLUTION CONTROL BOARD

ZONAL OFFICE JALANDHAR.

Website:- www.ppcb.gov.in

Office Dispatch No : **Registered/Speed Post** **Date:**

Industry Registration ID: *R12HSP41196* **Application No :** *12558957*

To,

Sh Jaitender Kumar
Sugar Mill Colony
Mukerian,Hoshiarpur-144211

Subject: **Renewal of 'Consent to Operate'an outlet u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent.**

With reference to your application for obtaining Renewal of ï¿½Consent to Operateï¿½an outlet for discharge of the effluent u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974, you are, hereby, authorized to operate an industrial unit fordischarge of the effluent(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Water Act, 1974 granted to the industry

Consent to Operate Certificate No.	*CTOW/Renewal/HSP/2020/12558957*
Date of issue :	*06/08/2020*
Date of expiry :	*31/03/2021*
Certificate Type :	*Renewal*
Previous CTO No. & Validity :	*CTOW/Renewal/HSP/2016/4039437* *From:07/10/2016 To:31/03/2020*

2. Particulars of the Industry

Name & Designation of the Applicant	*Mr.v. P. Gupta, (Vice President)*
Address of Industrial premises	*M/s Indian Sucrose Limited, Village - Chak Alla Baksh, G. T. Road, Mukerian, Distt. Hoshiarpur - 144211 Pb., Indian Sucrose Ltd., Mukerian,Hoshiarpur-144211*
Capital Investment of the Industry	*20563.8 lakhs*
Category of Industry	*Red*
Type of Industry	*Sugar*
Scale of the Industry	*Large*
Office District	*Hoshiarpur*
Consent Fee Details	282000/- through RTGS
Raw Materials(Name with quantity per day)	*SUGAR CANE @ 5000 Metric Tonnes/Day* *LIME @ 10 Metric Tonnes/Day* *SULPHUR @ 4 Metric Tonnes/Day*
Products (Name with quantity per day)	*SUGAR @ 500 Metric Tonnes/Day*

By-Products, if any,(Name with quantity per day)	*MOLASSES @ 225 Metric Tonnes/Day* *PRESS MUD @ 200 Metric Tonnes/Day* *BAGASSE @ 1400 Metric Tonnes/Day*
Details of the machinary and processes	*As per application.*
Details of the Effluent Treatment Plant	*ETP for trade effluent @ 2000 KLD & Domestic effluent 25 KLD.*
Mode of Disposal	*Trade effluent onto land for plantation/ irrigation through ETP.* *Domestic effluent onto land for plantation/ irrigation through STP.*
Standards to be achieved under Water(Prevention & Control of Pollution) Act, 1974	*As prescribed by the Board.*

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

Environmental Engineer, Regional office, Hoshiarpur.

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Limited or for getting loan from the financial institutions.
2. The industry shall apply for renewal/further extension in validity of consent atleast two months before expiry of the consent.
3. The industry shall ensure that the effluent discharging through the authorized outlet shall confirm to the prescribed standards as applicable from time to time.
4. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. The achievement of the adequacy and efficiency of the effluent treatment plant/pollution control devices/re-circulation system installed shall be the entire responsibility of the industry.
6. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Wastes(Management, Handling and Trans boundary Movement) Rules, 2008 as amended time to time , without any adverse effect on the environment, in any manner
7. The responsibility to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry. The Board shall only test check the accuracy of these reports for which the industry shall deposit the samples collection and testing fee with the Board as and when required.
8. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year.
9. The industry shall submit a yearly certificate to the effect that no addition/up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.
10. During the period beginning from the date of issuance and the date of expiration of this consent, the applicant shall not discharge floating solids or visible foam.
11. Any amendments/revisions made by the Board in the tolerance limits for discharges shall be applicable to the industry from the date of such amendments/revisions.
12. The industry shall not change or alter the manufacturing process(es) so as to change the quality and/or quantity of the effluents generated without the written permission of the Board.
13. Any upset conditions in the plant/plants of the factory, which is likely to result in increased effluent and/or result in violation of the standards lay down by the Board shall be reported to the Environmental Engineer, Punjab Pollution Control Board of concerned Regional Office immediately failing which any stoppage and upset conditions that come to the notice of the Board/its officers, will be deemed to be intentional violation of the conditions of consent.
14. The industry shall provide terminal manhole(s) at the end of each collection system and a manhole upstream of final outlet (s) out of the premises of the industry for measurement of flow and for taking samples.
15. The industry shall for the purpose of measuring and recording the quantity of water consumed and effluent discharged, affix meters of such standards and at such places as approved by the Environmental Engineer, Punjab Pollution Control Board of the concerned Regional Office.
16. The industry shall maintain record regarding the operation of effluent treatment plant i.e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment so as to satisfy the Board regarding regular and proper operation of pollution control equipment.
17. The industry shall provide online monitoring equipmentï¿½s for the parameters as decided by concerned Regional Office with the effluent treatment plant/air pollution control devices installed, if applicable.
18. The pollution control devices shall be interlocked with the manufacturing process of the industry.
19. The authorized outlet and mode of disposal shall not be changed without the prior written permission of the Board.
20. The industry shall comply with the conditions imposed by the SEIAA / MOEF in the environmental clearance granted to it as required under EIA notification dated14/9/06, if applicable.
21. The industry shall obtain and submit Insurance cover as required under the Public Liability Insurance Act, 1991.
22. The industry shall not use any unauthorized out-let(s) for discharging effluents from its premises. All unauthorized outlets, if any, shall be connected to the authorized outlet within one month from the date of issue of this consent.

23. The industry shall make necessary arrangements for the monitoring of effluent being discharged by the industry and shall monitor its effluents:-

    (i) Once in Year for Small Scale Industries.

    (ii) Four in a Year for Large/Medium Scale Industries.

    (iii) The industry will submit monthly reading/ data of the separate energy meter installed for running of effluent treatment plant/re-circulation system to the concerned Regional Office of the Board by the 5th of the following month.

24. The industry shall provide electromagnetic flow meters at the source of water supply, at inlet/outlet of effluent treatment plant within one month and shall maintain the record of the daily reading and submit the same to the concerned Regional Office by the 5th of the following month.

25. The Board reserves the right to revoke this consent at any time in case the industry is found violating any of the conditions of this consent and/or the provisions of Water (Prevention & Control of Pollution) Act, 1974 as amended from time to time.

26. The issuance of this consent does not convey any property right in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.

27. The consent does not authorize or approve the construction of any physical structures or facilities for undertaking of any work in any natural watercourse.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected under this or any other Act.

29. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of septic tank.

30. The diversion or bye pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except.

    (i) Where unavoidable to prevent loss of life or some property damage or

    (ii) Where excessive storm drainage or run off would damage facilities necessary for compliance with terms and conditions of this consent. The applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

31. The industry shall ensure that no water pollution problem is created in the area due to discharge of effluents from its industrial premises.

32. The industry shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.

33. Solids, sludge, filter backwash or other pollutant removed from or resulting from treatment or control of waste waters shall be disposed off in such a manner to prevent any pollutants from such materials from entering into natural water.

34. The industry shall re-circulate the entire cooling water and shall also re-circulate/reuse to the maximum extent the treated effluent in processes

35. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of re-circulation system/ effluent treatment plant.

36. The industry shall make proper disposal of the effluent so as to ensure that no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.

37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, the applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

38. The industry shall submit a detailed plan showing therein the distribution system for conveying waste-water for application on land for irrigation along with the crop pattern for the year.

39. The industry shall ensure that the effluent discharged by it is toxicity free.

40. The industry shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.

41. Drains causing oil & grease contamination shall will be segregated. Oil & grease trap shall be provided to recover oil & grease from the effluent.

42. The industry shall establish sufficient number of piezometer wells in consultation with the concerned Regional Office, of the Board to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the Environmental Engineer of the concerned Regional Office by the 5th of every month.

43. The industry shall ensure that its production capacity & quantity of trade effluent do not exceed the quantity mentioned in the consent and shall not carry out any expansion without the prior permission/NOC of the Board.

B. SPECIAL CONDITIONS

(1)The industry shall not crush sugar cane more than 5000 TCD without getting Environmental Clearance.
(2)The industry shall comply with the guidelines framed for Sugar Mills by Ministry of Environment, Forests & Climate Change.

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

INDIAN SUCROSE LIMITED
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EPABX No. +91+9115110651/52 e-mail : info.isl@yaducorporation.com
CIN - L15424PB1990PLC010903 ram.chand@yaducorporation.com
GSTIN 03AABCI1877K1ZJ

REF:ISL:AS:2019-20/ DT: 30.01.2020

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office, E-18-A, Focal Point
HOSHIARPUR

Subject: **Compliance of Water Consent Renewal for 5000 TCD Plant**

Dear Sir,

We are thankful to you for granting us Renewal of "Consent to Operate" an outlet U/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent vide your Letter No.9300 dated 07.10.2016.

The point-wise compliance of the Water Consent is as under:-

1. We have noted that this consent is not valid for getting power load from PSEB or for getting loan from the financial institutions.
2. We shall apply for renewal / extension of consent at least two months before expiry of the consent.
3. We shall ensure the effluent discharging through the authoirsed outlet shall confirm to the prescribed standards as applicable from time to time.
4. We planted minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. We achieved of adequacy and efficiency of the effluent treatment plant/ Pollution Control Devices/ Re-circulation System installed by the company.
6. We ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, as amended from time to time without any adverse effect on the environment, in any manner.
7. We shall responsible to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry.
8. We shall submit the Balance Sheet of every financial year to Regional Office, PPCB after finalization.
9. We shall submit a yearly certificate to the effect that no addition/ up-gradation/ modification/ modernization during the previous year.
10. Noted.
11. Noted
12. We will not change or alter the manufacturing process so as to change the quality and/or quantity of the effluent generated without the written permission of the board.
13. We ensure that any upset conditions in the plant of the factory, which is likely to result in increased effluent and/or result in violation of the standards laid down by the Board shall be reported to the Environmental Engineer, Regional Office of the Board.

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14. We have provided terminal manhole at the end of each collection system and a manhole upstream of the final outlet out of the premises of the industry for measurement of flow and for taking samples.
15. We affixed meters of such standards and at such places for the purpose of measuring and recording the quantity of water consumed and effluent discharged, as per direction of the board.
16. We have maintained the record regarding the operation of effluent treatment plant i. e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment for the satisfaction of board regarding regular and proper operation of pollution control equipment.
17. We have installed online continuous monitoring equipments at the outlet of effluent treatment plant.
18. The pollution control devices have interlocked with the manufacturing process of the plant.
19. We shall not change the authorized outlet and mode of disposal without the prior written permission of the Board.
20. Not Applicable.
21. We have obtained Insurance Cover under the Public Liability Insurance Act, 1991,
22. We will not use any unauthorized out-lets for discharging effluents from our premises.
23. We have made the necessary arrangements for the monitoring of effluent being discharged by the mill and monitored its effluents.
24. We have installed electromagnetic flow meter at effluent treatment plant.
25. We noted that Board reserves the right to revoke the consent granted to the industry at any time in case the industry is found violating any of the conditions of the consent under Water (Prevention & Control of Pollution) Act, 1974 as amended time to time.
26. Noted
27. Noted
28. Noted.
29. We have made the necessary and adequate arrangements to hold back the effluent in case of failure of Septic Tank.
30. We ensure that any diversion or by-pass of any discharge from facilities utilize by the industry in any unavoidable circumstances to prevent loss of life or some property damage.
31. We ensure that no water pollution problem is created in the area due to discharge of effluent from its industrial premises.
32. We shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.
33. Solid sludge, filter backwash etc removed from the treatment/ control process of waste water is being disposed off in proper manner & treated waste water is discharged on to land for irrigation.
34. We have been re-circulating the entire cooling water and also re-circulating/ reusing to the maximum extent the treated effluent in processes.

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35. We have arrangement to hold back the effluent in case of failure of re-circulation system / effluent treatment plant.
36. We have made arrangement for proper disposal of effluent & there is no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.
37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, we shall immediately notify the consent issuing authority in writing of each such diversion or by-pass.
38. We have already submitted detail plan showing therein the distribution system for conveying waste water for application on land of treated waste water on to land for irrigation.
39. We ensure that the effluent discharged by it is toxicity free.
40. We shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.
41. Oil & Grease trap has provided to recover Oil & Grease from the effluent.
42. The industry is going to establish sufficient number of Piezometer wells to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the EE of the concerned Regional Office.
43. We ensured that our production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board. In this regard, we submit that due to allotment of additional sugarcane from the area of other sugar mills by Cane Commissioner, Govt. of Punjab and Distt. Administration pressure to close the mill after crushing of available cane and allotted cane. It is a Seasonal and Agro based unit and the cane growers depends on mill and mill depends on the cane growers.

B. Special Conditions:

The company has applied for getting the Environment Clearance from SEIAA/ SEAC for increasing the crushing capacity from 5000 TCD to 12000 TCD, which is under process.

Hope you will find the above compliance satisfactory.

Regards

Thanking you

FOR INDIAN SUCROSE LIMITED

AUTHORISED SIGNATORY

INDIAN SUCROSE LIMITED
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The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office, E-18-A, Focal Point
HOSHIARPUR

Subject: **Compliance of Air Consent Renewal for 5000 TCD Plant**

Dear Sir,

We are thankful to you for granting us Air Consent Renewal vide your Letter dated 01.10.2019 to operate u/s 21 of Air (Prevention & Control of Pollution) Act, 1981.

The point-wise compliance of the Air Consent is as under:-

1. We have noted that this consent is not valid for getting power load from PSEB or for getting loan from the financial institutions.
2. We shall apply for renewal / extension of consent at least two months before expiry of the consent.
3. We have not violated any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled/ revoked.
4. We achieved of adequacy and efficiency of the installed Air Pollution Control Devices.
5. We shall not consume any fuel except baggase in boilers & diesel in DG sets without the prior written permission of the Board.
6. We shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height as per the norms fixed by the Board from time to time.
7. We have the port-holes, platforms and /or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets, as per given specifications.
8. We have displayed the board indicating environmental data near the stack.
9. i) We shall discharge all gases through a standard stack height as prescribed by the Board. We use Bagasse as fuel for steam generation
   ii) The stack height of Boiler is as per standard.
   iii)The stack height for DG Set is as per standard.
10. The Pollution control devices have interlocked with manufacturing process of the industry.
11. We have noted that existing pollution control equipment shall be altered or replaced in accordance with the direction of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.

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12. We have already provided certified canopy on the DG set to comply with the provisions of Notification No. GSR-371 E dt. 17.05.2002 (amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.
13. We will follow the direction as per Department of Science, Technology & Environment vide its Notification No. 4/46/92-3ST dt 29.12.1993.
14. We shall submit the Balance Sheet of every financial year to Regional Office, PPCB after finalization.
15. We shall submit a yearly certificate to the effect that no addition/ up-gradation/ modification/ modernization during the previous year.
16. i) We ensure that at any time emission will not exceed the standards laid down by the Board from time to time.
    ii) We ensure that emission from each stack will conform to the emission Standards laid down by the Board.
17. We ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.
18. The Air pollution control equipments have kept at all time in good running condition.
19. We planted minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
20. We are an old industry & has already get the building plan approved under the provision of section 3-A of Punjab Factories Rules 1952.
21. N. A.
22. We have already made necessary arrangements for the monitoring of stack emission two times in a year.
23. We have maintained the following record to the satisfaction of the Board:-
    i) Log books for running of air pollution control devices or pumps/motors used for it.
    ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.
    iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.
24. We shall install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of Air Pollution Control Device so as to the satisfy the Board regarding the regular operation of air pollution control device and monthly reading/ record shall be sent to the Board by 5th of the following month.
25. We shall provide the online monitoring system as applicable, for in stack emission and shall maintain the records of the same.
26. We have noted that Board reserves the right to revoke the consent granted to the industry at any time in case the industry is found violating any of the conditions of the consent under Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.
27. We shall comply with the conditions laid down or directions issued in due course by the Board under the provisions of Air Act, 1981.

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28. We have noted that nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.
29. N. A.
30. We will dispose off solid wastes generated, in a proper manner and to the satisfaction of the Board to avoid public nuisance and air pollution problem.
31. We ensure that no air pollution problem or public nuisance is created in the area due to discharge of emissions from the industry.
32. We have already provided adequate arrangements for fighting the accidental leakages/discharge of any air pollutant/gas/liquids from the vessel, mechanical equipment etc which are likely to cause environmental pollution.
33. We shall not change or alter the manufacturing process and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.
34. N. A.
35. We have obtained Insurance Cover under the Public Liability Insurance Act, 1991.
36. We have provided proper and adequate air pollution control arrangements for control emission from its fuel handling area.
37. N. A.
38. We have not cause any nuisance/traffic hazard in vicinity of the area.
39. We ensured that the noise & air emission from DG Sets do not exceed the standards prescribed for DG Sets by the Ministry of Environment & Forests, New Delhi.
40. N. A.
41. N. A.
42. We ensured that our production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board. In this regard, we submit that due to allotment of additional sugarcane from the area of other sugar mills by Cane Commissioner, Govt. of Punjab and Distt. Administration pressure to close the mill after crushing of available cane and allotted cane. It is a Seasonal and Agro based unit and the cane growers depends on mill and mill depends on the cane growers.

B. Compliances of special conditions are as under:-

1. We are having 03 Nos. of Oil & Grease removal traps before the inlet of ETP. We have installed the better quality of new belt and components for removal of Oil and Grease at the inlet of ETP and shall be started the same during the next crushing season 2019-20.
2. We got the online continuous effluent monitoring system (OCEMS) calibrated from M/s Forbes Marshall and Eco Laboratories and Consultants Pvt. Ltd., Mohali both are NABL Accredited Labs.
3. We had already appointed Environmental Engineer who is M. Tech. (Environment) from IIT for the operation & maintenance of ETP.

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4. We already got tested the soil from an organization of good repute.
5. We are going to cover the shed, chutes & conveyor belt of the fuel handling area of both the boilers before start of crushing season to avoid the baggase become air-borne during its movement.
6. We have started the operation of our ETP on 12th October, 2019 to operate & stabilize the ETP two months prior to the start of the coming crushing season 2019-20. Our crushing season started on 1st of December, 2019.
7. We already having the garland drain for the disposal of rainwater separately.
8. The Ash are being transported by the farmers to fill their low land areas and in their cane fields. The records is duly maintained at factory gate. We prepared an Ash Handling Management Plan and implemented the same in crushing season 2019-20.
9. We are already having an Irrigation Management Plan for the utilization of treated effluent. Please waive off this condition of Irrigation Management Plan to get approve from the Department of Soil & Water Conservation, Punjab, as we are not discharging the treated effluent/water out side the factory campus.
10. Lime Sludge collected in proper place environmentally sound manner and during off season, we are using for earth filling on the road and plant.
11. We attended the hearing on 19.11.2019 before the Chairman, PPCB, Patiala with all compliances.

Hope you will find the above compliance satisfactory.

Regards

Thanking you
FOR INDIAN SUCROSE LIMITED

AUTHORISED SIGNATORY

PROPOSED RAIN WATER HARVESTING

Rainwater harvesting is the accumulation and deposition of rainwater for reuse on-site, rather than allowing it to runoff. Rainwater can be collected from surface runoffs or roofs, and in many places the water collected is redirected to a deep pit (well, shaft, or borehole), a reservoir with percolation, or collected from dew or fog with nets or other tools. Depending upon the available contours at detailed engineering stage, the number of drainage outfall and extent of open drains etc. will be designed so as to discharge the water to the rainwater harvesting pond for reuse in dust suppression & greenbelt development. The calculation of rainwater endowment is presented here which shows the total rain water harvesting potential of the plant area.

Design of Rain water recharge structure

Three most important components, which need to be evaluated for designing a rainwater harvesting structure, are

- Hydrogeology of the area including nature and extent of aquifer, soil cover, topography, depthto water table and quality of groundwater.
- Area contributing to runoff i.e., total area and land use pattern, whether industrial, residential or green belts and general built up pattern of thearea
- Hydro meteorological characters viz. rainfall duration, general pattern of intensity ofrainfall.
- In order to design the recharge structure, hourly intensity of rainfall is considered to be 30mm/hr has been taken into account and the details are tabulatedbelow.

Based on the Runoff Coefficient the water harvesting potential of a site could be estimated using the formula given below:

Water harvesting potential in m^3/year = Annual Rainfall (m) x Area of catchment (m^2) x Runoff coefficient

Table 1: Data Assumed and/or Available for Rain water harvesting

S.No.	Details	Values
1	Roof top Area (Plant & Storage area + Administrative offices ,canteen, security) (m^2)	88400
2	Paved Area (Roads + Floor+ Parking) (m^2)	7000
3	Green Belt Area (m^2)	77900
4	Open Land Area	44900
5	Average Annual rainfall (mm) for Hoshiarpur District & surrounding areas	591.00
6	Hourly Rainfall intensity (m)	0.030
7	Runoff coefficient for roof top 0.80-0.90	0.85
8	Runoff coefficient for yard & paved area 0.60-0.65	0.65
9	Runoff coefficient for green belt0.10-0.20	0.15
10	Runoff coefficient for open area 0.10-0.20	0.20

Rooftop Rainwater Harvesting

The Industry is Sucrose manufacturing one, so it is highly suggested to recharge water through roof top mode only within the industrial premises to avoid contamination through other mode of recharge such as open area, green belt and roads and paved areas.

The plant premises having different buildings with RCC and dome / V shaped roof. Drain pipes (4-6 inches) should be constructed to collect water from flat RCC roof. These drain pipes need to be further connected with main rainwater collection pipes, provided with collection chambers. In case of dome / V shaped roof, rainwater is collected through gutters attached at the end of the roof and these gutters must be connected to rainwater pipes. From such roof catchments, almost 80-90% runoff water can be collected.

Average rooftop rainwater runoff available:
= A*RF*AvRc
Where,
A = Roof top area = 88400Sq.m.
RF = Rainfall = 591mm (Average annual rainfall, 2005-2019)
AvRc= Average run-off coefficient= 0.85
Average rainwater runoff available = 88400*.591*.85
=44407.74
Evaporation Loss is 20%
Therefore, total recharge from Roof Top Harvesting =44407.74-(44407.74*20%)
=35526.192 cum/annum

Hourly Runoff of Rooftop Rainwater Harvesting

Average hourly rooftop rainwater runoff available:
= A*HF*AvRc
Where,
A = Roof top area = 88400Sq.m.
HF = Hourly Rainfall = 30mm (Hourly intensity of rainfall is considered to be 30 mm/hr)
AvRc= Average run-off coefficient= 0.85
Average rainwater runoff available = 88400*0.03*.85
=2254.20

Total Runoff water quantity/Hour (m^3/hr) = 2254.20

Quantum of Rainwater recharge through individual recharge Structure:

Volume of water within free Board (Settlement Chamber)
= 6 m x 5 m x 2.5m = 75 m3
Volume of water in Gravel filled Part

i.e. Volume of water within the pore spaces of sand, gravel filled part @35%.

= 6 m x 5 m x 0.5 m x 0.35 = 5.25 m3

3).**Recharge well:**

Diameter of bore: 154mm

Diameter of well: 100mm

Depth of recharge well: It will depend upon the granular zone and depth of water table. Drilling of bore- well will be done up to depth of water table. Annular space will be provided with artificial gravel pack.

Volume of water in Recharge Well through which recharge will be done Intake capacity of recharge well= 36000 lph = 36 m3/hr.

Therefore, Total volume to be recharge through an individual structure will be

= (75 + 5.25 +36)

= 116.50 m3/hr

=2254.20/116.5 = **19.34= 19 rain water structures**

Thus, the rainwater recharging pit can accommodate 116.5 m^3/hr of the rainwater. Therefore, 19 rainwater harvesting structure require to accommodate the total quantum of runoff (35526.192 m^3/annum). The design of the proposed rooftop harvesting structure is recharge tube-well type of construction is given below with their capacity to recharge the rainfall in the ground water system. Periodic maintenance of filter media is required to get the full efficiency of the Artificial Recharge structure.

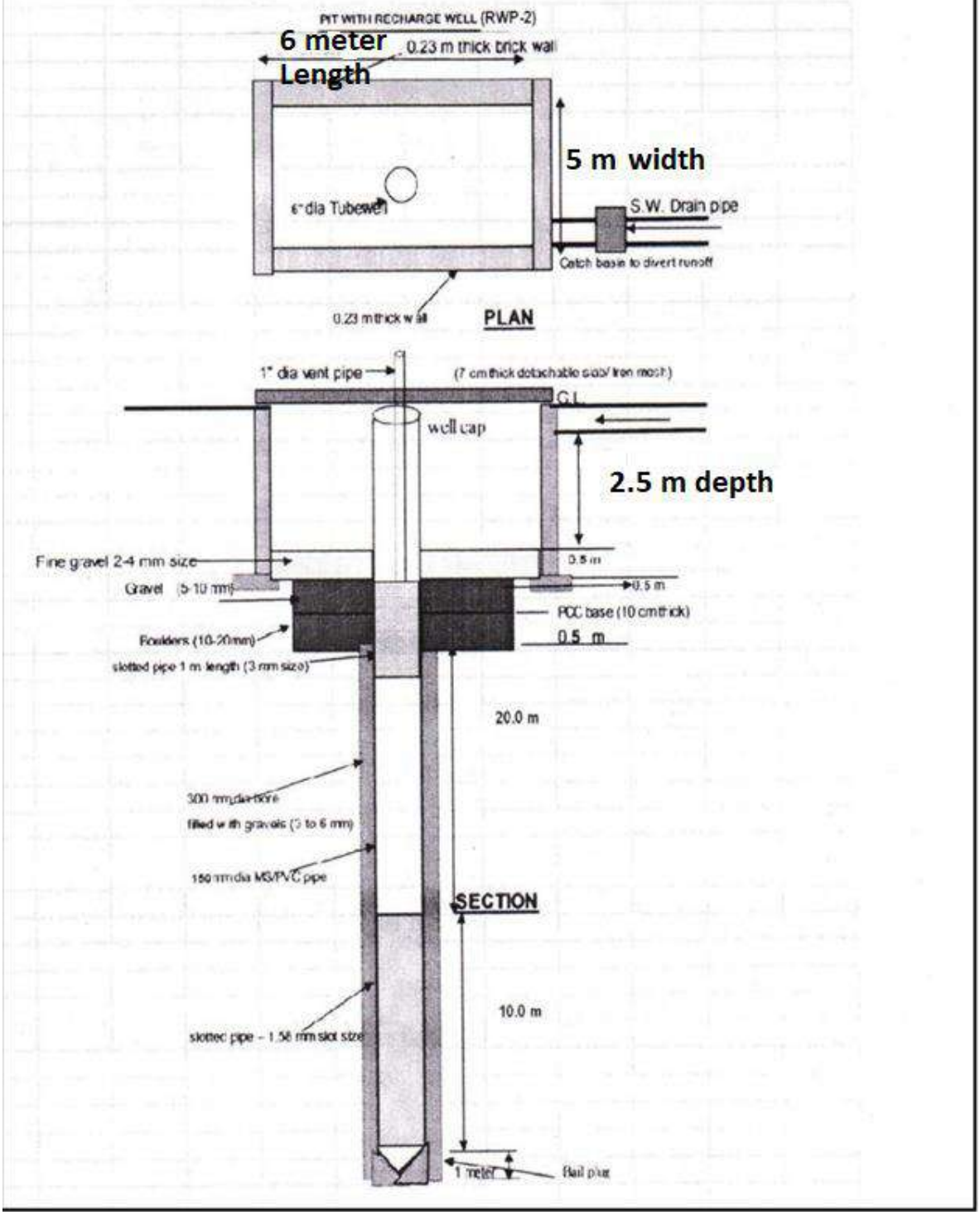


Figure 1 Systematic Rain Water Harvesting Structure

Artificial Groundwater Recharge outside Plant Premises

The industry has proposed for adoption of artificial recharge ponds in the villages within

the same watershed to avoid contamination of water from chemicals used in the Sucrose Industry. The ponds will be rejuvenated by widening and deepening them. Further Industry has proposed to construct/rejuvenate/deepening/desilting/maintenance along with installation of recharge shafts) Five large existing village ponds outside the industrial premises which would accommodate and recharge surface runoff from surrounding areas during monsoon season. It is logical that any recharge activity implemented in an area will surely benefit abstraction structures i.e. dug wells and bore wells in the surrounding as well as downstream area.

There will be 3 season of fillings. Slope of storm water drains shall be maintained in such a way to facilitate natural flow to RWH pond. The harvested water (Evaporation and other handling losses account to 20% reduction) may be utilized for greenbelt development, domestic, sanitation and some other activities increasing the ground water recharge.

The details of the villages ponds adopted for recharge are given in the below table:

Table 2

Summarization of Proposed Pond for Rainwater Harvesting

S. No.	Name of Village	Length in m	Width in meter	Depth in meter	Volume cubic meter	No of Fillings	Total Capacity	Net Recharge 40%
1	Gonspur	61.87	55.17	3.05	10404.46	3.00	31213.38	12485.35
2	Devi Dass - 1	137.16	58.52	3.05	24465.76	3.00	73397.27	29358.91
3	Devi Dass - 2	67.06	25.91	3.05	5295.25	3.00	15885.75	6354.30
4	Abdulapur	68.58	33.53	3.05	7008.42	3.00	21025.26	8410.10
5	Jalala	60.96	36.58	3.05	6796.04	3.00	20388.13	8155.25
Total Area in cubic meter cubic meter					53969.93	3.00		**64763.91**

Table 3

SUMMARIZATION OF RAINWATER HARVESTING PLAN

Total Fresh Water Requirement for Proposed Project	597 KLD or **197010 Cum/annum** (330 working days)
Source of Water Withdrawal for Project Activities	Groundwater
RWH Potential/Artificial Recharge Criteria	Minimum 50% recharge (Semi Critical Zone) (As Per CGWA Guidelines)
A. Rainwater Harvesting Quantum - Proposed Storage/Recharge Trench inside Industrial Premises	
I. Industrial	**35526.19 cum/annum**
II. Rainwater Harvesting Quantum outside Industrial Premises	***64763.91*** **cum/annum**
Total Rainwater Harvesting Potential (I + II)	**100290.10 cum/annum**
RWH Potential/Artificial Recharge Developed	**50.90 %**

Recommendation:

1. The project area lies in 'Semi Critical Zone' as per the dynamic groundwater resources of India 2017. The annual run-off generated from the roof top area is **35526.19 m^3/year,** when annual rainfall is 591.0 mm.
2. Presently M/S Indian Sucrose Limited does not have any arrangement to arrest the rainwater and recharge it through Rooftop RWH structures.
3. Hence they have to construct 19 rainwater harvesting structure in their premises to improve and develop of Ground water level.
4. The industry has proposed for adoption of ponds outside the industrial premises, in which total **64763.91m^3/year** recharge will be done.
5. Indian Sucrose Limited will carry out period maintenance of recharge structures. There will be 3 season of fillings.

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Point No. iv: SUBMIT REVISED CER ACTIVITIES AS PER THE OM DATED 01.05.2018.

Reply: Corporate Environment Responsibility (CER) Activities:-

Corporate Environment Responsibility is for the sustainable development of various components like Social, Economic, Environmental etc. These entire components are closely interrelated and mutually re-enforcing. The various activities proposed under the CER will as per the issue raised during Public hearing, Social need assessment and Environment Management Plan. The Industry intends to undertake CER activities in and around their Plant.

The CER budget proposed by the project proponent is **8.4 Crore**. The details of CER activities are explained in the Table.

S.No.	CER Activities	Fund allocated (Lakhs)	Implementation Time
1.	Organic waste converter with consultation of village panchayat (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	40	1 year
2.	Pond Adaptation in Village (1. Gonspur (2. Devi Dass-1 (3. Devi Dass-2 (4. Abdulapur (5. Jalala	150	3 years
3.	Medical facility provided in dispensary of following villages (1. Bhangala (2. Tanda Ram Sahai (3. Bhebal Manj	40	1 year
4.	Ambulance Facility 24x7 made available	30	1 year

	(1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur		
5.	Solar Panel installation / Computer labs/ Toilet facility in schools of village (1. G.P.S. Panjhdera kalan (2. K.M.S. Khanpur (3. G.P.S. Muradpur Awana	200	3 years
6.	Provide color coded dustbins in (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	20	1 year
7.	Green Area development (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	45	2 years
8.	STP installation in village (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	100	3 years
9.	Drainage system development in (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel	100	3 years

	(5. Khanpur		
10.	Community toilet for male & female	70	1 year
11.	Rain Shed at bus stops	50	2 years
	Total	**8.4**	

NOC has been already taken from the village dispensary and schools.

TO WHOM IT MAY CONCERN

I, Sarabjit kaur Principal/ Headmaster of GPS Panjdhera kalan School at Village Panjdhera kalan Tehsil Mukerian, District Hoshiarpur has permitted to M/s Indian Sucrose Ltd., G. T. Road, Mukerian that they can built the separate toilets for boys and girls/donate computers/solar water heaters in the School as CER activity and I have no objection for the same.

Principal/ Headmaster Sarabjit kaur

Name of School & Village: GPS Panjdhera kalan

Tehsil: Mukerian

District: Hoshiarpur

Date: 17.07.2020

ਮੁੱਖ ਅਧਿਆਪਕ, Sarabjit kaur
ਸਰਕਾਰੀ ਐਲੀਮੈਂਟਰੀ ਸਕੂਲ
ਪੰਜ ਢੇਰਾ ਕਲਾਂ ਬਲਾਕ -1 ਮੁਕੇਰੀਆਂ (ਹੁਸ਼ਿ.)

TO WHOM IT MAY CONCERN

I, Kanta Devi Principal/ Headmaster of G. M. S. Khanpur School at Village Khanpur Tehsil Mukerian, District Hoshiarpur has permitted to M/s Indian Sucrose Ltd., G. T. Road, Mukerian that they can built the separate toilets for boys and girls/donate computers/solar water heaters in the School as CER activity and I have no objection for the same.

Principal/ Headmaster Kanta Devi

Name of School & Village: G. M. S. Khanpur

Tehsil: mukerian

District: Hoshiarpur

Date: 17.07.2020

Dt. 16.07.2020

NO OBJECTION CERTIFICATE

I, Renu Bala Principal of G.P.S. Muradpur Awana, Distt. Hoshiarpur has permitted to M/s. Indian Sucrose Limited, Vill. Chak Alla Baksh, G. T. Road, Mukeiran, Distt. Hoshiarpur for adopting our school situated at Maradpur Awana to do the CER activities and I have No Objection for the same.

Principal Renu Bala
ਹੈਡ ਟੀਚਰ
ਸਰਕਾਰੀ ਐਲੀ. ਸਕੂਲ ਮੁਰਾਦਪੁਰ ਅਵਾਣਾ
Tehsil : Mukerian, ਮੁਕੇਰੀਆਂ-1 (ਹੁਸ਼ਿਆਰਪੁਰ)
Distt. Hoshiarpur

TO WHOM IT MAY CONCERN

I, Dr Pooja Devi (Medical Officer) Government Dispensary at Village Bhangala Tehsil Mukerian, District Hoshiarpur has permitted to M/s Indian Sucrose Ltd., G. T. Road, Mukerian that they can provide medicines/beds/ambulance to the dispensary as CER activity and I have no objection for the same.

Medical Officer
M.S.I
M.P.H.C.
Bhangala (Hsp.)

Authorised Signatory:

Name of Village: Bhangala

Tehsil: Mukerian

District: Hoshiarpur

Date: 17.07.2020

TO WHOM IT MAY CONCERN

I, Dr. Money (Medical officer) of **Government Dispensary** at Village Tanda Ram Sahai **Tehsil Mukerian, District Hoshiarpur** has permitted to **M/s** Indian **Sucrose Ltd., G. T. Road, Mukerian** that they can provide medicines/beds/ambulance to the dispensary as CER activity and I have no objection for the same.

[redacted]

Authorised Signatory

Name of Village: Tanda Ram Sahai

Tehsil: Mukerian

District: Hoshiarpur

Date: 17.07.2020

TO WHOM IT MAY CONCERN

I, Dr. Parneet Kaur (Medical Officer) of Government Dispensary at Village Behbalmanj Tehsil Mukerian, District Hoshiarpur has permitted to M/s Indian Sucrose Ltd., G. T. Road, Mukerian that they can provide medicines/beds/ambulance to the dispensary as CER activity and I have no objection for the same.

Authorised Signatory

Name of Village: Behbal Manj

Tehsil: Mukerian

District: Hoshiarpur

Date: 17.07.2020

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Applications for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

1.	**General Information:**		
	Water Quality:		Fresh Water
	Application Type Category/ Type of Application:		Sugar
	(i)	**Name of Industry:**	M/S INDIAN SUCROSE LIMITED
	(ii)	**Location Details of the Industrial Unit- (Attach Approved Site Plan with Location Map) ($)**	
		Address Line 1 :	VILLAGE:CHACK ALLA BAKSH, MUKERIAN,
		Address Line 2 :	DISTRICT:HOSHIARPUR
		Address Line 3 :	
		State:	PUNJAB
		District:	HOSHIARPUR
		Sub-District:	MUKERIAN
		Village/Town:	Mukerian (M Cl)
		Latitude:	31.928234
		Logitude:	75.626393
		Area Type :	Non-Notified
		Area Type Category :	Semi Critical
	(iii)	**Communication Address**	
		Address Line 1:	M/S INDIAN SUCROSE LIMITED
		Address Line 2:	VILLAGE:CHACK ALLA BAKSH, MUKERIAN
		Address Line 3:	DISTRICT:HOSHIARPUR
		State:	PUNJAB
		District:	HOSHIARPUR
		Sub-District:	MUKERIAN
		Pincode:	144211
		Phone Number with Area Code:	91 1765 502882
		Mobile Number:	91 8146975254
		Fax Number:	
		E-Mail:	prince.gupta1246@yahoo.com
	(iv)	**Salient Features of the Industrial Activity:**	
		MANUFACTURING UNIT OF SUGARCANE	

	(v)	**Land Use Details of the Existing / Proposed Industrial Unit Premises Ownership of the Land :**			
		Land Use Details	**Existing (sq meter)**	**Proposed (sq meter)**	**Grand Total (sq meter)**
		Green Belt Area	77083.00		77083.00
		Open Land	26563.00		26563.00

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

		Road/ Paved Area	6944.00		6944.00
		Rooftop area of building/ sheds	119410.00		119410.00
		Total	230000.00		230000.00

	(vi)	**Drainage in the Area (River/ Nala etc) :**	NA
	(vii)	**Source of Availability of Surface Water for Infrastructure Use (Submit Water Availability / Non Availability Certificate):($)**	NA
	(viii)	**Average Annual Rainfall in the Area (in mm):**	636.00
	(ix)	**Townships / Villages (Within 2km Radius of the Industrial Unit):**	VILLAGE: CHACK ALLA BAKSH
	(x)	**Whether Ground Water Utilization for:**	Existing Industry
		Date of Commencement Industry:	18/11/2010
		Date of Expansion :	

2. Details of Water Requirement (Fresh and Recycled Water Usage):
(Please Enclose Water Balance Flow Chart of Activities and Requirement of Water at each Stage) ($)

(i) Total Water Requirement (a+b+c+d) (m3/day)

			Existing	**Proposed**	**Total**
		Water Requirement Details (Fresh Water) (m3/day)			
(a)	**Ground Water Requirement (m3/day):**		597.00	0.00	597.00
(b)	**Surface Water Available (Canal, River, Ponds etc.) (m3/day):**		0.00	0.00	0.00
(c)	**Water Supply from Any Agency (m3/day):**		0.00	0.00	0.00
	Total Fresh Water Requirement (a+b+c)(m3/day):		**597.00**	**0.00**	**597.00**
(d)	**Recycled Water Usage (m3/day):**		0.00	0.00	0.00
	Total Water Requirement : (a+b+c+d)(m3/day)		**597.00**	**0.00**	**597.00**

(ii) Breakup of Water Requirement and Usage:

Activity	**Existing Requirement (m3/day)**	**Proposed Requirement (m3/day)**	**Total Requirement (m3/day)**	**No. of Operational Days in a Year**	**Annual Requirement (m3/year)**
Industrial Activity	550.00	0.00	550.00	150	82500.00
Residential / Domestic	47.00	0.00	47.00	150	7050.00
Greenbelt Development /Environment Maintenance	0.00	0.00	0.00	150	0.00
Other Use	0.00	0.00	0.00	150	0.00
Grand Total	597.00	0.00	597.00		89550.00

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(iii)	**Breakup of Recycled Water Usage:**					
			(m3/day)	**(Days)**	**(m3/year)**
(a)	**Total Waste Water Generated :**		537.00	150	80550.00
(b)	**Quantity of Treated Water Available**		0.00		
	i).	**Reuse in Industrial Activity:**	0.00	150	0.00
	ii).	**Reuse in Green Belt Development:**	537.00	150	80550.00
	iii).	**Other Uses:**	0.00	150	0.00
(c)	**Total Treated Water Utilized:**		537.00		80550.00
Net Ground Water Requirement:			597.00 (m3/day)		

3. (a). Groundwater Abstraction Structure- Existing:

Number of Existing Structures: 7

SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether Fitted with Water Meter	Whether Permission Registered with CGWA / If so Details Thereof
1	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
2	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
3	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
4	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
5	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
6	Tubewell / 2011	70.00 / 60	40.00	14.00	5 / 150	Submersible Pump	15.00	No	No / -
7	Tubewell / 2011	70.00 / 60	40.00	15.00	10 / 150	Submersible Pump	15.00	No	No / -

(b). Groundwater Abstraction Structure- Proposed:

Number of Proposed Structures: 0

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	SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether fitted with Water Meter	Whether Permission Registered with CGWA / If so Details Thereof

4.	**Groundwater Availability (Please Enclose a Comprehensive Report / Note on Groundwater Condition in and Around the Area) Applicable to Industries Consuming Greater Than 500 m3/day : ($)**
	RAIN WATER HARVESTING PROPOSAL ENCLOSED
5.	**Details of Rrainwater Harvesting and Artificial Recharge Measures Proposed / Implemented. If Ground Water Recharge outside the Industrial Unit Premises, then provide NOC from the Concern Authority / Agency if Already implemented, details may be furnished. (Attach Rainwater Harvesting /Artificial Recharge Proposal).($)**
	RAIN WATER HARVESTING PROPOSAL ENCLOSED
6.	**Consent to Operate / Estibilish / Approval Letter from Statutory Bodies viz Ministry of Environment & Forests (MoEF) or State Pollution Control Board(SPCB) or State Level Expert Appraisal Committee(SEAC) or State Level Environment Impact Assessment Authority(SLEIAA):($)**
	Attached Consent/ Approval of Government Agency(Previous: Referral Letter)
	Letter Number — **PPCB CONSENTS ENCLOSED**

	S.No	Consent /Approval of Govornment Agency	Attachment Name	File Name
	1	State Pollution Control Board	WATER CONSENT	Consent of Water .pdf
	2	State Pollution Control Board	AIR CONSENT	Consent of Air .pdf

7.	**Have You Applied Earlier for Groundwater Clearance from CGWA / State Government Agency:**
	If Yes, so Details thereof with Status:

INDUSTRIAL USE- Self Declaration

☑ I hereby certify that the data and information furnished above are true to the best of my knowledge and belief and I am aware that if any part of the data / information submitted is found to be false or misleading at any stage, the application will be rejected outright.

I hereby declare that all the mandatory documents prescribed in the application form have been uploaded and no blank /irrelevant documents have been uploaded. I am also aware that any false/ wrong submission /uploading of document will lead to rejection of my application without any notice.

It is to certify that no case related to ground water withdrawal/ contamination is pending against the industry/ project/ unit as on date. Any such case filed against the company/ project/ unit in respect of ground water withdrawal/ contamination during the pendency of this application shall be immediately brought to the notice of CGWA.

I hereby undertake that in case any environmental compensation/ penalty is imposed on the firm by any statutory authority, I shall comply with the decision of such authority.

1. Application proforma is subject to modification from time to time.

2. Application will be submitted online on website http://cgwa-noc.gov.in to following office.

Regional Director,Central Ground Water Board North Western Region, Bhujal Bhawan, Plot No. 3B, Sector 27-A, CHANDIGARH, CHANDIGARH, 160019

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

3. Incomplete application will be summarily rejected.
Scanned copy of last page of application with signature and seal should be attached at presribed place before submission of application.
4. Reciept of Processing Fee of Rs. 1000.00/- (Rupees One Thousand Only) submitted through NON TAX RECEIPT PORTAL (https://bharatkosh.gov.in) should be attached in online application at prescribed place before submission of application.
Bharatkosh Details:-

Bharat Kosh Transaction Ref. No:-	2204200001585
Bharat Kosh Transaction Date:-	24/04/2020

Note:- The Processing Fee is Non-Refundable. Applicant should ensure and Check Eligibility of Submission of Application and Required Documents before Submitting Online Application.

5.	Hard copy of application required:	No

Attached Files:

1). Site Plan with Location Map (Previous: Site Plan) : (Refer: 1 (ii))

No Attachment Found!

2). Certified Revenue Sketch : (Refer: 1 (ii))

No Attachment Found!

3). Documents of Ownership / Lease : (Refer: 1 (v))

No Attachment Found!

4). Source Water Availability/Non-availability Certificate(Previous: Source of Availability of Surface Water) : (Refer: 1 (vii))

S.No	Attachment Name	File Name
1	CERTIFICATE OF MC	Certificate from MC.pdf

5). Water Balance Flow Chart (Previous: Enclose Flow Chart of Activity and Requirement of Water): (Refer: 2)

No Attachment Found!

6). Hydrogeological Report(Previous: Groundwater Availability Report) : (Refer: 4)

S.No	Attachment Name	File Name
1	WATER BALANCE FINAL	WATER BALANCE FINAL INDIAN SUCROSE LTD.pdf

7). Rain Water Harvesting/Artificial Recharge proposal(Previous: Details of Rainwater Harvesting / Artificial Recharge Measures) : (Refer: 5)

S.No	Attachment Name	File Name
1	RAIN WATER HARVESTING PROPOSAL ENCLOSED	RAIN WATER RECHARGE PROPOSAL INDIAN SUCROSE LIMITED.pdf

8). Authorization Letter (Previous: Authorization) :

S.No	Attachment Name	File Name
1	RESOLUTION OF VP GUPTA	resolution of VP Gupta.pdf

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

10). Ground Water Quality Report(Previous: Non-Polluting Effluent) :

S.No	Attachment Name	File Name
1	FRESH WATER SAMPLING REPORT	FRESH WATER SAMPLING REPORT.pdf
2	ETP SAMPLING REPORT	ETP SAMPLING REPORT.pdf

11). Extra Attachment :

S.No	Attachment Name	File Name
1	CGWA FLOW CHART	CGWA WATER FLOW CHART.pdf
2	LAYOUT PLAN	layout plan.pdf
3	REVENUE SKETCH	REVENUE SKETCH.pdf

12). Scanned Industrial Application :

No Attachment Found!

13). Bharat Kosh Reciept (Porcessing Fee):

S.No	Attachment Name	File Name
1	BHARATKOSH RECEIPT	CGWA NTRP GOVT FEE RECEIPT.pdf

14). Application with Signature and Seal:

S.No	Attachment Name	File Name
1	SIGNATURE OF VP GUPTA	resolution of VP Gupta.pdf

Date : Name & Signature of the applicant

Place : (With official seal)

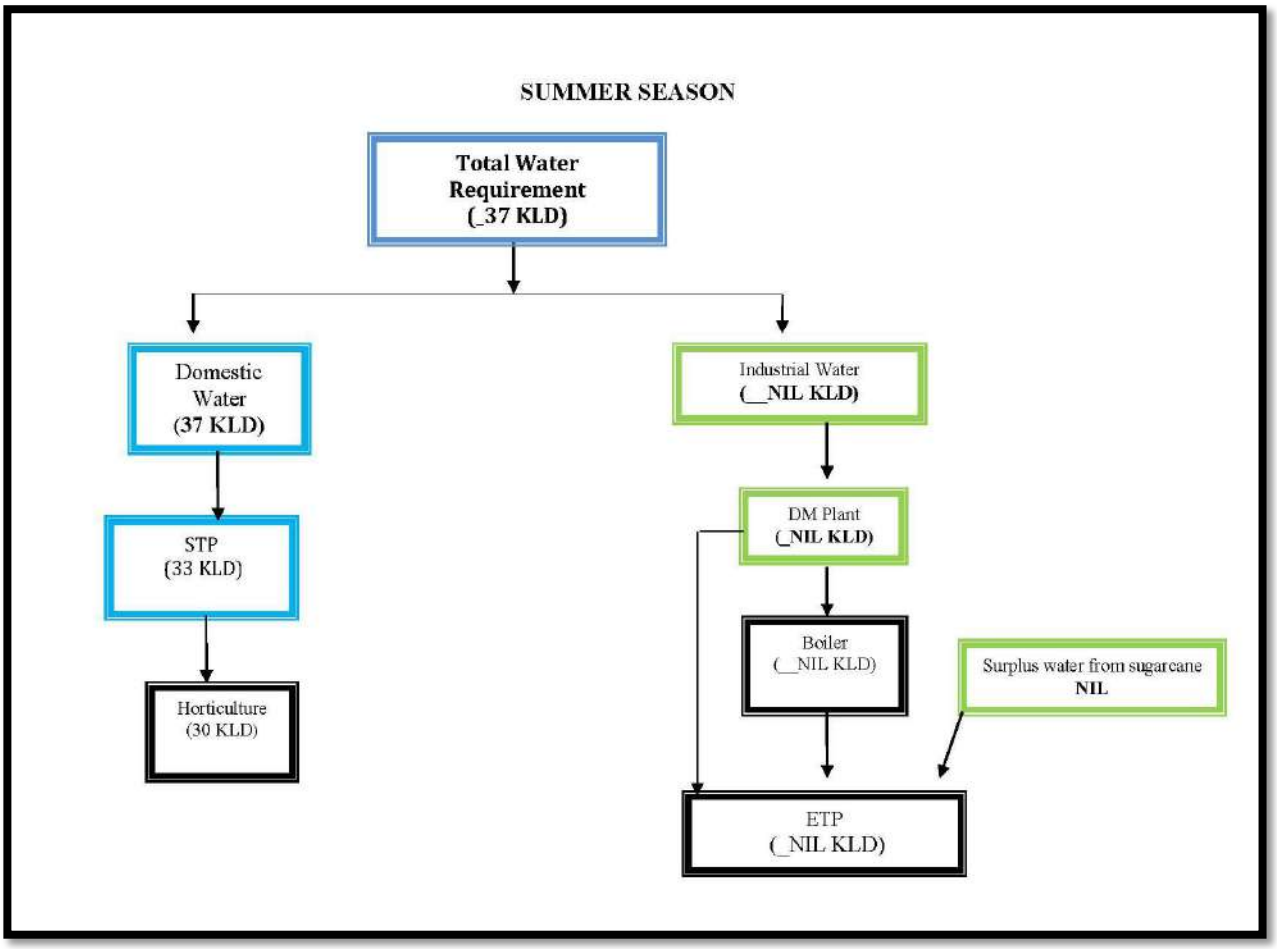
Associated User : INDIANSUCROSE

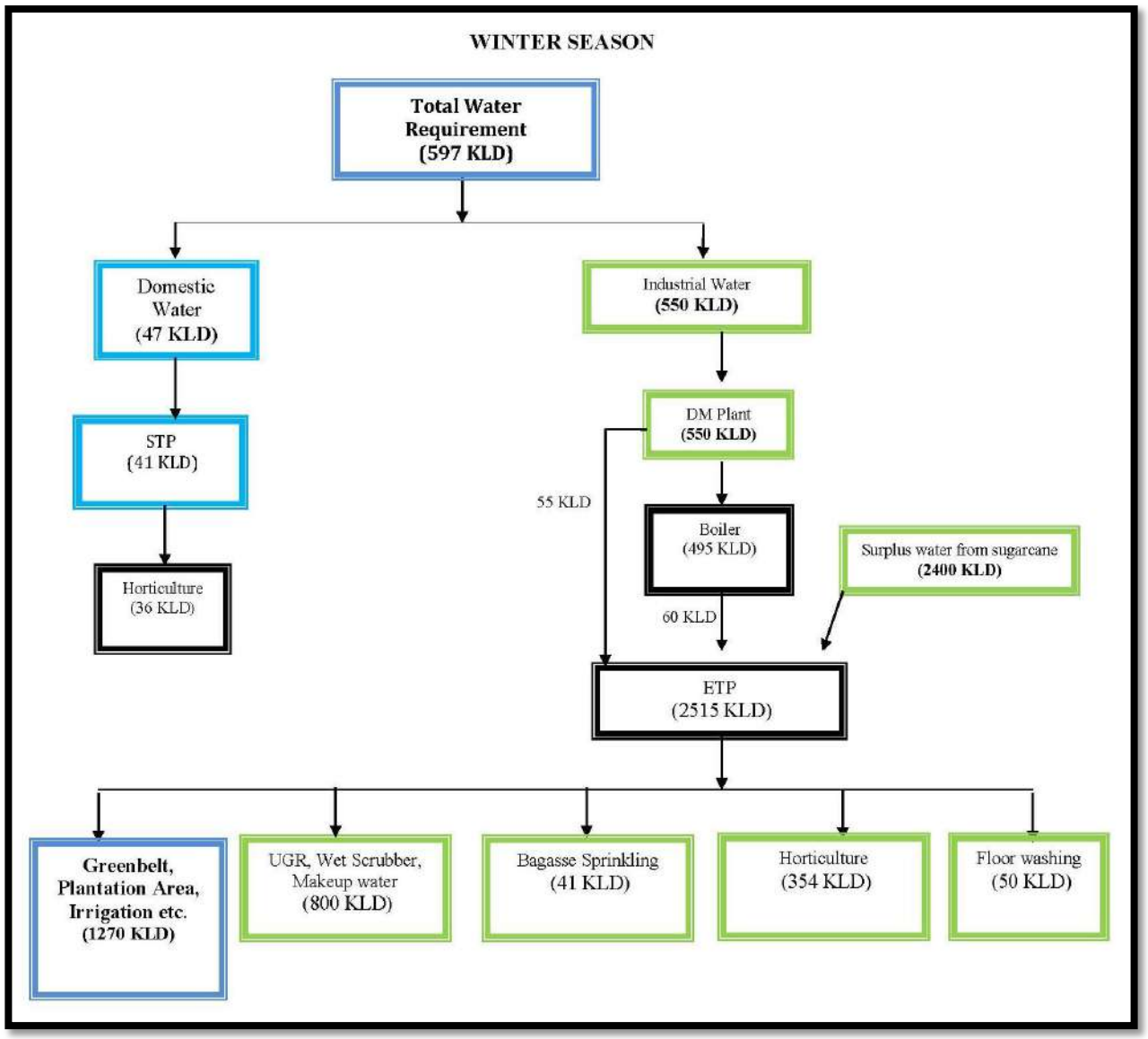
Submitted By User : INDIANSUCROSE

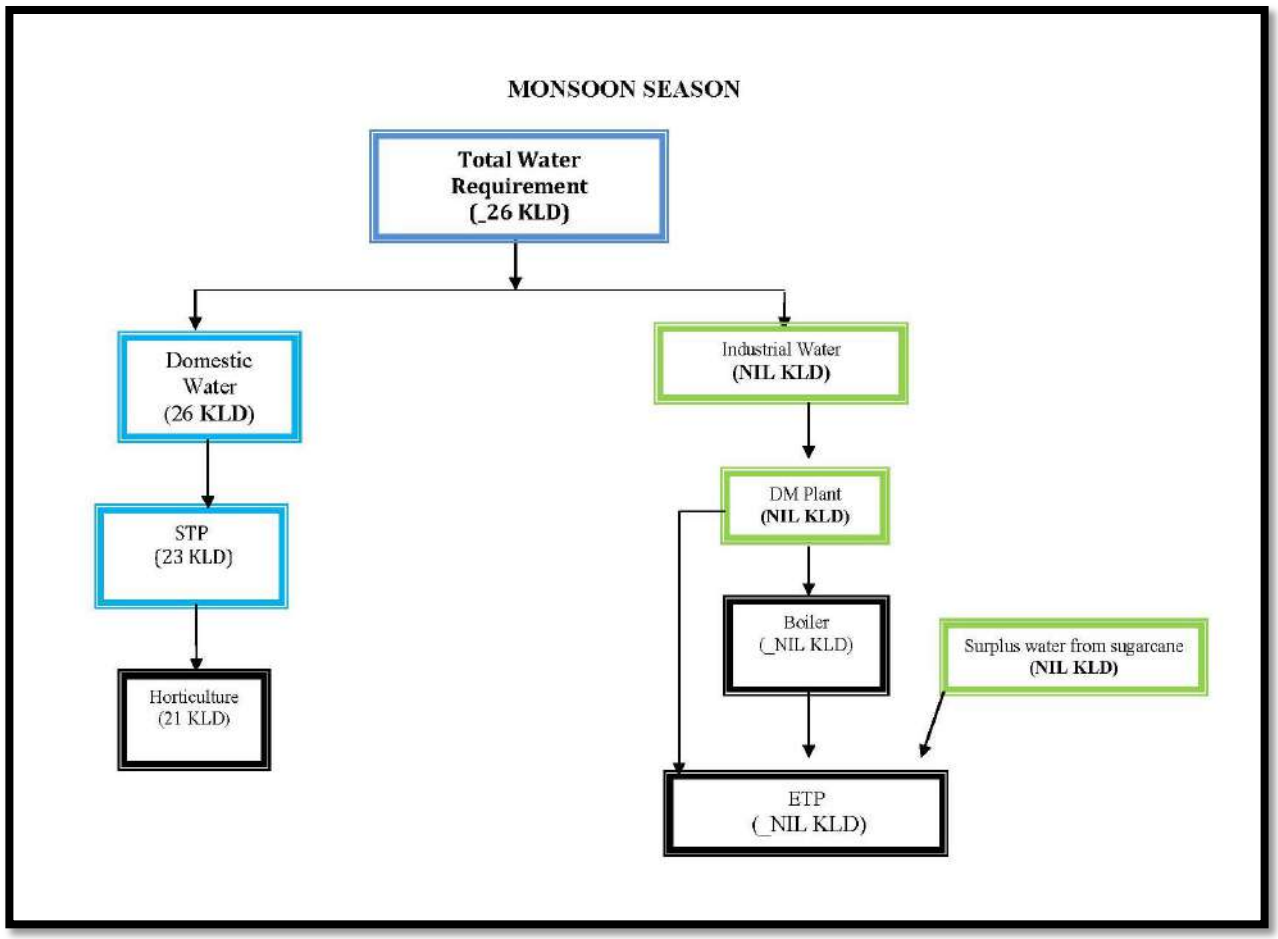
Submission Date : 28/04/2020

* In case signed by any authorized signatory, the details of the signatory with the authorization shall be enclosed.

Existing Water Requirement in the sugar mill is **468 KLD** and **129 KLD additional water** will be required for the proposed project. The total water requirement for Sugar Mill will be **597 KLD**.
Ground water will be used in the sugar mill through Tube well. Permission from CGWA **application** has been applied vide application no **21-4/5656/PB/IND/2020** on dated **28/04/2020** Details of water balance are given below:




WINTER SEASON
Total Water Requirement (597 KLD)
Domestic Water (47 KLD)
Industrial Water (550 KLD)
STP (41 KLD)
DM Plant (550 KLD)
55 KLD
Boiler (495 KLD)
Surplus water from sugarcane (2400 KLD)
Horticulture (36 KLD)
60 KLD
ETP (2515 KLD)
Greenbelt, Plantation Area, Irrigation etc. (1270 KLD)
UGR, Wet Scrubber, Makeup water (800 KLD)
Bagasse Sprinkling (41 KLD)
Horticulture (354 KLD)
Floor washing (50 KLD)


MONSOON SEASON
Total Water Requirement (_26 KLD)
Domestic Water (26 KLD)
Industrial Water (NIL KLD)
STP (23 KLD)
DM Plant (NIL KLD)
Boiler (_NIL KLD)
Surplus water from sugarcane (NIL KLD)
Horticulture (21 KLD)
ETP (_NIL KLD)

TREATED WATER IRRIGATION PLAN AS ON TODAY 21.09.2020

Calculation of treated water loading to plantation area is:-

SOIL TEXTURE		LOADING RATE IN	Average
		M3/Ha/Day	M3/Ha/Day
SANDY LOAM		170 to 225	197.5
	(As per Govt. notification annexed)		

We have 7.851 Ha plantation area for irrigation and Irrgation type is Canal Irrigation.
(Plot details and location of plot is depicted in the drawing annexed)
So, Average loading Rate per M3/Ha/day will be :- 197.50x7.351= 1451 M3 per Day

So it is sufficient to irrigate the treated water discharged on the land inside the plant

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग II—खण्ड 3—उप-खण्ड (i)
PART II—Section 3—Sub-section (i)
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 31] नई दिल्ली, शुक्रवार, जनवरी 15, 2016/पौष 25, 1937
No. 31] NEW DELHI, FRIDAY, JANUARY 15, 2016/ PAUSA 25 , 1937

पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 14 जनवरी, 2016

सा.का.नि. 35(अ).—केंद्रीय सरकार, पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 6 और धारा 25 द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए पर्यावरण (संरक्षण) नियम, 1986 का और संशोधन करने के लिए निम्नलिखित नियम बनाती है, अर्थात् :-

1. **लघु शीर्षक और प्रवर्तन.**- (1) इन नियमों का संक्षिप्त नाम पर्यावरण (संरक्षण) संशोधन नियम, 2016 है।

(2) ये उनके राजपत्र में प्रकाशन की तारीख को प्रवृत्त होंगे।

2. पर्यावरण (संरक्षण) नियम, 1986 की अनुसूची 1 में,-

(क) क्रम सं. 4 और उससे संबंधित प्रविष्टियों के स्थान पर निम्नलिखित क्रम सं. और प्रविष्टियां रखी जाएंगी, अर्थात् :-

क्रम सं.	उद्योग	मापदंड	मानक
(1)	(2)	(3)	(4)
"4.	चीनी उद्योग	बहिःस्राव	सभी सांद्रण मूल्य सिवाय पीएच के मिलीग्राम प्रति लीटर में है
		पीएच	5.5 – 8.5
		कुल निलंबित ठोस पदार्थ (टीएसएस). मिलीग्राम प्रति लीटर	100 (भूमि पर निपटान के लिए) 30 (भू-पृष्ठ जल पर निपटान के लिए)
		जैव आक्सीजन मांग, बीओडी, [27° सेंटीग्रेट पर तीन दिन], मिलीग्राम प्रति लीटर	100 (भूमि पर निपटान के लिए) 30 (भू-पृष्ठ जल पर निपटान के लिए)

		तेल एवं ग्रीज़, मिलीग्राम प्रति लीटर	10
		कुल भंग ठोस पदार्थ (टीडीएस), मिलीग्राम प्रति लीटर	2100
		अंतिम अपशिष्ट जल बहि:स्राव सीमा	200 लीटर प्रति टन पेराई किए हुए गन्ने के लिए
		(पेराई किए हुए गन्ने के प्रति टन के लिए अंतिम उपचारित अपशिष्ट बहि:स्राव 100 लीटर तक निर्बंधित है और छिडकाव तालाब ओवरफ्लो से अपशिष्ट जल या शीतलन टावर ब्लो डाउन पेराई किए हुए गन्ने के लिए 100 लीटर प्रति टन तक निर्बंधित है तथा इकाई से एकल आउटलेट बिन्दु अनुज्ञात है)	
		उत्सर्जन	
		स्टेक से विविक्त पदार्थ उत्सर्जन प्रति सामान्य क्यूबिक मीटर 150 मिलीग्राम से कम होगा।	

4(1) चीनी उद्योगों में उपचारित बहि:स्राव सिंचाई प्रोटोकाल और अपशिष्ट जल संरक्षण या अपशिष्ट जल प्रबंधन

(i) विभिन्न मृदा टेक्सचरों के लिए लदाई दरें

क्रम सं.	मृदा टेक्सचर	m^3/Ha/Day में लदाई दर
1.	रेतीली	225 से 280
2.	रेतीली दुमट	170 से 225
3.	दुमट	110 से 170
4.	क्ले दुमट	55 से 110
5.	क्ले	35 से 55

(ii) अपशिष्ट जल संरक्षण और प्रदूषण नियंत्रण प्रबंधन

1. अधिक साधित्र जल के पुन: चक्रण के लिए उपयोगिताओं या अनुषंगी इकाईयों के प्रसंस्करण के लिए शीतलन प्रबंधन और पालिसिंग टैंकों की स्थापना हो।
2. अपशिष्ट जल उपचार संयंत्र का पेराई ऋतु आरंभ होने से एक मास पूर्व स्थिरीकरण किया जाएगा और यह पेराई ऋतु के पश्चात् एक मास तक प्रचालन करना जारी रखेगा।
3. सिंचाई के लिए कोई मांग नहीं अवधि के दौरान उपचारित अपशिष्ट जल को केवल 15 दिन की धारण क्षमता वाले रिसाव रोधी लाइन तालाब में भंडारित किया जाएगा।
4. बहावमापी को सभी जल ऐब्स्ट्रैक्शन बिन्दुओं पर प्रतिस्थापित किया जाएगा और ताजे जल के उपयोग को न्यूनतम किया जाएगा।
5. समुचित वायु प्रदूषण नियंत्रण युक्तियों को विविक्त पदार्थ उत्सर्जन मानक को पूरा करने के लिए स्थापित किया जाएगा।"।

[फा.सं. क्यू-15017/31/2007-सीपीडब्ल्यू]

डा. राशिद हसन, सलाहकार

टिप्पण: मूल नियम भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (i) में का.आ.सं0 844(अ), तारीख 19 नवंबर, 1986 द्वारा प्रकाशित किए गए थे और तत्पश्चात उनमें निम्नलिखित अधिसूचनाओं के द्वारा संशोधन किए गए :

का.आ. सं. 433(अ), तारीख 18 अप्रैल, 1987; सा.का.नि. सं. 176(अ), तारीख 2 अप्रैल, 1996; सा.का.नि. सं. 97(अ), तारीख 18 फरवरी, 2009; सा.का.नि. सं. 149(अ), तारीख 4 मार्च, 2009; सा.का.नि. सं. 543(अ), तारीख 22 जुलाई, 2009; सा.का.नि. सं. 739(अ), तारीख 9 सितंबर, 2010; सा.का.नि. सं. 809(अ), तारीख 4 अक्तूबर, 2010; सा.का.नि. सं. 215(अ), तारीख 15 मार्च, 2011; सा.का.नि. सं. 221(अ), तारीख 18 मार्च, 2011; सा.का.नि. सं. 354(अ), तारीख 2 मई, 2011; सा.का.नि. सं. 424(अ), तारीख 1 जून, 2011; सा.का.नि. सं. 446(अ), तारीख 13 जून, 2011; सा.का.नि. सं. 152(अ), तारीख 16 मार्च, 2012; सा.का.नि. सं. 266(अ), तारीख 30 मार्च, 2012; सा.का.नि. सं. 277(अ), तारीख 31 मार्च, 2012; सा.का.नि. सं. 820(अ), तारीख 9 नवंबर, 2012; सा.का.नि. सं. 176(अ), तारीख 18 मार्च, 2013; सा.का.नि. सं. 535(अ), तारीख 7 अगस्त, 2013; सा.का.नि. सं. 771(अ), तारीख 11 दिसंबर, 2013; सा.का.नि. सं. 2(अ), तारीख 2 जनवरी, 2014; सा.का.नि. सं. 229(अ), तारीख 28 मार्च, 2014; सा.का.नि. सं. 232(अ), तारीख 31 मार्च, 2014; सा.का.नि. सं. 325(अ), तारीख 7 मई, 2014; सा.का.नि. सं. 612(अ), तारीख 25 अगस्त, 2014; सा.का.नि. सं. 789(अ), तारीख 11 नवंबर, 2014; का.आ. सं. 3305(अ), तारीख 7 दिसंबर, 2015 और अंत में अधिसूचना का.आ. सं. 4(अ), तारीख 1 जनवरी, 2016 द्वारा संशोधन किए गए थे ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 14th January, 2016

G.S.R. 35(E).—In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. **Short title and Commencement.-** (1) These rules may be called the Environment (Protection) Amendment Rules, 2016.
   (2) They shall come into force on the date of their publication in the Official Gazette.

2. In Schedule-I to the Environment (Protection) Rules, 1986, for serial number 4 and the entries relating thereto, the following serial number and entries shall be substituted, namely:-

S.No.	Industry	Parameters	Standards
(1)	(2)	(3)	(4)
"4.	SUGAR INDUSTRY	EFFLUENTS	**All concentration values are in milligramme per litre except for pH**
		pH	5.5 - 8.5
		Total Suspended Solids (TSS), milligramme per litre	100 (for disposal on land) 30 (for disposal in surface waters)
		Biological Oxgyen Demand ,	100 (for disposal on land)

		BOD[3 days at 27°C], milligramme per litre	30 (for disposal in surface waters)
		Oil & Grease milligramme per litre	10
		Total Dissolved Solids (TDS), milligramme per litre	2100
		Final wastewater discharge limit	200 litre per tonne of cane crushed
		(Final treated effluent discharge restricted to 100 litre per tonne of cane crushed and Waste water from spray pond overflow or cooling tower blow down to be restricted to 100 litre per tonne of cane crushed and only single outlet point from unit is allowed.)	
		EMISSIONS	
		The particulate matter emissions from the stack shall be less than 150 milligramme per normal cubic metre	

4(1) Treated effluent Irrigation protocol and waste water conservation or waste water management in Sugar industries

(i) Loading rates for different soil textures

S.N	Soil Texture	Loading rate in m^3/Ha/Day
1	Sandy	225 to 280
2	Sandy loam	170 to 225
3	Loam	110 to 170
4	Clay loam	55 to 110
5	Clay	35 to 55

(ii) Waste water conservation and pollution control management

1. Establishment of cooling arrangement and polishing tank for recycling the excess condensate water to process or utilities or allied units.
2. Effluent Treatment Plant to be stabilized one month prior to the start of the crushing season and continue to operate one month after the crushing season.
3. During no demand period for irrigation, the treated effluent to be stored in a seepage proof lined pond having 15 days holding capacity only.
4. Flow meter to be installed in all water abstraction points and usage of fresh water to be minimized.
5. Suitable Air pollution control devices to be installed to meet the particulate matter emission standard.".

[F.No. Q-15017/31/2007- CPW]
DR. RASHID HASAN, Advisor

Note: - The principal rules were published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i) *vide* number S.O. 844(E), dated the 19th November, 1986 and subsequently amended *vide* the following notifications, namely:-

S. O. 433 (E), dated the 18th April 1987; G.S.R. 176(E), dated the 2nd April, 1996; G.S.R. 97 (E), dated the 18th February, 2009; G.S.R. 149 (E), dated the 4th March , 2009; G.S.R. 543(E), dated the 22nd July,2009; G.S.R. 739 (E), dated the 9th September, 2010; G.S.R. 809(E), dated the 4th October, 2010, G.S.R. 215 (E), dated the 15th March, 2011; G.S.R. 221(E), dated the 18th March, 2011; G.S.R. 354 (E), dated the 2nd May, 2011; G.S.R. 424 (E), dated the 1st June, 2011; G.S.R. 446 (E), dated the 13th June, 2011; G.S.R. 152 (E), dated the 16th March, 2012; G.S.R. 266(E), dated the 30th March, 2012; G.S.R. 277 (E), dated the 31st March, 2012; G.S.R. 820(E), dated the 9th November, 2012; G.S.R. 176 (E), dated the 18th March, 2013; G.S.R. 535(E), dated the 7th August, 2013; G.S.R. 771(E), dated the 11th December, 2013;

G.S.R. 2(E), dated the 2nd January, 2014; G.S.R. 229 (E), dated the 28th March, 2014; G.S.R. 232(E), dated the 31st March, 2014; G.S.R. 325(E), dated the 07th May, 2014, G.S.R. 612, (E), dated the 25th August 2014; G.S.R. 789(E), dated the 11th November, 2014; S.O. 3305(E), dated the 7th December, 2015 and lastly amended *vide* notification S.O. 4(E), dated the 1st January, 2016.

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ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN

FOR

CAPACITY EXPANSION OF SUGAR MILL FROM 5000TCD ALONG WITH COGENERATION POWER OF 19.5MW TO 12000TCD ALONG WITH 59.5MW COGENERATION POWER PLANT

AT

VILLAGE-CHAK ALLABAKSH & MAHIULDINPUR DALEL, TEHSIL-MUKERIAN,DISTRICT-HOSHIARPUR

PUNJAB

PLOT AREA- 21.46Ha

[ToR LETTER NO: F. No. SEIAA/2018/858 on dated 16th July, 2018]

STUDY PERIOD: 1ST OCTOBER TO 31ST DECEMBER 2017

ADDITIONAL MONTH: JANURAY 2018

MONITORING DONE BY M/S. VARDAN ENVIROLAB (NABL ACCREDITATION TC-6299 MOEF&CC NO. S.O. 1783 (E)

[Project or Activity 5(j) Sugar Industry Category-B]



APPLICANT

Mr. Raj Narayan Yadav (General Manager)
Indian Sucrose Limited G. T. Road, Mukerian - 144211
District Hoshiarpur, Punjab, Contact no: 7290072110

ENVIRONMENT CONSULTANT

VARDAN ENVIRONET

(QCI/NABET ACCREDITED NO. NABET/EIA/1922/RA0166)

PLOT No. 82A, SEC. 5, IMT MANESAR, GURGAON (HARYANA)

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DOCUMENT NO. 2017_VI_00008_Final

EIA_Rev_01

(August 2020)

REVIEW AND REVISION HISTORY

History of revisions of the present report:

Table I: History of the Revisions

Rev.	Date	Modifications	Remarks
Rev.01 Final	August,2020	Final EIA /EMP Report	Report has been prepared by Team Vardan and all the comments of reviewers have been incorporated in EIA/EMP report.

Document No. 2017_VI_00008_Final EIA

Table II: Record of Review

Rev.	Date	Description	Review-1	Approval
Rev.00	December, 2018	Draft EIA /EMP Report	Mr. S.K. Sharma	Mr. R.S. Yadav
Rev.00	September,2019	Final EIA /EMP Report		
Rev.01	August,2020	Final EIA /EMP Report		

This Report has been prepared by **Vardan EnviroNet** on behalf of **M/s Indian Sucrose Limited** with due consideration and skill as per our general terms and conditions of business and terms of agreement with the **M/s Indian Sucrose Limited.**

DISCLAIMER

Vardan EnviroNet has taken all reasonable precautions in the preparation of this report as per its auditable quality plan. Vardan EnviroNet also believes that the facts presented in the report are accurate as on the date it was written. However, it is impossible to dismiss absolutely, the possibility of errors or omissions. Vardan EnviroNet therefore specifically disclaims any liability resulting from the use or application of the information contained in this report. The information is not intended to serve as legal advice related to the individual situation.

Declaration by Experts contributing to the EIA studies for M/s Indian Sucrose Ltd

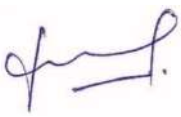
We, hereby certify that we were a part of the EIA report team in the following capacity that developed the above EIA.

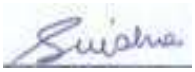
EIA coordinator:

Name:	Mr. S K Sharma
Signature and Date:	
Period of involvement:	June 2017 – till date
Contact information:	Plot No.82A, Sector-5, IMT Manesar, Gurgaon (Haryana) Contact – 9971684812
Email Id:	Industry@vardanenvironet.com

Functional area experts:

No	Functional areas	Name of the expert/s	Signature	Involvement (period and task**)
1	AP*	Mr. S K Sharma		**October – December, 2017** **a)** Identifying the sources of emissions and mitigation measures. **b)** Inventorisation of point Source Stacks emissions details. **c)** Site-specific micro-meteorology Monitoring and collection of secondary data. **d)** Air quality monitoring – location planning, supervision of AAQ monitoring, sample collection and preservation. e) Laboratory visit during analysis of samples f) Identification of air emission impacts from the project. g) Proposing mitigation measures along with budget for control of air pollution

No	Functional areas	Name of the expert/s	Signature	Involvement (period and task**)
2	WP*	Mr. S K Sharma		**October – December, 2017** **a)** Surface water and ground water quality monitoring, Sampling, Preservation and assessment, impacts on Water environment and mitigations. **b)** Identification, characterisation of effluent streams and treatments there of **c)** Water balance and conservation measures **d)** Budget Allocation
3	AQ*	Mr. Surbhi Makhwana		**October – December, 2017** a) Processing of site- specific micr meteorological data b) Collection and use inversion/mixing Height data f modelling. c) Air dispersion modelling for prediction of GLCS due to PM10, S02 and NOx
4	NV*	Mr. Asif Hussain		**October – December, 2017** a) Analysis of ambient noise quali data b) Impact due to plant noise and abatement measures
5	EB*	Dr. Niteesh kumar		**October – December, 2017** a) Biological environment status in respect of terrestrial faun and aquatic eco system b) Impact on ecological environment

No	Functional areas	Name of the expert/s	Signature	Involvement (period and task**)
6	HG*	Mr. Joshu Aanad		**October – December, 2017** a) Ground water resource assessment b) Impact on ground water potential and mitigation measures for avoiding Ground water contamination.
8	SE*	Mrs. Shilpa Mishra		**October – December, 2017** a) Determination of demograph profile including socio economy livelihood b) Assessing the changes in socio economic pattern c)Budget Allocation
9	SHW*	Mr. S.K. Sharma		**October – December, 2017** a) Non-hazardous solid wastes generation, recycling and disposal b) Storage and management of hazardous solid wastes c)Budget Allocation
10	SC*	Mr. S.K. Sharma		**October – December, 2017** a)Sampling, analysis and characterization of soil b) Assessment of fertility/productivity of soil, nutrient availability c) Remediation of soil pollution/contaminated soils d) Controlling degradation of soil/soil conservation
11	LU*	Mr. Asif Hussain		**October – December, 2017** a) Analysis of data related to land use pattern b) Land use map development. c) Impact on land environment in respect to land form change

No	Functional areas	Name of the expert/s	Signature	Involvement (period and task**)
12	RH*	Mrs. Anuradha Sharma		**October – December, 2017** a) Identification of hazardous prone areas b) Environment risk evaluation c) On-site and Off-site emergency planning

Declaration by the Head of the accredited consultant organization

I, R.S. Yadav, hereby, confirm that the above mentioned experts prepared the EIA of **M/s Indian Sucrose Ltd**

I certify that this report has been prepared by **'Vardan Environet'** with all reasonable skill, care and diligence within the terms of the contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

I also confirm that I shall be fully accountable for any misleading information mentioned in this statement.

Name: **R.S. Yadav**



Signature

Designation: **Managing Director**

NABET Certificate No. & Issue Date: NABET/EIA/1922/RA 0166 issued on 17.06.2020 and valid upto 06.11.2022.

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY PUNJAB
Ministry of Environment, Forest & Climate Change, New Delhi
O/O Punjab Pollution Control Board,
VatavaranBhawan, Nabha Road,
Patiala – 147 001
Telefax:- 0175-2215636

No. SEIAA/2018/ 858 **REGISTERED** **Date:** 16.7.18

To

M/s Indian Sucrose Limited,
GT Road, Mukerian,
Distt. Hoshiarpur

Subject: **Issuance of TORs for obtaining environmental clearance for expansion of an existing Sugar Mill Plant of capacity 5000 TCD to 12000 TCD along with Co-generation power plant of capacity 19.5 MW/hr to 59.5 MW /hr at Village Chak Allabaksh and Mahiuldinpur, Tehsil Mukerian, District Hoshiarpur, Punjab by M/s Indian Sucrose Limited, GT Road, Tehsil Mukerian, Distt. Hoshiarpur (Online proposal No. SIA/PB/IND2/22643/2018)**

This has reference to your application for issuance of ToRs for EIA study report to be submitted for expansion of an existing Sugar Mill Plant of capacity 5000 TCD to 12000 TCD along with Co-generation power plant of capacity 19.5 MW/hr to 59.5 MW/hr at Village Chak Allabaksh and Mahiuldinpur, Tehsil Mukerian, District Hoshiarpur, Punjab. The project is covered under category Sugar Industry- 5 (j) of the Schedule appended to the EIA notification, 2006.

The case was considered by the SEAC in its 166th meeting held on 24.05.2018 and decided to recommend to issue the following TOR alongwith additional specific TOR in line with the notification dated 14.03.2017 as amended on 08.03.2018 for preparation of the EIA report.

The case was considered by the SEIAA in its 133rd meeting held on 06.07.2018 and decided to accept the recommendations of SEAC and to issue the following TOR alongwith additional specific in line with the notification dated 14.03.2017 as amended on 08.03.2018 for preparation of the EIA report to the project proponent, as proposed by the SEAC.

A. STANDARD TERMS OF REFERENCE

A. Executive Summary

B. Introduction

i. Details of the EIA Consultant including NABET accreditation

ii. Information about the project proponent

iii. Importance and benefit soft he project

iv. Project Description

i. Cost of project and time of completion.

ii. Products with capacities for the proposed project.

iii. If expansion project, details of existing products with capacities and whether adequate and is available for expansion, reference of earlier environment clearance if any.

iv. List of raw materials required and their source along with mode of transportation.

v. Other chemicals and materials required with quantities and storage capacities

vi. Details of Emission, effluents, hazardous waste generation and their management.

vii. Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)

viii. Process description along with major equipment and machineries, process flow sheet (quantities) from raw material to products to be provided.

ix. Hazard identification and details of proposed safety systems.

x. Expansion / modernization proposals:

a. Copy of all the Environmental Clearance (s) including Amendments there to obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing existing operation of the project from SPCB shall be attached with the EIA-EMP report.

b. In case the existing project has not obtained environmental clearance, reasons for not taking environment clearance under the provisions of the EIA Notification 1994 and / or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.

4) Site Details

Location of the project site covering village, Taluka / Tehsil, District and State, Justification for selecting the site, whether other sites were considered.

i. A toposheet of the study area of radius of 10km and site location on 1:50, 000/1:25, 000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)

ii. Details w.r.t. option analysis for selection of site

iii. Co-ordinates (lat-long) of all four corners of the site.

iv. Google map-Earth downloaded of the project site.

v. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within

an Industrial area/Estate/Complex, layout of Industrial Area indicating location of unit within the Industrial area/Estate.

vi. Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular.

vii. Land use break-up of total land of the project site (identified and acquired), government/ private - agricultural, forest, wasteland, water bodies, settlements, etc. shall be included. (not required for industrial area)

viii. A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area

ix. Geological features and Geo-hydrological status of the study area shall be included.

x. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)

xi. Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.

xii. R&R details in respect of land in line with state Government policy.

5) Forest and wildlife related issues (if applicable):

(i) Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if applicable)

(ii) Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)

(iii) Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.

(iv) The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon

(v) Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area.

(vi) Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife.

6) Environmental Status

(i) Determination of atmospheric inversion level at the project site and site-specific micro- meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.

(ii) AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests. Baseline monitoring (October 2017 to December 2017) & additional study for one month (January-2018) of the project carried out by the project proponent may be accepted.

(iii) Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with - min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.

(iv) Surface water quality of nearby River (100m upstream and downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.

(v) Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.

(vi) Ground water monitoring at minimum at 8 locations shall be included.

(vii) Noise levels monitoring at 8 locations within the study area.

(viii) Soil Characteristic as per CPCB guidelines.

(ix) Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.

(x) Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule- I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.

(xi) Socio-economic status of the study area.

7) Impact and Environment Management Plan

i. Assessment of ground level concentration of pollutants from the stack emission based on site-specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.

ii. Water Quality modelling - in case of discharge in water body.

iii. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor- cum-rail transport shall be examined.

iv. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included.

Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.

v. Details of stack emission and action plan for control of emissions to meet standards.

vi. Measures for fugitive emission control.

vii. Details of hazardous waste generation and their storage, utilization and management. Copies of MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.

viii. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.

ix. Action plan for the green belt development in 33 % area with not less than 1, 500 trees per ha. giving details of species, width of plantation, planting schedule post plantation and maintenance plan for 3 years shall be included. The green belt shall be around the boundary and a scheme for greening of the roads used for the project shall also be incorporated.

x. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources.

xi. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

xii. Action plan for post-project environmental monitoring shall be submitted.

xiii. Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.

8) Occupational health

i. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.

ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far& Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department wise.

iii. Details of existing Occupational & Safety Hazards. What are the exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,

iv. Annual report of health status of workers with special reference to Occupational Health and Safety.

9) Corporate Environment Policy

i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.

iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.

iv. Does the company have system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report.

v. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

11) Enterprise Social Commitment (ESC)

i. Adequate funds (at least 2.5 % of the project cost) shall be earmarked towards the Enterprise.

ii. Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.

iii. Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.

13)' A tabular chart with index for point wise compliance of above TOR.

B. SPECIFICTERMS OF REFERENCE FOR EIA STUDIES FOR SUGAR INDUSTRY

1. Complete process flow diagram describing each unit, its processes and operations in production of sugar, along with material and energy inputs and outputs (material and energy balance).

2. Details on water balance including quantity of effluent generated, recycled & reused. Efforts to minimize effluent is charge and to maintain quality of receiving water body.

3. Details of effluent treatment plant, inlet and treated water quality with specific efficiency of each treatment unit in reduction in respect to fall concerned / regulated environmental parameters.

4. Number of working days of the sugar production unit.

5. Details of the use of steam from the boiler.

6. Details of proposed source-specific pollution control schemes and equipment to meet the national standards.

7. Collection, storage, handling and transportation of molasses,

8. Collection, storage and handling of bagasse and pressmud.

9. Flyash management plan for coal based and bagasse and action plan

10. Details on water quality parameters such as Temperature, Colour, pH, BOD, COD, Total Kjeldhal Nitrogen, Phosphates, Oil & Grease, Total Suspended Solids, Total Coli form bacteria etc.

11. Details on existing ambient air quality and expected, stack and fugitive emissions for PM10, PM2.5, SO2*, NOx*, etc., and evaluation of the adequacy of the proposed pollution control devices to meet standards for point sources and to meet AAQ standards. (*-As applicable)

12. Location of the existing Bore wells as well as proposed bore well if any to be marked on layout plan.

13. Action plan for utilization of treated waste water as per the protocol issued by MoEF.

Additional specific TOR: -

14) The project proponent shall make an assessment of ecological damage done and economic benefit derived due to violation and prepare remediation plan and natural & community resource augmentation plan and it shall be prepared as an independent chapter in the environment impact assessment report by the accredited consultants. The collection and analysis of data for assessment of ecological damage, preparation of remediation plan and natural and community resource augmentation plan shall be done by an environmental laboratory duly notified under Environment (Protection) Act, 1986, or a environmental laboratory accredited by National Accreditation Board for Testing and Calibration

Laboratories, or a laboratory of a Council of Scientific and Industrial Research institution working in the field of environment.

The aforesaid 'Terms of Reference' will be valid for a period of three years from its issuance. The project proponent should prepare EIA / EMP Report for its project based on aforesaid TORs and submit the same to the SEIAA for its appraisal However, the same shall be considered for appraisal only after the status regarding launching prosecution against the project proponent and responsible persons, is reported in affirmative by the Punjab Pollution Control Board.

Member Secretary

Endst. No._____ **Dated _____**

A copy of the above is forwarded to the following for information and necessary action: -

1. The Secretary to Govt. of India, Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhavan, Jorbagh Road, New Delhi - 110003.
2. The Advisor, Northern Regional Office, Ministry of Environment & Forests, Bays No. 24-25, Sector 31-A, Dakshin Marg, Chandigarh.

a) Name of the applicant Sh. Ved Prakash Gupta, Vice President

b) Phone Number 9780005968

Member Secretary

FILE NO: NO.IA-J-11011/342/2017-IA-II (I)

M/s Indian Sucrose Limited at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt-Hoshiarpur, Punjab

S. No.	Description	Reply	Citation
A.	**Standard TOR**		
1	**Executive Summary of the Project**	**Chapter 11**	
2	**Introduction**		
i	Details of the EIA Consultant including NABET accreditation	**Vardan EnviroNet,** is an accredited organization by Quality Council of India/NABET certificate no. **NABET/EIA/1922/RA0166 and** NABET accreditation certificate is incorporated in EIA Report.	**Annexure-I**
II	Information about the project proponent	Mr. Ved Prakesh Gupta Indian Sucrose Limited G.T. Road Mukerian - 144211, District Hoshiarpur, Punjab	**Chapter-1 Item No. 1.1.2 Page-2**
iii	Importance and benefits of the project	The expansion of this project will provide the employment to the 25 people during season and 20 during the off season. It also promotes the agricultural of sugarcane in the nearby area.	**Chapter 1 Item no 1.4 Page – 4**
3	**Project Description**		
i	Cost of project and time of completion.	The total project cost of the project is Rs. 347 crore (Existing=157 and Expansion=190). The proposed EMP cost for the expansion project is Rs. 3.79 crores and, Recurring Cost – Rs. 38 lakhs The co-generation project will be completed within 1 year and Sugar plant will be completed within 5 years, after the grant of Environment Clearance.	**Chapter-1 Item No. 1.2 Page-2**

<table>
<tr><td>ii</td><td>Products with capacities for the proposed project.</td><td>
<table>
<tr><th>S.no.</th><th>Products</th><th>Existing (5000TCD)</th><th>Proposed (7000TCD)</th><th>Total (12000TCD)</th></tr>
<tr><td>1</td><td>Sugar</td><td>500 Ton/day</td><td>700 Ton/day</td><td>1200 Ton/day</td></tr>
<tr><td>2</td><td>Power</td><td>19.5MW</td><td>40MW</td><td>59.5MW</td></tr>
</table>
</td><td>Chapter-2 Table No. 2.1, Page-18</td></tr>
<tr><td>iii</td><td>If expansion project, details of existing products with capacities and whether adequate land is available for expansion, reference of earlier EC if any</td><td>
<table>
<tr><th>S.no.</th><th>Products</th><th>Existing (5000TCD)</th></tr>
<tr><td>1</td><td>Sugar</td><td>500Ton/day</td></tr>
<tr><td>2</td><td>Power</td><td>19.5MW</td></tr>
</table>
The total land area of the project is 21.46 hectare. The land is adequate for the proposed expansion project and No additional land is required.
No earlier Environment Clearance required, As this process is in working condition since 1991 with the 2500 TCD capacity and increased its capacity to 5000 TCD in 2005.
</td><td>Chapter-1 Item No. 1.1.2 Page-2</td></tr>
<tr><td>iv</td><td>List of raw materials required and their source along with mode of transportation.</td><td>The basic raw material required in the production process is Sugarcane and bagasse. All the materials are transported with the trolley and trucks.</td><td>Chapter-2, Table-2.2 Page no-18</td></tr>
<tr><td>v</td><td>Other chemicals and materials required with quantities and storage capacities</td><td>Lime (15MT/Day) and Sulphur 15 MT/day will be used in the manufacturing process. These chemical are stored in storage room. It will be transported through tractor/trolley from nearby market.</td><td>Chapter 2, Table-2.2 Page no-18</td></tr>
<tr><td>vi</td><td>Details of Emission, effluents, hazardous waste generation and their management</td><td>The main Air pollutant will be- Particulate matter, Sulphur dioxide, Nitrogen dioxide.
The effluents generation will be from the mill house & pumps gland.
All the solid waste generated in the industry will be easily biodegradable.
Except the used oil from the DG sets, there will be no hazardous waste generation.</td><td>Chapter 4 Item No 4.2 Page no – 83 to 84</td></tr>
<tr><td>vii</td><td>Requirement of water, power, with source of supply, status of approval, water balance diagram, man-power requirement (regular and contract)</td><td>• Total water requirement for this proposed project is 597 KLD (468 + 129) which will be sourced from Tube well and CGWA application has been applied vide application no 21-4/5656/PB/IND/2020 on dated 28/04/2020.
• Total power requirement is 384MW/day which will be sourced from own CPP (capacity of CPP</td><td>Chapter 2, Item no-2.6.4, 2.6.5,</td></tr>
</table>

<table>
<tr><td></td><td></td><td>after expansion will be 59.5MW).
• Manpower requirement during season will be 350 (325+25).</td><td>2.6.6, 2.6.7. Fig-2.8 Page no-19-22 Annexure-II</td></tr>
<tr><td>viii</td><td>Process description along with major equipments and machineries, process flow sheet (quantative) from raw material to products to be provided</td><td>Extraction of juice → Clarification → Evaporation → Centrifugation → Crystallization</td><td>Chapter 2, Item no 2.5 Figure-2.6, 2.7 Page no-14 to 17</td></tr>
<tr><td>ix</td><td>Hazard identification and details of proposed safety systems.</td><td>The possible hazard from the project can be:
<table>
<tr><th>Sr. No.</th><th>Hazardous Area</th><th>Likely Accident</th></tr>
<tr><td>1.</td><td>Boiler Area</td><td>Explosion</td></tr>
<tr><td>2.</td><td>Turbine room</td><td>Explosion</td></tr>
<tr><td>3.</td><td>Electrocution</td><td>Lose fitting</td></tr>
<tr><td>4.</td><td>Electrical rooms</td><td>Fire and electrocution</td></tr>
<tr><td>5.</td><td>Transformer area</td><td>Fire and electrocution</td></tr>
<tr><td>6.</td><td>Cable tunnel</td><td>Fire and electrocution</td></tr>
<tr><td>7.</td><td>fuel storage area(Baggase/Rice Husk/Paddy straw/wood chip/maize cobs</td><td>Fire and spillage</td></tr>
<tr><td>8.</td><td>Chimney</td><td>Air pollution</td></tr>
</table></td><td>Chapter 7, Table 7.1, Page no-155</td></tr>
<tr><td>x</td><td>Expansion/modernization proposals:</td><td>--------</td><td>--</td></tr>
<tr><td>A</td><td>Copy of all the Environmental Clearance(s) including Amendments thereto obtained for The project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of</td><td>The unit was established in the year 1991 for production capacity of 5000 TCD and the same was not covered under EIA notification 2006. The certified compliance report from the MoEF&CC was not required. The unit is obtaining CTO regularly from PPCB. The production capacity was increased in the year 2017-18 under pressure from cane commissioner to complete the cane crushing in the area from 5000-65000 TCD.</td><td>Annexure-</td></tr>
</table>

	the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments shall be provided. In addition, status of compliance of Consent to Operate for the ongoing existing operation of the project from SPCB shall be attached with the EIA-EMP report.		**III** **Annexure-IV**
b	In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.	The project was set up in 1990 and came in operational phase in 1991 and it was not mandatory to get Environmental Clearance before the EIA notification 2006. Consent to operate for Air for the Year 2017-2018 was granted on dated 24.10.2017 and CTO of Water was issued on dated 07.10.2016 valid upto 31.03.2020. CTO is Enclosed in the EIA The existing project has not obtained Environmental Clearance as project was set up in 1990 and came in operational phase in 1991 and it was not covered under EIA notification 14th Sept., 2006. Consent to operate for Air for the Year 2017-2018 was granted on dated 24.10.2017 and CTO of Water was issued on dated 07.10.2016 valid upto 31.03.2020.	**Annexure -III**
4	**Site Details**		
i	Location of the project site covering village, Taluka/Tehsil, District and State, Justification for selecting the	The proposed project located at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian, District-Hoshiarpur, Punjab. As this is the Expansion project and acquired land i.e 21.46ha is adequate for the expansion	**Annexure V**

<table>
<tr><td></td><td>site, whether other sites were considered.</td><td>that’s why NO alternate site was proposed.</td><td></td></tr>
<tr><td>ii</td><td>A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet. (including all eco-sensitive areas and environmentally sensitive places)</td><td>Key plan of study area of radius of 10km and site location on 1:50,000/1:25,000 scale is given in EIA Report. There is no Eco-sensitive area found in the study area.</td><td>Chapter 1 figure-2.1 Page no-9</td></tr>
<tr><td>iii</td><td>Details w.r.t. option analysis for selection of site</td><td>There is no alternative site analysis, as project is for the expansion and will be install in the existing premises.</td><td></td></tr>
<tr><td>iv</td><td>Co-ordinates (lat-long) of all four corners of the site.</td><td><table><tr><th>Pillar No</th><th>Latitudes</th><th>Longitudes</th></tr><tr><td>A</td><td>31°55'40.357" N</td><td>75°37'13.668"E</td></tr><tr><td>B</td><td>31°55'42.288" N</td><td>75°37'18.500"E</td></tr><tr><td>C</td><td>31°5 5'43.868 " N</td><td>75°37'32.417"E</td></tr><tr><td>D</td><td>31°55'46.081" N</td><td>75°37'37.553"E</td></tr><tr><td>E</td><td>31°55'46.114 " N</td><td>75 °37'47.296"E</td></tr><tr><td>F</td><td>31°55'34.951 " N</td><td>75°37'47.122"E</td></tr><tr><td>G</td><td>31°55'31.661" N</td><td>75 ° 37'37.297"E</td></tr><tr><td>H</td><td>31°55'36.520 " N</td><td>75 ° 37 '24 .140"E</td></tr><tr><td>I</td><td>31°55'36.431 " N</td><td>75 ° 37'14 .507"E</td></tr></table></td><td></td></tr>
<tr><td>v</td><td>Google map-Earth downloaded of the project site</td><td>Google imagery of project site downloaded from Google earth is given in EIA report.</td><td>Chapter 2 Figure-2.2 Page no-10</td></tr>
<tr><td>vi</td><td>Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. If located within an Industrial area/Estate/Complex,</td><td>Layout map of proposed project site is given in EIA report.</td><td>Chapter-2 Figure-2.3 Page no-11</td></tr>
</table>

<table>
<tr><td></td><td>layout of Industrial Area indicating location of unit within the Industrial area/Estate.</td><td></td><td></td></tr>
<tr><td>vii</td><td>Photographs of the proposed and existing (if applicable) plant site. If existing, show photographs of plantation/greenbelt, in particular</td><td>Photographs of the existing and proposed site along with green belt are given in EIA report.</td><td>Chapter 2. Figure-2.3,2.4 Page no-12,13</td></tr>
<tr><td>viii</td><td>Land use break-up of total land of the project site (identified and acquired), government/ private - agricultural, forest, wasteland, water bodies, settlements, etc shall be included. (not required for industrial area)</td><td>Land use breakup of total land of project site as:
<table>
<tr><th>Land-Use</th><th>Area (in Ha)</th><th>% Area</th></tr>
<tr><td>Sugar Mill Plant</td><td>4</td><td>18.6</td></tr>
<tr><td>Power Plant</td><td>1.82</td><td>8.48</td></tr>
<tr><td>ETP</td><td>0.40</td><td>1.86</td></tr>
<tr><td>STP</td><td>0.40</td><td>1.86</td></tr>
<tr><td>Housing Colony</td><td>1.86</td><td>8.66</td></tr>
<tr><td>Green Plantation</td><td>7.79</td><td>36.3</td></tr>
<tr><td>Internal Road</td><td>0.70</td><td>3.26</td></tr>
<tr><td>Open & Cane Yard Area</td><td>4.49</td><td>20.9</td></tr>
<tr><td>Total Area</td><td>21.46</td><td>100</td></tr>
</table>
This is private land and being used for industrial purpose. Land Converstion has been approved by the Town & Village Department, Punjab 30.09.2016.</td><td>Chapter-2 Table-2.6 Page no-22

Annexure-V</td></tr>
<tr><td>ix</td><td>A list of major industries with name and type within study area (10km radius) shall be incorporated. Land use details of the study area</td><td>There are no any major industries within study area (10km radius). Land use detail of the study area is described below and LU/LC map is enclosed in the EIA report.
<table>
<tr><th>Landuse/Land cover</th><th>Area (Hectare)</th></tr>
<tr><td>Agriculture land</td><td>3995.65</td></tr>
<tr><td>Water Body</td><td>141.3</td></tr>
<tr><td>Open Scrub</td><td>455.3</td></tr>
<tr><td>Fellow Land</td><td>2527.7</td></tr>
<tr><td>Built up Area</td><td>737.9</td></tr>
<tr><td>Total Area</td><td>7850</td></tr>
</table></td><td>Chapter 3 Table-3.1 , Fig-3.2 Page no-28, 29</td></tr>
<tr><td>x</td><td>Geological features and Geo-</td><td>The study area is Unconsolidated alluvial sediments lying south of Siwalik foothills mainly occupy</td><td></td></tr>
</table>

	hydrological status of the study area shall be included.	the district. The alluvial sediments are classified as piedmont and fluvial deposits. The piedmont deposits lie along Siwalik Hills, which comprises boulders, pebbles, gravel, sand and clay. This is the most fertile area of the district covering one-fourth of the geographical area. It has wide spread irrigational facilities. Ground water Pre-monsoon Depth is 10-20 m and Post-monsoon Depth <10m.	
xi	Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean season river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of Flood Level of the project site and maximum Flood Level of the river shall also be provided. (mega green field projects)	Detailed drainage pattern of the project site upto 10 Km radius of the study area has been studied and it shows that Beas river is located at 10 km in West of project site and Mukerian Hydel Canal at 3 Km in East	**Chapter 3 Figure-3.4 Page no-31**
xii	Status of acquisition of land. If acquisition is not complete, stage of the acquisition process and expected time of complete possession of the land.	A total land is about 21.46 ha and this land is already acquired by the project proponent.	**Annexure no-V**
xiii	R&R details in respect of land in line with state Government policy	Not Applicable	--
5	**Forest and wildlife related issues (if applicable):**		
i	Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department. (if	The existing project is situated in the private land and no forest land is involved in the core area. NOC from the department of forest has be issued vide letter no 1607 dated 22/09/2017.	**Annexure no-VI**

	applicable)		
ii	Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (in case of projects involving forest land more than 40 ha)	Land use map of 10km study area has been incorporated in the EIA/EMP report.	**Chapter 3 figure no-3.2 Page No-29**
iii	Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted	NOC from the DFO has already been provided to the project **vide letter no 1607 on dated 22.09.17** which is enclosed in the EIA report.	**Annexure no-VI**
iv	The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon	There are no eco-sensitive areas such as national park / wildlife sanctuary /biosphere reserves within 10 km radius of project area.	**Annexure no-VI**
v	Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area	Only one Schedule-I species (INDIAN PEAFOWL) was recorded during the study period and Conservation Plan for this has been approved from Chief Wildlife warden, Mohali.	**Annexure no-VII**
vi	Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife	Not applicable, as the project is not located within 10 km of the national parks, Sanctuaries, Biosphere reserves and migratory corridors of wild animals.	

<table>
<tr><td>6</td><td>Environmental Status</td><td></td><td></td></tr>
<tr><td>i</td><td>Determination of atmospheric inversion level at the project site and site-specific micrometeorological data using temperature, relative humidity, hourly wind speed and direction and rainfall.</td><td>A metrological station was set-up at the project site and micro meteorological data for three months period (1st October 2017 to 31st December 2017) is describe below:
<table>
<tr><th rowspan="2">Month</th><th colspan="2">Temperature</th><th rowspan="2">Relative Humidity%</th><th rowspan="2">Wind Speed (m/sec)</th></tr>
<tr><th>Max ^{0}C</th><th>Min ^{0}C</th></tr>
<tr><td>October</td><td>37.4</td><td>15.6</td><td>12-78</td><td>0.0-6.7</td></tr>
<tr><td>November</td><td>36.4</td><td>12.8</td><td>13-84</td><td>0.0-4.9</td></tr>
<tr><td>December</td><td>16</td><td>6.3</td><td>27-86</td><td>0.0-4.8</td></tr>
</table></td><td>Chapter 3, Table No-3.4 Figure no-3.7, Page No-40 & 41</td></tr>
<tr><td>ii</td><td>AAQ data (except monsoon) at 8 locations for PM10, PM2.5, SO2, NOX, CO and other Parameters relevant to the project shall be collected. The monitoring stations shall be based CPCB guidelines and take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.</td><td>AAQ data (post monsoon season) for PM_{10}, $PM_{2.5}$, SO_2, NO_X, CO was collected at 8 different location for the period 1st October to 31st December 2017 and additional one month for January, as per the prescribed ToR. The eight different locations are choose as per the MoEF guidelines. The pre-dominant wind direction is WNW.</td><td>Chapter 3 Table No-3.5, 3.6 Page No-42, 44</td></tr>
<tr><td>iii</td><td>Raw data of all AAQ measurement for 12 weeks of all stations as per frequency given in the NAQQM Notification of Nov. 2009 along with - min., max., average and 98% values for each of the AAQ parameters from data of all AAQ stations should be provided as an annexure to the EIA Report.</td><td>AAQ data for 3 months of 8 locations (twice a week) were collected during study period October 2017 to December 2017 and additional one month data for January as per the prescribed ToR.
<table>
<tr><th rowspan="2">S.no</th><th rowspan="2">Parameter</th><th rowspan="2">Max</th><th rowspan="2">Min</th><th colspan="2">98%</th><th rowspan="2">Standard Norms</th></tr>
<tr><th>Max</th><th>Min</th></tr>
<tr><td>1</td><td>PM_{10}</td><td>94.6</td><td>70.2</td><td>93.8</td><td>83.95</td><td>100</td></tr>
<tr><td>2</td><td>$PM_{2.5}$</td><td>53.4</td><td>30.5</td><td>52.35</td><td>44.05</td><td>60</td></tr>
<tr><td>3</td><td>NO_2</td><td>32.6</td><td>16.3</td><td>31.9</td><td>24.2</td><td>80</td></tr>
<tr><td>4</td><td>SO_2</td><td>13.6</td><td>6.2</td><td>14.9</td><td>10.3</td><td>80</td></tr>
<tr><td>5</td><td>CO</td><td>0.87</td><td>0.51</td><td>0.83</td><td>0.74</td><td>4</td></tr>
</table>
All the unit are in $\mu g/m^3$ except CO which is mg/m^3</td><td>Chapter 3 Table No-3.6 A, B Page No-44 , 45</td></tr>
<tr><td>iv</td><td>Surface water quality of nearby River (100m upstream and</td><td>Four Surface water (4 locations) samples collected from ponds during study period October 2017 to December 2017 and additional one month data for January as per the prescribed ToR. The</td><td>Chapter-3,</td></tr>
</table>

<table>
<tr><td></td><td>downstream of discharge point) and other surface drains at eight locations as per CPCB/MoEF&CC guidelines.</td><td>results of Analysis show these result:<table><tr><th>October to December 2017</th><th>January 2018</th></tr><tr><td>pH - 7.21 to 7.52
Hardness - 112.35to 235.35mg/l
TDS - 158 to 367 mg/l</td><td>pH - 7.33 to 7.63
Hardness - 98.37 to 243.85mg/l
TDS - 148 to 356 mg/l</td></tr></table>The detailed results are incorporated in EIA report.</td><td>Item no-3.8 (A,B) Page No-62 to 64 Annexure VIII</td></tr>
<tr><td>v</td><td>Whether the site falls near to polluted stretch of river identified by the CPCB/MoEF&CC, if yes give details.</td><td>No, there are not any polluted stretch of river identified by the CPCB/MoEF&CC.</td><td>--</td></tr>
<tr><td>vi</td><td>Ground water monitoring at minimum at 8 locations shall be included.</td><td>Ground water monitoring sample at 8 locations were collected during study period October 2017 to December 2017 and additional one month data for January as per the prescribed ToR.
Analysis results of ground water reveal the following result;<table><tr><th>October to December 2017</th><th>January 2018</th></tr><tr><td>pH - 7.44 to 7.95
Hardness - 137.45 to 193.25 mg/l
TDS - 244 to 318.00 mg/l</td><td>pH - 7.44 to 7.95
Hardness - 137.45 to 193.25 mg/l
TDS - 244.60 to 318.00 mg/l</td></tr></table>The detailed results are incorporated in EIA report.</td><td>Chapter-3, Table no-3.7 (A,B) Page No-60 to 63 Annexure VIII</td></tr>
<tr><td>vii</td><td>Noise levels monitoring at 8 locations within the study area.</td><td>Noise levels monitoring at 8 locations for the study period October 2017 to December 2017 and additional one month data for January as per the prescribed ToR.
Analysis results of Noise reveal the following result<table><tr><th>October to December 2017</th><th>January 2018</th></tr><tr><td>Noise Level (Day) - 52.97Leq dB to 63.79 Leq dB
Noise Level (Night) - 42.87 Leq dB to 56.49 Leq dB</td><td>Noise Level (Day) - 51.75Leq dB to 62.44 Leq dB
Noise Level (Night) - 40.72 Leq dB to 53.78Leq dB</td></tr></table>The detailed results are incorporated in EIA report.</td><td>Chapter-3, Table no-3.9 (A,B) Page No-66 & 67 Annexure VIII</td></tr>
</table>

<table>
<tr>
<td>viii</td>
<td>Soil Characteristic as per CPCB guidelines.</td>
<td>Sampling & Monitoring was done at the 6 location for the study period October 2017 to December 2017 and additional one month data for January as per the prescribed ToR.
Analysis results of Soil for the the following result.
<table>
<tr><th>October to December 2017</th><th>January 2018</th></tr>
<tr><td>pH - 7.21 to 8.2
Conductivity - 0.685 to 0.812 mS/cm.
Organic matter (%) - 0.45 to 0.70</td><td>pH - 6.95 to 7.88
Conductivity - 0.385 to 0.481 mS/cm
Organic matter (%) - 0.47 to 0.76</td></tr>
</table>
The concentration of Nitrogen, Phosphorus and Potassium has been found to be in good amount in the soil samples. Soil texture is Silty Loam at project site. The detailed results are incorporated in EIA report.</td>
<td>Chapter-3, Table no-3.3 (A,B) Page No-34 to 38 Annexure VIII</td>
</tr>
<tr>
<td>ix</td>
<td>Traffic study of the area, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc</td>
<td>Detailed traffic study of the area along with type & frequency of the heavy vehicles and additional traffic due to proposed project has been carried out and incorporated in EIA report.
The LOS value from the proposed project may be “Very good” for highway which was earlier “very good”. So the additional load on the carrying capacity of the concern roads is not likely to have any significant adverse effect.</td>
<td>Chapter 3, Item no-3.15 Page No-71 to75</td>
</tr>
<tr>
<td>x</td>
<td>Detailed description of flora and fauna (terrestrial and aquatic) existing in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.</td>
<td>The Ecological Biodiversity Study was carried by the Expert and one Schedule-1 species was found during the study which is Indian Peafowl, conservation plan has been approved.</td>
<td>Annexure IX</td>
</tr>
<tr>
<td>xi</td>
<td>Socio-economic status of the study area.</td>
<td>The Socio-Economic Study was carried by the Expert approved by NABET accreditation and study show that:

Total population of villages under the study area is 110139 out of which males are 55582 (50.46%) and females are 54557 (49.53%)
Out of the total population, the population of children within the age of 0-6 age-group is
</td>
<td>Annexure X</td>
</tr>
</table>

<table>
<tr><td></td><td></td><td>about 11773 (10.68%)
• Child Sex ratio is 817 i.e No.of female child per 1000 male child
• Scheduled caste population is about 25107 (22.79%) while the Scheduled tribes population is Nil in the region
• Out of the total population in the region 83886 i.e 76.16% are literates</td><td></td></tr>
<tr><td>7</td><td>Impact and Environment Management Plan</td><td></td><td></td></tr>
<tr><td>i</td><td>Assessment of ground level concentration of pollutants from the stack emission based on site specific meteorological features. In case the project is located on a hilly terrain, the AQIP Modelling shall be done using inputs of the specific terrain characteristics for determining the potential impacts of the project on the AAQ. Cumulative impact of all sources of emission (including transportation) on the AAQ of the area shall be assessed. Details of the model used and the input data used for modelling shall also be provided. The air quality contours shall be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.</td><td>Air quality Modeiling has been done for determining cumulative impact of all sources of emission. ISCST3 (US-EPA approved) Dispersion Model was used to predict the air quality.
The predicted GLC at the project site is defined in the table :
<table>
<tr><th>Location Code</th><th>Location Name</th><th>Parameter</th><th>Max Baseline Conc. (µg/m^3)</th><th>Predicted GLC (µg/m^3) – ISCST3 Model</th><th>Cumulative GLC (µg/m^3)</th></tr>
<tr><td rowspan="3">A1</td><td rowspan="3">Project Site</td><td>PM10</td><td>90.60</td><td>0.0455</td><td>90.646</td></tr>
<tr><td>SO2</td><td>13.60</td><td>2.1700</td><td>15.770</td></tr>
<tr><td>NOx</td><td>31.40</td><td>0.4160</td><td>31.816</td></tr>
</table>
The result show that predicted GLC will not increase as per the CPCB NORM’s.</td><td>Chapter 4, Item no – 4.3
Page no- 84 to 93</td></tr>
<tr><td>ii</td><td>Water Quality modelling - in case of discharge in water body</td><td>The proposed project has adopted “Zero liquid effluent Discharge (ZLD)”. So there is no effluent will be discharged in to the local drain.</td><td>--</td></tr>
<tr><td>iii</td><td>Impact of the transport of the raw materials and end products on the</td><td>The LOS value from the proposed project remain the same i.e “Very Good”,So the additional load on the carrying capacity of the concern roads is not likely to have any significant adverse effect.</td><td>Chapter 3, Item no-</td></tr>
</table>

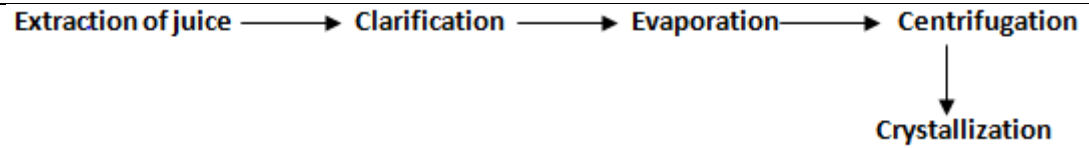
	surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor cum- rail transport shall be examined.		**3.15 Page No-71 to75**
iv	A note on treatment of waste water from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.	Waste water generated from production process will be treated in the ETP capacity of 3000 KLD. Brief ETP Scheme follow the following steps: Bar Screen → Oil & Grease pit → Equalization tank → Diffused Aeration → Primary Clarifier → Secondary Clarifier → Sand & Carbon filter	**Chapter 4 , Item no-4.4 Page No-94 to 97**
v	Details of stack emission and action plan for control of emissions to meet standards.	There will be emission of the Particulate matter, Nox and some amount of Sox from the Stack due to the burning of bagasse in the boiler. To control the emission wet scrubber has already been installed and ESP will be installed for the expansion project.	**Chapter 4, Item no – 4.3 Page 84**
vi	Measures for fugitive emission control	Paved road, regular sweeping, water sprinkling, will be provide to control the fugitive emission.	
vii	Details of hazardous waste generation and their storage, utilization and management. Copies of MOU regarding utilization of solid and hazardous waste in cement plant shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation,	Sugar-Industry is the agro based industry, so except used oil from the DG-sets, there will no hazardous waste generation from the production process, which will be sold to the authorized vendor. Undertaking for the used oil by the project proponent is enclosed in the EIA report.	**Annexure XI**

	and natural resource conservation.		
viii	Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 2009. A detailed plan of action shall be provided.	Not Applicable	--
ix	Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated.	The total plot area acquired under project is about 21.46 hectare and a total of 7.79 hectare which is more than 33% area will utilize under green belt development. Around 19200 trees will be planted in the next 5 year after the grant of Environment Clarence. The detailed green belt development plant is incorporated in EIA report.	**Chapter 10, Item no-10.4 Table-10.1, 10.2 Page No-202-203**
x	Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water Requirement from other sources.	**163559.43m^3** of runoff-rain water will be harvested every year. The detailed rain water harvesting action plan is given in EIA report.	**Chapter 4, Item no-4.8 (B) Page No – 98 to 105**
xi	Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.	The company has proposed the EMP budget for the expansion project is 3.79 Crores and 38 lakhs as the recurring cost.	**Chapter 10, Table-10.3 Page No-205**
xii	Action plan for post-project environmental monitoring shall be	The ambient air quality will be monitored twice a week and stack emission one in the six month by the third party.	**Chapter 6, Table-6.1,**

	submitted.	The surface & Ground water will be monitored one in three months. Environmental audit once in a year.	**6.2 Page No-115 to 117**
xiii	Onsite and Offsite Disaster (natural and Man-made) Preparedness and Emergency Management Plan including Risk Assessment and damage control. Disaster management plan should be linked with District Disaster Management Plan.	Disaster management plan are prepared with an aim of taking precautionary step to control the hazard propagation, avert disaster, take action after the disaster which limits the damage to the minimum and follow the on-site & off-site emergency planning. The disaster management plan is prepared in line with District Disaster Management Plan.	**Chapter 7, Item no-7.8 Page No-172-174**
8	**Occupational health**		
i	Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers	Rs. 1.5 Lakhs/Annum will be kept for to ensure safety of all Employees including contract & casual workers.	
ii	Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre-placement and periodical examinations give the details of the same. Details regarding last month analyzed data of above mentioned parameters as per age, sex, duration of exposure and department Wise.	Timely health checkup of the employees will be done.	
iii	Details of existing Occupational & Safety Hazards. What are the	The exposure level of hazards is measured and company is adopting to keep them within Permissible exposure level (PEL) so that health of the workers can be preserved.	**Chapter 7, Item no –**

	exposure levels of hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,	The proposed budget for occupational health is Rs. **1.5 Lakhs/annum**	**7.9 Page no 174**
iv	Annual report of health status of workers with special reference to Occupational Health and Safety.	Annual report of health status of workers will be submit after environment clearance.	----
9	**Corporate Environment Policy**		
i	Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.	Yes. Details are incorporated in EIA report Environment policy is given in company policy is enclosed in the EIA report**.**	**Annexure XII**
ii	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms /conditions? If so, it may be detailed in the EIA.	Yes The Environmental policy is followed for SOPs so that any violation regarding environmental norms will be avoided. For that scheduled internal audits and management review meeting is done. Company's approved Environmental Policy is annexed in EIA/EMP report.	**Chapter 10 Item no 10.3 Page 205**
iii	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.	Hierarchical system of the company is mentioned in EIA report.	**Chapter 10 Fig no-10.2 Page no - 201**
iv	Does the company have system of reporting of non-compliances /	Yes, the company has system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders and the details are given in	**Chapter – 10**

	violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report	chapter-10	**Fig no – 10.1 Page no 199**
10	Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during Operation phase.	The existing washroom and the restroom will be provided to the worker during the construction activity. The labour will be from the nearby areas, hence there will be not any proposal for the Temporary housing for the worker during construction activity.	
11	**Enterprise Social Commitment (ESC)**		
i	Adequate funds (at least 2.5 % of the project cost) shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.	As per the Office Memorandum dated 1st May, 2018 by the MoEF & CC, **Rs 8.4 Crore** has been proposed as the Corporate Environment Responsibility which will be used for the sustainable development of various components like Social, Economic, Environmental etc. Details CER activity are incorporated in the EIA report.	
12	Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water	Yes, Punjab Pollution Control Board has filed the case against M/s Indian Sucrose Ltd under the EP Act vide a **letter no COMA/170/2017** to the District Court, Hoshiapur.	--

	Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.		
13	A tabular chart with index for point wise compliance of above TOR.	Complied	
B	**Specific ToR for EIA Studies for Sugar Industry**		
1	Complete process flow diagram describing each unit, its processes and operations in production of sugar, along with material and energy inputs and outputs (material and energy balance).		
2	Details on water balance including quantity of effluent generated, recycled & reused. Efforts to minimize effluent is charge and to maintain quality of receiving water body	Complied	**Chapter 2 Fig no- 2.8 Page no - 20 to 22**
3	Details of effluent treatment plant, inlet and treated water quality with specific efficiency of each treatment unit in reduction in respect to fall concerned / regulated environmental parameters.	Effluent treatment plant report is attached as annexure.	**Annexure XIII**
4	Number of working days of the sugar production unit.	Total 160 working days has been defined in the sugar mill.	
5	Details of the use of steam from the boiler.	Steam will be used in cogeneration power plant to produce power.	
6	Details of proposed source-specific pollution control schemes and equipments to meet the national	Explained in ToR point no 7 and Sub heading-iv, v, vi,vii.	

	standards		
7	Collection, storage, handling and transportation of molasses	Molasses will be produced as by product from sugar production process. Molasses will be stored in storage tanks/silos and sold to the nearby distilleries.	
8	Collection, storage and handling of bagasse and press mud.	Bagasse produced after crushing sugarcane will be collected, and dried. It will be stored in shed area and used as fuel for boiler. Press Mud will be produced as by product. It will be dried in open area to avoid fungal and bacterial growth and given to the farmers. It will also be used as manure in greenbelt area.	
9	Fly ash management plan for coal based and bagasse and action plan	The proposed project will have bagasse as fuel for boiler. Boiler ash will be sold for the brick manufacturing.	
10	Details on water quality parameters such as Temperature, Colour, pH, BOD, COD, Total Kjeldhal Nitrogen, Phosphates, Oil & Grease, Total Suspended Solids, Total Coli form bacteria etc	Explained in the ToR point no 6 and sub division iv,vi	**Annexure-VIII**
11	Details on existing ambient air quality and expected, stack and fugitive emissions for PM10, PM2.5, SO2*, NOx*, etc., and evaluation of the adequacy of the proposed pollution control devices to meet standards for point sources and to meet AAQ standards. (*-As applicable)	Explained in the ToR point no 6 and sub division iii	**Annexure-VIII**
12	Location of the existing Bore wells as well as proposed bore well if any to be marked on the Layout plan		**Chapter 2, Figure 2.3 Page no 13**
13	Action plan for utilization of treated waste water as per the protocol issued by MOEF.	The treated water will be used back in the boiler and back in process after the carbon & Sand filtration.	
	Additional specific TOR:-		

	The project proponent shall make an assessment of ecological damage done and economic benefit die to violation and prepare remediation plan and natural & community resource augmentation plan and it shall be prepared as an independent chapter in the environment Impact assessment report by the accredited consultant. The collection and analysis of data for assessment of ecological damage, preparation of remediation plan and natural & community resource augmentation plan shall be done by an environment laboratory duly notified under Environment (Protection) Act, 1986 or a environment laboratory accredited by National Accreditation Board for Testing and Calibration Laboratories.	• EMP budget for the proposed project is 3.79 Crores and 38 lakhs as the recurring cost • The proponent has allocated a dedicated budget of **Rs 45 Lakhs** exclusively for "Natural & Community Resource Augmentation" in the peripheral areas. • The Economical benefit from the violation activity was i. Direct was in term of profit which was approx **Rs 1.7 crores.**	**Chapter-13, Page no 216**

TERMS OF REFERENCE-STATUS OF COMPLIANCE

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ABBREVIATIONS	
AAQM	Ambient Air Quality Monitoring
APCD	Air Pollution Control Devices
cm	Centimeter
CPCB	Central Pollution Control Board
dB	Decibel
DG	Diesel Generator
E	East
ECC	Emergency Control Centre
EIA	Environmental Impact Assessment
EMC	Environmental Management Cell
EMP	Environmental Management Plan
ENE	East of North- East
EPA	Environmental Protection Agencies
ESE	East of South East
ETP	Effluent treatment plant
FCC	False ColourComposite
GIS	Geographical information system
GLC	Ground level concentration
GPS	Global Positioning System
IMD	Indian Meteorological Department
IRS	Indian Remote Sensing Satellite
ISCST	Industrial Source Complex, Short Terms
ISO	International Organization of Standardization
ISS	Indian Standard Specification
KLD	Kilo Litre Per Day
Km	Kilometer
KVA	Kilo Volt Ampere
KW	Kilo Watt
m	Meter
M bgl	Meter Below Ground Level
mg	Milligram
MoEF&CC	Ministry of Environment, Forest and Climate Change
mRL	Mean Reference Level
MSMEs	Micro, Small and Medium Enterprises
N	North
NE	North-East
NH	National Highway

ABBREVIATIONS	
NNE	North of North-East
NNW	North of North-West
NO_2	Nitrogen Dioxides
NW	North-West
OHSAS	Occupational Health & Safety Assessment
PPE	Personal Protective Equipment
PPM	Part Per Million
Pvt.	Private
QC	Quality Council
QCI	Quality Council of India
QRA	Quantitative Risk Assessment
R&R	Rehabilitation & Resettlement
RDS	Respirable Dust Sampler
RSPM	Respirable Suspended Particulate Matter
RO	Reverse Osmosis
SE	South- East
SEIAA	State Level Environmental Assessment Authority
SO_2	Sulphur-Di-Oxide
SOI	Survey of India
SPM	Suspended Particulate Matter
SSE	South of South-East
SSW	South of South-West
STP	Sewage Treatment plant
TAC	Traffic Advisory Committee
TDS	Total Dissolve Solid
TOR	Terms of Reference
TPH	Tones Per Hour
TS	Total Solid
TSDF	Treatment, Storage and Disposal Facility
US EPA	United State Environmental Protection Agencies
$\mu g/m^3$	Micro gram per meter cube
w.e.f.	With Effective From
w.r.t.	With Reference To
W/W	Weight By Weight
WNW	West Of North-West
WSW	West Of South-West
ZLD	Zero Liquid Discharge

CHAPTER -1
INTRODUCTION

1.0Purpose of the Report

As per the EIA Notification dated 14th September 2006 as amended from time to time& 14 March, 2017; it is mandatory to have the Environmental Clearance for any new industry, the expansion and Violation of the industry from Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India, New Delhi for which EIA is required be conducted as per the guidelines of MoEF&CC, New Delhi. The purpose of the EIA report is to provide a coherent statement of the potential impacts of proposed project and the measures that should be taken to establish the impacts and suggest mitigation measures. It contains essential information for:

- The proponent to implement the proposal in an environmentally and socially responsible manner;
- The responsible authority to make an informed decision on the proposal, including the terms and conditions that must be attached to an approval or authorization; and
- The public to understand the proposal and its likely impacts on people and the environment.

1.1Identification of Project and Project Proponent

1.1.1Project Details

M/s. Indian Sucrose Limited was established in 1990 and came in operational phase in 1991 with capacity 2500 TCD with Cogeneration power plant of capacity 7.5 MW. The capacity of the plant was increased to 5000 TCD along with 19.5 MW Cogeneration power plants in year 2005. The project proponent had increased its capacity from **5000 TCD to 6500 TCD** in the year **2015-16** with the intimation to **Punjab Pollution Control Board** and **Central Excise Deptt. vide our Letter No(s).304 dt. 22.09.2015 & 536 dt. 11.12.2015** but **without** any prior **Environment Clearance**, Now the proponent has proposed the project to expand the capacity to **12000 TCD** along with Co-generation power plant to **59.5 MW** at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt.-Hoshiarpur, Punjab. Sugarcane will be used as Raw Material for the production of sugar which is meeting from local markets. The project is planned to be established over an area 21.46 ha. Presently the plant operates for approximately 160 days in a year depending upon the availability of sugarcane. The proposed plant will produce Sugar as product and Molasses, Press mud and Bagasse as byproducts. The power will be generated with steam during the process. The existing project has not obtained Environmental Clearance as project was set up in 1990 and came in operational phase in 1991 and it was not mandatory to get Environmental Clearance before the EIA notification 2006.

Screening Category

As per EIA Notification, 2006 and its subsequent amendments, the proposed expansion project falls under Category "B", Project or Activity 5(j) due to Sugar Industry, hence require Environmental Clearance.

1.1.2Identification of Project Proponent

Applicant: Mr. Ved Prakesh Gupta, (General Manager) M/s Indian Sucrose Limited

Address: Indian Sucrose Limited, G.T. Road Mukerian, 144211 Distt - Hoshiarpur Punjab.

1.2Brief Description of Nature, Size, Location of the Project

Brief description about the nature, size and location of the project is given in **Table -1.1**.

~~Table-1.1 Salient features of the Project and Environmental Settings~~

S. No.	Particulars	Details
1.	**Nature and size of the Project**	Capacity expansion of sugar mill from 5000TCD along with 19.5MW Cogeneration power plant to 12000TCD along with 59.5MW cogeneration power plant.
2.	**Location details**	
	Plot/ Survey / Khasra No.	H.B. No.-234,236
	Village	Chak Allabaksh and Mahiuldinpur Dalel
	Tehsil	Mukerian
	District	Hoshiarpur
	State	Punjab
	Latitude and Longitude	31°55'34.99"N 75°37'47.07"E
	Toposheet No.	H43D9/H43D12
3.	**Area Details**	
	Total Project Area	21.46 ha
4.	**Environmental Setting Details (with approximate aerial distance and direction from the project site)**	
	Nearest major settlement	Mukerian City, 3 Km, N
	Nearest City	Mukerian City, 3 Km, N
	Nearest Highway	NH 1A , 0.5 Km, W
	Nearest Railway Station	Mukerian Railway station , 3 Km, N
	Nearest Airport	Sri Guru Ram Das Jee International Airport Amritsar ,95 Km, SW
	National Parks/ Wild Life Sanctuaries/ Biosphere	There is no National Park and Biosphere Reserve within 10 Km radius

S. No.	Particulars	Details
	Reserves/RF and PF within 10km radius	No RF/PF within the 10 KM of the project site. **NOC from DFO** is obtained vide **letter no 1607** dated 22/09/2017.
	Nearest Water Bodies	Mukerian Hydel Canal, 7Km, E Beas river is at a distance of 10 km in west.
	Seismic Zone	Zone IV
5.	**Cost Details**	
	Project Cost	Existing (5000 TCD) – 157 crore Proposed (7000 TCD)– 190 crore Total – 347 crore
	Cost for CER	Rs. 8.4 Crores
	EMP Recurring Cost/Annum	Rs 38 Lakhs
	Cost for OH&S	Rs. 15 Lakhs/annum
6. Basic Requirements of the Project		
	Fresh Water	Existing-460 KLD Proposed-137 KLD Total-597KLD
	Fuel (TPD)	**Particular** / **Existing** / **Proposed** / **Total** Bagasse / 1400 / 1960 / 3360 Wood Chips / 200 / 280 / 480 Rice Husk / 630 / 882 / 1512 Maize Cobs / 107 / 150 / 257 Paddy Straw / 398 / 560 / 958
	Manpower	Existing-325 Proposed-25 Total-350
	Boiler Capacity	160 TPH (3 boilers are existing and will be replaced by 1 boiler of 200 TPH after expansion)
	Running Days	Approximately 160 days (during season)

1.3 Site Selection:

As this is the Expansion project and acquired land is adequate for the expansion that's why NO alternate site was proposed and acquired land has some advantageous feature:

- Location in rural area ensures adequate availability of manpower at marginally lower Rates.
- There is no National Park, Biosphere Reserves, Tiger Reserves, within 10 km radius of study area.
- National Highway NH-1A is at a distance of 0.5km in West direction. State Highway 25 is at a distance of 2.55 km in North direction makes it easier to transport raw materials and final product at market.

1.4 Importance to the Country and Region

Sugarcane is generally regarded as one of the most significant and efficient sources of biomass for bio-fuel (ethanol) production. Sugarcane offers production alternatives to food, such as feed, fibre and energy, particularly co-generation of electricity and ethanol. In India, sugar is an essential item of mass consumption and the cheapest source of energy, supplying around 10 percent of the daily calorie intake. India is the second largest producer of sugar (16.3 million ton production in 2008-09) and India is the largest consumer of sugar in the world. As Per the latest production data, MY 2016/17 sugar production is estimated at 21.9 MMT, down by 8.4 percent from the previous estimate and almost 20 percent below last year's production. As a result, total sugar supplies are limited to 32.6 MMT, which is just enough to meet the out-year consumption and stock requirements. For the third time in recent years, Indian sugar production dropped below consumption (25.6 MMT). Maharashtra and UP will contribute 22 percent and 43 percent respectively, of total production (crystal weight basis).

Keeping in view of the above, M/s. Indian Sucrose Limited has proposed to increase the capacity from 5000 TCD Unit along with Cogeneration Power Plant of 19.5 MW to 12,000TCD Unit along with Cogeneration Power Plant of 59.5 MW at Village-Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian, Distt. Hoshiarpur, Punjab.

1.5 Scope of the Study-details of regulatory scoping carried out (As per Terms of Reference)

The project has been applied on the State Environmental Impact Portal on 26, March 2018 under the Violation window for the grant of Environment Clearance. The project was considered in the 166th SEAC meeting held on the 24th April 2018 and ToR was granted to the project vide **letter no SEIAA/2018/858 on 16.07.2018** by the State Expert Appraisal Committee.

1.5.1 Structure of the Report

The entire EIA report is prepared based on the generic structure of EIA document given at APPENDIX III of the Notification No. S.O. 1533 dated 14th September, 2006 at MoEF & CC, New Delhi.

The report has been divided into twelve chapters as described below:

Chapter-1 gives information about the project proponent i.e. M/S Indian Sucrose Limited and the proposed project including its location and justification/importance, brief details around the surrounding area and details about site selection criteria considered. It also outlines the statutory requirement of obtaining prior Environment Clearance, steps to be followed for the same and basic purpose, scope and methodology of EIA study.

Chapter-2 is Project Description and infrastructure facilities incorporating all industrial and environmental activities of the project proponent for setting up of the proposed project for the manufacturing of sugar. It also gives information about manufacturing process and raw materials, sources of pollution and details of pollution control facilities to be provided i.e. water and waste water details, air pollution and control system, sludge storage facility, noise control measures etc.

Chapter-3 is Description of the Environment which includes Base Line Environment Study giving details about status of air quality, meteorology, water, noise, land, ecology and socio economic environment of the study area based on information collected through actual field study or from secondary sources.

Chapter-4 is Identification of Impacts (and its mitigation measures), which identifies the impacts of various environmental parameters whether beneficial or deleterious for the construction and operation phase of the project. It also quantifies significant impacts of the proposed project on various environmental components for the construction and operation phase of the project.

Chapter-5 Analysis of Alternatives (Technology and Site) identifies the description of each alternative, Summary of adverse impacts of each alternative, Mitigation measures proposed for each alternative.

Chapter-6 is Environmental Monitoring Plan which provides details of monitoring plan of various environmental parameters as well as its frequency of monitoring.

Chapter-7 is Additional Studies which includes Public Consultation, Risk Assessment, Social Impact Assessment, R and R Action Plans.

Chapter-8 is Benefits due to the proposed project including improvement in Physical infrastructure, improvement in the social infrastructure, Employment potential –skilled, semi-skilled and others.

Chapter -9 is Environmental Cost Benefit Analysis.

Chapter-10 Environmental Management Plan (EMP) incorporating measures to be adopted for mitigation of anticipated adverse impacts, if any safety measures, post-project monitoring program for environmental parameters, green belt development etc.

Chapter-11 is the Summary and Conclusion of the proposed Project, includes overall justification of the project.

Chapter-12 is profile of consultant engaged for the monitoring and preparation of EIA report.

Chapter-13 is Assessment of the Ecological Damage, Remediation Plan and Natural and Community Resource Augmentation Plan.

1.5.2 Summary of Environmental Legislation for Proposed Project

- Environment Impact Assessment Notification, dated 14th September 2006, as amended on 1st December, 2009.
- Environment (Protection) Act, 1986 Environment (Protection) Rules, 1986
- Air (Prevention and Control of Pollution) Act, 1987 (as amended) with Rules.
- Water (Prevention and Control of Pollution) Act, 1974 with Rules.
- Noise Pollution (Regulation and Control) Rules, 2006 (as amended)
- The Municipal Solid Waste (Management and Handling) Rules, 2000
- The Public Liability Insurance Act, 1992 (as amended)
- Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 (as amended)
- The Explosives Rules, 2008
- Hazardous & Other Waste (Management, Handling and Trans boundary Movement) Rules, 2016
- Excise and Taxation act 2000

CHAPTER -2
PROJECT DESCRIPTION

2.0 Type of Project

M/s. Indian Sucrose Limited is an existing Sugar mill of capacity 5000 TCD along with 19.5MW cogeneration power plant. The Owner of the unit has proposed to expand the capacity to 12000 TCD along with Co-generation power plant to 59.5 MW at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt-Hoshiarpur, Punjab. Location of the plant is given in **Fig 2.1** and layout plan is given in **Fig 2.3**. Sugarcane will be used as Raw Material for the production of sugar which is meeting from local markets.

As per EIA Notification dated 14th Sep, 2006, as amended from time to time; the project falls under Category "B", Project or Activity 5(j) Sugar Industry.

2.1Need/ Justification for the Project

India's stable economy, rising incomes, growing young population, and changing consumption patterns are key drivers for food consumption and increase in demand.

M/s. Indian Sucrose Limited is operating 5000 TCD sugar mill along with 19.5MW cogeneration power plant Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt.-Hoshiarpur, Punjab. In order to improve the viability of the plant by cost reduction and producing value added saleable product, it is now planned to increase the capacity of the plant to 12000TCD along with 59.5MW cogeneration power plant.

Sugarcane will be used as raw material which is easily available in nearby areas. The sugarcane can be converted in valuable products like sugar and molasses, press mud and bagasse as byproducts. The latest technology is adopted with a better productivity and quality of sugar.

Further it will help to uplift the rural mass as M/s. Indian Sucrose Limited in existing 5000 TCD sugarcane-based sugar mill 325 manpower is required in season and 25 persons will be added after expansion (12000 TCD). During off-season the existing manpower is 190 and after expansion 20 more persons will be added.

Special emphasis on Financial and Social benefits will be given to the local people including tribal population, if any, in the area. Development of social amenities will be in the form of medical facilities, education to underprivileged and creation of self-help groups. The current project will be the source of revenue to state.

2.2Location of Project (maps showing general location, specific locations, project boundary and project site layout)

- The total land required for the proposed project **is 21.46 ha,** which is already acquired by the proponent and no additional land is required for the Expansion project. The project site is located Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt.-Hoshiarpur,

Punjab. The centre geographical co-ordinates of the project site are Latitude-31°55'34.99"N and Longitude-75°37'47.07"E with Mean Sea Level of 260 meters. **No forest land is involved in the project site**. There is no National Park, Biosphere Reserves, Tiger Reserves, within 10 km radius of study area. The transportation infrastructure is already available and is well maintained in the existing area. The project is well connected with the National Highway NH-1A is at a distance of 0.5km in West and State Highway 25 is at a distance of 2.55 km in North & Mukerian Railways at a distance 3 km. Sri Guru Ram Das Jee International Airport Amritsar is at 95 Km distance in SW from the project site. The Topographic map, Google map, layout plan and site photograph& green belt photograph are shown in **Fig. 2.1, 2.2,2.3, 2.4 and 2.5** respectively

2.3 Size or Magnitude of Operation

Existing Project :	5000 TCD with 19.5 MW
Violation Activity :	5000 TCD to 6500 TCD
Proposed Activity (After Expansion):	12000 TCD with 59.5 MW

2.4 Proposed Schedule for Approval and Implementation

26.03.2018	Submission of Form-1/PFR
16.07.2018	TOR issued from MOEF&CC
August 2018	Draft EIA submission for Public Hearing
October, 2018	Public Hearing
January, 2019	Submission of Final EIA to SEAC
September,2020	Submission of revised final EIA

The implementation of the project will be taken up within one year after receipt of 'Consent to Establish' from Punjab State Pollution Control Board and Environmental Clearance from State Level Expert appraisal Committee, Punjab.

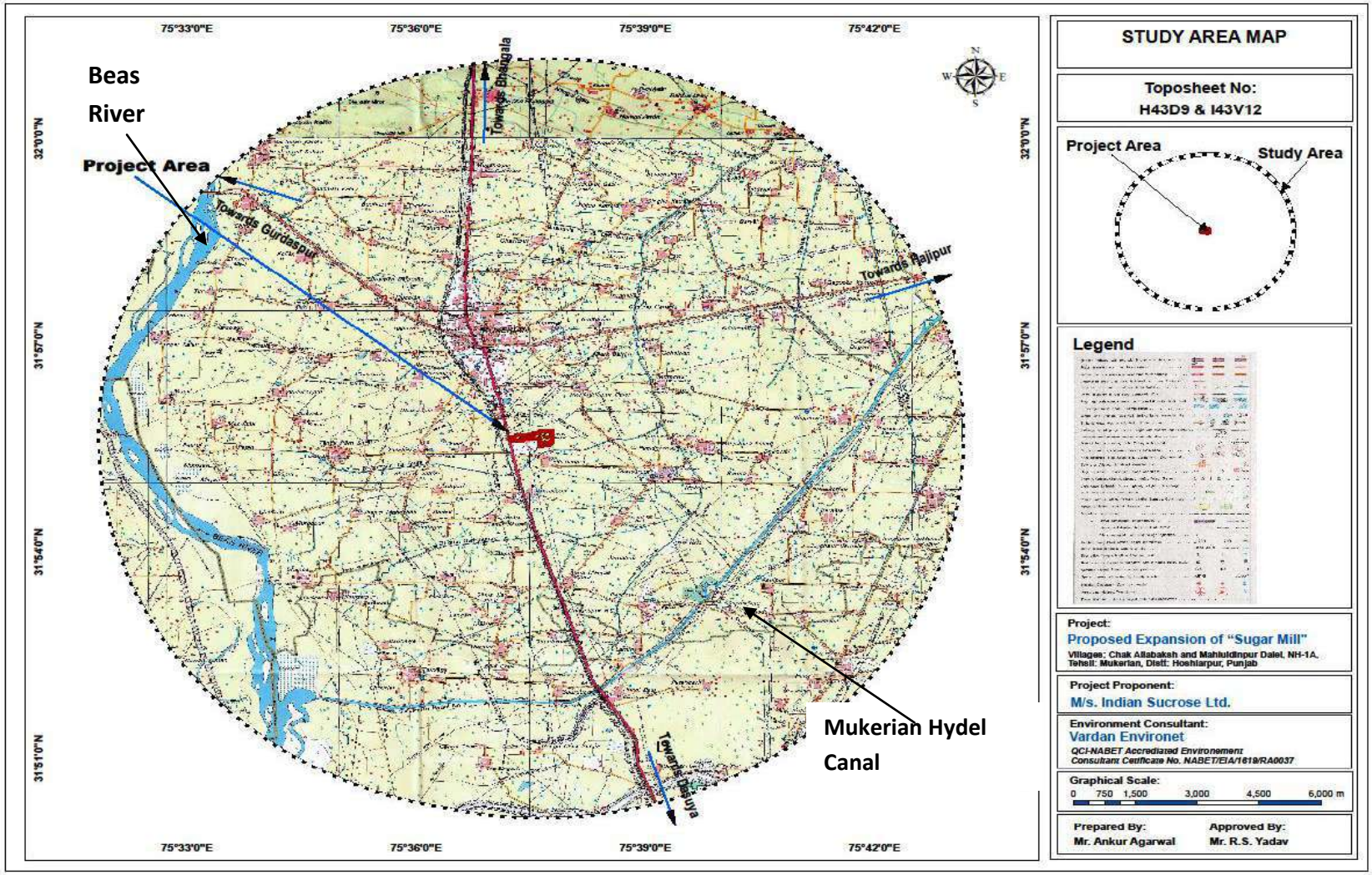


Figure 2.1: Key Plan – 10 KM Study area from the Project Boundary

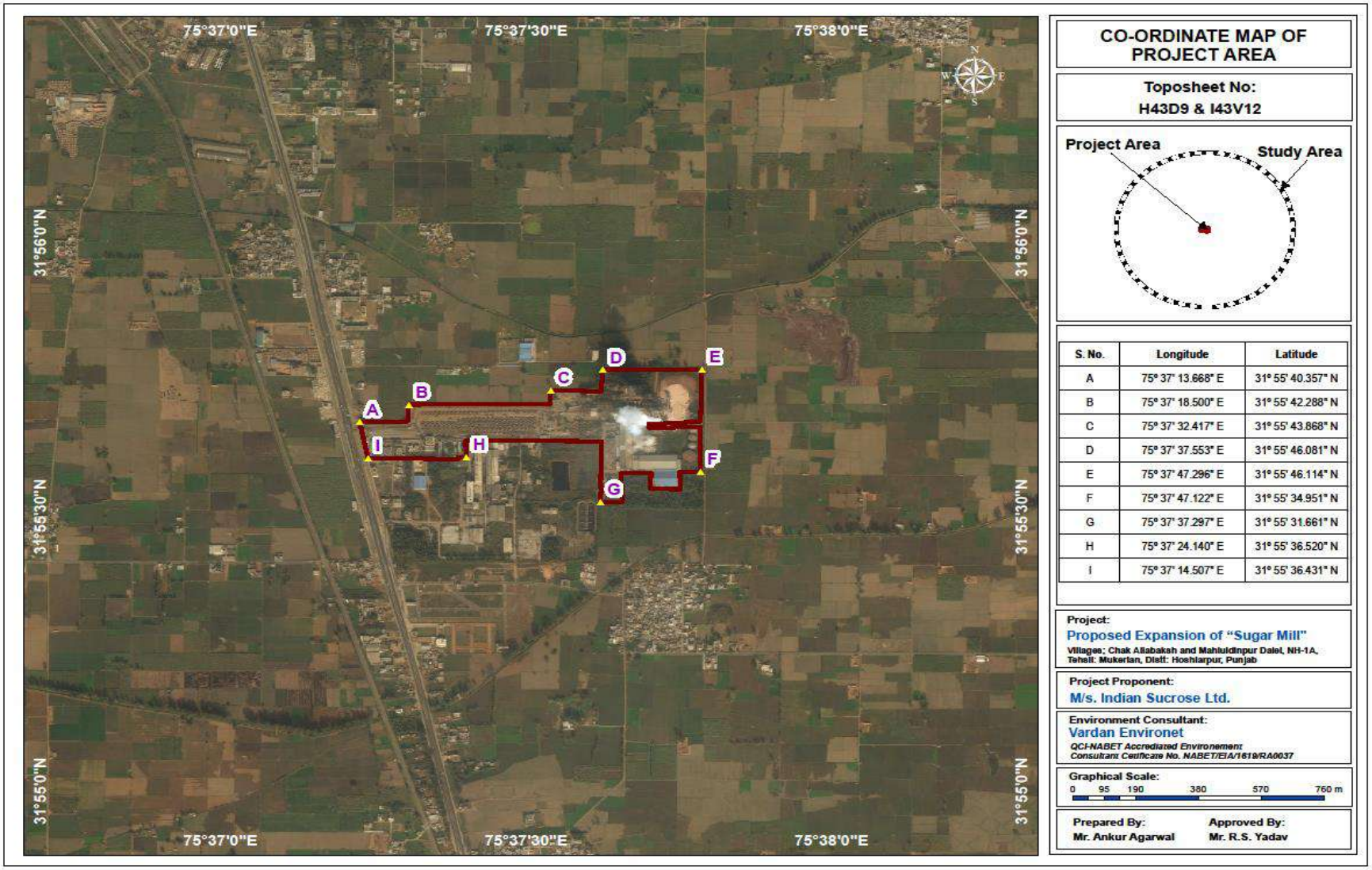


Figure- 2.2Google Image of the Project Site

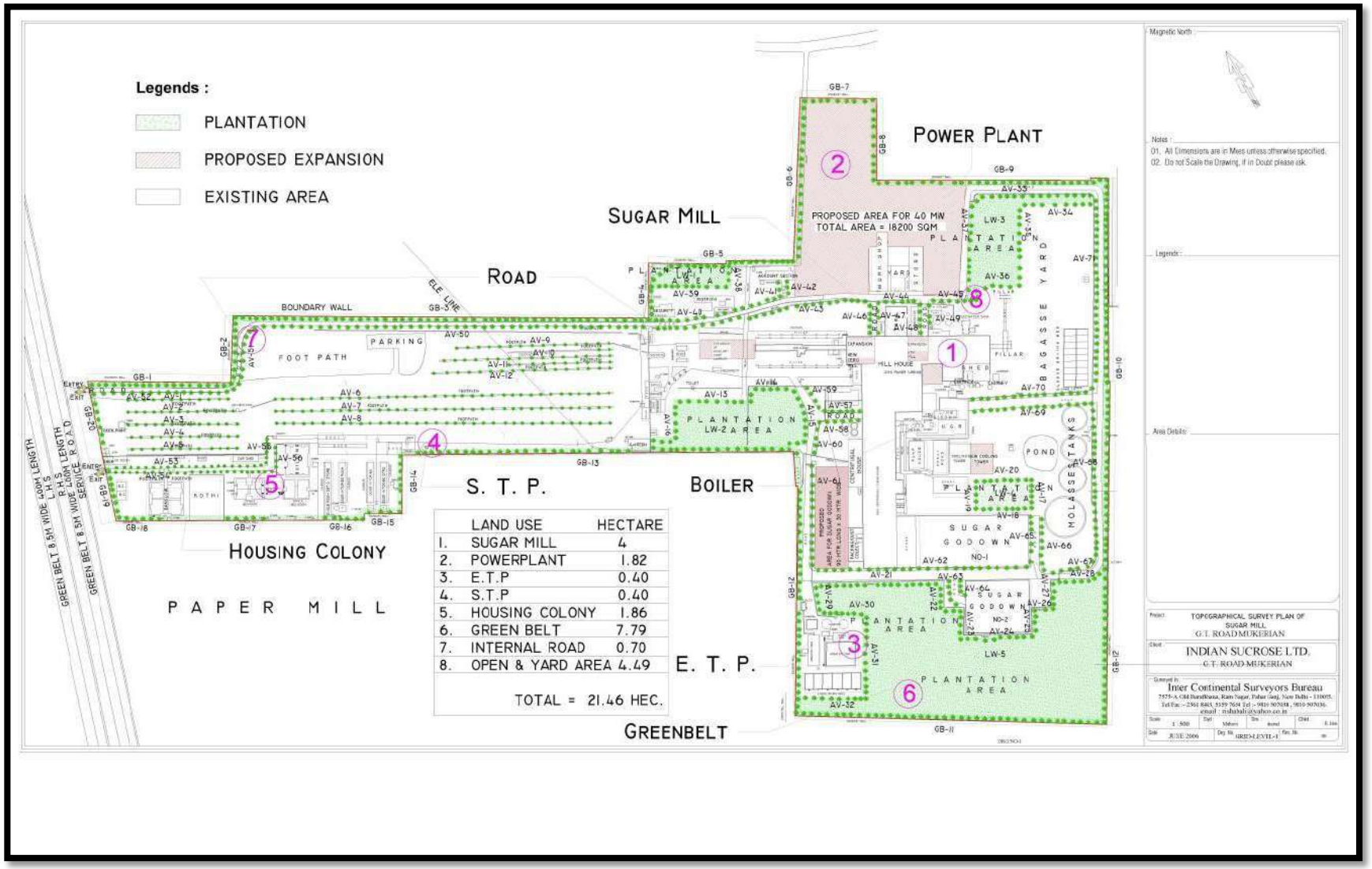


Figure 2.3 Layout plan of the project

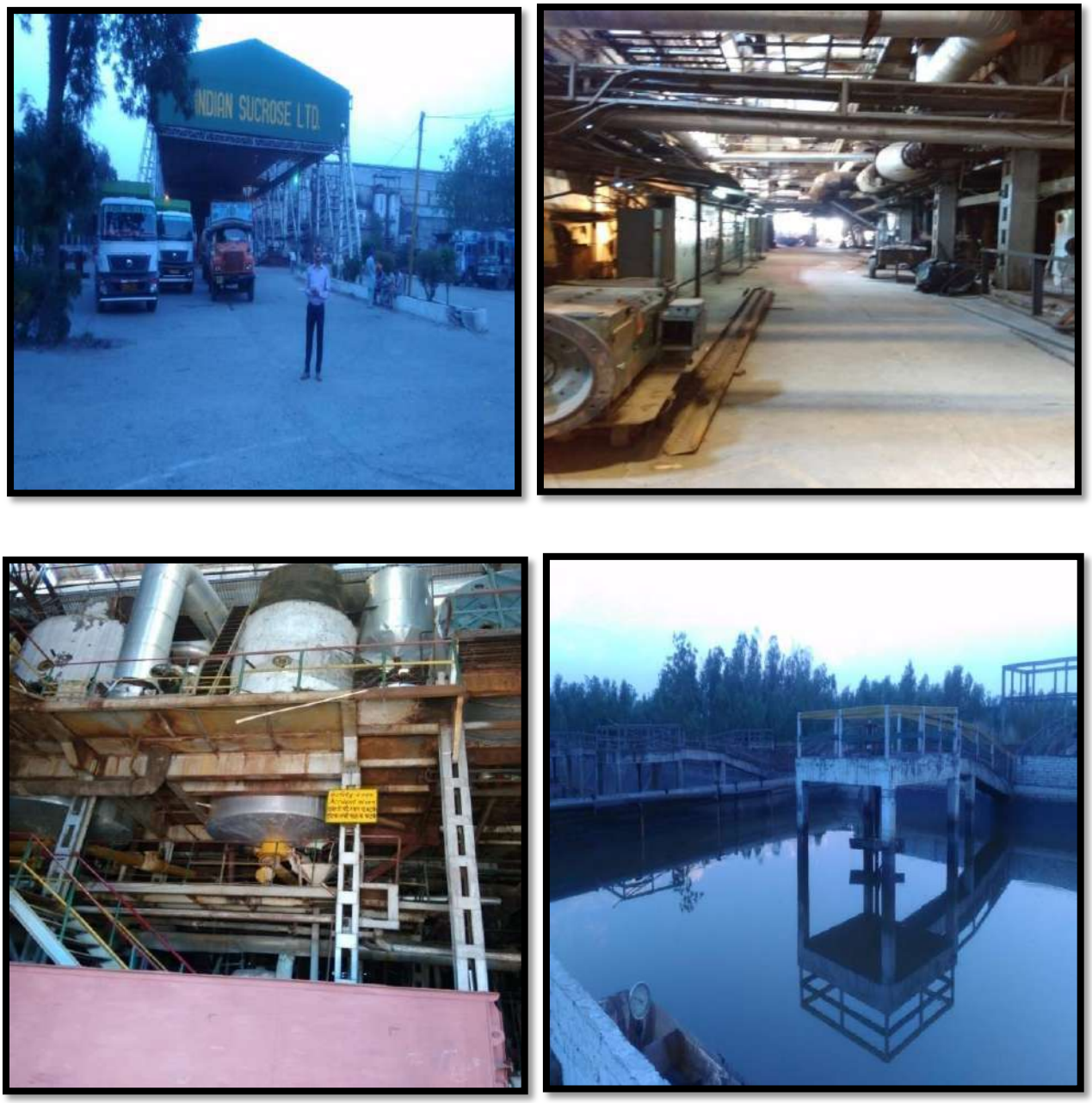


Fig: 2.4 Photographs of existing sugar mill



Fig: 2.5Photographs of Green Belt

2.5PROCESS DESCRIPTION AND TECHNOLOGY (SUGARCANE BASED)

2.5.1 SUGAR MILL

1. Extraction of juice:

The sugarcane is passed through devices like knives for cutting the stalks into chips before being subjected to crushing in a milling tandem comprising 4 to 6 three roller mills. Fine preparation with its impact on final extraction, is receiving special attention &shredders &particularly the fibrizers are gaining popularity. The mills are of modern design, being equipped with turbine drive, special feeding devices, efficient compound imbibitions systematic In the best milling practice More than 95% of the sugar in the cane goes into the juice, this percentage being called the sucrose extraction or more simply the extraction. A fibrous

residue called bagasse with a low sucrose content is produced about 25 to 30% of cane, which contains 45 to 55% moisture.

2. Clarification:

The dark green juice from the mills is acidic (pH4.5) &turbid, called raw juice or mixed juice. The mixed juice after being heated to 65 to 75 ^{0}C is treated with phosphoric acid, sulphur dioxide &milk of lime for removal of impurities in suspension in a continuously working apparatus. The treated juice on boiling fed to continuous clarifier from which the clear juice is decanted while these settled impurities known as mud dissent to the field as fertilizer. The clear juice goes to the evaporators without further treatment.

3. Evaporation

The clarified juice contains about 85% water. About 75% of this water is evaporated in vacuum multiple effects consisting of a succeeding (generally four) of vacuum boiling cells arranged in series so that each succeeding body has higher vacuum. The vapours from the final body go to condenser. The syrup leaves the last body continuously with about 60% solids &40% water.

4. Crystallization

The syrup is again treated with sulphur dioxide before being sent to the pan station for crystallization of sugar. Crystallization takes place in single-effect vacuum pans, where the syrup is evaporated until saturated with sugar. At this point 'seedgrain' is added to serve as a nucleus for the sugar crystals &more syrup is added as water evaporates.The growth of the crystals continues until the pan is full. Given as killed sugar boiler (or adequate instrumentation) the original crystals can be grown without the formation of additional crystals, so that when the pan is just full, the crystals are all of desired size &the crystal &syrup form a dense mass known as 'massecuite'. The 'strike' is then discharged through a foot valve into a crystallizer.

5. Centrifugation

The massecuite from crystallizer is drawn into revolving machines called centrifuges. The perforated lining retains the sugar crystals, which may be washed with water if desired. The mother liquor 'molasses' passes through the lining because of the centrifugal force exerted & after the sugar is 'Purged' it is cut down leaving the centrifuge ready for another charge of massecuite. Continuous centrifuges may purge low grades. The mother liquor separated from commercial sugar is again sent to pan for boiling and re-crystallization. Three stages of recrystallization are adopted to ensure maximum recovery of sugar in crystal form. The final molasses is sent out the factory as waste being unsuitable for recovery of sugar under commercial condition from economical point of view.

It may be noted that the expansion is only marginal by 10 to 14% and is achieved by modernization of machinery hardware notably as–

- Stabilization of crush rate by addition of one new mill with TRPF

- Reduction in sugar loss in Bagasse by improving Reduced Mill Extraction and Cane preparation
- Power saving by replacing fibrizer turbine drive
- Steam reduction by adopting use of extensive vapour bleeding with addition of evaporator bodies, one juice heater and flash heat recovery system
- Improvement in sugar quality by replacing old centrifugal machines

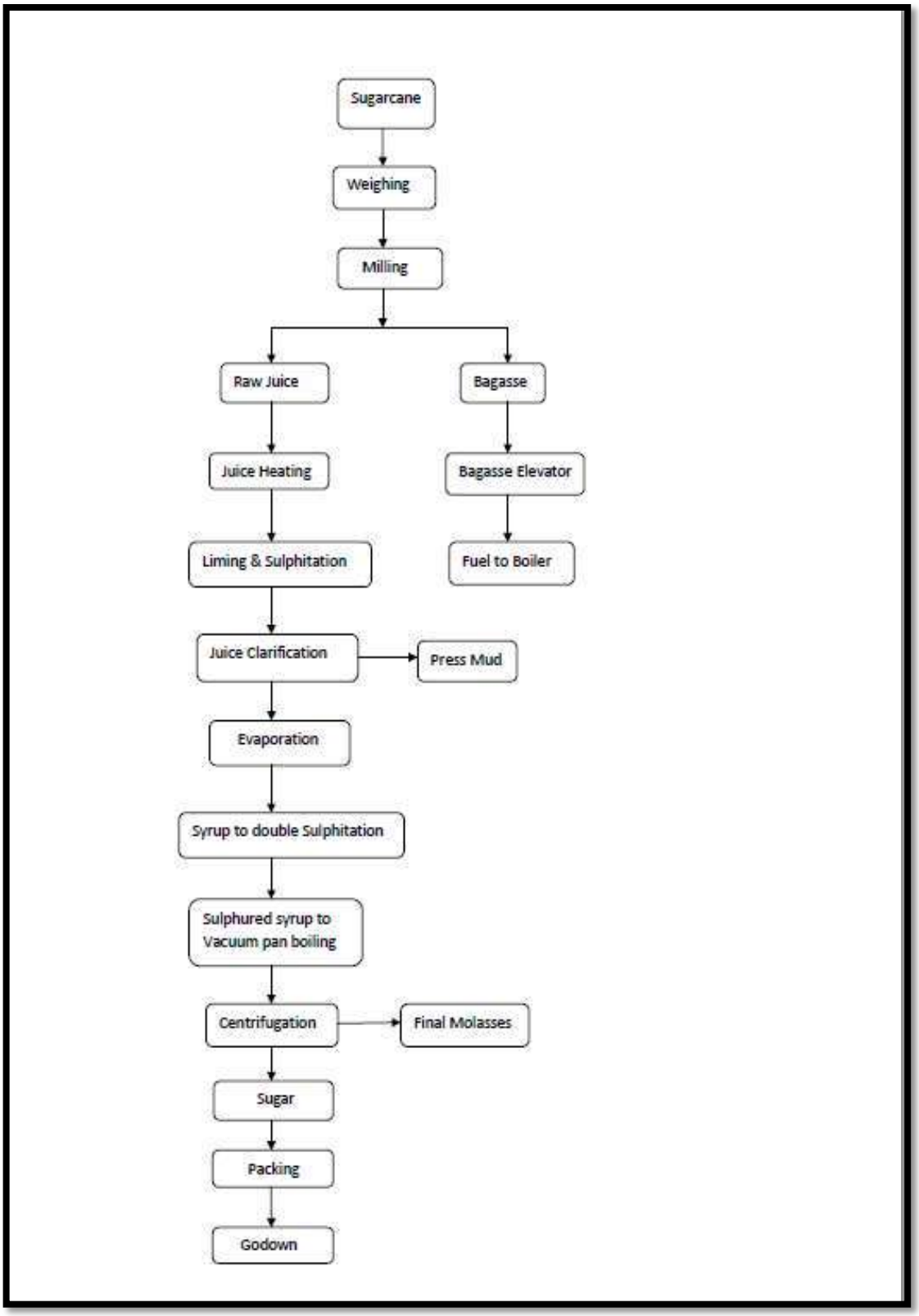


Fig: 2.6 Process Flow Diagram

2.5.2Cogeneration Power Plant

M/s Indian Sucrose Limited proposes to expand a bagasse based Co-Generation Power Plant to 59.5 MW, the peculiarities of manufacturing process is as follows.

This is a simple three step process namely Water preparation, Steam Generation and Power Generation. The standard flow–sheet as will be adopted can be given as

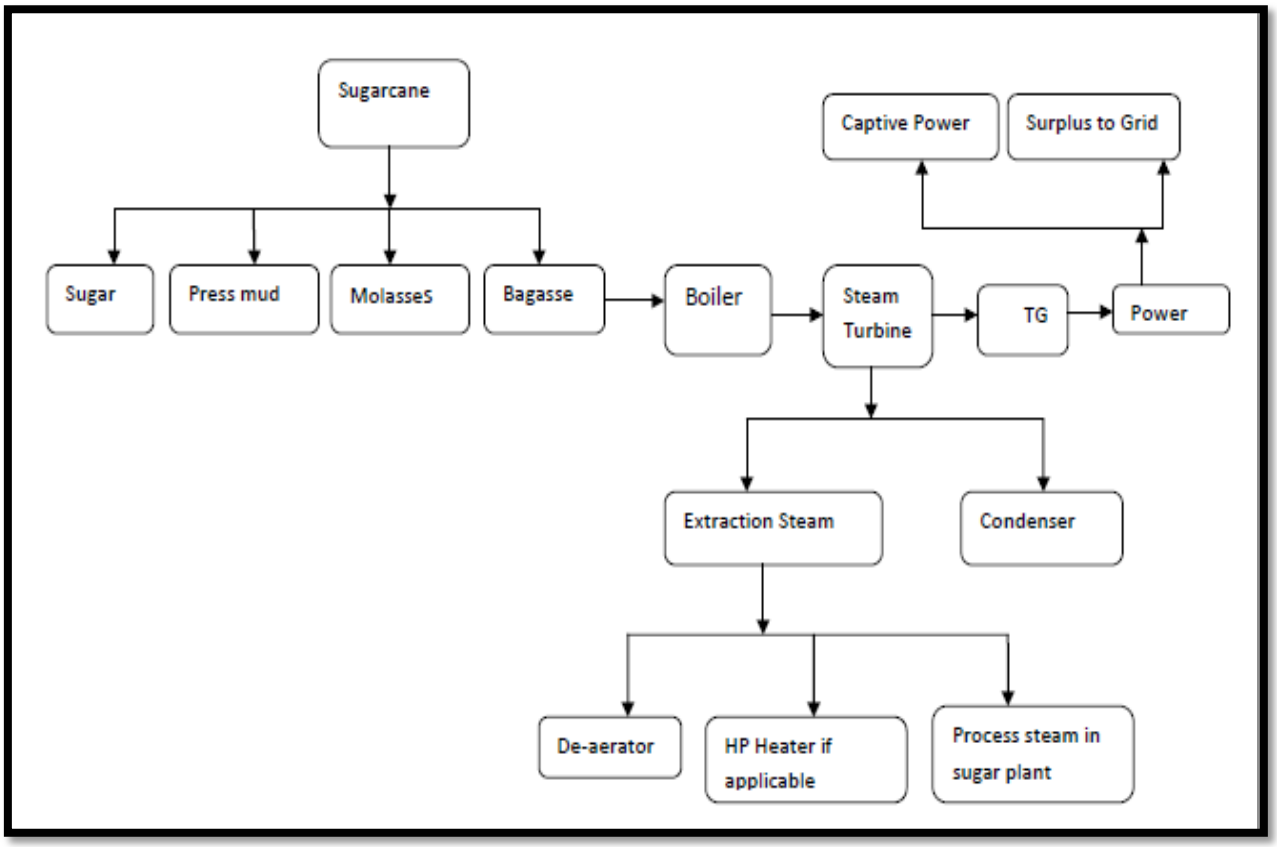


Fig : 2.7 Power production flow diagram

The steam turbine operates on basic principles of thermodynamics. After leaving the boiler, superheated vapor enters the turbine at high temperature and high pressure. The high heat/pressure steam is converted into kinetic energy using a nozzle (a fixed nozzle in an impulse type turbine or the fixed blades in a reaction type turbine). Once the steam has left the nozzle it is moving at high velocity and is sent to the blades of the turbine. A force is created on the blades due to the pressure of the vapor on the blades causing them to move. A generator or other such device can be placed on the shaft, and the energy that was in the vapor can now be stored and used. The gas exits the turbine as a saturated vapor at a lower temperature and pressure than it entered with and is sent to the condenser to be cooled(during off season).During crushing season after de-superheating, the exit steam from power turbine is sent to evaporator to evaporate juice and its condensate return to boiler.

2.6 Project Description:

2.6.1 Proposed Facilities: This project will be result in the production of the finished good and some of the byproduct which are given in the table2.1.

Table:2.1 List of Products/By-products and Quantity

S.no.	Products	Existing (5000TCD)	Proposed (7000TCD)	Total (12000TCD)
1	Sugar	500Ton/day	700Ton/day	1200Ton/day
2	Power	19.5MW	40MW	59.5MW
3	Bagasse (by product)	1400 MT/Day	1960 MT/Day	3360 MT/Day
4	Molasses(by product)	225 MT/Day	315 MT/Day	540 MT/Day
5	Press Mud (by product)	220 MT/Day	308 MT/Day	528 MT/Day

2.6.2 Raw Material Requirement (Sugarcane) The raw material details for the existing & proposed production of sugar are provided in the following table**.** Proposed Sugar mill will work for approximately 160days/annum.

Table 2.2: Raw Material Requirement (Sugarcane Based)

S. No.	Particular	Existing	Proposed	Total	Source of the Raw Material & Mode of Transportation
1.	Sugarcane	5000 TCD	7000 TCD	1200 TCD	From reserve area by tractor trolley/trucks.
	Chemicals				
2.	Lime	10 MT/Day	15 MT/Day	25 MT/Day	From market
3.	Sulphur	4 MT/Day	Not required	Not required	-
	Fuel Requirement (TPD)				
4.	Bagasse (In season)	1400	1960	3360	From their own mill
5.	Rice Husk (Off-season)	630	882	1512	From market
6.	Paddy Straw(Off-season)	398	560	958	From market

7.	Wood Chips(Off-season)	200	280	480	From market
8.	Maize Cobs(Off-season)	107	150	257	From market

2.6.3 Boiler Details:

One boiler with capacity 200 TPH is proposed to be installed. Others details regarding this are mentioned in the table given below:

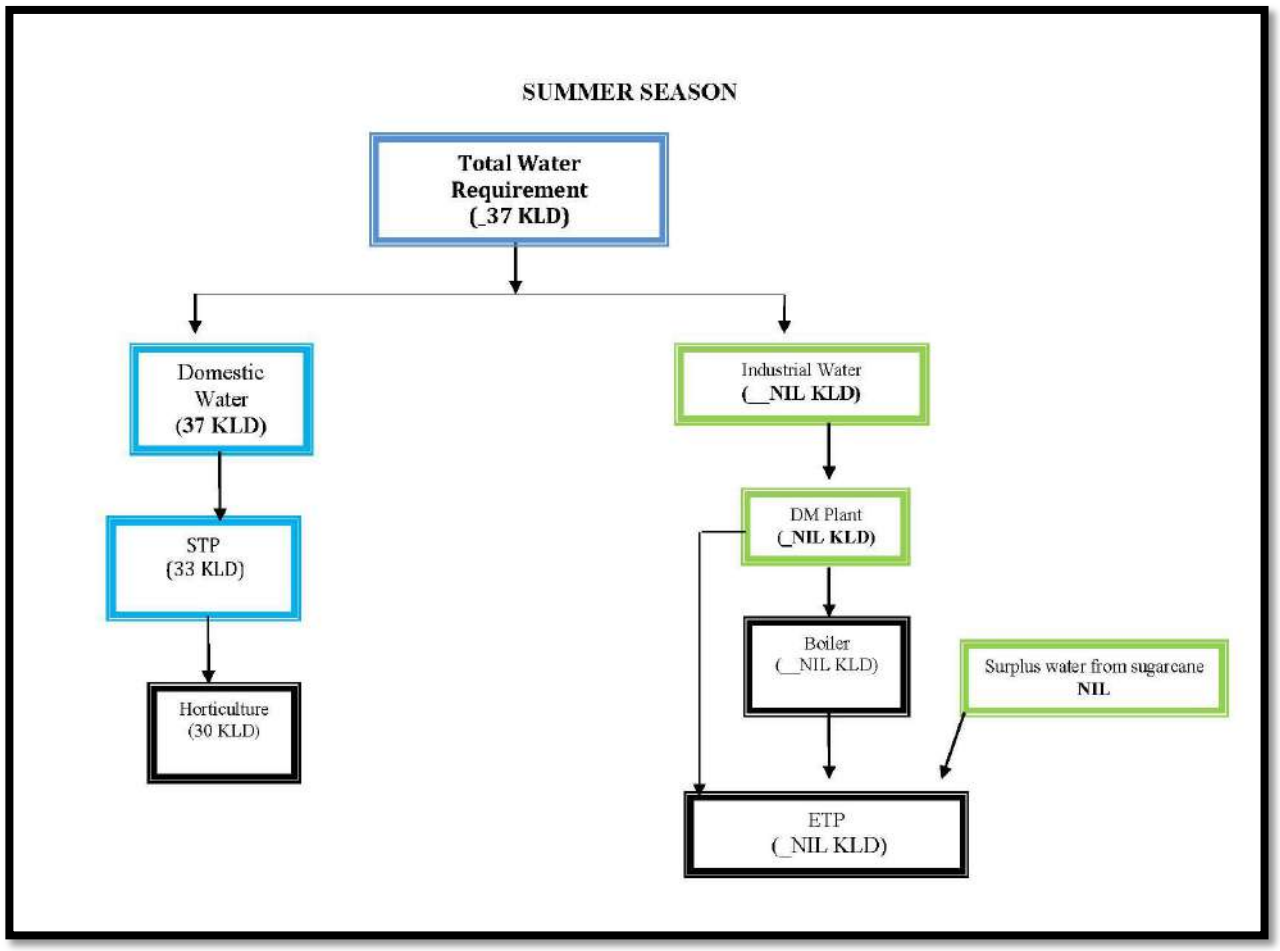
Table-2.3Boiler Details

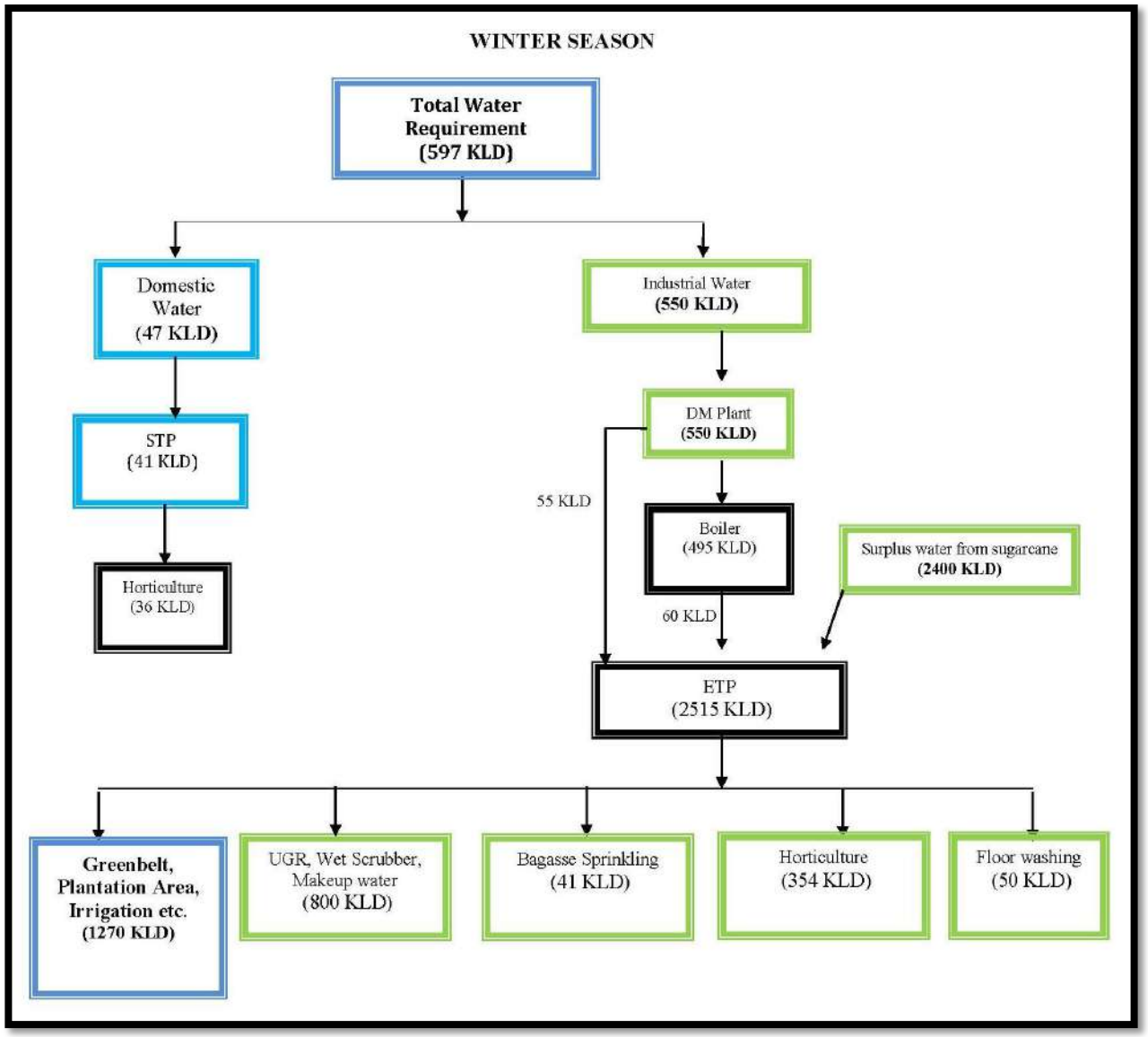
S. No.	Particular	Details
1.	Type of Fuel	Bagasse/Rice Husk/MaizeCobs/Paddy Straw/Wood Chips
2.	Capacity of Boiler	Existing: 160TPH (40 + 40 + 80) Proposed: 200TPH (1 boiler)
3.	Stack Height	30 m
4.	Air Pollution Control Devices Measures	Existing: 3 Wet Scrubbers Proposed: ESP

2.6.4 Water Requirement

The sugar industry consumes large quantity of water in manufacturing process and resulting in huge wastewater generation. The water used in sugar industry is of two types. One is Cold water and the other is Condense hot water. The cold water is used as make up water, injection water to the condenser, cooling water for various accessories such as engines, crystallizers, cold maceration, juice dilution, lime preparation, laboratory testing and factory equipment cleaning. The condense water is hot and it is used as boiler feedback water, maceration, juice dilution, lime and sulphate preparation, oliver wash, dilution, molasses conditioning, centrifugal, magma making, massecuite dilution, etc.

Existing Water Requirement in the sugar mill is **468 KLD** and **129 KLD additional water** will be required for the proposed project. The total water requirement for Sugar Mill will be **597 KLD**.
Ground water will be used in the sugar mill through Tube well. Permission from CGWA **application** has been applied vide application no **21-4/5656/PB/IND/2020** on dated **28/04/2020** Details of water balance are given in **Fig 2.8.**


SUMMER SEASON
Total Water Requirement (_37 KLD)
Domestic Water (37 KLD)
Industrial Water (__NIL KLD)
STP (33 KLD)
DM Plant (_NIL KLD)
Boiler (__NIL KLD)
Surplus water from sugarcane NIL
Horticulture (30 KLD)
ETP (_NIL KLD)


WINTER SEASON
Total Water Requirement (597 KLD)
Domestic Water (47 KLD)
Industrial Water (550 KLD)
STP (41 KLD)
DM Plant (550 KLD)
55 KLD
Boiler (495 KLD)
Surplus water from sugarcane (2400 KLD)
Horticulture (36 KLD)
60 KLD
ETP (2515 KLD)
Greenbelt, Plantation Area, Irrigation etc. (1270 KLD)
UGR, Wet Scrubber, Makeup water (800 KLD)
Bagasse Sprinkling (41 KLD)
Horticulture (354 KLD)
Floor washing (50 KLD)

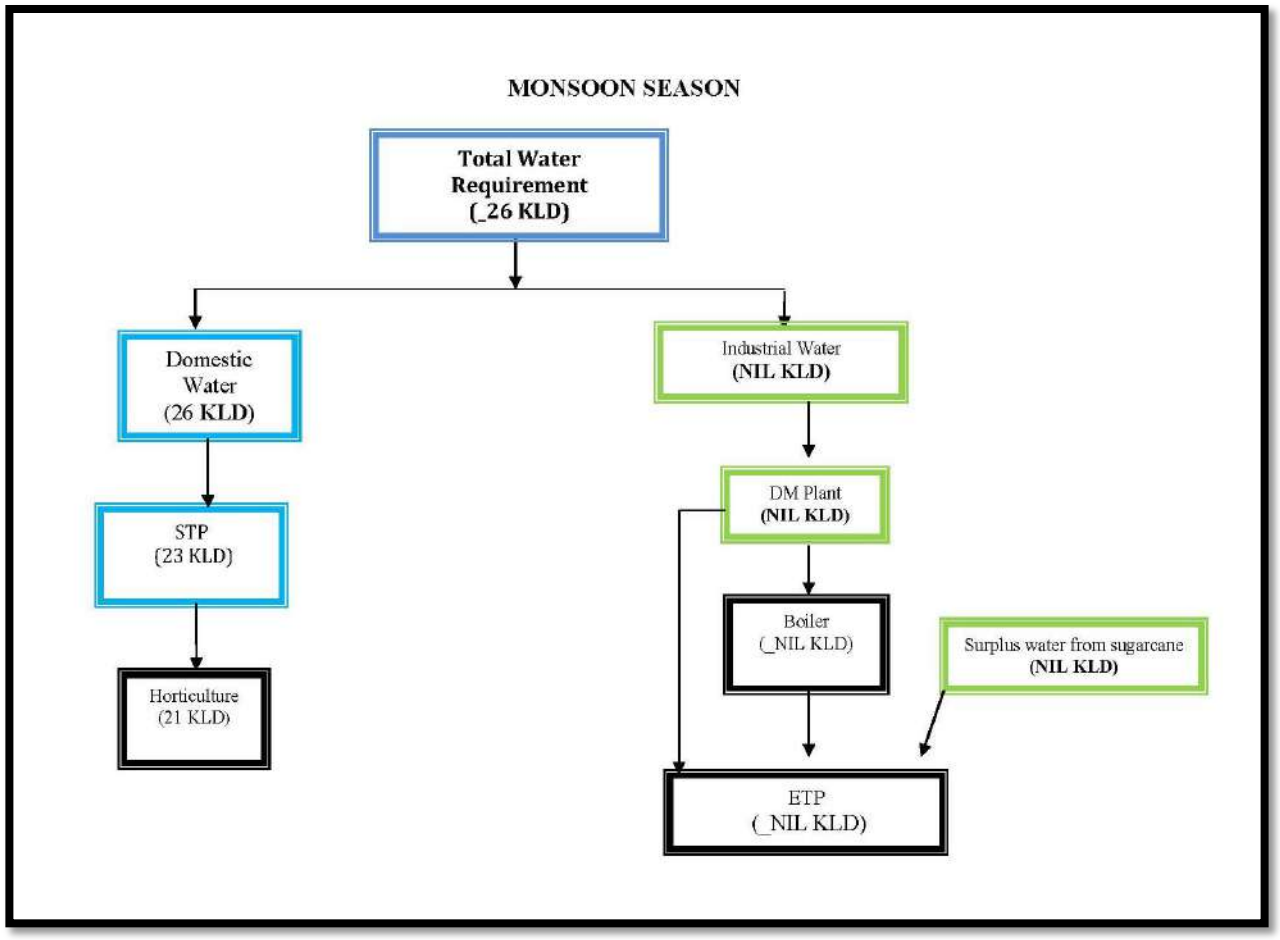


Fig: 2.8 Water Balance

2.6.5 Power Requirement:

The power requirement for the Existing & Proposed Phase is given in the table 2.5 and it is source from its own Co-generation Power Production of capacity 59.5MW/h and in case of emergency from the DG-Sets.

Table-2.4 Power Requirement

S.No.	Particulars	Details@0.032 MW/T	Source
1	Power Requirement for existing 5000 TCD sugar mill	160 MW /day during season	**Source:** From their own Cogeneration power plant
2	Power Requirement for proposed expansion 12000 TCD sugar mill	224 MW/day during season	

	Total	**384 MW/day**	
	Cogeneration Power Production 59.5 MW/h		

2.6.6 Details of D.G. Sets:

Four D.G. sets of capacity 1045 KVA already exist at the project site two more D.G. sets of capacity 3000 KVA will be installed for the power backup. Details regarding the D.G. Sets are mentioned in the table given below:

Table-2.5 Details regarding the D.G. Sets

S. No.	Particular	Details
1.	No. of DG sets	6 No. (Silent Type)
2.	Type of Fuel	HSD
3.	Capacity	4045 KVA
4.	Stack Height	As per CPCB/SPCB norms

2.6.7Manpower Requirement

The total manpower required for the proposed project is approx. 350 persons (325 + 25) which include all Categories of unskilled, semiskilled, skilled personnel and contract labour. Adequate facility such as sanitation, fuel, restroom etc. will be provided to the labor force during construction as well as to the casual workers including truck drivers during operation phase.

2.6.8Land Requirement

The total land required for the proposed project is 21.46 ha, which is already acquired by the proponent and no additional land is required for the Expansion project. Land breakup of the project area is given in the below table:

Table 2.6 Land Area Breakup

S.no.	Land use	Area (Hectare)	Percentage (%)
1	Sugar Mill Plant	4	18.6
2	Power Plant	1.82	8.48
3	Effluent Treatment Plant	0.40	1.86
4	Sewage Treatment Plant	0.40	1.86
5	Housing Colony	1.86	8.66
6	Green Plantation	7.79	36.3
7	Internal Road	0.70	3.26
8	Open & Cane Yard Area	4.49	20.9
	Total	**21.46**	**100**

2.7Description of Mitigation Measures, Measure Incorporated in to the Project to Meet Environmental Standard, Environmental Operating Conditions or Other EIA Requirements.

Following mitigation measures will be adopted by M/s Indian Sucrose Limited to minimize the impact of project on the surrounding environment.

S.no	Particulars	Mitigation measures to be adopted
1	Air Environment	• Air pollutant from a Sugar plant is basically from boiler and having PM in the range of 150 mg/Nm^3. Sox & Nox emission will also be there but in very minimum quantity as the Sox percentange is very low in the agro based fuel. • These are particulates in the flue coming from fuel *i.e.* bagasse. • The particulate emissions are through Wet Scrubbers and ESP will be installed for the expansion phase and value will come down less than 50mg/m^3 as per standards of CPCB. • Online Air monitoring system for stack emission (for Particulate Matter) will be installed and transmission of online data to Punjab Pollution Control Board and CPCB will be done.
2	Water Environment	• The proposed Sugar Mill would be based on "Zero Liquid Discharge" (ZLD). • Waste water from domestic use and industrial use will be treated in STP of capacity 30 KLD and ETP of capacity 3000 KLD respectively. • Some of water will be recycle back in the process. • After treatment the water will used in green belt development, floor washing and sprinkling. • Periodically Checkup of ETP & STP outlet and report submitted to PPCB. • Online monitoring station has already been installed at the outlet of the ETP and results are transmitting to the PPCB websites. • Rain water harvesting has also been proposed by the proponent for the proposed expansion.
3	Solid/Hazardous Waste Environment	• ETP/STP sludge will be collected and given to the farmers. • Boiler ash will be given to the Brick manufacturing. • Bagasse will be used as fuel in the boilers. • Molasses will be sold to the distillery unit. • Press mud will be given to the farmers.

S.no	Particulars	Mitigation measures to be adopted
4	Noise Environment	• The Noise free machines of latest technology will be installed. • The green belt will (plantation of dense trees across the boundary) help in reducing noise levels in Sugar Mill as a result of attenuation of noise generated due to plant operations, and transportation. • Earmuffs would be used while running the equipments of the plant. • D.G sets are provided with acoustic enclosures to control the noise level within the prescribed limit. • A high standard of maintenance and proper lubricants will be practiced for plant machinery and equipments, which helps to avert potential noise problems.
5	Odour management	• Better cane management to avoid staling of sugar • Steaming of major pipe lines and Proper cleaning of drains • Maintaining the proper temperature and pH in the fermenter. • Regular use of Chlorine to avoid growth of sulphur decomposing micro-organisms to control H_2S generation.

*** Detailed description of the Impact assessment and their mitigation plan are described in the chapter 4.**

2.8 Assessment of New& untested Technology for the Risk of Technological Failure

Alternate technology for the proposed project is described in the chapter 5.

CHAPTER - 3
DESCRIPTION OF THE ENVIRONMENT

3.0 Introduction

The main objectives of describing the environment, which may be potentially affected, are

(i) To assess present environmental quality and the environmental impacts and

(ii) To identify environmentally significant factors. The chapter contains information on existing environmental scenario of the proposed project study area.

3.1 Study Area

Various environmental parameters study has been done within 10 Km radius area of the proposed project site. The study area map is given in **Chapter 1, Figure 1.1**.

3.2Study Period

The Expert Appraisal Committee (Industry-2) of MoEF&CC has issued Standard ToR for the proposed project vide no: No.IA-J-11011/342/2017-IA-II (I) on dated 14th August 2017.The baseline data was collected from 1st October to 31st December 2017.

3.3 Components and Methodology

To achieve the objectives of ToR, Vardan Environet team members visited the study area and monitored the environmental parameters as per of ToR Letter and accordance with the Guidelines for EIA, issued by the Ministry of Environment, Forests and Climate Change, Government of India. The components of the study are given below:

1. Water Environment
2. Air Quality and Meteorology
3. Air Environment
4. Noise Environment
5. Land Environment
6. Biological Environment
7. Socio-economic Environment
8. Hydrogeology
9. Geology
10. Solid and Hazardous Waste
11. Land Use
12. Risk Assessment

3.4 Data Collection Methodology

The baseline information on micro-meteorology, ambient air quality, water quality, noise levels, soil quality and floristic descriptions are largely drawn from the data generated by M/s Vardan Enviro Lab, Gurgaon (NABL Accredited Lab). The FAE's are also involved in selection of monitoring locations and data collection. Long term meteorological data recorded at the IMD station, Kurukshetra was also collected. Micrometeorological data at site was recorded using automatic weather station. Apart from these, secondary data have been collected from Census Handbook, Revenue Records, Statistical Department, Soil Survey and Land use Organization, District Industries Centre, Forest Department, Central Ground Water Authority, etc.

3.5 Land Use Pattern of the Study Area

(A) Data Used

Indian Remote Sensing satellite, multi-spectral digital data has been used for the preparation of land use/ land cover map of present study. Survey of India reference map on 1:50,000 scales have been used for the preparation of base map and geometric correction of satellite data. Ground truthing has been carried out by making field visit by the involved EC and FAE to validate the interprete those of remotely sensed data, by enabling verification of the interpreted details and by supplementing with the information, which cannot be obtained directly on satellite imagery.

(B) Methodology

The methodology used for the study consists of following components.

Methodology Adopted for Thematic Data Extraction from the Satellite Imageries

ERDAS image processing software and ARC/GIS software were used for the project. ERDAS 9.2 image processing software was used for digital processing of the spatial data. Digital image processing techniques were applied for the mapping of the land use land cover classes of the provided area from the satellite data. Methodology Used for Land use Classification and Mapping is presented in **Figure 3.1.**

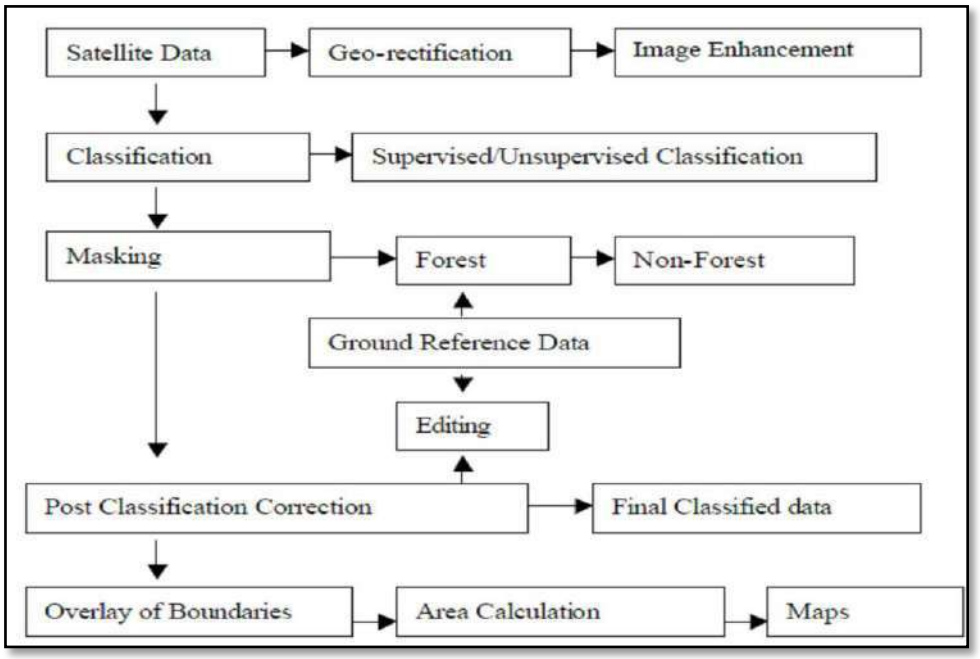


Figure- 3.1: Methodology Used for Land use Classification and Mapping Results

In the present study, both digital image processing and using visual interpretation technique were used to generate output of Land use cover map of study area. A standard False Colour Composite (FCC) image and drainage map has also been generated on the same scale **(Figure 3.3and Figure 3.4)**. The land use pattern of the study area is given in **Table 3.1.**

Table 3.1Land Use Pattern of the Study Area

Land-Use	Area (in Hectares)	% Area
Agriculture land	3995.65	50.9
Water Body	141.3	1.8
Open Shrub	455.3	5.8
Fellow Land	2527.7	32.2
Built up Area	737.9	9.4
Total Area	**7850**	**100**

Conclusion: The proposed study area consisting 50.9% (3995.65Ha.) of Agricultural land, 4% (1148.67 Ha.) Water body, 1.8% (141.3 Ha.)Open shrub, 5.8% (455.3 Ha.) Fellow land, 32.2% (2527.7 Ha.) and 9.4% (737.9Ha) Settlement.

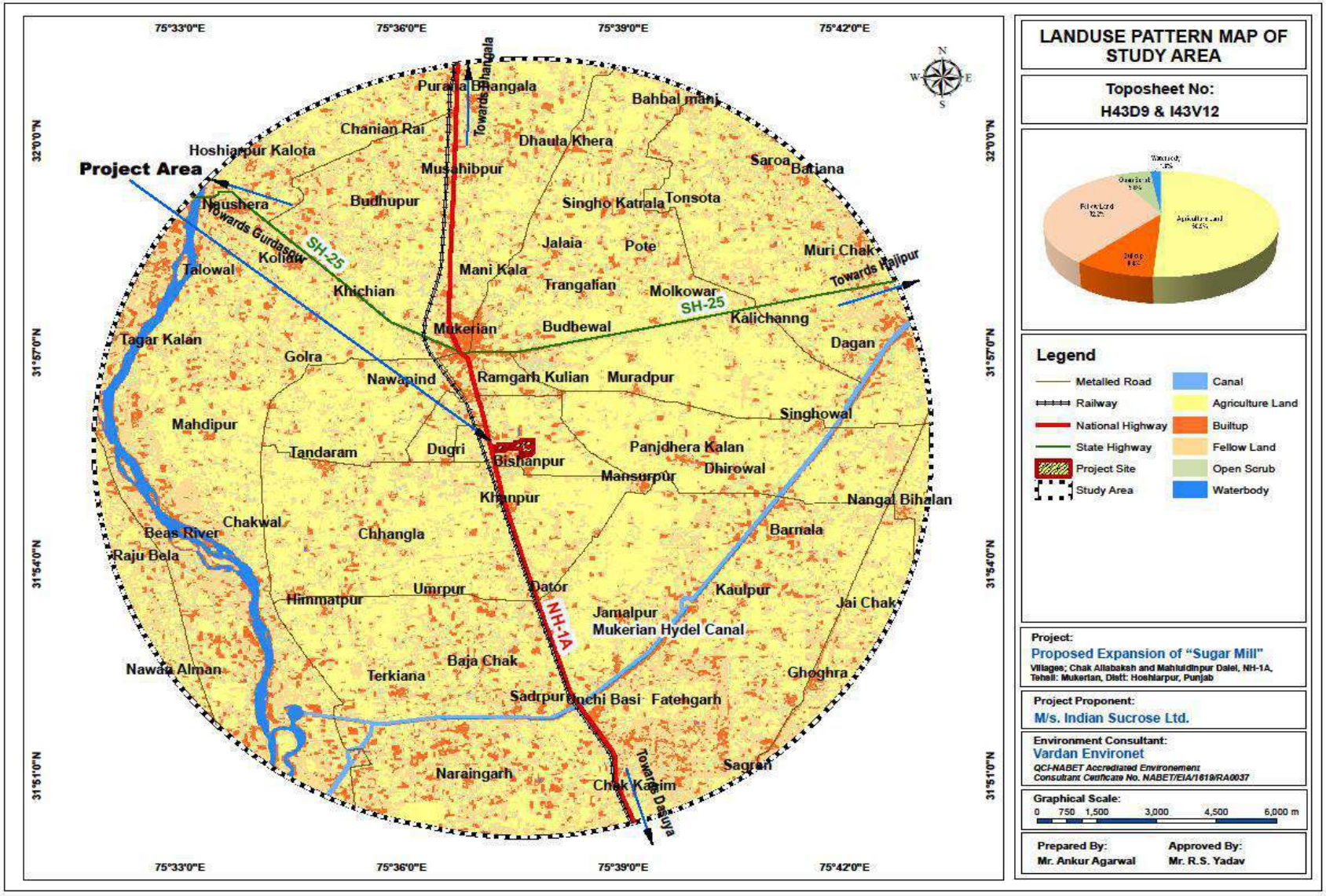


Figure 3.2: Land Use Pattern of the Study Area (10 km Radius from the Project Site)

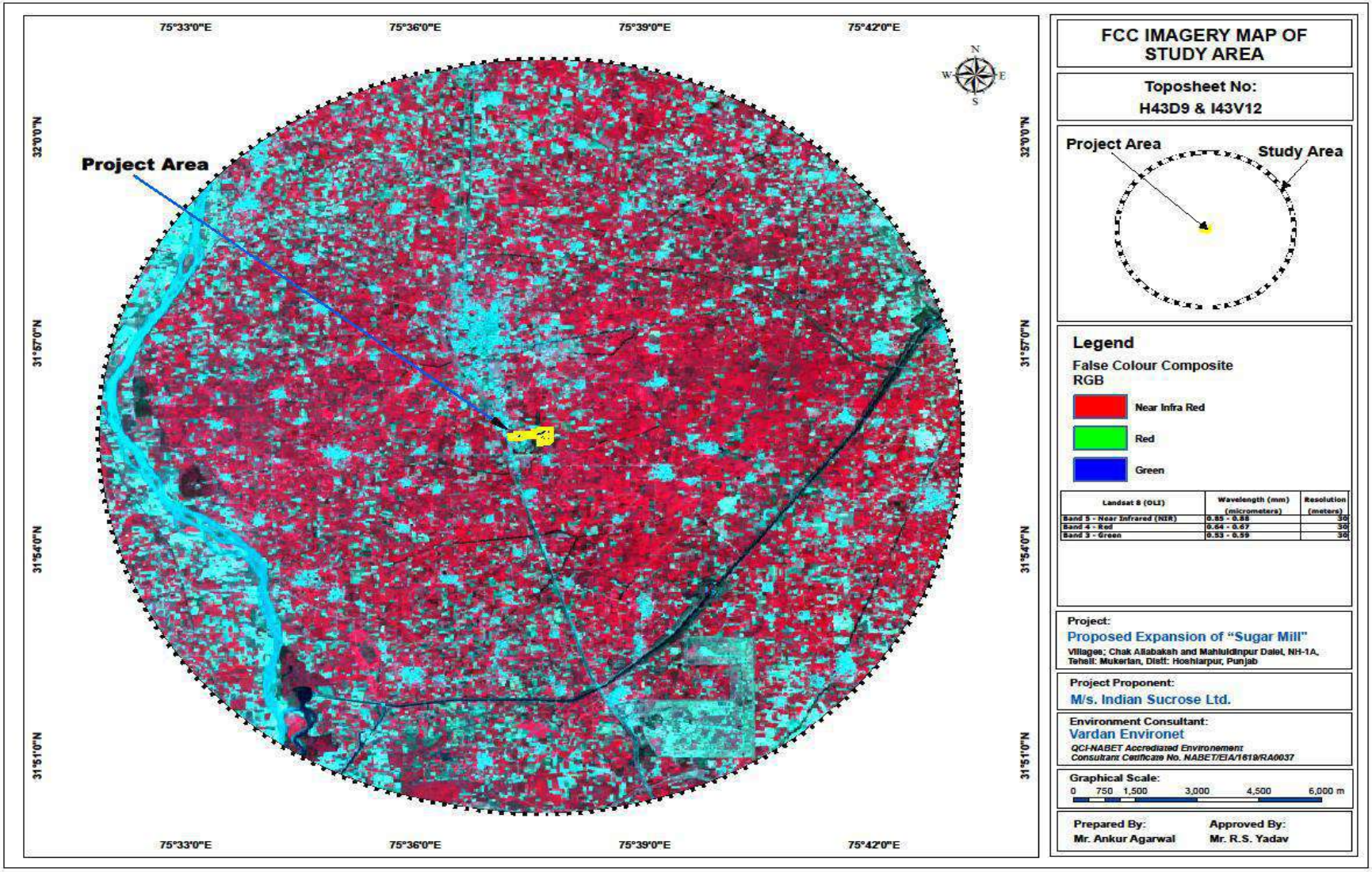


Figure 3.3: FCC Map of the Study Area (10 km Radius from the Project Site)

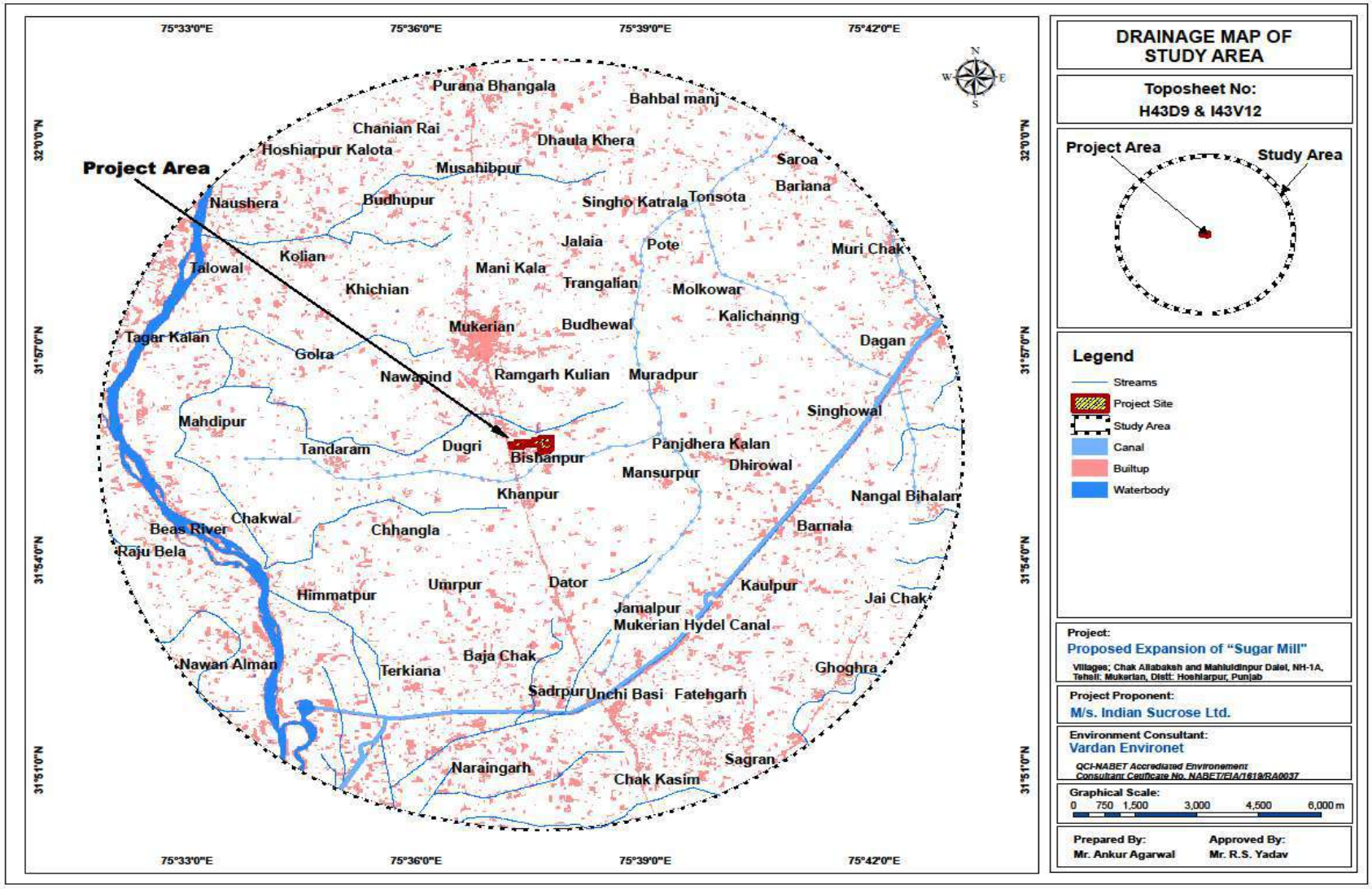


Figure 3.4: Drainage Map of the Study Area (10 km Radius from the Project Site)

3.6 Geomorphology

The Upper Shiwaliks and the Quaternary deposits constitute the main geological formations of the area. The Upper Shiwaliks comprise conglomerate beds, friable sandstone, siltstone and clay beds. Stray pebbles of granite, limestone and sand stones are also present. Sand stones are soft and friable. Lumps of clay and pellets are also met within the sandstone. At places sand stones show well developed cross-bedding and suggest the possibility of eolian origin. The sand stones contain a large portion of the mica flakes and concretions of clay. They are susceptible to weathering as a result of which there is a considerable collection of sand as talus cones.Quaternary deposits constitute gravel beds, alluvial fans and river terraces. They contain sand and clay in varying proportions. River terraces are seen flanking the present day streams and at some places they occupy the ridges. Gravel beds constitute an important source of white quartzite fragments. Recently ammonite fossils have been encountered in the Shiwalik formations near Garhshankar.

3.7 Hydrogeology

Unconsolidated alluvial sediments lying south of Siwalik foothills mainly occupy the district. The alluvial sediments are classified as piedmont and fluvial deposits. The piedmont deposits lie along Siwalik Hills, which comprises boulders, pebbles, gravel, sand and clay. It is further divided into Kandi and Sirowal, which are contemporaneous, and merge imperceptibly with each other. The fluvial comprise of silt, sand, gravel and clay in association with Kankar. Ground water is generally fresh at all levels. Ground water exploration was carried out at 48 sites which includes 5 piezometers. The boreholes at Patti Khas, Naloian, Jian, Hariana and Niala were abandoned due to insufficient thickness of aquifers. In the rest of the area, as well the ground water occurs under unconfined conditions in shallow aquifers and under semi-confined to confined condition in deeper aquifers. The drilling depth range from 126 to 460m bgl and constructed in the depth range of 103 to 374m. The yield of these wells ranges from 708 lpm to 2900 lpm with draw down of 5 to 12m. The wells constructed in the northwestern part of the district were high yielding wells than those constructed along the Siwalik foothills zone. Transmissivity of aquifers ranges from 634 to 4120 m^2/day. The hydraulic conductivity value in the district varies from 2 to 29m/day. The value of storage coefficient worked out to be $58x10^{-2}$ to 1.8 x 10^{-3}.Ground water Pre-monsoon Depth is 10-20 m and Post-monsoon Depth <10m.

3.8 Land Environment

3.8.1 Soil Quality and Characteristics

The information on soils has been collected from various secondary sources and also through primary soil sampling analysis of which is described in this section.

For studying the soil profile of the region, **6** locations were selected to assess the existing soil conditions around the contract area representing various land use conditions. The concentrations of physical and chemical parameters were determined.

The sampling locations have been finalized with the following objectives:

- To determine the baseline soil characteristics of the study area; and
- To determine the impact of industrialization on soil characteristics.

Quality of the soil in the area is showing a marked diversity in nature depending upon the parent rock and climatic conditions prevailing in different parts of the district. The analysis results of the soil samples collected are given in **Table-3.2.** Photographs of the sampling and sampling location map are presented in **Figure 3.5& 3.6 respectively.**

Table 3.2 Soil Monitoring Station Details

Station	Sampling Location	Aerial distance (km) and direction from Project Site	Co-ordinates	
			Latitude	Longitude
S1	Project Site	--	31° 55' 42.76" N	75° 37' 30.24" E
S2	Khanpur	0.7 Km towards South	31° 55' 07.25" N	75° 37' 31.09" E
S3	Mukerian	2.8Km towards NNW	31° 57' 09.00" N	75° 36' 40.36" E
S4	Mahdipur	6.3 Km towards West	31° 55' 45.30" N	75° 33' 14.91" E
S5	Kaulpur	5.6 Km towards SE	31° 53' 46.08" N	75° 40' 42.17" E
S6	Kallchanng	5.7 Km towards ENE	31° 57' 19.14" N	75° 40' 55.69" E

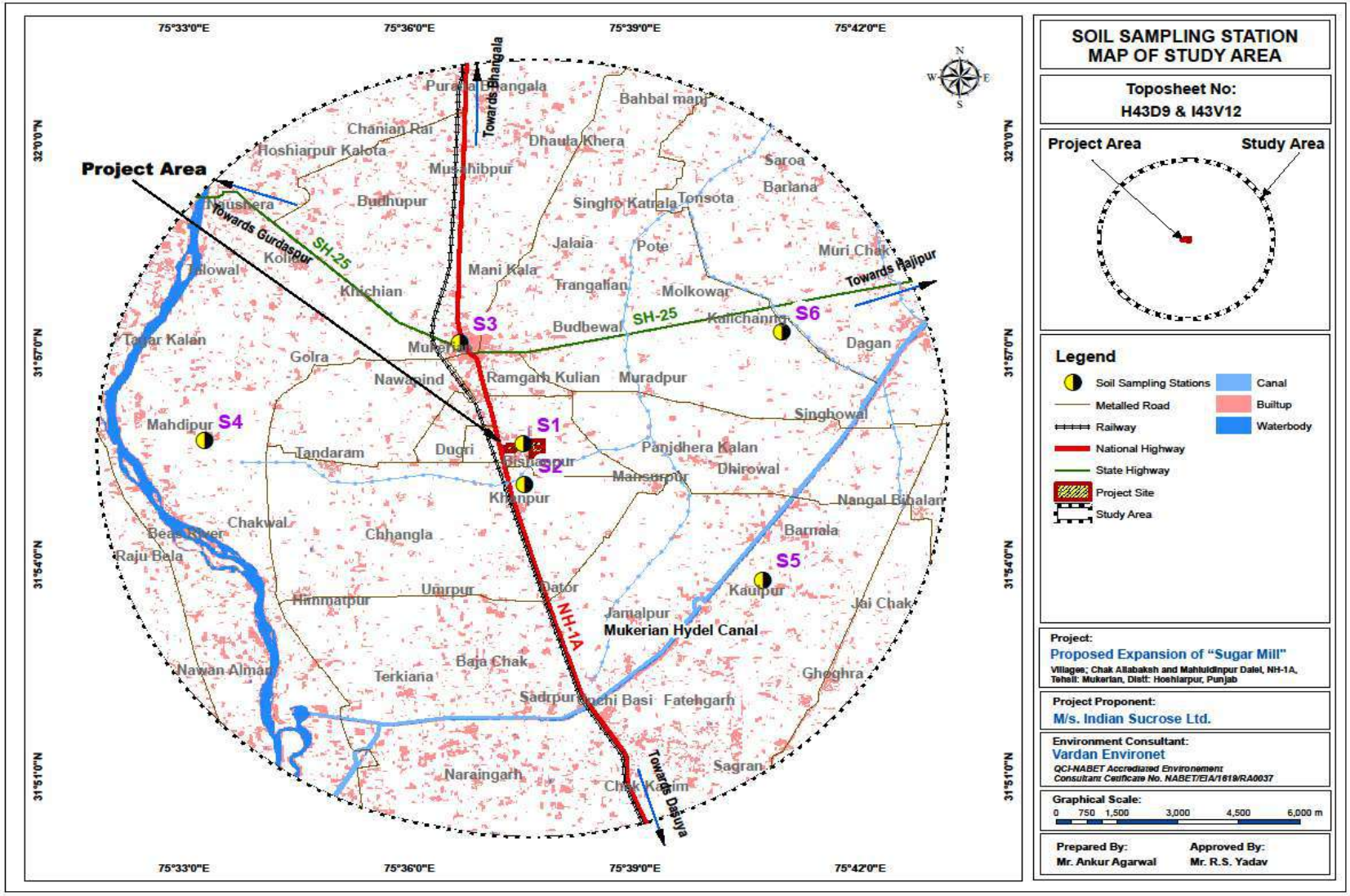


Figure 3.6: Key Plan of Soil Sampling Stations

Table 3.3 (A) Soil Analysis Result for the month of October to December, 2017)

S.no	Parameter	S1	S2	S3	S4	S5	S6	Test Method
1.	pH (at 25 ^{0}C)	7.42	7.27	7.21	7.73	7.92	8.20	IS : 2720 (P-26,1987)
2.	Conductivity (mS/cm)	0.362	0.395	0.727	0.685	0.812	0.422	IS:14767-2000 Reaffirmed 2006
3.	Soil Texture	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	USDA Method, 1968
4.	Color	Brownish	Brownish	Brownish	Brownish	Brownish	Brownish	USDA Method, 1968
5.	Water holding capacity (%)	28.78	31.73	27.32	25.32	35.29	30.58	USDA Method, 1968
6.	Bulk density (gm/cc)	1.64	1.52	1.37	1.26	1.67	1.36	USDA Method, 1968
7.	Chloride as Cl (mg/100gm)	32.12	40.27	54.32	48.23	78.68	77.65	USDA Method, 1968
8.	Calcium as Ca (mg/100gm)	35.27	37.53	42.37	36.43	46.75	55.89	USDA Method, 1968
9.	Sodium as Na (mg/100gm)	41.47	45.34	39.82	30.44	42.83	47.62	USDA Method, 1968
10.	Potassium as K (kg/hec.)	118.00	109.45	126.00	116.00	116.00	127.00	USDA Method, 1968

11.	Organic Matter (%)	0.45	0.50	0.60	0.52	0.70	0.53	IS:2720 (P-22, 1972)
12.	Magnesium as Mg (mg/100gm)	18.37	26.30	26.20	23.21	24.56	32.79	USDA Method, 1968
13.	Available Nitrogen as N (kg./hec.)	248.00	239.00	272.00	235.00	242.36	268.00	IS:14684, 1999
14.	Available Phosphorus (kg./hec.)	24.56	28.58	27.32	26.69	33.68	27.87	USDA, APHA-4500PC
15.	Zinc as Zn (mg/kg)	0.80	0.75	0.73	0.54	1.05	0.93	APHA-3030D, APHA-3111B
16.	Manganese as Mn (mg/kg)	3.78	4.15	5.35	4.27	6.63	5.84	APHA-3030D, APHA-3111B
17.	Chromium as Cr (mg/kg)	0.47	0.61	0.38	0.52	0.59	0.76	APHA-3030D, APHA-3111B
18.	Lead as Pb (mg/kg)	0.12	0.14	0.17	0.19	0.13	0.18	APHA-3030D, APHA-3111B
19.	Cadmium as Cd (mg/kg)	0.52	0.64	0.65	0.52	0.81	0.74	APHA-3030D, APHA-3111B
20.	Copper as Cu (mg/kg)	0.63	0.75	0.82	0.64	0.67	0.86	APHA-3030D, APHA-3111B

Table 3.3 (B) Soil Analysis Result for the month of January, 2018

S.no	Parameter	S1	S2	S3	S4	S5	S6	Test Method
1.	pH (at 25 ^{0}C)	7.63	7.33	6.95	7.85	7.65	7.88	IS : 2720 (P-26,1987)
2.	Conductivity (mS/cm)	0.386	0.412	0.358	0.432	0.481	0.395	IS:14767-2000 Reaffirmed 2006
3.	Soil Texture	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	Silty Loam	USDA Method, 1968
4.	Color	Brownish White	Brownish White	Brownish White	Brownish White	Brownish White	Brownish White	USDA Method, 1968
5.	Water holding capacity (%)	33.26	28.56	36.52	28.23	42.26	30.20	USDA Method, 1968
6.	Bulk density (gm/cc)	1.56	1.63	1.44	1.35	1.55	1.46	USDA Method, 1968
7.	Chloride as Cl (mg/100gm)	42.15	52.41	65.35	56.42	82.23	62.75	USDA Method, 1968
8.	Calcium as Ca (mg/100gm)	37.63	43.56	48.16	43.65	54.42	47.32	USDA Method, 1968
9.	Sodium as Na (mg/100gm)	35.12	40.21	37.23	33.75	48.83	43.10	USDA Method, 1968
10.	Potassium as	123.00	115.30	132.00	110.00	124.00	135.00	USDA Method,

	K (kg/hec.)							1968
11.	Organic Matter (%)	0.47	0.56	0.76	0.57	0.62	0.63	IS:2720 (P-22, 1972)
12.	Magnesium as Mg (mg/100gm)	21.63	30.23	12.23	26.36	23.63	22.30	USDA Method, 1968
13.	Available Nitrogen as N (kg./hec.)	256.00	243.00	268.00	248.00	267.00	256.00	IS:14684, 1999
14.	Available Phosphorus (kg./hec.)	28.16	35.23	25.75	30.23	27.23	35.86	USDA, APHA-4500PC
15.	Zinc as Zn (mg/kg)	0.75	0.84	0.81	0.68	0.94	0.88	APHA-3030D, APHA-3111B
16.	Manganese as Mn (mg/kg)	4.23	6.23	7.05	5.83	6.25	7.20	APHA-3030D, APHA-3111B
17.	Chromium as Cr (mg/kg)	0.42	0.56	0.45	0.61	0.54	0.84	APHA-3030D, APHA-3111B
18.	Lead as Pb (mg/kg)	0.14	0.16	0.15	0.17	0.15	0.16	APHA-3030D, APHA-3111B
19.	Cadmium as Cd (mg/kg)	0.66	0.72	0.63	0.69	0.74	0.65	APHA-3030D, APHA-3111B z
20.	Copper as Cu (mg/kg)	0.75	0.85	0.76	0.43	0.56	0.95	APHA-3030D, APHA-3111B

Interpretation

1) The analysis results show that soil is acidic in nature as pH value ranges from 8.20 to 7.21 with organic matter 0.45%-0.70% during the period of October to December 2017. During the period of January 2018 the pH value ranges from 6.95 to 7.88 with organic matter 0.47 to 0.76%.
2) The concentration of Nitrogen (235 to 272 Kg/ha.), Phosphorus (24.56 to 33.68 Kg/ha.) and Potassium (109.45 to 127 Kg/ha.) has been found to be in good amount in the soil samples during the period of October to December 2017. During the period of January 2018, the concentration of Nitrogen (243 to 268 kg/ha.), Phosphorus (25.75 to 35.86 kg/ha.) and Potassium (110 to 135 gm/cc) which is fairly in course with the baseline data collected during Oct-Dec 2018.

3.9 Environment and Meteorology

3.9.1 Climate

The climate of Hoshiarpur district is classified as tropical steppe, hot and semi-arid which is mainly dry with very hot summer and cold winter except during monsoon season when moist air of oceanic origin penetrates into the district. There are four seasons in a year. The hot season starts from mid March to last week of the June followed by the south west monsoon which lasts upto September. The transition period from September to November forms the post monsoon season. The winter season starts late in November and remains upto first week of March.

Air Pollutants upon discharge to atmosphere pass through a number of mechanisms, which include diffusion and transportation leading to dispersion. These mechanisms are governed by the local atmospheric conditions. All these result in the necessity to collect the meteorological parameters like ambient temperature, wind speed, wind direction, and other weather conditions (relative humidity, atmospheric pressure etc.), which will be ultimately used for the prediction of the ground level concentrations of the air pollutants through mathematical modeling.

For this purpose a temporary auto weather station was installed to record micro meteorological data on wind speed, wind direction, Ambient Temperature, Solar Insolation and Relative Humidity on hourly basis.

The primary data from the site was matched with secondary data of IMD station, Amritsarfor data proofing.

A sophisticated on-site meteorological observatory was established near project site and operated continuously for three months' period (1stOctober 2017 to 31stDecember 2017). The observatory was located about 10 m above the ground level and ensured to be free from any obstruction to wind. Besides, this location was found to be most suitable one being close to the project site. The summary of the on-site data generated in respect of the above parameters for

the period mentioned above are presented in **Table-3.4**. The Wind rose diagram for the entire period is shown in **Figures 3.7.**

3.9.2 Temperature

The monthly maximum and minimum temperatures recorded on-site during the aforesaidmonitoring period (1st October 2017 to 31st December 2017) varied between 37.4°C - 6 °C and. It could be observed that, the pattern of data recorded on-site generally matches with the past data of IMD.

3.9.3 Relative Humidity

The monthly minimum and maximum relative humidity recorded onsite during the said monitoring period varied between 12 % - 86 %.

3.9.4 Rainfall

The normal annual rainfall of the district is 938 mm which is unevenly distributed over the area in 38 days. The south west monsoon, sets in from first week of July and withdraws in end of September, contributes about 77% of annual rainfall. July and August are the wettest months. Rest 23% rainfall is received during non-monsoon period in the wake of western disturbances and thunder storms. Generally rainfall in the district increases from southwest to northeast.

- Normal Annual Rainfall: 938 mm
- Normal monsoon Rainfall: 720 mm
- Temperature Mean Maximum: 39^0C (May- June)
- Mean Minimum: 5^0C (January)
- Normal Rainy days: 38

The average annual rainfall at Hoshiarpur is 938 mm/year (As per CGWB report Hoshiarpur-2013).Total 518.1mm rainfall was recorded during the monitoring period.

Table-3.4 Onsite Meteorological Data – (1st October 2017 to 31st December 2017)

Month	Temperature		Relative Humidity%	Wind Speed (m/sec)
	Max ^{0}C	Min ^{0}C		
October	37.4	15.6	12-78	0.0-6.7
November	36.4	12.8	13-84	0.0-4.9
December	16	6.3	27-86	0.0-4.8

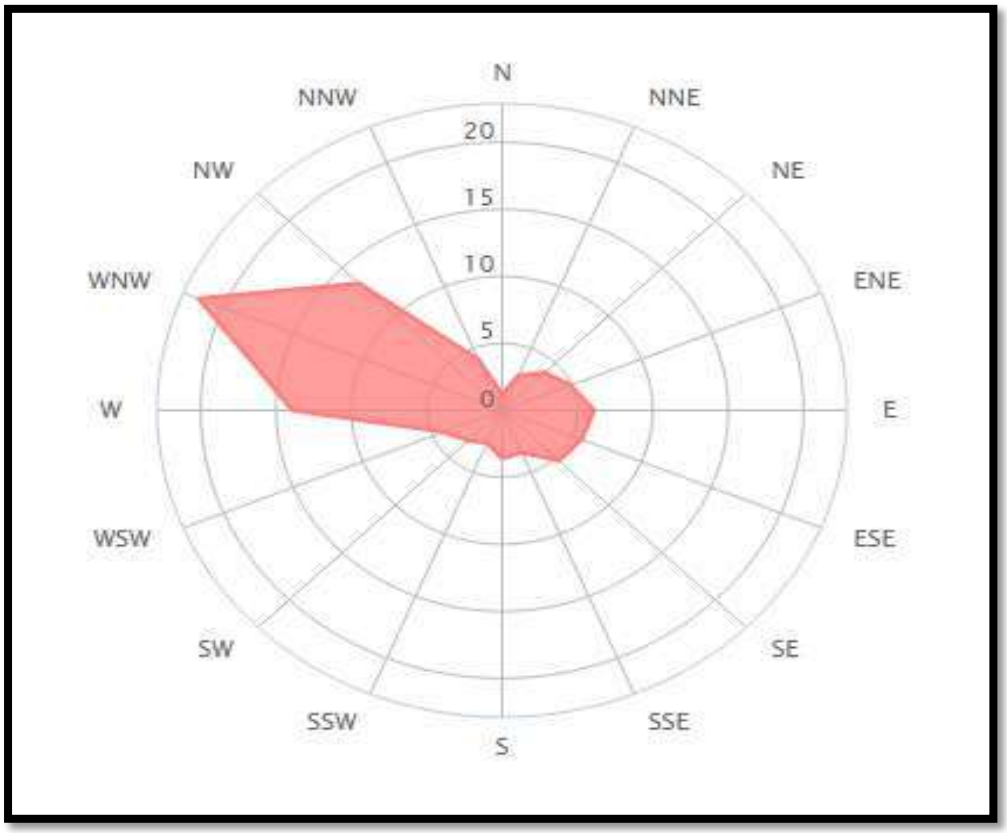


Figure 3.7: Wind rose Diagram

3.10Ambient Air Quality

The ambient air quality with respect to the study area of 10 km radius around the contract area forms the baseline information. The various sources of air pollution in the region are dust rising from unpaved roads, domestic fuel burning, vehicular traffic, agricultural activities, other industries, etc.The prime objective of baseline air quality monitoring is to assess existing air quality of the area. This will also be useful in assessing the conformity to standards of the ambient air quality during the operations.The baseline status of the ambient air quality has been assessed through scientifically designed ambient air quality network. The design of monitoring network in the air quality surveillance program has been based on the following considerations:

- Meteorological conditions.
- Topography of the study area.
- Likely impact area.

3.10.1 Ambient Air Quality Monitoring

Ambient air monitoring was carried out for 3 month as per CPCB guidelines in the surrounding areas of the project site to assess the ambient air quality. To know the ambient air quality at a larger distance i.e. in the study area of 10 km. radius, air quality survey has been conducted at 08 locations over a period of Pre Monsoon Season. Major air pollutants viz, PM_{10}, $PM_{2.5}$, Sulphur Dioxide (SO_2), Nitrogen Dioxide (NO_2), and Carbon Monoxide (CO) representing the basic air pollutants in the region were identified for Ambient Air Quality Monitoring (AAQM). The ambient air quality monitoring stations were set up as par **Table 3.5 and Figure -3.8.**

Table 3.5Ambient Air Quality Monitoring Sampling Stations

Station	Sampling Location	Aerial distance (Km) and direction from Project Site	Co-ordinates		Sampling Criterion
			Latitude	Longitude	
A1	Project Site	--	31° 55' 42.76" N	75° 37' 30.24" E	Centre
A2	Khanpur	.07Km towards South	31° 55' 07.25" N	75° 37' 31.09" E	Crosswind
A3	Mukerian	2.8Km towards NNW	31° 57' 09.00" N	75° 36' 40.36" E	Upwind
A4	DhaulaKhera	7.5Km towards North	31° 59' 50.48" N	75° 38' 08.29" E	Crosswind
A5	Mahdipur	6.3Km towards West	31° 55' 45.30" N	75° 33' 14.91" E	Crosswind
A6	Naraingarh	7.8Km towards South	31° 51' 13.90" N	75° 37' 04.88" E	Crosswind
A7	Kaulpur	5.6Km towards SE	31° 53' 46.08" N	75° 40' 42.17" E	Downwind
A8	Kallchanng	5.7Km towards ENE	31° 57' 19.14" N	75° 40' 55.69" E	Crosswind

3.10.2 Air Sampling Program

As stated earlier, the sampling at the above 08 stations were carried out during Pre Monsoon Season i.e. 1st October 2017 to 31st December 2017. The stations were selected and located with due consideration to the meteorological conditions of the region. The samples were collected as per the CPCB norms during study period. Detailed Air monitoring data sheet attached as **Annexure VIII.**The standards of Ambient Air Quality in India are available online at http://cpcb.nic.in/National_Ambient_Air_Quality_Standards.php.

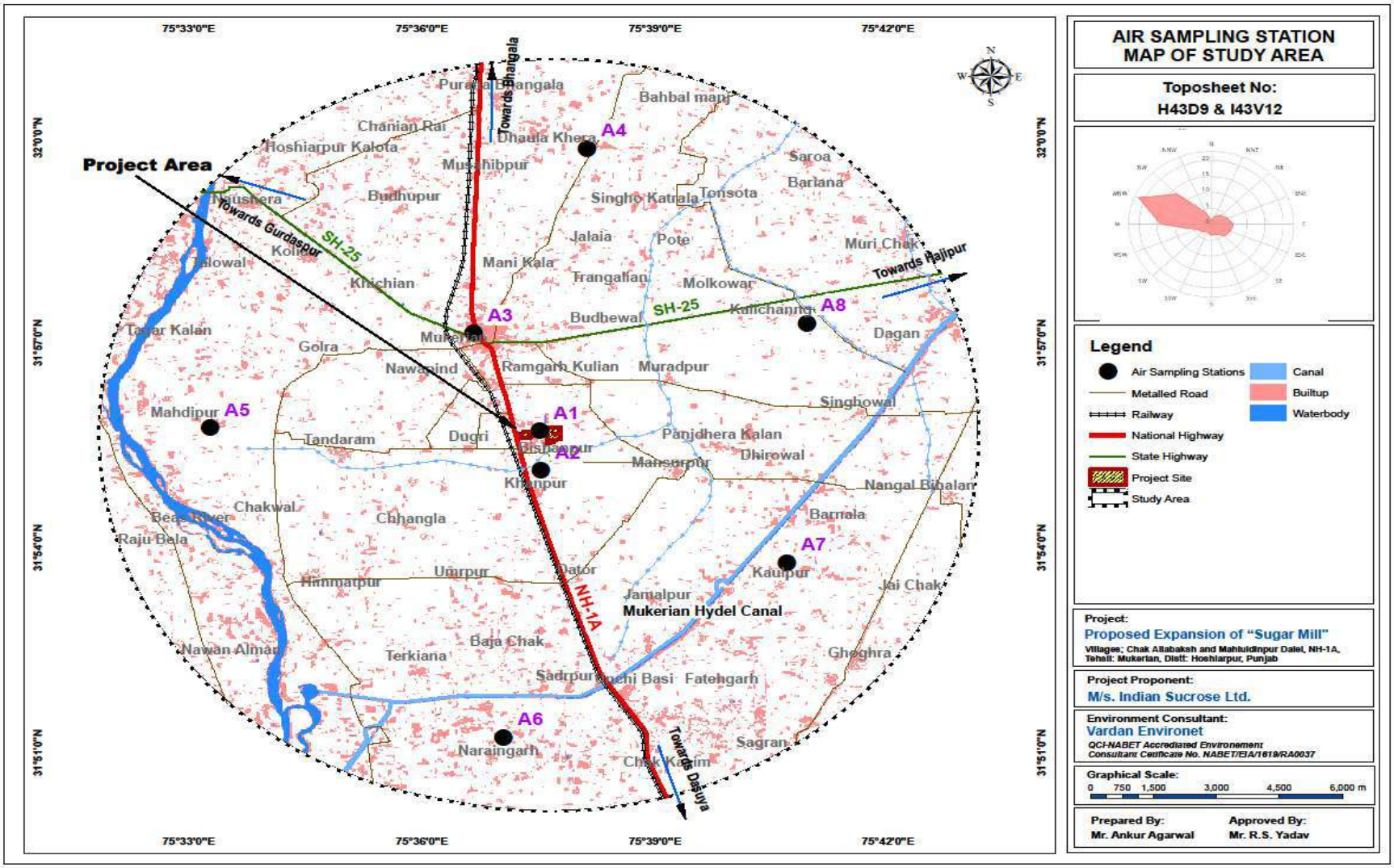


Figure 3.8: Key Plan of Air Monitoring Stations

3.10.3 Baseline Data

Six major air pollutants viz. PM_{10} and $PM_{2.5}$, Sulphur Dioxide (SO_2), Nitrogen Dioxide (NO_2), and Carbon Monoxide (CO) were monitored to establish the baseline air quality. The results are given in **Table 3.6 A & B and Figure -3.9. Figure 3.10**is showing the photographs of the sampling site.

Table 3.6 (A)Ambient Air Quality Monitoring Results for the Study Period October to December 2017

Location Name	PM_{10} ($\mu g/m^3$)			$PM_{2.5}$ ($\mu g/m^3$)			NO_2 ($\mu g/m^3$)			SO_2 ($\mu g/m^3$)			CO (mg/m^3)		
	Max.	Min.	98 % tile	Max.	Min.	98 % tile	Max.	Min.	98 % tile	Max.	Min.	98 % tile	Max.	Min.	98 % tile
A1	90.6	76.3	90.55	51.2	35.6	50.95	31.4	16.5	30.85	13.6	7.1	13.4	0.82	0.56	0.8152
A2	91.2	84.2	90.85	52.3	37.5	51.25	30.5	18.6	30.3	13.2	7.5	13.2	0.85	0.54	0.826
A3	91.2	76.3	90.75	52.1	37.5	52.1	32.6	17.4	31.9	12.2	7.5	12.2	0.82	0.56	0.7936
A4	84.1	75.2	93.8	45.6	30.5	44.05	25.1	18.3	24.2	12.6	8.3	12.6	0.78	0.55	0.776
A5	94.6	80.2	94.1	52.1	38.4	51.65	32.6	19.2	31.45	13.3	7.5	12.95	0.75	0.51	0.7456
A6	93.2	78.2	92.45	53.4	39.5	52.35	32.3	20.9	32.3	13.5	7.4	13.45	0.78	0.56	0.7608
A7	84.3	70.2	83.95	47.5	32.4	47.3	27.5	16.3	27.45	10.3	6.2	10.3	0.87	0.54	0.825
A8	90.2	76.5	89.8	50.2	34.5	49.35	30.3	16.3	29.45	13.5	8.1	13.45	0.78	0.54	0.78
CPCB Norms	**100**			**60**			**80**			**80**			**4**		

Table 3.6 (B) Ambient Air Quality Monitoring Results for the Study Period January 2017

Location Name	$PM_{2.5}$ ($\mu g/m^3$)			PM_{10} ($\mu g/m^3$)			NO_2 ($\mu g/m^3$)			SO_2 ($\mu g/m^3$)			CO (mg/m^3)		
	Max.	Min.	98 % tile	Max.	Min.	98 % tile	Max.	Min.	98 % tile	Max.	Min.	98 % tile	Max.	Min.	98 % tile
A1	50.2	38.4	48.8	90.4	78.5	90.4	31.2	19.6	30.1	13.5	7.6	13.5	0.82	0.53	0.81
A2	51.2	37.7	50.55	91.5	78.5	90.58	30.1	17.4	29.6	15.2	8.7	15	0.82	0.55	0.82
A3	51.2	37.7	50.55	91.5	78.5	90.58	30.1	17.4	29.6	15.2	8.7	15	0.82	0.55	0.82
A4	49.5	38.5	49.2	88.3	76.5	88.2	32.6	19.2	32.2	14.2	8.6	14	0.8	0.56	0.8
A5	53.5	38.5	52.96	90.2	78.4	89.72	32.5	19.2	31.8	14.2	86	14	0.8	0.54	0.79
A6	50.4	38.4	50	90.2	78.3	89.91	32.3	18.6	32.3	15.1	9.5	15	0.85	0.57	0.85
A7	51.6	38.3	51	91.2	78.6		33.2	21.5	32.6	15.3	8.5	15	0.84	0.56	0.84
A8	50.1	36.5	49.83	90.2	76.5		34.2	19.5	33	15.2	9.2	15	0.82	0.55	0.8
CPCB Norms	**100**			**60**			**80**			**80**			**2**		

Interpretation

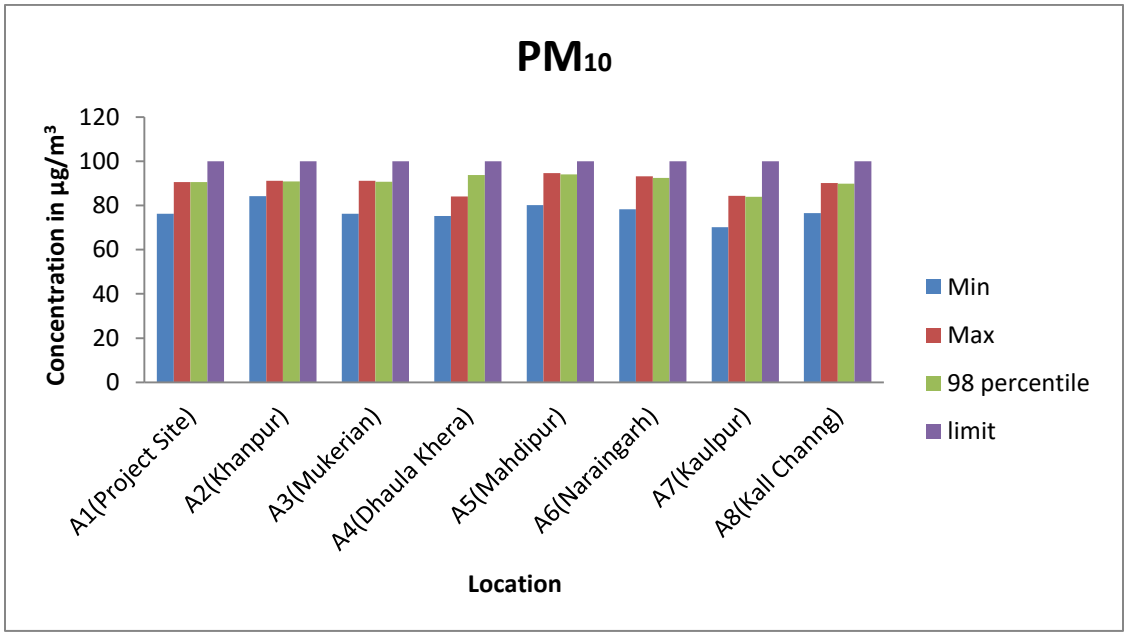
1) Maximum concentrations for PM10 for all locations were found to be in range of 70.2 to 94.6 $\mu g/m^3$ for the sampling period of October to December 2017. The Maximum concentrations of PM 10 in the month of January 2018 for all locations were found to be in range of 88.3 to 91.5 $\mu g/m^3$.

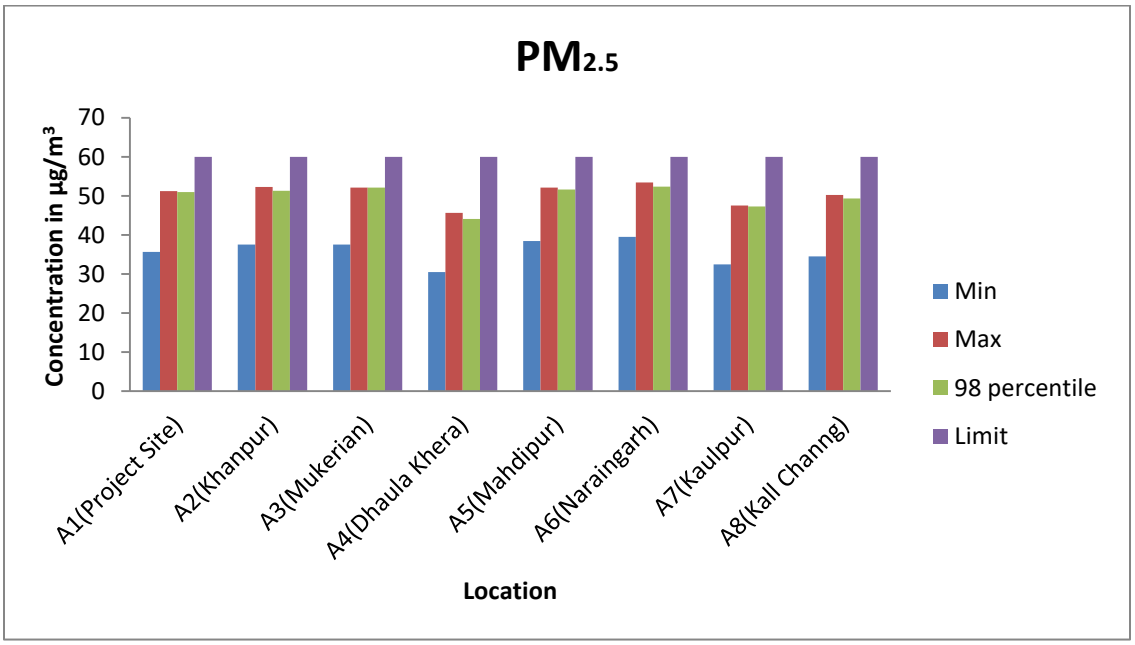
2) Maximum concentrations for PM2.5 for all locations were found to be in range of 30.5 to 53.4 $\mu g/m^3$ for the sampling period of October to December 2017. The Maximum concentrations of PM 2.5 in the month of January 2018 for all locations were found to be in range of 36.5 to 53.5 $\mu g/m^3$.

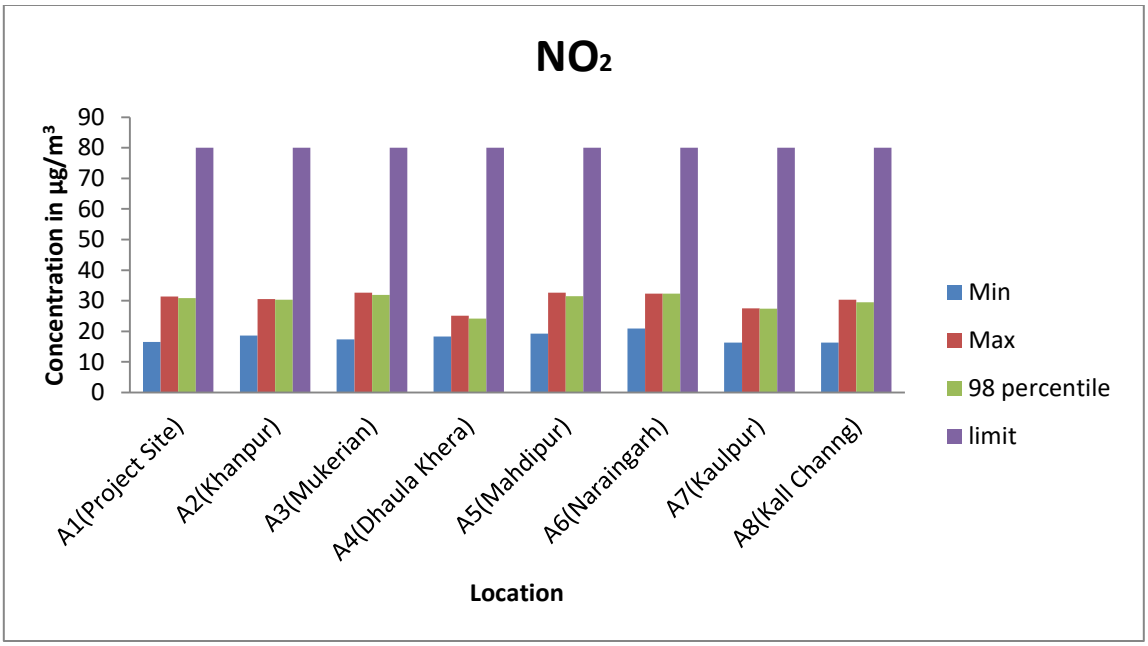
3) Maximum concentrations for NOx for all locations were found to be in range of 16.3 to 32.6$\mu g/m^3$ for the sampling

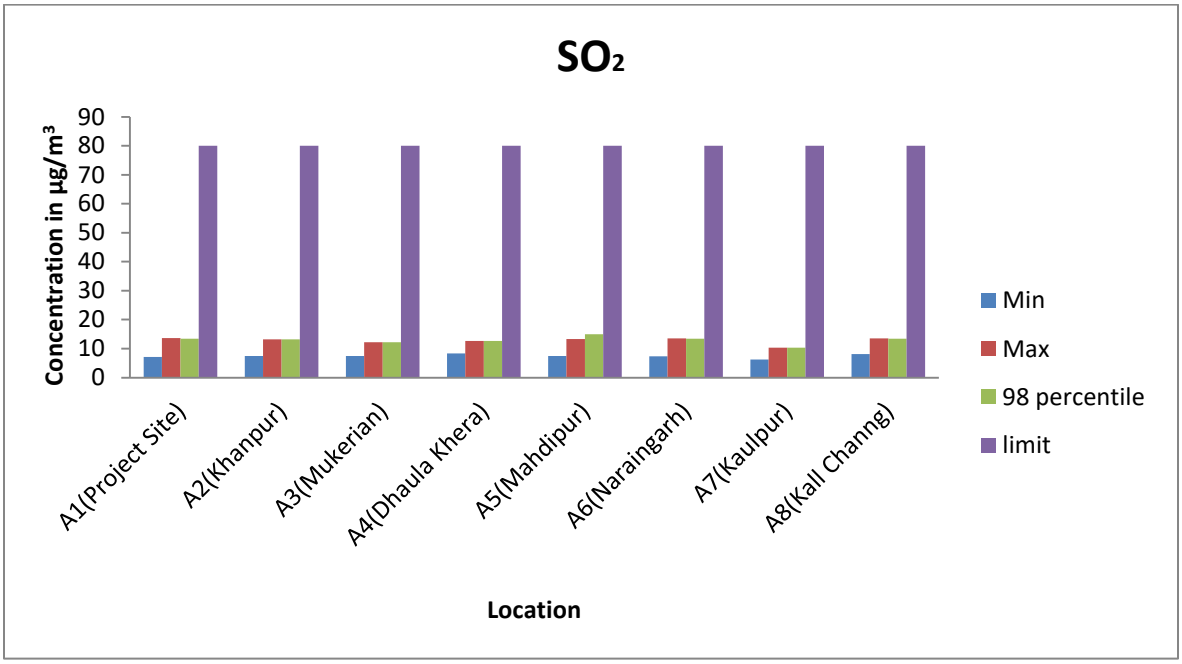
period of October to December 2017. The Maximum concentrations of NOx in the month of January 2018 for all locations were found to be in range of 34.2 to 17.4 μg/m^3.

4) Maximum concentrations for SO2 for all locations were found to be in range of 6.2 to 13.6 μg/m^3 for the sampling period of October to December 2017. The Maximum concentrations of SO2 in the month of January 2018 for all locations were found to be in range of 7.6 to 15.3μg/m^3.
5) Maximum concentrations for CO for all locations were found to be in range of 0.51 to 0.87 mg/m^3 for the sampling period of October to December 2017. The Maximum concentrations of CO in the month of January 2018 for all locations were found to be in range of 0.53 to 0.85 mg/m^3.
6) The results were compared with NAAQS and CPCB monthly monitoring data which shows that the results never superseded any norms.
7) The proposed project will increase the air pollution levels of the nearby areas. Impact on air environment is predicted and its subsequent mitigation measures are discussed in Chapter-4.


PM10
Concentration in µg/m³
120
100
80
60
40
20
0
A1(Project Site)
A2(Khanpur)
A3(Mukerian)
A4(Dhaula Khera)
A5(Mahdipur)
A6(Naraingarh)
A7(Kaulpur)
A8(Kall Channg)
Location
Min
Max
98 percentile
limit


PM2.5
Concentration in µg/m³
70
60
50
40
30
20
10
0
A1(Project Site)
A2(Khanpur)
A3(Mukerian)
A4(Dhaula Khera)
A5(Mahdipur)
A6(Naraingarh)
A7(Kaulpur)
A8(Kall Channg)
Location
Min
Max
98 percentile
Limit


NO2
Concentration in µg/m³
90
80
70
60
50
40
30
20
10
0
A1(Project Site)
A2(Khanpur)
A3(Mukerian)
A4(Dhaula Khera)
A5(Mahdipur)
A6(Naraingarh)
A7(Kaulpur)
A8(Kall Channg)
Location
Min
Max
98 percentile
limit


SO2
Concentration in µg/m³
90
80
70
60
50
40
30
20
10
0
A1(Project Site)
A2(Khanpur)
A3(Mukerian)
A4(Dhaula Khera)
A5(Mahdipur)
A6(Naraingarh)
A7(Kaulpur)
A8(Kall Channg)
Location
Min
Max
98 percentile
limit

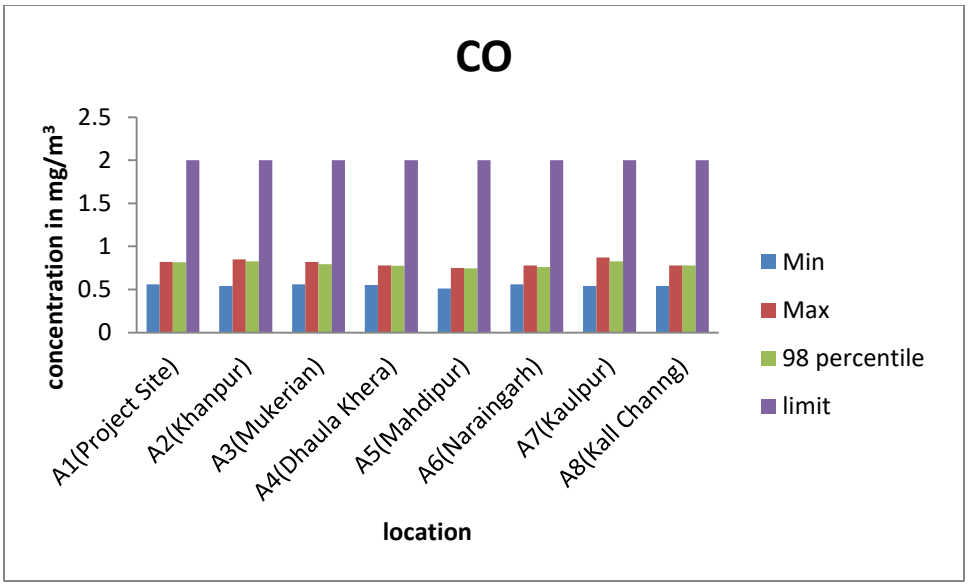
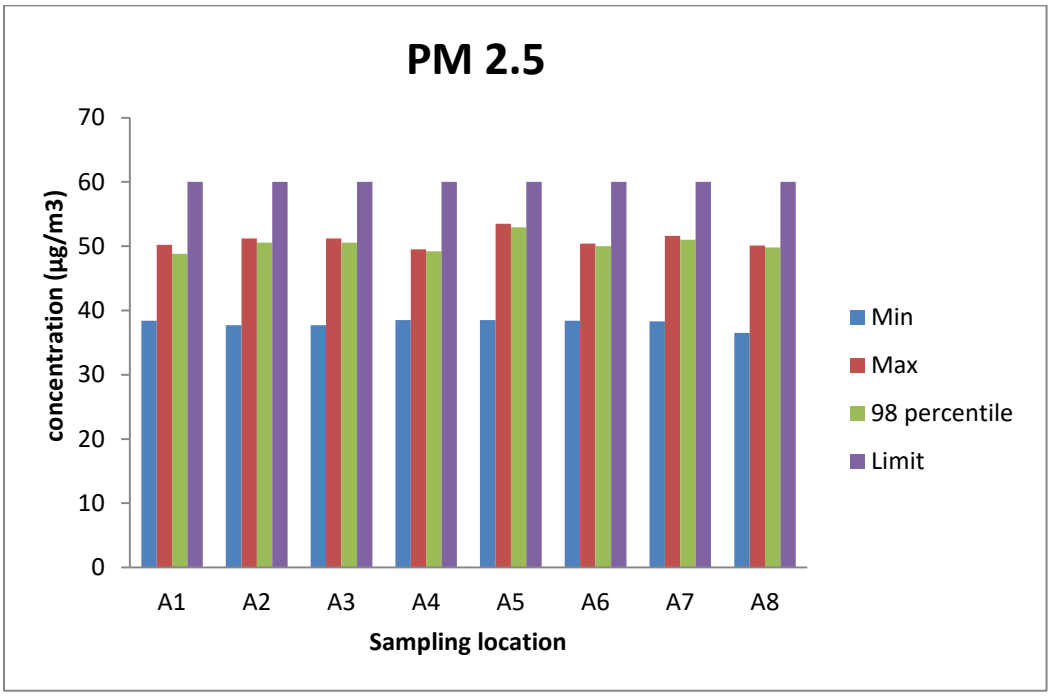
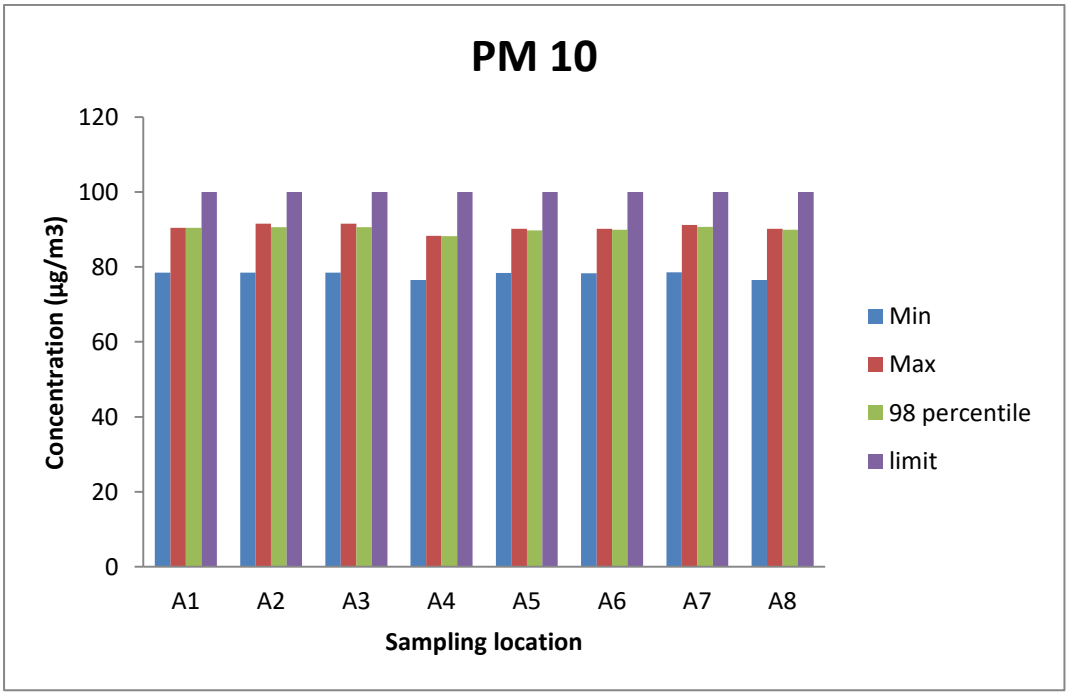
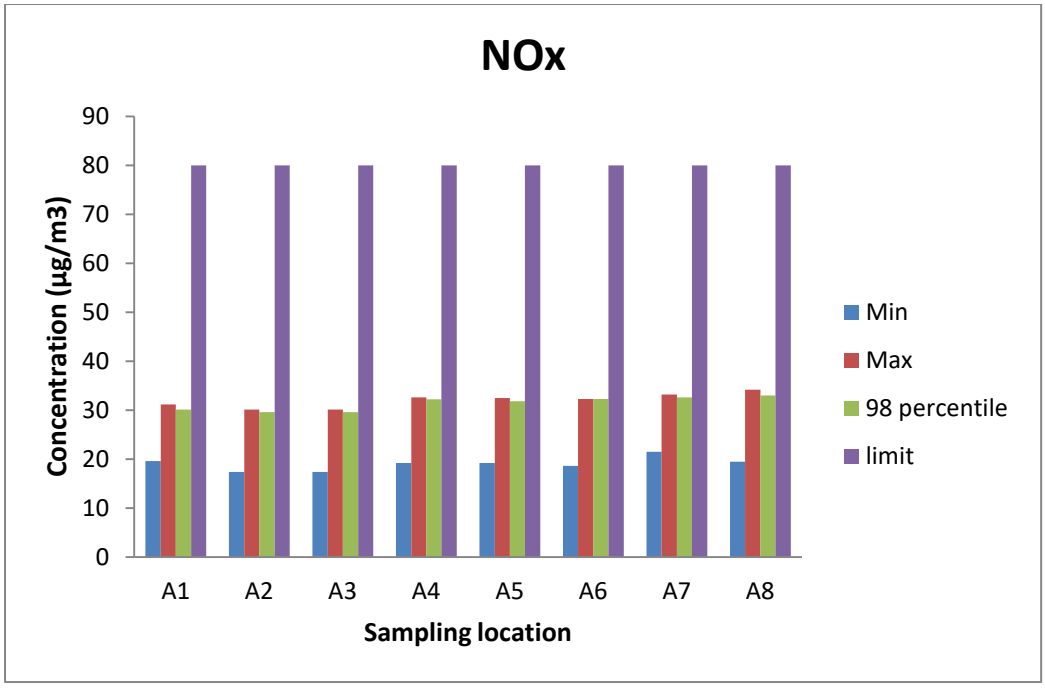
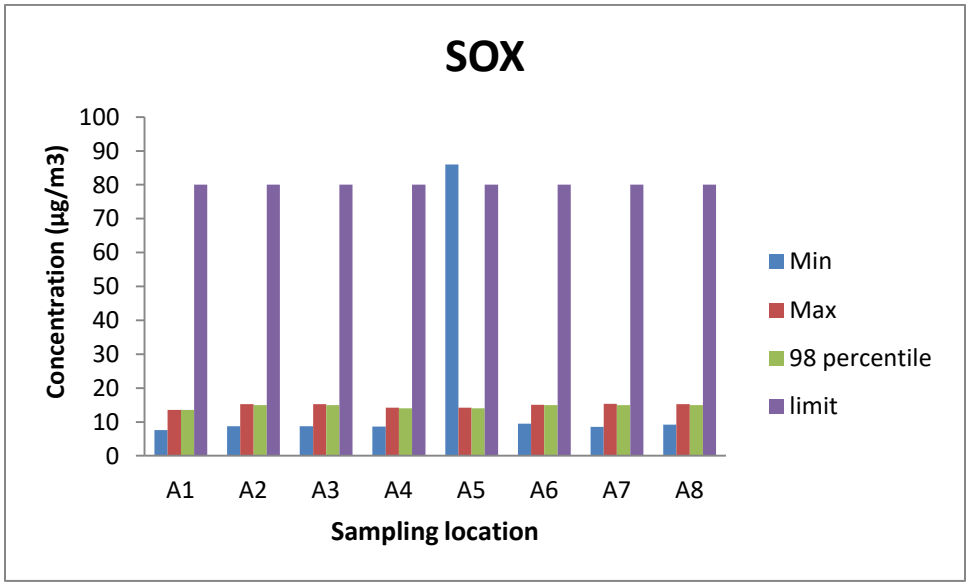


Fig-3.9 (A): Graph showing Concentration of PM 10, PM2.5, Sox, Nox, CO of the study area for the month October to December 2017




PM 10
120
100
80
60
40
20
0
Concentration (µg/m3)
A1
A2
A3
A4
A5
A6
A7
A8
Sampling location
Min
Max
98 percentile
limit


NOx
90
80
70
60
50
40
30
20
10
0
Concentration (µg/m3)
A1
A2
A3
A4
A5
A6
A7
A8
Sampling location
Min
Max
98 percentile
limit



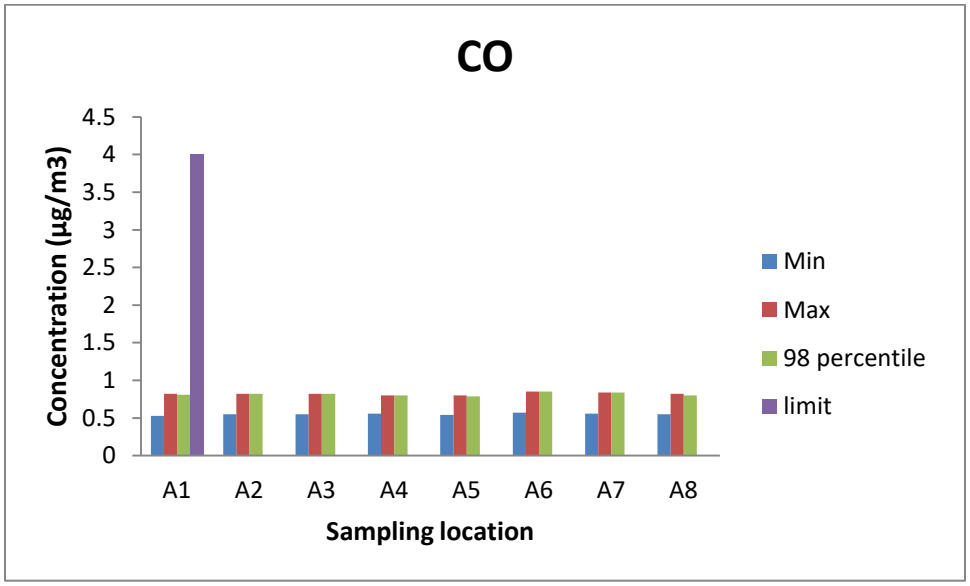


Fig-3.9 (B): Graph showing Concentration of PM 10, PM2.5, Sox, Nox, CO of the study area for the month January 2018



Figure 3.10: Photographs of Air Quality Monitoring (Project Site)

3.11 Water Environment

A) Ground Water

The Quality of ground water was studied by collecting **8** water samples from representative hand pumps, tube wells. Sampling points were decided using google image and field survey. Standard procedures were followed for the sampling and analysis of physico–chemical parameters of water. **Table 3.9** shows the details of location of water sampling stations and results of different parameters are given in **Table 3.10.** Location map and Photographs of the sampling location is presented in **Figure 3.13** and **Figure 3.13.**

Table 3.7Ground Water Sampling Stations

Station	Sampling Location	Aerial distance (km) and direction from Project Site	Co-ordinates	
			Latitude	Longitude
GW1	Project Site	--	31° 55' 42.76" N	75° 37' 30.24" E
GW2	Khanpur	.07 Km towards South	31° 55' 07.25" N	75° 37' 31.09" E

GW3	Mukerian	2.8 Km towards NNW	31° 57' 09.00" N	75° 36' 40.36" E
GW4	DhaulaKhera	7.5 Km towards North	31° 59' 50.48" N	75° 38' 08.29" E
GW5	Mahdipur	6.3 Km towards West	31° 55' 45.30" N	75° 33' 14.91" E
GW6	Naraingarh	7.8Km towards South	31° 51' 13.90" N	75° 37' 04.88" E
GW7	Kaulpur	5.6 Km towards SE	31° 53' 46.08" N	75° 40' 42.17" E
GW8	Kallchanng	5.7 Km towards ENE	31° 57' 19.14" N	75° 40' 55.69" E



Figure 3.11: Photograph of Ground Water sampling

Table 3.7 (A)Ground Water Analysis Result for the month of October- December, 2017

#	Parameter	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable Limit	Permissible Limit
1.	pH (at 25 ^{0}C)	7.85	7.82	7.92	7.83	7.97	7.53	7.46	7.72	6.5 to 8.5	No Relaxation
2.	Colour(Hazen)	<5	<5	<5	<5	<5	<5	<5	<5	5	15
3.	Turbidity (NTU)	<1	<1	<1	<1	<1	<1	<1	<1	1	5
4.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$ (mg/l)	156.32	148.56	174.23	168.24	182.24	138.54	127.86	137.88	200	600
7.	Calcium as Ca (mg/l)	26.53	23.57	34.20	30.56	29.61	28.69	25.64	29.05	75	200
8.	Alkalinity as $CaCO_3$(mg/l)	166.20	156.51	170.45	173.54	166.72	166.72	155.76	143..47	200	600
9.	Chloride as Cl (mg/l)	35.63	31.42	38.63	42.35	46.15	46.61	53.61	46.58	250	1000
10	Cyanide as CN (mg/l)	<0.02 mg/l	<0.02 mg/l	< 0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	0.05	No Relaxation
11.	Magnesium as Mg (mg/l)	21.90	21.81	21.60	22.35	26.33	16.27	15.52	15.53	30	100

12.	Total Dissolved Solids (mg/l)	235.00	218.60	272.00	262.00	283.00	297.00	245.00	288.00	500	2000
13.	Sulphate as SO_4 (mg/l)	25.45	21.45	35.20	31.24	26.51	32.87	25.61	29.22	200	400
14.	Fluoride as F (mg/l)	0.46	0.44	0.46	0.67	0.51	0.47	0.43	0.38	1.0	1.5
15.	Nitrate as NO_3 (mg/l)	12.20	10.52	14.52	15.20	12.63	9.86	7.58	18.25	45	No Relaxation
16.	Iron as Fe (mg/l)	0.31	0.34	0.26	0.42	0.39	0.37	0.34	0.32	0.3	No relaxation
17.	Aluminium as Al (mg/l)	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	0.03	0.2
18.	Boron (mg/l)	<0.1 mg/l	<0.1 mg/l	< 0.1 mg/l	<0.1 mg/l	<0.1 mg/l	<0.1 mg/l	<0.1 mg/l	*<0.1 mg/l	0.5	1
19	Chromium as Cr(mg/l)	<0.01 mg/l	< 0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	0.05	No Relaxation
20.	Conductivity (mS/cm)	0.393	0.365	0.455	0.437	441	497	410	521	--	--
21.	Phenolic Compounds (mg/l)	<0.001 mg/l	< 0.001 mg/l	< 0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	< 0.001 mg/l	<0.001 mg/l	0.001	0.002
22.	Mineral Oil(mg/l)	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS (mg/l)	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l)	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	*<0.02 mg/l	<0.02 mg/l	0.2	1.0

24.	Zinc as Zn (mg/l)	0.40	0.38	0.56	0.56	0.32	0.87	0.53	0.76	5	15
25.	Copper as Cu (mg/l)	0.07	0.08	0.09	0.12	0.09	0.12	0.10	0.09	0.05	1.5
26.	Manganese as Mn (mg/l)	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	0.1	0.3
27.	Cadmium as Cd (mg/l)	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	<0.06 mg/l	0.003	No Relaxation
28.	Lead as Pb (mg/l)	<0.13mg/l	<0.13mg/l	<0.13mg/l	<0.13mg /l	<0.13mg/l	<0.13mg/l	<0.13mg /l	<0.13m g/l	0.01	No Relaxation
29.	Selenium as Se (mg/l)	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	0.01	No Relaxation
30.	Arsenic as As (mg/l)	<0.01 mg/l	< 0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<L 0.01 mg/l	< 0.01 mg/l	0.01	0.05
31.	Mercury as Hg (mg/l)	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	0.001	No Relaxation
32.	Total Coliform (MPN/100ml)	<2/100ml	<2/100ml	<2/100ml	<2/100ml	<2/100ml	<2/100ml	<2/100ml	<2/100m l	Shall not be detectable in any 100 ml sample	
33.	E. Coli (MPN/100ml)	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Shall not be detectable in any 100 ml sample	

Table 3.7 (B) Ground Water Analysis Result for the month of January, 2018

#	Parameter	GW1	GW2	GW3	GW4	GW5	GW6	GW7	GW8	Acceptable Limit	Permissible Limit
1.	pH (at 25 ^{0}C)	7.54	7.64	7.92	7.95	7.84	7.44	7.56	7.86	6.5 to 8.5	No Relaxation
2.	Colour (Hazen)	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	5	15
3.	Turbidity (NTU)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1	5
4.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$ (mg/l)	172.58	150.34	180.45	157.51	193.25	147.58	137.45	146.88	200	600
7.	Calcium as Ca (mg/l)	36.27	26.15	36.24	26.64	34.51	32.47	28.61	32.54	75	200
8.	Alkalinity as $CaCO_3$(mg/l)	185.42	161.22	175.41	169.24	173.34	186.55	162.34	156.47	200	600
9.	Chloride as Cl (mg/l)	41.55	34.42	42.63	38.78	53.21	48.41	60.54	55.85	250	1000
10	Cyanide as CN (mg/l)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	No Relaxation
11.	Magnesium as Mg (mg/l)	19.95	20.68	21.88	22.12	26.04	16.18	16.05	15.96	30	100

12.	Total Dissolved Solids (mg/l)	275.00	244.00	298.00	270.00	310.00	318.00	287.00	304.00	500	2000
13.	Sulphate as SO_4 (mg/l)	28.00	24.15	38.51	26.64	30.55	36.41	21.66	36.00	200	400
14.	Fluoride as F (mg/l)	0.56	0.41	0.55	0.62	0.62	0.56	0.53	0.41	1.0	1.5
15.	Nitrate as NO_3 (mg/l)	15.75	13.16	17.26	13.14	15.24	12.42	10.24	14.36	45	No Relaxation
16.	Iron as Fe (mg/l)	0.26	0.32	0.35	0.36	0.34	0.32	0.28	0.31	0.3	No relaxation
17.	Aluminium as Al (mg/l)	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	0.2
18.	Boron (mg/l)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	1
19	Chromium as Cr (mg/l)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05	No Relaxation
20.	Conductivity (mS/cm)	460	408	498	453	518	533	483	509	--	--
21.	Phenolic Compounds (mg/l)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	0.002
22.	Mineral Oil (mg/l)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.5	No Relaxation
23.	Anionic Detergents as MBAS (mg/l)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.2	1.0
24.	Zinc as Zn (mg/l)	0.66	0.45	0.63	0.58	0.68	0.67	0.62	0.71	5	15

25.	Copper as Cu (mg/l)	0.28	0.07	0.07	0.10	0.12	0.14	0.13	0.10	0.05	1.5
26.	Manganese as Mn (mg/l)	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.1	0.3
27.	Cadmium as Cd (mg/l)	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.003	No Relaxation
28.	Lead as Pb (mg/l)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	No Relaxation
29.	Selenium as Se (mg/l)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	No Relaxation
30.	Arsenic as As (mg/l)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.05
31.	Mercury as Hg (mg/l)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.001	No Relaxation
32.	Total Coliform (MPN/100ml)	<2	<2	<2	<2	<2	<2	<2	<2	Shall not be detectable in any 100 ml sample	
33.	E. Coli (MPN/100ml)	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Shall not be detectable in any 100 ml sample	

Conclusion

1. The summarized analysis data for Ground and Surface water for both the monitoring periods are brief as under.

- pH varies from to7.46 to 7.97
- Total Hardness varies from 127.86 to 182.24 (mg/L)
- Total Dissolved Solids varies from 218.60 to 297.00 (mg/L)

2. All the nine essential characteristics of groundwater samples are within the permissible limits. All the other desirable characteristics of all the groundwater samples are also observed to be well within both desirable and permissible limits.
3. A review of the chemical analysis reveals that there is some variation in chemical composition of water tapped from different sources but the ground water from all sources remains suitable for drinking purposes as all the constituents are within the limits prescribed for drinking water standards promulgated by Indian Standards (IS: 10500).
4. The collected surface water samples were analyzed in accordance with Indian Standards and the results have been compared with IS: 2296 Class A to E. All the results were found to be within the prescribed limits.
5. **Ground water sampling done by PBTI, Labs Mohali reports of the same is attached as annexure**

B) Surface Water

Surface water sampling locations is given in **Table 3.9** and results are given in **Table 3.10.** Sampling location is presented in **Figure 3.16.**

Table: 3.8 Surface Water Sampling Stations

Station	Sampling Location	Aerial distance (km) and direction from Project Site	Co-ordinates	
			Latitude	Longitude
SW1	Canal Near Naraingarh	6.9 Km towards South	31° 51' 48.56" N	75° 37' 05.72" E
SW2	Beas River (Up-stream)	7.8 Km towards NW	31° 57' 33.52" N	75° 32' 48.70" E
SW3	Canal Near Budhewal	3.3 Km towards NE	31° 57' 19.14" N	75° 38' 53.10" E
SW4	Beas River (Down-	6.8 Km towards SW	31° 52' 56.20" N	75° 34' 09.02" E

	stream)			

Table 3.8 (A): Surface Water Sampling Results for the month of October to December 2017

S.No.	Parameter	S1	S2	S3	S4	Desirable Limit	Permissible Limit
1.	pH (at 25 ^{0}C)	7.37	7.45	7.21	7.52	6.5 to 8.5	No Relaxation
2.	Colour (Hazen)	<5	<5	<5	<5	5	15
3.	Turbidity (NTU)	7	12	16	14	1	5
4.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Total Hardness as $CaCO_3$(mg/l)	123.42	112.35	235.35	132.24	Agreeable	Agreeable
6.	Calcium as Ca (mg/l)	22.33	18.56	35.45	20.42	200	600
7.	Alkalinity as $CaCO_3$(mg/l)	114.76	96.88	185.58	108.53	75	200
8.	Chloride as Cl (mg/l)	31.23	28.54	66.84	33.65	200	600
9.	Residual free Chlorine (mg/l)	<0.20mg/l	<0.20mg/l	<0.20mg/l	<0.20mg/l	250	1000
10.	Cyanide as CN (mg/l)	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	0.05	No Relaxation
11.	Magnesium as Mg (mg/l)	16.45	16.05	35.70	19.75	30	100
12.	Total Dissolved Solids (mg/l)	178.00	167.00	367.00	158.00	500	2000
13.	Total Suspended solids(mg/l)	38.00	33.00	55.00	37.00	500	2000
14.	Dissolved Oxygen(mg/l)	6.6	6.4	7.9	6.7	-	-
15.	Sulphate as SO^4 (mg/l)	18.53	16.44	36.35	18.22	200	400
16.	Fluoride as F (mg/l)	0.42	0.36	0.43	0.32	1.0	1.5
17.	BOD (3 Days at 27^{0}C)(mg/l)	<5.0	<5.0	6.8	<5.0	45	No Relaxation
18.	COD(mg/l)	10.25	12.32	18.54	10.57	0.47	0.3

19.	Conductivity(mS/cm)	298	279	612	265	< 0.03	0.03
20.	Nitrate as NO_3 (mg/l)	6.52	12.20	13.45	8.69	0.69	0.5
21.	Sodium as Na(mg/l)	11	14	21	15	0.69	0.5
22.	Potassium as K(mg/l)	3	4	3	5		Less than 30
23.	Iron as Fe (mg/l)	0.16	0.24	0.33	0.11		Less than 250
24.	Aluminium as Al (mg/l)	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	5	15
25.	Boron (mg/l)	0.38	0.35	0.47	0.42	0.05	1.5
26.	Chromium as Cr(mg/l)	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	0.1	0.3
27.	Phenolic Compounds (mg/l)	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	0.003	No Relaxation
28.	Mineral Oil(mg/l)	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	0.01	No Relaxation
29.	Anionic Detergents as MBAS (mg/l)	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	< 0.01	No Relaxation
30.	Zinc as Zn (mg/l)	0.31	0.24	0.52	0.36	< 0.01	No Relaxation
31.	Copper as Cu (mg/l)	0.09	0.11	0.16	0.12	< 0.01	No Relaxation
32.	Manganese as Mn (mg/l)	<0.10 mg/l	<0.10 mg/l	<0.10 mg/l	<0.10 mg/l	*BDL(**DL 0.10 mg/l)	*BDL(**DL 0.10 mg/l)
33.	Cadmium as Cd (mg/l)	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	< 0.001	< 0.001

34.	Total Coliform (MPN/100ml)	622	586	693	650	MPN/100ml	MPN/100ml
35.	Fecal Coliform (MPN/100ml)	347	321	426	410	MPN/100ml	MPN/100ml

Table 3.8 (B): Surface Water Sampling Results for the month of January 2018

S.No.	Parameter	S1	S2	S3	S4	Desirable Limit	Permissible Limit
1.	pH (at 25 ^{0}C)	7.44	7.36	7.33	7.63	6.5 to 8.5	No Relaxation
2.	Colour (Hazen)	<5	<5	<5	<5	5	15
3.	Turbidity (NTU)	10	9	14	12	1	5
4.	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Total Hardness as $CaCO_3$(mg/l)	135.41	98.37	243.85	140.35	Agreeable	Agreeable
6.	Calcium as Ca (mg/l)	26.56	14.53	37.22	23.74	200	600
7.	Alkalinity as $CaCO_3$ (mg/l)	126.34	87.36	193.45	115.73	75	200
8.	Chloride as Cl (mg/l)	38.53	22.85	78.51	40.55	200	600
9.	Residual free Chlorine (mg/l)	<0.20mg/l	<0.20mg/l	<0.20mg/l	<0.20mg/l	250	1000
10.	Cyanide as CN (mg/l)	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	0.05	No Relaxation
11.	Magnesium as Mg (mg/l)	16.80	15.09	36.69	19.71	30	100
12.	Total Dissolved Solids (mg/l)	236.00	148.00	356.00	195.00	500	2000
13.	Total Suspended solids (mg/l)	43.00	36.00	48.00	42.00	500	2000
14.	Dissolved Oxygen (mg/l)	6.4	5.8	7.6	6.1	-	-
15.	Sulphate as SO^4 (mg/l)	21.34	14.83	34.61	20.63	200	400

16.	Fluoride as F (mg/l)	0.46	0.34	0.50	0.37	1.0	1.5
17.	BOD (3 Days at 27^0C) (mg/l)	<5.0	<5.0	6.4	<5.0	45	No Relaxation
18.	COD (mg/l)	14.12	10.56	22.36	13.22	0.47	0.3
19.	Conductivity (mS/cm)	396	248	596	327	< 0.03	0.03
20.	Nitrate as NO_3 (mg/l)	8.74	9.76	16.23	6.78	0.69	0.5
21.	Sodium as Na (mg/l)	16.7	13.1	28.7	14.4	0.69	0.5
22.	Potassium as K (mg/l)	4.5	2.3	4.8	3.3		Less than 30
23.	Iron as Fe (mg/l)	0.20	0.18	0.37	0.16		Less than 250
24.	Aluminium as Al (mg/l)	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	<0.03 mg/l	5	15
25.	Boron (mg/l)	0.43	0.31	0.53	0.38	0.05	1.5
26.	Chromium as Cr (mg/l)	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	<0.01 mg/l	0.1	0.3
27.	Phenolic Compounds (mg/l)	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	0.003	No Relaxation
28.	Mineral Oil (mg/l)	<0.01mg/l	<0.01mg/l	<0.01mg/l	<0.01mg/l	0.01	No Relaxation
29.	Anionic Detergents as MBAS (mg/l)	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	<0.02 mg/l	< 0.01	No Relaxation
30.	Zinc as Zn (mg/l)	0.60	0.31	0.57	0.32	< 0.01	No Relaxation
31.	Copper as Cu (mg/l)	0.28	0.08	0.15	0.10	< 0.01	No Relaxation
32.	Manganese as Mn (mg/l)	<0.10 mg/l	<0.10 mg/l	<0.10 mg/l	<0.10 mg/l	*BDL(**DL 0.10 mg/l)	*BDL(**DL 0.10 mg/l)
33.	Cadmium as Cd (mg/l)	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	<0.001 mg/l	< 0.001	< 0.001
34.	Total Coliform (MPN/100ml)	693	500	405	693	MPN/100ml	MPN/100ml
35.	Fecal Coliform (MPN/100ml)	426	300	350	455	MPN/100ml	MPN/100ml

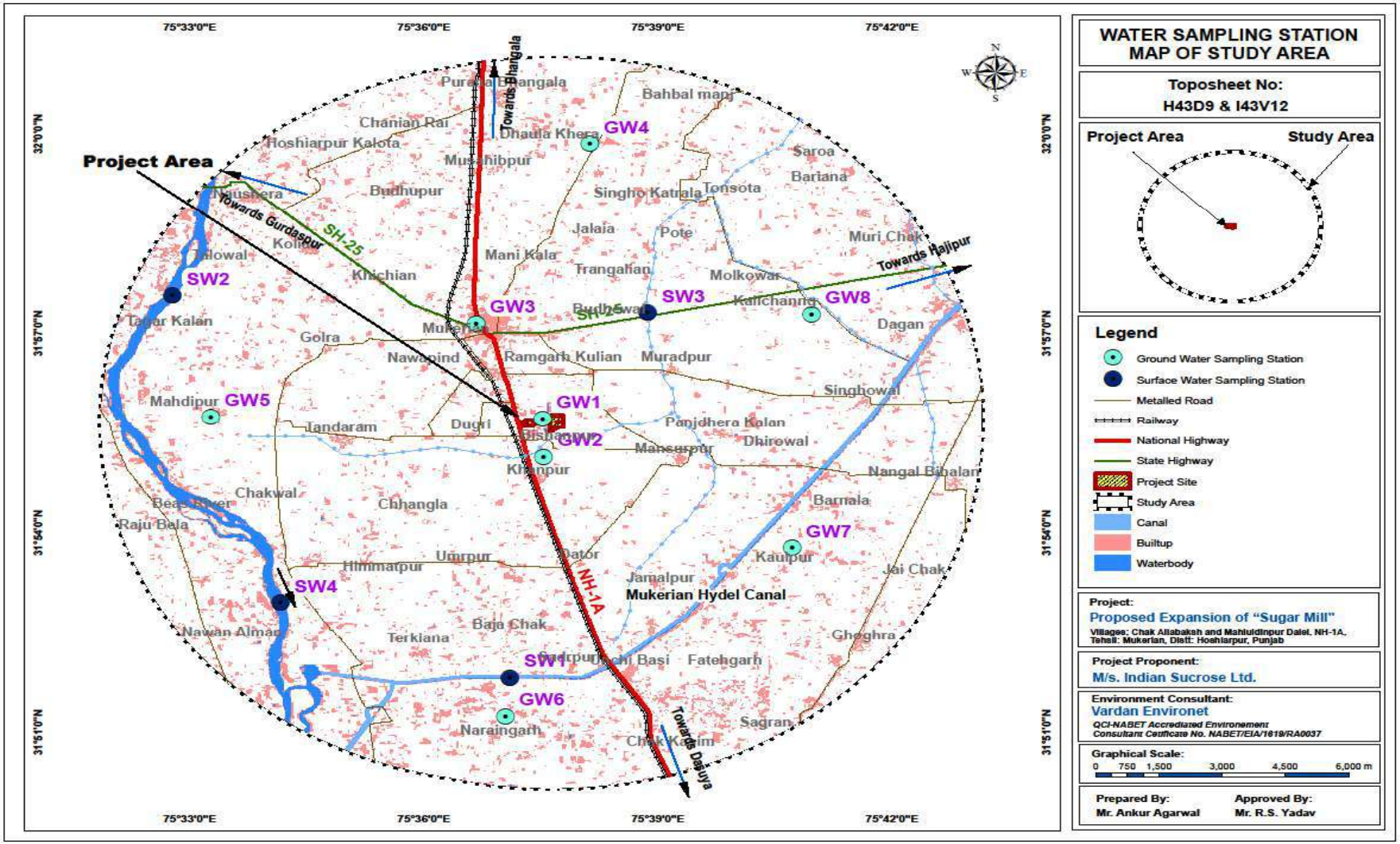


Figure 3.12Key Plan of Water Sampling Stations

Interpertation: The summarized analysis data for Surface water for both the monitoring periods are brief as under.

- pH varies from to7.21 to 7.52
- Total Hardness varies from 112.35 to 235.35 (mg/L)
- Total Dissolved Solids varies from 158 to 367.00 (mg/L)
- Total Suspended solids varies from 33 to 55 (mg/L)
- Do varies from 6.4 to 7.9 (mg/L)Other heavy metal analyzed *viz.* Manganese and Cadmium was below detectable limit. A review of the above chemical analysis reveals that there is some variation in chemical composition of water tapped from different source.

3.12 Noise Environment

Noise often defined as unwanted sound, interferes with speech communication, causes annoyance, distracts from work, disturb sleep, thus deteriorating quality of human environment. Noise Pollution survey has therefore been carried out.Noise levels were measured in residential areas and other settlements located within 10 km radius around the site.

3.12.1 Noise Analysis within the Study Area

The noise analysis within the study area was recorded using 4012 Maxtech sound level meter. The analysis reveals that the noise's well within the permissible range. The location of Noise level monitoring is presented in **Table 3.5** and the levels recorded are as stated in **Table 3.6. Figure 3.11** shows the photographs of the sampling location.

Table 3.9Noise Monitoring Sampling Stations

Station	Sampling Location	Aerial distance (km) and direction from Project Site	Co-ordinates	
			Latitude	Longitude
N1	Project Site	--	31° 55' 42.76" N	75° 37' 30.24" E
N2	Khanpur	.07Km towards South	31° 55' 07.25" N	75° 37' 31.09" E
N3	Mukerian	2.8Km towards NNW	31° 57' 09.00" N	75° 36' 40.36" E
N4	DhaulaKhera	7.5Km towards North	31° 59' 50.48" N	75° 38' 08.29" E

N5	Mahdipur	6.3Km towards West	31° 55' 45.30" N	75° 33' 14.91" E
N6	Naraingarh	7.8Km towards South	31° 51' 13.90" N	75° 37' 04.88" E
N7	Kaulpur	5.6Km towards SE	31° 53' 46.08" N	75° 40' 42.17" E
N8	Kallchanng	5.7Km towards ENE	31° 57' 19.14" N	75° 40' 55.69" E

Table 3.9 (A) Noise Monitoring Result for the month of October to December 2017

S. No	Locations	Noise LevelLeq. dB (A)	
		Day Time (6:00 a.m. to 10:00 p.m.)	Night Time (10:00 p.m. to 6:00 a.m.)
1.	N1	63.79	56.49
2.	N2	54.28	43.68
3.	N3	53.89	44.18
4.	N4	52.97	43.47
5.	N5	53.27	44.17
6.	N6	54.13	44.45
7.	N7	53.89	42.87
8.	N8	53.18	44.19
CPCB Standards			
a.	**Residential Area**	**55.0**	**45.0**
b.	**Industrial Area**	**75.0**	**70.0**
c.	**Commercial Zone**	**65.0**	**55.0**
d.	**Silence Zone**	**50.0**	**40.0**

Table 3.9 (B) Noise Monitoring Result for the month of January 2018

S. No	Locations	Noise LevelLeq. dB (A)	
		Day Time (6:00 a.m. to 10:00 p.m.)	Night Time (10:00 p.m. to 6:00 a.m.)
1.	N1	62.44	53.78

2.	N2	52.45	41.44
3.	N3	51.75	43.36
4.	N4	53.45	40.72
5.	N5	52.88	41.64
6.	N6	53.22	43.62
7.	N7	51.78	41.47
8.	N8	52.85	43.69
CPCB Standards			
a.	**Residential Area**	**55.0**	**45.0**
b.	**Industrial Area**	**75.0**	**70.0**
c.	**Commercial Zone**	**65.0**	**55.0**
d.	**Silence Zone**	**50.0**	**40.0**

Conclusion

Ambient noise levels were measured at 08 locations around the proposed project site. A noise level varies from 52.97 to 63.79Leq dB during day time and 42.87 to 56.49Leq dB during night time for the study period October to December 2017. During the monitoring periods January 2018 noise level varies from 51.75 to 62.44Leq dB during day time and 42.87 to 53.78Leq dB during night time. Thus noise levels at all locations were observed to be within the prescribed limits. Noise Quality data attached as **Annexure IX** and Ambient Air Quality Standards in respect of Noise are available online at http://cpcb.nic.in/divisionsofheadoffice/pci2/noise_rules_2000.pdf.

From the above study and discussions it can be concluded that noise levels in the study area are well within the prescribed limits as prescribed by the CPCB and State Pollution Control Board.

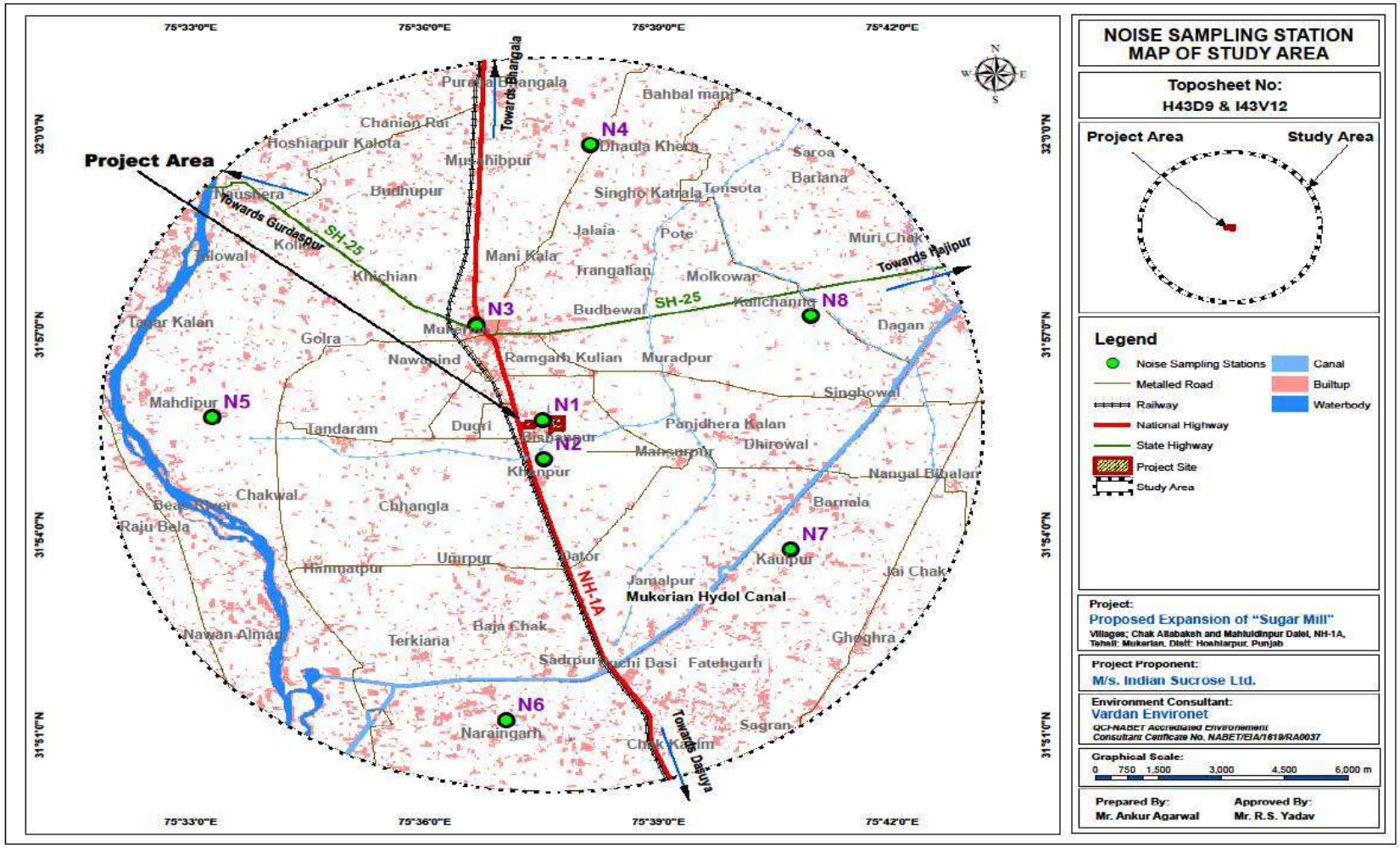


Figure 3.14: Key Plan of Noise Monitoring Station

3.13 Biological Environment

There is no National Park, Wildlife Santuary, Reserve & Protected forest within 10 Km of the study area. **NOC from DFO** is obtained vide **letter no 1607** dated 22/09/2017.

Only one Schedule-I species in the buffer area **i.e. *Pavo cristatus*.** Detailed EB report is attached as **Annexure XIV.**

Wildlife conservation plan for Pavo cristatus has been approved by Chief Wildlife Warden, Mohali. Total Budget of 27 Lakhs has been proposed for wildlife conservation plan.

3.14 Socio-Economic Environment: Brief Demographic Profile of the Study Area is defined below and Detailed Socio-Economic study is attached as Annexure**- XV.**

- Total number of households are about 23091
- Total population of villages under the study area is 110139 out of which males are 55582 (50.46%) and females are 54557 (49.53%)
- The average family size is about 4.7 persons per family
- Sex ratio (No. of females per 1000 males) is 981 which indicates that females are less in number than their male counterpart in the study area
- Out of the total population, the population of children within the age of 0-6 age-group is about 11773 (10.68%)
- Child Sex ratio is 817 i.eNo.of female child per 1000 male child
- Scheduled caste population is about 25107 (22.79%) while the Scheduled tribes population is Nil in the region
- Out of the total population in the region 83886 i.e. 76.16% are literates.

3.15 Traffic Study

Traffic study measurements were performed at two locations SH-25 and NH-1A to assess impact on local transport infrastructure due to this proposed project. Road and highway studies are given in **Table-3.10**.

Table: 3.10 Roads and Highways in the Study Area

Name of National/State Highway	Direction		Dispatch Ratio In Percentage
	Up	Down	
NH-1A	Bhangala	Dasuya	70
SH-25	Gurdaspur	Hajipur	30

Traffic data collected continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on each of the two directions for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under the three categories were determined and given in **Table 3.11.** Existing traffic scenario is given in **Table 3.12.** Modified traffic scenario given in **Table 3.13.**

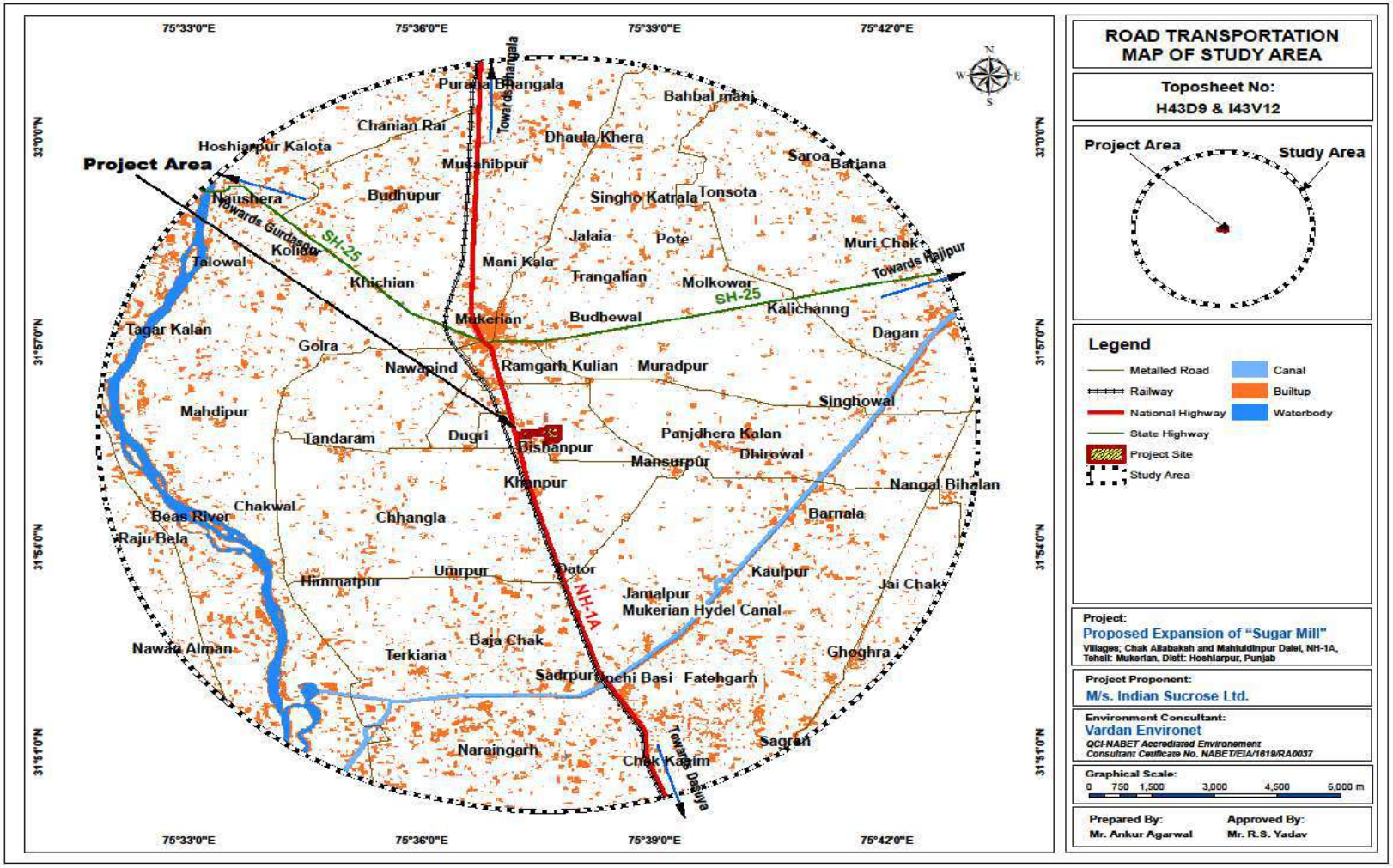


Fig: 3.16 Transportation map of the Study Area

Table 3.11 No. of Vehicles per Day

#	Vehicles Distribution	Number of Vehicles Distribution/Day		PCU	Total Number of Vehicle in PCU/day		Total Number of Vehicle (PCU)/Hour	
		NH-1A	SH-25		NH-1A	SH-25	NH-1A	SH-25
1	Cars	4125	1428	1	4125	1428	172	60
2	Buses	2414	1014	3	7242	3042	302	127
3	Trucks	2784	1720	3	8352	5160	348	215
4	Two wheelers	5412	2143	0.5	2706	1072	113	45
5	Three wheelers	1647	782	0.75	1235	586	52	25
Total		**16382**	**7087**	**-**	**23660**	**11288**	**987**	**472**

Table 3.12 Existing Traffic Scenario and LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS
NH-1A	**987**	3000	0.329	**B**
SH-25	**472**	1250	0.38	**B**

Note: The existing level may be "Very Good" for both NH-1A and SH-25.

V/C	LOS	Performance
0.0-0.2	A	Excellent
0.2-0.4	B	Very Good
0.4-0.6	C	Good/ Average/ Fair
0.6-0.8	D	Poor
0.8-1.0	E	Very Poor

Note: Capacity as per IRC: 64-1990

During Plant Operation

S.No.	Mode of Transportation	No. of trips	PCU	Total Number of Vehicle in PCU/day	Total Number of Vehicle (PCU)/Hour
1.	Trucks	10	3	30	1.25
2.	Bus	5	3	15	0.6
3.	Tractor/Trollys	150	3	450	19
4.	Car	25	1	25	1
5.	Two wheeler	50	0.5	25	1
6.	Three wheelers	14	0.75	11	0.5
Total					**23.5**

Table: 3.13 Modified Traffic Scenario and LOS

Road	Increased PCU'S-State/National Highway	V	C	Modified V/C Ratio	LOS
NH-1A	23.5x70%=16.5	987+16.5= 1003.5	3000	0.33	B
SH-25	23.5x30%=7	472+7=479	1250	0.38	B

Conclusion

The LOS value from the proposed project remain the same i.e "Very Good",So the additional load on the carrying capacity of the concern roads is not likely to have any significant adverse affect.

CHAPTER-4

ANTICIPATED ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

4.0 Introduction

This chapter presents identification and appraisal of various impacts from the proposed power plant in the study area. Generally, the environmental impacts can be categorized as either primary or secondary. Primary impacts are those which are attributed directly to the project and secondary impacts are those which are indirectly induced and typically include the associated investment and changed patterns of social and economic activities by the proposed action.

Quantification of assessments in terms of measurable units would be the ideal method for impact assessment. Mathematical models are the best tools to quantitatively describe cause-effect relationships between sources of pollution and different components of environment. However, due to lack of information/data, uncertainties involved and complex interrelationships between various sectors of environment; it is not always possible or at least not easily achievable. In such cases, only qualitative predictions have been made based on experience and judgments.

The Environment Management Plan (EMP) is required to ensure sustainable development in the study area (10 km) of the proposed plant site, hence it needs to be an all en-compassive plan for which the proposed industry, Regulating agencies like pollution control board working in the region and more importantly the affected population of the study area need to extend their co-operation and contribution.

The affected environmental attributes in the region are air quality, water quality, soil, land use, ecology and public health. The management action plan aims at controlling pollution at the source level to the extent possible with the available and affordable technology followed by treatment measures before they are discharged. The proposed project would create impact on the environment in two distinct phases:

i. During the construction phase which may be regarded as temporary or short term; and
ii. During the operation phase which would have long term effects.

The construction and operational phase of the proposed project comprises various activities each of which will have an impact on some or other environmental parameters. Various impacts during the construction and operation phase on the environmental parameters have been studied and mitigation measures for the same are discussed briefly below and elaborated in the subsequent sections.

4.1 Impact& Mitigation Measure during Construction Phase

This phase involves the activities like erection of civil structures, movement/removal of old construction, erection of new equipment and machinery, greenbelt development etc. Air , Noise and Land are likely to be effected by these activities ,although Aesthetics and Socio-economic factors are also identified. But the impacts will be marginal and for short term only. The green belt development will have positive impacts. The impacts on different environmental parameters due to proposed project construction are discussed in **Table 4.1.**

Table: 4.1 Impact Identification Matrix (Construction Phase)

Activities	Environmental Attributes										
	Air	Noise	Water	Hydro Geology	Geology	Climate	Land	Ecology	Socio Economic	Solid/Hazardous	Risk
Operation of DGs	√	√				√				√	√
Operation of Construction Equipment	√	√	√		√			√		√	√
Traffic	√	√									√
Land Development and Building Construction	√		√	√			√	√	√	√	√

4.1.1 Air Environment

Project Activity	Impact	Mitigation Measures
Material Supply (Transportation) **Storage of material** **Movement of machinery** **Land Development/ Green belt Development** **Building Construction** • Excavation work, • Filling of foundation, • Heavy fabrication work including metal cutting (Gas cutting, welding), **Garbage Disposal** **Operation of DG set**	• Increases in respiratory ailments like asthma and bronchitis. • Chances of Accident will be increase due to construction work. • Stomatal index may be minimized due to dust deposit on leaf. • Crop yield will be reduced	1. Regular water sprinkling will be done to avoid dust generation from transportation and stored material. 2. Only PUC vehicle will be used for the transportation of materials and equipment. 3. Dust mask will be provided to the workers. 4. It is proposed to plant 19,200 Nos. of trees in the 7.79ha area. Barricading will be done wherever required.

4.1.2Water Environment

Project Activity	Impact	Mitigation Measures
Land Development/ Green belt Development **Building Construction**	• There is no major impact on Human. • There is no major impact on Animal. • Green area will be increased. • There is no major impact on crop as the purposed project is in notified industrial area.	Adequate measures to be taken to reduce fresh water demand. Rain Water Harvesting /Recharge Plan to reduce fresh water demand.

4.1.3 Soil Environment

Project Activity	Impact	Mitigation Measures
Land Development/ Green belt Development **Building Construction** **Garbage Disposal**	• Loss of productivity of soil due to accidental spillage of chemicals, diesel or oil and waste water from the industry. • There is no major impact on Human, • Animal and Crop as the purposed project is in notified industrial area. • Green area will be increased.	Adequate measures to be taken to reduce fresh water demand. Rain Water Harvesting /Recharge Plan to reduce fresh water demand. No toxic /waste water will be disposed directly on land.

4.1.4Noise Environment

Project Activity	Impact	Mitigation Measures
Material Supply (Transportation) **Storage of material** **Movement of machinery** **Land Development/ Green belt Development** **Building Construction** • Excavation work, • Filling of foundation, • Heavy fabrication work including metal cutting (Gas cutting, welding), **Garbage Disposal** **Operation of DG set** **Painting and Finishing**	• Decreases the efficiency of a man. Lack of concentration. Causes Blood Pressure. Temporary or permanent Deafness. • Noise pollution damages the nervous system of animal. • There should be cool & peaceful environment for their better growth of plant. Noise pollution causes poor quality of crops in a pleasant atmosphere. • Loud noise is very dangerous to buildings, bridges and monuments. It creates waves which struck the walls and put the building in danger condition. It weakens the edifice of buildings.	• PUCC Certified vehicles will be used. • Vibration pads shall be installed for major equipments • All the major noise generating Equipments shall be equipped with acoustic enclosures. • DG set shall be equipped with acoustic enclosures.

4.1.5 Land Cover/ Land Use

Project Activity	Impact	Mitigation Measures
Land Development/ Green belt Development **Construction of Building**	As the land is already acquired by the project proponent since 1990, so there will no impact on the Land use and Land Cover.	It is proposed to plant **19200 Nos.** of trees in the **7.79ha** area.

4.1.6Hydrogeology

Project Activity	Impact	Mitigation Measures
Land Development/ Green belt Development **Garbage Disposal**	There will be decrees in the water table as water will be met from the Tube well.	Rain water harvesting scheme will be followed by the project proponent to maintain the water table.

4.1.7Geology

Project Activity	Impact	Mitigation Measures
Land Development/ Green belt Development	There will no cutting of tress/plant and Green belt will be maintained in the Plant premises.	It is proposed to plant **19200 Nos.** of trees in the **7.79ha** area.

4.1.8Solid/ Hazardous

Project Activity	Impact	Mitigation Measures
Land Development/ Green belt Development	During construction phase of the proposed project, top soil, construction debris and oil from the machineries will be generated.	• Top soil will be stacked separately and will be used for green belt. • Construction debris will be used for filling of low laying area. • Used oil will be sold to CPCB authorized vendor. It is proposed to plant **19200 Nos.** of trees in the **7.79ha** area.

4.1.9Risk Hazardous

Project Activity	Impact	Mitigation Measures
Material Supply (Transportation) **Storage of material** **Movement of machinery** **Land Development/ Green belt Development** **Building Construction** • Excavation work, • Filling of foundation, • Heavy fabrication work including metal cutting (Gas cutting, welding)	Chances of accident may increase due to purposed Activity.	All transportation within the main working will be carried out directly under the supervision and control of the management. The Vehicles must be maintained in good repairs and checked thoroughly at least once a week by the competent person authorized for the purpose by the Management.

4.1.10 Ecology and Biodiversity

Project Activity	Impact	Mitigation Measures
Material Supply (Transportation) **Storage of material**	Transportation of raw material and products the trucks/dumper will disturb the movement of animal and reptiles.	Transportation of products and raw material should be minimize in the morning and evening and cannot be done in night.

Movement of machinery **Land Development/ Green belt Development** **Building Construction** **Excavation work,** **Filling of foundation,** **Heavy fabrication work including metal cutting (Gas cutting, welding),** **Garbage Disposal** **Operation of DG set** **Painting and Finishing**	Fugitive emission from vehicle movement will form a layer in leaves thus reducing the gaseous exchange process. This ultimately affects the growth of plants. Chances of vehicle collisions with wildlife attempting to cross roads are possible. The Indian peafowl movement is very common in the area; the noise from sand mining will hinder the same. Waste water discharge from the proposed activity can contaminate the soil and ultimately effect the growth of plants.	Green belt and community forestry should be encouraged to mitigate the noise level. Plantation will be carried out on approach roads and nearby vicinity. The latest equipment with sound-control devices should be used for operation/manufacturing, etc. Annual bio-monitoring of roadside plants exposed to vehicular pollution will be done to check the dust load and Air Pollution Tolerance Index (APTI).

4.1.11Socio Economic conditions

Project Activity	**Impact**	**Mitigation Measures**
Material Supply (Transportation) **Storage of material** **Movement of machinery** **Land Development/ Green belt Development** **Building Construction** • Excavation work, • Filling of foundation, • Heavy fabrication work including metal cutting (Gas cutting, welding), **Garbage Disposal** **Operation of DG set** **Painting and Finishing**	During construction phase of the proposed project, labors will be required and this requirement will meet from surrounding area. Hence, positive impact will be on Socio economic environment.	During the construction phase around 30- 50 local skilled and semi-skilled workers including contractors will be employed.

4.2 Impact& Mitigation Measure during Operational Phase

This phase of the project is important because it generates long-term impacts as the production starts. The primary impacts causing likely deterioration will be in Air, Water, Noise and Land / Soil due to the gaseous emissions, vehicular movement, and discharge of liquid effluent. Identification of impacts during operation phase is given in **Table 4.2.**This phase includes following activities:

i. Raw material storage
ii. Product manufacturing
iii. Product storage
iv. Transportation
v. Gaseous emission

vi. Effluent discharge
vii. Solid waste generation
viii. Occasional equipment failure / Process upset and related problems
ix. Industrial development
x. Chemical Hazards
xi. Generation of employment opportunity
xii. Contribution to social welfare

Table: 4.2 Identification of Impacts during Operation Phase

Activity	Environmental Attribute	Cause	Impact Characteristics			
			Nature	Duration	Reversibility	Significance
Green Belt Development	Ecology	Planting of Trees	Positive	Long Term	Reversible	High Positive Impact
Emissions from various unit processes and vehicular traffic	Air Quality (SPM, SO_2, NOx, CO, HC)	Unit operations, Vehicle Operation and fuel Combustion	Negligible Negative	Long Term	Reversible	Low as ambient and stack monitoring , Scrubber Vehicle maintenance will be performed
	Noise levels	Noise generation from machinery and Vehicles	Minor Negative	Short Term	Reversible	Low, due to noise protection measures, periodical vehicle maintenance
Solid Waste Disposal	Land and Soil	Generation of Solid Waste	Minor Negative	Short Term	Reversible	Low, proper collection and Disposal
Wastewater Discharge	Water Quality	Generation of Wastewater	Minor Negative	Short Term	Reversible	ETP Shall be provided
DG Set	Air Quality	Exhaust Emissions	Minor Negative	Short Term	Reversible	Low, DG Set is only a standby
	Noise Levels	Noise Generation	Minor Negative	Short Term	Reversible	Low due to Noise Protection measures

Activity	Environmental Attribute	Cause	Impact Characteristics			
			Nature	Duration	Reversibility	Significance
Socio-Economic	Employment Generation	Direct and Indirect employment	Positive	Long Term	Irreversible	High, new opportunities of income for many families
	Quality of Life	In flow of funds in the region/nation	Positive	Long Term	Irreversible	High, the project will generate employment

4.3 Air Environment

Impact during Operational Phase

A. Utility Emission

Utility emissions will be mainly from Boiler and D.G. sets proposed for the sugar unit. The company already has 160 TPH (40+40+80) capacity boilers which will be replaced by one boiler of capacity 200 TPH. Fuel used in the boiler is Bagasse/Rice Husk/Maize Cobs/Paddy Straw/Wood Chips and 4 D.G. sets of capacity 1045 KVA already exist at the project site two more D.G. sets of capacity 3000 KVA will be installed for the power backup. Fuel used in the D.G sets is the HSD.

B. Fugitive emissions

Fugitive emission from sugar include includes dust from stock piles, spills, raw material and fuel handling, loading-unloading, transportation and open vessel.

C. Ambient Air Quality Modeling

ISCST3 Dispersion Model

The Industrial Source Complex (ISC) Short Term model provides options to model emissions from a wide range of sources that might be present at a typical industrial source complex. ISCST3 is US-EPA approved model to predict the air quality. The model uses urban dispersion and regulatory defaults options as per guidelines on air quality models (PROBES/70/1997-1998). Emission sources are categorized into four basic types of sources, i.e., point sources, volume sources, area sources, and open pit sources. The volume source option and the area source option may also be used to simulate line sources. The model assumes receptors on flat terrain. The ISC short term area source model is based on a numerical integration over the area in the upwind and cross wind directions of Gaussian plume formula. This can be applied to the Point, Area, Line or Volume sources simultaneously and their resultant incremental concentration of the pollutant can be predicted.

- **Model Options Used For Computations**

The options used for short-term computations are:

- The plume rise is estimated by Briggs formulae, but the final rise is always limited to that of the mixing layer;
- Stack tip down-wash is not considered;
- Buoyancy Induced Dispersion is used to describe the increase in plume dispersion during the ascension phase;
- Calms processing routine is used by default;
- It is assumed that the pollutants do not undergo any physio-chemical transformation and that there is no pollutant removal by dry deposition;
- Washout by rain is not considered;
- Flat terrain is assumed / used for computations;
- Cartesian co-ordinate system has been used for computations; and
- The model computations have been done for 10 km with 100 m grid interval.

- **Gaussian Plume Model**

Ground Level Concentration (χ) (GLC) from a point source at any receptor is given by -

$$\chi = \frac{Qg_1g_2}{(2\pi\sigma_y\sigma_z u)}$$ - (USEPA ISCST3, 1987)

where,

$g_1 = \exp(-y2/2\sigma y2)$

$g_2 = \exp[-(z-H)2/2\sigma z2] + \exp[-(z+H)2/2\sigma z2]$

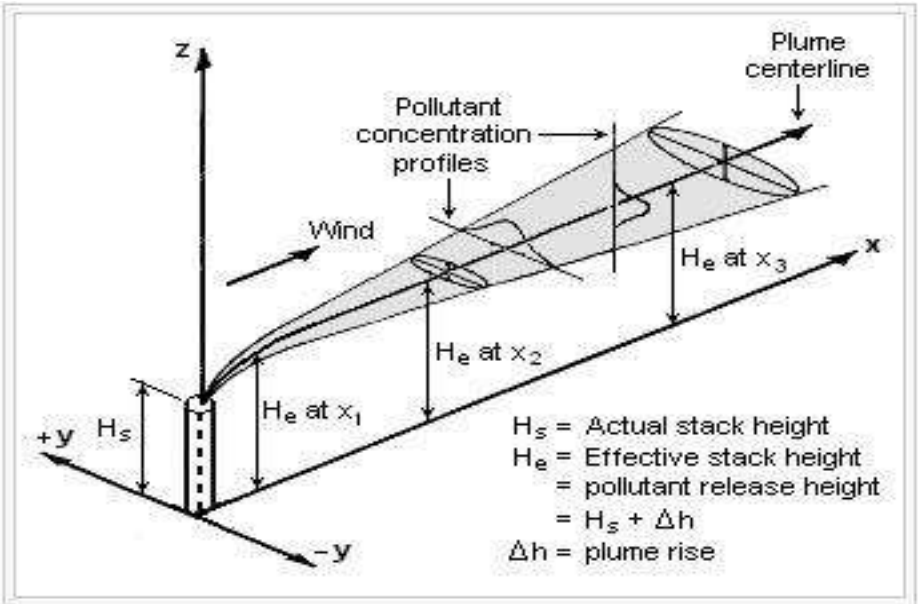
Q = source strength

Z = receptor height above the ground

H_e = effective stack height (Plume rise + Physical stack height)

u = wind speed at stack level

σ_y &σ_z = dispersion parameters



Visualization of a buoyant Gaussian air pollutant dispersion plume

Figure 4.1 – Gaussian Plume Model

- **Dispersion Parameters**

Dispersion parameters σ_y and σ_z for open country conditions (Briggs, 1974) are used, as the project is located on in a rural area. Atmospheric dispersion coefficients vary with downwind distance (x) from emission sources for different atmospheric stability conditions. (CPCB – PROBES/70/1997-98).

Table 4.3 - Dispersion parameters as per stability class

Stability Class	σ_y	σ_z
A	$0.22x(1+0.0001x)^{-.5}$	0.20x
B	$0.16x(1+0.0001x)^{-.5}$	0.12x
C	$0.11x(1+0.0001x)^{-.5}$	$0.08x(1+0.0002x)^{.5}$
D	$0.08x(1+0.0001x)^{-.5}$	$0.06(1+0.0015x)^{.5}$
E	$0.06x(1+0.0001x)^{-.5}$	$0.03x(1+0.0003x)^{-1}$
F	$0.04x(1+0.0001x)^{-.5}$	$0.16x(1+0.0003x)^{-1}$

- **Plume Rise**

Plume rise Δh has been determined according to Brigg's formula (CPCB guideline)

$\Delta h = 21.425 \quad F^{3\,4} \qquad$ for F<55

$$\Delta h = 38.71 \frac{F^{3\,5}}{U_s} \quad \sqrt{U_s} \quad \text{for } F>55$$

$F = g\ VsD2(Ts-Ta)/4Ts$

Where

Us = wind speed at stack level (m/s)

Vs = stack gas velocity (m/s)

Ts = stack gas temperature (0K)

Ta = ambient temperature (0K)

F = Buoyancy flux parameter (m4/s3)

Δh = Plume rise (m)

D = Diameter of the stack (m)

g = acceleration due to gravity, 9.807 (m/s2)

D. Stack details

Boiler will be based on Bagasse, rice husk, Paddy Straw, Wood chips, Maize Cobs as available fuel options.

Table 4.4 – Stack details

Location	Capacity	Stack Height (m)	Stack Diameter (m)	Flow Rate (Nm^3/s)	Exit Gas Temp.* (^oC)
Boiler	40 TPH	40	3	41	75
Boiler	40 TPH	40	3	41	75
Boiler	80 TPH	50	3	81	75
Boiler	200 TPH	78	4.5	200	110-120

E. Meteorological Data

The meteorology of the project area plays very important role in dispersion of pollutants and buildup of pollution within the atmosphere. In the present study, one season (October 2017 – December 2017) meteorological data has been taken to find the dispersion of pollutant concentration. The mixing height for study period, which is an important parameter to express the dispersive potential of atmosphere, has been taken from the atlas of hourly mixing height and assimilative capacity of atmosphere in India (S.D. Attri et al., 2008). Windrose diagram of one season meteorological data used for modeling is shown given below in **Figure 4.2**.

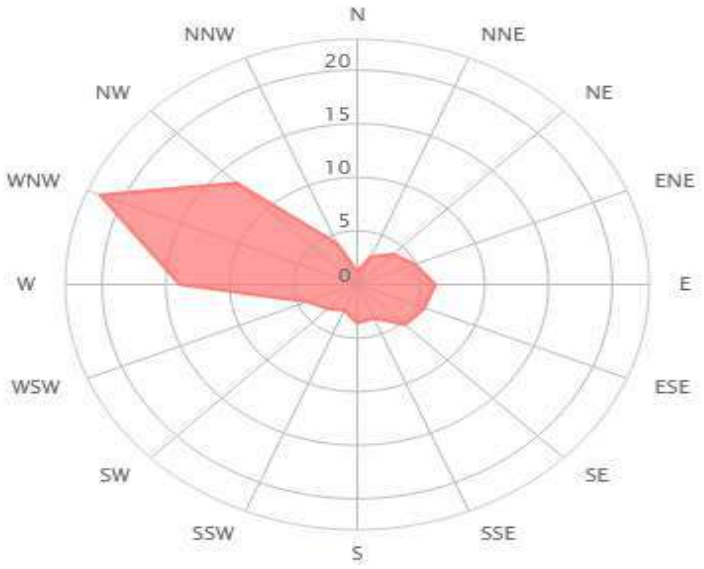


Figure 4.2 - Wind rose Diagram

F. Results

- The maximum cumulative GLC concentration of PM_{10} wiz. 94.606 ug/m^3 was predicted inside the study area. As the distance from source increases, the incremental concentration of PM_{10} drops drastically due to settling of PM_{10} particles under gravity.
- The maximum cumulative GLC concentration of SO_2 wiz. 15.770 ug/m^3 was predicted inside the study area.
- The maximum cumulative GLC concentration of NOx wiz. 34.254 ug/m^3 was predicted inside the study area.

4.5 – Predicted GLC of PM10 at Ambient Air Quality Monitoring Stations

Location Code	Location Name	Parameter	Max Baseline Conc. (µg/m^3)	Predicted GLC (µg/m^3) – ISCST3 Model	Cumulative GLC (µg/m^3)
A1	Project Site	PM2.5	51.2	0.01732	51.217
		PM10	90.60	0.0455	90.646
		SO2	13.60	2.1700	15.770
		NOx	31.40	0.4160	31.816
A2	Near Village- Khanpur	PM2.5	52.3	0.00388	52.303
		PM10	91.50	0.0101	91.510

		SO2	15.20	0.3261	15.526
		NOx	30.50	0.0731	30.573
A3	Near Village- Mukerian	PM2.5	52.1	0.00295	52.102
		PM10	91.20	0.0076	91.508
		SO2	15.20	0.0225	15.222
		NOx	32.60	0.0419	32.642
A4	Near Village- DhaulaKhera	PM2.5	45.6	0.00059	45.600
		PM10	88.30	0.0015	88.302
		SO2	14.20	0.0396	14.240
		NOx	32.60	0.0077	32.608
A5	Near Village- Mahdipur	PM2.5	52.1	0.00236	52.102
		PM10	94.60	0.0059	94.606
		SO2	14.20	0.1580	14.358
		NOx	32.50	0.0410	32.541
A6	Near Village- Naraingarh	PM2.5	53.4	0.00089	53.400
		PM10	93.20	0.0022	93.202
		SO2	15.10	0.0770	15.177
		NOx	32.30	0.0191	32.319
A7	Near Village- Kaulpur	PM2.5	47.5	0.0013	47.501
		PM10	91.20	0.0034	91.203
		SO2	15.30	0.1427	15.443
		NOx	33.20	0.0277	33.228
A8	Near Village- Kallchanng	PM2.5	50.2	0.00205	50.202
		PM10	90.20	0.0054	90.205
		SO2	15.20	0.2543	15.454
		NOx	34.20	0.0540	34.254

The contour maps showing the predicted concentration levels of PM_{10}, SO_2, NOx are presented in **Figure 4.3, Figure 4.4**and **Figure 4.5**.

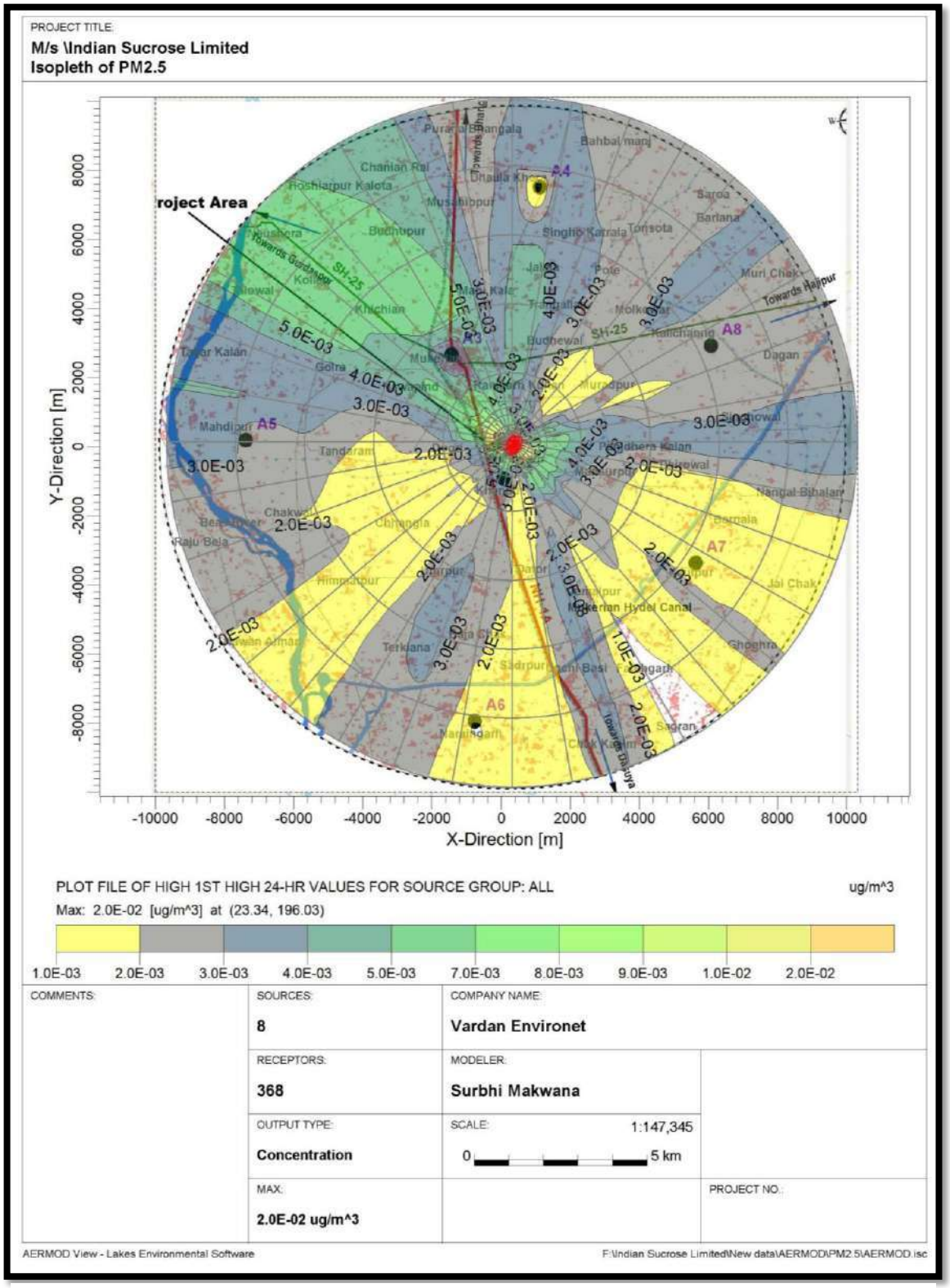


Figure 4.3 Spatial distribution of predicted GLCs of $PM_{2.5}$

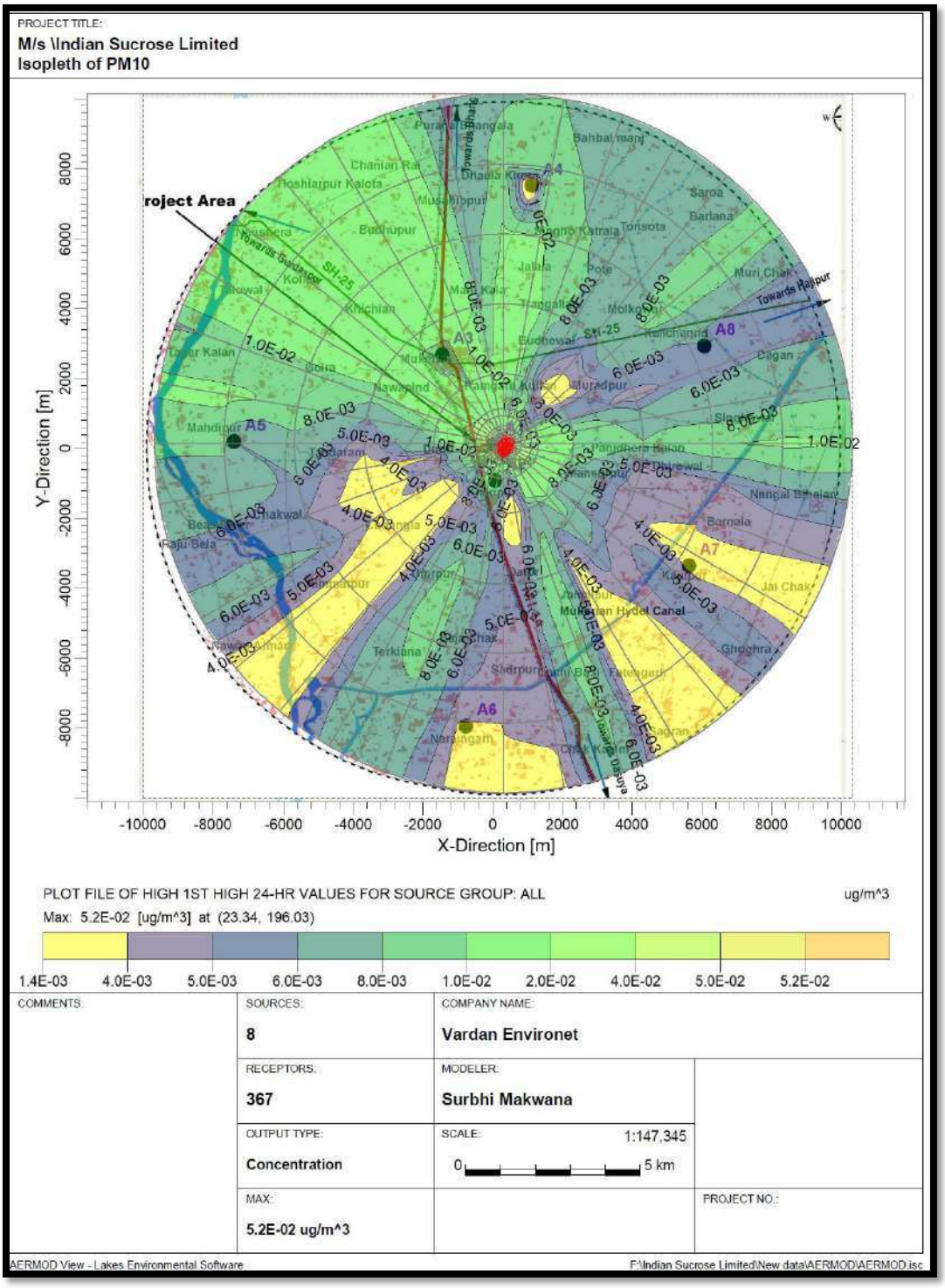


Figure 4.4 – Spatial distribution of predicted GLCs of PM_{10}

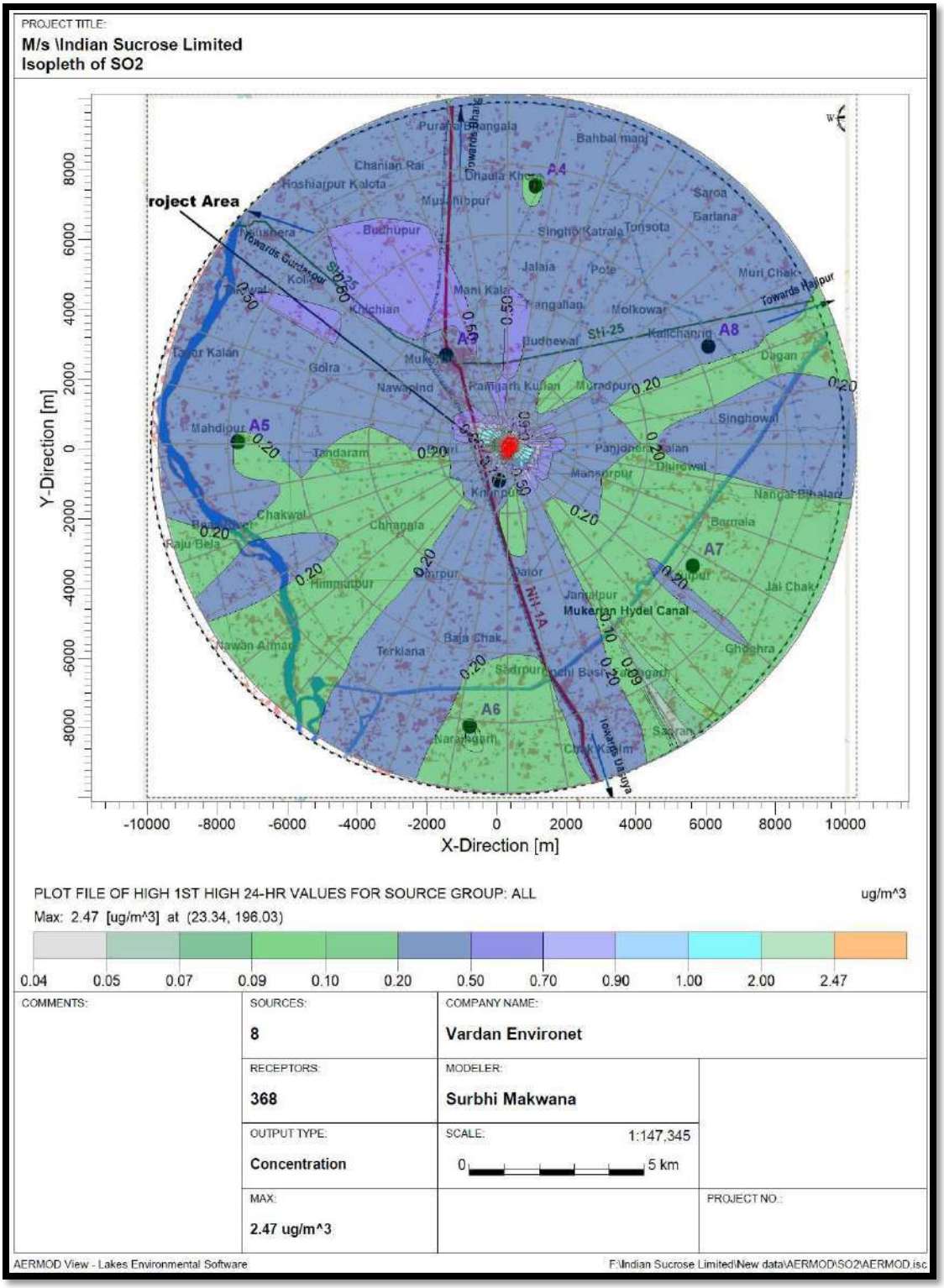


Figure 4.5 – Spatial distribution of predicted GLCs of SO_2

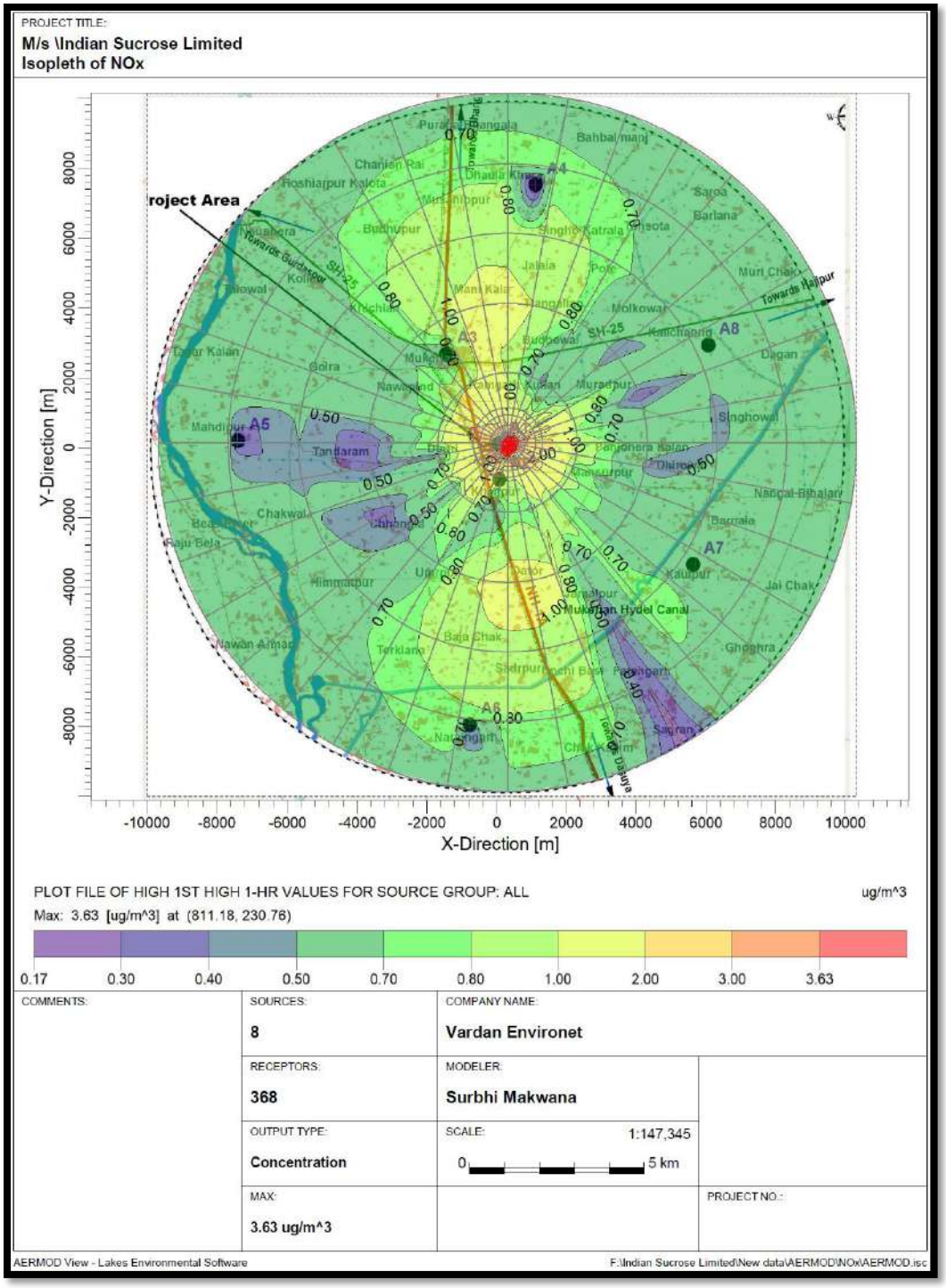


Figure 4.6– Spatial distribution of predicted GLCs of NOx

Mitigation Measures

A. For Utility Emission:

- Stack height as per the CPCB will be provided to the proposed boiler& the D.G.-sets for the better dispersion of the pollutant.
- As the Biomass will be used as fuel in the boiler instead of bituminous coal which result in reduction of anthropogenic emission which are released during Combustion process and help in protecting the Air environment as bagasse is considered as the eco-friendly Fuel.
- Wet Scrubber is already attached with the boiler to control the particulate emission and for the expansion phase ESP will be installed.
- Additional green area will be developed as Green belt for proposed expansion which will acts like adsorbent of air pollutants.

B. Fugitive Emission

S. No.	Emissions Sources	Management measures
1.	Fuel and ash transfer	➢ Mechanized Handling and conveying with proper Hood ➢ Cover Definite Loading Point ➢ Covered transfer points
2.	Vehicular emissions	➢ Paved roads ➢ Regular sweeping ➢ Water sprinkling through mobile tankers
CPCB Guidelines will be followed		

4.4 Water Environment

Impact

Waste water is generated from the mill house includes the water used as splashes to extract maximum amount of juice and those used to cool the roller bearings. This waste water is treated in the ETP of capacity 3000 KLD and the treated water is used in the green belt or the plantation. Total Fresh water requirement for the proposed plant is 597 KLD which will be met from the Tube-well. Complete water Balance in given in the chapter2 for the reference. The proposed project would adopt the "Zero liquid discharge".

A Effluent Treatment Plant (3000KLD)

Effluent treatment plant is a unit in which all the liquid effluents of industry are treated. The detailed process to treat the waste water generated from the sugar industry is given

below:

Table: 4.6 Wastewater Characteristics

S.no.	Parameter	Average values
1	pH	4.5-8.0
2	COD	2000-3000 (mg/l)
3	BOD	1500 -2000 (mg/l)
4	TSS	500-600 (mg/l)
5	Oil & Grease	15 (mg/l)
6	Temperature	30-40°C

(A) Bar Screen- Bar Screens or sometimes called **Bar Racks** are normally installed as the first line of defense to remove large objects primarily, rags, woods and rocks that manage to escape and find their way through the sewer systems. Usually these objects can be of extreme nuisance because if left around going to the main treatment plant, they pose a significant risk of damaging pumps and blocking valves. The racks require constant attention to clean it manually or mechanically and whatever collections of materials are stored in a waste bin before sent to sanitary landfill for disposal.

(B)Oil and grease pit (Oil skimmers)- The skimmer is a rotating cylindrical device design to remove the surface oil layer. It consists of using cohesive force between the oil and the surface of the material to be move up. The metal part must be immerged in 1cm to 3cm of the free oil layer floating on the top of the water. The oil catches in the rotatory device drop in a conveyor which evacuates oil in a container for oil recovery. After bar screen waste water will move to Oil and grease pit. Here all the oil and grease will be removed from the waste water.

(C)Equalization Tank-Effluent from the oil and grease pit comes to the equalization tank in wastewater treatment. The main function is to act as buffer. To collect the incoming raw effluent that comes at widely fluctuating rates and position to the rest of the ETP at steady (Average) flow rate. During the peak hours ETP comes at high flow rate. The equalization tank stores this effluent and lets it out during the non-peak time when there is no /little incoming effluent. In equalization tank 45% of BOD, 42%COD, TS and TDS 18%, TSS 17% will be removed.

(D) Upflow Anaerobic Sludge Blanket-The UASB is a system in which substrate passes through an expanded sludge bed containing high concentration of biomass. The sludge in the reactor may be granular or flocculent. Most of the substrate removal takes place in the sludge bed. The remaining portion of the substrate passes through a less dense biomass, called the sludge blanket. Above the sludge blanket the reactor has a three-phase

separator, Gas-liquid-solid, which separates the solid particles from the liquid and gas, allowing liquid and gas to leave the system.

(E) Aeration Tank- Aeration is the most critical component of a treatment system using the activated sludge process. A well designed aeration system has a direct impact on the level of wastewater treatment it achieves. Aeration provides oxygen to bacteria for treating and stabilizing the wastewater. Oxygen is needed by the bacteria to allow biodegradation to occur. The supplied oxygen is utilized by bacteria in the wastewater to break down the organic matter containing carbon to form carbon dioxide and water. Without the presence of sufficient oxygen, bacteria are not able to biodegrade the incoming organic matter in a reasonable time. In the absence of dissolved oxygen, degradation must occur under septic conditions which are slow, odorous, and yield incomplete conversions of pollutants. In aeration tank 82% of BOD, 81% of COD, 20% TS and TDS, 21% TSS will be removed. During this process a mass of biologically active flocks called Activated Sludge is formed.

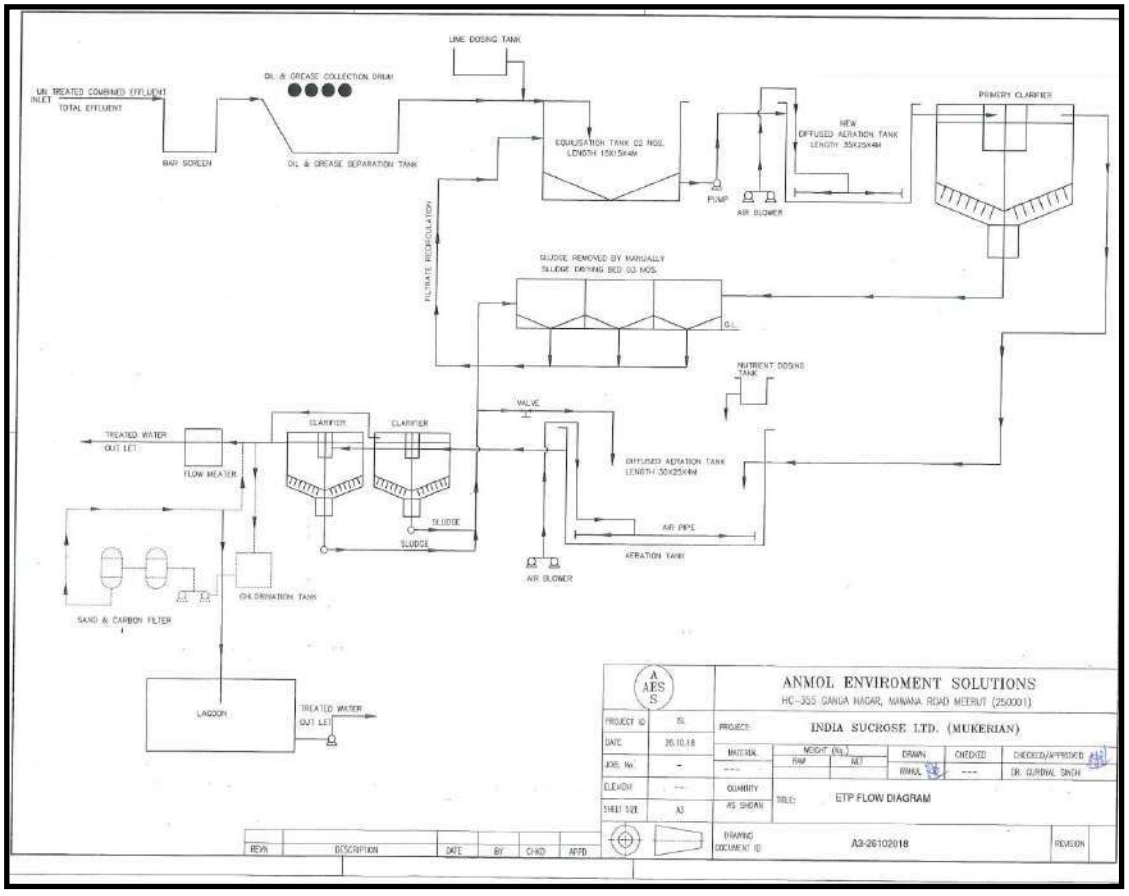


Figure 4.7: Modified ETP Design

(F)Clarifiers - Clarifiers are settling tanks built with mechanical means for continuous removal of solids being deposited by sedimentation. Clarifiers work on the principle of gravity settling. The heavier suspended solids settle in the clarifier due to the quiescent conditions provided in the Clarification zone. The settled solids are swept to the centre well provided for collection of sludge with help of moving scraper blades. In clarifiers 97% of COD, 95% BOD, 77.5% TDS, 88.8% TSS and 79.23% of TS will be removed.

(G) Secondary Aeration Tank-Water from the secondary clarifier will move in the secondary aeration tank. Again oxygen will be supplied to the waste water at this stage for its further treatment and sludge will be dried in sludge drying beds.

(H)Treated Water- Treated water will be used for green belt development, floor washing and sprinkling.

Table: 4.7 Treated Water Characteristics

S.no.	Parameter	Average values
1	pH	7.0-8.0
2	COD	<250(mg/l)
3	BOD	<100(mg/l)
4	TSS	<100(mg/l)
5	Oil & Grease	<10(mg/l)
6	Temperature	20-30°C

List Of Jobs Done /To BE DONE FOR UPGRADATION OF ETP

- Modification of Oil Skimmer with proper handling of Oil and its collection at ETP.
- Re-arrangement of Aeration Tank No. 1 & 2 for proper aeration at all levels.
- Re-arrangement of Inlet and Outlet of Effluent in the Clarifier No. 1 & 2.
- Modification of Inlet and Outlet of effluent in the Clarifier No. 3.
- Pipelines arrangement and modification as per drawing of all the equipments.
- MGF modification in line with second phase modification.
- ACF modification in line with second phase modification.
- Preparation of chlorination tank with proper dosing of chlorine to the treated effluent as per drawing and design in line with second phase modification.

B) Rain Water Harvesting/Recharge Plan

Rainwater harvesting is the accumulation and deposition of rainwater for reuse on-site, rather than allowing it to runoff. Rainwater can be collected from surface runoffs or roofs, and in many places the water collected is redirected to a deep pit (well, shaft, or

borehole), a reservoir with percolation, or collected from dew or fog with nets or other tools. Depending upon the available contours at detailed engineering stage, the number of drainage outfall and extent of open drains etc. will be designed so as to discharge the water to the rainwater harvesting pond for reuse in dust suppression & greenbelt development. The calculation of rainwater endowment is presented here which shows the total rain water harvesting potential of the plant area.

Design of Rain water recharge structure

Three most important components, which need to be evaluated for designing a rainwater harvesting structure, are

- Hydrogeology of the area including nature and extent of aquifer, soil cover, topography, depth to water table and quality of groundwater.
- Area contributing to runoff i.e., total area and land use pattern, whether industrial, residential or green belts and general built up pattern of the area
- Hydro meteorological characters viz. rainfall duration, general pattern of intensity of rainfall.
- In order to design the recharge structure, hourly intensity of rainfall is considered to be 30mm/hr has been taken into account and the details are tabulated below.

Based on the Runoff Coefficient the water harvesting potential of a site could be estimated using the formula given below:

Water harvesting potential in m^3/year = Annual Rainfall (m) x Area of catchment (m^2) x Runoff coefficient

Table 4.8: Data Assumed and/or Available for Rain water harvesting

S.No.	Details	Values
1	Roof top Area (Plant & Storage area + Administrative offices ,canteen, security) (m^2)	88400
2	Paved Area (Roads + Floor+ Parking) (m^2)	7000
3	Green Belt Area (m^2)	77900
4	Open Land Area	44900
5	Average Annual rainfall (mm) for Hoshiarpur District & surrounding areas	591.00
6	Hourly Rainfall intensity (m)	0.030
7	Runoff coefficient for roof top 0.80-0.90	0.85
8	Runoff coefficient for yard & paved area 0.60-0.65	0.65
9	Runoff coefficient for green belt0.10-0.20	0.15
10	Runoff coefficient for open area 0.10-0.20	0.20

Rooftop Rainwater Harvesting

The Industry is Sucrose manufacturing one, so it is highly suggested to recharge water through roof top mode only within the industrial premises to avoid contamination through other mode of recharge such as open area, green belt and roads and paved areas.

The plant premises having different buildings with RCC and dome / V shaped roof. Drain pipes (4-6 inches) should be constructed to collect water from flat RCC roof. These drain pipes need to be further connected with main rainwater collection pipes, provided with collection chambers. In case of dome / V shaped roof, rainwater is collected through gutters attached at the end of the roof and these gutters must be connected to rainwater pipes. From such roof catchments, almost 80-90% runoff water can be collected.

Average rooftop rainwater runoff available:

= A*RF*AvRc

Where,

A = Roof top area = 88400Sq.m.

RF = Rainfall = 591mm (Average annual rainfall, 2005-2019)

AvRc= Average run-off coefficient= 0.85

Average rainwater runoff available = 88400*.591*.85

=44407.74

Evaporation Loss is 20%

Therefore, total recharge from Roof Top Harvesting =44407.74-(44407.74*20%)

=35526.192 cum/annum

Hourly Runoff of Rooftop Rainwater Harvesting

Average hourly rooftop rainwater runoff available:

= A*HF*AvRc

Where,

A = Roof top area = 88400Sq.m.

HF = Hourly Rainfall = 30mm (Hourly intensity of rainfall is considered to be 30 mm/hr)

AvRc= Average run-off coefficient= 0.85

Average rainwater runoff available = 88400*0.03*.85

=2254.20

Total Runoff water quantity/Hour (m^3/hr) = 2254.20

Quantum of Rainwater recharge through individual recharge Structure:

Volume of water within free Board (Settlement Chamber)

= 6 m x 5 m x 2.5m = 75 m3

Volume of water in Gravel filled Part

i.e. Volume of water within the pore spaces of sand, gravel filled part @35%.

= 6 m x 5 m x 0.5 m x 0.35 = 5.25 m3

3).**Recharge well:**

Diameter of bore: 154mm

Diameter of well: 100mm

Depth of recharge well: It will depend upon the granular zone and depth of water table. Drilling of bore- well will be done up to depth of water table. Annular space will be provided with artificial gravel pack.

Volume of water in Recharge Well through which recharge will be done Intake capacity of recharge well= 36000 lph = 36 m3/hr.

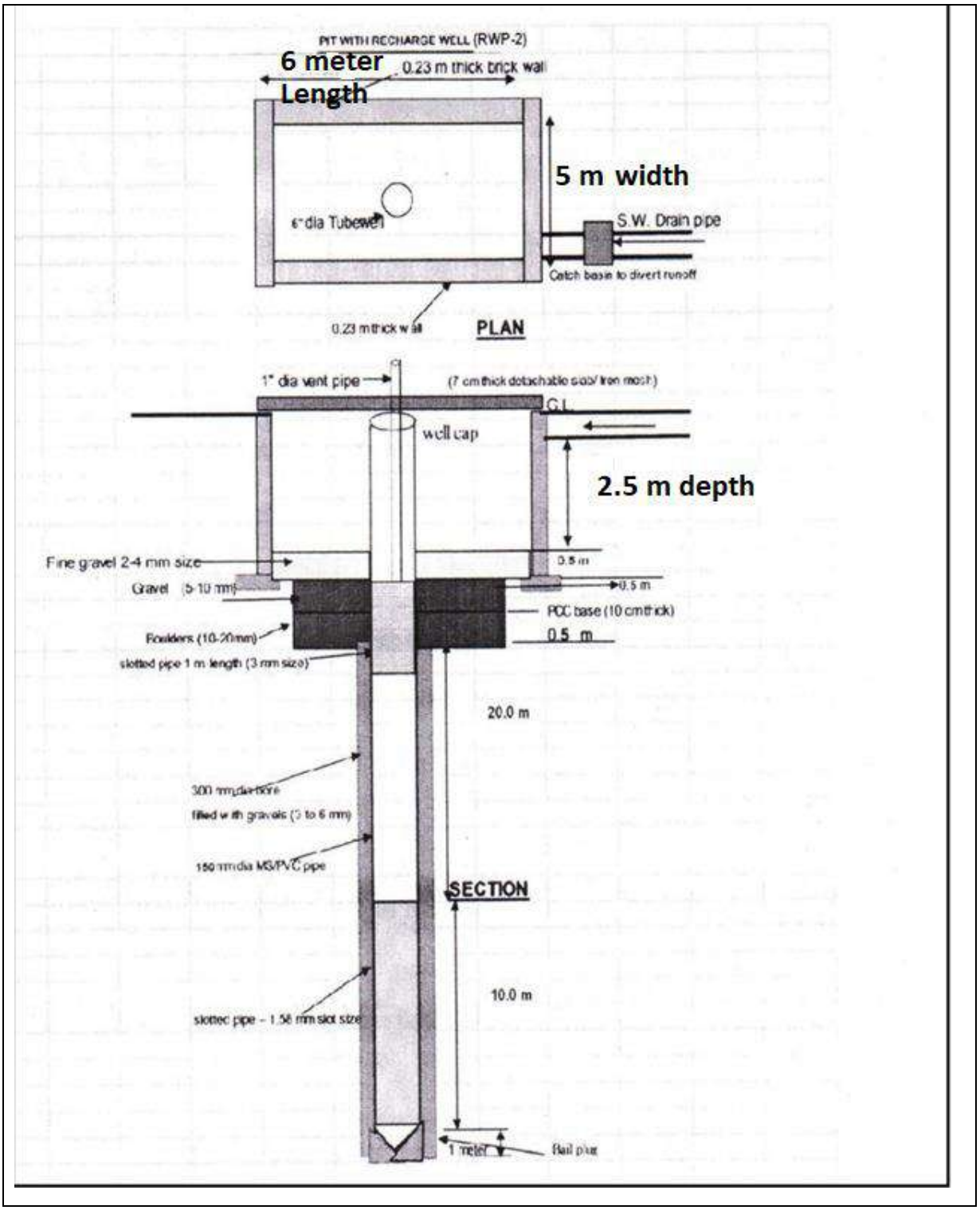
Therefore, Total volume to be recharge through an individual structure will be

= (75 + 5.25 +36)

= 116.50 m3/hr

=2254.20/116.5 = **19.34= 19 rain water structures**

Thus, the rainwater recharging pit can accommodate 116.5 m^3/hr of the rainwater. Therefore, 19 rainwater harvesting structure require to accommodate the total quantum of runoff (35526.192 m^3/annum). The design of the proposed rooftop harvesting structure is recharge tube-well type of construction is given below with their capacity to recharge the rainfall in the ground water system. Periodic maintenance of filter media is required to get the full efficiency of the Artificial Recharge structure.


PIT WITH RECHARGE WELL (RWP-2)
6 meter Length
0.23 m thick brick wall
5 m width
6" dia Tubewell
S.W. Drain pipe
Catch basin to divert runoff
0.23 m thick wall
PLAN
1" dia vent pipe
(7 cm thick detachable slab/ iron mesh)
G.L.
well cap
2.5 m depth
Fine gravel 2-4 mm size
Gravel (5-10 mm)
Boulders (10-20mm)
slotted pipe 1 m length (3 mm size)
0.5 m
0.5 m
PCC base (10 cm thick)
0.5 m
20.0 m
300 mm dia bore
filled with gravels (3 to 6 mm)
150 mm dia MS/PVC pipe
SECTION
10.0 m
slotted pipe - 1.58 mm slot size
1 meter
Rail pipe

Artificial Groundwater Recharge outside Plant Premises

The industry has proposed for adoption of artificial recharge ponds in the villages within the same watershed to avoid contamination of water from chemicals used in the Sucrose Industry. The ponds will be rejuvenated by widening and deepening them. Further Industry has proposed to construct/rejuvenate/deepening/desilting/maintenance along with installation of recharge shafts) Five large existing village ponds outside the industrial premises which would accommodate and recharge surface runoff from surrounding areas during monsoon season. It is logical that any recharge activity implemented in an area will surely benefit abstraction structures i.e. dug wells and bore wells in the surrounding as well as downstream area.

There will be 3 season of fillings. Slope of storm water drains shall be maintained in such a way to facilitate natural flow to RWH pond. The harvested water (Evaporation and other handling losses account to 20% reduction) may be utilized for greenbelt development, domestic, sanitation and some other activities increasing the ground water recharge.

The details of the villages ponds adopted for recharge are given in the below table:

Table 4.9: Summarization of Proposed Pond for Rainwater Harvesting

S. No.	Name of Village	Length in m	Width in meter	Depth in meter	Volume cubic meter	No of Fillings	Total Capacity	Net Recharge 40%
1	Gonspur	61.87	55.17	3.05	10404.46	3.00	31213.38	12485.35
2	Devi Dass - 1	137.16	58.52	3.05	24465.76	3.00	73397.27	29358.91
3	Devi Dass - 2	67.06	25.91	3.05	5295.25	3.00	15885.75	6354.30
4	Abdulapur	68.58	33.53	3.05	7008.42	3.00	21025.26	8410.10
5	Jalala	60.96	36.58	3.05	6796.04	3.00	20388.13	8155.25
Total Area in cubic meter cubic meter					53969.93	3.00		**64763.91**

Table 4.10: summarization of rainwater harvesting plan

Total Fresh Water Requirement for Proposed Project	597 KLD or **197010 Cum/annum** (330 working days)
Source of Water Withdrawal for Project Activities	Groundwater
RWH Potential/Artificial Recharge Criteria	Minimum 50% recharge (Semi Critical Zone) (As Per CGWA Guidelines)
A. Rainwater Harvesting Quantum - Proposed Storage/Recharge Trench inside Industrial Premises	
I. Industrial	**35526.19 cum/annum**
II. Rainwater Harvesting Quantum outside Industrial Premises	***64763.91* cum/annum**
Total Rainwater Harvesting Potential (I + II)	**100290.10 cum/annum**
RWH Potential/Artificial Recharge Developed	**50.90 %**

Recommendation:

1. **The project area lies in 'Semi Critical Zone' as per the dynamic groundwater resources of India 2017. The annual run-off generated from the roof top area is 35526.19 m^3/year, when annual rainfall is 591.0 mm.**
2. Presently M/S Indian Sucrose Limited does not have any arrangement to arrest the rainwater and recharge it through Rooftop RWH structures.
3. Hence they have to construct 19 rainwater harvesting structure in their premises to improve and develop of Ground water level.
4. The industry has proposed for adoption of ponds outside the industrial premises, in which total **64763.91m^3/year** recharge will be done.
5. Indian Sucrose Limited will carry out period maintenance of recharge structures. There will be 3 season of fillings.

4.5 Impact on Noise Environment

Impacts during operational phase

The baseline data for noise are given in Chapter III, of this EIA/EMP Report. After commencement of the plant there will be an increase in the noise levels. Source of noise will be operation of DG Sets during power failure. The noise is likely to be generated due to movement of vehicles and running equipments.

Proposed mitigation measure

I. Noise level can be reduced by stopping leakages from various steam lines, compressed air lines and other high pressure equipment. The noise produced in valves and piping associated with equipment handling compressible and incompressible fluids shall be attenuated to 75 dB(A) at a distance of 1.0 m from the source by the use of low noise trims, acoustic lagging (insulation), thick-walled pipe work as and where necessary to comply with CPCB noise standards for industrial zones.
II. All pipes and valves downstream of pressure control valve (including pressure control valve) will be one schedule higher than needed by pressure considerations to attenuate the noise.
III. By providing padding at various locations to avoid rattling due to vibration;
IV. Providing noise proof cabins to operators where remote control for operating noise generating equipment is feasible;
V. The air compressor, process air blower, pneumatic valves should be provided with acoustic enclosure;
VI. In all the design/installation precautions are taken as specified by the manufacturers with respect to noise control shall be strictly adhered to;
VII. High noise generating sources shall be insulated adequately by providing suitable enclosures;
VIII. Design and layout of building to minimize transmission of noise, segregation of particular items of plant and to avoid reverberant areas;
IX. Use of lagging with attenuation properties on plant components / installation of sound attenuation panels around the equipment;

The noise control system will be designed to form an integral part of the plant

4.6 Soil Environment

There is no discharge of waste water on to land. The solid wastes shall be segregated according to their properties, packed, transported and stored in a separate impervious storage area demarcated for them. They will then be disposed off according to the requirements of statutory authorities. Hence implementation of project will not have any major effect on the soil environment.

Mitigation

- No toxic /waste water will be disposed directly on land;
- Vegetation will be done on uncovered soil.

4.7 Solid & Hazardous waste Management:

Solid waste and Hazardous waste will be store separately. Solid waste is the biodegradable in nature and hence will be given to farmer, to used as manure in the green belt whereas Hazardous waste i.e used oil of about 1.0 KL per year will be sold to the authorized vendor. Solid waste generation and its management is given in the below table:

Table 4.9: Solid waste Management

Name of the Solid Waste	Quantity	Management
Boiler Ash	Existing: 25 Ton/Day Proposed: 35 Ton/Day	Boiler ash will be used for the Brick manufacturing
ETP Sludge	Existing: 2 Ton/Day Proposed: 2.8 Ton/Day	ETP Sludge will be given to the farmers and used in the green belt area
Bagasse	Existing: 1400 Ton/Day Proposed: 1960 Ton/Day	Bagasse will be used as fuel in the boiler
Molasses	Existing: 216 Ton/Day Proposed: 302 Ton/Day	Molasses will be stored in proper silos and supplied to the nearby distilleries
Press mud	Existing: 195 Ton/Day Proposed: 273 Ton/Day	Press mud will be given to the farmers

4.8 Odor Management :

Sources of odor

- Typical compounds generating odour in sugar industry are acetic acid, ethyl alcohol / butyl alcohol, bacterial decomposition of organic matter (stale cane smell) & bacterial decomposition of sulphur compounds (H2S).
- Causes of odour are stale cane, bad mill sanitation, bacterial growth in the interconnecting pipes & unattended drains etc.

Remedial measures

- Better cane management to avoid staling of sugar
- Use of mill sanitation bio-cides to minimize the growth of aerobic / anaerobic micro–organisms
- Steaming of major pipelines & Proper cleaning of drains
- Regular use of Chlorine dioxide in the drains that destroy the odour at the source by avoiding the growth of sulphur decomposing micro-organisms to control H_2S generation**.**
    - $5H2S + 8\ ClO2 \rightarrow 5H2SO4 + 8\ Cl- + 4H2O$

4.9 Ecology Environment

- Wet Scrubber had already and ESP will be provided to the boiler stack to reduce the emission of particulate matter and SOx
- Dust collectors will be provided in the areas of loading and unloading.
- The industry will adopt the ZLD policy the ETP scheme.
- Boiler ash, Press mud, ETP sludge, will be sold to the farmer.
- Greenbelt will be developed within the factory premises to promote habitat for various birds and small fauna and insects.
- Boiler is based on the renewable Biomass which decrees the dependency on the Non-renewable sources.

4. 10 Impact on Biological Environment

There are no National Parks and Protected Sanctuaries within the study area, no impact is anticipated on the same. For estimation the adverse impact of the proposed project on sensitive area, air quality modeling has done and Air quality modeling results shows that no adverse impact on sensitive area.

In spite of there being no impact, efforts will be made not only to maintain the ecological balance of the surroundings but also to improve upon the same.

The attributes that are identified to describe ecology are animals, birds, fish, field crops, threatened species, natural vegetation etc. The study area does not have any identified endangered species, Forest, National Park, Sanctuaries and hence there is no question of any adverse impact on the same.

Emphasis will be placed on social forestry programme wherein tree plantation would be undertaken within the plant premises. The tree plantation under this programme would help in absorbing atmospheric heat, noise as well as pollutants.

Hence, all efforts will be put-up by the project proponent to maintain the ecological balance and improve the environment in terms of ecology and Green Belt development.

Industry will follow the zero discharge norms.Hence, no adverse impacts on surrounding ecology.

4.11Impact on Socio-Economic Environment

Critically analysing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate both positive and negative impacts of the proposed project in the region that are stated below.

4.12 Positive Impacts

4.12.1.1 No Rehabilitation

The villages and their inhabitants at the project site will not be disturbed from their settlements due to the proposed project. Therefore neither villages nor any part of village or any hamlet will be disturbed during the project. As the project operations will not disturb or relocate any village or settlement, no adverse impact is anticipated on any human settlement.

4.12.1.2 Employment potential –skilled; semi-skilled and unskilled:

- As per the survey it has been observed that the population in general do not have opportunities of earning from employment and the non-worker population is higher in the region so the project in general will require total manpower of about 350 persons for the proposed project which will include all Categories of unskilled, semiskilled, skilled personnel and contract labour.
- The proposed project will help to increase in demand of ancillary services including hotels, lodges, retail shops, banks, automobile workshops, school, health care centres, public transport and other logistics services.
- This will help in upliftment of local people in terms of economy and social welfare and will lead economic upliftment of the area.

4.12.1.3 Indirect Employment Potential

The project might be creating more demand for cane cultivating people and labor and business people. The project shall have positive impact on demand for the land value, which will generate more income for the local people.

4.12.1.4 No burden in the existing Infrastructure Facilities

Local work force will be given first preference in the activity due to which influx of the outsiders is not envisaged or it will be very minimal. Thus, there will not be the necessity of provision of housing facility for the local workers and not stressing on the existing civic amenities of the area. If sufficient number of local workers will not be available, then workers from outside will be engaged. For the outside workers if any, housing arrangement and the facilities will be provided at the project site. The projects will benefit the local people due to the civil construction and transportation companies.

4.12.1.5 Improvement in Infrastructure

The activity will benefit the local people due to provision of more infrastructural facilities such as developments of approach routes within the village area, street light, health facilities etc.

4.12.2 Adverse Impacts:

4.12.2.1 Impacts on Human Health

As discussed adequate air, water and noise pollution control measures in compliance to the regulatory standards will be provided in the proposed project.

- Boiler ash and ETP sludge will be collected and given to the farmers. Molasses will be sold and press mud will be given to the farmers.
- Waste water from domestic use and industrial use will be treated in STP and ETP respectively and after treatment the water will used in green belt development, floor washing and sprinkling
- The overall impact on human health will be insignificant during operation phase.

4.12.2.2 Impacts on Agriculture

Productivity of crops may be deteriorated affecting the agriculture based livelihood due to the pollution arising out of the project activity, if proper mitigation measures are not implemented.

Table: 4.10 Qualitative Effects on Socio-economic Environment

Parameter	Local	Regional	Direct	Indirect	Reversible	Irreversible
Employment	+	●	+	+	●	+
Income	+	●	+	+	●	+
Transport	+	+	+	+	●	+
Education	+	●	+	●	●	+
Medical facilities	+	●	+	●	●	+
Communication	+	+	+	●	●	+
Sanitation	-	●	-	●	●	-
Housing	+	●	+	●	●	+
Health	-	●	-	-	●	-
Recreation	+	+	●	+	●	+
Agriculture	-	●	-	-	●	-
Cost of living	+	●	●	-	●	+
Business	+	+	+	●	●	+
Per Capita Income	+	+	+	●	●	+

Pollution	-	•	-	•	•	•

+ : Positive

- : Negative

• : Insignificant

4.12.3 Mitigation Measures of Socio Economic Environment:

Adequate measures have been envisaged in the project design to control air pollution. Proposed adequate & effective control measures will be provided to mitigate the impacts

- Awareness programs shall be arranged on health, hygiene and sanitation
- Periodic health checkup camps, shall be organized by project authority for villagers, contract laborers, employees and their family
- Apart from the normal health check up, emphasis shall also be given to prevent specific diseases originating due to emission of different pollutants such as respiratory aliments, skin problems, water borne diseases, hearing abilities etc.
- Job oriented training courses must be organized through industrial / technical training institutions for educated youth like electrical, tailoring, plumbing, type writing, shorthand and machine repairing, welding fabrication, and other skill developing trades
- Whenever necessary, collaboration between project authority and local bodies will be done on regular basis with an objective to build and maintain a good relationship which is necessary for smooth functioning of the project as well as progress and welfare of the people in the study area
- Awareness programs will be taken to make people aware about the environmental protection, need of water conservation etc.
- At the work place, first aid facilities shall be maintained at a readily accessible place with necessary appliances including sterilized cotton wool etc. Ambulance facility shall also be provided during emergency
- Sufficient supply of water fit for drinking shall be provided at suitable places.
- Sanitary facilities shall be provided at accessible place within the work zone and kept in a good condition.

4.13 Impact on Hydrogeology

During the construction phase of proposed project, water will be required for construction activities at site. This requirement of water will be drawn from the ground water. The

exploitation of ground water resources during the construction phase will not have a significant impact on the ground water availability in the area. Drinking water facility will be provided to the construction workers and waste water will be discharged into septic tanks via soak pits. Also there will be no constructional discharge from the site which can have any impact on the water quality. There is no surface water body within the core zone as well as there will be no waste water discharge outside the premises. Thus, it is clear that due to the construction activities there will be no impact on the surface water environment.

Water requirement of the plant is proposed to be met by ground water & recycled water. The proposed molasses based distillery would have "Zero Effluent discharge". Thus, it is clear that during operational activities there will be no impact on the ground/surface water environment.

4.14Risk Assessment

Detailed risk assessment study is given in **Chapter 7.**

4.15Cultural Environment

Theworkersworkingintheindustryareofdifferentcultureandreligion.Theinteractionand interminglingofallthesepeoplewillimprovetheunderstandingofvariouscultures.Thiswill definitely improve and strengthen friendliness, brotherhood and unity among them.

4.16 Indirect Impacts

4.16.1 Impacts on Public Health and Safety

The discharge of waste materials (stack emission, wastewater and solid wastes), from process operations can have potential impact on public safety and health. The impact due to the emission from the proposed plant will be insignificant as the mitigation measures delineated in EMP are strictly followed. The public health and safety is dependent on the effective implementation of control measures suggested for pollution control.

4.16.2 Management of Public Interests

Based on the analysis of the socio-economic profile of the study area along with the prediction and evaluation of likely impacts arising out of the proposed activity, it has been possible to prepare a feasible environmental management plan. It is felt that this would help in minimizing the adverse impacts on the socio-economic environment to a considerable extent, while at the same time addressing to large extent the aspirations of the community. For the recruitment of semi-skilled and un-skilled workers particularly during construction, preference shall be given to the local people.

The project proponent is equally conscious for socio-economic development and is committed to raise quality of life and social well-being of communities where it operates. Its CSR initiatives

have been prioritized on local needs, which focus on Health, Education, Sustainable Livelihood, Social Mobilization, Infrastructure Development, Water Harvesting, Agriculture, and Environment Conservation.



CHAPTER -5
ANALYSIS OF ALTERNATIVE SITE

5.0 Introduction

M/s. Indian Sucrose Limited was established in 1990 and came in operational phase in 1991 with capacity 2500 TCD with cogeneration power plant of capacity 7.5 MW. The capacity of the plant was increased to 5000 TCD along with 19.5 MW Cogeneration power plant in year 2005.The Owner of the unit has proposed to expand the capacity to 12000 TCD along with Co-generation power plant to 59.5 MW at Village- Chak Allabaksh and MahiuldinpurDalel, Tehsil-Mukerian Distt.-Hoshiarpur, Punjab. Sugarcane will be used as Raw Material for the production of sugar which is meeting from local markets. The project is planned to be established over an area 21.46 Hactare. The raw material i.e sugarcane required for sugar mill will be met out from local market. The bagasse produced from the sugar mill will be used as fuel for boilers. The transportation cost for molasses/bagasse will be reduced and project is viable. Therefore existing site is more suitable for the capacity expansion of the project from 5000TCD unit along with 19.5MW cogeneration power plant to 12000TCD unit along with 59.5MW cogeneration power plant.

5. 1 Alternative for Technology and other Parameters

Technology Alternative:

The existing technology used by M/s Indian Sucrose Limited for manufacturing of sugar is one of the best and proven technology: hence no alternative technology has been analyzed.

Site Alternatives:

The site for the said Sugar Mill has been selected on account of following reasons:-

A) Land Requirement: The land is sufficient for the proposed expansion of the sugar mill .Availability of Required Land for the proposed project is within the existing sugar unit premises and area required is about 21.46 hectare. **Hence alternative site was not studied.**

B) Raw material source, availability: The main raw material i.e. sugarcane is required for production of sugar is easily available from the nearby area.

C) Site Approach: The site is approachable by the nearest railway station namely Mukerian, Railway Station is 3km (approx) from project site. The nearest airport is Sri Guru Ram Das Jee International Airport Amritsar Airport is 95km (approx) from the project site. The National Highway NH-1A is at a distance of 0.5km from the project site. The state highway SH- 25 is at a distance 2.55 km from the project site.

D) Topography / Nature of Terrain: The existing site has plain topography and doesn't require cutting or filling and subsequently doesn't entail huge manpower and machinery.

E) Availability of water: The water will be sourced through borewell.

F) Environmental Considerations

The site selected is feasible w.r.t following listed points below:--

- No forest land involved at site.
- No displacement of people
- No requirement of cutting of trees
- No cultivable land involved at site.
- Away from critically polluted area
- Away from archeological sites.
- Away from core zone of biosphere reserve.
- Away from tiger reserve/elephant reserve/turtle nestling grounds
- Away from national park and wildlife sanctuaries



CHAPTER -6
ENVIRONMENTAL MONITORING PROGRAMME

6.0 Introduction

Environmental Monitoring is an essential tool for sustainable development and ensuring effective most implementation and monitoring of Environmental management plan and mitigation measures. It is also very essential to keep updating the environmental management system for effective conservation of environment along with ongoing project activities/operation. The environment monitoring plan enables environmental management system with early sign of need for additional action and modification of ongoing actions for environment management, improvement and conservation. It provides exact idea for mitigation measures to be implemented as it is linked with actual distraction of environmental quality due to the project activities. Hence, monitoring of critical parameters of environmental quality is very essential in the routine activity schedule of project operation. An Environmental Monitoring Program shall be scheduled for the following major objectives:

- Assessment of the changes in environmental conditions, if any, during the project operation/activities.
- Monitoring and tracking the effectiveness of Environment Management Plan and implementation of mitigation measures planned.
- Identification of any significant adverse transformation in environmental condition to Plan additional mitigation measures.

6.1 Monitoring Points / Locations and Components

The environmental monitoring points shall be decided considering the environmental impacts likely to occur due to the operation of proposed project as the main scope of monitoring program is to track, timely and regularly, the change in environmental conditions and to take timely action for protection of environment. The monitoring points/location and components of significance shall be as per **Table 6.1.**

Table 6.1: Post Project Environmental Monitoring Locations

S. No.	Environmental Components	Monitoring Points/ Location
1.	Ambient Air	Two station in project site including stack and two in nearest settlement
2.	Water Ground Water	Water quality of the area was studied at minimum 2 location near project site
	Waste water	• Wastewater from all sources. • Wastewater at different stages of Effluent

		treatment Process.
3.	Emission	• At Source of emission (Stacks) from Sampling Port/ D.G. Sets. • Process emission in workplace area/ plants (for each area/plant minimum 2 locations and 1 location outside plant area near vent)
4.	Noise	• At all source and outside the Plant area. • At least 5 points near/around the plant Boundary.
5.	Greenbelt/Vegetation Cover	• Greenbelt Area at Boundary and Garden
6.	Solid Waste	• Process dust generated and collected as Solid wastes. • Domestic Biological Solid waste before manuring and prepared manure/compost.
7.	Soil	• At least 2locations from area near Solid/ hazardous waste storage/ Dumping Area. • At least four locations from Greenbelt and area where manure of biological waste is applied.

6.2 Monitoring Parameters, Methodologies and Frequency

Monitoring of environmental samples shall be done as per the guidelines provided by MoEF & CC/ CPCB/ PPCB mention in the above **Fig 6.2**. The monitoring parameters and frequency of monitoring shall be as per **Table6.2.**

Table 6.2 Post Project Environmental Monitoring Parameter and Frequency

Sr.No	Item	Parameters	Frequency	methodology
1.	Ambient Air quality	PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO, etc.	Twice in a week and 24 hourly at each station.	IS-5182, CPCB (guidelines for measurement of Ambient Air Pollutants).
2.	Stationary Emission from Stack	PM, SO_2, NO_x	Quarterly	Is-11255 (guidelines for stack emission)
3.	Process emission	Fugitive gaseous pollutant expected.	Quarterly	
4.	Surface water and ground water	pH, Temperature, EC, Turbidity, Total Dissolved Solids, Calcium, magnesium,	Once in three months	Standard limits: Surface-IS:2296 Ground-IS 10500 Sampling

		Total hardness, Total Alkalinity, Chlorides, Sulphates, Nitrates, DO, COD, BOD, oil and Grease, Metals expected in effluent.		Methodology-IS: 3025
5	Liquid Effluent	Physical and chemical parameters with organic content	Once in every week	Sampling Methodology-IS: 3025
6.	Noise	Equivalent noise level- dB (A)	Once in a week	IS:9989(Assessment of noise with respect to community response)
7.	Soil and Solid wastes	pH, Humidity, Texture, Organic matter, N, P, K, Sulphate, Calcium, Magnesium, C:N ratio.	Quarterly	Sampling Methodology and Analysis- IS: 2720
8.	Greenbelt	Number of plantation (Units), Number of Survived plants/ trees, Number of poor plants/ Trees	Ongoing- round the year	
9.	Environmental Audit	As per Direction of ISO 14001	Once in a Year	

6.3 Reporting and Documentation

The records of the monitoring program shall be kept on regular basis for all aspects of the monitoring. Separate records for water, wastewater, solid wastes, air emission, soil and manure / compost shall be prepared and preserved regularly. Immediately upon the completion of monitoring as per the planned schedule, report shall be prepared and necessary documents shall be forwarded to the concerned person. Methodology of monitoring (sampling and analysis) shall be prepared as separate documents as SOP (Standard Operating Procedure) wherever required. The records showing results / outcome of the monitoring programs shall be prepared as per the requirement of the schedule mentioned above. Regularly, these documents and records shall be reviewed for necessary improvement of the monitoring plan / mitigation measures / environmental technologies as well as for necessary actions of Environmental Management Cell.

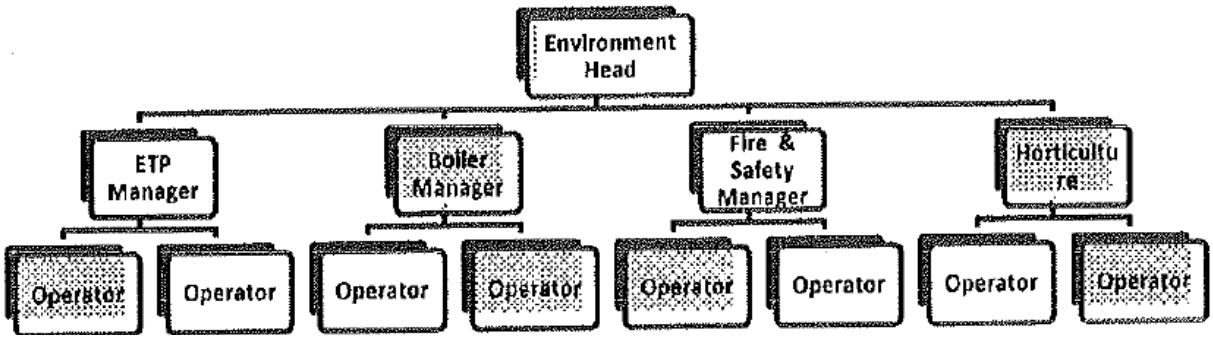


Fig 6.1: Environment management Cell

6.4 Budgets for Environmental Management Plan

S. No.	Particulars		Initial Cost (Crore)	Recurring Cost (Lakh)
1.	Air Pollution Control ESP		1.90	20
2.	Wastewater Treatment	Modification of ETP	0.40	5
		STP	0.30	3
3.	Fire and Safety		0.15	3
4.	Green Belt Development		0.34	4
5.	Rain Water Harvesting Plan		0.70	3
	Total		**3.79**	**38**

CHAPTER -7

ADDITIONAL STUDIES

7.0 PREAMBLE

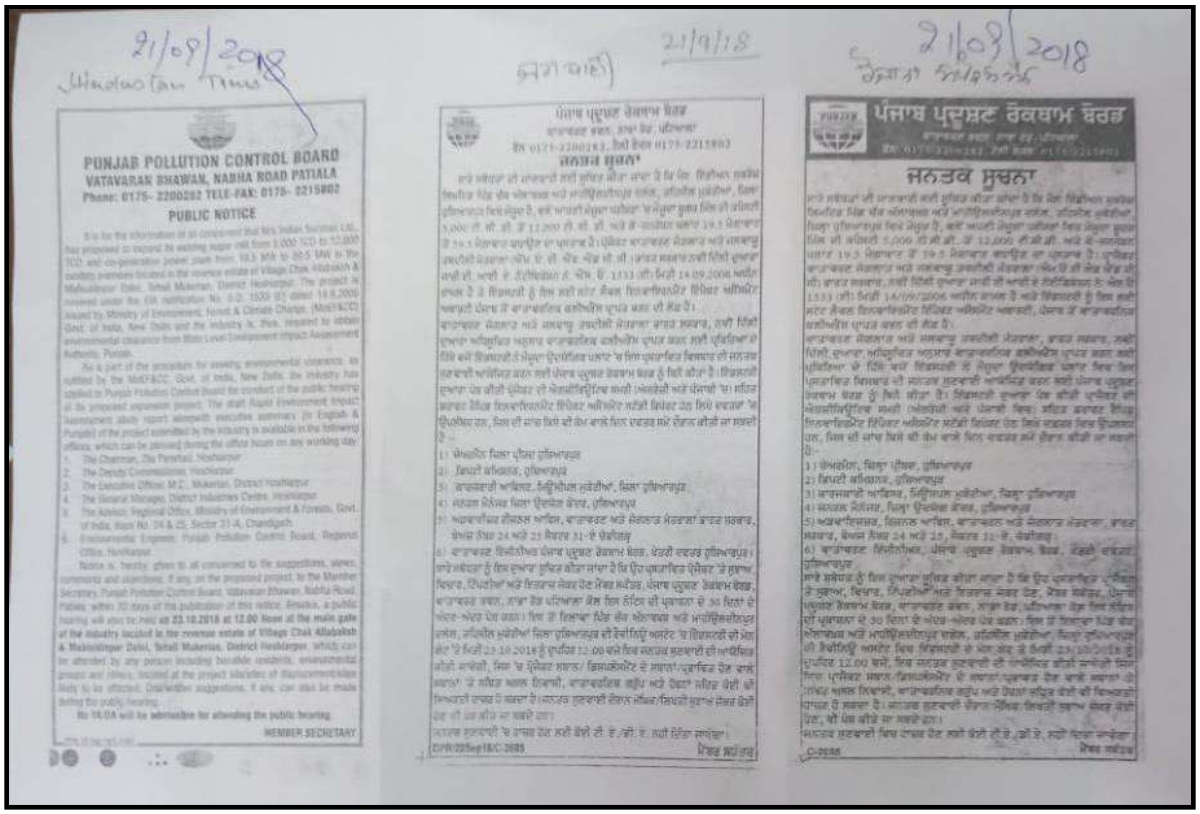
In this chapter following issues are described and have been carried out by **M/s Indian Sucrose Limited**

- Public consultation/Public Hearing
- Hazard Identification and Risk Assessment

7.1 Public Consultation

Public hearing is a very significant part of the process of public participation envisaged under guidelines issued by MoEF&CC, Government of India. It facilitates involvement of all the stake holders of the project which is essential for ensuring smooth running of project and benefitting all section of society in the process of economic development of the region. The public hearing for the expansion from 5000 TCD along with 19.5MW Cogeneration power plant to 12000 TCD along with 59.5MW Cogeneration power plant at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt.-Hoshiarpur, by the M/s Indian Sucrose Ltd was conducted on the 23 Oct 2018 (12 Noon) at the project site with prior approval from Punjab State Pollution Control Board.

7.2.1 Public Hearing Advertisement


21/09/2018
Hindustan Times

PUNJAB POLLUTION CONTROL BOARD
VATAVARAN BHAWAN, NABHA ROAD PATIALA
Phone: 0175- 2200202 TELE-FAX: 0175- 2215802

PUBLIC NOTICE

MEMBER SECRETARY

21/9/18

ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ

ਜਨਤਕ ਸੂਚਨਾ

21/09/2018

ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ

ਜਨਤਕ ਸੂਚਨਾ

7.2.2 Public Hearing Photograph








7.2.3 Minutes of Public Hearing

PUNJAB POLLUTION CONTROL BOARD
VATAVARAN BHAWAN,PATIALA

Tel. Fax : 0175- 2215802
PBX : 2200282, 2200557
Web: http:// www.ppcb.gov.in

No. EE (Mega)/2018/_____ Dated_____

To

The Member Secretary,
State Level Environment Impact Assessment Authority, Pb.
O/o Punjab Pollution Control Board,
Patiala.

Subject: **Proceedings of the public hearing conducted on 23.10.2018 in connection with application filed by M/s Indian Sucrose Ltd., for obtaining environmental clearance under EIA Notification dated 14/9/2006 for expansion of the existing sugar mill from 5,000 TCD to 12,000 TCD and for co-generation power plant from 19.5 MW to 59.5 MW in the existing premises located in the revenue estate of Village Chak Alabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District Hoshiarpur.**

It is intimated that the subject cited industry has applied for obtaining environmental clearance as required under the EIA notification dated 14.9.2006 for the proposed expansion of the existing sugar mill from 5,000 TCD to 12,000 TCD and co-generation power plant from 19.5 MW to 59.5 MW in the existing premises located in the revenue estate of Village Chak Allabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District Hoshiarpur. The project is covered under EIA notification No. 1533 (E) dated 14.9.2006 and the 'Terms of Reference' for preparing draft EIA study report for the said project have been prescribed by the State Environment Impact Assessment Authority (SEIAA), Punjab. Accordingly, the company had submitted draft rapid EIA study report alongwith summary report of the same to the Board and requested for conduct of the public hearing for the proposed expansion project.

In compliance to provision of the EIA notification dated 14.9.2006, the Board issued public notice of 30 days in two daily newspapers for getting responses from public and intimating time, date & venue of the public hearing fixed for 23.10.2018 at the project site. A copy of the said notices is enclosed herewith as **Annexure-I**. The public announcements and banners were displayed in the vicinity/nearby villages to give the wide publicity of the public hearing by the Board. Thereafter, public hearing for the said project was conducted on 23.10.2018. The public hearing process was presided over by the Additional Deputy Commissioner (Gen), Hoshiarpur & supervised in the presence of Environmental Engineer, PPCB, Regional Office, Hoshiarpur and Environmental Engineer (Mega), Punjab Pollution Control Board, Patiala. The public hearing was attended by 112 persons and entire process of the said hearing was videographed. A copy of the attendance sheet containing the details of persons, who attended the said hearing alongwith copy of the CD containing video recording, is enclosed herewith as **Annexure-II & III** respectively.

M/s Indian Sucrose Ltd.,
Vill. Chak Allabaksh & Mahiuldinpur Dalel, Mukerian, Distt. Hoshiarpur

-2-

The summary of the public hearing proceedings reflecting all the views and concerns expressed during the public hearing, duly signed by the Additional Deputy Commissioner (Gen), Hoshiarpur is enclosed herewith as **Annexure-IV** further necessary action at the end of the SEIAA, Punjab.

DA/- As above

Environmental Engineer (Mega)
For Member Secretary

Endst. No. _____ **Dated**_____

A copy of the above alongwith a copy of proceedings is forwarded to the Deputy Commissioner, Hoshiarpur for information and necessary action. He is requested to get a copy of the proceeding of the public hearing displayed conspicuously at his office.

DA/- As above

Environmental Engineer (Mega)
For Member Secretary

Endst. No. 367-70 **Dated** 3/11/2019

A copy of the above alongwith a copy of proceedings is forwarded to the following for information and necessary action:

1. The Senior Environmental Engineer, Punjab Pollution Control Board, Zonal Office, Jalandhar.
2. The Environmental Engineer (Computers) Punjab Pollution Control Board, Head Office, Patiala for displaying the proceedings of public hearing on the web site of the Board.
3. The Environmental Engineer, Punjab Pollution Control Board, Regional Office, Hoshiarpur. He is also requested to get a copy of the proceeding of the public hearing displayed conspicuously at his office. Also, a copy of the proceedings may be sent to the concerned Zila Parishad and Village Panchayat for displaying the same conspicuously.
4. M/s Indian Sucrose Ltd., Village Chak Allabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District Hoshiarpur. The industry is advised to submit final EIA report after incorporating the grievances/suggestions raised by the public in the public hearing to the SEIAA, Punjab for obtaining the environmental clearance, before starting any developmental activities on its proposed expansion project.

DA/- As above.

Environmental Engineer (Mega)
For Member Secretary

21/09/2018
Hindustan Times

PUNJAB POLLUTION CONTROL BOARD

VATAVARAN BHAWAN, NABHA ROAD PATIALA
Phone: 0175- 2200282 TELE-FAX: 0175- 2215802

PUBLIC NOTICE

It is for the information of all concerned that M/s Indian Sucrose Ltd., has proposed to expand its existing sugar mill from 5,000 TCD to 12,000 TCD and co-generation power plant from 19.5 MW to 59.5 MW in the existing premises located in the revenue estate of Village Chak Allabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District Hoshiarpur. The project is covered under the EIA notification No. S.O. 1533 (E) dated 14.9.2006 issued by Ministry of Environment, Forest & Climate Change, (MoEF&CC) Govt. of India, New Delhi and the industry is, thus, required to obtain environmental clearance from State Level Environment Impact Assessment Authority, Punjab.

As a part of the procedure for seeking environmental clearance, as notified by the MoEF&CC, Govt. of India, New Delhi, the industry has applied to Punjab Pollution Control Board for conduct of the public hearing of its proposed expansion project. The draft Rapid Environment Impact Assessment study report alongwith executive summary (in English & Punjabi) of the project submitted by the industry is available in the following offices, which can be perused during the office hours on any working day:

1. The Chairman, Zila Parishad, Hoshiarpur
2. The Deputy Commissioner, Hoshiarpur
3. The Executive Officer, M.C., Mukerian, District Hoshiarpur
4. The General Manager, District Industries Centre, Hoshiarpur
5. The Advisor, Regional Office, Ministry of Environment & Forests, Govt. of India, Bays No. 24 & 25, Sector 31-A, Chandigarh.
6. Environmental Engineer, Punjab Pollution Control Board, Regional Office, Hoshiarpur.

Notice is, hereby, given to all concerned to file suggestions, views, comments and objections, if any, on the proposed project, to the Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala, within 30 days of the publication of this notice. Besides, a public hearing will also be held on **23.10.2018 at 12.00 Noon at the main gate of the industry located in the revenue estate of Village Chak Allabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District Hoshiarpur**, which can be attended by any person including bonafide residents, environmental groups and others, located at the project site/sites of displacement/sites likely to be affected. Oral/written suggestions, if any, can also be made during the public hearing.

No TA/DA will be admissible for attending the public hearing.

MEMBER SECRETARY

DPR/ 20 Sep 18/C-2506

21/08/2018

ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ

ਵਾਤਾਵਰਣ ਭਵਨ, ਨਾਭਾ ਰੋਡ, ਪਟਿਆਲਾ
ਫੋਨ: 0175-2200282, ਟੈਲੀ ਫੈਕਸ: 0175-2215802

ਜਨਤਕ ਸੂਚਨਾ

ਸਾਰੇ ਸਬੰਧਤਾਂ ਦੀ ਜਾਣਕਾਰੀ ਲਈ ਸੂਚਿਤ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ਕਿ ਮੈਸ: ਇੰਡੀਅਨ ਸੁਕਰੋਜ਼ ਲਿਮਟਿਡ ਪਿੰਡ ਚੱਕ ਅੱਲਾਬਖਸ਼ ਅਤੇ ਮਾਹੀਉਲਦੀਨਪੁਰ ਦਲੇਲ, ਤਹਿਸੀਲ ਮੁਕੇਰੀਆਂ, ਜ਼ਿਲ੍ਹਾ ਹੁਸ਼ਿਆਰਪੁਰ ਵਿਖੇ ਮੌਜੂਦ ਹੈ, ਵਲੋਂ ਆਪਣੀ ਮੌਜੂਦਾ ਪਰੀਸਰਾਂ ਵਿਚ ਮੌਜੂਦਾ ਸ਼ੂਗਰ ਮਿੱਲ ਦੀ ਕਪੈਸਟੀ 5,000 ਟੀ.ਸੀ.ਡੀ. ਤੋਂ 12,000 ਟੀ.ਸੀ.ਡੀ. ਅਤੇ ਕੋ-ਜਨਰੇਸ਼ਨ ਪਲਾਂਟ 19.5 ਮੈਗਾਵਾਟ ਤੋਂ 59.5 ਮੈਗਾਵਾਟ ਵਧਾਉਣ ਦਾ ਪ੍ਰਸਤਾਵ ਹੈ। ਪ੍ਰਾਜੈਕਟ ਵਾਤਾਵਰਣ ਜੰਗਲਾਤ ਅਤੇ ਜਲਵਾਯੂ ਤਬਦੀਲੀ ਮੰਤਰਾਲਾ (ਐਮ.ਓ.ਈ.ਐਫ ਐਂਡ ਸੀ.ਸੀ) ਭਾਰਤ ਸਰਕਾਰ, ਨਵੀਂ ਦਿੱਲੀ ਦੁਆਰਾ ਜਾਰੀ ਈ.ਆਈ.ਏ ਨੋਟੀਫਿਕੇਸ਼ਨ ਨੰ: ਐਸ.ਓ 1533 (ਈ) ਮਿਤੀ 14/09/2006 ਅਧੀਨ ਸ਼ਾਮਲ ਹੈ ਅਤੇ ਇੰਡਸਟਰੀ ਨੂੰ ਇਸ ਲਈ ਸਟੇਟ ਲੈਵਲ ਇਨਵਾਇਰਮੈਂਟ ਇੰਪੈਕਟ ਅਸੈਸਮੈਂਟ ਅਥਾਰਟੀ, ਪੰਜਾਬ ਤੋਂ ਵਾਤਾਵਰਨਿਕ ਕਲੀਅਰੈਂਸ ਪ੍ਰਾਪਤ ਕਰਨ ਦੀ ਲੋੜ ਹੈ।

ਵਾਤਾਵਰਣ ਜੰਗਲਾਤ ਅਤੇ ਜਲਵਾਯੂ ਤਬਦੀਲੀ ਮੰਤਰਾਲਾ, ਭਾਰਤ ਸਰਕਾਰ, ਨਵੀਂ ਦਿੱਲੀ ਦੁਆਰਾ ਅਧਿਸੂਚਿਤ ਅਨੁਸਾਰ ਵਾਤਾਵਰਨਿਕ ਕਲੀਅਰੈਂਸ ਪ੍ਰਾਪਤ ਕਰਨ ਲਈ ਪ੍ਰਕਿਰਿਆ ਦੇ ਹਿੱਸੇ ਵਜੋਂ ਇੰਡਸਟਰੀ ਨੇ ਮੌਜੂਦਾ ਉਦਯੋਗਿਕ ਪਲਾਂਟ ਵਿਚ ਇਸ ਪ੍ਰਸਤਾਵਿਤ ਵਿਸਥਾਰ ਦੀ ਜਨਤਕ ਸੁਣਵਾਈ ਆਯੋਜਿਤ ਕਰਨ ਲਈ ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ ਨੂੰ ਬਿਨੈ ਕੀਤਾ ਹੈ। ਇੰਡਸਟਰੀ ਦੁਆਰਾ ਪੇਸ਼ ਕੀਤੀ ਪ੍ਰਾਜੈਕਟ ਦੀ ਐਗਜ਼ੀਕਿਊਟਿਵ ਸਮਰੀ (ਅੰਗਰੇਜ਼ੀ ਅਤੇ ਪੰਜਾਬੀ ਵਿਚ) ਸਹਿਤ ਡਰਾਫਟ ਰੈਪਿਡ ਇਨਵਾਇਰਮੈਂਟ ਇੰਪੈਕਟ ਅਸੈਸਮੈਂਟ ਰਿਪੋਰਟ ਹੇਠ ਲਿਖੇ ਦਫ਼ਤਰ ਵਿਚ ਉਪਲਬਧ ਹਨ, ਜਿਸ ਦੀ ਜਾਂਚ ਕਿਸੇ ਵੀ ਕੰਮ ਵਾਲੇ ਦਿਨ ਦਫ਼ਤਰ ਸਮੇਂ ਦੌਰਾਨ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ:-

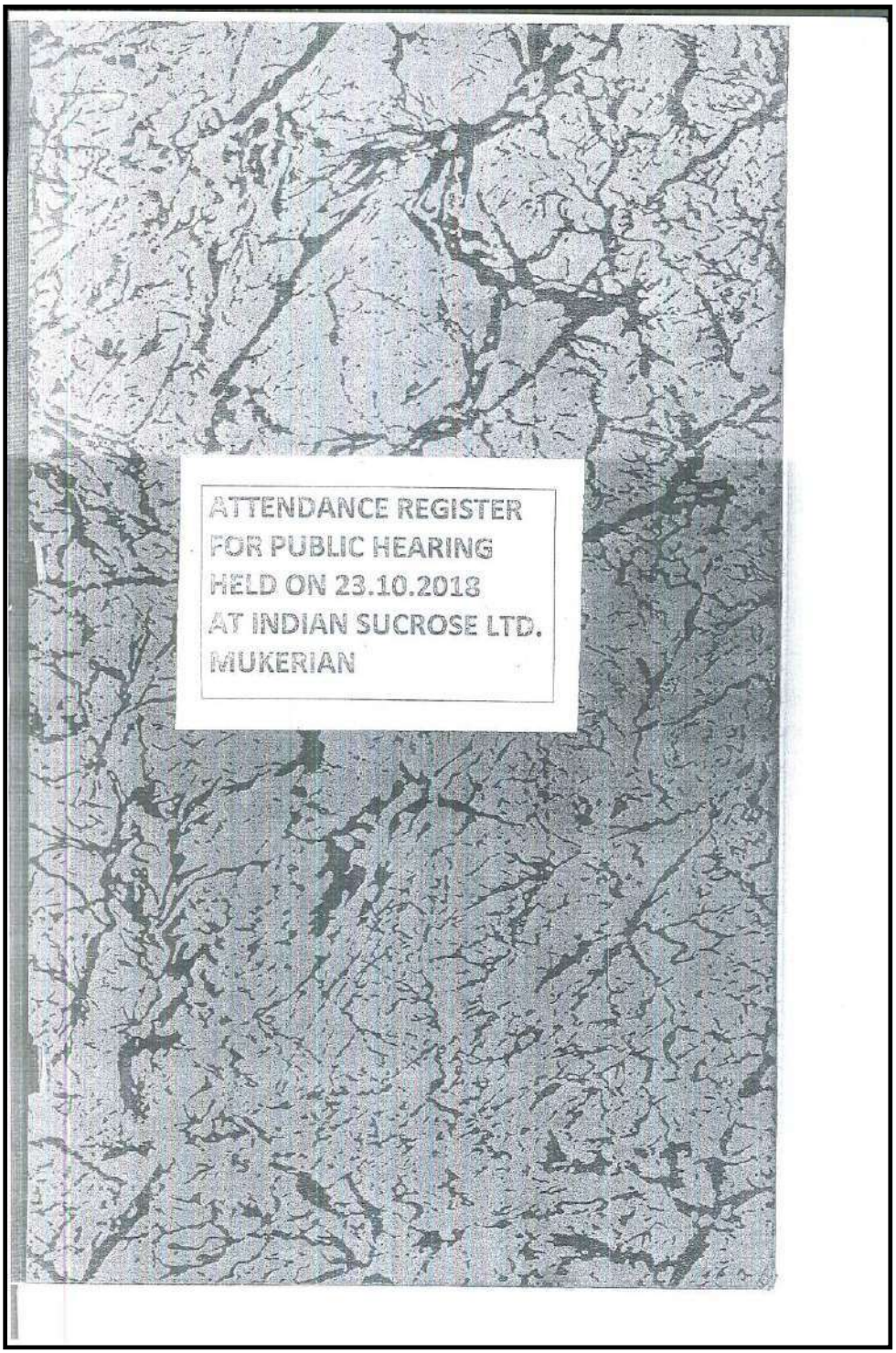
1) ਚੇਅਰਮੈਨ, ਜ਼ਿਲ੍ਹਾ ਪ੍ਰੀਸ਼ਦ, ਹੁਸ਼ਿਆਰਪੁਰ
2) ਡਿਪਟੀ ਕਮਿਸ਼ਨਰ, ਹੁਸ਼ਿਆਰਪੁਰ
3) ਕਾਰਜਕਾਰੀ ਆਫਿਸਰ, ਮਿਊਂਸਪਲ ਮੁਕੇਰੀਆਂ, ਜ਼ਿਲ੍ਹਾ ਹੁਸ਼ਿਆਰਪੁਰ
4) ਜਨਰਲ ਮੈਨੇਜਰ, ਜ਼ਿਲ੍ਹਾ ਉਦਯੋਗ ਕੇਂਦਰ, ਹੁਸ਼ਿਆਰਪੁਰ
5) ਅਡਵਾਇਜ਼ਰ, ਰਿਜ਼ਨਲ ਆਫਿਸ, ਵਾਤਾਵਰਨ ਅਤੇ ਜੰਗਲਾਤ ਮੰਤਰਾਲਾ, ਭਾਰਤ ਸਰਕਾਰ, ਬੇਅਜ ਨੰਬਰ 24 ਅਤੇ 25, ਸੈਕਟਰ 31-ਏ, ਚੰਡੀਗੜ੍ਹ।
6) ਵਾਤਾਵਰਣ ਇੰਜੀਨੀਅਰ, ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ, ਖੇਤਰੀ ਦਫ਼ਤਰ, ਹੁਸ਼ਿਆਰਪੁਰ

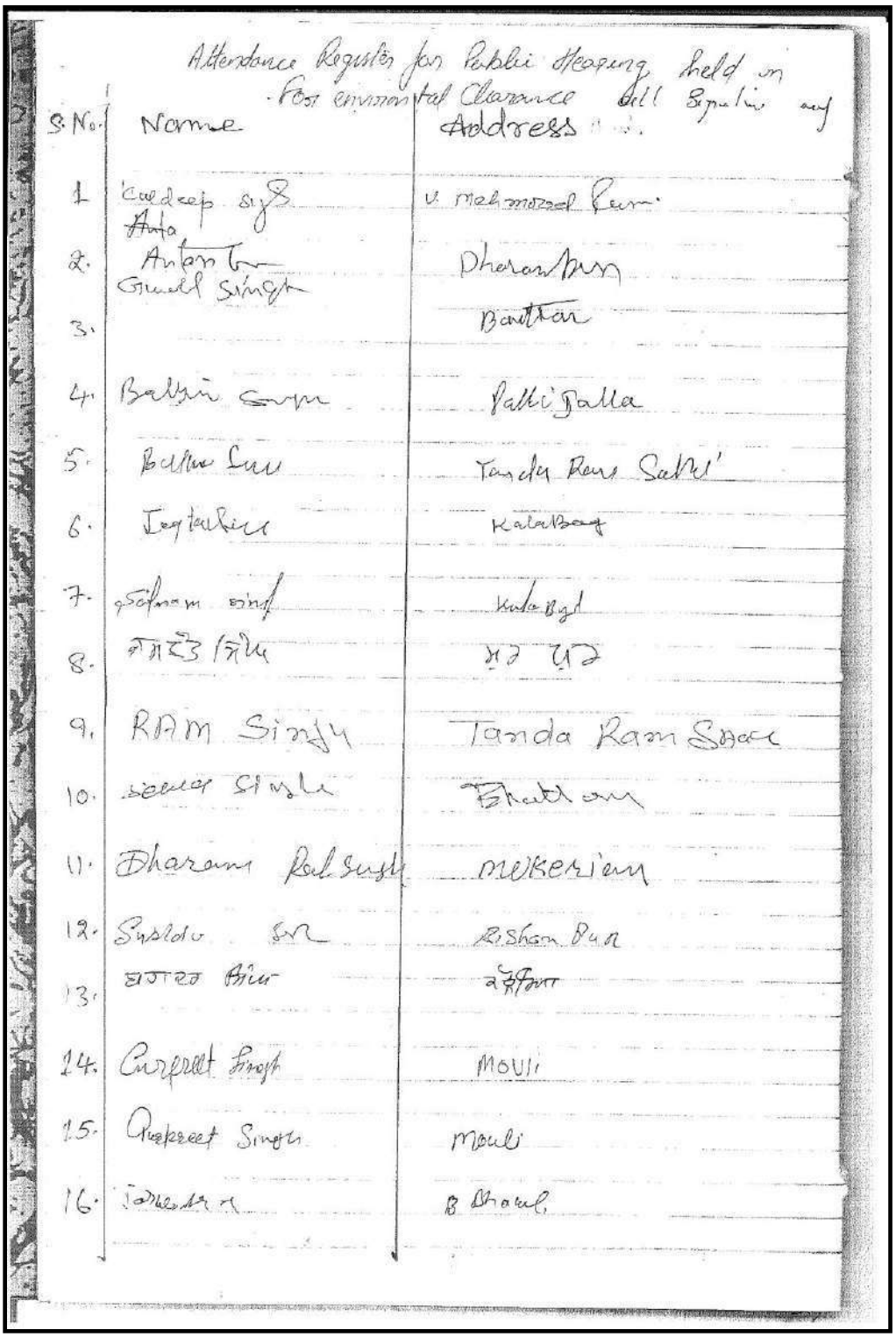
ਸਾਰੇ ਸ਼ਖ਼ਸ ਨੂੰ ਇਸ ਦੁਆਰਾ ਸੂਚਿਤ ਕੀਤਾ ਜਾਂਦਾ ਹੈ ਕਿ ਉਹ ਪ੍ਰਸਤਾਵਿਤ ਪ੍ਰਾਜੈਕਟ ਤੇ ਸੁਝਾਅ, ਵਿਚਾਰ, ਟਿੱਪਣੀਆਂ ਅਤੇ ਇਤਰਾਜ਼ ਜੇਕਰ ਹੋਣ, ਮੈਂਬਰ ਸੱਕਤੱਰ, ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ, ਵਾਤਾਵਰਣ ਭਵਨ, ਨਾਭਾ ਰੋਡ, ਪਟਿਆਲਾ ਕੋਲ ਇਸ ਨੋਟਿਸ ਦੀ ਪ੍ਰਕਾਸ਼ਨਾ ਦੇ 30 ਦਿਨਾਂ ਦੇ ਅੰਦਰ-ਅੰਦਰ ਪੇਸ਼ ਕਰਨ। ਇਸ ਤੋਂ ਇਲਾਵਾ ਪਿੰਡ ਚੱਕ ਅੱਲਾਬਖਸ਼ ਅਤੇ ਮਾਹੀਉਲਦੀਨਪੁਰ ਦਲੇਲ, ਤਹਿਸੀਲ ਮੁਕੇਰੀਆਂ, ਜ਼ਿਲ੍ਹਾ ਹੁਸ਼ਿਆਰਪੁਰ ਦੀ ਰੈਵੀਨਿਊ ਅਸਟੇਟ ਵਿਚ ਇੰਡਸਟਰੀ ਦੇ ਮੇਨ ਗੇਟ ਤੇ ਮਿਤੀ 23/10/2018 ਨੂੰ ਦੁਪਹਿਰ 12.00 ਵਜੇ, ਇਕ ਜਨਤਕ ਸੁਣਵਾਈ ਦੀ ਆਯੋਜਿਤ ਕੀਤੀ ਜਾਵੇਗੀ ਜਿਸ ਵਿਚ ਪ੍ਰਾਜੈਕਟ ਸਥਾਨ/ਡਿਸਪੋਜ਼ਲ ਦੇ ਸਥਾਨਾਂ/ਪ੍ਰਭਾਵਤ ਹੋਣ ਵਾਲੇ ਸਥਾਨਾਂ ਤੇ ਸਬੰਧਤ ਅਸਲ ਨਿਵਾਸੀ, ਵਾਤਾਵਰਨਿਕ ਗਰੁੱਪ ਅਤੇ ਹੋਰਨਾਂ ਸ਼ਹਿਰ ਕੋਈ ਵੀ ਵਿਅਕਤੀ ਹਾਜ਼ਰ ਹੋ ਸਕਦਾ ਹੈ। ਜਨਤਕ ਸੁਣਵਾਈ ਦੌਰਾਨ ਮੌਖਿਕ/ਲਿਖਤੀ ਸੁਝਾਅ ਜੇਕਰ ਕੋਈ ਹੋਣ, ਵੀ ਪੇਸ਼ ਕੀਤੇ ਜਾ ਸਕਦੇ ਹਨ।

ਜਨਤਕ ਸੁਣਵਾਈ ਵਿਚ ਹਾਜ਼ਰ ਹੋਣ ਲਈ ਕੋਈ ਟੀ.ਏ./ਡੀ.ਏ. ਨਹੀਂ ਦਿੱਤਾ ਜਾਵੇਗਾ।

C-2695

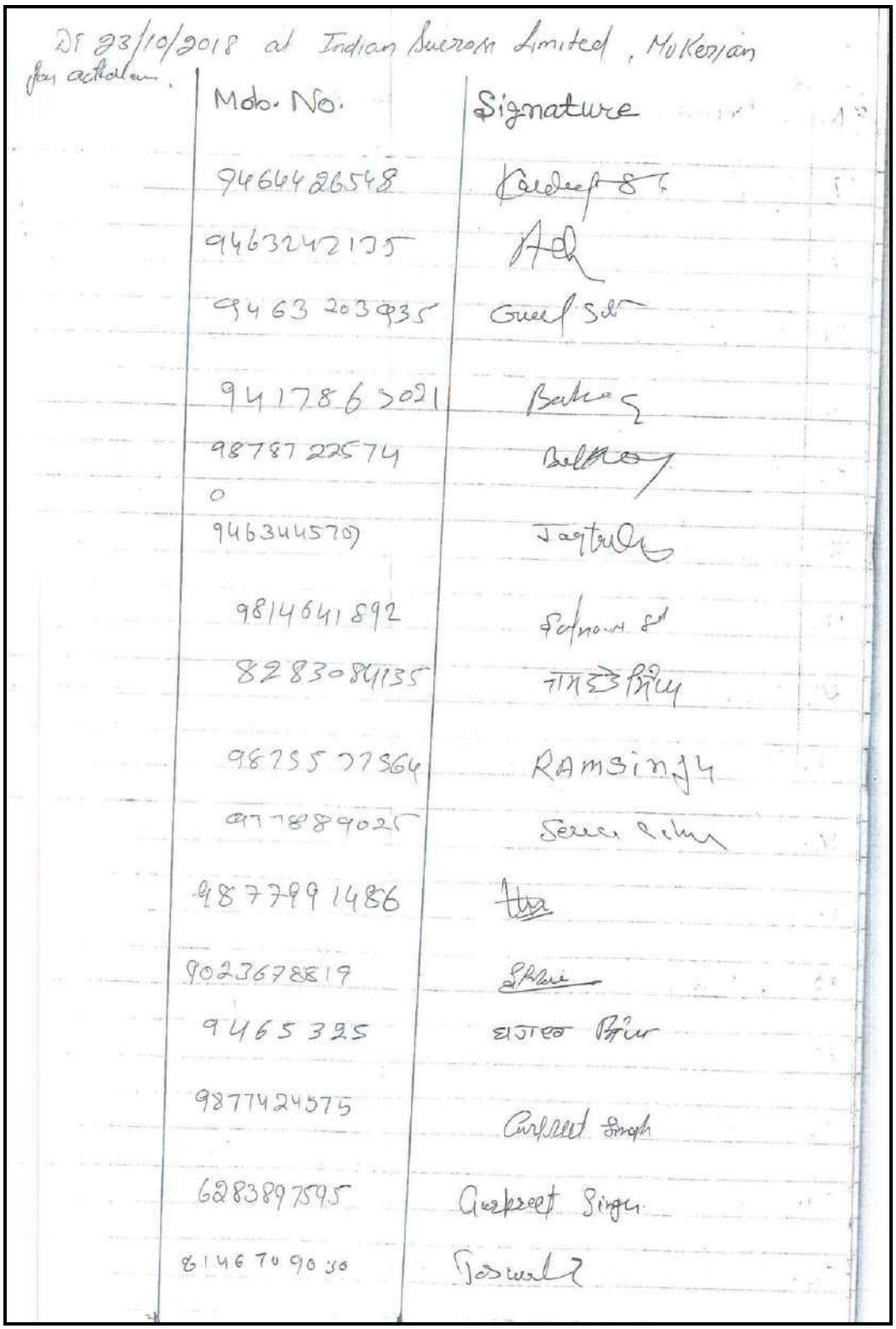
ਮੈਂਬਰ ਸਕੱਤਰ


ATTENDANCE REGISTER
FOR PUBLIC HEARING
HELD ON 23.10.2018
AT INDIAN SUCROSE LTD.
MUKERIAN



Attendance Register for Public Hearing held on ... For environmental Clearance to M/s Indian ...

S.No.	Name	Address
1	Gurdeep Singh Ahla	V. Mehmoorpur Ram.
2.	Antar Singh Gurdeep Singh	Dharam Pur
3.		Bantlar
4.	Balbir Singh	Pakki Galla
5.	Balbir Singh	Tanda Ram Sahai
6.	Jagtar Singh	Kalabag
7.	Gurnam Singh	Kalabgd
8.	[illegible]	[illegible]
9.	RAM Singh	Tanda Ram Sahai
10.	Jeevan Singh	Bhatkam
11.	Dharam Pal Singh	Mekeriam
12.	Sushil Kumar	Rishan Pur
13.	[illegible]	[illegible]
14.	Gurpreet Singh	Mouli
15.	Gurpreet Singh	Mouli
16.	[illegible]	B Bhawal



DT 23/10/2018 at Indian Sucrose Limited, Mukerian for activities.

Mob. No.	Signature
9466426548	Kuldeep S.
9463242135	Adh
9463203935	Gurdev Sh
9417863021	Baku
9878722574	Bellroy
9463445709	Jagtar
9814641892	Sukhwinder Sh
8283084135	[illegible]
9875577564	RAMsingh
9778894025	Sewa Singh
9877991486	[illegible]
9023678819	[illegible]
9465325	[illegible]
9877424575	Gurjeet Singh
6283897595	Gurpreet Singh
8146709030	[illegible]

Attendance Register for Public Hearing held on

S.No	Name	Address
17.	[illegible]	[illegible]
18.	Gurpreet Singh	Bedhupur
19.	Anil Kumar	Dugri
20.	Raman Sharma	Pandori
21.	Onkar Chand	Bhangala
22.	Harjit Singh	Pandori
23.	Gurmail	Jandar
24.	Nirmal Sih	Mithmi
25.	Ramjit Sih	Gahellian
26.	[illegible]	[illegible]
27.	[illegible]	[illegible]
28.	SANJEEV SENGUPTA	Sugar mill Mukerian.
29.	Vijay [illegible]	Mahindernagar Dalel
30.	Surjit Singh	Bhattian Jattan
31.	Kamaljit Singh	Panj Dhra Kalan
32.	Kewal Krishan	Jamal Pur.

Dt. 23/10/2018 at Indian Sucrose Ltd, Mukerian

Mob. No.	Signature
94633-93557	Jatinder Singh
94639-50750	Gurbreet Singh
80547-337[illegible]	
8427779555	
9115110589	
98559-44046	
9468052016	
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9 8528000090	
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98780-45286	

Attendance Register for Public Hearing held on

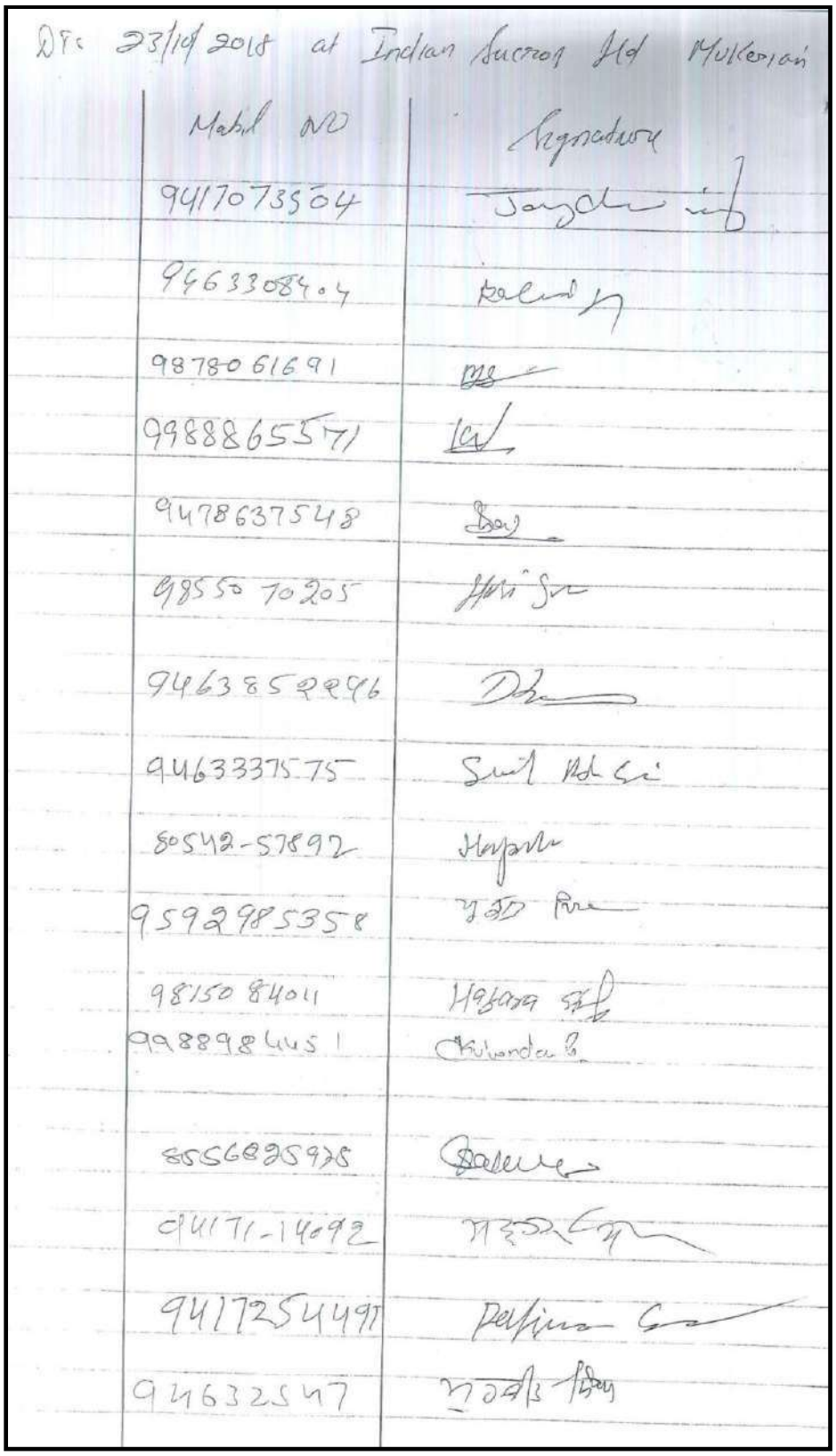
S.No	Name	Address
33	Davinder Singh	Attari
34	Hardev Singh	Panjdhera Kalan
35	Harnek Singh	Panjdhera Kalan
36	Avtar Singh	Tarsem
37.	Mela Singh	[illegible]
38	Ajit Singh	Makhu.
39	[illegible]	Ex Chairman Block Samiti Jagraon
40	Dalvir Singh	Sarpanch Bishan Pura
41	Bhawan Kadian	Pindori Bishan Youth club
42	[illegible]	Khanpur
43	[illegible]	[illegible]
44	[illegible]	[illegible]
45	[illegible]	[illegible]
46	[illegible]	[illegible]
47	Kamaljit Singh	Basant Pur
48	[illegible]	[illegible]

Dt. 23/10/2018 at Indian Sucrose ltd, Mukerian

	Mobile NO	Signature
	9417152439	
	98163-98172	
	9815155413	
	9780519872	
	9872201996	
	9464242804	
	9815019934	
	9463013730	
	9876283415	
	9501946398	
	9988232714	
	9465880387	
	9815430220	
	9417173078	
	9501760380	
	9815565380	

Attendance Register for Public Hearing held on

	Name	Address
49	Jagdeep singh	Bhattian Raj Puttan
50	Balbir Sahu Ex Sarpanch	Bishan Pur
51	Mukhtiar Singh Ex Sarpanch	Bishan Pur
52	Kamal Sir	Mukerian
53	Shamsher Singh	Chhangla
54	Hari Singh	Jhanji
55	Dhaban	Dhanoa
56	Surjit Pal Sir	Himat Pur
57	Harpal Singh	Himat Pur
58	[illegible]	[illegible]
59	Hazara Singh	Ram Sahai Chaka alia.
60	Kulwant Singh	
61	Karam Singh	Purone Bhangala
62	[illegible]	[illegible]
63	[illegible]	[illegible]
64	[illegible]	[illegible]

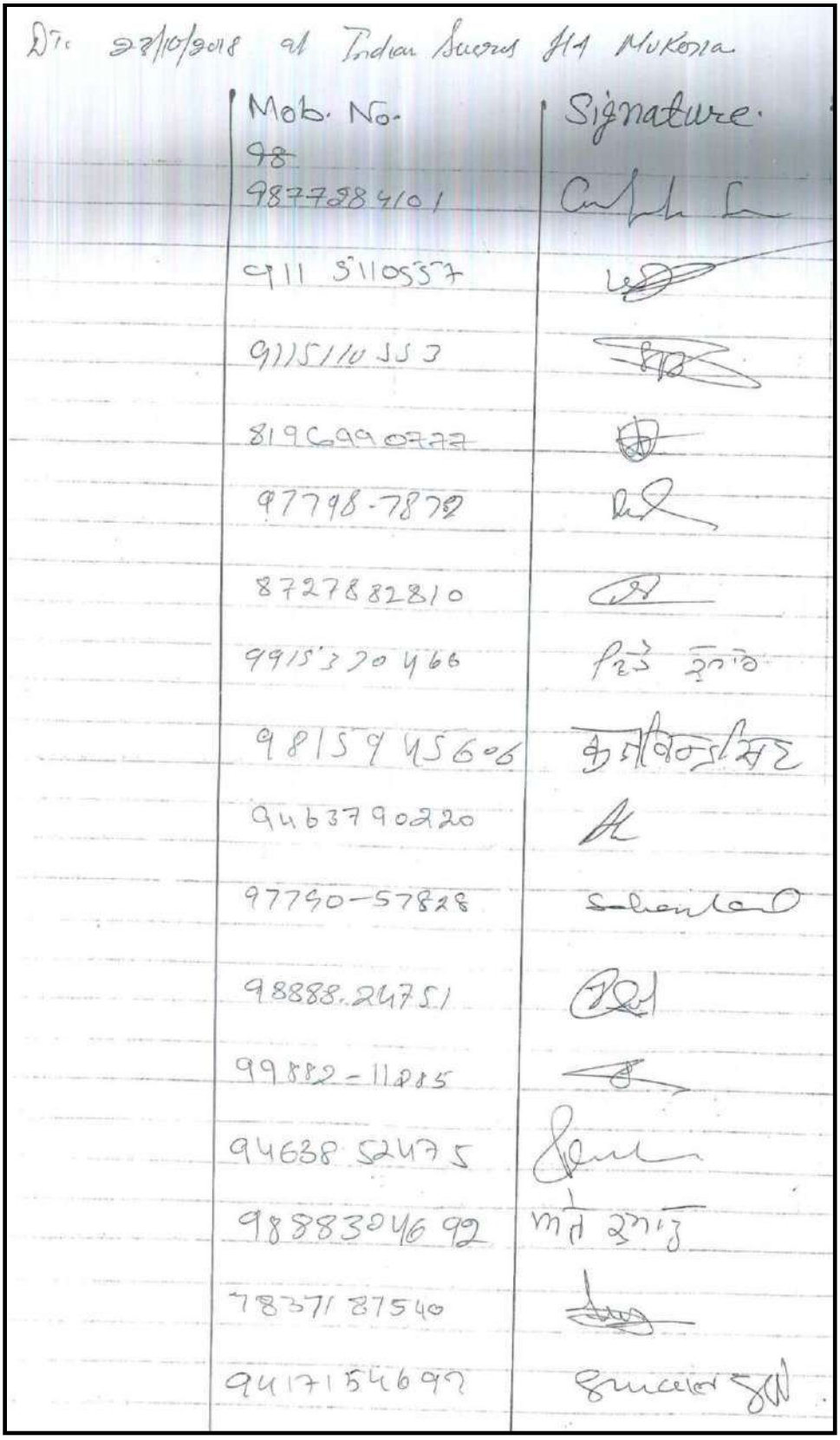


Dt: 23/10/2018 at Indian Sucrose Ltd Mukerian

Mobile NO	Signature
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9855070205	
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9463337575	
80542-57892	
9592985358	
9815084011	
9988984451	
8556825975	
94171-14092	
9417254491	
9463254?	

Attendance Regarding Public Hearing held on

S.No	Name	Address
65	Gurjinderpal Singh	Bishanpura
66	Mandeep S	T. D Pr
67	Satwinder Singh	Chak Bhan
68	Vikas Dadwal	Jalalabad
69	Dilbag Singh	Mahi
70.	Surinder Singh	Bhaini Kane
71.	[illegible]	[illegible]
72	[illegible]	[illegible]
73.	[illegible]	[illegible]
74	[illegible]	[illegible]
75.	Jaspreet Singh	Aima Mangat
76.	Satwinder Singh	Jagatpura Kala
77.	Rajkumar	Mukerian
78.	[illegible]	[illegible]
79.	[illegible]	[illegible]
80	[illegible]	[illegible]

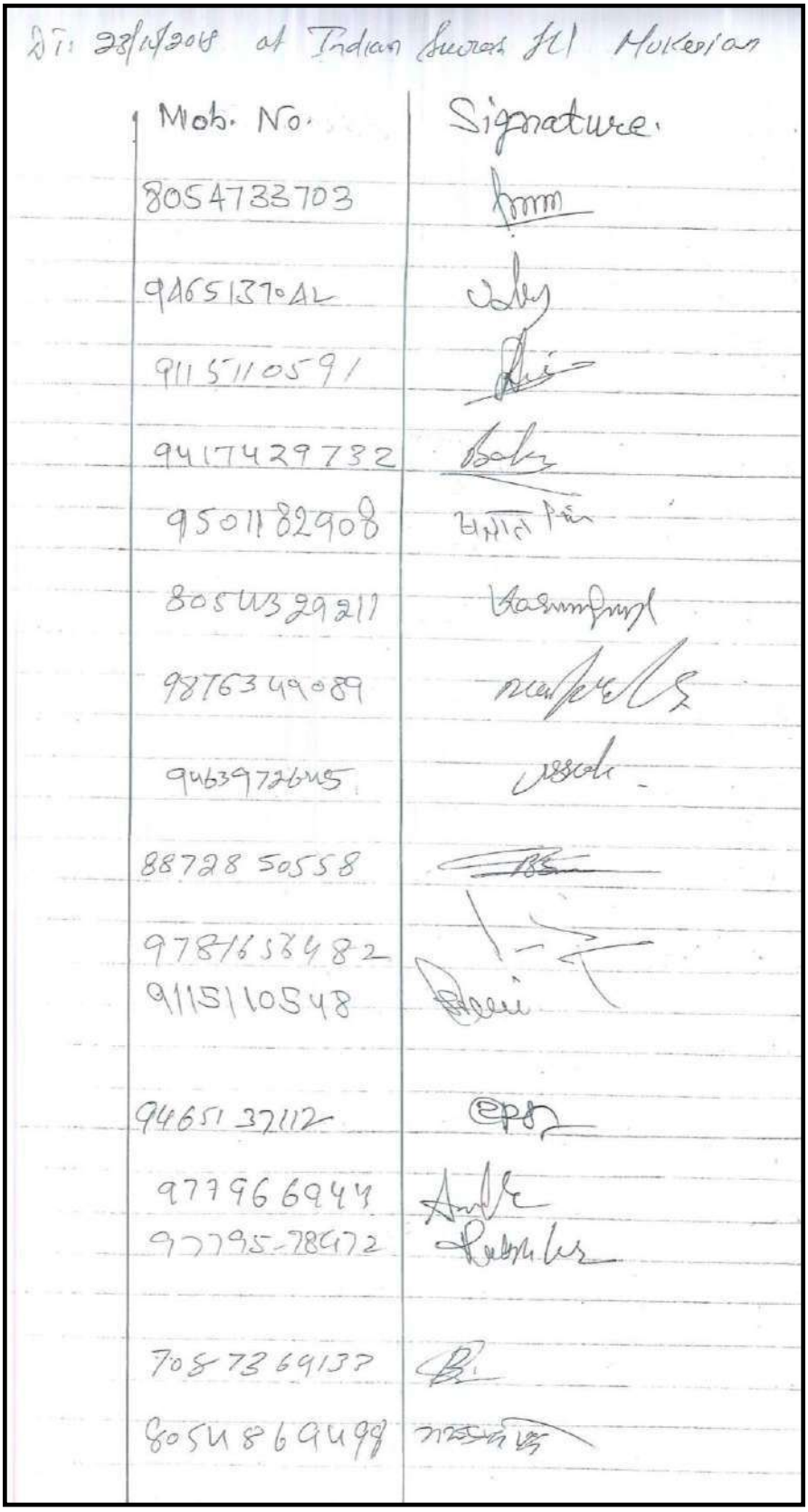


Dt. 28/10/2018 at Indian Sucrose Ltd Mukerian.

Mob. No.	Signature.
98 9877288401	
9115110557	
9115110553	
8196990777	
97798-78792	
8727882810	
9915370466	
9815945606	
9463790220	
97790-57828	
98888.24751	
99882-11815	
94638 52475	
9888304692	
7837187540	
9417154697	

Attendance Register for Public Hearing held on

S.No	Name	Address
81	Sanjeev Kumar	VPO Bajaghata.
82	Uday Singh	Gobra
83	Ravi Kant	Pandari
84	Balwinder Singh	Bhundawal
85	[illegible]	[illegible]
86	[illegible]	[illegible]
87	[illegible]	[illegible]
88	Nirvair Singh	[illegible]
89	Bikramjit Singh	Narnokat
90	[illegible]	Dael.
91	[illegible]	Sahalebar
92	Jai Pal Sharma	Choce-Alla Baagh
93	Amit Kumar	Pathwar.
94	Rakesh kumar	Bassiwal
95.	[illegible]	Dhodi
96.	[illegible]	[illegible]

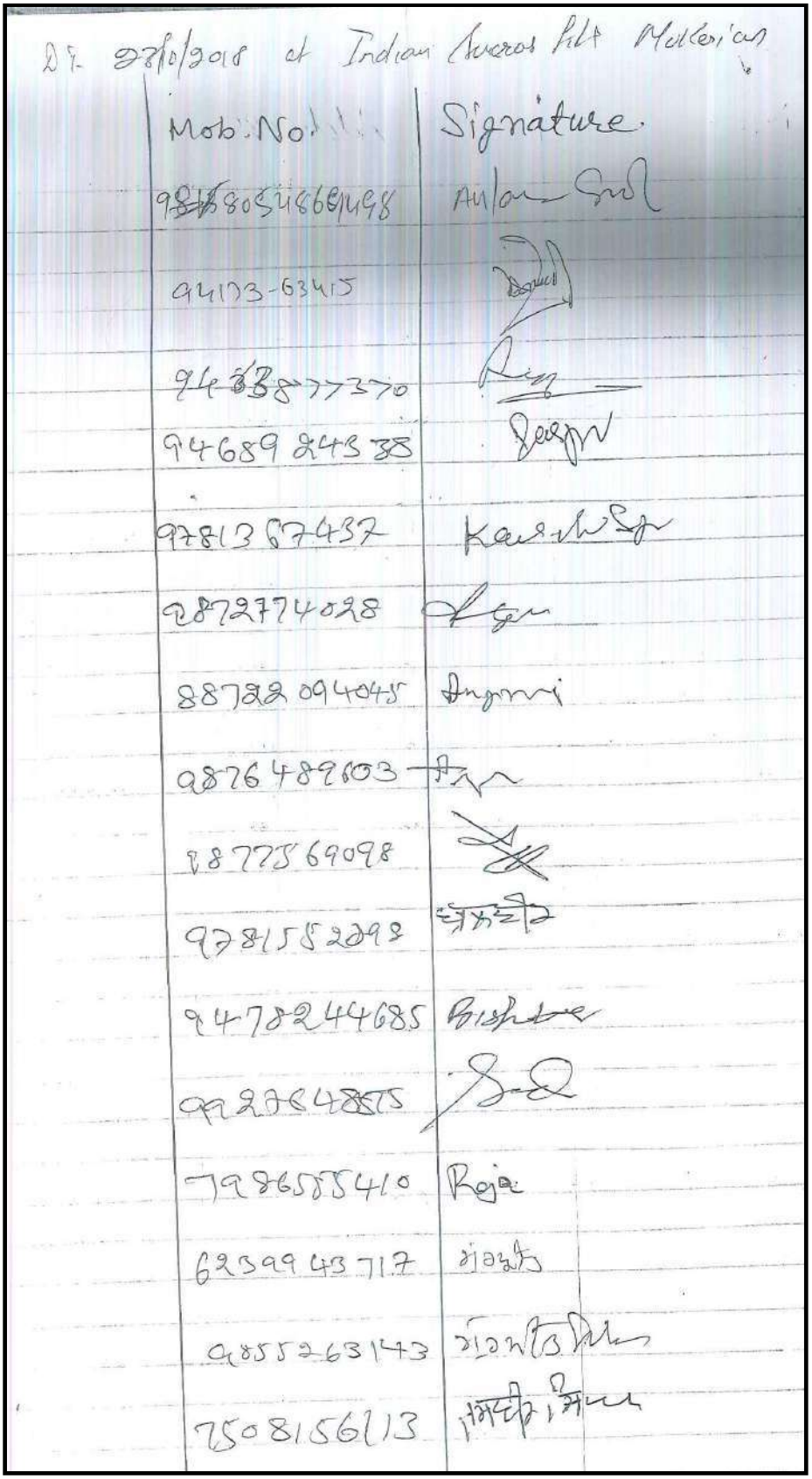


Dt: 28/4/2018 at Indian Sucrose Ltd Morkonam

Mob. No.	Signature.
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9501182908	
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9781658482	
9115110548	
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7087369137	
8054869499	

Attendance Register for Public Hearing held on

S.No	Name	Address
97	Aulad Sahil	Mehatpur
98	Parshuram Singh	Salempur Khurd
99	Ram Dan	Dangi Raj Patti
100	Parshuram Sah	Purwa
101	Kishore K.C.	Abdulla par
102	Ajit Sahu	Khanpur
103	Anyaraj Sah	Gadra
104	Ashok Kr.	Behbal Marg
105	Akhilesh	Nangar bihali
106	Babloo Nath	Bhangala
107	Bishambar	Sahalian
108	Sanjay Sah	Chak colony
109	Rajya	Khanpur
110	Gurpreet Sah	Sg. Khedakan
111	Gurmeet Sah	Khanpur
112	Jashodra Sah	Jhangi



Dt. 28/10/2018 at Indian Sucrose Ltd Maksi

Mob. No.	Signature.
9[illegible]805486[illegible]498	
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9468924338	
9781387437	
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8872209404[illegible]	
9876489803	
8775769098	
9781552092	
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9[illegible]2764875	
7986585410	
6259943717	
9855263143	
7508156[illegible]13	

Proceedings of the Public Hearing conducted on 23.10.2018 in connection with application filed by M/s Indian Sucrose Ltd., for obtaining environmental clearance under EIA Notification dated 14/9/2006 for expansion of the existing sugar mill from 5,000 TCD to 12,000 TCD and for co-generation power plant from 19.5 MW to 59.5 MW in the existing premises located in the revenue estate of Village Chak Alabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District-Hoshiarpur.

The following were present to supervise the proceedings:-

1. Smt. Anupam Kaler, PCS,
   Addl. Deputy Commissioner (Gen),
   Hoshiarpur.
2. Sh. Ashok Sharma,
   Environmental Engineer,
   Punjab Pollution Control Board,
   Regional Office, Hoshiarpur.
3. Sh. Parveen Saluja,
   Environmental Engineer (Mega)
   Punjab Pollution Control Board, Patiala.
4. Sh. Anil Kumar,
   Functional Manager,
   District Industries Centre, Hoshiarpur.
5. Sh. Mohan Lal,
   Sanitary Inspector,
   M.C., Mukerian, District Hoshiarpur.

Environmental Engineer (Mega), Punjab Pollution Control Board, Patiala welcomed the Supervising-cum-Presiding Officer and people from adjoining towns/villages, who came to attend the public hearing of this project. He informed that an application was filed by M/s Indian Sucrose Ltd., with the State Environment Impact Assessment Authority (SEIAA), Punjab for getting Environmental Clearance under EIA notification no. 1533 (E) dated 14.9.2006 for expansion of the existing sugar mill from 5,000 TCD to 12,000 TCD and for co-generation power plant from 19.5 MW to 59.5 MW in the existing premises located in the revenue estates of

Village Chak Alabaksh & Mahiuldinpur Dalel, Tehsil Mukerian, District-Hoshiarpur. After considering the application of the industry, the SEIAA, Punjab had issued 'Terms of Reference' to the industry for preparation of draft EIA study report. Now, the industry has submitted draft EIA report to the Punjab Pollution Control Board for conducting public hearing of the project as per the procedure prescribed in the EIA Notification dated 14.09.2006. Environmental Engineer (Mega) apprised the public present there about the requirement of conducting the public hearing before deciding the application filed by the industry for getting the said clearance for the expansion of the project at the existing site. He also brought into the notice of public that a copy of the draft EIA report alongwith the executive summary of the same submitted by the industry to the Punjab Pollution Control Board was placed in the office of Deputy Commissioner, Hoshiarpur; Zila Parishad, Hoshiarpur; General Manager District Industrial Centre, Hoshiarpur; E.O., M.C. Mukerian, District Hoshiarpur; Regional Office of MoEF&CC at Chandigarh and Environmental Engineer, Regional Office, Punjab Pollution Control Board, Hoshiarpur for access to the public and other stakeholders. He further brought out that a notice of public hearing was published in three prominent newspapers namely, The Hindustan Times, Jagbani and Spokesman on 21.09.2018 to make the public aware of the date, time & venue of the public hearing and about the places/offices, where the public could access the draft EIA report and its executive summary report before the said hearing. Thereafter, he requested the representative of the project proponent and Environmental Consultant of industry to elaborate about the main features of the project and the draft EIA study report to the public.

Sh. S.K. Sharma of M/s Vardan Environent Environmental Consultant of the project proponent brought out the details of the project before the public as under:-

Introduction

M/s Indian Sucrose Limited was established in 1990 and came in operational phase in 1991 with capacity 2500 TCD with Cogeneration power plant of

capacity 7.5 MW. The capacity of the plant was increased to 5000 TCD along with 19.5 MW Cogeneration power plants in year 2005. The project proponent had increased its capacity from 5000 TCD to 6500 TCD in the year 2015-16 with the intimation to Punjab Pollution Control Board and Central Excise Deptt. vide their Letter No(s).304 dt. 22.09.2015 & 536 dt. 11.12.2015 but without any prior Environment Clearance, Now the proponent has proposed the project to expand the capacity to 12000 TCD along with Co-generation power plant to 59.5 MW at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt.-Hoshiarpur, Punjab. The total land under the project is 21.46ha. Expansion will be within the existing boundary only. As per ToR letter no SEIAA/2018/858 on 16.07.2018, baseline monitoring (October to December 2017) and additional one month (January 2018) study of the project was to be carried out by the industry.

Project Benefits

- The waste product Bagasse is used in the Captive power plant, the power generated will be provided to the plant operations.
- Proposed project will result in growth of the surrounding areas by increased direct and indirect employment opportunities to the local villagers in the region including ancillary development and supporting infrastructure.
- Development of social amenities will be in the form of medical facilities, education to underprivileged and creation of self-help groups.
- Source of revenue to state.
- Environmental Benefit of the project as baggase is used as the fuel in the boiler which decreases the dependability on the natural resources.

Demography & Socio-economic Environment

- Total number of households are about 23091.
- Total population of villages under the study area is 110139 out of which males are 55582 (50.46%) and females are 54557 (49.53%).
- Sex ratio (No. of females per 1000 males) is 981 which indicates that females are less in number than their male counterpart in the study area.

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- Child Sex ratio is 817 i.e No.of female child per 1000 male child.
- Scheduled caste population is about 25107 (22.79%) while the Scheduled tribes population is Nil in the region
- Out of the total population in the region 83886 i.e. 76.16% are literates

Pollution mitigation measures

Air pollution control

- A stack of 78 m height will be provided with 200 TPH boiler to be installed in the mill for proper dispersing of smoke, so that there shall be no damage to the fertile land.
- ESP shall be installed to control the air pollution. Continuous air monitoring shall be carried out. An online air monitoring device shall be installed on the stack and the results of which to be displayed at website of CPCB and PPCB through internet. Rs.1.90 Crores will be spent on the installation of air pollution control measures.

Waste Water Treatment

- The proposed project would be based on "Zero Liquid Discharge (ZLD)".
- The waste water generated from the domestic use and industrial use will be treated in STP(30 KLD) and ETP (3000 KLD) and online monitoring system will be installed and result of which are to be displayed on the website of CPCB and PPCB through internet. Rs.70.0 Lacs will be spent on the installation of water pollution control measures.

Solid Waste Management

- Boiler ash and ETP/STP sludge and press mud will be collected and given to the farmers.
- Bagasse will be used as fuel in the boilers.

Odour Management

- Use of mill sanitation bio-cides to minimize the growth of aerobic / anaerobic micro–organisms.
- Steaming of major pipe lines
- Regular use of bleaching powder in the drains to avoid growth of sulphur decomposing micro-organisms to control H_2S generation.

4

Green belt

- Rs. 34 Lacs will be spent for development of green belt.

Thereafter, Environmental Engineer brought into the notice of public present at the venue of hearing that as per the provisions of EIA notification dated 14.09.2006, as amended from time to time, the persons present at the venue may seek any information or clarifications on the proposed project from the project promoter. It was also brought into the notice of the persons present there that the information or clarifications sought by them and reply given by the project proponent will be recorded in the proceedings of the hearing, which will be sent to the SEIAA, Punjab for further consideration. Accordingly, he requested the persons present in the hearing to seek information or clarifications on the project one by one. He also informed that no information / clarifications / comments / views / suggestions / objections on the project have been received from the public in writing by the Board, so far.

Thereupon, the detail of the information/ clarifications sought by the persons present at the venue of hearing and the reply given by the project proponent is as under:

Sr. No.	Name & address of the person	Detail of query/ statement / information / clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.
1.	Sh. Dalbir Singh, r/o Bishanpur, Tehsil Mukerian, District Hoshiarpur.	He stated that there is water & air pollution from the project, which adversely effects their village. More than 100 persons of their village have given complaint in writing regarding pollution of the project to the Punjab Pollution Control Board at Hoshiarpur. S.D.O. from Punjab Pollution Control	Representative of the Sugar Mill informed that the public hearing is being conducted by the Punjab Pollution Control Board to know the problems of the public from the existing unit. He further informed that the pollution control devices of latest

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		Board, Hoshiarpur has come to the project, to check the water and air pollution and he verbally stated that the water is polluted. No solution has been made of the said complaint and no written reply to the same has been received. More than 15 persons of their village who were suffering from stomach and breathing diseases have died due to the pollution caused by the sugar mill. He further stated that 10-15 persons of their village are also suffering from stomach and breathing diseases due to the water & air pollution caused by the existing unit of the sugar mill. If the pollution from the project has not been controlled then there are more chances of spreading other diseases. He also stated that first of all pollution from the existing unit should be controlled and then the expansion of the project be allowed.	technology having efficiency, three times better from the existing pollution control devices, to control the pollution from the existing as well as from the expansion project will be installed simultaneously with the expansion project.
2.	Sh. Ajay Kaushal, Ex. Chairman, Zila Parishad, Village Dugri Rajputan, District Hoshiarpur	He welcomes the Addl. Deputy Commissioner, Hoshiarpur and other Officers. He stated that the project proponent in its reply stated that better pollution control devices will be installed alongwith expansion. He wanted to know from the Punjab Pollution Control Board whether the issue of installing the good quality device is not being	Representative of the Sugar Mill informed that the public hearing has been conducted to resolve the issues/ problems raised by the public. Earlier, the project has increased the capacity of the mill by its own for which the Punjab Pollution Control Board has initiated criminal action against the owner/ responsible

		addressed while granting NOC to the industry before expansion and the NOC has been issued to the small scale projects without the proposal for installing the pollution control devices. He further stated that they are making complaints regarding the pollution from the project since February, 2017. He also stated that if we extract water 120 ft deep from the ground, then colour of the water is such like juice of sugarcane. When the water samples from the project are taken by the Punjab Pollution Control Board then the same are passed. The samples should also be to got analysed from outside laboratory other than Punjab Pollution Control Board. The peoples are dying due to water pollution. He has no objection for expansion of the unit but the pollution from the existing unit should be controlled. The funds allocated for control of pollution that has not been utilized properly for the same. He further stated that when air blows from East to West then there is more air pollution from the project. The project proponent should take more attentions on the issues raised by the public regarding control of pollution.	persons. He reiterated that the public hearing has been convened to set right all the issues of the public related to the project.

3.	Sh. Jagdev Singh, Sarpanch, Village Bhattian Rajputan, District Hoshiarpur	He stated that he requested the officers of Punjab Pollution Control Board to resolve the issue regarding pollution from the project as raised by the earlier spokesmen. He further stated that the aerial distance of his village from the project is about 2 kms and he never feel pollution from the project, but the pollution may reach there. He also informed that the expansion to be made by the project proponent should also be favoured as need of expansion of sugar mill is being felt in the area. Sugarcane is the main crop of the area by which the farmers of the area and their family are getting livelihood and also getting more benefits. Last year the mill has milled the sugarcane upto 17-18 May, as such the capacity of the sugar mill should be increased. The pollution should be controlled on ground and not in papers. The sugar mill should be operated upto April. The safety of the area is also important. With this project, there are other business set up in the area by the local people. He demanded that the employment should be given to the people of Mukerian area as the problems are faced by this area and benefits should also be made	Environmental consultant of Sugar Mill informed that the pollution control devices of the latest technology will be installed to control the pollution alongwith online monitoring system, which will be monitored by the Central Pollution Control Board & Punjab Pollution Control Board. He further informed that the preference will be given to the local people in the employment.

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		to this area.	
4.	Sh. Hardip Singh, Ex. Sarpanch, Village Bhaini Paswal, District Gurdaspur	He welcomes the Addl. Deputy Commissioner and the public. He congratulated the project proponent for expanding the capacity of the unit from 5,000 TCD to 12,000 TCD. He further stated that the problem of the people of the area regarding water pollution should be solved. He also stated that more than 70-80% people of the area are associated with agriculture. He endorses the statement of the earlier speakers regarding control of pollution. He also stated that employment is for health but health is not for the employment. He demanded that a committee be constituted to supervise the reserved amount to be spent for installation of pollution control equipments and welfare of the people.	Representative of the Sugar Mill informed that the issues as raised by the public has been noted down and the same will be implemented.
5.	Sh. Gurnam Singh, r/o Village Pandori, Distt. Hoshiarpur	He stated that regarding the pollution problem, Punjab Pollution Control Board is taking strict action. The industry should make proper arrangements to control the pollution. He further stated that earlier in the area, there was rice (Basmati) was main crop and now the sugarcane is main crop in the area. He told the people who wants to expand the unit raise their hands, in response of the same most of the people present raised hands in favor	No reply was given.

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		of the project.	
6.	Sh. Harinder Singh Kurewal, r/o Village Bhagana, Distt. Hoshiarpur	He stated that the capacity of the sugar mill should be increased as rice and wheat crops are taking more water than sugarcane. The preference should be given nearby village in development.	Environmental consultant of the industry informed that more than Rs.8 Crores will be spent under Corporate Social Responsibility activities, which will be utilized with the consultation of the nearest villagers. He further informed that as per new rule, if the industry wants to employ more than 25 workers, then the same should be employed through Deputy Commissioner Office. As such, the people of the area should apply to the DC, Hoshiarpur for taking job in the sugar mill and they will get the list from them.
7.	Sh. Sachin Dhayia, Press Reporter, Dainik Bhaskar	1. He wanted to know whether the distillery project is being established or the capacity of the sugar mill is increased. 2. First of all, the pollution from the existing unit should be controlled and thereafter, the capacity of the same will allowed to be increased. People are dying and no action is being taken on the complaint filed by the nearby people. 3. In the public hearing, the industry has gathered the public from	1. Representative of the Sugar Mill informed that the public hearing is being conducted for enhancement of the capacity of the sugar mill and there is no proposal to set up a distillery unit. 2. As already stated the pollution control devices of the latest technology will be installed to control the pollution from the existing as well as from the

		its own persons. No wide publicity and announcement has been made in the nearby villages and name of the newspapers in which public notice has been published, be informed. 4. If the water from 120ft deep is taken, the same is not potable.	expansion project. 3. Environmental Engineer (Mega), Punjab Pollution Control Board, Patiala shown the photocopy of the public notice and informed that the public notice was published in three leading newspapers namely Hindustan Times, Jagbani & Dainik Bhaskar in its edition dated 21.09.2018.
8.	Master Kewal Singh, Nambardar, Village Bishanpur, Distt. Hoshiarpur	He stated that he has received the information regarding the public hearing directly or indirectly, therefore, he has come to attend the public hearing. He further stated that whatever commitment has been made that has not been implemented. The paper mill was established on this place in the year 1967 where the people of the nearby area were worked in the same, but thereafter they were retrenched. Preference should be given to the local area in employment. Pollution problem should be sort out. Earlier, the mill has taken the land from the farmers but the same was not returned to the real owners and the land was sold out @ Rs.4,00,000/- per acre. The expansion of the sugar mill should be carried	Representative of the Sugar Mill reiterated that the public hearing is being conducted for listening the grievances of the public, so that the industry be able to sort out the issues/problems raised by the public. To control the water & air pollution, a huge amount will be spent. Monitoring system will also be installed on them which will be monitored by the CPCB & PPCB through web technology on day to day basis.

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		out.	
9.	Sh. Surjit Singh, Sarpanch, Village Bhattian Jattan, District Hoshiarpur	He stated that the questions raised by the earlier speaker including Sarpanch Village Bishanpur are very valuable. He further stated that no reply has been received by the villagers of Bishanpur regarding the complaint made by them. He thanks the project proponent for establishing the sugar mill in the area and given congratulations for expansion of the same. The industry should take care of the health of the people of the nearby area. The industry should give employment in the mill whose land has been taken by the sugar mill and an assurance should be given in this regard. The people of the area have given land to the sugar mill at the lower rates. Expansion of the sugar should be carried out and the pollution should also be controlled.	Representative of the Sugar Mill informed that the company has four sugar mills. With the expansion of the unit, more opportunities of employment will be generated, but as of now, he has no data regarding how many persons are directly get the benefit of employment. The youths who had passed MBA and ITI will get the opportunity of job in the mill.
10.	Sh. Vijay Kumar Jain, Nambardar, Village Mahiuldinpur Dalel, Distt. Hoshiarpur	He welcomes the Addl. Deputy Commissioner and stated that the problems raised by the public are genuine and are in actual. He stated that he will request the ADC, Hoshiarpur to get the problems solved. The area has get the benefit from the sugar mill. Earlier, there was a problem of purchasing of rice, which was main crop of the area. Now, the farmers are getting	No reply was given.

		more benefits by sowing sugarcane crop. He thanked the project proponent for expansion of the project. The industry should make development in the villages which have given their land to the sugar mill. The sugar mill should be operated till the entire season.	

Environmental Engineer (Mega), Punjab Pollution Control Board, Patiala further requested the persons present at the venue of hearing that if anyone else wants to seek any information/ clarification on the proposed expansion project, but no one came forward. After that people were asked to raise their hands who are in favour of this proposed expansion project and most of the people present raised hands in favor of the project.

Thereafter, Sh. Ashok Sharma, Environmental Engineer, Punjab Pollution Control Board, Regional Office, Hoshiarpur informed that if any industry is polluting underground water by way of digging borewell and if it is in the knowledge of any one, the same should be brought to his notice and he will ensure a proper action and the prize money as declared by the Punjab Pollution Control Board should be given to him and his name & address will be kept confidential. Punjab Pollution Control Board is committed towards zero tolerance to industrial pollution. The industry has to spend Rs.8.67 Crores on corporate social responsibility activities, which is mandatory on the part of the industry. With regard to preference in employment in the sugar mill to the local people, it does falls in the purview of the Punjab Pollution Control Board, however,

he has already asked the project proponent to give preference to local people while providing employment. With regard to announcements/wide publicity in the nearby village is concerned, a videography of the same has been carried out and unedited video alognwith the proceedings of the public hearing will be sent to SEIAA, Punjab on which the Authority will take necessary action This public hearing was attended by 112 persons.

The hearing ended with vote of thanks to the Supervisor-Cum-Presiding Officer and the public present in the hearing.

(Parveen Kumar Saluja)
Env. Engineer (Mega)
PPCB, Head Office,
Patiala

(Ashok Sharma)
Env. Engineer,
PPCB, Regional Office,
Hoshiarpur

(Anupam Kaler), PCS,
Addl. Deputy Commissioner (Gen)
Hoshiarpur

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7.2.4 Action Plan of Public Hearing

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
1.	Sh. Dalbir Singh, r/o Bishanpur, Tehsil Mukerian, District Hoshiarpur	He stated that there is water & air pollution from the project, which adversely affects their village. More than 100 persons of their village have given complaint in writing regarding pollution of project to the Punjab Pollution Control Board at Hoshiarpur. S.D.O from Pollution Control Board at Hoshiarpur has come to the project, to check the water and air pollution and he verbally stated that the water is polluted. No solution has been made of the said complaint and no written reply to the same has been received. More than 15 persons of their village who were suffering from the stomach and breathing diseases have died due to the water & air pollution caused by the sugar mill. If the pollution caused by the existing unit of the Sugar	Representative of the sugar mill informed that Public hearing is being conducted by the Pollution Control Board to know the problems of the public from the existing unit. He further informed that the pollution control devices of the latest technology having efficiency, three times better from the existing as well as from the expansion project will be installed simultaneously with the expansion project.	Waste water from the industry is being treated in the ETP of capacity **3000 KLD** and same will be continue for the expansion process also. To control the Air Pollution for the existing unit, 3 no of **Wet scrubber** has already been installed and for the expansion unit **ESP** will be installed with the 200 TPH boilers. Online monitoring station has already been installed at the ETP and the results for the same continuously displayed on the PPCB websites. **Budget :** **Waste Water Treatment:** Capital Cost: 70 lakhs Recurring Cost: 8 lakhs

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		mill. If the pollution from the project has not been controlled then there are more chances of spreading other diseases. He also stated that first of all pollution from the existing unit should be controlled and then the expansion of the project be allowed.		**Air pollution control devices:** Capital Cost: 1.90 Crores Recurring Cost: 20 lakhs
2.	Sh. Ajay Kaushal, Ex. Chairman, ZilaParishad, Village DugriRajputan, District Hoshiarpur	He welcomes the Add. Deputy Commissioner, Hoshiarpur and other officers. He stated that the project proponent in its reply stated that better Pollution Control Board Devices will be installed along with expansion. He wanted to know from the Punjab Pollution Control Board whether the issue of installing the good device is not being addressed while granting NOC to the industry before expansion and the NOC has been issued to the small scale projects without the proposal for installing the pollution control devices. He	Representative of the Sugar Mill informed that public hearing has been conducted to resolve the issues/problem raised by the public. Earlier, the project has increased the capacity of the mill by its own for which the Punjab Pollution Control Board has initiated criminal action against the owner/responsible persons. He reiterated that the public hearing has been conducted to set right all the issues of the public related to the project.	The details of Pollution Control device explained in S.no 1. Online monitoring station has already been installed at the ETP and the results for the same continuously displayed on the PPCB websites. Online Stack Monitoring Station will be installed for the expansion project. **Budget :** Stack Monitoring: 2 lakhs Online ETP Monitoring: 1 lakhs

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		further stated that they are making complaints regarding the pollution from the project since February, 2017. He also stated that if we extract water 120 ft deep from the ground, then color of the water is such like juice of sugarcane. When the water samples from the project are taken by the Pollution Control Board then the same are passed. The samples should also be to got analyzed from outside laboratory other than Punjab Pollution Control Board. The people are dying due to water pollution. He has no objection for expansion of the unit but the pollution from the existing unit should be controlled. The funds allocated that has not been utilized properly for the same. He further stated that when air blows from East to West then there is more air pollution from the project proponent should take more attention on the		

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		issues raised by the public regarding control of pollution.		
3.	Sh. Jagdev Singh, Sarpanch, Village BhattianRajputan, District Hoshiarpur	He stated that he requested the officers of Punjab Pollution Control Board to resolve the issue regarding pollution from the project as raised by the earlier spokesmen. He further stated that the aerial distance of his village from the project is about 2 kms and he never feel pollution from the project, but the pollution may reach there. He also informed that the expansion to be made by the project proponent should also be favored as need of expansion of sugar mill is being felt in the area. Sugacane is the main crop of the area and their family are getting livelihood and also getting more benefits. Last year the mill has milled the sugarcane upto 17-18 May, as such the capacity of the sugar mill should be increased. The	Environmental consultant of Sugar Mill informed that the pollution control devices of the latest technology will be installed to control the pollution along with online monitoring system, which will be monitored by the Central Pollution Control Board & Punjab Pollution Control Board. He further informed that the preference will be given to the local people in the employment	Online Monitoring station for the ETP has already been installed and result for the same is continuously displayed on the PPCB websites. Online Stack Monitoring station will be installed for the expansion project. The direct employment to ~ 325 person has been provided with the existing project and ~ 25 person will be getting employment with the expansion project. Indirect employment will be generating with the proposed expansion project.

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		pollution should be controlled on ground and not in papers The sugar mill should *be* operated upto April. The safety of the area is also important. With this project, there are other businesses set up in the area by the local people. He demanded that the Employment should be given to the people of Mukerian area as the problems are faced by this area and benefits should also be made to this area.		
4.	Sh. Hardip Singh, Ex. Sarpanch, Village BhainiPaswal, District Gurdaspur	He welcomes ADD, Deputy Commissioner and the public. He congratulated the project proponent for expanding the capacity of the unit from 5,000 TCD to 12,000 TCD. He further stated that the problem of the people of the area regarding water pollution should be solved. He also stated that more than 70- 80% people of the area are associated with agriculture. He endorses the statement of	Representative of the Sugar Mill informed that the issues as raised by the public have been noted down and the same will be implemented.	For the welfare of the People & Society, budget of Rs 8.5 Crore has been proposed by the project proponent.

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		the earlier speakers regarding control of pollution. He also stated that employment is for health but health is not for the employment. He demanded that a committee be constituted to supervise the reserved amount to be spent for installation of pollution control equipments and welfare of the people.		
5.	Sh. Gurnam Singh, r/o Village Pandori, Distt. Hoshiarpur	He stated that regarding the pollution problem, Punjab Pollution Control Board is taking strict action. The industry should make proper arrangements to control the pollution. He further stated that earlier in the area, there was rice (Basmati) was main crop and now the sugarcane is main crop in the area. He told the people who wants to expand the unit raise their hands, in response of the same most of the people present raised hands in favor of the project.	No reply was given	

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
6.	Sh. Harinder Singh Kurewal, r/o Village Bhagana, Distt. Hoshiarpur	He stated that the capacity of the sugar mill should be increased as rice and wheat crops are taking more water than sugarcane. The preference should be given nearby village in development.	Environment consultant of the industry informed that more than Rs 8 crores will be spent under Corporate Social Responsibility activities, which will be utilized with the consultation of the nearest villagers. He further informed that as per new rule, if the industry wants to employ more than 25 workers, then the same should be employed through Deputy Commissioner Office. As such, the people of the area should apply to the DC, Hoshiarpur for taking job in the sugar mill and they will get the list from them.	
7.	Sh. SachinDhayia, Press Reporter, DainikBhaskar	1. He wanted to know whether the distillery project is being established or the capacity of the sugar mill is increased. 2. First of all, the pollution from the existing unit should be controlled and thereafter, the capacity of the same will allowed to be increased.	Representative of the Sugar Mill informed that the ·public hearing is being conducted for Enhancement of the capacity of the sugar mill and there is no proposal to set up a distillery unit. As already stated the pollution control devices of the latest	

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		People are dying and no action is being taken on the complaint filed by the nearby people. 3. In the public hearing, the industry has gathered the public from its own persons. No wide publicity and announcement has been made in the nearby villages and name of the newspapers in which public notice has been published, be informed. 4. If the water from 120ft deep is taken, the same is not potable.	technology will be installed to control the pollution from the existing as well as from expansion project. Environmental Engineer (Mega), Punjab Pollution Control Board, Patiala shown the photocopy of the public notice and informed that the public notice was published in three leading newspapers namely Hindustan Times, Jagbani&DainikBhaskar in its edition dated 21.09.2018.	
8.	Master Kewal Singh, Nambardar, Village Bishanpur, Distt. Hoshiarpur	He stated that he has received the information regarding the public hearing directly or indirectly, therefore, he has come to attend the public hearing. He further stated that whatever commitment has been made that has not been implemented. The paper mill	Representative of the Sugar Mill reiterated that the public hearing is being conducted for listening the grievances of the public, so that the industry is able to sort out the issues/problems raised by the public. To control the water & air pollution, a huge amount will be spent. Monitoring system will	Employment details are explained in S.No 3.

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		was established on this place in the year 1967 where the people of the nearby area were worked in the same, but thereafter they were retrenched. Preference should be given to the local area in employment. Pollution problem should be sort out Earlier, the mill has taken the land from the farmers but the same was not returned to the real owners and the land was sold out @ Rs.4,00,000/- per acre. The expansion of the sugar mill should be carried out.	also be installed on them which will be monitored by the CPCB & PPCB through web technology on day to day basis.	
9.	Sh. Surjit Singh, Sarpanch, Village BhattianJattan, District Hoshiarpur	He stated that the questions raised by the earlier speaker including sarpanch Village Bishanpur are very valuable; he further stated that no reply has been received by the villagers of Bishanpur regarding the complaint made by them. He thanks the project proponent for establishing the sugar mill in the area and given	Representative of the Sugar Mill informed that the company has four Sugar Mills, with the expansion of the unit, more opportunities of employment will be generated, but as of now, he has no data regarding how many persons are directly get the benefit of employment. The youth who had passed MBA and ITI will get the opportunity of job in the	Employment details are explained in S.No 3.

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		congratulation for the expansion of the same. The industry should give employment in the mill and an assurance should be given in this regard. The people of the area have given land to the sugar mill at the lower rates. Expansion of the sugar should be carried out and the pollution should also be controlled.	mill.	
10.	Sh. Vijay Kumar Jain, Nambardar, Village MahiuldinpurDalel, Distt. Hoshiarpur	He welcomes the Add, Deputy Commissioner and stated that the problems raised by the public are genuine and are in actual. He stated that he will request the ADC, Hoshiarpur to get the problems solved. The area has got the benefit from the sugar mill. Earlier, there was a problem of purchasing of rice, which was main crop of the area. Now, the farmers are getting more benefits by sowing sugarcane crop. He thanked the project proponent for expansion of the project. The industry	No reply was given	

S.No	Name & address of the person	Detail of query/statement / information clarification sought by the person present	Reply of the query / statement / information / clarification given by the project proponent.	Action Plan
		should make development in the villages which have given their land to the sugar mill. The sugar mill should be operated till the entire season		

7.3 Objective of Risk Assessment:

Industrial accident results in great personal & financial loss. Manufacturing processes that have the potential for accidents which may be catastrophic to the plant, work force, and environment or public.

7.3.1 Hazard Identification &Risk Assessment (HIRA)

Hazard analysis involves the identification and quantification of the various hazards (unsafe condition) that exist in the plant. On the other hand, risk analysis deals with the identification and quantification of the risk, the plant equipment and Personnel are exposed to due to accidents resulting from the hazards present in the plant.

Risk analysis involves the identification and assessment of risks to the population is exposed to as a result of hazards present. This requires an assessment of failure probability credible accident scenario, vulnerability of population etc. Much of this information is difficult to get or generate consequently, the risk analysis in present case is confined to maximum credible accident studies and safety and risk aspect related to Sugar manufacturing industry and power plant.

Activities requiring assessment of risk due to occurrence of most probable instances of hazard and accident are both onsite and off-site.

On-site

- Exposure to fugitive dust, noise, and other emissions
- Housekeeping practices requiring contact with solid and liquid wastes
- Emission/spillage etc. from storage & handling

Off-site

- Exposure to pollutants released from offsite/ storage/related activities
- Contamination due to accidental releases or normal release in combination with natural hazard
- Deposition of toxic pollutants in vegetation / other sinks and possible sudden releases due to accidental occurrences

7.3.2 Identification of types of Hazards in Sugar & Co-Generation Plant (HAZID)

Disaster at cement plants may occur due to following hazards:

Fire in Electric Panels, Oil room and alcohol storage
Explosion in Boiler house etc.
Electrocution

Cleaning of barrels, which have held chemical substances
Fall of material etc.

The potentially hazardous areas and the likely accidents with the concerned area have been enlisted below **Table No.7.1**

Table 7.1 Possible Hazardous Locations onsite

Sr. No.	Hazardous Area	Likely Accident
1.	Boiler Area	Explosion
2.	Turbine room	Explosion
3.	Electrocution	Lose fitting
4.	Electrical rooms	Fire and electrocution
5.	Transformer area	Fire and electrocution
6.	Cable tunnel	Fire and electrocution
7.	fuel storage area(Baggase/Rice Husk/Paddy straw/wood chip/maize cobs	Fire and spillage
8.	Chimney	Air pollution

a) Fire

Fire can be observed in the boiler area, Fuel storage yard, Fuel spillage, Electrical rooms, Transformer area etc. due to accidental failure scenario.

b) Boiler Explosion

Explosion may lead to release of heat energy & Pressure waves. **Table 7.2** shows tentative list of Damages envisaged due to different heat loads**.**

Table 7.2 List of Damages Envisaged at Various Heat Loads

Sr. No.	Heat loads (kW/m^2)	Type of Damage Intensity	
		Damage to Equipment	Damage to People
1	37.5	Damage to process equipment	100% lethality in 1 min. 1% lethality in 10 sec

2	25.0	Minimum energy required to ignite wood	50% Lethality in 1 min. Significant injury in 10 sec
3	19.0	Maximum thermal radiation intensity allowed on thermally unprotected equipment	--
4	12.5	Minimum energy required to melt plastic tubing	1% lethality in 1 min
5	4.0	--	First degree burns, causes pain for exposure longer than 10 sec
6	1.6	--	Causes no discomfort on long exposures
***Source**: World Bank (1988). Technical Report No. 55: Techniques for Assessing Industrial Hazards. , Washington, D.C: The World Bank.*			

c) Electrocution

Fatal Accident due to carelessness during working hours may lead to electrocution. Loose /wire cable may results in serious injury of manpower resulting in man-days loss.

7.4 Proposed Mitigation Measures

(A) Preventive Measures for Electricity Hazard

- All electrical equipment's is to be provided with proper earthing. Earthed electrode are periodically tested and maintained
- Emergency lighting is to be available at all critical locations including the operator's room to carry out safe shut down of the plant
- Easy accessibility of fire fighting facilities such as fire water pumps and fire alarm stations is considered
- All electrical equipment's are to be free from carbon dust, oil deposits, and grease
- Use of approved insulated tools, rubber mats, shockproof gloves and boots, tester, fuse tongs, discharge rod, safety belt, hand lamp, wooden or insulated ladder and not wearing metal ring and chain.
- Flame and shock detectors and central fire announcement system for fire safety are to be provided.

- Temperature sensitive alarm and protective relays to make alert and disconnect equipment before overheating is to be considered
- Danger from excess current due to overload or short circuit is to be prevented by providing fuses, circuit breakers, thermal protection

(B) Fuel Storage (Bagasse/Rice husk/Paddy straw/wood chip/maize cobs

- Proper stacking of material
- Safety signage to be put up for clear indication of storage yard
- Appropriate PPE have to be worn while handling Bagasse/Rice husk which may result in occupational hazard

(C) Precautionary Measures for Falling material

- Safety helmets to be used to protect workers below against falling Material
- Barriers like a toe boards or mesh guards is to be provided to prevent items from slipping or being knocked off the edge of a structure
- An exclusion zone is to be created beneath areas where work is taking place.
- Danger areas are to be clearly marked with suitable safety signs indicating that access is restricted to essential personnel wearing hard hats while the work is in progress.

(D) Safety Measures for Storage & Handling of Alcohol

Handling and storage of alcohol is done as per prescribed norms. The alcohol is directly fed to the bottling unit mechanically and no manual handling will be involved which will reduce the risk of spillage in the storage area. Following precautionary measures would be taken for safety:

(a) Handling and storage

Keeping away from heat, sparks and open flame, care will be taken for avoidance of spillage, skin and eye contact, well ventilation, Use of approved respirator if air contamination is above acceptable level will be promoted. For Storage and handling following precautions will be taken:

- Keeping away from oxidizers, heat and flames.
- Avoidance of plastics, rubber and coatings in the storage area.
- Cool, dry, & ventilated storage and closed containers.
- Grounding of the container and transferring of equipment to eliminate static electric sparks.

(b) First Aid Measures

For Skin contact, Eye contact, & Inhalation first aid measures to be taken onsite. Medical help to be sought as soon as possible.

(c) Fire Fighting Measures

- Use of extinguishing media surrounding the fire as water for Class A , dry chemicals (BC or ABC powder), CO2, Sand, for class B & C.

Special Fire Fighting Procedures; Keeping the fire upwind.Shutting down of all possible sources of ignition, keeping of run-off water out of sewers and water sources.Avoidance of water in straight hose stream which will scatter and spread fire. Use of spray or fog nozzles will be promoted, cool containers will be exposed to flames with water from the side until well after the fire is out.

- Hazardous Decomposition Products: gases of Carbon Monoxide (CO) & Carbon Dioxide (CO_2).

7.5 Need of Establishing a Fire Fighting Group

A small spark of fire may result into loss of lives, machines and the damage by fire may result in high economic losses. This type of losses can be avoided by preventing and controlling the fire instantly for which fire–fighting group will be established.

The firefighting group would house and keep in readiness, the following types of equipment and arrangements.

- CO_2 extinguishers
- Dry powder chemical extinguishers
- Foam extinguishers
- 80 mm. spray hoses
- Fire brigade
- Fire hydrant
- Protocol (chemical to combat oil fires).

In order to avoid fire in cable galleries, all the power and control cables of FRLS type (Fire Resistant Low Smoke) will be used.

i) Inspection

- Fire alarm panel (electrical) will cover the entire plant. The inspection group will periodically inspect fire extinguishers in fire stations and machines and other places.
- The groups will display emergency telephone number boards at vital points.
- The group will regularly carry out general inspection for fire.

ii) Procedure for Extinguishing Fire

The following steps will be taken during a fire accident in the system:

As soon as the message is received about fire, one of the systems will be diverted to the place

of the fire accident along with a staff member.

- Simultaneously plant fire station will be informed by phone walkie for fire brigades and fire stations of nearby area.
- In the meanwhile, the pipe system will be operated to obtain maximum pressure on output. In case cables are within the reach of fire, power supply will be tripped and the cables shifted.

iii) Fire Fighting with Water

Adequate and reliable arrangement is required for fighting the fire with water such as:

1. Provision for Fire brigade and Fire hydrant.
2. Arrangement of pipelines along and around all vulnerable areas.
3. Provision of valves at appropriate points to enable supply of water at the required place/area or divert the same to another direction/pipe line.
4. Provision of overhead tanks which will be providing with the water during power failure and it would work by the gravitational force.

iv) Sources of Water for Fire Fighting

The following two sources of water have been considered for firefighting:

- Overhead Tank
- Raw Water Reservoir

v) Fire Fighting with Fire Extinguishers

To deal with fire – other than carbonaceous fires, which can be deal with by water – suitable fire extinguishers are required to do the job effectively. It is therefore necessary to keep adequate number of extinguishers in readiness at easily approachable places. Adequate number of fire stations would be provided.

- Further, other spray groups from the system will be diverted to the spot.
- In case of fire in the belt, belt will be cut near the burning portion to save the remaining parts.
- After extinguishing the fire, the area will be well prepared for reuse.

7.6 Environment Health and Safety Cell

A fully fledge EHS cell (Environment Health & Safety Cell) has been there at plat site. Main function of EHS cell is to assess the potential risks/hazards to environment, health of employees & society and safety within the plant. Installation of fire fighting system, fire alarm, provision of safety/protective equipment's to workers and regular medical check-ups have been taken up. Plant is maintained at zero discharge so no likely impact is likely to occur on environment and

society. Also regular monitoring of different parameters is being carried out to ensure safety of environment and society. Trainings and Mock drills are also carried out in regular intervals for workers to ensure the safety in case of any accident or natural hazard.

7.7 Emergency Planning& Procedure

7.7.1 Emergency Control Center

Emergency Control Centre (ECC) is cell from which emergency operations are directed and coordinated. This centre activates as soon as on–site emergency is declared.

7.7.2 General Description of ECC

The ECC is located in an area that offers minimal risk being directly exposed to possible accidents.

During an emergency, the Emergency Management Staff, including the site controller shall gather in the ECC. Therefore, the ECC shall be equipped with adequate communication systems in the form of telephones and other equipment's to allow unhampered organisations and other nearby facility personnel.

The ECC provides shelter to its occupants against the most common accidents; in addition, the ECC's communication systems are protected from possible shutdown. The ECC has its own emergency lighting arrangement and electric communication systems operation. **Figure 7.1** shows Team involved in Emergency planning.

Only a limited and prearranged number of people are admitted to the ECC, when in use. This eliminates unnecessary interference and reduces confusion.

The ECC is always ready for operation and provided with the equipment and supplies necessary during the emergency such as:

- Updated copies of the On–site Disaster Management Plan.
- Emergency telephone numbers.
- The names, phone number, and address of external agencies, response organizations and neighboring facilities.
- The adequate number of telephone (more than two).
- Emergency lights, Clocks, Personal protective equipment.
- List of fire extinguishers with their type no. and location, capacity, etc.
- Safety helmets – List of quantity & location.
- Status boards/message board.
- Material safety data sheets for chemicals handled at the facility.

Several maps of the facility including drainage system for surrounding area showing:

- ❖ Areas where hazardous materials are stored.
- ❖ Plot plans of storage tanks, routes of pipelines, all water permanent lines etc.
- ❖ The locations where personal protective equipment are stored.
- ❖ The position of pumping stations and other water sources.
- ❖ Roads and plant entrances.
- ❖ Assembly areas & layout of Hydrant lines.

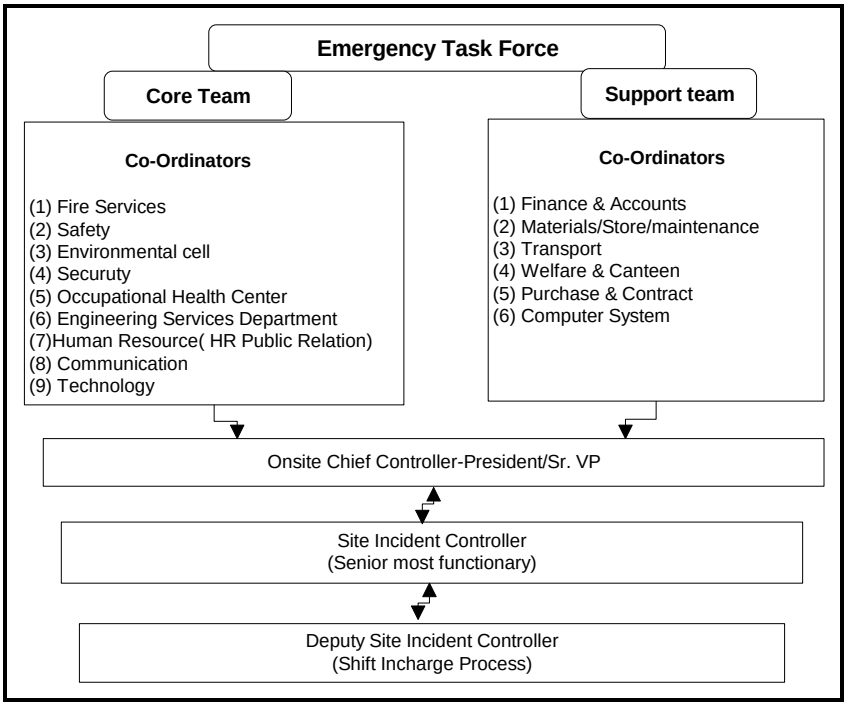


Figure 7.1: Emergency Team

7.7.3 Emergency Planning for Disaster due to Fire

Cable rooms, transformer, unit, auxiliary transformers, oil tanks, etc. within the plant are the likely areas for which disaster management plan is to be made to deal with any eventuality of fire. Stores, workshop, canteen and administrative building will be included.

7.8 Disaster Management Plan

Definition

A major emergency in an activity/project is one which has the potential to cause serious injury or loss of life. It may cause extensive damage to property and serious disruption both inside and outside the activity/project. It would normally require the assistance of emergency services to

handle it effectively.

Scope

An important element of mitigation risk is planning for emergency, i.e. identifying accident possibility, assessing the consequences of such accidents and deciding on the emergency procedures, both on site and off site that would need to be implemented in the event of an emergency.

Objective

The overall objectives of the emergency plan will be:

- To localize the emergency and, eliminate it; and
- To minimize the effects of the accident on people and property.

Elimination will require prompt action by operations and works emergency staff using, for example, fire–fighting equipment, water sprays etc.

Minimizing the effects may include rescue, first aid, evacuation, rehabilitation and giving information promptly to people living nearby.

Phases of Disaster

There are various phases of Disaster including pre and Post Management of Hazardous Event that may or has occurred.

Warning Phase

Emergencies /disasters are generally preceded by warnings during which preventive measures may be initiated. For example uncontrollable build-up of pressure in process equipment, weather forecast give warning about formation of Vapour cloud, equipment failure etc.

Period of Impact Phase

This is the phase when emergency /disaster actually strike and preventive measures may hardly be taken. However, control measures to minimise the effects may be taken through a well-planned and ready-to-act disaster management plan already prepared by organization. The duration may be from seconds to days.

Rescue Phase

This is the phase when impact is almost over and efforts are concentrated on rescue and relief measures.

Relief Phase

In this phase, apart from organization and relief measures internally, depending on severity of the disaster, external help are also to be summoned to provide relief measures (like

evacuations to a safe place and providing medical help, food clothing etc.). This phase will continue till normalcy is restored.

Rehabilitation Phase

This is the final and longest phase. During which measures required to put the situation back to normal as far as possible are taken. Checking the systems, estimating the damages, repair of equipment's and putting them again into service are taken up. Help from revenue/insurance authorities need to be obtained to assess the damage, quantum of compensation to be paid etc.

7.9 Proposed On–Site Emergency Plan

Onsite Emergency Plan

The onsite emergency is an unpleasant situation that causes extensive damage to plant personnel and surrounding area and its environment due to in operation, maintenance, design and human error. Onsite plan will be applied in case of proposed expansion. Following point are to be taken into consideration:

To identify, assess, foresee and work out various kinds of possible hazards, their places, potential and damaging capacity and area in case of above happenings.

Review, revise, redesign, replace or reconstruct the process, plant, vessels and control measures if so assessed.

Measures to protect persons and property of processing equipments in case of all kinds of accidents, emergencies and disasters

To inform people and surroundings about emergency if it is likely to adversely affect them

S. No.	Item	Cost in Rs. Per year
2.	Occupational Health & Safety	1,50,000
TOTAL		1,50,000

Disaster control Management system

Disaster Management group plays an important role in combating emergency in a systematic manner. Schematic representation Emergency Control Management system for Indian Sucrose is shown in **Figure 7.2.**

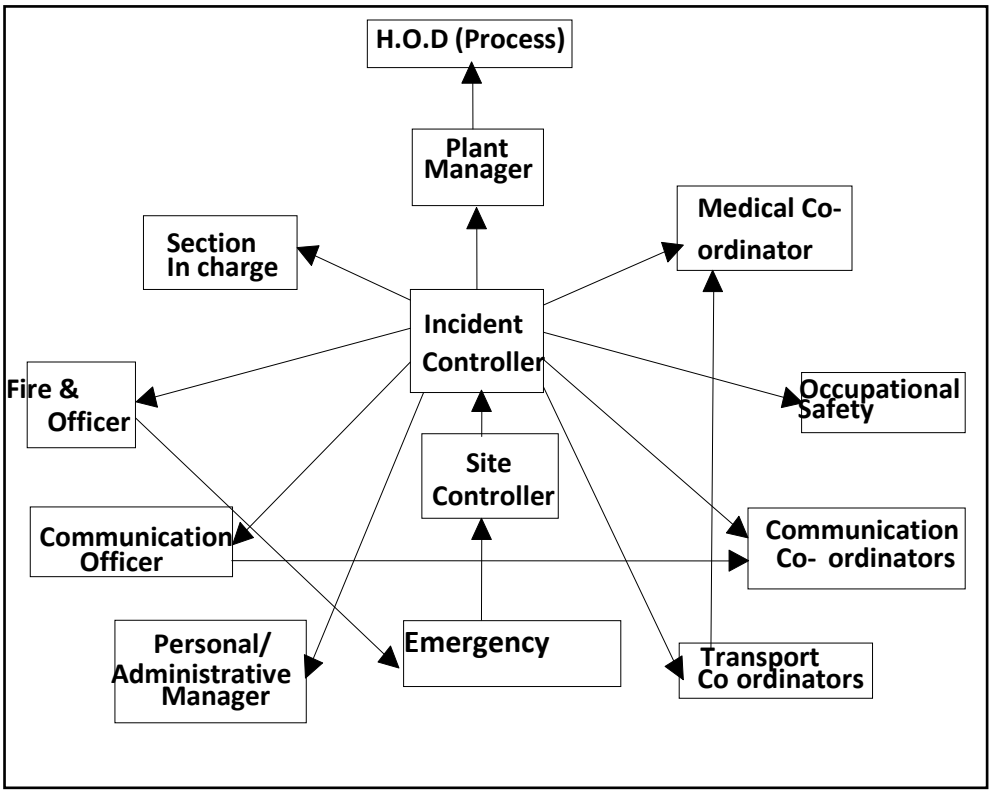


Fig. 7.2: Onsite DMP - Disaster Control / Management System

Control Room Facility

Following are the facilities to be provided at the control room of Ms. Wonder Cements Ltd to tackle the emergency failure scenarios:

Fire Detection System is to be installed in the control room
VHF base station with a range of 25 km and VHF handsets of range 5 km is to be installed for ready communication in emergency
Public address System (PAS) is to be installed to ease the communication to various corners of the site
The duties and responsibilities of different co-ordinators of Onsite Disaster Management Plan is to be displayed in the Control Room.

Alarm System

A siren shall be provided under the control of Security office in the plant premises to give warning. In case of emergencies this will be used on the instructions to shift in charge that is positioned round the clock. The warning signal for emergency shall be as follows:

- Emergency Siren: Waxing and waning sound for 3 minutes.
- All clear signal: Continuous siren for one minute.

Communication

Walkies & Talkies shall be located at strategic locations; internal telephone system EPBX with external P&T telephones would be provided.

7.10 Fire Protection System

Fire Fighting System

The fire protection system for the unit is to provide for early detection, alarm, containment and suppression of fires. The fire detection and protection system has been planned to meet the above objective an all–statutory and insurance requirement of Tariff Advisory Committee (TAC) of India. The complete fire protection system will comprise of the following.

Fire Fighting Facility: Available in existing unit and will be maintained in future

System Description of Fire Fighting System

The entire fire safety installation shall be compliant with the most stringent codes / standard for the entire complex to ensure the highest safety standard and uniformity of system. Further, before property is operational, the fire protection shall be fully operated and tested under simulated conditions to demonstrate compliance with the most stringent standards, codes and guidelines.

A) Fire pumping system

The fire pumping system shall comprise of independent electrical pumps for hydrant and sprinkler system, diesel engine driven pump & jockey pump for hydrant & sprinkler system.

Electrical pump shall provide adequate flow for catering requirement of hydrant system. Diesel engine driven fire pumps shall be provided for ensuring operation & performance of the system in case of total electrical power failure. Jockey pumps shall compensate for pressure drop and line leakage in the hydrant and sprinkler installation. Provision of PRS/ orifice plate shall be made in sprinkler riser to restrict pressure on sprinkler system.

Individual suction lines shall be drawn from the fire reserve tanks at the basement level and connected to independent fire suction header. The electric fire pumps, diesel engine driven fire pumps and the jockey pumps shall all draw from this suction header.

Delivery lines from various pumps shall also be connected to a common header in order to ensure that maximum standby capacity is available. The sprinkler pump shall be isolated from the main discharge header by a non-return valve so that the hydrant pump can also act as standby for the sprinkler system. The ring main shall remain pressurized at all times and Jockey pumps shall make up minor line losses. Automation required to make the system fully functional shall be provided.

B) Fire hydrant system

Internal and external standpipe fire hydrant system shall be provided with landing valve, hose reel, first aid hose reels, complete with instantaneous pattern short gunmetal pipe in the Complex.

The internal diameter of inlet connection shall be at least 80 mm. The outlet shall be of instant spring lock type gunmetal ferrule coupling of 63 mm dia. for connecting to hose pipe. Provision of flow switch on riser shall be made for effective zone monitoring. The flow switch shall be wired to FAP and shall indicate water flow on hydrant of the identified zone.

Recessed cupboard/ fire hydrant cabinet shall be strategically located for firefighting requirement. Location of cabinets shall be accessed as per compartmentation plan in consultation with the Architect. Provision of fire man's axe shall be made for internal hydrant.

External hydrant shall be located within 2 m to 15 m from the building to be protected such that they are accessible and may not be damaged by vehicle movement. A spacing of about 45-50 m between hydrants for the building shall be adopted. Details of fire hydrant system are as follows:

i) Piping

Mild Steel pipes (heavy class) as per IS: 1239 shall be provided throughout the complex. Pipes buried below ground shall be suitably lagged with 2 layers of 400 micron polythene sheet over 2 coats of bitumen.

ii) External Hydrants: External hydrants shall be provided all around the Complex. The hydrants shall be controlled by a cast iron sluice valve or butterfly valve. Hydrants shall have instantaneous type 63mm dia outlets. The hydrants shall be double outlet with CI duck foot bend and flanged riser or required height to bring the hydrant to correct level above ground.

- For each external fire hydrant two numbers of 63mm dia. 15 m long controlled percolation hose pipe with gunmetal male and female instantaneous type couplings machine wound with GI wire, gunmetal branch pipe with nozzle shall be provided.
- Each external hydrant hose cabinet shall be provided with a drain in the bottom plate.
- Each hose cabinet shall be conspicuously painted with the letters "FIRE HOSE".

iii) Internal Hydrants: Internal hydrant shall be provided on each landing and other locations as required by NBC with double headed gunmetal landing valve with 100 mm Dia inlet, with shut off valves having cast iron wheels. Landing valve shall have flanged inlet and instantaneous type outlets.

- Instantaneous outlets for fire hydrants shall be standard pattern and suitable for fire hoses.
- For each internal fire hydrant station two numbers of 63 mm dia. 15 m long rubberized

fabric lined hose pipes with gunmetal male and female instantaneous type coupling machine would with GI wire, fire hose reel, gunmetal branch pipe with nozzle shall be provided.

- Standard fire hose reels of 20mm dia high pressure rubber hose 36.5 m long with gunmetal nozzle, all mounted on a circular hose reel of heavy duty mild steel construction having cast iron brackets shall be provided. Hose reel shall be connected directly to the wet riser with an isolating valve. Hose reel shall be mounted vertically.
- Each internal hydrant hose cabinet shall be provided with a drain in the bottom plate. The drain point shall be led away to the nearest general drain.
- Each internal hydrant hose cabinet containing items as above shall also be provided with a nozzle spanner and a Fireman's Axe. The cabinet shall be recessed in the wall.
- Each hose cabinet shall be conspicuously painted with the letters "FIRE HOSE".

iv) Hose Reel: Hose reel shall be heavy duty, 20 mm dia, length shall be 36.5 metre long fitted with gun metal chromium plated nozzle, mild steel pressed reel drum which can swing upto 170 degree with wall brackets of cast iron finished with red and black enamel complete.

C) Sprinkler system

Elaborate automatic sprinkler system shall be provided. The system shall be suitably zoned for its optimum functional performance.

The sprinkler system shall be provided with control valves, flow and tamper switches at suitable location and shall be connected to control module of the fire alarm system for its monitoring and annunciation in case of activation.

Sprinkler type along with its Quartzite bulbs rating shall be selected based on the requirement of the space and shall be specified accordingly. Inspector's test valve assembly with sight glass shall be provided at remote end with discharge piped to drain outlet / pipe.

D) Fire Extinguishers

Portable fire extinguishers of water (gas pressure), Carbon-di-oxide, foam type, Dry Chemical Powder and FM-200 or Clean agent type shall be provided as first aid fire extinguishing appliances. These extinguishers shall be suitably installed in the entire areas as per IS: 2190.

The appliances shall be so installed over the entire sections, that a person is not required to travel more than 15 m to reach the nearest extinguisher. These shall be placed or hanged on wall in a group on several suitable places.

E) Fire Pump

The fire pump shall be horizontally mounted, variable speed type. It shall have a capacity to deliver and developing adequate head so as to ensure a minimum pressure at the highest and the farthest outlet. The pump shall be capable of giving a discharge of not less than 150 per

cent of the rated discharge, at a head of not less than 65 per cent of the rated head. The shut off head shall be within 120 per cent of the rated head.

The pump casing shall be of cast iron and parts like impeller, shaft sleeve, wearing ring etc. shall be of non-corrosive metal like bronze/brass/gun metal. The shaft shall be of stainless steel. Provision of mechanical seal shall also be made.

Bearings of the pump shall be effectively sealed to prevent loss of lubricant or entry of dust or water. The pump shall be provided with a plate indicating the suction lift, delivery head, discharge, speed and number of stages. The pump casing shall be designed to withstand 1.5 times the working pressure.

7.11 First Aid

A first aid centre with adequate facilities shall be provided. It shall be maintained round the clock by a compounder cum dresser and a doctor. An Ambulance shall also be provided at site to carry affected people to hospital.

7.12 Security

The security requirements of the company premises shall be taken care of by CSO assisted by a Fire In charge. The team, apart from the normal security functions will manage the role required during a disaster management operation as a part of the crisis control team.

7.13 Safety

The safety wing led by a Safety Manager will meet the requirement of emergencies round the clock. The required safety appliances shall be distributed at different locations of the plant to meet any eventualities. Poster/placards reflecting safety awareness will be placed at different locations in the plant area.

7.14 Evacuation Procedure

As the major hazard is only due to fire, which has more or less localized impact no mass evacuation, procedures are required. Evacuation would involve only the people working very close to the fire area.

7.15 Personal Protective Equipment's (PPE)

This equipment is used mainly for three reasons; to protect personnel from a hazard while performing rescue/accident control operations, to do maintenance and repair work under hazardous conditions, and for escape purposes. The list of Personal Protective Equipment provided at the facility and their locations shall be available in ECC.

Effective command and control accomplish these functions necessitates personal trained in this On–site Disaster Management Plan with adequate facilities and equipment's and equipment to carry out their duties and functions. These organizations and the facilities required to support

their response are summarized in the following subsections.

Personal protective equipment's play a vital role in overcoming major disastrous situation saving life during onsite emergency. List of recommended Personal Protective equipment (PPE) is given below in **Table 7.3**

Table 7.3 Summary of Recommended Personal Protective Equipment According to hazard onsite

Objective	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation	Safety glasses with side-shields, protective shades, etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords	Plastic helmets with top and side impact protection
Hearing protection	Noise, ultra-sound	Hearing protectors (ear plugs or ear muffs)
Foot protection	Failing or rolling objects, points objects. Corrosive or hot liquids	Safety shoes and boots for protection against moving and failing objects, liquids and chemicals
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures	Gloves made of rubber or synthetic material (Neoprene), leather, steel, insulation materials, etc.
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors	Facemasks with appropriate filters for dust removal and air purification (chemical, mists, vapors and gases). Single or multi-gas personal monitors, if available
	Oxygen deficiency	Portable or supplied air (fixed lines). Onsite rescue equipment
Body / leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and	Insulating clothing, body suits, aprons etc. of appropriate materials

Objective	Workplace Hazards	Suggested PPE
	laceration	
Contact with HSD	Fuel Oil storage and Fuel Handling	Canister type gas mask. PVC or Rubber. Goggles giving complete protection to eyes. Eye wash fountain with safety
Fly Ash	Fly ash handling and storage	Wear dust-proof goggles and rubber or PVC gloves. When using large quantities or where heavy contamination is likely, wear: coveralls. At high dust levels, wear: a Full-face Class P3 (Particulate) or an Air-line respirator where an inhalation risk exists, wear: a Class P1 (Particulate) respirator.

7.16 Mock Drill

As per the *Industrial Major Accident Hazard Rules,*

Mock drillS of the on-site emergency plan is conducted every month.

A detail report of the mock drill conducted is to be made immediately available to all the concerned authority

Also, Major Fire and Minor Fire mock drills are conducted once in three months and one month respectively.

7.17 Training

On job training to the engineers on various stages of risk analysis and preparedness during emergency to reflect in the operation of terminal, especially from the safety stand point. The fire team belonging to the fire fighting department are to be intensively trained for the use of all equipment and in various fire fighting methods for handling different types of fires.

Details of Training facilities for • safety • Fire Fighting	 Monthly Monthly Monthly

• Occupational Health & safety	

7.18 Procedure for Testing & Updating the Plan

Simulated emergency preparedness exercises and mock fire fighting exercises including mutual aid scheme resources and in conservation with district emergency authority to be carried out time to time.

7.19 Disclosure of Information to Worker & Public Awareness System in Existence & Anticipated

- Safety awareness among workers by conserving various training programs and Seminars, competition, slogans etc.
- Practical exercise.
- Distribution and practices of safety Instructions.
- Safety Quiz contests.
- Display of Safety Posters & Safety Slogans.
- Developing Safety Instructions for every Job and ensuring these instructions/booklets or manuals by the workers.

7.20 Off-Site Emergency Planning

The off-site emergency plan is an integral part of any hazard control system. It is based on those accidents identified by the works management, which could affect people and the environment outside the works. Thus, the off-site plan follows logically from the analysis that took place to provide the basis for the on-site plan and the two plans therefore complement each other. The roles of the various parties that may be involved in the implementation of an off-site plan are described below. The responsibility for the off-site plan will be likely to rest either with the works management or with the local authority. Schematic representation of various organisation involved during emergency is shown below in **Figure 7.1 & Table 7.4** shows details with Communication Nos during Offsite Emergency.

Table 7.4 Local Statutory Government bodies

List of DCs – Punjab

Sl No	District	Office/Fax No	Residence No.	Mobile No.
1	Ferozerpur	01612-24404/245467	244005	98552-12021
2	Faridkot	01639-250009/256009	254913	98552-12021
3	Jalandhar	0181-2224549/2458058	245966	9880-71075
4	Patiala	0175-2311324/2311329	2311325	98722-30897
5	Ropar	01831-221252/2714184	-	98150-00069 98729-10003
Deputy Commissioner				
1	Amritsar	0183-2226161 0183-2223551/2223991	2226162	94782-18866 98778-61786
2	Batinda	0164-2210042/2212789	2212789	7589033333
3	Barnala	01679-244360/241111	244386	84271-01650
4	Faridkot	01639-251651/251024	2510000	94630-75767
5	Fatehgarh Sahib	01763-232215/231339	221341	98722-21702
6	Ferozpur	01632-244008/241101	244006	98153-04213
7	Fazilka	01638-260555/260555	261555	98015-00008
8	Gurudaspur	01874-247500/224501	224270	94631-25029
9	Hoshirpur	01882-220301/220303	270302	98780-07221
10	Jalandhar	0181-2224783/2224727	2459664	94175-90001
11	Kapurthala	01822-233777/233393	233776	94170-79777
12	Ludhiana	0161-2403100/2400394	2404055	95013-99999
13	Mansa	01652-227700/229247	232900	90544-98988

14	Moga	01636-234400/234411	225401	89680-13313
13	Sri Muktsar Sahib	01633-263643/263808	263644	98140-57363
14	Patiala	0175-2311300/2311301/2201366	2311302-03	94179-44155
15	Pathankot	0186-2220342/2220342	2257233	99150-10135
16	Roopnagar	01881-221150/221165	221250	94638-37773
17	Sangrur	01672-234004/230008	232900	97800-08595
18	S.A.S Nagar **(ADC)**	0172-2270731/630966	2270220	98889-87867
19	S.A.S Nagar	01823-221301/226426	221401	94634-24848
20	Tarn-Taran	01852-224101/224102	246161	98552-330110

Details of SPs of Districts - Punjab

S.No	Name District	Mobile	Office No	Residential No	Fax No
1	Amritsar (R)	98727-72385 95929-00163	2584369, 2583819 97800-04040	0172-2625182	2702355
2	Tarn Taran	98761-00008	01852-226500	95929-14302 226200	224100
3	Gurdaspur	98765-16004	241173 502903 502860	220207 45081-84172	245396
4	Batala	95019-18300	242145 242134 97800-06109	220901	285320
5	Pathankot	98151-98144	0186-2220070/2220388	2250133	2220388
6	Jalandhar Rural	75080-85888 78373-40999	2220136 2220126	2233309	2220226
7	Shahid Bhagat Singh Nagar	94172-90000	01823-226039 / 221023 (PBX)		226763

8	Hoshiarpur	98786-18009	01882-22051 / 247501		247502 220513
9	Kapurthala	98780-00580	0182-2233736/2220513		233761
10	Patiala	97800-05544 95929-12501	0175- 5055417/5055418(SSP) 0175-5055402(SP (H))	2311135	2311115
11	Sangrur	95929-00051	0805-4545001(SSP) 0805-4545002(SP (H)) 0805-4545003(SP(D))	241300-01	241700
12	Fatahgarh sahib	97803-12000 95929-12301	01763-509666 / 609602	232990	220090
13	Barnala	98721-00016	0169-231107		243683
14	S.A.S. Nagar	98147-77863	0172-2270948(SP City-I) 0172-2270575(SP, City-II)		2270359
15	Ludhiana rural	98158-00301	224048 223359		223239
16	khanna	98158-00451 95929-14021	226325		226024
17	Rupnagar	97798-00888	01881-220946(SSP) 01881-22019(SP(D))		228874
18	Firozpur	98158-00405	01632-244049 / 246697 / 245063		244402
19	Fazilka	95929-86400	01638-262333		263312
20	Sri Muktsar sahib	90412-80817	01633-264809		241722
21	Moga	98158-00756	01636-236600		237817
22	Faridkot	98153-06868 84271-00068	01639-252000		250920
23	Bathinda	98765-16001	0164-2219100	2219101 2217900	2219300

8	Hoshiarpur	98786-18009	01882-22051 / 247501		247502 220513
9	Kapurthala	98780-00580	0182-2233736/2220513		233761
10	Patiala	97800-05544 95929-12501	0175- 5055417/5055418(SSP) 0175-5055402(SP (H))	2311135	2311115
11	Sangrur	95929-00051	0805-4545001(SSP) 0805-4545002(SP (H)) 0805-4545003(SP(D))	241300-01	241700
12	Fatahgarh sahib	97803-12000 95929-12301	01763-509666 / 609602	232990	220090
13	Barnala	98721-00016	0169-231107		243683
14	S.A.S. Nagar	98147-77863	0172-2270948(SP City-I) 0172-2270575(SP, City-II)		2270359
15	Ludhiana rural	98158-00301	224048 223359		223239
16	khanna	98158-00451 95929-14021	226325		226024
17	Rupnagar	97798-00888	01881-220946(SSP) 01881-22019(SP(D))		228874
18	Firozpur	98158-00405	01632-244049 / 246697 / 245063		244402
19	Fazilka	95929-86400	01638-262333		263312
20	Sri Muktsar sahib	90412-80817	01633-264809		241722
21	Moga	98158-00756	01636-236600		237817
22	Faridkot	98153-06868 84271-00068	01639-252000		250920
23	Bathinda	98765-16001	0164-2219100	2219101 2217900	2219300

Either way, the plan must identify an emergency coordinating officer who would take overall command of the off-site activities. Consideration of evacuation may include the following

factors:

In the case of a major fire but without explosion risk (e.g. an oil storage tank), only houses close to the fire are likely to need evacuation

If fire is escalating very fast it is necessary to evacuate people nearby as soon as possible

In acute emergency people are advised to stay indoors and shield themselves from the fire.

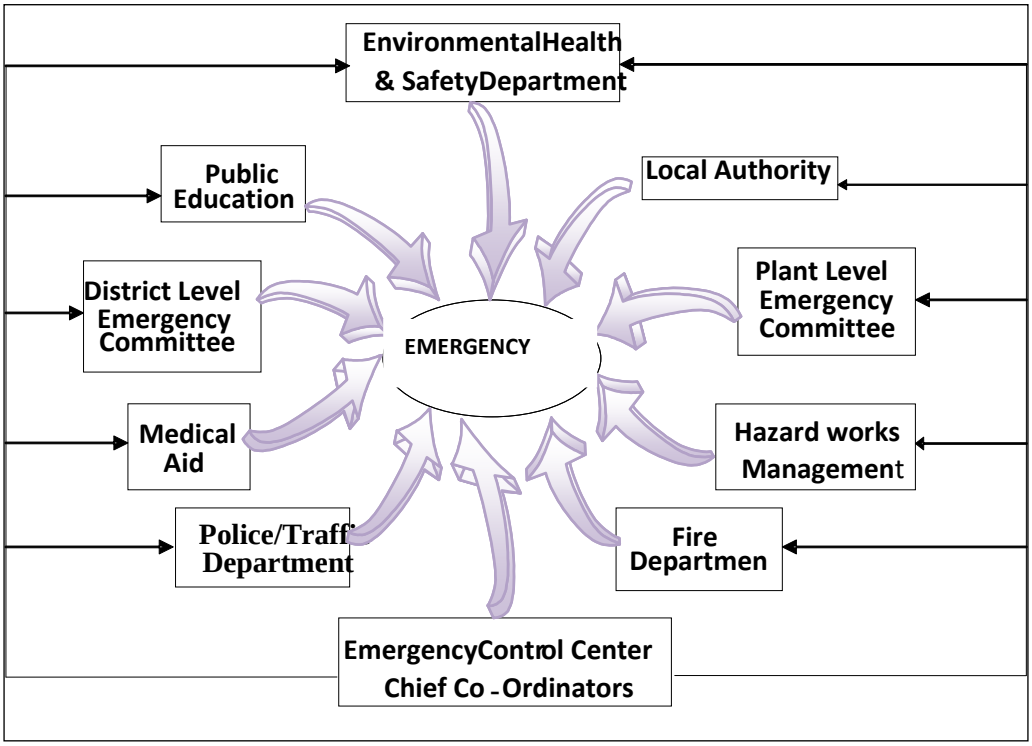


Figure 7.3: Various Organizations Involved During Emergency

Organization

Organizational details of command structure, warning systems, implementation procedures, emergency control centres include name and appointments of incident controller, site main controller, their deputies and other key personnel involved during emergency.

Communications

Identification of personnel involved, communication centre, call signs, network, list of telephone numbers.

Special Emergency Equipment

Details of availability and location of heavy lifting gear, specified fire-fighting equipment, fireboats etc.

Voluntary Organizations

Details of Voluntary organizations, telephone numbers nearby of hospitals, Emergency helpline, resources etc are to be available with chief authorities.

Non-governmental Organizations (NGO)

NGO's could provide a valuable source of expertise and information to support emergency response efforts. Members of NGOs could assist response personnel by performing specified tasks, as planned during the emergency planning process.

Evacuation of personnel from the affected area
Arrangements at rallying posts and parking yards
Rehabilitation of evacuated persons

Chemical information

Details of the hazardous substances (MSDS information) and a summary of the risks associated with them are to be made available at respective site.

Meteorological information

There is to be arrangements for obtaining details of weather conditions prevailing at or before the time of accident and weather forecasts updates.

Humanitarian Arrangements

Transport, evacuation centres, emergency feeding, treatment of injured, first aid, ambulances, temporary mortuaries.

Public Information

Dealing with the media-press office
Informing relatives, etc.

Assessment

Collecting information on the causes of the emergency
Reviewing the efficiency and effectiveness of all aspects of the emergency plan.

Role of local authority

Local Authorities like Panchayat, Sabha, Samity, municipalities can help in combating emergency situation after assessing the impact scenario in rescue phase.

Role of police

The police is to assist in controlling of the accident site, organizing evacuation and removing of

any seriously injured people to hospitals.

Co-ordination with the transport authorities, civil defence and home guards
Co-ordination with army, navy, air force and state fire services
Arrange for post mortem of dead bodies
Establish communication centre with easy contact with ECC

Role of Fire Brigade

The fire brigade is to be organized to put out fires and provide assistance as required during emergency.

Media

The media is to have ready and continuous access to designated officials with relevant information, as well as to other sources in order to provide essential and accurate information to public throughout the emergency and to avoid commotion and confusion
Efforts are made to check the clarity and reliability of information as it becomes available, and before it is communicated to public
Public health authorities are consulted when issuing statements to the media concerning health aspects of chemical accidents
Members of the media are to facilitate response efforts by providing means for informing the public with credible information about accidents involving hazardous substances

- Role of health care authorities

Hospitals and doctors must be ready to treat all type of injuries to causalities during emergency.
Co-ordinate the activities of Primary Health Centres and Municipal Dispensaries to ensure required quantities of drugs and equipments
Securing assistance of medical and paramedical personnel from nearby hospitals/institutions
Temporary mortuary and identification of dead bodies

7.21 Conclusion

As discussed above It is Project activity is safe and the project is not likely to cause any significant risk, as adequate risk mitigation measured.

CHAPTER -8
PROJECT BENEFITS

8.0 INTRODUCTION

The development of industrial projects plays a key role in the economic growth of any country. Sugar is one of the most important products to the mankind, which is widely used for domestic and industrial purposes. The growth of the sugar industry significantly contributes to economic growth as it generates employment both directly and also due to development of downstream industries. Peripheral development takes place and due to more influx of money through the area, overall importance of the area increases and overall the infrastructure improves.

8.1 EMPLOYMENT POTENTIAL

8.1.1 Direct Employment

Employment scenario of the study area is largely dependent on the agriculture and Industrialization of the area. The present expansion project has employment generation potential by way of recruiting local people directly for different activities of the project. Estimated manpower requirement after the proposed expansion shall be 350. Both skilled & un-skilled workers will be employed by the company. At present workforce of more than 325 are working directly in the existing facility. These persons will be on Company payroll. Others will be arranged through contractors. From unloading of raw materials to loading of finished goods one or more labour contracts will be awarded to local contractors. Local people will be given the opportunity in employment as per their capability and expertise. Priority will be given to scheduled tribe families and women. This will enhance the present socio economic status of the local people.

8.1.2 Indirect Employment

Indirect employment and income effects of any sugar plant are non-marginal and usually remain widespread across a long region. Over the years Indian Sucrose Limited has caused generation of income and employment opportunities the ancillaries and service unit switch came in the vicinity of the sugar plant, ancillary, transport and manufacturing sectors. Employment generation potential by way of recruiting local people directly for different activities of the project, specifically at the construction phase. It is expected that substantial portion of the investment in this project will trickle down to the local people in the form of employment and income.

A part of this increase in employment potential may be attributed to the existing plant and other industries in the vicinity. As the expansion will takes place, indirect employment is likely to grow further. The project is expected to generate substantial indirect employment in other

sectors such as service units etc. employment and income effects indicates that the project has strong positive direct as well as indirect impact on employment and income generation of the area. Since the infrastructure for maintenance of the specialized plant and machinery may not be readily near site, adequate maintenance facilities for day-to-day and minor plant maintenance including a well-equipped workshop and trained technicians shall be developed for the project. Major maintenance and annual overall will be contracted out to manufactures or reputed agencies. It is observed that about 150 people may get indirect employment only in these sectors.

8.2 IMPROVEMENT IN INFRASTRUCTURE M/s Indian Sucrose Limited intended to provide the following infrastructure in the study area of 10 km radius:

a) Road Transport: There will be improved road communication due to the proposed project and maintenance will also be done time to time.

b) Market: Need for the proposed products are based on the demand and supply gap in the current market. With increasing utilization of the current products, in future, to cater the requirement of all the products, it is essential to have the proposed manufacturing unit.

c) Infrastructure: Creation of community assets (infrastructure) like Installation/ Repair of Hand Pumps/ Bore wells Gram Panchayat dug well de-siltation and deepening, as a part of corporate social responsibility.

8.3 EDUCATION The local peoples' interest towards education will increase due to the expectation of getting jobs, especially from non-agricultural sources such as the industries in the vicinity of sugar mill. The project is expected to increase such aspirations by bringing opportunities of some direct and indirect employment for the local people. The general awareness towards the importance of education is expected to increase as a result of the proposed expansion. The project will have positive impact on the level of education of the people.

8.4 CORPORATE ENVIRONMENT RESPONSIBILITY (CER) ACTIVITIES

Corporate Environment Responsibility is for the sustainable development of various components like Social, Economic, Environmental etc. These entire components are closely interrelated and mutually re-enforcing. The various activities proposed under the CER will as per the issue raised during Public hearing, Social need assessment and Environment Management Plan. The CER budget proposed by the project proponent is **1.68 Crore**. This CER budget is proposed as per the Office Memorandum dated 1st May, 20188 by the MoEF & CC. The details of CER activities are explained in the Table no 8.1.

Table: 8.1 Proposed CER Activities

S.No.	CER Activities	Fund allocated (Lakhs)	Implementation Time
1.	Organic waste converter with consultation of village panchayat 1. Bishanpur 2. Chak Allabaksh 3. Durgi Rajpuran 4. Mahiuldinpur Dalel 5. Khanpur	40	1 year
2.	Pond Adaptation in Village (1. Gonspur (2. Devi Dass-1 (3. Devi Dass-2 (4. Abdulapur (5. Jalala	150	3 years
3.	Medical facility provided in dispensary of following villages (1. Bhangala (2. Tanda Ram Sahai (3. Bhebal Manj	40	1 year

4.	Ambulance Facility 24x7 made available (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	30	1 year
5.	Solar Panel installation / Computer labs/ Toilet facility in schools of village (1. G.P.S. Panjhdera kalan (2. K.M.S. Khanpur (3. G.P.S. Muradpur Awana	200	3 years
6.	Provide color coded dustbins in (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	20	1 year
7.	Green Area development (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel	45	2 years

	(5. Khanpur		
8.	STP installation in village (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	100	3 years
9.	Drainage system development in (1. Bishanpur (2. Chak Allabaksh (3. Durgi Rajpuran (4. Mahiuldinpur Dalel (5. Khanpur	100	3 years
10.	Community toilet for male & female	70	1 year
11.	Rain Shed at bus stops	50	2 years
	Total	**8.4**	

8.5 GREENBELT DEVELOPMENT

Green belt will be developed over 33% area of the total plant area. Out of the 21.46 ha of the plant area, about 7.79ha will be developed as greenbelt which is more than 33%. This greenbelt will serve as a buffer between the peripheries and the industry, there by controlling the air emissions and noise levels. Indigenous trees with tree density of 2500 trees per hectare (600nos. of plant per acre) with local board leaf specification will be planted. Total numbers of plants required to cover 7.79ha. is ~19,200.

Sr. No.	Year	Total Plants	Cost (lakhs)
1	1st Year	6500	10
2	2nd Year	6000	9.5
3	3rd Year	5500	9
4	4th Year	700	3.5
5	5th Year	500	2
Total		**19,200**	**34**

8.6 Environmental benefit:

- The project proponent adopts the Zero Liquid Discharge (ZLD) technology. Hence, there will be NO discharge of liquid effluent outside factory premises. Industrial waste water will be treated in the ETP and Domestic in the STP.
- Rain water harvesting will be implemented in the project sites to recharge the ground water table.
- Agricultural waste will be used as fuel in the boiler, which decreases the dependency on the Natural resources.
- To minimize the air pollutant concentration, the company have the wet Scrubber and ESP will be installed.

8.7 OTHER TANGIBLE BENEFITS

Sugar mill plants by nature serve as the nuclei for development of small-scale industries in the areas around them. These small-scale units usually have input-output linkages with the sugar mill plants. The demand for sugar by sugar mill plants are generally met through the supply of sugar from small-scale units located nearby. The present project is likely to accelerate such industrialization through “Bubble Effects” in the study area. It is important to note that the small-scale units are usually labour-intensive and high-priority industries from social point of view. This is expected to play a major role in the future economic and social development of

this area. The proposed project is expected to serve as Centre of significant small-scale industrial economy around it complemented by the services sector. This is expected to play a major role in the future economic and social development of this area. Project will encourage industrial growth of this sector specifically in formulation units in the region;

- Project will encourage industrial growth of this sector specifically in formulation units in the region;
- The company will cater needs of the domestic market also.
- The company will have market growth of its name in various States. Present markets for the products are Punjab, Haryana etc.

CHAPTER -9
ENVIRONMENTAL COST BENEFIT ANALYSIS

9.0 General

As per EIA Notification dated 14th Sept., 2006, the Chapter on the 'Environmental Cost Benefit Analysis' is applicable only if the same is recommended at the Scoping stage.

As per the ToR points issued by MoEF, New Delhi vide letter no No. **letter no SEIAA/2018/858 on 16.07.2018** for the proposed project activity, the 'Environmental Cost Benefit Analysis' is not required.

CHAPTER -10
ENVIRONMENT MANAGEMENT PLAN

10.0 Introduction

The environmental management plan consists of the set of mitigation, management, monitoring and institutional measures to be taken during implementation and operation to eliminate adverse environmental impacts or reduce them to acceptable levels. The present environmental management plan addresses the components of environmental affected during construction of the plant and by the different activities forming part of the manufacturing processes.

10.1 PURPOSE OF ENVIRONMENTAL MANAGEMENT PLAN: The environment management plan is prepared with a view to facilitate effective environmental management of the project, in general and implementation of the mitigation measures in particular. The EMP provides a delivery mechanism to address potential adverse impacts and to introduce standards of good practice to be adopted for all project works. For each stage of the program, the EMP lists all the requirements to ensure effective mitigation of every potential biophysical and socio-economic impact identified in the EIA. For each impact or operation, which could otherwise give rise to impact, the following information is presented:

- To treat and dispose of all the pollutants viz. liquid, gaseous and solid waste so as to meet statutory requirements (Relevant Pollution Control Acts) with appropriate technology.
- To support and implement work to achieve environmental standards and to improve the methods of environmental management.
- To promote green-belt development.
- To encourage good working conditions for employees.
- To reduce fire and accident hazards.
- Budgeting and allocation of funds for environment management system.
- To adopt cleaner production technology and waste minimization program.

10.2 Environmental Management Cell

Apart from having an EMP, it is also necessary to have a permanent organizational set up charged with the task of proposed plant will create a department consisting of officers from various disciplines to co–ordinate the activities concerned with the management and implementation of the environmental control measures. Environment Management cell is defined in the **Fig 10.1** and company hierarchy system is defined in the **Fig 10.2.**

- Basically this department will undertake to monitor the environmental pollution levels by measuring stack emissions, ambient air quality, water and effluent quality, noise level etc. either departmentally or by appointing external agencies wherever necessary.

- In case the monitored results of environmental pollution are found exceeding the allowable values, the environmental management cell will suggest remedial action and get these suggestions implemented through the concerned plant authorities. The actual operation and maintenance of pollution control equipment of each unit will be under the respective plant managers.
- The Environmental Management Cell (EMC) will handle of all the related activities such as collection of statistics of health of workers and population of the region, afforestation and green belt development.

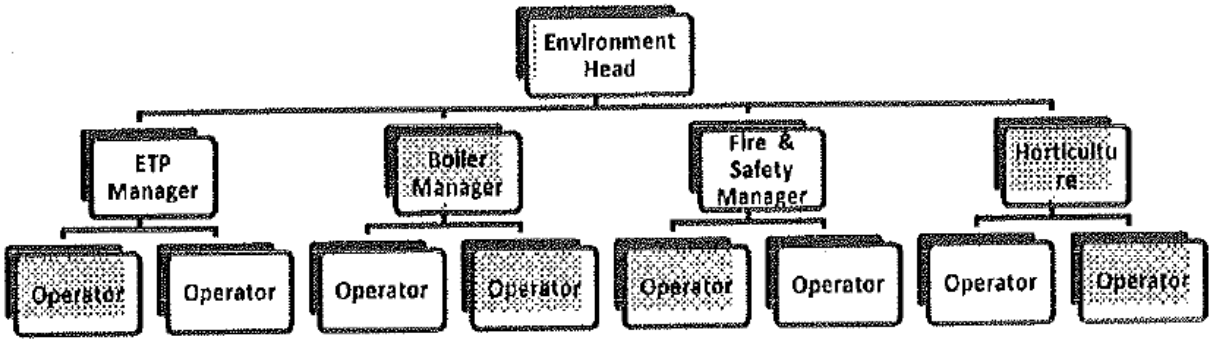


Figure10.1 Environmental Management Cell

10.3 Environmental Policy

The Environment cell follow the well-defined Environment policy Which are defined below:
Effectively manage, monitor, Improve and communicate the environmental performance.

- Take all reasonable steps to prevent pollution.
- Set realistic anti measurable objectives and targets for continual improvement of the Environmental performance.
- Ensure that all employees and contractors are trained to understand their environmental responsibilities and create an environment that adheres to the company's Policies, Procedures and Application Regulations.
- Hold leadership accountable for good environment performance of our operations and projects, inherent in that accountability will be the commitment of senior management to provide resources and successfully create an appropriate environment. .
- Comply fully with all relevant legal requirements, codes of practice and regulations.
- Reduce, recycle and reuse natural resources.
- Minimize waste anti increase recycling within the frame work of waste management procedures, identify and manage environmental risks anti hazards.
- The protect proponent shall regularly review this policy and ensure that corrective and preventive actions are taken in order to ensure continual improvement.

- To treat all the pollutants viz liquid and gaseous, which contribute to the degradation of the environment, with appropriate technologies.
- To comply with all regulations stipulated by the Central] State Pollution Control Boards related to air emission and liquid effluent discharge as per air and water pollution control laws.
- To handle hazardous wastes as per the hazardous Waste (Management and Handling Rules), 2009 of the Environment (Protection) Act, 1986.
- To encourage support and conduct development work for the purpose of achieving environmental standards and to improve the methods of environmental management.
- To create good working conditions (avoid of all order and noise pollution) for employees.
- To minimize fire and accident hazards.
- Perspective bed getting and allocation of funds for environment management expenditure.
- Preventive maintenance and regular checking of machineries and equipments.
- To make continuous efforts in waste minimization.
- For the equipments and pipe lines, leakage detection and repair shall be scheduled to minimize fugitive emissions. '
- Continuous efforts with energy nudist for the reduction of fuel and energy consumption.
- The system of reporting of none—conformance/ violation of any Environmental Law/ Policy will be as per quality management system. The internal audit will be conducted on periodic basis and any none—conformance] violation to Environmental Law/ Policy will be closed and discussed during Management Review Meetings of Board of Directors/ Partners.
- Environmental Management Cell will be responsible to implement the Environmental Policy.

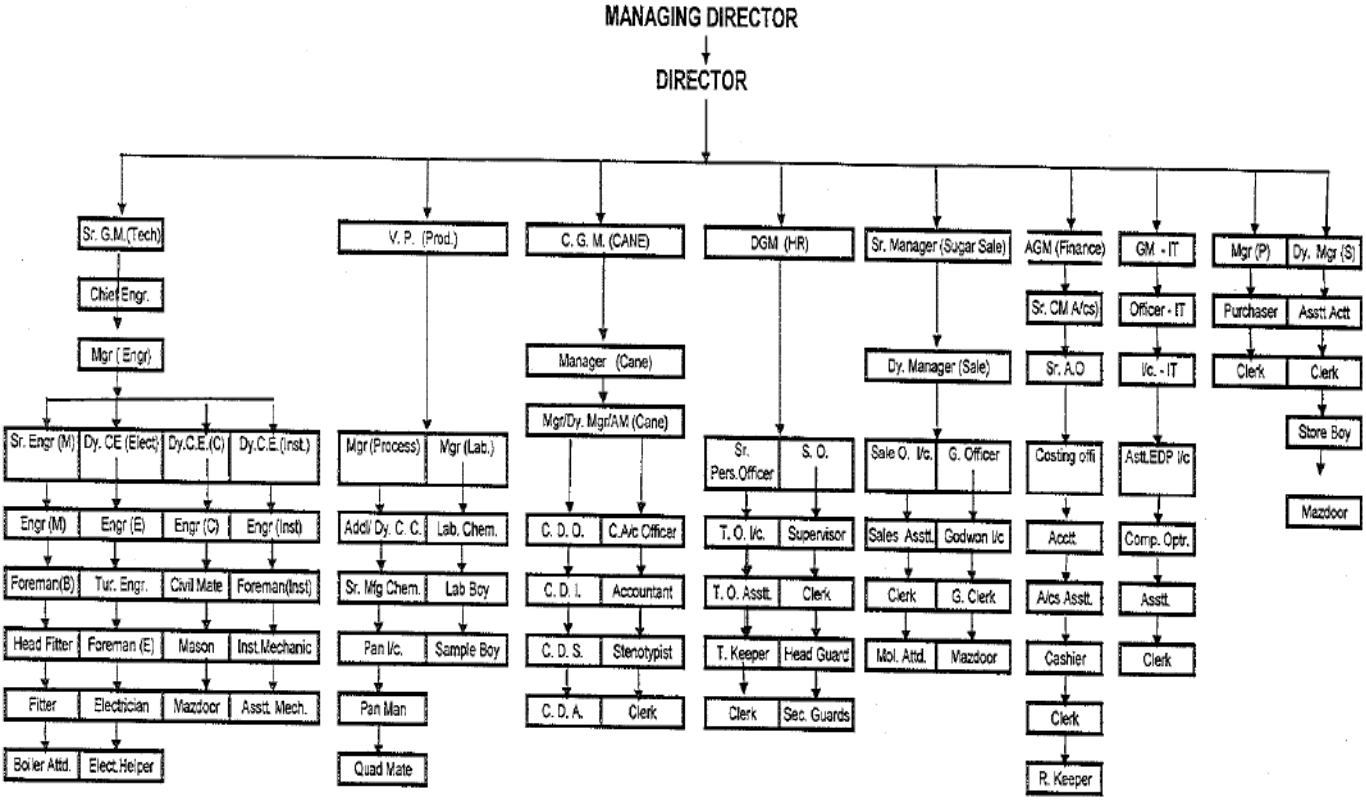


Figure: 10.2 Company Hierarchical Structure

10.4 Green Belt Development

The air pollution emitted by Industries settles on the ground and vegetation of surrounding area. The plants Interact with both gaseous and particulate pollutants and to great extent absorb them and thus, remove them from the atmosphere. This pollution removal property of the plants has been known for a long time.

An area of 7.78 ha (more than 33%) of the total site area (21.46 ha) is earmarked for green belt development. As it is an existing facility some of the land is covered under greenbelt. But it is not alike a typical industrial greenbelt of 1200 to 1500 trees per ha. There are big gaps. A typical industrial greenbelt of 5 to 10 m width on all sides cannot be developed unless the existing trees are removed and the entire area is denuded. It is not advisable to uproot the existing trees and hence it is planned to reinforce and strengthen the existing greenbelt by pruning the branches of the trees to the desired level so that it becomes possible to grow new saplings close to the trees. It is proposed to have 2 to 5 rows of trees on all sides with a spacing of 2m x 3m (2500 / Ha).

Action plan for greenbelt development in 33% of area:

Environmental protection has been considered as an important domain for industrial and other developmental activities in India. Ministry of Environment, Forests & Climate Change (MoEF&CC) has taken several policy initiatives and promoted integration of environmental concerns in developmental projects. One such initiative is the notification on Environmental Impact Assessment (EIA) of

developmental projects issued in 1994 and further revised notification in year 2006 under the provisions of Environment (Protection) Act, 1986 EIA Guidance Manual for building, construction, townships, and area development projects proactively talks about the importance of greenbelts in such projects.

Greenbelt in India refers to a buffer zone created beyond which industrial activity may not be carried on. This concept has developed through a long line of cases and today, greenbelts are present not only for the purpose of protecting sensitive areas to maintain ecological balance but are also be found in urban areas so as to act as a sink for the harmful gases released by vehicles and industries operating in the city area. In this regard, comprehensive Guidelines for Developing Greenbelts have been compiled by the Central Pollution Control Board [Refer Probes/75/1999-2000].

As per the stipulations of MoEF&CC, greenbelt is to be provided all along the boundary by planting tall, evergreen trees and the total green area including landscaping area will be 1/3rd (about 33%) of the plant area. This will include Lay down area which will be later on converted into Green area. Depending on the size, activity and environmental impacts of the industry; extent of land available, agro- climatic conditions, at least 5 m wide greenbelt of two rows of tall and evergreen plants shall be grown at the rate of 1000 per Ac (2500 per ha). At a distance of about 10m from tree to tree, about 100 avenue trees can be grown per km on each side of open & Cane yard area. Thus, a total of 1200 Avenue Trees can be grown along the 2 km open & Cane yard area network theoretically or mathematically. Thus, it is feasible to grow about 800 avenue trees at a distance of 10 m from plant to plant in one row on either of the roads. Profusely branching trees with canopy, such as Peepal, Banyan, Kadamb, Neem, *Conocarpus lancefolius* etc will be grown as avenue trees.

As stated earlier, it envisaged to develop greenbelt of 5 to 10m width on all sides of the industry in an area of open & Cane yard area. At present around 200 plants are existing in the facility.

Saplings grown in polythene bags will be planted at distance of 2 m x 3 m @ 2500 / Ha). Work on greenbelt shall be undertaken along with the proposed construction. An amount of Rs.34,00,000 is allocated for development of greenbelt. A total of 19,475 trees will be grown in the 7.79 Ha in 2 to 10 rows of 3mx2m all along the boundary besides one row of avenue plantations on either side of the internal roads at a distance of 10m from plant to plant. Saplings grown in poly bags are transplanted in pits of 30 Cm depth. Treated effluent water and rain water harvested shall be used for plantations.

Table 10.1Greenbelt Development Plan

Sr. No.	Year	Total Plants	Cost (lakhs)
1	1st Year	6500	10
2	2nd Year	6000	9.5
3	3rd Year	5500	9
4	4th Year	700	3.5
5	5th Year	500	2
Total		**19,200**	**34**

A list of plants suitable for greenbelt and to the local agro climatic conditions is given in Table below:

Table No.10.2: List of plants suggested for greenbelt and avenue plantations

S.No	Botanical Name	Family	English /Common	S/T	Habitat	Height(m)
1	*Acacia auriculiformis*	Mimoseae	Australian Wattle	T	Tree	16
2	*Acacia nilotica*	Mimoseae	Indian gum	T	Tree	8
3	*Albizia lebbeck*	Mimoseae	Sirisha			15
4	*Anthocephalus chinensis*	Rubiaceae	Kadambama	T	Tree	20
5	*Azadirachta indica*	Meliaceae	Neem	T	Tree	20
6	*Bambusa arundinacia*	Poaceae	Thorny Bamboo	T	Shrub	20
7	*Bambusa vulgaris*	Poaceae	The Golden Bamboo	T	Sh/Tree	15
8	*Bauhinia purpurea*	Caesalpinaceae	Butterfly tree	T	Tree	7
9	*Bauhinia varigata*	Caesalpinaceae	Budhist bauhinia	T	Tree	5
10	*Cassia fistula*	Caesalpinaceae	Golden showers	T	Tree	12
11	*Citrus aurantium*	Rutaceae	Citrus tree	T	Tree	5
12	*Cocos nucifera*	Arecaceae	Coconut tree	T	Tree	15
13	*Delonix regia*	Caesalpinaceae	Flame tree	T	Tree	15
14	*Emblica officinalis*	Euphorbiaceae	Gooseberry	T	Tree	5
15	*Eucalyptus citriodora*	Myrtaceae	Lemon scented gum	T	Tree	20
16	*Ficus benghalensis*	Moraceae	Banyan tree	T	Tree	20
17	*Ixora undulate*	Rubiaceae	Ixora	T	Tree	6
18	*Madhuca longifolia*	Sapotaceae	The butter tree	T	Tree	15
19	*Mangifera indica*	Anacardiaceae	Mango tree	S	Tree	15
20	*Nerium indicum*	Apocynaceae	Pink oleander	T	Shrub	5
21	*Peltophorum pterocarpum*	Caesalpinaceae	Copper pod tree	T	Tree	20
22	*Polythia longifolia*	Anonaceae	Ashoka tree	S	Tree	20
23	*Terminalia catappa*	Combretaceae	The Indian almond	T	Tree`	10

Care will be taken to plant ample trees along the road side, boundary wall as well as within the plant premises. It will enable proper balance of atmosphere both outside the campus by absorbing noise and gaseous pollutants of the road side movement of vehicles and also absorption of noise and emissions within the premises of the plant.

Company will follow the following five year comprehensive greenbelt development program after that the company will keep following the prevailing practices of greenbelt management.

1st & 2nd YEAR PLAN:

- Capital provision for irrigation facilities (water pipelines & taps/valves, flexible pipes) and shall be made in project capital cost
- Company will start activities of greenbelt development along with inception of construction/expansion phase of the project

- Company will provide all necessary facilities for irrigation of greenbelt
- Company will acquire saplings from local private/government (Forest & Other) nursery
- Plantation & maintenance of trees & shrubs as described in Guidelines for greenbelt development
- Company will do fertilization as required for healthy & dense greenbelt development

3rd to 5th YEAR PLAN:

- Company will maintain all necessary facilities for irrigation of greenbelt in good condition and necessary maintenance of irrigation facilities will be done regularly
- Company will regularly assess survival rate of planted trees & shrub and if required necessary re-plantation will be done to ensure healthy & dense greenbelt area in 33 % of the total area of proposed premises
- For re-plantation, if required, company will acquire saplings from local private/government (Forest & Other) nursery
- Company will do fertilization as required for healthy & dense greenbelt development.

Management Period:

The properly designed greenbelt area, irrigation facilities, Sapling storage & maintenance area and storage for greenbelt development resources/tools etc. will be provided in construction phase prior to commissioning of plant operation of expansion unit. The necessary structural maintenance shall be done throughout the extent of operation phase. The greenbelt development guidelines and five year program will be initiated with inception of construction phase of project and will be implemented & practiced as routine throughout the project life.

10.5 Budget and Procurement Schedule

On regular basis, Environment Management Cell shall inspect hence site and availability of the materials, technologies, services and maintenance works. The Cell shall make appropriate budget for the purpose. Regular record review for any change in financial requirement of environment management shall be done and appropriate budgetary provisions shall be made. Along with other budgets, Budget for environmental management shall be prepared and revised regularly as per requirement. The budget shall include provisions for:

- Environmental Monitoring Program
- Operation and Maintenance of Environmental Technologies / Equipments
- Laboratory works for Environmental management activities
- Emergency Purchase of necessary material, equipments, tools, services
- Greenbelt development
- Social and Environmental Welfare and Awareness programs / training (CSR)
- Annual Environmental Audit

Table 10.3: Environment Management Budget

S. No.	Particulars		Initial Cost (Crore)	Recurring Cost (Lakh)
1.	Air Pollution Control ESP		1.90	20
2.	Wastewater Treatment	Modification of ETP	0.40	5
		STP	0.30	3
3.	Fire and Safety		0.15	3
4.	Green Belt Development		0.34	4
5.	Rain Water Harvesting Plan		0.70	3
	Total		**3.79**	**38**

10.6 CONSERVATION PLAN FOR INDIAN PEAFOWL

Conservation plan has been approved by the concerned authority approval letter attached as annexures.

CHAPTER -11
SUMMARY AND CONCLUSION

11.0 Introduction

M/s. Indian Sucrose Limited was established in 1990 and came in operational phase in 1991 with capacity 2500 TCD with Cogeneration power plant of capacity 7.5 MW. The capacity of the plant was increased to 5000 TCD along with 19.5 MW Cogeneration power plants in year 2005. The project proponent had increased its capacity from **5000 TCD to 6500 TCD** in the year **2015-16** with the intimation to **Punjab Pollution Control Board** and **Central Excise Deptt. vide our Letter No(s).304 dt. 22.09.2015 & 536 dt. 11.12.2015**but **without** any prior **Environment Clearance**, Now the proponent has proposed the project to expand the capacity to **12000 TCD** along with Co-generation power plant to **59.5 MW** at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt.-Hoshiarpur

11.1 Project Location and the Surrounding Environment

The proposed project is located at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt. Hoshiarpur, Punjab. The project is established over an area of 21.46 Hactare. Sugarcane will be used as raw material for sugar production. The plant will operate 160 days in a year and will produce Sugar. The power will be generated with steam during the process. As per the EIA notification, 2006 this project falls under Category 'B' and Project or Activity 5(j) Sugar Industry, hence require Environmental Clearance. Presently there is no SEIAA/SEAC in Punjab hence the case is applied under category A and the case will be appraised at the level of MoEF&CC.

Table 11.1 Project and Environmental Settings

S. No.	Particulars	Details
1.	Nature & size of the Project	12000 TCD sugar plant along with 59.5MW Cogeneration power plant
2.	Total Project Area	21.46 hectare
3.	Nearest Highway	NH 1A , 0.5 Km,W
4.	Nearest Railway Station	Mukerian Railway station , 3 Km, N
5.	Nearest Airport	Sri Guru Ram Das Jee International Airport Amritsar ,95 Km, SW
6.	National Parks/ Wild Life Sanctuaries/ Biosphere Reserves/RF & PF within 10km radius	There is no National Parks/ Wild Life Sanctuaries/ Biosphere Reserves/RF & PF within 10km radius area of project site

7.	Nearest Water Bodies	Beas river is at a distance of 10km (approx) in West direction from project site. Mukerian Hydel Canal, 7Km, E
8.	Seismic Zone	Zone IV
9.	**Cost Details**	
	Project Cost	Existing – 157 crore Proposed – 190 crore Total – 347 crore
	Cost for CER	Rs. 8.4 Crore
10.	Working Days	Approximately 160 days (during season)

11.2 Project Requirement

11.2.1 Raw Material Requirement (Sugarcane Based)

The raw materials required for the Sugar Mill can be broadly categorized and given in **Table11.2.**

Table 11.2 Raw Material Requirement

S. No.	Particular	Existing	Proposed	Total	Source of the Raw Material & Mode of Transportation
1.	Sugarcane	5000 TCD	7000 TCD	1200 TCD	From reserve area by tractor trolley/trucks.
	Chemicals				
2.	Lime	10 MT/Day	15 MT/Day	25 MT/Day	From market
3.	Sulphur	4 MT/Day	Not required	Not required	-
	Fuel Requirement (TPD)				
4.	Bagasse (In season)	1400	1960	3360	From their own mill
5.	Rice Husk (Off-season)	630	882	1512	From market
6.	Paddy Straw(Off-season)	398	560	958	From market
7.	Wood Chips(Off-season)	200	280	480	From market

8.	Maize Cobs(Off-season)	107	150	257	From market

11.2.2 WATER REQUIREMENT

Water Requirement for Sugarcane based

Existing Water Requirement in the sugar mill is **468 KLD** and **129 KLD additional water** will be required for the proposed project. The total water requirement for Sugar Mill will be **597 KLD**.

Ground water will be used in the sugar mill through Tubewell. Permission from CGWA **application** has been applied vide application no **21-4/5656/PB/IND/2020** on dated **28/04/2020**

11.2.3 POWER REQUIREMENT

Table 11.3 Power Requirement

S.No.	Particulars	Details @0.032 MW/T	Source
1	Power Requirement for existing 5000 TCD sugar mill	160 MW /day during season	**Source:** From their own Cogeneration power plant
2	Power Requirement for proposed expansion 12000 TCD sugar mill	224 MW/day during season	
	Total	384 MW/day	
	Cogeneration Power Production 59.5 MW/h		

11.3 MANUFACTURINGPROCESS

Manufacturing Process is given below:

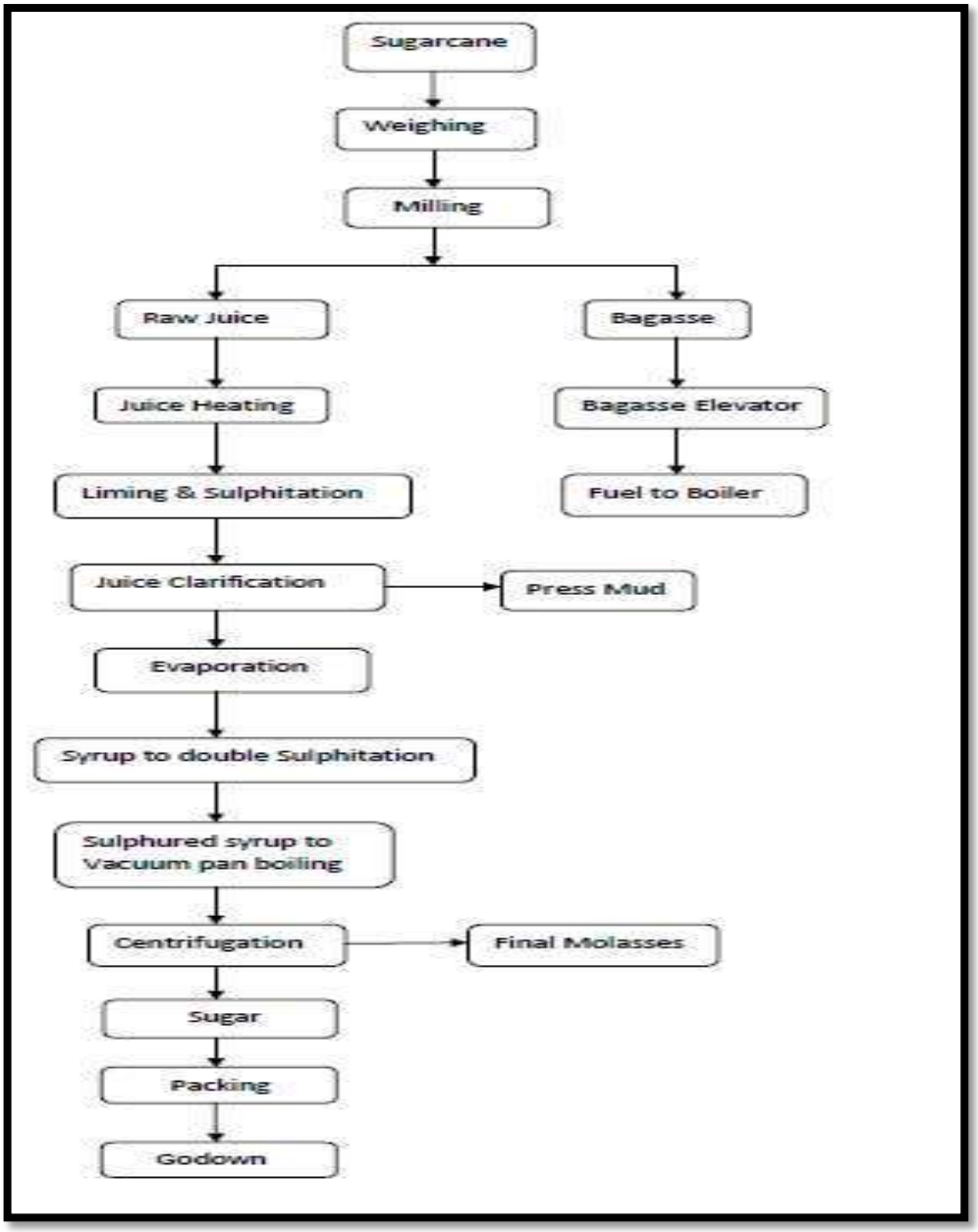


Figure 11.1 MANUFACTURING PROCESS

11.4 ENVIRONMENTAL BASELINE STUDY

1st October 2017 to 31st December 2017

Table 11.4 Baseline Monitoring Results

Parameters	No. of Sites	Description	Permissible Level
Air Quality	8	PM_{10} - 70.2 µg/m^3 to 94.6 µg/m^3 $PM_{2.5}$ - 30.5 µg/m^3 to 53.4µg/m^3 SO_2 - 6.2µg/m^3 to 13.6µg/m^3 NO_2 - 16.3µg/m^3 to 32.6µg/m^3	100 µg/ m^3 60 µg/ m^3 80 µg/ m^3 80 µg/ m^3
Ground Water Quality	8	pH - 7.46 to 7.97 Hardness - 127.86 to 182.24 mg/l TDS - 218.60 to 297.00 mg/l	6.5-8.5 200-600 mg/l 500-2000 mg/l
Surface Water Quality	4	pH - 7.21 to 7.52 Hardness - 112.35to 235.35mg/l TDS- 158 to 367 mg/l	6.5-8.5 Agreeable 500-2000 mg/l
Soil Quality	6	pH - 7.21 to 8.2 Conductivity - 0.685 to 0.812 mS/cm.	---
Noise Level	8	Noise Level (Day) - 52.97Leq dB to 63.79Leq dB Noise Level (Night) - 42.87 Leq dB to 56.49Leq dB	75 Leq dB (A) 70 Leq dB (A)

11.5 Biological Environment

Biological environment of the area was studied during the study period. Only single species Indian Peafowl i.e.***Pavocristatus*** is listed in the Schedule I under Wildlife Protection Act, 1972. Conservation Plan Indian Peafowl of is given in chapter-10.

No Wildlife Sanctuary, National Park, Biosphere Reserves, Wildlife Corridors, migratory routes of birds, within study area of 10 km radius.

11.6 Demography& Socio-economic Environment

- Total number of households are about 23091
- Total population of villages under the study area is 110139 out of which males are 55582 (50.46%) and females are 54557 (49.53%)
- The average family size is about 4.7 persons per family

- Sex ratio (No. of females per 1000 males) is 981 which indicates that females are less in number than their male counterpart in the study area
- Out of the total population, the population of children within the age of 0-6 age-group is about 11773 (10.68%)
- Child Sex ratio is 817 i.eNo.of female child per 1000 male child
- Scheduled caste population is about 25107 (22.79%) while the Scheduled tribes population is Nil in the region
- Out of the total population in the region 83886 i.e 76.16% are literates

11.7 Mitigation Measures

11.7.1 Air Pollution Control

- ESP will be installed with the boiler with stack of 78m height.
- 3 no of Wet Scrubber have been installed with the respective boiler with minimum stack height of 40m for the existing Boiler
- Ambient air quality and stack emission would be regularly monitored and effective control exercised, so that the stack emission load limits would be met at all the time.
- Green belt will be developed on 7.79haapprox (36.3%) area of the total project area which will help in attenuating the pollutants emitted by the plant.
- About 19, 200 plant will be planted in the next 5 year.
- Adequate measures for control of fugitive dust emissions will be taken.
- Online Stack monitoring station will be installed for the expansion project.

11.7.2 Waste Water Treatment

- Fresh water requirement of the project will be met by ground water through tube well.
- The proposed project would be based on "Zero Liquid Discharge (ZLD)".
- The waste water generated from the domestic use and industrial use will be treated in STP (30 KLD) and ETP(3000 KLD).
- Treated water will be used in greenbelt, floor washing and sprinkling.
- Periodically Checkup of ETP & STP outlet and report submitted to PPCB.
- Online monitoring station at the ETP has already been installed and result for the same is displaced on the PPCB site.

11.7.3 Noise Management

- The Noise free machines of latest technology will be installed.
- The green belt will (plantation of dense trees across the boundary) help in reducing noise levels in Sugar Mill as a result of attenuation of noise generated due to plant operations, and transportation.

- Earmuffs would be used while running the equipments of the plant.
- D.G sets are provided with acoustic enclosures to control the noise level within the prescribed limit.
- A high standard of maintenance and proper lubricants will be practiced for plant machinery and equipments, which helps to avert potential noise problems.

11.5.4 Solid Waste Management

- Boiler ash and ETP/STP sludge will be collected and given to the farmers.
- Bagasse will be used as fuel in the boilers.
- Molasses will be sold.
- Press mud will be given to the farmers.

11.7.5 Odour Management

- Better cane management to avoid staling of sugar
- Use of mill sanitation bio-cides to minimize the growth of aerobic / anaerobic micro–organisms
- Steaming of major pipe lines
- Proper cleaning of drains
- Regular use of bleaching powder in the drains to avoid growth of sulphur decomposing micro-organisms to control H2S generation
-

11.7.6 HAZARDOUS WASTE GENERATION AND DISPOSAL

No hazardous waste will be produced from the project activities except some used oil generated from D.G sets; which will be sold to recyclers authorized by State Pollution Control Board.

11.8 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

Breakup of EMP cost of the proposed project is given in the Table below.

Table 11.5 ENVIRONMENTAL MANAGEMENT PLAN

Sl. No.	Particulars		Initial Cost (Crore)	Recurring Cost (Lakhs)
1.	Air Pollution Control (ESP/Wet Scrubber)		1.90	20
2.	Wastewater Treatment	ETP	0.40	5
		STP	0.30	3
3.	Fire and Safety		0.15	3
4.	Green Belt Development/Solid Waste Disposal		0.34	4
5.	Rain Water harvesting		0.70	3
	Total		**3.79**	**38 Lakhs**

11.9 PROJECT BENEFIT

The Project plant in the area will generate rural employment. The Sugar mill activity in the region will have positive impact on the social economic condition of the area by providing employment to the local in-habitants; wages paid to them will increase the per capita income, housing, education, medical and transportation facilities, economic status, health and agriculture.

11 .9.1 Justification for the Implementation of the Project

The following points justify implementation of this project:

- The plant will be maintained as per laid down guidelines.
- The Sugar Mill would have a zero discharge as no waste water will be discharged outside the project premises.
- Better maintenance and installation of proper pollution control equipments will help in reducing such emissions.
- More than 33% of the total Project area is already covered under plantation.
- CPCB guidelines for fugitive emissions will be followed.
- No forest land is involved.

- No court case/ litigation are pending against this project.
- No National Park, Biosphere Reserve, Wild Life Sanctuary, within the study area.
- Proper care will be taken by incorporating sound-proof enclosures for equipments and providing earmuffs and earplugs for operators.
- The proposed project will generate employment for the local people.
- There will not be major pollution due to the project activity, as the project will be implemented with environment friendly technology.

Mitigation measures to be taken are listed below.

11.6.2 Socio-Economic Environment

M/s Indian Sucrose Limited will actively contribute to improve the socio – economic conditions of the area and also will actively participate in various socio economic activities like; educational campaigns, health check-ups, training programme etc. (as per the need) which will lay stress on the overall development of the project site. Following points will be stressed upon:

- During operation the plant will generate employment for local population
- Skilled employees will be recruited through open recruitment process.
- Trained operators and workers in various aspects of ESH (Environment, Health and Safety) will be employed.
- The managers and officers involved in Environment Management Cell would undergo refresher workshop and up-gradation of information on various environmental issues from time to time.
- The industry would help in promoting the activities related to environmental awareness in the nearby villages.

11.10 Conclusion

M/s Indian Sucrose Limited will generate a fair amount of direct, indirect and induced employment in the region. The local economy will receive a boost due to employee spending and services generated by the company. Due to the implementation of the project activity there shall be improvement in the standard of living viz. better education, improved health, sanitation facilities etc. This is envisaged as a major positive benefit. The company's management shall recruit semi-skilled and unskilled workers from the nearby villages due to availability of local labors. The employment provided due to the proposed project would rapidly increase the social status of the villagers. There are various issues raised by the public during the public hearing related to the Pollution, proponent will consider these issues and work on it to make sustainable development.

CHAPTER-12
DISCLOSURE OF CONSULTANT ENGAGED

12.0 Disclosure of Consultants Engaged

Vardan EnviroNet, established on 16th August 2012, is an accredited organization by Quality Council of India/NABET (National Accreditation Board for Education and Training) certificate no. **NABET/EIA/1922/RA 0166**. The updated list of accredited consultant is also available online at http://nabet.qci.org.in/environment/pop.asp?file=documents/Annexure7.pdf&heading=Accredited%20EIA%20Consultant%20Organizations%20with%20accredited%20sectors. We have our in-house Environmental Laboratory named "Vardan EnviroLab" at Plot No. 82 A, Sector-5, IMT Manesar, Gurgaon (Haryana) approved by National Accreditation Board for Testing and Calibration Laboratories, Govt. of India (NABL).

CHAPTER 13
ASSESSMENT OF THE ECOLOGICAL DAMAGE, REMEDIATION PLAN AND NATURAL AND COMMUNITY RESOURCE AUGMENTATION PLAN

13.1 INTRODUCTION

M/s Indian Sucrose has been applied the application for the proposed expansion from 500 TCD along with 19.5 MW co-generation power plants to 12000 TCD along with 59.5 MW co-generation power plants in the SEAC/SEIAA Punjab on the 26, March 2018 under the Violation window for the grant of Environment Clearance**.**

The project was considered in the **166th SEAC meeting held on 24.05.2018.** SEIAA/SEAC has proposed the prescribed ToR vide letter no **SEIAA/2018/858** on dated **16.07.2018** for the preparation of Environmental Impact Assessment Report and Environmental Management Plan (Including Assessment of ecological damage and the remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA).

In order to carry out the environmental/ ecological damage assessment and formulation of related remediation plan and the natural and community resource augmentation plan with respect to Capacity Expansion from **5000 TCD to 6500 TCD** without obtaining prior Environmental Clearance under the Environment Impact Assessment Notification, 2006 (as amended from time to time).

In order to carry out the environmental/ ecological damage assessment and formulation of related remediation plan and the natural and community resource augmentation plan with respect to Construction and operation without obtaining prior Environmental Clearance under the Environment Impact Assessment Notification, 2006 (as amended from time to time).

13.2 DAMAGE ASSESSMENT REPORT & REMEDIATION PLAN

13.2.1 METHODOLOGY OF ASSESSMENT

As per notification vide **S.O. 804(E) dated 14.03.2017** it has been notified that the violation cases/non-Compliance will involve the assessment of ecological damage, remediation plan and natural and community resource augmentation plan.

We have collected and analysed the data, for assessment of ecological damage, preparation of remediation plan and natural and community resource augmentation plan and following methodology will be adopted.

The overall impact on air, water, noise, soil and land environment will be assessed. In addition, it will be weighed against the positive impact created on the socioeconomic scenario. To estimate the impact produced, a framework has been designed as given ahead:

- The place of activity is permissible for the purpose (like it should not fall in eco-sensitive zones etc.)
- Environmental Sensitivity to be clearly defined
- Status of work done till date
- Status of activities (in quantitative terms) undertaken during violation period and extent of damage

13.2.2 CRITERIA OF ASSESSMENT

- Negative impact indicates increase pollution load, vibration and public inconveniences
- Positive impact in terms of increased income due to employment, or other ancillary activities. Also benefits generated due to activities undertaken under corporate social responsibility
- Criteria to be used to assess the impact due to the construction (as per the table below):

Table: Criteria to assess the impact

Score	Rating
4	Major
3	Moderate
2	Minor
1	Negligible
0	None
-1	Negligible
-2	Minor
-3	Moderate
-4	Major

Table: Scoring criteria to assess the damage

Damage Scale	
Particulars	**Score Range**
Extremely Damaging	-61 to -80
Damaging	-41 to -60
Minutely Damaging	-21 to -40
Not Damaging Significantly	<-20

13.2.3 OBJECTIVES OF REMEDIATION PLAN

- To suggest control measures for preventing deterioration of air quality along with approximate cost.
- To suggest control measures for preventing deterioration of noise quality along with approximate cost.
- To suggest control measures for preventing deterioration of water quality along with approximate cost.
- Remediation plan of loss of top soil, loss of vegetation including trees and their approximate cost.
- To suggest control measures for keeping community safe from adverse effects of activity approximate cost.
- Plan and suggest Development of shelter of green belt to improve environment.

13.2.4 NATURAL AND COMMUNITY RESOURCE AUGMENTATION PLAN WILL INCLUDE:

Augmentation plan will include various activities to be taken for augmentation of Natural Resources like water, land vegetative cover in a time bound manner and estimation of financial implication.

- Activities to be taken for augmentation of community resources. The key community resources include –
- It can be a physical structure or place -- a school, hospital, library, recreation centre. It might also be an unused building that could house a community Centre, a community owned forest, a park, a pond, or other pasture and open space belonging to community.
- It can be a community service that makes life better for majority of community members
    - public transportation, early childhood education centre, community recycling facilities, cultural organization.
- It can be an activity that provides jobs and supports the local economy.

  The score calculated based on the above criteria along with the conditions given in TOR will be used for damage assessment for estimation of the penal amount to be provided against creating impact under violation.

13.3 DAMAGE ASSESSMENT

For assessment of damage to environment following Environmental aspects has been identified:

1. Air Environment
2. Water Environment
3. Soil Environment
4. Waste management
5. Noise Environment
6. Ecological Environment
7. Community welfare
8. Use of Natural resources
9. Topography and Natural drainage
10. Local Issues
11. Environmental accidents
12. Geological changes
13. Hydrological changes
14. Traffic planning

To assess these environmental parameters team has been deputed to assess preliminary assessment of damage to environment. Based on site inspection and the documentary evidences the environmental aspects vs activity has been filled.

13.3.1 ENVIRONMENTAL DAMAGE ASSESSED AND ITS REMEDIATION

The Construction has been done by the contractor. The Damage Assessment and Remediation of environmental parameters along with Cost basis is explained in the table No. 5:

Environmental Attributes	Cause of Pollution/Impact	Damage	Remediation
Air Environment	• Transportation of Construction material. • The transportation of material was done using 8-10 trucks & tractor daily (average)	Air emission from vehicular exhausts and handling of construction material	Plantation of trees around in nearby area road.

	Operation of machineries and DG sets	**Air pollution due to particulates and gases** During operation phase, Four D.G. sets of capacity 1045 KVA were exist at the project site which used for backup in case of power failure, the main source of Air pollution.	Dust suppression and water sprinkling system has been installed. APCD has been installed.
Water Environment	Operation activity	460 KLD of water for manufacturing Process was sourced from ground water.	ETP of 3000 KLD has been installed for treatment of water.

Soil Quality	Soil Excavation	No major excavation done only some pit was dig.	Land reclamation of nearby area- The excavated soil was re-used for backfilling; Top soil has already been used in green area development.
Waste Management	Waste generated during manufacturing process	Contamination/degradation of soil/water quality	Sludge is handling in 10 sludge beds having size 8X14 with in the plant premises.

	Generation of Hazardous wastes	Used DG oil was generated as Hazardous waste	Used oil generated from the 4 Nos. DG sets of total capacity 1045 KVA given to DG set service provider for disposal of used oil.
Noise Environment	Operation of machineries and DG sets	Health issue to the workers due to increase in noise levels	Plantation of trees around the project periphery including green crippers will act as Barricades around the project.
Ecological Environment	Site clearance	No significant flora and fauna at project site	Total plantation area after complete development of the project, will be 7.79 ha (33.39 % of net plot area). Total 2000 no. of trees have already been planted and 17,200 trees to be plant in future.
Community welfare		Secure facilities to the workers	Structure of road
			Infrastructure at plant area.
Use of natural resources		Energy use was through diesel and petrol	Rain water Harvesting for Ground water recharge
			Sprinkling and watering of plantation on nearby roads

Local Issues		Land was already allotted at the name of M/s Indian Sucrose Ltd.	-
Environmental Accident		The project work was done by experienced and qualified persons hence no environmental accident happened.	
Geological changes		There was no mineral at project site and there was only ordinary soil.	
Hydrological changes		The project does not possess any adverse impact on nearby hydrogeology.	

13.3.2 DAMAGE MATRIX

DAMAGE DUE TO PRODUCTION

			Emission to Air		Release to Water			Waste Generation			Land Degredation				Use of Natural Resource and Raw Materials			Local Issues			Transportation Issues	Environmental Accidents		Effects on Biodiversity	Noise Pollution	Soil Quality and Management	Geology	Hydrology	Total
Steps	**Work**	**Current Status**	**PM**	**Gaseous Emissions**	**Execution of foundations and retaining walls**	**Cleaning Process of Machinary & Tools**	**Sanitary Water**	**C&D water**	**Non- Hazardous Waste**	**Hazardous & E-waste, Battery Waste**	**Dumping due to use construction material**	**Use of concrete release and surface cleaning agents**	**Dumping of other liquid**	**Change in Natural Drainage and Topography**	**Water**	**Energy**	**Raw Materials**	**Noise and Vibrations**	**Odour**	**Dust**	**Landscape Alteration**								
Step 1	Land Occupation	100																										**0**

Step 2	Removal of vegetation	100																										**0**
Step 3	Excavation Work	100	-3	-1		-1				-1	-1		-2	-1		-1	-2	-2		-2		-2			-2	-2		-1	**-24**
Step 4	Foundation	100																											**0**
Step 5	Masonary Work	100	-3	-1	-3			-4	-1		-3				-3	-2	-4								-2				**-25**
Step 6	Drainage System	100																											**0**
Step 7	STP/ ETP	80	-1	-3	-1		-1	-1	-2						-2				-3	-1								-2	**-16**
Step 8	Rainwater Harwesting	100																											**0**
Step 9	Plantation	95	1	2			1								-1		1	2	1		1			1		1			**10**
Step 10	Roads	100																											**0**
Step 11	Installation of Electrical, mechanical items and fire	100																											**0**

Total			**-8**	**-7**	**-4**	**-1**	**2**	**-5**	**-3**	**-1**	**-4**	**0**	**-2**	**-1**	**-6**	**-3**	**-7**	**-4**	**-4**	**-3**	**1**	**-2**	**0**	**1**	**-4**	**-3**	**0**	**-3**	**-125**

13.3.3 IMPACT SUMMARY

S.No.	Identification Environmental Element/Units	Base Scale	Damage Scale
1	Emission to Air	-15	Not Damage Significantly
2	Release to Water	-7	Not Damage Significantly
3	Waste Generation	-9	Not Damage Significantly
4	Land Contamination	-7	Not Damage Significantly
5	Use of Natural resources and Raw materials	-16	Not Damage Significantly
6	Local issues	-11	Not Damage Significantly
7	Transport Issues	1	Positive
8	Environmental Accidents	-2	Not Damage Significantly
9	Effects on Biodiversity	1	Positive
10	Noise Pollution	-4	Not Damage Significantly
11	Soil Quality and Management	-3	Not Damage Significantly
12	Geology	0.0	Positive
13	Hydrology	-3	Not Damage Significantly

Summarized Remediation Cost Summary

S. No.	Environmental Component	Remediation Proposed	Further Remarks	Rate	Quantity	Total Cost	Year I	Year II	Year III
1	Air Environment	Road & Paved Area	Construction and Maintenance of Road & Paved Area in nearby village			100,000	50,000	-	50,000
		Health Checkup	Health Checkup Camp in nearby village	50,000	**2**	100,000	50,000	50,000	-
		Plantation in Nearby Area Road	Plant 500 @ 100 (including maintenance)	100	500	100,000	50000	25000	25,000
			TOTAL COST			**300,000**	**150,000**	**75,000**	**75,000**
2	Water Environment	Ground water Recharge	Pond adoptation	3,000,000	1	3,000,000	2000000	500000	500000
			TOTAL COST			**3,000,000**	**2000000**	**500000**	**500000**
3	Soil Environment	Park Maintenance	Maintenance of park in nearby village			50000	50000	-	-

			TOTAL COST			**50000**	**50000**	**-**	**-**
4	Waste Management	Providing bins	100 bin @2500/pc.	2500	100	250000	100000	100000	50000
			TOTAL COST			250000	100000	100000	50000
5	Noise Environment	Distribution of PPE to labour	Cost of 300000			300000	150000	150000	-
			TOTAL COST			**300000**	**150000**	**150000**	**-**
6	Ecological Environment	Plantation in nearby Area	100 trees @ Rs. 200/tree	200	100	20,000	10,000	10000	-
		Development of Park	In consideration with Panchayat, development of Panchayat Park			20,000	20000		-
			TOTAL COST			**40000**	**30000**	**10000**	**0**
COST OF REMEDIATION						**3,940,000**	**2,480,000**	**835,000**	**625,000**
			SUMMARISED AUGMENTATION COST SUMMARY						
S. No.	**Component**	**Activity Proposed**	**Further Remarks**	**Rate**	**Quantity**	**Total Cost**	**Year I**	**Year II**	**Year III**
1	Natural Augmentation	Providing Solar Lighting in the Village	-			300000	150000	150000	

		Providing Solar Lighting in the School	-			200000	100000	100000	
			TOTAL COST			**500000**	**250000**	**250000**	**0**
2	Community Welfare	Construction of Sanitation facilities	Toilets will be provided			80000	50000	30000	
		Temple Renovation	Renovation of temple in nearby site			20000	20000		
			TOTAL COST		-	**100000**	**70000**	**30000**	**0**
COST OF NATURAL AUGMENTATION AND COMMUNITY						**600000**	**320000**	**280000**	**0**

YEARWISE BREAKUP OF REMEDIATION AND AUGMENTATION COST

S. No.	Item	Total Cost	Year I	Year II	Year III
1	Cost on Remediation Plan based on Damage Assessment due to violation	**3940000**	**2480000**	**835000**	**625000**
2	Natural Resource and Community Resource Augmentation Plan	**600000**	**320000**	**280000**	**0**
TOTAL COST TO BE SPENT		**4540000**	**2800000**	**1115000**	**625000**

Quality Council of India

National Accreditation Board for Education & Training

CERTIFICATE OF ACCREDITATION

Vardan Environet, Gurugram

Plot No. 82-A, Sector 5, IMT Manesar, Gurugram, Haryana

Accredited as Category - A organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA-EMP reports in the following Sectors:

Sl. No.	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals including open cast/ underground mining	1	1 (a) (i)	A
2	Offshore & Onshore Oil and gas exploration, development & production	2	1 (b)	A
3	River Valley projects	3	1 (c)	A
4	Mineral beneficiation	7	2 (b)	A
5	Metallurgical industries (ferrous & nonferrous)- both primary & secondary	8	3 (a)	A
6	Coke oven plants	11	4 (b)	A
7	Petrochemical based processing	20	5 (e)	B
8	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
9	Distilleries	22	5 (g)	A
10	Sugar Industry	25	5 (j)	B
11	Oil & gas transportation pipeline (crude and refinery/ petrochemical products), passing through national parks/ sanctuaries/coral reefs /ecologically sensitive Areas including LNG terminal	27	6 (a)	A
12	Highways	34	7 (f)	A
13	Building and construction projects	38	8 (a)	B
14	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Feb 28, 2020 posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions as per the Scheme. The accreditation needs to be renewed before the expiry date by Vardan Environet, Gurugram following due process of assessment.

Sd/-
Sr. Director, NABET
Dated: June 17, 2020

Certificate No.
NABET/EIA/1922/RA 0166

Valid till
Nov 06, 2022

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Applications for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

1.	**General Information:**		
	Water Quality:		Fresh Water
	Application Type Category/ Type of Application:		Sugar
	(i)	**Name of Industry:**	M/S INDIAN SUCROSE LIMITED
	(ii)	**Location Details of the Industrial Unit- (Attach Approved Site Plan with Location Map) ($)**	
		Address Line 1 :	VILLAGE:CHACK ALLA BAKSH, MUKERIAN,
		Address Line 2 :	DISTRICT:HOSHIARPUR
		Address Line 3 :	
		State:	PUNJAB
		District:	HOSHIARPUR
		Sub-District:	MUKERIAN
		Village/Town:	Mukerian (M Cl)
		Latitude:	31.928234
		Logitude:	75.626393
		Area Type :	Non-Notified
		Area Type Category :	Semi Critical
	(iii)	**Communication Address**	
		Address Line 1:	M/S INDIAN SUCROSE LIMITED
		Address Line 2:	VILLAGE:CHACK ALLA BAKSH, MUKERIAN
		Address Line 3:	DISTRICT:HOSHIARPUR
		State:	PUNJAB
		District:	HOSHIARPUR
		Sub-District:	MUKERIAN
		Pincode:	144211
		Phone Number with Area Code:	91 1765 502882
		Mobile Number:	91 8146975254
		Fax Number:	
		E-Mail:	prince.gupta1246@yahoo.com
	(iv)	**Salient Features of the Industrial Activity:**	
		MANUFACTURING UNIT OF SUGARCANE	

	(v)	**Land Use Details of the Existing / Proposed Industrial Unit Premises Ownership of the Land :**			
		Land Use Details	**Existing (sq meter)**	**Proposed (sq meter)**	**Grand Total (sq meter)**
		Green Belt Area	77083.00		77083.00
		Open Land	26563.00		26563.00

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

		Road/ Paved Area	6944.00		6944.00
		Rooftop area of building/ sheds	119410.00		119410.00
		Total	230000.00		230000.00

	(vi)	**Drainage in the Area (River/ Nala etc) :**	NA
	(vii)	**Source of Availability of Surface Water for Infrastructure Use (Submit Water Availability / Non Availability Certificate):($)**	NA
	(viii)	**Average Annual Rainfall in the Area (in mm):**	636.00
	(ix)	**Townships / Villages (Within 2km Radius of the Industrial Unit):**	VILLAGE: CHACK ALLA BAKSH
	(x)	**Whether Ground Water Utilization for:**	Existing Industry
		Date of Commencement Industry:	18/11/2010
		Date of Expansion :	

2. Details of Water Requirement (Fresh and Recycled Water Usage):
(Please Enclose Water Balance Flow Chart of Activities and Requirement of Water at each Stage) ($)

(i) Total Water Requirement (a+b+c+d) (m3/day)

			Existing	**Proposed**	**Total**
		Water Requirement Details (Fresh Water) (m3/day)			
(a)	**Ground Water Requirement (m3/day):**		597.00	0.00	597.00
(b)	**Surface Water Available (Canal, River, Ponds etc.) (m3/day):**		0.00	0.00	0.00
(c)	**Water Supply from Any Agency (m3/day):**		0.00	0.00	0.00
	Total Fresh Water Requirement (a+b+c)(m3/day):		**597.00**	**0.00**	**597.00**
(d)	**Recycled Water Usage (m3/day):**		0.00	0.00	0.00
	Total Water Requirement : (a+b+c+d)(m3/day)		**597.00**	**0.00**	**597.00**

(ii) Breakup of Water Requirement and Usage:

Activity	**Existing Requirement (m3/day)**	**Proposed Requirement (m3/day)**	**Total Requirement (m3/day)**	**No. of Operational Days in a Year**	**Annual Requirement (m3/year)**
Industrial Activity	550.00	0.00	550.00	150	82500.00
Residential / Domestic	47.00	0.00	47.00	150	7050.00
Greenbelt Development /Environment Maintenance	0.00	0.00	0.00	150	0.00
Other Use	0.00	0.00	0.00	150	0.00
Grand Total	597.00	0.00	597.00		89550.00

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

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					(m3/day)	(Days)	(m3/year)
(iii)	**Breakup of Recycled Water Usage:**						
	(a)	**Total Waste Water Generated :**			537.00	150	80550.00
	(b)	**Quantity of Treated Water Available**			0.00		
		i).	**Reuse in Industrial Activity:**		0.00	150	0.00
		ii).	**Reuse in Green Belt Development:**		537.00	150	80550.00
		iii).	**Other Uses:**		0.00	150	0.00
	(c)	**Total Treated Water Utilized:**			537.00		80550.00
Net Ground Water Requirement:					597.00 (m3/day)		

3. (a). Groundwater Abstraction Structure- Existing:

Number of Existing Structures: 7

SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether Fitted with Water Meter	Whether Permission Registered with CGWA / If so Details Thereof
1	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
2	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
3	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
4	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
5	Tubewell / 2011	70.00 / 60	40.00	15.00	5 / 150	Submersible Pump	15.00	No	No / -
6	Tubewell / 2011	70.00 / 60	40.00	14.00	5 / 150	Submersible Pump	15.00	No	No / -
7	Tubewell / 2011	70.00 / 60	40.00	15.00	10 / 150	Submersible Pump	15.00	No	No / -

(b). Groundwater Abstraction Structure- Proposed:

Number of Proposed Structures: 0

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)
Applications for Issue of NOC to Abstract Ground Water (NOCAP)

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

	SNo.	Type of Structure Name / Year of Construction	Depth (Meter) / Diameter (mm)	Depth to Water Level (Meters below Ground Level)	Discharge (m3/Hour)	Operational Hours (Day) / Days (Year)	Mode of Lift Name	Horse Power of Pump	Whether fitted with Water Meter	Whether Permission Registered with CGWA / If so Details Thereof

4.	**Groundwater Availability (Please Enclose a Comprehensive Report / Note on Groundwater Condition in and Around the Area) Applicable to Industries Consuming Greater Than 500 m3/day : ($)**
	RAIN WATER HARVESTING PROPOSAL ENCLOSED
5.	**Details of Rrainwater Harvesting and Artificial Recharge Measures Proposed / Implemented. If Ground Water Recharge outside the Industrial Unit Premises, then provide NOC from the Concern Authority / Agency if Already implemented, details may be furnished. (Attach Rainwater Harvesting /Artificial Recharge Proposal).($)**
	RAIN WATER HARVESTING PROPOSAL ENCLOSED
6.	**Consent to Operate / Estibilish / Approval Letter from Statutory Bodies viz Ministry of Environment & Forests (MoEF) or State Pollution Control Board(SPCB) or State Level Expert Appraisal Committee(SEAC) or State Level Environment Impact Assessment Authority(SLEIAA):($)**
	Attached Consent/ Approval of Government Agency(Previous: Referral Letter)
	Letter Number — **PPCB CONSENTS ENCLOSED**

	S.No	Consent /Approval of Govornment Agency	Attachment Name	File Name
	1	State Pollution Control Board	WATER CONSENT	Consent of Water .pdf
	2	State Pollution Control Board	AIR CONSENT	Consent of Air .pdf

7.	**Have You Applied Earlier for Groundwater Clearance from CGWA / State Government Agency:**
	If Yes, so Details thereof with Status:

INDUSTRIAL USE- Self Declaration

☑ I hereby certify that the data and information furnished above are true to the best of my knowledge and belief and I am aware that if any part of the data / information submitted is found to be false or misleading at any stage, the application will be rejected outright.

I hereby declare that all the mandatory documents prescribed in the application form have been uploaded and no blank /irrelevant documents have been uploaded. I am also aware that any false/ wrong submission /uploading of document will lead to rejection of my application without any notice.

It is to certify that no case related to ground water withdrawal/ contamination is pending against the industry/ project/ unit as on date. Any such case filed against the company/ project/ unit in respect of ground water withdrawal/ contamination during the pendency of this application shall be immediately brought to the notice of CGWA.

I hereby undertake that in case any environmental compensation/ penalty is imposed on the firm by any statutory authority, I shall comply with the decision of such authority.

1. Application proforma is subject to modification from time to time.

2. Application will be submitted online on website http://cgwa-noc.gov.in to following office.

Regional Director,Central Ground Water Board North Western Region, Bhujal Bhawan, Plot No. 3B, Sector 27-A, CHANDIGARH, CHANDIGARH, 160019

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

3. Incomplete application will be summarily rejected.	
Scanned copy of last page of application with signature and seal should be attached at presribed place before submission of application.	
4. Reciept of Processing Fee of Rs. 1000.00/- (Rupees One Thousand Only) submitted through NON TAX RECEIPT PORTAL (https://bharatkosh.gov.in) should be attached in online application at prescribed place before submission of application.	
Bharatkosh Details:-	
Bharat Kosh Transaction Ref. No:-	2204200001585
Bharat Kosh Transaction Date:-	24/04/2020
Note:- The Processing Fee is Non-Refundable. Applicant should ensure and Check Eligibility of Submission of Application and Required Documents before Submitting Online Application.	
5. Hard copy of application required:	No

Attached Files:

1). Site Plan with Location Map (Previous: Site Plan) : (Refer: 1 (ii))

No Attachment Found!

2). Certified Revenue Sketch : (Refer: 1 (ii))

No Attachment Found!

3). Documents of Ownership / Lease : (Refer: 1 (v))

No Attachment Found!

4). Source Water Availability/Non-availability Certificate(Previous: Source of Availability of Surface Water) : (Refer: 1 (vii))

S.No	Attachment Name	File Name
1	CERTIFICATE OF MC	Certificate from MC.pdf

5). Water Balance Flow Chart (Previous: Enclose Flow Chart of Activity and Requirement of Water): (Refer: 2)

No Attachment Found!

6). Hydrogeological Report(Previous: Groundwater Availability Report) : (Refer: 4)

S.No	Attachment Name	File Name
1	WATER BALANCE FINAL	WATER BALANCE FINAL INDIAN SUCROSE LTD.pdf

7). Rain Water Harvesting/Artificial Recharge proposal(Previous: Details of Rainwater Harvesting / Artificial Recharge Measures) : (Refer: 5)

S.No	Attachment Name	File Name
1	RAIN WATER HARVESTING PROPOSAL ENCLOSED	RAIN WATER RECHARGE PROPOSAL INDIAN SUCROSE LIMITED.pdf

8). Authorization Letter (Previous: Authorization) :

S.No	Attachment Name	File Name
1	RESOLUTION OF VP GUPTA	resolution of VP Gupta.pdf

Application for Permission to Abstract Ground Water for Industrial Use (Application For New NOC)

Application Number : 21-4/5656/PB/IND/2020

10). Ground Water Quality Report(Previous: Non-Polluting Effluent) :

S.No	Attachment Name	File Name
1	FRESH WATER SAMPLING REPORT	FRESH WATER SAMPLING REPORT.pdf
2	ETP SAMPLING REPORT	ETP SAMPLING REPORT.pdf

11). Extra Attachment :

S.No	Attachment Name	File Name
1	CGWA FLOW CHART	CGWA WATER FLOW CHART.pdf
2	LAYOUT PLAN	layout plan.pdf
3	REVENUE SKETCH	REVENUE SKETCH.pdf

12). Scanned Industrial Application :

No Attachment Found!

13). Bharat Kosh Reciept (Porcessing Fee):

S.No	Attachment Name	File Name
1	BHARATKOSH RECEIPT	CGWA NTRP GOVT FEE RECEIPT.pdf

14). Application with Signature and Seal:

S.No	Attachment Name	File Name
1	SIGNATURE OF VP GUPTA	resolution of VP Gupta.pdf

Date : Name & Signature of the applicant

Place : (With official seal)

Associated User : INDIANSUCROSE

Submitted By User : INDIANSUCROSE

Submission Date : 28/04/2020

* In case signed by any authorized signatory, the details of the signatory with the authorization shall be enclosed.

PUNJAB POLLUTION CONTROL BOARD

ZONAL OFFICE JALANDHAR.

Website:- www.ppcb.gov.in

Office Dispatch No :	**Registered/Speed Post**	**Date:**
Industry Registration ID: *R12HSP41196*		**Application No :** *12558779*

To,

Mr.v. P. Gupta
Sugar Mill Colony
Mukerian,Hoshiarpur-144211

Subject: **Renewal of 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981 for discharge of emissions arising out of premises.**

With reference to your application for obtaining Renewal of 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981, you are hereby, authorized to operate an industrial unit for discharge of the emission(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Air Act, 1981 granted to the industry

Consent to Operate Certificate No.	*CTOA/Renewal/HSP/2020/12558779*
Date of issue :	*06/08/2020*
Date of expiry :	*31/03/2021*
Certificate Type :	*Renewal*
Previous CTO No. & Validity :	*CTOA/Fresh/HSP/2019/9418292* *From:07/10/2016 To:31/03/2020*

2. Particulars of the Industry

Name & Designation of the Applicant	*Mr.v. P. Gupta, (Vice President)*
Address of Industrial premises	*M/s Indian Sucrose Limited, Village - Chak Alla Baksh, G. T. Road, Mukerian, Distt. Hoshiarpur - 144211 Pb., Indian Sucrose Ltd., Mukerian,Hoshiarpur-144211*
Capital Investment of the Industry	*20563.8 lakhs*
Category of Industry	*Red*
Type of Industry	*Sugar*
Scale of the Industry	*Large*
Office District	*Hoshiarpur*
Consent Fee Details	282000/- through RTGS
Raw Materials (Name with Quantity per day)	*SUGAR CANE @ 5000 Metric Tonnes/Day* *LIME @ 10 Metric Tonnes/Day* *SULPHUR @ 4 Metric Tonnes/Day*
Products (Name with Quantity per day)	*SUGAR @ 500 Metric Tonnes/Day*

By-products, if any, (Name with Quantity per day)	*MOLASSES @ 225 Metric Tonnes/Day* *PRESS MUD @ 200 Metric Tonnes/Day* *BAGASSE @ 1400 Metric Tonnes/Day*
Details of the machinery and process	*As per application.*
Quantity of fuel required (in TPD) and capacity of boilers/ Furnace/Thermo heater etc.	*Bagasse for boilers of capacity 38 TPH, 38 TPH & 80 TPH.* *Diesel for DG sets.*
Type of Air Pollution Control Devices to be installed	*Water Scrubber as APCD with Boilers.* *Canopy with DG sets of capacity 500 KVA, 320 KVA, 200 KVA & 25 KVA.*
Stack height provided with each boiler/thermo heater/Furnace etc.	*STACK 140(Ground Level)/20(Roof Level)* *STACK 250(Ground Level)/30(Roof Level)*
Sources of emissions and type of pollutants	*SPM from Boilers & DG sets.*
Standards to be acheived under Air(Prevention & Control of Pollution) Act, 1981	*As prescribed by the Board.*

PUNJAB

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

Environmental Engineer, Regional office, Hoshiarpur.

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Ltd. or for getting loan from the financial institutions.
2. The industry shall apply for renewal /extension of consent at least two months before expiry of the consent.
3. The industry shall not violate any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled / revoked.
4. The achievement of adequacy and efficiency of the air pollution control devices installed shall be the entire responsibility of the industry
5. The authorized fuel being used shall not be changed without the prior written permission of the Board.
6. The industry shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height, as per the norms fixed by the Board from time to time.
7. The industry shall provide port-holes, platforms and/or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets.

   Specifications of the port-holes shall be as under:-

   i) The sampling ports shall be provided atleast 8 times chimney diameter downstream and 2 times upstream from the flow disturbance. For a rectangular cross section the equivalent diameter (De) shall be calculated from the following equation to determine upstream, downstream distance:-

   De = 2 LW / (L+W)

   Where L= length in mts. W= Width in mts.

   ii) The sampling port shall be 7 to 10 cm in diameter

8. The industry shall put display Board indicating environmental data in the prescribed format at the main entrance gate.
9. The industry shall discharge all gases through a stack of minimum height as specified in the following standards laid down by the Board.

   (i) Stack height for boiler plants

S.NO.	Boiler with Steam Generating Capacity	Stack heights
1.	*Less than 2 ton/hr.*	9 meters or 2.5 times the height of neighboring building which ever is more
2.	*More than 2 ton/hr. to 5 ton/hr.*	12 meters
3.	*More than 5 ton/hr. to 10 ton/hr*	15 meters
4.	*More than 10 ton/hr. to 15 ton/hr*	18 meters
5.	*More than 15 ton/hr. to 20 ton/hr*	21 meters
6.	*More than 20 ton/hr. to 25 ton/hr.*	24 meters
7.	*More than 25 ton/hr. to 30 ton/hr.*	27 meters
8.	*More than 30 ton/hr.*	30 meters or using the formula H = 14 Qg0.3or H = 74 (Qp)0.24 Where Qg = Quantity of SO2 in Kg/hr. Qp = Quantity of particulate matter in Ton/day.

Note : Minimum Stack height in all cases shall be 9.0 mtr. or as calculated from relevant formula whichever is more.

(ii) For industrial furnaces and kilns, the criteria for selection of stack height would be based on fuel used for the corresponding steam generation.

(iii) Stack height for diesel generating sets:

Capacity of diesel generating set	Height of the Stack	
0-50 KVA	Height of the building	+ 1.5 mt
50-100 KVA	-do-	+ 2.0 mt.
100-150 KVA	-do-	+ 2.5 mt.
150-200 KVA	-do-	+ 3.0 mt.
200-250 KVA	-do-	+ 3.5 mt.
250-300 KVA	-do-	+ 3.5 mt.

For higher KVA rating stack height H (in meter) shall be worked out according to the formula:

$$H = h+0.2 (KVA)0.5$$

where h = height of the building in meters where the generator set is installed.

10. The pollution control devices shall be interlocked with the manufacturing process of the industry to ensure its regular operation.

11. The existing pollution control equipment shall be altered or replaced in accordance with the directions of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.

12. The industry will provide canopy and adequate stack with the D.G sets so as to comply with the provision of notification No GSR-371 E dated 17-5-2002(amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.

13. The Govt. of Punjab, Department of Science, Technology & Environment vide its notification no.4/46/92-3ST/2839 dt. 29/12/1993 has put prohibition on the use of rice husk as fuel after 1.4.1995 except the following:-

ï¿½In the form of briquettes and use of rice husk in fluidized bed combustion.So the industry shall make the necessary arrangement to comply with the above notification.ï¿½

14. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year

15. That the industry shall submit a yearly certificate to the effect that no addition / up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.

16. a) The industry shall ensure that at any time the emission do not exceed the prescribed emissions standards laid down by the Board from time to time for such type of industry /emissions.

    b) The industry shall ensure that the emissions from each stack shall conform to the following emission standards laid down by the Board in respect of the Industrial Boilers.

Steam Generating capacity A.	*Required particulate matter B.*	
Area upto 5 Km from Other than the periphery of I and Class-II town	*Other than 'A' class*	
Less than 2 ton/hr.	800 mg/NM3	1200 mg/NM3
2 ton to 10 ton/hr.	500 mg/NM3	1000 mg/NM3
Above 10 ton to 15 ton/hr	350 mg/NM3	500 mg/NM3
Above 15 ton/hr	150 mg/NM3	150 mg/NM3

All emissions normalized to 12% carbon dioxide.

17. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of theHazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.

18. The air pollution control equipments shall be kept at all time in good running condition and;

(i) All failures of control equipments.

(ii) The emissions of any air pollutant into the atmosphere in excess of the standards lay down by the Board occurring or being apprehended to occur due to accident or other unforeseen act or event. 'Shall be intimated through fax to the concerned Regional Office as well as to the Director of Factories, Punjab, Chandigarh as required under rule 10 of the Punjab State Board for the Prevention and Control of Air Pollution Rules, 1983'.

19. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.

20. The industry shall submit a site emergency plan approved by the Chief Inspector of Factories, Punjab as applicable.

21. The industry shall comply with the conditions imposed by the SEIAA/MOEF in the Environmental Clearance granted to it as required under EIA notification dated 14/9/06, if applicable.

22. The industry shall make necessary arrangements for the monitoring of stack emissions and shall get its emissions analyzed from lab approved / authorized by the Board:-

(i) Once in Year for Small Scale Industries.

(ii) Twice/thrice/four time in a Year for Large/Medium Scale Industries.

23. The industry shall maintain the following record to the satisfaction of the Board :-

(i) Log books for running of air pollution control devices or pumps/motors used for it.

(ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.

(iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.

24. The industry will install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of air pollution control device so as to the satisfy the Board regarding the regular operation of air pollution control device and monthly reading / record may be sent to the Board by the fifth of the following month.

25. The industry shall provide online monitoring system as applicable, for in stack emission and shall maintain the record of the same for inspection of the Board Officers.

26. The Board reserves the right to revoke the consent granted to the industry at any time, in case the industry is found violating the provisions of Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.

27. The industry shall comply with any other conditions laid down or directions issued in due course by the Board under the provisions of the Air (Prevention & Control of Pollution) Act, 1981.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.

29. Any amendments/revisions made by the Board/CPCB/MOEF in the emission/stack height standards shall be applicable to the industry from the date of such amendments/revisions.

30. The industry shall dispose off its solid waste generated by the burning of fuel in an Environmentally Sound Manner within the premises/outside as approved by the Board, to avoid public nuisance and air pollution problem in the area.

31. The industry shall ensure that no air pollution problem or public nuisance is created in the area due to the discharge of emissions from the industry.

32. The industry shall provide adequate arrangement for fighting the accidental leakage/discharge of any air pollutant/gas/ liquids from the vessels, mechanical equipment's etc, which are likely to cause environmental pollution.

33. The industry shall not change or alter the manufacturing process(es) and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.

34. The industry shall earmark a land within their premises for disposal of boiler ash in an environmentally sound manner, and / or the industry shall make necessary arrangements for proper disposal of fuel ash in a scientific manner and shall maintain proper record for the same, if applicable.

35. The industry shall obtain and submit Insurance cover under the Public Liability Insurance Act, 1991.

36. The industry shall provide proper and adequate air pollution control arrangements for control emission from its fuel handling area, if applicable.

37. The industry shall comply with the code of practice as notified by the Government/Board for the type of industries where the siting guidelines / Code of Practice have been notified.

38. The industry shall not cause any nuisance/traffic hazard in vicinity of the area

39. The industry shall ensure that the noise & air emission from D.G. sets do not exceed the standards prescribed for D.G. sets by the Ministry of Environment & Forests, New Delhi.

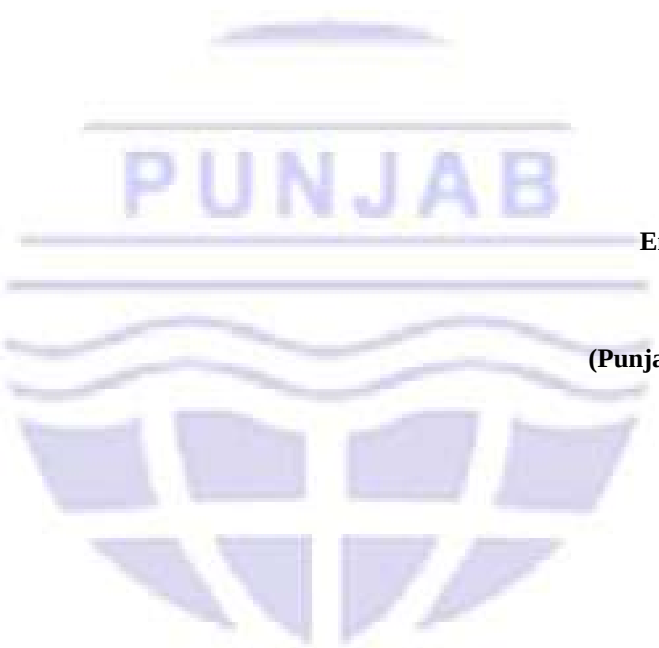
40. The industry shall ensure that there will not be significant visible dust emissions beyond the property line

41. The industry shall provide adequate and appropriate air pollution control devices to contain emissions from handling, transportation and processing of raw material & product of the industry.

42. The Industry shall ensure that its production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board.

B. SPECIAL CONDITIONS

(1)The industry shall not crush sugar cane more than 5000 TCD without getting Environmental Clearance.
(2)The industry shall comply with the guidelines framed for Sugar Mills by Ministry of Environment, Forests & Climate Change.





06/08/2020

(Arun Kakkar)
Environmental Engineer
For & on behalf
of
(Punjab Pollution Control Board)

PUNJAB POLLUTION CONTROL BOARD

ZONAL OFFICE JALANDHAR.

Website:- www.ppcb.gov.in

Office Dispatch No : **Registered/Speed Post** **Date:**

Industry Registration ID: *R12HSP41196* **Application No :** *12558957*

To,

Sh Jaitender Kumar
Sugar Mill Colony
Mukerian,Hoshiarpur-144211

Subject: **Renewal of 'Consent to Operate'an outlet u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent.**

With reference to your application for obtaining Renewal of ï¿½Consent to Operateï¿½an outlet for discharge of the effluent u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974, you are, hereby, authorized to operate an industrial unit fordischarge of the effluent(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Water Act, 1974 granted to the industry

Consent to Operate Certificate No.	*CTOW/Renewal/HSP/2020/12558957*
Date of issue :	*06/08/2020*
Date of expiry :	*31/03/2021*
Certificate Type :	*Renewal*
Previous CTO No. & Validity :	*CTOW/Renewal/HSP/2016/4039437* *From:07/10/2016 To:31/03/2020*

2. Particulars of the Industry

Name & Designation of the Applicant	*Mr.v. P. Gupta, (Vice President)*
Address of Industrial premises	*M/s Indian Sucrose Limited, Village - Chak Alla Baksh, G. T. Road, Mukerian, Distt. Hoshiarpur - 144211 Pb., Indian Sucrose Ltd., Mukerian,Hoshiarpur-144211*
Capital Investment of the Industry	*20563.8 lakhs*
Category of Industry	*Red*
Type of Industry	*Sugar*
Scale of the Industry	*Large*
Office District	*Hoshiarpur*
Consent Fee Details	282000/- through RTGS
Raw Materials(Name with quantity per day)	*SUGAR CANE @ 5000 Metric Tonnes/Day* *LIME @ 10 Metric Tonnes/Day* *SULPHUR @ 4 Metric Tonnes/Day*
Products (Name with quantity per day)	*SUGAR @ 500 Metric Tonnes/Day*

By-Products, if any,(Name with quantity per day)	*MOLASSES @ 225 Metric Tonnes/Day* *PRESS MUD @ 200 Metric Tonnes/Day* *BAGASSE @ 1400 Metric Tonnes/Day*
Details of the machinary and processes	*As per application.*
Details of the Effluent Treatment Plant	*ETP for trade effluent @ 2000 KLD & Domestic effluent 25 KLD.*
Mode of Disposal	*Trade effluent onto land for plantation/ irrigation through ETP.* *Domestic effluent onto land for plantation/ irrigation through STP.*
Standards to be achieved under Water(Prevention & Control of Pollution) Act, 1974	*As prescribed by the Board.*

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

Environmental Engineer, Regional office, Hoshiarpur.

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Limited or for getting loan from the financial institutions.
2. The industry shall apply for renewal/further extension in validity of consent atleast two months before expiry of the consent.
3. The industry shall ensure that the effluent discharging through the authorized outlet shall confirm to the prescribed standards as applicable from time to time.
4. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. The achievement of the adequacy and efficiency of the effluent treatment plant/pollution control devices/re-circulation system installed shall be the entire responsibility of the industry.
6. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Wastes(Management, Handling and Trans boundary Movement) Rules, 2008 as amended time to time , without any adverse effect on the environment, in any manner
7. The responsibility to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry. The Board shall only test check the accuracy of these reports for which the industry shall deposit the samples collection and testing fee with the Board as and when required.
8. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year.
9. The industry shall submit a yearly certificate to the effect that no addition/up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.
10. During the period beginning from the date of issuance and the date of expiration of this consent, the applicant shall not discharge floating solids or visible foam.
11. Any amendments/revisions made by the Board in the tolerance limits for discharges shall be applicable to the industry from the date of such amendments/revisions.
12. The industry shall not change or alter the manufacturing process(es) so as to change the quality and/or quantity of the effluents generated without the written permission of the Board.
13. Any upset conditions in the plant/plants of the factory, which is likely to result in increased effluent and/or result in violation of the standards lay down by the Board shall be reported to the Environmental Engineer, Punjab Pollution Control Board of concerned Regional Office immediately failing which any stoppage and upset conditions that come to the notice of the Board/its officers, will be deemed to be intentional violation of the conditions of consent.
14. The industry shall provide terminal manhole(s) at the end of each collection system and a manhole upstream of final outlet (s) out of the premises of the industry for measurement of flow and for taking samples.
15. The industry shall for the purpose of measuring and recording the quantity of water consumed and effluent discharged, affix meters of such standards and at such places as approved by the Environmental Engineer, Punjab Pollution Control Board of the concerned Regional Office.
16. The industry shall maintain record regarding the operation of effluent treatment plant i.e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment so as to satisfy the Board regarding regular and proper operation of pollution control equipment.
17. The industry shall provide online monitoring equipmentï¿½s for the parameters as decided by concerned Regional Office with the effluent treatment plant/air pollution control devices installed, if applicable.
18. The pollution control devices shall be interlocked with the manufacturing process of the industry.
19. The authorized outlet and mode of disposal shall not be changed without the prior written permission of the Board.
20. The industry shall comply with the conditions imposed by the SEIAA / MOEF in the environmental clearance granted to it as required under EIA notification dated14/9/06, if applicable.
21. The industry shall obtain and submit Insurance cover as required under the Public Liability Insurance Act, 1991.
22. The industry shall not use any unauthorized out-let(s) for discharging effluents from its premises. All unauthorized outlets, if any, shall be connected to the authorized outlet within one month from the date of issue of this consent.

23. The industry shall make necessary arrangements for the monitoring of effluent being discharged by the industry and shall monitor its effluents:-

    (i) Once in Year for Small Scale Industries.

    (ii) Four in a Year for Large/Medium Scale Industries.

    (iii) The industry will submit monthly reading/ data of the separate energy meter installed for running of effluent treatment plant/re-circulation system to the concerned Regional Office of the Board by the 5th of the following month.

24. The industry shall provide electromagnetic flow meters at the source of water supply, at inlet/outlet of effluent treatment plant within one month and shall maintain the record of the daily reading and submit the same to the concerned Regional Office by the 5th of the following month.

25. The Board reserves the right to revoke this consent at any time in case the industry is found violating any of the conditions of this consent and/or the provisions of Water (Prevention & Control of Pollution) Act, 1974 as amended from time to time.

26. The issuance of this consent does not convey any property right in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.

27. The consent does not authorize or approve the construction of any physical structures or facilities for undertaking of any work in any natural watercourse.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected under this or any other Act.

29. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of septic tank.

30. The diversion or bye pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except.

    (i) Where unavoidable to prevent loss of life or some property damage or

    (ii) Where excessive storm drainage or run off would damage facilities necessary for compliance with terms and conditions of this consent. The applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

31. The industry shall ensure that no water pollution problem is created in the area due to discharge of effluents from its industrial premises.

32. The industry shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.

33. Solids, sludge, filter backwash or other pollutant removed from or resulting from treatment or control of waste waters shall be disposed off in such a manner to prevent any pollutants from such materials from entering into natural water.

34. The industry shall re-circulate the entire cooling water and shall also re-circulate/reuse to the maximum extent the treated effluent in processes

35. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of re-circulation system/ effluent treatment plant.

36. The industry shall make proper disposal of the effluent so as to ensure that no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.

37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, the applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

38. The industry shall submit a detailed plan showing therein the distribution system for conveying waste-water for application on land for irrigation along with the crop pattern for the year.

39. The industry shall ensure that the effluent discharged by it is toxicity free.

40. The industry shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.

41. Drains causing oil & grease contamination shall will be segregated. Oil & grease trap shall be provided to recover oil & grease from the effluent.

42. The industry shall establish sufficient number of piezometer wells in consultation with the concerned Regional Office, of the Board to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the Environmental Engineer of the concerned Regional Office by the 5th of every month.

43. The industry shall ensure that its production capacity & quantity of trade effluent do not exceed the quantity mentioned in the consent and shall not carry out any expansion without the prior permission/NOC of the Board.

B. SPECIAL CONDITIONS

(1)The industry shall not crush sugar cane more than 5000 TCD without getting Environmental Clearance.
(2)The industry shall comply with the guidelines framed for Sugar Mills by Ministry of Environment, Forests & Climate Change.

06/08/2020

(Arun Kakkar)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

INDIAN SUCROSE LIMITED
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EPABX No. +91+9115110651/52 e-mail : info.isl@yaducorporation.com
CIN - L15424PB1990PLC010903 ram.chand@yaducorporation.com
GSTIN 03AABCI1877K1ZJ

REF:ISL:AS:2019-20/ DT: 30.01.2020

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office, E-18-A, Focal Point
HOSHIARPUR

Subject: **Compliance of Water Consent Renewal for 5000 TCD Plant**

Dear Sir,

We are thankful to you for granting us Renewal of "Consent to Operate" an outlet U/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent vide your Letter No.9300 dated 07.10.2016.

The point-wise compliance of the Water Consent is as under:-

1. We have noted that this consent is not valid for getting power load from PSEB or for getting loan from the financial institutions.
2. We shall apply for renewal / extension of consent at least two months before expiry of the consent.
3. We shall ensure the effluent discharging through the authoirsed outlet shall confirm to the prescribed standards as applicable from time to time.
4. We planted minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. We achieved of adequacy and efficiency of the effluent treatment plant/ Pollution Control Devices/ Re-circulation System installed by the company.
6. We ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, as amended from time to time without any adverse effect on the environment, in any manner.
7. We shall responsible to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry.
8. We shall submit the Balance Sheet of every financial year to Regional Office, PPCB after finalization.
9. We shall submit a yearly certificate to the effect that no addition/ up-gradation/ modification/ modernization during the previous year.
10. Noted.
11. Noted
12. We will not change or alter the manufacturing process so as to change the quality and/or quantity of the effluent generated without the written permission of the board.
13. We ensure that any upset conditions in the plant of the factory, which is likely to result in increased effluent and/or result in violation of the standards laid down by the Board shall be reported to the Environmental Engineer, Regional Office of the Board.

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14. We have provided terminal manhole at the end of each collection system and a manhole upstream of the final outlet out of the premises of the industry for measurement of flow and for taking samples.
15. We affixed meters of such standards and at such places for the purpose of measuring and recording the quantity of water consumed and effluent discharged, as per direction of the board.
16. We have maintained the record regarding the operation of effluent treatment plant i. e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment for the satisfaction of board regarding regular and proper operation of pollution control equipment.
17. We have installed online continuous monitoring equipments at the outlet of effluent treatment plant.
18. The pollution control devices have interlocked with the manufacturing process of the plant.
19. We shall not change the authorized outlet and mode of disposal without the prior written permission of the Board.
20. Not Applicable.
21. We have obtained Insurance Cover under the Public Liability Insurance Act, 1991,
22. We will not use any unauthorized out-lets for discharging effluents from our premises.
23. We have made the necessary arrangements for the monitoring of effluent being discharged by the mill and monitored its effluents.
24. We have installed electromagnetic flow meter at effluent treatment plant.
25. We noted that Board reserves the right to revoke the consent granted to the industry at any time in case the industry is found violating any of the conditions of the consent under Water (Prevention & Control of Pollution) Act, 1974 as amended time to time.
26. Noted
27. Noted
28. Noted.
29. We have made the necessary and adequate arrangements to hold back the effluent in case of failure of Septic Tank.
30. We ensure that any diversion or by-pass of any discharge from facilities utilize by the industry in any unavoidable circumstances to prevent loss of life or some property damage.
31. We ensure that no water pollution problem is created in the area due to discharge of effluent from its industrial premises.
32. We shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.
33. Solid sludge, filter backwash etc removed from the treatment/ control process of waste water is being disposed off in proper manner & treated waste water is discharged on to land for irrigation.
34. We have been re-circulating the entire cooling water and also re-circulating/ reusing to the maximum extent the treated effluent in processes.

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35. We have arrangement to hold back the effluent in case of failure of re-circulation system / effluent treatment plant.
36. We have made arrangement for proper disposal of effluent & there is no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.
37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, we shall immediately notify the consent issuing authority in writing of each such diversion or by-pass.
38. We have already submitted detail plan showing therein the distribution system for conveying waste water for application on land of treated waste water on to land for irrigation.
39. We ensure that the effluent discharged by it is toxicity free.
40. We shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.
41. Oil & Grease trap has provided to recover Oil & Grease from the effluent.
42. The industry is going to establish sufficient number of Piezometer wells to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the EE of the concerned Regional Office.
43. We ensured that our production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board. In this regard, we submit that due to allotment of additional sugarcane from the area of other sugar mills by Cane Commissioner, Govt. of Punjab and Distt. Administration pressure to close the mill after crushing of available cane and allotted cane. It is a Seasonal and Agro based unit and the cane growers depends on mill and mill depends on the cane growers.

B. Special Conditions:

The company has applied for getting the Environment Clearance from SEIAA/ SEAC for increasing the crushing capacity from 5000 TCD to 12000 TCD, which is under process.

Hope you will find the above compliance satisfactory.

Regards

Thanking you

FOR INDIAN SUCROSE LIMITED

AUTHORISED SIGNATORY

INDIAN SUCROSE LIMITED
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CIN - L15424PB1990PLC010903 ram.chand@yaducorporation.com

REF:ISL:AS:2019-20/ DT: 30.01.2020

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office, E-18-A, Focal Point
HOSHIARPUR

Subject: **Compliance of Air Consent Renewal for 5000 TCD Plant**

Dear Sir,

We are thankful to you for granting us Air Consent Renewal vide your Letter dated 01.10.2019 to operate u/s 21 of Air (Prevention & Control of Pollution) Act, 1981.

The point-wise compliance of the Air Consent is as under:-

1. We have noted that this consent is not valid for getting power load from PSEB or for getting loan from the financial institutions.
2. We shall apply for renewal / extension of consent at least two months before expiry of the consent.
3. We have not violated any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled/ revoked.
4. We achieved of adequacy and efficiency of the installed Air Pollution Control Devices.
5. We shall not consume any fuel except baggase in boilers & diesel in DG sets without the prior written permission of the Board.
6. We shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height as per the norms fixed by the Board from time to time.
7. We have the port-holes, platforms and /or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets, as per given specifications.
8. We have displayed the board indicating environmental data near the stack.
9. i) We shall discharge all gases through a standard stack height as prescribed by the Board. We use Bagasse as fuel for steam generation
   ii) The stack height of Boiler is as per standard.
   iii)The stack height for DG Set is as per standard.
10. The Pollution control devices have interlocked with manufacturing process of the industry.
11. We have noted that existing pollution control equipment shall be altered or replaced in accordance with the direction of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.

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12. We have already provided certified canopy on the DG set to comply with the provisions of Notification No. GSR-371 E dt. 17.05.2002 (amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.
13. We will follow the direction as per Department of Science, Technology & Environment vide its Notification No. 4/46/92-3ST dt 29.12.1993.
14. We shall submit the Balance Sheet of every financial year to Regional Office, PPCB after finalization.
15. We shall submit a yearly certificate to the effect that no addition/ up-gradation/ modification/ modernization during the previous year.
16. i) We ensure that at any time emission will not exceed the standards laid down by the Board from time to time.
    ii) We ensure that emission from each stack will conform to the emission Standards laid down by the Board.
17. We ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.
18. The Air pollution control equipments have kept at all time in good running condition.
19. We planted minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
20. We are an old industry & has already get the building plan approved under the provision of section 3-A of Punjab Factories Rules 1952.
21. N. A.
22. We have already made necessary arrangements for the monitoring of stack emission two times in a year.
23. We have maintained the following record to the satisfaction of the Board:-
    i) Log books for running of air pollution control devices or pumps/motors used for it.
    ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.
    iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.
24. We shall install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of Air Pollution Control Device so as to the satisfy the Board regarding the regular operation of air pollution control device and monthly reading/ record shall be sent to the Board by 5th of the following month.
25. We shall provide the online monitoring system as applicable, for in stack emission and shall maintain the records of the same.
26. We have noted that Board reserves the right to revoke the consent granted to the industry at any time in case the industry is found violating any of the conditions of the consent under Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.
27. We shall comply with the conditions laid down or directions issued in due course by the Board under the provisions of Air Act, 1981.

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28. We have noted that nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.
29. N. A.
30. We will dispose off solid wastes generated, in a proper manner and to the satisfaction of the Board to avoid public nuisance and air pollution problem.
31. We ensure that no air pollution problem or public nuisance is created in the area due to discharge of emissions from the industry.
32. We have already provided adequate arrangements for fighting the accidental leakages/discharge of any air pollutant/gas/liquids from the vessel, mechanical equipment etc which are likely to cause environmental pollution.
33. We shall not change or alter the manufacturing process and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.
34. N. A.
35. We have obtained Insurance Cover under the Public Liability Insurance Act, 1991.
36. We have provided proper and adequate air pollution control arrangements for control emission from its fuel handling area.
37. N. A.
38. We have not cause any nuisance/traffic hazard in vicinity of the area.
39. We ensured that the noise & air emission from DG Sets do not exceed the standards prescribed for DG Sets by the Ministry of Environment & Forests, New Delhi.
40. N. A.
41. N. A.
42. We ensured that our production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board. In this regard, we submit that due to allotment of additional sugarcane from the area of other sugar mills by Cane Commissioner, Govt. of Punjab and Distt. Administration pressure to close the mill after crushing of available cane and allotted cane. It is a Seasonal and Agro based unit and the cane growers depends on mill and mill depends on the cane growers.

B. Compliances of special conditions are as under:-

1. We are having 03 Nos. of Oil & Grease removal traps before the inlet of ETP. We have installed the better quality of new belt and components for removal of Oil and Grease at the inlet of ETP and shall be started the same during the next crushing season 2019-20.
2. We got the online continuous effluent monitoring system (OCEMS) calibrated from M/s Forbes Marshall and Eco Laboratories and Consultants Pvt. Ltd., Mohali both are NABL Accredited Labs.
3. We had already appointed Environmental Engineer who is M. Tech. (Environment) from IIT for the operation & maintenance of ETP.

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4. We already got tested the soil from an organization of good repute.
5. We are going to cover the shed, chutes & conveyor belt of the fuel handling area of both the boilers before start of crushing season to avoid the baggase become air-borne during its movement.
6. We have started the operation of our ETP on 12th October, 2019 to operate & stabilize the ETP two months prior to the start of the coming crushing season 2019-20. Our crushing season started on 1st of December, 2019.
7. We already having the garland drain for the disposal of rainwater separately.
8. The Ash are being transported by the farmers to fill their low land areas and in their cane fields. The records is duly maintained at factory gate. We prepared an Ash Handling Management Plan and implemented the same in crushing season 2019-20.
9. We are already having an Irrigation Management Plan for the utilization of treated effluent. Please waive off this condition of Irrigation Management Plan to get approve from the Department of Soil & Water Conservation, Punjab, as we are not discharging the treated effluent/water out side the factory campus.
10. Lime Sludge collected in proper place environmentally sound manner and during off season, we are using for earth filling on the road and plant.
11. We attended the hearing on 19.11.2019 before the Chairman, PPCB, Patiala with all compliances.

Hope you will find the above compliance satisfactory.

Regards

Thanking you
FOR INDIAN SUCROSE LIMITED

AUTHORISED SIGNATORY

ਜਮਾਂਬੰਦੀ 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਵਖਸ਼.. ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ-ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
123/ 109 ਕੁਲ 3.50 ਮਾਲ 2.19 ਸਵਾਈ 1.31 (ਪੱਤੀ) , ਨੰਬਰਦਾਰ) ਹਰਸਰਨ ਸਿੰਘ	164	ਮੈਸਰਜ਼ ਓਸਵਾਲ ਸ਼ੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆਂ ਮਾਰਫ਼ਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸ਼ੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਢੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ ਨਵਦੀ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਦੂ ਰਾਮ 1/12 ਹਿੱਸਾ ਕਲਿਤਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਦੂ ਰਾਮ 1/12 ਹਿੱਸਾ ਰਿਵਿੰਦਰ ਕੁਮਾਰ ਪੁੱਤਰ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਦੂ ਰਾਮ 1/12 ਹਿੱਸਾ ਵਿਨੋਦ ਕੁਮਾਰ ਪੁੱਤਰ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਦੂ ਰਾਮ 1/12 ਹਿੱਸਾ ਅਵਿਨਾਸ਼ ਕੁਮਾਰ ਪੁੱਤਰ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਦੂ ਰਾਮ 1/12 ਹਿੱਸਾ ਅਨਿਲ ਕੁਮਾਰ ਪੁੱਤਰ ਕਲਿਆਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ ਕੁੰਦਰ ਪੁੱਤਰੀ ਕਲਿਆਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ ਮਧੂ ਪੁੱਤਰੀ ਕਲਿਆਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ ਮਨੀਤਾ ਪੁੱਤਰੀ ਕਲਿਆਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ	ਅਬਦੁਲਾ ਮਾਲਕਾਨ		32 // 17 32 // 24 ਕੁਲ ਜਿੰਮੇ 2 11 ਕਨਾਲ 11 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 58 ਏਅਰ 42.65 ਸੈਂਟੀਆਰ) ਕੈਰਮਜ਼ਰੂਆ 11 ਕਨਾਲ 11 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 58 ਏਅਰ 42.65 ਸੈਂਟੀਆਰ) ਕੈਰਮਮੁਮਕਿਨ ਟੈਕਟਰੀ	3-11 (0-17-95.79) ਕੈਰਮਮੁਮਕਿਨ ਚੱਕਟਰੀ 8-0 (0-40-46.86) ਕੈਰਮਮੁਮਕਿਨ ਕੈਕਟਰੀ 11-11 (0-58-42.65)	ਬਹੁਦੇ ਇੰਤਕਾਲ ਨੰ 3088- ਮਿਤੀ 8/3/2016 ਵੱਲੋ ਮੈਸਰਜ਼ ਓਸਵਾਲ ਸ਼ੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫ਼ਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸ਼ੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਢੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/2 ਹਿੱਸਾ ਬਾਹੱਕ ਨੀਲਮ ਕੁਮਾਰ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਮੈਸਰਜ਼ ਲਿਮਿਟਿਡ ਆਫਿਸ ਢੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/2 ਹਿੱਸਾ ਨੰਬਰ ਖਸਰਾ 32/17 (3-11) 32//24 (0-8) ਕਿਤਾ 2 ਰਕਬਾ 11-11 ਦਾ 1/2 ਹਿੱਸਾ ਸਕਦਰ 5-15-4.50 ਤਬਦੀਲ ਮਲਕੀਅਤ ਹੋਇਆ ਇੰਤਕਾਲ ਮੰਜ਼ੂਰ ਹੈ ਜੀ ਬਹੁਦੇ ਹੁਕਮ ਨੰ 705 ਅਦਾਲਤੀ ਹੁਕਮ ਮਿਤੀ 17/8/2016 ਬਹੁਦੇ ਰੋਜ਼ਨਾਮਚਾ ਰਪਟ ਨੰ, 705 ਮਿਤੀ 5/8/2016 ਨਾਲ ਦਾ ਹੁਕਮ ਤਹਿਸੀਲਦਾਰ ਜਾਂਚ ਮੁਕੇਰੀਆਂ ਵਾਧੂਕਮ ਇਨ ਦੀ ਬੱਰਣ ਆਫ ਸ੍ਰੀ ਹਰਭੂਪਿੰਦਰ ਸਿੰਘ ਜੰਜਾ ਆਈ ਏ ਐੱਸ ਕਮਿਸ਼ਨਰ ਜਲੰਧਰ ਦੇ ਹੁਕਮ ਮਿਤੀ 17/8/2016 ਅਨੁਸਾਰ ਐੱਸ ਡੀ ਐੱਮ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਜੀ ਦੇ ਹੁਕਮ 7/1/2016 ਤੇ ਅਮਲੇ ਹੁਕਮ ਤੱਕ ਸਫੇਦ ਹੋ ਚੁੱਕਾ ਹੈ।

ਰਜਿਸਟਰ ਨੰ 4642 ਕੁੱਲ ਪੰਨੇ: 6 ਕੁੱਲ ਫ਼ੀਸ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ Ravinder Kumar

ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਦੁਰੁਸਤ ਹੈ।

ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

ਪੰਨਾ 6 ਦਾ 1 ਪ੍ਰਿੰਟਿਡ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਸਫੇਦੇ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ।

ਜਮਾਂਬੰਦੀ- 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਬਖਸ਼.. ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ- ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਪਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਪ੍ਰਬੰਧ ਅਤੇ ਖਾਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
124/ 110 ਕੁਲ 12.50 ਮਾਲ 7.81 ਸਵਾਈ 4.69 (ਪੱਤੀ) , (ਨੰਬਰਦਾਰ), ਹਰਸਰਨ ਸਿੰਘ	165	ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਦਿਵਿਆ ਧਾਰਨ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਦੱਦਾਹੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ	ਮਕਬੂਜਾ ਮਾਲਕਾਨ		31 // 19 31 // 20 31 // 21 31 // 22 32 // 2/2 32 // 3/2/1 32 // 8/2 32 // 8 32 // 10/1 32 // 10/2 32 // 11	2-13 (0-13-10.52) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 3-7 (0-16-94.62) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 3-0 (0-40-16.86) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 3-0 (0-40-16.86) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 5-4 (0-31-36.31) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 5-17 (0-29-59.26) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 5-16 (0-34-90.41) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 3-0 (0-40-16.86) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 1-7 (0-6-82.91) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 5-13 (0-33-63.95) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ 7-11 (0-38-19.22) ਨੋਕਮੁਮਕਿਨ ਵੇਕਟਰੀ	ਰਪਟ ਨੰ 1253 ਅਦਾਲਤੀ ਹੁਕਮ ਮਿਤੀ 28/5/2012 ਰਪਟ ਨੰ 1253 ਮਿਤੀ 28-5-2012 ਖਸਰਾ ਨੰ 34//14/2/2,14/3/2,15 ਕਿਤਾ 3 ਰਕਬਾ 9-10 ਬਦਲੇ 60.8275 ਰੁਪਏ ਵਿਚ ਕੁਰਕ ਹੋ ਚੁਕਾ ਹੈ। ਵਰੰਟ ਇੰਤਕਾਲ ਨੰ 3088 ਮਿਤੀ 6/3/2015 ਵਲੋ ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਦਿਵਿਆ ਧਾਰਨ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਦੱਦਾਹੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/1 ਹਿੱਸਾ ਬਾਰੱਥ ਨੀਲਮ ਕੁਮਾਰ ਪੁੱਤਰ ਦਿਵਿਆ ਧਾਰਨ ਓਸਵਾਲ ਮੈਸਰਜ ਲਿਮਟਿਡ ਆਫਿਸ ਦੱਦਾਹੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/1 ਹਿੱਸਾ ਸਾਲਮ ਖੇਵਟ ਕਿਤੇ 49 ਰਕਬਾ 265-12 ਤਬਦੀਲ ਮਲਕੀਅਤ ਹੀਬਾ ਰਿਤੋਕਾਲ ਮੰਜੂਰ ਹੈ ਜੀ ਵਰੰਟ ਰਪਟ ਨੰ 68 ਤਾਮੀਲ ਹੁਕਮ ਮਿਤੀ 05/10/2015 ਵਰੰਟ ਤਾਮੀਲਨਾਮਾ ਰਪਟ ਨੰ 68 ਮਿਤੀ 5/10/2015 ਕੁਰਕੀ ਬਾਹੁਕਮ ਅਦਾਲਤ ਸ੍ਰੀਮਤੀ ਪੂਜਾ ਜੱਸੀ ਸੀਨਿਅਰ ਡਵੀਜਨ ਜਿੱਲਾ ਹੁਸ਼ਿਆਰਪੁਰ ਸਿਵਲ EJC NO 70 ਆਫ 9/9/2013 ਵਲੋ ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਦਿਵਿਆ ਧਾਰਨ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਦੱਦਾਹੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ ਨਾਲਮ ਖੇਵਟ ਕਿੱਤੇ 49 ਰਕਬਾ 265- 12 ਖਾਰੱਥ ਮੈਸਰਜ ਇੰਨਰੋਜਸ ਕੰਪਨੀ ਲਿਮਟਿਡ ਮਾਰਫਤ ਡਵੀਜਨਲ ਮੈਨਜਰ ਸੰਗਰੂਰ ਕੁਰਕ ਹੋ ਚੁੱਕੀ ਹੈ। ਵਰੰਟ ਰਪਟ ਨੰ 705 ਵਰਕਾਰੀ ਹੁਕਮ ਮਿਤੀ 17/8/2016 ਵਰੰਟ ਤਾਮੀਲਨਾਮਾ ਰਪਟ ਨੰ, 705 ਮਿਤੀ 5/8/2016 ਮੁਆਫਦਾ ਹੁਕਮ ਤਹਿਸੀਲਦਾਰ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਧਾਰੂਕਮ ਇਨ ਦੀ ਕੋਰਟ ਆਫ ਸ੍ਰੀ ਹਰਜੀਪਿੰਦਰ ਸਿੰਘ ਨੱਥਾ ਆਈ.ਏ.ਐੱਸ ਕਮਿਸਨਰ ਜਲੰਧਰ ਦੇ ਹੁਕਮ ਮਿਤੀ 17/8/2016 ਅਨੁਸਾਰ ਐੱਸ ਡੀ ਐੱਮ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਜੀ ਦੇ ਹੁਕਮ 7/1/2016 ਤੇ ਅਗਲੇ ਹੁਕਮ ਤੱਕ ਸਟੇਅ ਹੋ ਚੁੱਕਾ ਹੈ।

ਡੁਪਲੀਕੇਸ਼ਨ ਨੰ 4612 ਕੁੱਲ ਪੰਨੇ: 6 ਕੁੱਲ ਫੀਸ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ: ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਠੀਕ ਦੁਰੁਸਤ ਹੈ।

ਪੰਨਾ 6 ਦਾ 2 ਪ੍ਰਿੰਟ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਸਵੇਰੇ ਪਟਵਾਰੀ ਕਲੇ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

ਜਮਾਂਬੰਦੀ 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਬਖਸ਼.. ਰੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ-ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੋਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
					32 // 12	7-11 (0-38-19.22) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					32 // 13/1	0-15 (0-34-4.54) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					32 // 16	3-5 (0-16-14.04) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					32 // 25/1	2-8 (0-12-14.06) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					32 // 25/2	0-3 (0-26-1.16) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					33 // 6	7-12 (0-38-14.51) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					33 // 7	8-16 (0-33-45.69) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					33 // 8/1	0-4 (0-1-1.17) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					33 // 8/2/1	3-18 (0-19-72.84) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					33 // 8/2/2/1	3-6 (0-16-69.33) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	
					33 // 8/2/2/2	0-12 (0-3-3.51) ਕੈਨਾਲਾਈਜ਼ਡ ਕੈਬਟਰੀ	

ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਰਕਬਾ ਦਰੁਸਤ ਹੈ

ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

ਕੰਪਿਊਟਰ ਨੰ 4642 ਕੁੱਲ ਪੰਨੇ: 6 ਕੁੱਲ ਫ਼ੀਸ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ

ਪੰਨਾ 6 ਦਾ 3 ਪ੍ਰਿੰਟਿੰਗ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਵਜੇ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ

ਜਮਾਂਬੰਦੀ- 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਬਖਸ਼.. ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ- ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਹੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
					33 // 9/1	0-4 (0-1-1.17) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 9/2	7-16 (0-39-15.69) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 10/1	0-2 (0-0-50.59) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 10/2	3-2 (0-15-58.16) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 11	3-0 (0-40-46.86) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 12	3-0 (0-40-46.86) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 13	3-0 (0-40-46.86) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 14	7-16 (0-39-15.69) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 15	7-4 (0-36-42.17) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 18	3-0 (0-40-46.86) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	
					33 // 19	3-0 (0-40-46.86) ਗੈਰਮੁਮਕਿਨ ਪੈਵਟਰੀ	

ਰਜਿਸਟ੍ਰੇਸ਼ਨ ਨੰ 4642 ਕੁੱਲ ਪੰਨੇ: 6 ਕੁੱਲ ਫ਼ੀਸ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ: ਕੰਪਿਊਟਰ ਸਾਫ਼ਟ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਚੁਕੁਤ ਹੈ।

ਪੰਨਾ 6 ਚਾ 4 ਪ੍ਰਿੰਟਿੰਗ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਸਵੇਰੇ ਪਟਵਾਰੀ ਵਲੇ ਸਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖ਼ਰ

ਜਮਾਂਬੰਦੀ 2011 2012 ਪਿੰਡ- ...ਚੱਕ ਅੱਲਾਬਖਸ਼... ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ-ਮੁਕੇਰੀਆਂ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੋਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
					39 // 20	6-0 (0-40-46.86) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					34 // 14/2/2	0-17 (0-4-29.98) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					34 // 14/3/2	0-13 (0-3-23.81) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					34 // 15	6-0 (0-40-46.26) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					34 // 16/1	7-11 (0-38-19.22) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					39 // 4	7-4 (0-36-42.17) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					39 // 5/1	7-3 (0-36-18.88) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					39 // 5/2	0-4 (0-1-1.17) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					39 // 5/3	0-4 (0-1-1.17) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					34 // 6/1	3-16 (0-19-22.26) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	
					39 // 6/2	4-0 (0-20-23.43) ਨੌਰਮੁਮਕਿਨ ਕੈਂਟਰੀ	

ਰਜਿਸਟਰ ਨੰ 4642 ਕੁੱਲ ਪਨੇ: 6 ਕੁੱਲ ਗੰਨਾ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਂ/ਅਹੁਦਾ

ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਪ੍ਰਤਾਮੇਦ ਹਲਕਾ ਮੁਕੇਰੀਆਂ ਹੈ।

ਪੰਨਾ 6 ਦਾ 5 ਪ੍ਰਿੰਟਿੰਗ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਸਵੇਰੇ ਪਟਵਾਰੀ ਵਲੋਂ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

ਜਮਾਂਬੰਦੀ- 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਬਖਸ਼.. ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ- ਮੁਕੇਰੀਆਂ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੋਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
					39 // 7	7-4 (0-36-42.17) ਕੋਰਮੁਅਬਿਨ ਹੈਬਟਰੀ	
					40 // 1	7-16 (0-39-45.69) ਕੋਰਮੁਅਬਿਨ ਹੈਬਟਰੀ	
					40 // 2	8-0 (0-40-46.86) ਕੋਰਮੁਅਬਿਨ ਹੈਬਟਰੀ	
					40 // 9	8-0 (0-40-46.86) ਕੋਰਮੁਅਬਿਨ ਹੈਬਟਰੀ	
					40 // 10	7-16 (0-39-45.69) ਕੋਰਮੁਅਬਿਨ ਹੈਬਟਰੀ	
				ਕੁਲ	ਬਿੱਤੇ 49	265-12 (13-43-55.64)	
					265 ਕਨਾਲ 12 ਮਰਲਾ (13 ਹੈਕਟੇਅਰ 43 ਏਅਰ 55.64 ਸੈਂਟੀਅਰ) ਨੋਰਮਾਰੂਆ		
					265 ਕਨਾਲ 12 ਮਰਲਾ (13 ਹੈਕਟੇਅਰ 43 ਏਅਰ 55.64 ਸੈਂਟੀਅਰ) ਨੋਰਮੁਅਬਿਨ ਹੈਬਟਰੀ		

ਟ੍ਰਾਂਜੈਕਸ਼ਨ ਨੰ 4642 ਕੁੱਲ ਪੰਨੇ: 6 ਕੁੱਲ ਫੀਸ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ: ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਦਰੁਸਤ ਹੈ|

ਪੰਨਾ 6 ਦਾ 6 ਪ੍ਰਿੰਟਿਡ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਸਵੇਰੇ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ| ਕਰਮਚਾਰੀ ਦੇ ਦਸਤਖਤ

ਜਮਾਂਬੰਦੀ-2013 2014 ਪਿੰਡ- ਮਹਿਊਸਦੀਨ ਪੁਰ ਦਲੋਲ ਹੱਦਬਸਤ ਨੰ :- 234 ਤਹਿਸੀਲ-ਮੁਕੇਰੀਆਂ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਰੋਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
553/ 561 ਕੁਲ 49.44 . ਮਾਲ 30.90 ਸਵਾਈ 18.54 (ਪੱਤੀ) , (ਨੰਬਰਦਾਰ) ਰਕਬਾ ਵੀ ਸ਼ਰੀਕਤ ਮਿਆ 0/4, ਵਿਜੈ ਕੁਮਾਰ 1/4	893	ਓਸਵਾਲ ਸੂਕਰਨ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਓਸਵਾਲ ਚੰਡਾਰੀ ਕਲਾਂ ਪੀ ਟੀ ਓਤ ਲੁਧਿਆਣਾ	ਅਖਚੂਰਾ ਮਾਲਯ		57 // 21	8-0 (0-40-46.86) ਸੂਕਰ ਮਿਲ	ਰਕਬਦਵਰ ਨੰਬਰ
					57 // 22	8-0 (0-40-46.86) ਸੂਕਰ ਮਿਲ	
					58 // 14/2	1-8 (0-7-9.20) ਸੂਕਰ ਮਿਲ	
					58 // 17	6-17 (0-34-85.12) ਸੂਕਰ ਮਿਲ	
					58 // 24	7-5 (0-37-43.34) ਸੂਕਰ ਮਿਲ	
					58 // 25/1	6-4 (0-31-36.31) ਸੂਕਰ ਮਿਲ	
					58 // 25/2	1-16 (0-9-10.54) ਸੂਕਰ ਮਿਲ	
					59 // 4	7-16 (0-39-45.69) ਸੂਕਰ ਮਿਲ	
					59 // 5/1	6-8 (0-32-37.49) ਸੂਕਰ ਮਿਲ	
					59 // 5/2	1-12 (0-8-9.37) ਸੂਕਰ ਮਿਲ	
					59 // 6/1	6-11 (0-7-64.08) ਸੂਕਰ ਮਿਲ	
					59 // 6/2	6-9 (0-32-62.76) ਸੂਕਰ ਮਿਲ	
					59 // 7	8-0 (0-40-46.86) ਸੂਕਰ ਮਿਲ	
					59 // 14	8-2 (0-40-47.44) ਸੂਕਰ ਮਿਲ	

ਰਜਿਸਟਰੇਸ਼ਨ ਨੰ 4641 ਕੁੱਲ ਪੰਨੇ: 2 ਕੁੱਲ ਫ਼ੀਸ: 40 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਹਸਤਾਖਰ

ਪੰਨਾ 2 ਦਾ 1 ਪ੍ਰਿੰਟਿਡ ਮਿਤੀ : 25-05-2017 09:49:25.283 ਜਦੋਂ ਪਟਵਾਰੀ ਦੁਆਰਾ ਇਹ ਰਿਕਾਰਡ ਮਿਤੀ 25/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੋਇ

ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਚੁਰਾਸ ਹੈ।

ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

ਜਮਾਂਬੰਦੀ- 2013 2014 ਪਿੰਡ- ਮੱਖਿਊਲਦੀਨ ਪੁਰ ਦਸੋਲ ਹੱਦਬਸਤ ਨੰ :- 234 ਤਹਿਸੀਲ- ਮੁਕੇਰੀਆਂ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਪਲਾਟ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੂੰ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
					59 // 15	8-0 (0-40-46.86) ਬੁਰਜ ਨੰਬਲ	
					59 // 16	4-9 (0-22-51.06) ਬੁਰਜ ਨੰਬਲ	
					59 // 17	4-7 (0-22-0.48) ਬੁਰਜ ਨੰਬਲ	
					60 // 1	7-4 (0-36-12.17) ਬੁਰਜ ਨੰਬਲ	
					60 // 10/1	1-4 (0-6-7.03) ਬੁਰਜ ਨੰਬਲ	
				ਕੁਲ	ਕਿਤੇ 19	104-15 (5-29-88.53)	
					104 ਰਕਬਾ (5 ਹੈਕਟੇਅਰ 88.53 ਸੈਂਟੇਅਰ) ਗੈਰਮਜਰੂਆ	15 ਮਰਲਾ 29 ਵਰਗ	
					104 ਰਕਬਾ (5 ਹੈਕਟੇਅਰ 88.53 ਸੈਂਟੇਅਰ) ਬੁਰਜ ਨੰਬਲ	15 ਮਰਲਾ 29 ਵਰਗ	

ਰਜਿਸਟਰਡ ਨੰ 4641 ਕੁੱਲ ਪੰਨੇ: 2 ਕੁੱਲ ਫੀਸ: 40 ਕਲਰਕਾਂ ਦਾ ਨਾਮ/ਮੁਹਰ:

ਪੰਨਾ 2 ਦਾ 2 ਪ੍ਰਿੰਟ ਮਿਤੀ : 25-05-2017 09:49:23:283 ਸਮੇਤ ਪਟਵਾਰੀ ਵੱਲੋਂ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 23/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ।

ਰਿਪੋਰਟ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਦੁਰਸਤ ਹੈ।

ਕਲਰਕਾਂ ਦੇ ਦਸਤਖਤ

ਸਮਾਂਬੰਦੀ- 2013 2014 ਪਿੰਡ- ਮਹਿਉਲਦੀਨ ਪੁਰ ਦਲੇਲ ਹੱਦਬਸਤ ਨੰ :- 234 ਤਹਿਸੀਲ- ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ - ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੋਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
114/ 83 ਕੁਲ 1.63 ਮਾਲ 1.02 ਸਦਾਵੀ 0.61 (ਪੱਤੀ) , (ਨੰਬਰਦਾਰ) ਸਰਬ ਸ੍ਰੀ ਹਰਿੰਦਰ ਸਿੰਘ 3/4, ਵਿਜੇ ਕੁਮਾਰ 1/4	164	ਦਲਾਵਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ 1/8 ਹਿੱਸਾ ਅਵਤਾਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 1/8 ਹਿੱਸਾ ਪਿਆਰਾ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 1/8 ਹਿੱਸਾ ਜਸਵਿੰਦਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 1/8 ਹਿੱਸਾ ਮੈਸਰਜ ਉਸਵਾਲ ਸੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਉਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਉਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਉਸਵਾਲ ਵੰਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ 1/2 ਹਿੱਸਾ	ਅਕਬੂਜਾ		60 // 19	5-3 (0-26-5.16) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	ਫਰਦਬਦਰ ਨੰਬਰ 3
				ਕੁਲ	ਕਿੱਤੇ 1	5-3 (0-26-5.16)	
					5 ਕਨਾਲ 3 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 26 ਏਅਰ 5.16 ਸੈਂਟੇਅਰ) ਕੈਲਮਜਰੂਆ		
					5 ਕਨਾਲ 3 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 26 ਏਅਰ 5.16 ਸੈਂਟੇਅਰ) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ		
588/ 500 ਕੁਲ 19.33 ਮਾਲ 12.08 ਸਦਾਵੀ 7.25 (ਪੱਤੀ) , (ਨੰਬਰਦਾਰ) ਸਰਬ ਸ੍ਰੀ ਹਰਿੰਦਰ ਸਿੰਘ 3/4, ਵਿਜੇ ਕੁਮਾਰ 1/4	806	ਮੈਸਰਜ ਉਸਵਾਲ ਸੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਉਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਉਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਉਸਵਾਲ ਵੰਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ 2/3 ਹਿੱਸਾ ਪੁਨੇ ਚੋਦੀ ਪੁੱਤਰੀ ਸਾਧੂ ਸਿੰਘ ਪੁੱਤਰ ਮੋਦੀਆ ਸਿੰਘ 2/45 ਹਿੱਸਾ ਧਰਮ ਕੌਰ ਪੁੱਤਰੀ ਸਾਧੂ ਸਿੰਘ ਪੁੱਤਰ ਮੋਦੀਆ ਸਿੰਘ 2/45 ਹਿੱਸਾ ਦਿਲਾਵਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ ਅਵਤਾਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ ਪਿਆਰਾ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ ਜਸਵਿੰਦਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ	ਮੈਸਰਜ ਉਸਵਾਲ ਸੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਉਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਉਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਉਸਵਾਲ ਵੰਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ ਠਿਸੇਦਾਰ		60 // 2	7-11 (0-38-19.22) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	ਫਰਦਬਦਰ ਨੰਬਰ 3
					60 // 9	8-0 (0-40-46.86) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	
					60 // 10/2	8-4 (0-31-36.31) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	
					60 // 11	8-0 (0-40-46.86) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	
					60 // 12	8-0 (0-40-46.86) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	
					60 // 20	4-13 (0-23-52.24) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ	
				ਕੁਲ	ਕਿੱਤੇ 6	42-8 (2-14-48.34)	
					42 ਕਨਾਲ 8 ਮਰਲਾ (2 ਹੈਕਟੇਅਰ 14 ਏਅਰ 48.34 ਸੈਂਟੇਅਰ) ਕੈਲਮਜਰੂਆ		
					42 ਕਨਾਲ 8 ਮਰਲਾ (2 ਹੈਕਟੇਅਰ 14 ਏਅਰ 48.34 ਸੈਂਟੇਅਰ) ਗੰ. ਮੂ. ਸੂਗਰ ਮਿਲ		

ਰਜਿਸਟਰ ਨੰ 4641 ਕੁੱਲ ਪੰਨੇ: 1 ਕੁੱਲ ਫੀਸ: 20 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ: ਔਪਰੇਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਚੁਰੁਸਤ ਹੈ।

ਪ੍ਰਿੰਟਿੰਗ ਟਾਈਮ : 26-05-2017 09:50:19:123 ਸਵੇਰੇ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 23/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

KHEWAT NO/REVENUE/ AREA/LAMBERDAR	KHATONI NUMBER / LAGAN	OWNER NAME & DETAIL	CULTIVATORS NAME & DETAIL	SOURCES OF IRRIGATION	MURABA & KHASRA NUMBER	AREA & NATURE OF LAND	REMARKS
124/110	165	M/S OSWAL SUGARS LIMITED, MUKERIAN - MARFAT NEELAM KUMAR OSWAL S/O VIDHAY SAGAR, OSWAL SUGAR LIMITED OFFICE DHANDARI KALAN, G.T. LUDHIANA,	MAKBUJA MALKAN		31 // 19	2-13 - FACTORY	RAPUT NO. 1253 COURT ORDER DT 28/5/2012, RAPUT NO. 1253 DT 28.05.2012, KHASRA NO. 34 // 14 /2 / 2, 14/3/2, 15 KITTA, 3 AREA, 9-10 AGAINST RS 608275/-
TOTAL 12.50					31 // 20	3-07 - FACTORY	Mutation No. 3088
REVINUE 7.81					31 // 21	8-00 - FACTORY	Dt. 08.03.2016 M/s Oswal Sugars Ltd., Mukerian
SWAI 4.69					31 // 22	8-00 - FACTORY	C/o Neelam Kumar Oswal S/o Vidya Sagar
					32 // 2 /2	6-04 - FACTORY	Oswal Sugar Ltd. Office Dhandari Kalan G T Road
					32 // 3 / 2 /1	5-17 - FACTORY	Ludhiana 1/1 part cultivator Neelam Kumar
					32 // 8 / 2	6-18 - FACTORY	s/o Vidya Sagar Oswal Messers Limited Office
					32 // 9	8-00 - FACTORY	Dhandari Kalan G. T. Road Ludhiana 1/1 part
					32 // 10 / 1	1-07 - FACTORY	total khewat kite 49 area 265-12 changed
					32 // 10 / 2	6-13 - FACTORY	ownership through mutation is submitted
					32 // 11	7-11 - FACTORY	for approval
					32 // 12	7-11 - FACTORY	Baruai Report No. 68
					32 // 13/1	6-15 - FACTORY	Govt. Order dt. 05.10.2015 daily report No. 68
					32 // 16	3-5 - FACTORY	dt. 05.10.2015 Kuraki order by Court Smt. Poonam
					32 // 25 / 1	2-8 - FACTORY	Joshi Sr. Divisional Distt. Judge, Hoshairpur
					32 // 25 / 2	5-3 - FACTORY	Civil EJC No. 70 of 9/9/2013 from M/s Oswal
					33 // 6	7-12 - FACTORY	Sugar Limited Mukerian C/o Neelam Kumar
					33 // 7	7-16 - FACTORY	Oswal S/o Vidya Sagar Oswal Sugar Ltd.
					33 // 8 / 1	0-4 - FACTORY	Office Dhandari Kalan G T Road Ludhiana
					33 // 8 / 2 / 1	3-18 - FACTORY	Salm Khewat Kite 49 Area 265-12 Bahuk
					33 // 8 / 2 / 2 / 1	3-6 - FACTORY	National Insurance Co. Ltd. C/o Divisional
					33// 8 / 2/ 2 / 2	0-12 - FACTORY	Manager, Sangrur has been kurked.
					33 // 9 / 1	0-4 - FACTORY	
					33 // 9 / 2	7-16 - FACTORY	ownership through mutation is submitted
					33 // 10 / 1	0-2 - FACTORY	for approval
					33 // 10 / 2	3-2 - FACTORY	Baruai Report No. 68
					33 // 11	8-0 - FACTORY	
					33 // 12	8-0 - FACTORY	
					33 // 13	8-0 - FACTORY	
					33 // 14	7-16 - FACTORY	
					33 //15	7-4 - FACTORY	
					33 // 18	8-0 - FACTORY	
					33 // 19	8-0 - FACTORY	
					33 // 20	8-0 - FACTORY	
					34 // 14 / 2 / 2	0-17 - FACTORY	
					34 // 14 / 3 / 2	0-13 - FACTORY	
					34 // 15	8-0 - FACTORY	
					34 // 16 / 1	7-11 - FACTORY	
					39 // 4	7-4 - FACTORY	
					39 // 5 / 1	7-3 - FACTORY	

ਜਮਾਂਬੰਦੀ 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਬਖਸ਼.. ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ-ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ - ਗੁਰਦਾਸਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਾਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
123/ 109 ਕੁਲ 3.50 ਮਾਲ 2.19 ਜਦਾਈ 1.31 ਪੱਤੀ) - (ਨੰਬਰਦਾਰ) ਮਲਸਤਨ ਮਿੱਸ	164	ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆਂ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਵਹਿਦਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/2 ਹਿੱਸਾ ਮਾਰਫਤੀ ਦੀਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਸੀ ਰਾਮ 1/12 ਹਿੱਸਾ ਲਲਿਤਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਸੀ ਰਾਮ 1/12 ਹਿੱਸਾ ਸੁਰਿੰਦਰ ਕੁਮਾਰ ਪੁੱਤਰ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਸੀ ਰਾਮ 1/12 ਹਿੱਸਾ ਵਿਨੋਦ ਕੁਮਾਰ ਪੁੱਤਰ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਸੀ ਰਾਮ 1/12 ਹਿੱਸਾ ਅਰਵਿਨਾਸ਼ ਕੁਮਾਰ ਪੁੱਤਰ ਲੱਭੂ ਰਾਮ ਪੁੱਤਰ ਰੁਲਸੀ ਰਾਮ 1/12 ਹਿੱਸਾ ਮਨਿਸ਼ ਕੁਮਾਰ ਪੁੱਤਰ ਕਰਿਸ਼ਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ ਰੁਖਸਰ ਪੁੱਤਰੀ ਕਰਿਸ਼ਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ ਮੰਜੂ ਪੁੱਤਰੀ ਕਰਿਸ਼ਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ ਅਨੀਤਾ ਪੁੱਤਰੀ ਕਰਿਸ਼ਨਾ ਦੇਵੀ ਪੁੱਤਰੀ ਲੱਭੂ ਰਾਮ 1/48 ਹਿੱਸਾ	ਬਤੌਰ ਮਾਲਕਾਨ	ਕੁਲ	32 // 17 32 // 24 ਕਿੱਤੇ 2 11 ਕਨਾਲ 11 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 4.8 ਏਅਰ 42.65 ਸੈਂਟੇਅਰ) ਗੈਰਮੁਮਕਿਨ 11 ਕਨਾਲ 11 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 4.8 ਏਅਰ 42.65 ਸੈਂਟੇਅਰ) ਗੈਰਮੁਮਕਿਨ ਫੈਕਟਰੀ	3-11 (0-17-95.79) ਗੈਰਮੁਮਕਿਨ ਫੈਕਟਰੀ 8-0 (0-40-46.86) ਗੈਰਮੁਮਕਿਨ ਫੈਕਟਰੀ 11-11 (0-58-42.65)	ਬਹੁਬੇ ਇੰਤਕਾਲ ਨੰ 3088- ਮਿਤੀ 8/3/2016 ਦੇਠੋ ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆਂ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਵਹਿਦਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/2 ਹਿੱਸਾ ਚਾਰੰਜ ਨੀਲਮ ਕੁਮਾਰ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਮੈਸਰਜ ਲਿਮਿਟਿਡ ਆਫਿਸ ਵਹਿਦਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/2 ਹਿੱਸਾ ਰਕਬਾ ਖਸਰਾ 32//17 (3-11) 32//24 (0-8) ਕਿਤਾ 2 ਰਕਬਾ 11-11 ਦਾ 1/2 ਹਿੱਸਾ ਬਦਦਰ 5-15-4.50 ਰਕਬਦੀਲ ਮਲਵੀਅਤ ਦੋਇਆ ਇੰਤਕਾਲ ਮੰਜੂਰ ਹੈ ਜੀ ਬਹੁਬੇ ਰਪਟ ਨੰ 705 ਹਕਦਾਰੀ ਹੁਕਮ ਮਿਤੀ 17/8/2016 ਬਹੁਬੇ ਦੋਸ਼ਨਾਮਾ ਰਪਟ ਨੰ, 705 ਮਿਤੀ 5/8/2016 ਨਾਲਹ ਹੁਕਮ ਤਹਿਸੀਲਦਾਰ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਵਾਹੁਕਮ ਦਿਨ ਦੀ ਕੋਰਟ ਆਫ ਸ੍ਰੀ ਹਰਭੂਪਿੰਦਰ ਸਿੰਘ ਨੰਦਾ ਆਈ ਏ ਐੱਸ ਕਮਿਸ਼ਨਰ ਜਲੰਧਰ ਦੇ ਹੁਕਮ ਮਿਤੀ 17/8/2016 ਅਨੁਸਾਰ ਐੱਸ ਡੀ ਐੱਮ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਜੀ ਦੇ ਹੁਕਮ 7/1/2016 ਤੇ ਅਗਲੇ ਹੁਕਮ ਤੱਕ ਸਟੇਅ ਹੋ ਚੁੱਕਾ ਹੈ।

ਨਮੂਨਾ ਨੰ 4642 ਕੁੱਲ ਪੰਨੇ: 6 ਕੁੱਲ ਫੀਸ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ Parveen Kumar ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਤਰਮੀਮ ਹੈ।

ਪੰਨਾ 6 ਦਾ 1 ਪ੍ਰਿੰਟਿਡ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਸਵੇਰੇ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖਰ

ਜਮਾਂਬੰਦੀ- 2011 2012 ਪਿੰਡ- ..ਚੱਕ ਅੱਲਾਯਖ਼ਸ਼.. ਹੱਦਬਸਤ ਨੰ :- 236 ਤਹਿਸੀਲ- ਮੁਕੇਰੀਆਂ ਜ਼ਿਲਾ - ਗੁਰਦਾਸਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
124/ 110 ਕੁਲ 12.50 ਮਾਲ 7.81 ਸਵਾਈ 4.69 (ਪੱਤੀ) , (ਨੰਬਰਦਾਰ) ਹਰਸਰਨ ਸਿੰਘ	165	ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਚੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ	ਮਕਬੂਜ਼ਾ ਮਾਲਕਾਨ		31 // 19 31 // 20 31 // 21 31 // 22 32 // 2/2 32 // 3/2/1 32 // 8/2 32 // 9 32 // 10/1 32 // 10/2 32 // 11	2-13 (0-13-40.52) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 8-7 (0-16-54.62) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 8-0 (0-40-16.86) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 8-0 (0-40-16.86) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 8-4 (0-31-86.31) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 5-17 (0-29-59.26) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 5-18 (0-34-90.41) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 8-0 (0-40-16.86) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 7-7 (0-6-82.91) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 6-13 (0-33-63.95) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ 7-11 (0-38-19.22) ਨੋਰਮੁਅਕਿਨ ਫੈਕਟਰੀ	ਰਪਟ ਨੰ 1253 ਅਦਾਲਤੀ ਹੁਕਮ ਮਿਤੀ 28/5/2012 ਰਪਟ ਨੰ 1253 ਮਿਤੀ 28-5-2012 ਖਸਰਾ ਨੰ 34//14/2/2,14/3/2,15 ਕਿਤਾ 3 ਰਕਬਾ 9-10 ਵਜਬੇ 60.8275 ਰੁਪਏ ਵਿਚ ਕੁਰਕ ਹੋ ਚੁਕਾ ਹੈ। ਵਰੂਏ ਇੰਤਕਾਲ ਨੰ 3088 ਮਿਤੀ 8/3/2016 ਦਵੇ ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਚੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/1 ਹਿੱਸਾ ਬਾਬੱਤ ਨੀਲਮ ਕੁਮਾਰ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸਿਮਰਜ ਲਿਮਟਿਡ ਆਫਿਸ ਚੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ 1/1 ਹਿੱਸਾ ਸਾਲਮ ਖੇਵਟ ਪਿਤੇ 49 ਰਕਬਾ 265-12 ਤਬਦੀਲ ਮਲਖੀਅਤ ਹੋਇਆ ਇੰਤਕਾਲ ਮੰਜੂਰ ਹੈ ਜੀ ਵਰੂਏ ਰਪਟ ਨੰ 68 ਦਰਖਾਸਤ ਹੁਕਮ ਮਿਤੀ 05/10/2015 ਵਰੂਏ ਰੋਜ਼ਨਾਮਚਾ ਰਪਟ ਨੰ 68 ਮਿਤੀ 5/10/2015 ਕੁਰਕੀ ਬਾਹੁਕਮ ਅਦਾਲਤ ਸ੍ਰੀਮਤੀ ਪੂਨਮ ਜੋਸ਼ੀ ਸਿਵਿਲ ਜੱਜ ਜੂਨੀਅਰ ਡਵੀਜਨ ਜਿੱਲਾ ਗੁਰਦਾਸਪੁਰ ਮਿਦਵ EJC NO 70 ਆਫ 9/9/2013 ਵਦੇ ਮੈਸਰਜ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਮੁਕੇਰੀਆ ਮਾਰਫਤ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਸੂਗਰ ਲਿਮਿਟਿਡ ਆਫਿਸ ਚੰਢਾਰੀ ਕਲਾਂ ਜੀ.ਟੀ.ਰੋਡ ਲੁਧਿਆਣਾ ਸਾਲਮ ਖੇਵਟ ਪਿੰਤੇ 49 ਰਕਬਾ 265- 12 ਬਾਬੱਤ ਨੋਰਮਨ ਇੰਨਗੇਰਜ਼ ਕੰਪਨੀ ਲਿਮਟਿਡ ਮਾਰਫਤ ਡਵੀਜਨਲ ਮੈਨਜਰ ਮੰਗੂਹਰ ਕੁਰਕ ਹੋ ਚੁੱਕੀ ਹੈ। ਵਰੂਏ ਰਪਟ ਨੰ 705 ਦਰਖਾਸਤ ਹੁਕਮ ਮਿਤੀ 17/6/2016 ਵਰੂਏ ਰੋਜ਼ਨਾਮਚਾ ਰਪਟ ਨੰ, 705 ਮਿਤੀ 5/8/2016 ਆਮਦਾ ਹੁਕਮ ਤਹਿਸੀਲਦਾਰ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਧਾਹੁਕਮ ਇਨ ਦੀ ਕੋਰਟ ਆਫ ਸ੍ਰੀ ਹਰਦੀਪਿੰਦਰ ਸਿੰਘ ਨੰਦਾ ਆਈ.ਏ ਐੱਸ ਕਮਿਸਨਰ ਜਲੰਧਰ ਦੇ ਹੁਕਮ ਮਿਤੀ 17/6/2016 ਅਨੁਸਾਰ ਐੱਸ ਡੀ ਐੱਮ ਸਾਹਿਬ ਮੁਕੇਰੀਆਂ ਜੀ ਦੇ ਹੁਕਮ 7/1/2016 ਤੇ ਅਗਲੇ ਹੁਕਮਾ ਤੱਕ ਸਟੇਅ ਹੋ ਚੁੱਕਾ ਹੈ।

ਰਜਿਸਟਰ ਨੰ 4642 ਕੁੱਲ ਪਨੇ: 6 ਕੁੱਲ ਕੀਮਤ: 120 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਪਦਵੀ: ਕੰਪਿਊਟਰ ਸਾਫ਼ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਚੁਰਾਸ਼ ਹੈ।

ਪੰਨਾ 6 ਦਾ 2 ਪ੍ਰਿੰਟਿਡ ਮਿਤੀ : 25-05-2017 09:51:20:190 ਤਦੋਂ ਪਟਵਾਰੀ ਵਲੋਂ ਸਾਫ਼ ਰਿਕਾਰਡ ਮਿਤੀ 24/05/2017 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਰਮਚਾਰੀ ਦੇ ਹਸਤਾਖ਼ਰ

Translation of dt- 30/9/16 letter

TOWN & VILLAGE PLANNING DEPTT., PUNJAB

From

Distt. Town Planner,
Hoshiarpur.

To

M/s Indian Sucrose Limited,
G. T. Road, Mukerian – 144 211.
Distt. Hoshiarpur.

Memo No. 1083 / DTP(H)/CLU-1 dt. 30.09.2016

Subject: Application for classification of land use of the land situated at village Chak Alla Baksh, H. N. No. 236, Tehsil Mukerian, Distt. Hoshiarpur.

It has been observed the subject case by this office and brought the report of that time, the total area of 50.86 acres land belongs to village Chak Alla Baksh, Hadbast No. 236 and Vill. Mahiuldinpur Dalel Hadbast No. 234 falls under Tehsil Mukerian, Distt. Hoshiarpur, as per this report. The total area of the site is 50.86 acres. A Industry namely M/s Indian Sucrose Ltd. is running in this site. This site is having CLU (Industrial use) as per master plan, Mukerian 2010-2031 prepared by this office.

This information is not treated as NOC/ Approval for construction of building relates to this site.

Sd/-
Distt. Town Planner,
Hoshiarpur.

ਨਗਰ ਅਤੇ ਗਰਾਂਮ ਯੋਜਨਾਂਬੰਦੀ ਵਿਭਾਗ, ਪੰਜਾਬ।

ਵਲੋ

ਜ਼ਿਲ੍ਹਾ ਨਗਰ ਯੋਜਨਾਕਾਰ,
ਹੁਸ਼ਿਆਰਪੁਰ।

ਸੇਵਾ ਵਿਖੇ

M/s Indian Sucrose Limited,
G.T.Road , Mukerian-144211,
Distt. Hoshiarpur

ਯਾਦ ਪੱਤਰ ਨੰ: 1083 ਡੀਟੀਪੀ(ਐਚ)/ ਮੀ. ਐਫ.ਜ਼-1
ਮਿਤੀ: 30-09-2016

ਵਿਸ਼ਾ: **Application for classification of land use of the land situated at village Chak Alla Baksh, H.B.No. 236, Tehsil Mukerian Distt. Hoshiarpur.**

ਉਪਰੋਕਤ ਵਿਸ਼ੇ ਅਧੀਨ ਕੇਸ ਨੂੰ ਇਸ ਦਫਤਰ ਵਿਖੇ ਵਾਚਿਆ ਗਿਆ ਅਤੇ ਮੌਕਾ ਰਿਪੋਰਟ ਮੰਗਵਾਈ ਗਈ, ਜਿਸ ਅਨੁਸਾਰ ਸਾਈਟ ਪਿੰਡ ਚੱਕ ਅੱਲਾ ਬਖਸ਼, ਹ.ਬ.ਨੰ. 236 ਅਤੇ ਪਿੰਡ ਮਹਿਉਦਦੀਨਪੁਰ ਦਲੇਲ, ਹ.ਬ.ਨੰ.234, ਤਹਿ. ਮੁਕੇਰੀਆਂ ਜ਼ਿਲਾ ਹੁਸ਼ਿਆਰਪੁਰ ਵਿਖੇ ਵਿੱਚ ਪੈਂਦੀ ਹੈ। ਸਾਈਟ ਦਾ ਕੁੱਲ ਏਰੀਆ 50.86 ਏਕੜ ਹੈ। ਸਾਈਟ ਵਿੱਚ ਮੈਸ: ਸੁਕਰੋਜ਼ ~~ਇੰਟਰਨੈਸ਼ਨਲ~~ ਇੰਡੀਆਨ ਲਿਮੀਟਡ ਨਾਮ ਦੀ ਇੰਡਸਟਰੀ ਚੱਲ ਰਹੀ ਹੈ। ਇਸ ਦਫਤਰ ਵਲੋਂ ਤਿਆਰ ਕੀਤੇ ਮਾਸਟਰ ਪਲੈਨ ਮੁਕੇਰੀਆਂ 2010-2031 ਅਨੁਸਾਰ ਇਸ ਸਾਈਟ ਦਾ ਲੈਂਡ ਯੂਜ਼ ਇੰਡਸਟਰੀਅਲ ਹੈ। ਇਸ ਜਾਣਕਾਰੀ ਨੂੰ ਵਿਸ਼ੇ ਸਬੰਧੀ ਸਾਈਟ ਦਾ ਐਨ.ਓ.ਸੀ / ਬਿਲਡਿੰਗ ਉਸਾਰੀ ਦੀ ਮਨਜੂਰੀ ਨਾ ਸਮਝਿਆ ਜਾਵੇ।

ਜ਼ਿਲ੍ਹਾ ਨਗਰ ਯੋਜਨਾਕਾਰ,
ਹੁਸ਼ਿਆਰਪੁਰ।

As per fard total area & Factory premises area of Indian Sucrose Ltd. (Formerly Oswal Sugar Ltd) Mukerian as on 01.09.2016

S.No	Village	Hadvast / Khewat / Khatauni	Khasra No		Total Area as per Fard			Our Area as per Fard		
					Acre	Kanal	Marla	Acre	Kanal	Marla
1	Village Chack Alla Baksh, Mukerian (Factory Area)	236 -123/109 - 164	32//17	3-11	0	3	11.00	0	1	15.50
			32//24	8-00	1	0	0.00	0	4	0.00
			Total	**11-11**	**1**	**3**	**11.00**	**0**	**5**	**15.50**
2	Village Chack Alla Baksh, Mukerian (Factory Area)	236 - 124/110 -165	31//19	2-13	0	2	13.00	0	2	13.00
			31//20	3.07	0	3	7.00	0	3	7.00
			31//21	8-00	1	0	0.00	1	0	0.00
			31//22	8-00	1	0	0.00	1	0	0.00
			32//2/2	6-04	0	6	4.00	0	6	4.00
			32//3/2/1	5-17	0	5	17.00	0	5	17.00
			32//8/2	6-18	0	6	18.00	0	6	18.00
			32//9	8-00	1	0	0.00	1	0	0.00
			32//10/1	1-07	0	1	7.00	0	1	7.00
			32//10/2	6-13	0	6	13.00	0	6	13.00
			32//11	7-11	0	7	11.00	0	7	11.00
			32//12	7-11	0	7	11.00	0	7	11.00
			32//13/1	6-15	0	6	15.00	0	6	15.00
			32//16	3.05	0	3	5.00	0	3	5.00
			32//25/1	2.08	0	2	8.00	0	2	8.00
			32//25/2	5.03	0	5	3.00	0	5	3.00
			33//6	7-12	0	7	12.00	0	7	12.00
			33//7	7-16	0	7	16.00	0	7	16.00
			33//8/1	0.04	0	0	4.00	0	0	4.00
			33//8/2/1	3-18	0	3	18.00	0	3	18.00
			33//8/2/2/1	3-06	0	3	6.00	0	3	6.00
			33//8/2/2/2	0-12	0	0	12.00	0	0	12.00
			33//9/1	0-04	0	0	4.00	0	0	4.00
			33//9/2	7-16	0	7	16.00	0	7	16.00
			33//10/1	0-02	0	0	2.00	0	0	2.00
			33//10/2	3-02	0	3	2.00	0	3	2.00
			33//11	8-00	1	0	0.00	1	0	0.00
			33//12	8-00	1	0	0.00	1	0	0.00
			33//13	8-00	1	0	0.00	1	0	0.00

As per fard total area & Factory premises area of Indian Sucrose Ltd. (Formerly Oswal Sugar Ltd) Mukerian as on 01.09.2016

S.No	Village	Hadvast / Khewat / Khatauni	Khasra No		Total Area as per Fard			Our Area as per Fard		
					Acre	Kanal	Marla	Acre	Kanal	Marla
			33//14	7-16	0	7	16.00	0	7	16.00
			33//15	7-04	0	7	4.00	0	7	4.00
			33//18	8-00	1	0	0.00	1	0	0.00
			33//19	8-00	1	0	0.00	1	0	0.00
			33//20	8-00	1	0	0.00	1	0	0.00
			34//14/2/2	0-17	0	0	17.00	0	0	17.00
			34//14/3/2	0-13	0	0	13.00	0	0	13.00
			34//15	8-00	1	0	0.00	1	0	0.00
			34//16/1	7-11	0	7	11.00	0	7	11.00
			39//4	7-04	0	7	4.00	0	7	4.00
			39//5/1	7.03	0	7	3.00	0	7	3.00
			39//5/2	0-04	0	0	4.00	0	0	4.00
			39//5/3	0-04	0	0	4.00	0	0	4.00
			39//6/1	3-16	0	3	16.00	0	3	16.00
			39//6/2	4-00	0	4	0.00	0	4	0.00
			39//7	7-04	0	7	4.00	0	7	4.00
			40//1	7-16	0	7	16.00	0	7	16.00
			40//2	8-00	1	0	0.00	1	0	0.00
			40//9	8-00	1	0	0.00	1	0	0.00
			40//10	7-16	0	7	16.00	0	7	16.00
			Total	**265-12**	**12**	**152**	**352.00**	**12**	**152**	**352.00**
		Total of land village Chack Alla Baksh			**13**	**155**	**363**	**12**	**157**	**367.50**
3	**Village Mohiuldinpur Dalel Mukerian (Factory Area)**	234-114/83-164	60//19	5-03	0	5	3.00	0	2	11.50
4	**Village Mohiuldinpur Dalel Mukerian (Factory Area)**	234 - 500/576 - 709	60//2	7-11	0	7	11	0	5	0.7
			60//9	8-00	1	0	0	0	5	6.7
			60//10/2	6-04	0	6	4	0	4	2.7
			60//11	8-00	1	0	0	0	5	6.7
			60//12	8-00	1	0	0	0	5	6.7
			60//20	4-13	0	4	13	0	3	2
			Total	**42-8**	**3**	**17**	**28**	**0**	**27**	**25.50**

As per fard total area & Factory premises area of Indian Sucrose Ltd. (Formerly Oswal Sugar Ltd) Mukerian as on 01.09.2016											
S.No	Village	Hadvast / Khewat / Khatauni	Khasra No		Total Area as per Fard			*Our Area as per Fard*		
					Acre	Kanal	Marla	*Acre*	*Kanal*	*Marla*
5	Village Mohiuldinpur Dalel Mukerian (Factory Area)	234 - 561/575 - 795	57//21	8-00	1	0	0.00	*1*	*0*	*0*
			57//22	8-00	1	0	0	*1*	*0*	*0*
			58//14/2	1-08	0	1	8	*0*	*1*	*8*
			58//17	6-17	0	6	17	*0*	*6*	*17*
			58//24	7-08	0	7	8	*0*	*7*	*8*
			58//25/1	6-04	0	6	4	*0*	*6*	*4*
			58//25/2	1-16	0	1	16	*0*	*1*	*16*
			59//4	7-16	0	7	16	*0*	*7*	*16*
			59//5/1	6-08	0	6	8	*0*	*6*	*8*
			59//5/2	1-12	0	1	12	*0*	*1*	*12*
			59//6/1	1-11	0	1	11	*0*	*1*	*11*
			59//6/2	6-09	0	6	9	*0*	*6*	*9*
			59//7	8-00	1	0	0	*1*	*0*	*0*
			59//14	8-02	1	0	2	*1*	*0*	*2*
			59//15	8-00	1	0	0	*1*	*0*	*0*
			59/16	4-09	0	4	9	*0*	*4*	*9*
			59//17	4-07	0	4	7	*0*	*4*	*7*
			60//1	7-04	0	7	4	*0*	*7*	*4*
			60//10/1	1-04	0	1	4	*0*	*1*	*4*
			Total	104-15	5	58	135	*5*	*58*	*135.00*
		Total of land village Mohiuldinpur		116-04	8	80	166	*5*	*87*	*172.00*
	As per fard total area & factory premises area of ISL at Chack Alla Baksh & Mohiuldinpur				21	235	529	*17*	*244*	*539.50*
Total land as per fard - 53 Acr. , 5 Kanal & 9 Marla										
Factory premises area of M/s Indian Sucrose Limited (Formerly Oswal Sugars Limited - 50 Acr. , 6 Kanal & 19.1/2 Marla										

22

From:

Chief Agricultural Officer,
Hoshiarpur

To :

M/s Oswal Sugars Limited,
G.T. Road,
MUKERIAN

Sub: OSWAL SUGARS LIMITED MUKERIAN - CONVERSION OF AGRICULTURAL LAND FOR INDUSTRIAL USE.

Ref: YOUR LETTER NO. GSL/90-91/CAO/Conversion dtd. 22.11.91

Dear Sir,

With reference to the above subject and in continuation to our letter No. 16806 dated 9-10-1991, this office has no objection in conversion of Agricultural land (as per enclosed particulars) into Industrial land. This is for your information and necessary action, please.

sd/-

Chief Agricultural Officer

Village-Chak-Allahdakoh
Tehsil Dasuya Dist. Hoshiarpur

Village	Tehsil	Khasra No.	Kanal	Marla	Kanal	Marla
Dasuya	Hoshiarpur	180/272	39	6/2	4	0
		"	34	14/2	1	0
		27/51	39	4	7	4
			21		7	4
						14 8
		23/47	38	5/1	7	3
		24/40	5	3	0	4
			5	2	0	4
			6	1	3	16
						11 0
		15/26 & 27	32	17	1	15½
			32	24	4	0
		49/82	32	16	3	5
			26	9	2	0
		50/83	32	25/2	5	3
						5 11
						5 3
(2)		163/254	32	9/2	6	18
			13	1	6	15
			32	3/2/1	5	17
						19 10
		162/253	32	9	8	0
			11		7	11
			12		7	11
			33	6	7	15
			9	1	0	4
			9	1	0	4
			32	2/2	6	4
			10	1	0	3
						37 08

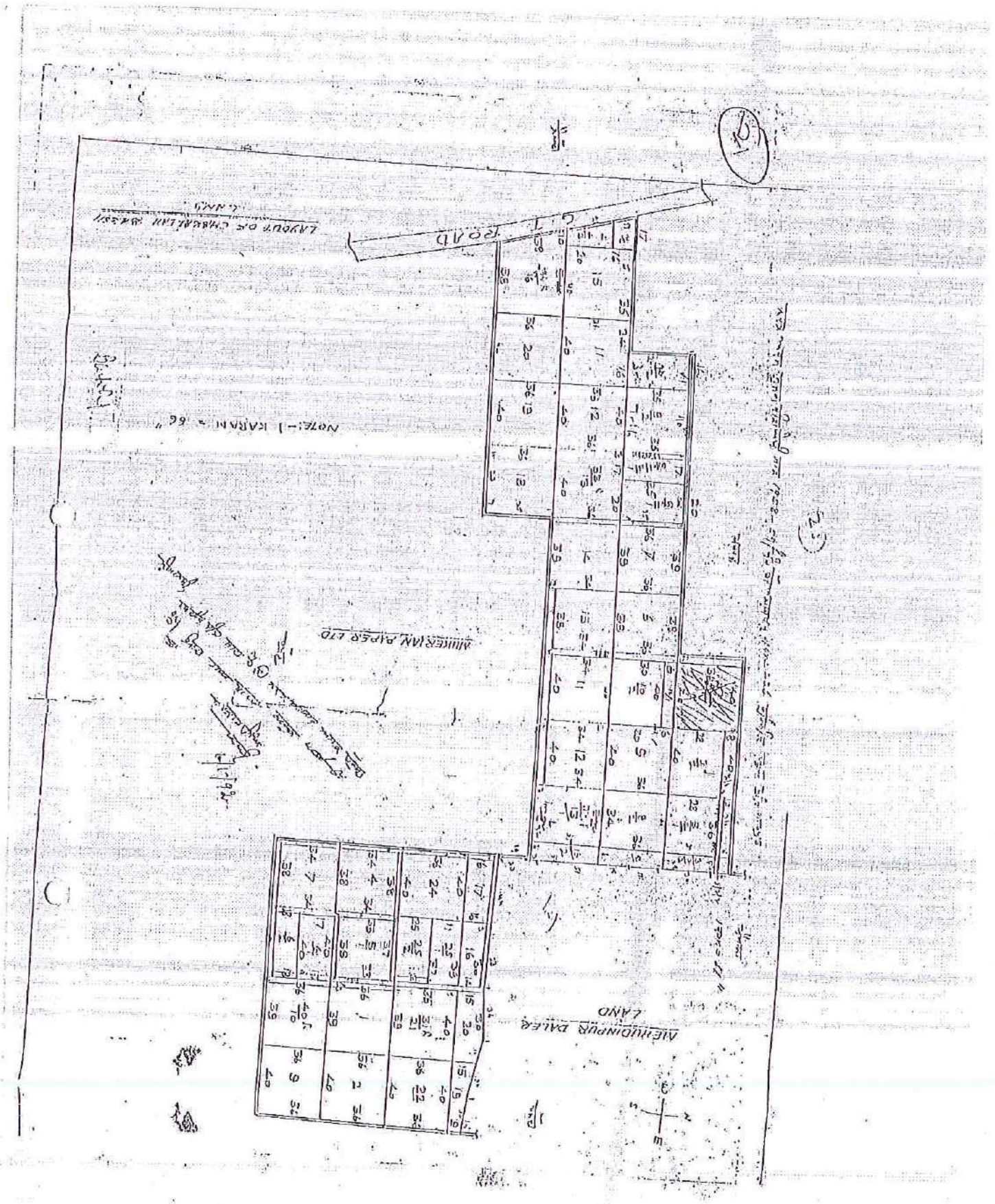
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Village-chak- Alla-Baksh
Had bust No.236

Tehsil	DISTT.	KHEWAT NO.	KHASRA NO.	AREA	TOTAL
Dasuya	Hoshiarpur	160/249	33/7	7-16	
			8/2/1	3-18	
			8/2/2/1	3-6	
			8/2/2/2	0-12	
			9/2	7-16	
			14	7-16	
			15	7-4	38-8
		144/202	32/10/1	1-7	
			10/2	6-13	
		161/252	33/10/2	3-2	8-0 3-2
		145/206	33/11	8-0	
			12	8-0	
			13	8-0	
			18	8-0	
			19	8-0	
			20	8-0	
			34/14/3	1-7	
			15	8-0	
			16	8-16	66-3
		115/155,156	31/19	2-13	
			20	3-7	
			31/21	1-0	
			22	8-0	
			40/1	7-16	
			2	8-0	
			9	8-0	
			10	7-16	53-12

G.Total= 273 Kanal 17½ Marlas

Kanungo Circle
Agricultural Officer
Hoshiarpur.



ਪੰਜਾਬ ਸਰਕਾਰ
ਵਣ ਅਤੇ ਜੰਗਲੀ ਜੀਵ ਸੁਰੱਖਿਆ ਵਿਭਾਗ, ਪੰਜਾਬ
ਦਫ਼ਤਰ ਵਣ ਮੰਡਲ ਅਫਸਰ, ਜੰਗਲੀ ਜੀਵ ਮੰਡਲ,
ਬੱਸੀ ਜਾਨਾ, ਟਾਂਡਾ ਰੋਡ, ਹੁਸ਼ਿਆਰਪੁਰ।
ਫੋਨ ਨੰ: 01882-250453
E-Mail: dfo.wlhsp@gmail.com

To

M/S Indian Sucrose Limited,
G.T.Road, Mukerian,
Distt. Hoshiarpur.

No.....1607..... Dated:.....22/09/17

Subject : **Regarding confirmation that No Reserve forest or Wild Life Sanctuary is located near the Project site of M/s M/S Indian Sucrose Limited G. T. Road, Mukerian, Distt. Hoshiarpur (Area 21.46 Ha) at Village Chak Allabaksh and Mahiuldinpur Dalel, Teh. Mukerian, Distt Hoshiarpur, Punjab for capacity expansion of Sugar Mill from 5000 TDC to 12,000 TDC Unit along with Cogeneration Power Plant of 19.5 MW to 59.5 MW .**

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Ref: **Your letter No. ISL: AS: 2017-18/316 Dated 04/08/2017 and Range Officer Letter No. 78 Dated 08-09-2017.**

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ਉਪਰੋਕਤ ਹਵਾਲੇ ਅਧੀਨ ਪੱਤਰ ਦੇ ਸਬੰਧ ਵਿੱਚ ਲਿਖਿਆ ਜਾਂਦਾ ਹੈ ਕਿ ਉਕਤ ਜਗ੍ਹਾ ਦੇ 10 ਕਿਲੋਮੀਟਰ ਦੇ ਨੇੜੇ ਨਾ ਤਾਂ ਕੋਈ ਨੈਸ਼ਨਲ ਪਾਰਕ ਹੈ ਅਤੇ ਨਾ ਹੀ ਜੰਗਲੀ ਜੀਵ ਸੈਂਚਰੀ ਹੈ। ਇਸ ਲਈ ਇਸ ਮੰਡਲ ਵੱਲੋਂ ਇਤਰਾਜਹੀਣਤਾ ਸਰਟੀਫਿਕੇਟ ਜਾਰੀ ਕੀਤਾ ਜਾਂਦਾ ਹੈ।

ਵਣ ਮੰਡਲ ਅਫਸਰ,
ਜੰਗਲੀ ਜੀਵ ਮੰਡਲ,
ਹੁਸਿਆਰਪੁਰ।

ਪਿੱਠ ਅੰਕਣ ਨੰਬਰ..... ਮਿਤੀ.....

ਇਸ ਦੀ ਨਕਲ ਵਣ ਰੇਂਜ ਅਫਸਰ, ਜੰਗਲੀ ਜੀਵ ਰੇਂਜ, ਦਸੂਹਾ ਨੂੰ ਉਨ੍ਹਾਂ ਦੇ ਪੱਤਰ ਨੰ: 78 ਮਿਤੀ 08-09-2017 ਵਿੱਚ ਸੂਚਨਾਂ ਲਈ ਭੇਜੀ ਜਾਂਦੀ ਹੈ।

ਵਣ ਮੰਡਲ ਅਫਸਰ,
ਜੰਗਲੀ ਜੀਵ ਮੰਡਲ,
ਹੁਸ਼ਿਆਰਪੁਰ।

Government of Punjab
Department of Forests and Wildlife Preservation
O/o Principal Chief Conservator of Forests (Wildlife)
and Chief Wildlife Warden, Punjab
Forest Complex, Sector 68, S.A.S. Nagar.
Phone: 0172-2298010

No.:_____

To

Divisional Forest Officer (Wildlife),
Hoshiarpur.

Dated:_____

Subject **Submission of Wildlife Conservation Plan for the proposed project of Capacity Expansion from 5000 TCD with 19.5 MW Co-generation Power Plan to 12000 TCD along with 59.5 MW Co-generation Power Plant, Chak Alla Baksh and Mahiuldinpur Dalel, Tehsil Mukerian, District, District Hoshiarpur, Punjab.**

Reference **i) Your Letter No. 2568 dated 18.12.2019**
ii) M/s Indian Sucrose Limited, Hoshiarpur's Letter No. 540 dated 7.12.2019

****

With respect to above cited subject and letters quoted above, the Wildlife Conservation Plan in view of Schedule I fauna falling in the Buffer Zone of the proposed project "Capacity Expansion from 5000 TCD with 19.5 MW Co-generation Power Plan to 12000 TCD along with 59.5 MW Co-generation Power Plant" at Village Chak Allabaksh, Tehsil Mukerian, District Hoshiarpur, Punjab of Rs. 27.00 Lakh as submitted by M/s Indian Sucrose Limited and recommended by you has been considered in this office. This office hereby conveys "In-principle" approval to the Plan subject to the following conditions: -

1. This "In-principle" approval is valid for one month from the date of issue of this letter.
2. The Project Proponent is required to deposit funds of 27.00 lakh to Divisional Forest Officer (Wildlife), Hoshairpur within a period of one month.

3. The Project Proponent will implement the plan in letter and spirit falling which the approval of the plan will be revoked by the competent authority of this office.

4. A copy of the approved Mitigation Plan is enclosed herewith for information and further necessary action.

5. The final approval will be given only after the receipt of funds as proposed in the Plan.

Principal Chief Conservator of Forests (Wildlife)
and Chief Wildlife Warden,
Punjab, S.A.S. Nagar.

Endst. No. 7078-79 Dated: 23-12-2019

A copy is sent to the followings for information and further necessary action.

1. Member Secretary, State Environment Impact Assessment Authority (SEIAA) O/o Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala, Punjab- 147001.
2. M/s Indian Sucrose Limited. Village Chak Allabaksh, Tehsil Mukerian, District Hoshiarpur, Punjab. This is w.r.t. their letter No. 540 dated 07.12.2019

23/12/19

Principal Chief Conservator of Forests (Wildlife),
and Chief Wildlife Warden,
Punjab, S.A.S. Nagar.

4.3.1 FINANCIAL PROJECTION

Rs. 27.00 Lakhs has been allocated towards conservation of scheduled fauna in the area for the implementation of conservation proposal.

Table 11: Budget for Conservation/Management Plan

S. No.	Component	Budget (Rs in Lakh)
1	Planting of trees groves inside the surrounding forest area	7.00
2	Equipments: Tranquilizing Gun, Pistol etc.	7.00
3	Gap Funding for ERP Boat	8.00
4	Workshops, Training and awareness programmes	2.00
5	Rescue & Rehabilitation of Animals	2.00
6	Contingency/General	1.00
Total		27.00

Divisional Forest Officer
Wild Life Division
Hoshiarpur.

Approved.
23/12/17
CWLW, PB
Chief Wildlife Warden
Punjab, S.A.S. Nagar

Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample Number:	VEL/ISL/S/01	Report No.:	VEL/S/1710/006
Name & Address of Party:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, (Panjab)	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis :	09/11/2017 to 14/11/2017
Sample Description:	SOIL SAMPLE	Receipt Date:	09/11/2017
Sampling Location:	Project Site (S1)	Sampling Date:	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	Type of Sampling:	Composite
Sampling & Analysis Protocol:	IS 2720 & USDA	Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	IS : 2720 (P-26,RA2011)	7.42	--
2.	Conductivity	IS:14767-2000 Reaffirmed 2006	0.812	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Loam	--
4.	Color	USDA Method, 1968	Brownish White	--
5.	Water holding capacity	USDA Method, 1968	28.78	%
6.	Bulk density	USDA Method, 1968	1.64	gm/cc
7.	Chloride as Cl	USDA Method, 1968	32.12	mg/100g
8.	Calcium as Ca	USDA Method, 1968	35.27	mg/100g
9.	Sodium as Na	USDA Method, 1968	41.47	mg/kg
10.	Potassium as K	USDA Method, 1968	168.00	kg/hec.
11.	Organic Matter	IS:2720 (P-22, RA2009)	45	%
12.	Magnesium as Mg	USDA Method, 1968	12.37	mg/100g
13.	Available Nitrogen as N	IS:14684, RA2006	298	kg./hec.
14.	Available Phosphorus	USDA Method, 1968	14.56	kg./hec.
15.	Zinc (as Zn)	USEPA 3050B	0.8	mg/kg
16.	Manganese (as Mn)	USEPA 3050B	3.78	mg/kg
17.	Lead (as Pb)	USEPA 3050B	0.47	mg/kg
18.	Cadmium (as Cd)	USEPA 3050B	0.07	mg/kg
19.	Chromium (as Cr)	USEPA 3050B	0.52	mg/kg
20.	Copper (as Cu)	USEPA 3050B	0.26	mg/kg

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample Number:	**VEL/ISL/S/02**	Report No.:	**VEL/S/1710/007**
Name & Address of Party:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, (Panjab)**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
Sample Description:	**SOIL SAMPLE**	Receipt Date:	**09/11/2017**
Sampling Location:	**Near Village- Khanpur (S2)**	Sampling Date:	**08/11/2017**
Sample Collected by:	**Vardan Enviro Lab Representative**	Type of Sampling:	**Composite**
Sampling & Analysis Protocol:	**IS 2720 & USDA**	Sampling Quantity:	**2.0 Kg**
		Depth of Sampling:	**30 cm**
		Packing Status:	**Temp Sealed**

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	IS : 2720 (P-26,RA2011)	7.27	--
2.	Conductivity	IS:14767-2000 Reaffirmed 2006	0.695	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Loam	--
4.	Color	USDA Method, 1968	Brownish White	--
5.	Water holding capacity	USDA Method, 1968	31.73	%
6.	Bulk density	USDA Method, 1968	1.52	gm/cc
7.	Chloride as Cl	USDA Method, 1968	30.27	mg/100g
8.	Calcium as Ca	USDA Method, 1968	37.53	mg/100g
9.	Sodium as Na	USDA Method, 1968	45.34	mg/kg
10.	Potassium as K	USDA Method, 1968	179.45	kg/hec.
11.	Organic Matter	IS:2720 (P-22, RA2009)	48	%
12.	Magnesium as Mg	USDA Method, 1968	13.76	mg/100g
13.	Available Nitrogen as N	IS:14684, RA2006	283	kg./hec.
14.	Available Phosphorus	USDA Method, 1968	16.58	kg./hec.
15.	Zinc (as Zn)	USEPA 3050B	0.75	mg/kg
16.	Manganese (as Mn)	USEPA 3050B	4.15	mg/kg
17.	Lead (as Pb)	USEPA 3050B	0.61	mg/kg
18.	Cadmium (as Cd)	USEPA 3050B	0.09	mg/kg
19.	Chromium (as Cr)	USEPA 3050B	0.64	mg/kg
20.	Copper (as Cu)	USEPA 3050B	0.36	mg/kg

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ISL/S/03	Report No.:	VEL/S/1710/008
Name & Address of Party:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, (Panjab)	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis :	09/11/2017 to 14/11/2017
Sample Description:	SOIL SAMPLE	Receipt Date:	09/11/2017
Sampling Location:	Near Village- Mukerian (S3)	Sampling Date:	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	Type of Sampling:	Composite
Sampling & Analysis Protocol:	IS 2720 & USDA	Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	IS : 2720 (P-26,RA2011)	7.21	--
2.	Conductivity	IS:14767-2000 Reaffirmed 2006	0.727	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Loam	--
4.	Color	USDA Method, 1968	Brownish White	--
5.	Water holding capacity	USDA Method, 1968	27.32	%
6.	Bulk density	USDA Method, 1968	1.37	gm/cc
7.	Chloride as Cl	USDA Method, 1968	34.32	mg/100g
8.	Calcium as Ca	USDA Method, 1968	37.37	mg/100g
9.	Sodium as Na	USDA Method, 1968	39.82	mg/kg
10.	Potassium as K	USDA Method, 1968	181.00	kg/hec.
11.	Organic Matter	IS:2720 (P-22, RA2009)	48	%
12.	Magnesium as Mg	USDA Method, 1968	13.78	mg/100g
13.	Available Nitrogen as N	IS:14684, RA2006	309	kg./hec.
14.	Available Phosphorus	USDA Method, 1968	17.32	kg./hec.
15.	Zinc (as Zn)	USEPA 3050B	0.5	mg/kg
16.	Manganese (as Mn)	USEPA 3050B	5.35	mg/kg
17.	Lead (as Pb)	USEPA 3050B	0.38	mg/kg
18.	Cadmium (as Cd)	USEPA 3050B	0.04	mg/kg
19.	Chromium (as Cr)	USEPA 3050B	0.62	mg/kg
20.	Copper (as Cu)	USEPA 3050B	0.21	mg/kg

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample Number:	VEL/ISL/S/04	Report No.:	VEL/S/1710/009
Name & Address of Party:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, (Panjab)	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis :	09/11/2017 to 14/11/2017
Sample Description:	SOIL SAMPLE	Receipt Date:	09/11/2017
Sampling Location:	Near Village- Mahdipur (S4)	Sampling Date:	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	Type of Sampling:	Composite
Sampling & Analysis Protocol:	IS 2720 & USDA	Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	IS : 2720 (P-26,RA2011)	7.73	--
2.	Conductivity	IS:14767-2000 Reaffirmed 2006	0.685	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Loam	--
4.	Color	USDA Method, 1968	Brownish White	--
5.	Water holding capacity	USDA Method, 1968	25.32	%
6.	Bulk density	USDA Method, 1968	1.10	gm/cc
7.	Chloride as Cl	USDA Method, 1968	28.23	mg/100g
8.	Calcium as Ca	USDA Method, 1968	38.43	mg/100g
9.	Sodium as Na	USDA Method, 1968	47.44	mg/kg
10.	Potassium as K	USDA Method, 1968	173.00	kg/hec.
11.	Organic Matter	IS:2720 (P-22, RA2009)	43	%
12.	Magnesium as Mg	USDA Method, 1968	11.21	mg/100g
13.	Available Nitrogen as N	IS:14684, RA2006	305	kg./hec.
14.	Available Phosphorus	USDA Method, 1968	16.69	kg./hec.
15.	Zinc (as Zn)	USEPA 3050B	0.5	mg/kg
16.	Manganese (as Mn)	USEPA 3050B	4.27	mg/kg
17.	Lead (as Pb)	USEPA 3050B	0.52	mg/kg
18.	Cadmium (as Cd)	USEPA 3050B	0.09	mg/kg
19.	Chromium (as Cr)	USEPA 3050B	0.32	mg/kg
20.	Copper (as Cu)	USEPA 3050B	0.34	mg/kg

(Tested By) (Checked By) (Approved By)

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
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Test Certificate

Sample Number:	VEL/ISL/S/05	Report No.:	VEL/S/1710/010
Name & Address of Party:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, (Panjab)	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis :	09/11/2017 to 14/11/2017
Sample Description:	SOIL SAMPLE	Receipt Date:	09/11/2017
Sampling Location:	Near Village- Kaulpur (S5)	Sampling Date:	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	Type of Sampling:	Composite
Sampling & Analysis Protocol:	IS 2720 & USDA	Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 ^{0}C)	IS : 2720 (P-26,RA2011)	7.92	--
2.	Conductivity	IS:14767-2000 Reaffirmed 2006	0.812	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Loam	--
4.	Color	USDA Method, 1968	Brownish White	--
5.	Water holding capacity	USDA Method, 1968	35.29	%
6.	Bulk density	USDA Method, 1968	1.97	gm/cc
7.	Chloride as Cl	USDA Method, 1968	38.68	mg/100gm
8.	Calcium as Ca	USDA Method, 1968	31.75	mg/100gm
9.	Sodium as Na	USDA Method, 1968	48.83	mg/100gm
10.	Potassium as K	USDA Method, 1968	186.00	kg/hec.
11.	Organic Matter	IS:2720 (P-22, RA2009)	38	%
12.	Magnesium as Mg	USDA Method, 1968	16.56	mg/100gm
13.	Available Nitrogen as N	IS:14684, RA2006	326	kg./hec.
14.	Available Phosphorus	USDA Method, 1968	18.68	kg./hec.
15.	Zinc as Zn	USEPA 3050B	1.1	mg/kg
16.	Manganese as Mn	USEPA 3050B	4.63	mg/kg
17.	Chromium as Cr	USEPA 3050B	0.59	mg/kg
18.	Lead as Pb	USEPA 3050B	0.11	mg/kg
19.	Cadmium as Cd	USEPA 3050B	0.81	mg/kg
20.	Copper as Cu	USEPA 3050B	0.36	mg/kg

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
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Test Certificate

Sample Number:	**VEL/ISL/S/06**	Report No.:	**VEL/S/1710/011**
Name & Address of Party:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, (Panjab)**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
Sample Description:	**SOIL SAMPLE**	Receipt Date:	**09/11/2017**
Sampling Location:	**Near Village- Kallchanng (S6)**	Sampling Date:	**08/11/2017**
Sample Collected by:	**Vardan Enviro Lab Representative**	Type of Sampling:	**Composite**
Sampling & Analysis Protocol:	**IS 2720 & USDA**	Sampling Quantity:	**2.0 Kg**
		Depth of Sampling:	**30 cm**
		Packing Status:	**Temp Sealed**

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26,RA2011)	8.2	--
2.	Conductivity	IS:14767-2000 Reaffirmed 2006	0.752	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Loam	--
4.	Color	USDA Method, 1968	Brownish White	--
5.	Water holding capacity	USDA Method, 1968	23.87	%
6.	Bulk density	USDA Method, 1968	1.31	gm/cc
7.	Chloride as Cl	USDA Method, 1968	37.65	mg/100gm
8.	Calcium as Ca	USDA Method, 1968	38.89	mg/100gm
9.	Sodium as Na	USDA Method, 1968	47.62	mg/100gm
10.	Potassium as K	USDA Method, 1968	184.00	kg/hec.
11.	Organic Matter	IS:2720 (P-22, RA2009)	45	%
12.	Magnesium as Mg	USDA Method, 1968	14.79	mg/100gm
13.	Available Nitrogen as N	IS:14684, RA2006	328	kg./hec.
14.	Available Phosphorus	USDA Method, 1968	17.87	kg./hec.
15.	Zinc as Zn	USEPA 3050B	1.1	mg/kg
16.	Manganese as Mn	USEPA 3050B	5.12	mg/kg
17.	Chromium as Cr	USEPA 3050B	0.76	mg/kg
18.	Lead as Pb	USEPA 3050B	0.12	mg/kg
19.	Cadmium as Cd	USEPA 3050B	0.74	mg/kg
20.	Copper as Cu	USEPA 3050B	0.36	mg/kg

(Issued By) (Checked By) (Approved By)

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Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/209-234**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Project Site (A1)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO (mg/m3)
01.10.2017	78.7	40.3	19.4	7.8	0.82
02.10.2017	82.6	43.5	23.2	9.4	0.81
08.10.2017	76.5	39.2	17.3	8.2	0.76
09.10.2017	83.5	45.1	25.1	9.8	0.78
15.10.2017	86.9	48.2	27.2	10.5	0.68
16.10.2017	90.5	51.2	30.3	13.2	0.74
22.10.2017	77.4	35.6	16.5	8.4	0.58
23.10.2017	85.8	45.1	26.4	10.3	0.59
29.10.2017	84.2	43.6	23.3	10.8	0.66
30.10.2017	90.6	50.7	31.4	13.6	0.66
05.11.2017	83.9	46.2	23.5	12.1	0.69
06.11.2017	79.4	38.6	19.3	8.6	0.74
12.11.2017	79.8	39.2	19.1	8.6	0.56
13.11.2017	77.2	38.4	18.6	7.1	0.63
19.11.2017	82.5	43.3	23.2	9.6	0.67
20.11.2017	86.4	46.6	27.4	12.2	<0.50
26.11.2017	78.9	39.1	19.7	8.4	0.66
27.11.2017	76.3	37.7	17.2	7.6	0.57
03.12.2017	80.5	41.5	21.3	9.2	0.72
04.12.2017	86.3	47.9	28.1	11.6	0.60
10.12.2017	79.9	40.7	20.2	8.4	0.62

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Test Certificate

Report No.:	VEL/A/ISL/209-234				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
11.12.2017	78.6	39.7	18.6	7.7	0.62
17.12.2017	77.4	35.6	16.5	8.4	0.58
18.12.2017	81.1	42.9	24.7	8.7	0.72
24.12.2017	85.6	45.3	27.2	10.3	0.79
25.12.2017	81.4	42.1	22.8	8.8	0.62

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Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/235-260**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Khanpur (A2)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO (mg/m3)
01.10.2017	91.2	47.3	25.1	10.3	0.78
02.10.2017	87.1	46.5	20.4	8.4	0.62
08.10.2017	88.3	49.6	27.3	10.3	0.77
09.10.2017	86.1	48.1	27.5	10.1	0.70
15.10.2017	90.5	52.3	30.1	13.2	0.56
16.10.2017	88.6	49.6	23.6	12.4	0.60
22.10.2017	89.3	47.2	24.3	9.3	0.69
23.10.2017	85.3	40.2	19.6	8.6	0.80
29.10.2017	86.3	46.1	24.1	9.3	0.85
30.10.2017	88.7	39.5	19.6	7.5	0.70
05.11.2017	86.4	41.9	18.6	8.2	0.59
06.11.2017	85.3	45.1	24.3	9.6	<0.50
12.11.2017	88.2	45.4	24.1	10.2	0.65
13.11.2017	87.3	48.2	28.6	12.6	0.69
19.11.2017	89.2	43.2	24.3	11.2	0.58
20.11.2017	90.3	43.3	24.3	9.2	0.74
26.11.2017	85.4	37.5	19.2	7.6	0.58
27.11.2017	88.6	42.5	25.3	9.4	0.56
03.12.2017	86.5	42.6	20.0	8.1	0.65
04.12.2017	89.3	47.8	25.3	10.3	0.54
10.12.2017	84.5	45.2	23.4	9.9	0.60

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Report No.:	VEL/A/ISL/235-260				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
11.12.2017	85.5	45.6	24.4	12.1	0.56
17.12.2017	88.6	47.2	27.2	13.2	0.63
18.12.2017	84.2	43.3	23.3	8.1	0.66
24.12.2017	90.5	50.2	30.5	12.2	0.58
25.12.2017	86.2	47.5	27.4	10.5	0.66

NOTE: a)The results listed refer only to the tested samples & applicable parameters
b) Total liabilities of our lab will be restricted to the invoice amount only
c) The sample will be destroyed after retention time unless otherwise specified
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/261-286**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Mukerian (A3)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO (mg/m3)
01.10.2017	79.4	38.8	19.7	7.5	0.63
02.10.2017	82.6	44.7	22.5	9.9	<0.50
08.10.2017	87.6	49.2	27.6	10.4	<0.50
09.10.2017	91.2	52.1	31.2	12.2	0.66
15.10.2017	80.2	39.6	19.6	8.2	0.82
16.10.2017	86.5	47.5	27.3	10.5	0.74
22.10.2017	83.3	42.3	24.3	9.3	0.67
23.10.2017	87.4	48.4	28.4	11.2	0.65
29.10.2017	80.2	40.2	21.2	9.3	0.69
30.10.2017	84.3	45.3	26.4	11.2	0.64
05.11.2017	89.4	49.2	30.1	11.2	0.65
06.11.2017	86.3	48.3	27.6	9.9	0.75
12.11.2017	87.5	46.4	28.1	10.6	0.76
13.11.2017	82.2	41.3	23.4	8.4	0.69
19.11.2017	83.2	43.1	23.1	9.2	0.75
20.11.2017	84.5	46.5	24.5	10.2	0.72
26.11.2017	83.4	38.4	18.6	7.8	0.71
27.11.2017	80.2	41.6	22.5	8.6	0.67
03.12.2017	76.3	37.5	17.4	7.5	0.64
04.12.2017	86.5	45.1	26.5	12.2	0.70
10.12.2017	84.2	43.6	24.7	10.4	0.67

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Report No.:	VEL/A/ISL/261-286				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
11.12.2017	86.3	44.1	25.3	9.3	0.56
17.12.2017	89.4	49.1	28.4	10.9	0.58
18.12.2017	85.6	52.1	32.6	11.8	0.66
24.12.2017	88.6	44.6	25.3	9.3	0.75
25.12.2017	90.3	49.7	29.8	11.4	<0.50

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/287-312**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Dhaula Khera (A4)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
03.10.2017	78.4	36.7	18.4	8.6	0.56
04.10.2017	75.6	32.4	18.6	9.3	0.63
10.10.2017	78.3	37.4	18.9	10.9	<0.50
11.10.2017	79.6	39.6	19.4	9.6	0.62
17.10.2017	76.4	36.4	20.4	9.5	0.72
18.10.2017	79.5	39.5	20.3	9.6	0.69
24.10.2017	83.5	42.3	23.3	12.6	<0.50
25.10.2017	75.2	32.5	20.6	9.9	0.66
31.10.2017	76.3	38.6	19.6	8.6	0.67
01.11.2017	81.3	42.1	22.3	10.2	<0.50
07.11.2017	79.5	38.5	18.3	9.5	<0.50
08.11.2017	80.3	40.6	20.6	10.5	0.62
14.11.2017	77.6	38.6	19.4	8.5	0.78
15.11.2017	82.3	42.1	21.5	10.2	0.77
21.11.2017	80.7	40.2	20.6	9.9	0.71
22.11.2017	76.4	34.2	19.6	8.4	0.56
28.11.2017	77.6	30.5	19.2	9.5	0.60
29.11.2017	81.5	42.3	22.4	10.6	0.55
05.12.2017	79.4	38.6	19.5	9.6	0.63
06.12.2017	83.5	42.5	23.2	11.2	0.72
12.12.2017	84.1	45.6	25.1	12.6	0.63

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Report No.:	VEL/A/ISL/287-312				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
13.12.2017	79.6	39.5	19.3	8.6	0.72
19.12.2017	76.3	38.4	18.5	8.3	0.68
20.12.2017	80.2	41.2	21.3	12.2	0.58
26.12.2017	79.6	39.6	20.2	9.8	0.58
27.12.2017	80.2	40.2	22.3	9.9	<0.50

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/313-338**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Mahdipur (A5)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
03.10.2017	80.2	42.1	21.5	10.2	0.75
04.10.2017	88.4	45.3	27.6	13.2	<0.50
10.10.2017	92.2	41.2	21.3	12.2	0.58
11.10.2017	83.5	42.5	23.2	11.2	0.72
17.10.2017	86.4	47.1	26.3	13.1	0.68
18.10.2017	84.3	43.6	24.6	11.0	0.72
24.10.2017	89.4	38.4	19.3	7.5	0.58
25.10.2017	91.4	43.2	25.2	12.3	0.54
31.10.2017	87.6	52.1	32.6	11.8	0.66
01.11.2017	88.5	48.2	27.1	12.5	0.74
07.11.2017	93.2	47.0	27.6	15.3	0.73
08.11.2017	90.6	50.1	30.3	14.6	0.71
14.11.2017	82.3	41.2	22.1	11.3	0.51
15.11.2017	86.1	45.3	26.3	13.2	0.67
21.11.2017	89.5	39.5	19.2	9.2	0.63
22.11.2017	93.6	43.5	25.6	11.2	0.63
28.11.2017	88.6	48.2	27.6	13.2	0.59
29.11.2017	89.4	48.2	28.1	12.5	0.63
05.12.2017	85.5	43.5	24.3	10.2	<0.50
06.12.2017	86.3	47.1	26.4	14.1	0.68
12.12.2017	89.2	40.2	21.4	10.5	0.72

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Report No.:	VEL/A/ISL/313-338				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
13.12.2017	90.6	49.2	28.6	12.6	<0.50
19.12.2017	88.3	47.6	24.6	11.2	0.72
20.12.2017	94.6	46.3	27.2	10.4	0.62
26.12.2017	91.4	48.6	26.6	11.8	0.66
27.12.2017	93.3	51.2	25.5	9.4	0.67

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/339-364**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Naraingarh (A6)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
03.10.2017	84.2	45.1	24.2	9.3	0.58
04.10.2017	86.5	47.6	28.1	12.2	0.66
10.10.2017	78.2	39.5	20.9	7.4	0.78
11.10.2017	81.3	40.6	24.2	8.2	0.74
17.10.2017	90.2	50.1	32.3	13.5	0.58
18.10.2017	86.4	46.3	27.5	12.1	0.68
24.10.2017	93.5	53.4	23.1	10.6	0.69
25.10.2017	86.5	47.6	27.2	11.3	0.58
31.10.2017	81.1	42.5	22.4	8.3	0.57
01.11.2017	82.3	41.5	21.6	7.4	0.61
07.11.2017	86.3	44.2	26.3	12.3	0.56
08.11.2017	88.4	49.3	28.1	13.4	<0.50
14.11.2017	81.3	43.4	21.2	10.4	0.62
15.11.2017	88.4	48.2	28.4	9.3	0.67
21.11.2017	90.2	50.3	30.1	12.5	0.71
22.11.2017	86.5	46.2	26.5	9.8	0.72
28.11.2017	91.4	51.2	32.3	13.0	0.67
29.11.2017	84.1	43.1	24.1	9.2	0.63
05.12.2017	83.4	44.1	23.3	9.6	0.66
06.12.2017	86.4	47.3	27.1	10.5	0.59
12.12.2017	84.2	45.3	24.2	8.1	0.64

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Report No.:	VEL/A/ISL/339-364				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
13.12.2017	90.2	50.1	30.2	12.2	0.70
19.12.2017	87.6	48.4	27.5	10.5	0.65
20.12.2017	82.3	41.5	22.6	8.1	0.66
26.12.2017	91.3	51.3	31.2	12.3	0.61
27.12.2017	86.4	47.2	26.5	9.9	0.60

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/365-390**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Kaulpur (A7)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO (µg/m3)
05.10.2017	75.3	40.5	20.2	8.4	0.62
06.10.2017	71.4	42.6	24.6	9.6	0.54
12.10.2017	76.4	37.3	18.6	8.4	0.77
13.10.2017	70.2	41.5	22.3	9.4	0.59
19.10.2017	76.7	37.5	18.6	7.5	0.70
20.10.2017	81.1	47.1	27.5	10.1	0.70
26.10.2017	78.6	39.7	18.6	7.7	0.62
27.10.2017	77.4	35.6	16.5	8.4	0.58
02.11.2017	79.3	39.5	19.4	9.3	0.56
03.11.2017	84.3	45.2	27.1	8.3	0.66
09.11.2017	79.5	40.1	19.5	7.2	0.64
10.11.2017	76.5	38.6	18.7	7.5	0.87
16.11.2017	76.4	39.9	18.6	8.2	0.59
17.11.2017	81.4	41.5	23.3	8.0	0.69
23.11.2017	78.5	40.3	18.5	7.6	0.56
24.11.2017	79.4	38.8	19.4	8.4	0.66
30.11.2017	79.3	39.5	19.4	8.6	0.78
01.12.2017	83.6	45.3	25.1	9.9	0.64
07.12.2017	81.2	41.3	21.3	8.2	0.59
08.12.2017	76.2	47.5	27.4	10.5	0.66
14.12.2017	79.6	39.8	18.4	7.6	0.68

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Report No.:	VEL/A/ISL/365-390				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO (µg/m3)
15.12.2017	78.4	39.2	19.4	8.6	0.66
21.12.2017	79.4	37.5	19.2	7.6	0.58
22.12.2017	75.6	32.4	16.3	6.2	0.56
28.12.2017	73.2	41.4	21.2	8.2	0.66
29.12.2017	76.2	37.2	18.5	7.1	0.74

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Name & Address of the Project:	**M/s Indian Sucrose Ltd. Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Report No.:	**VEL/A/ISL/391-416**
		Reporting Date:	**04/01/2018**
		Ref. No:	**NIL**
		Monitoring Period:	**October to December 2017**
		Equipment Used:	**RDS & FPS with all accessories**
Sample Collected by:	**Vardan Envirolab Representative**	Protocol Used:	**CPCB Guidelines/IS-5182**
Sample Description:	**Ambient Air Quality Monitoring**	Parameter Required	**As Per TOR Letter**
Location:	**Near Village- Kallchanng (A8)**		

RESULT

Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
05.10.2017	84.6	43.2	25.0	9.2	0.68
06.10.2017	81.3	41.3	17.5	11.3	0.78
12.10.2017	85.6	44.4	24.1	13.5	0.63
13.10.2017	82.2	46.4	27.4	8.2	0.63
19.10.2017	84.3	45.3	24.5	11.4	<0.50
20.10.2017	80.7	43.7	22.6	9.6	0.69
26.10.2017	86.3	46.3	27.3	9.7	0.78
27.10.2017	89.3	45.3	22.7	11.4	0.72
02.11.2017	80.2	41.3	21.1	10.4	0.68
03.11.2017	83.4	43.5	21.3	10.7	0.67
09.11.2017	89.4	48.5	28.6	10.2	0.71
10.11.2017	84.9	47.7	26.3	10.3	0.63
16.11.2017	81.1	41.1	23.7	8.5	0.69
17.11.2017	76.5	36.2	20.3	9.5	0.58
23.11.2017	84.2	42.4	24.1	8.1	0.70
24.11.2017	79.7	34.5	19.4	9.7	0.72
30.11.2017	90.2	50.2	30.3	12.3	0.65
01.12.2017	83.2	42.5	25.1	11.2	0.56
07.12.2017	79.3	38.5	16.3	8.3	0.56
08.12.2017	78.5	39.3	18.6	9.6	0.54
14.12.2017	84.2	43.2	23.3	13.4	0.64

M.Sc. Env. Science

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Test Certificate

Report No.:	VEL/A/ISL/391-416				
Date	PM_{10} ($\mu g/m^3$)	$PM_{2.5}$ ($\mu g/m^3$)	NO_2 ($\mu g/m^3$)	SO_2 ($\mu g/m^3$)	CO ($\mu g/m3$)
15.12.2017	79.2	40.2	19.1	9.8	0.58
21.12.2017	81.3	41.6	22.6	8.9	<0.50
22.12.2017	84.5	45.5	25.5	10.2	0.72
28.12.2017	88.6	47.2	27.2	13.2	0.63
29.12.2017	83.2	42.5	25.1	11.2	0.56

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Test Certificate

Sample Number:	**VEL/ISL/W/01**	Report No.:	**VEL/W/1710/009**
Name and Address of the Project:	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
Sample Description:	**Groundwater Sample**	Receipt Date:	**09/11/2017**
Sampling Location:	**Near Project Site (GW1)**	Sampling Date:	**08/11/2017**
Preservation:	**Refrigerated**	Sampling Type:	**Grab**
Sample Collected by:	**Vardan EnviroLab Team**	Sampling Quantity:	**2.0 Ltr**
Sampling & Analysis Protocol:	**IS-10500-2012, APHA 22nd Edition 2012**	Parameter Required:	**As Per TOR Letter**

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA 22nd Edition, 4500-H+ B	7.85	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (**DL 0.1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	156.32	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	26.53	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	166.20	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl- B	35.63	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN- D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	21.90	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	235.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	25.45	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F- D	0.46	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	12.20	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.31	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample No.: **VEL/ISL/W/01** Report No.: **VEL/W/1710/009**

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2120 B	393	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.40	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.07	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	**VEL/ISL/W/02**	Report No.:	**VEL/W/1710/010**
Name and Address of the Project:	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
Sample Description:	**Groundwater Sample**	Receipt Date:	**09/11/2017**
Sampling Location:	**Near Village-Khanpur (GW2)**	Sampling Date:	**08/11/2017**
Preservation:	**Refrigerated**	Sampling Type:	**Grab**
Sample Collected by:	**Vardan EnviroLab Team**	Sampling Quantity:	**2.0 Ltr**
Sampling & Analysis Protocol:	**IS-10500-2012, APHA 22nd Edition 2012**	Parameter Required:	**As Per TOR Letter**

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA 22nd Edition, 4500-H^+ B	7.82	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (DL0. 1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	148.56	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	23.57	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	156.51	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^- B	31.42	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN^- D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	21.81	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	218.60	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	21.45	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F^- D	0.44	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	10.52	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.34	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample No.: VEL/ISL/W/02			VEL/W/1710/010			
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2120 B	365	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.38	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.08	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

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Test Certificate

Sample Number:	**VEL/ISL/W/03**	Report No.:	**VEL/W/1710/011**
Name and Address of the Project:	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
		Receipt Date:	**09/11/2017**
Sample Description:	**Groundwater Sample**	Sampling Date:	**08/11/2017**
Sampling Location:	**Near Village-Mukerian (GW3)**	Sampling Type:	**Grab**
Preservation:	**Refrigerated**	Sampling Quantity:	**2.0 Ltr**
Sample Collected by:	**Vardan EnviroLab Team**	Parameter Required:	**As Per TOR Letter**
Sampling & Analysis Protocol:	**IS-10500-2012, APHA 22nd Edition 2012**		

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^+ B	7.92	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (DL 1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	174.23	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	34.20	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	170.45	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^- B	38.63	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN^- D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	21.60	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	272.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	35.20	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F^- D	0.46	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	14.52	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.26	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample No.: **VEL/ISL/W/03**					Report No.: **VEL/W/1710/011**	
S. No.	**Parameter**	**Test-Method**	**Result**	**Unit**	**Limits of IS:10500 -2012**	
					Requirement (Acceptable) Limit	**Permissible limit in the Absence of Alternate Source**
20.	Conductivity	APHA 22nd Edition, 2120 B	455	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.56	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.09	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample Number:	VEL/ISL/W/04	Report No.:	VEL/W/1710/012
Name and Address of the Project:	M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis :	09/11/2017 to 14/11/2017
		Receipt Date:	09/11/2017
Sample Description:	Groundwater Sample	Sampling Date:	08/11/2017
Sampling Location:	Near Village- Dhaula Khera (GW4)	Sampling Type:	Grab
Preservation:	Refrigerated	Sampling Quantity:	2.0 Ltr
Sample Collected by:	Vardan EnviroLab Team	Parameter Required:	As Per TOR Letter
Sampling & Analysis Protocol:	IS-10500-2012, APHA 22nd Edition 2012		

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^{+} B	7.83	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (**DL 0.1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	168.24	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	30.56	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	173.54	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^{-} B	42.35	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN^{-} D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	22.35	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	262.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	31.24	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F^{-} D	0.67	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	15.20	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.42	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample No.: VEL/ ISL/W/04			Report No.: VEL/W/1710/012			
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2120 B	437	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
22.	Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.56	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.12	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
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(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample Number:	VEL/ISL/W/05	Report No.:	VEL/W/1710/013
Name and Address of the Project:	M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis :	09/11/2017 to 14/11/2017
		Receipt Date:	09/11/2017
Sample Description:	Groundwater Sample	Sampling Date:	08/11/2017
Sampling Location:	Near Village- Mahdipur (GW5)	Sampling Type:	Grab
Preservation:	Refrigerated	Sampling Quantity:	2.0 Ltr
Sample Collected by:	Vardan EnviroLab Team	Parameter Required:	As per TOR Letter
Sampling & Analysis Protocol:	IS-10500-2012, APHA 22nd Edition 2012		

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^+ B	7.97	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (DL0. 1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	182.24	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	29.61	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	166.72	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^- B	46.15	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN^- D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	26.33	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	283.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	26.51	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F^- D	0.51	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	12.63	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.39	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample No.: VEL/ISL/W/05			VEL/W/1710/013			
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2510 B	441	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.32	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.09	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

(Tested By) (Checked By) (Approved By)

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample Number:	**VEL/ISL/W/06**	Report No.:	**VEL/W/1710/014**
Name and Address of the Project:	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
		Receipt Date:	**09/11/2017**
Sample Description:	**Groundwater Sample**	Sampling Date:	**08/11/2017**
Sampling Location:	**Near Village- Naraingarh (GW6)**	Sampling Type:	**Grab**
Preservation:	**Refrigerated**	Sampling Quantity:	**2.0 Ltr**
Sample Collected by:	**Vardan EnviroLab Team**	Parameter Required:	**As per TOR Letter**
Sampling & Analysis Protocol:	**IS-10500-2012, APHA 22nd Edition 2012**		

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H$^+$ B	7.53	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (**DL 0.1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	138.54	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	28.69	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	166.72	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl$^-$ B	46.61	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN$^-$ D	BDL(DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	16.27	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	297.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	32.87	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F$^-$ D	0.47	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	9.86	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.27	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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b) Total liabilities of our lab will be restricted to the invoice amount only
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(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample No.: VEL/ISL/W/06					Report No.: VEL/W/1710/014	
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2510 B	497	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.87	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.12	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

(Tested By) (Checked By) (Approved By)

NOTE: a)The results listed refer only to the tested samples & applicable parameters
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(ISO 9001|ISO 14001|OHSAS 18001|MoEF & CC Recognized|NABL Accredited|HSPCB & RSPCB Approved)

Test Certificate

Sample Number:	**VEL/ISL/W/07**	Report No.:	**VEL/W/1710/015**
Name and Address of the Project:	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
		Receipt Date:	**09/11/2017**
Sample Description:	**Groundwater Sample**	Sampling Date:	**08/11/2017**
Sampling Location:	**Near Village- Kaulpur (GW7)**	Sampling Type:	**Grab**
Preservation:	**Refrigerated**	Sampling Quantity:	**2.0 Ltr**
Sample Collected by:	**Vardan EnviroLab Team**	Parameter Required:	**As per TOR Letter**
Sampling & Analysis Protocol:	**IS-10500-2012, APHA 22nd Edition 2012**		

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^+ B	7.46	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (**DL 0.1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	127.86	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	25.64	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	155.76	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^- B	53.61	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN^- D	BDL(DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	15.52	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	245.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	25.61	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F^- D	0.43	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	7.58	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.34	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample No.: **VEL/ISL/W/07** Report No.: **VEL/W/1710/015**

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2510 B	410	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.53	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.10	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622.1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

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Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample Number:	**VEL/ISL/W/08**	Report No.:	**VEL/W/1710/016**
Name and Address of the Project:	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-IA, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis :	**09/11/2017 to 14/11/2017**
		Receipt Date:	**09/11/2017**
Sample Description:	**Groundwater Sample**	Sampling Date:	**08/11/2017**
Sampling Location:	**Near Village- Kaulpur (GW8)**	Sampling Type:	**Grab**
Preservation:	**Refrigerated**	Sampling Quantity:	**2.0 Ltr**
Sample Collected by:	**Vardan EnviroLab Team**	Parameter Required:	**As per TOR Letter**
Sampling & Analysis Protocol:	**IS-10500-2012, APHA 22nd Edition 2012**		

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^+ B	7.72	--	6.5 to 8.5	No Relaxation
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen	5	15
3.	Turbidity	APHA 22nd Edition, 2130 B	*BDL (**DL 0.1 NTU)	NTU	1	5
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--	Agreeable	Agreeable
5.	Taste	APHA 22nd Edition, 2160 B	Agreeable	--	Agreeable	Agreeable
6.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	137.88	mg/l	200	600
7.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	29.05	mg/l	75	200
8.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	143..47	mg/l	200	600
9.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^- B	46.58	mg/l	250	1000
10.	#Cyanide as CN	APHA 22nd Edition, 4500 CN^- D	BDL(DL 0.02 mg/l)	mg/l	0.05	No Relaxation
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	15.53	mg/l	30	100
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	288.00	mg/l	500	2000
13.	Sulphate as SO_4	APHA 22nd Edition, 4500 E	29.22	mg/l	200	400
14.	Fluoride as F	APHA 22nd Edition, 4500-F^- D	0.38	mg/l	1.0	1.5
15.	Nitrate as NO_3	IS 3025 (P-34) 1988	18.25	mg/l	45	No Relaxation
16.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.32	mg/l	0.3	No relaxation
17.	#Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2
18.	Boron	APHA 22nd Edition, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1
19.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.05	No Relaxation

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample No.: **VEL/ISL/W/08** Report No.: **VEL/W/1710/016**

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source
20.	Conductivity	APHA 22nd Edition, 2510 B	521	µS/cm	--	--
21.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
22.	#Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l	0.5	No Relaxation
23.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
24.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.76	mg/l	5	15
25.	Copper as Cu	APHA 22nd Edition, 3111 B	0.09	mg/l	0.05	1.5
26.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.1	0.3
27.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
28.	Lead as Pb	APHA 22nd Edition, 3111 B	*BDL(**DL 0.13mg/l)	mg/l	0.01	No Relaxation
29.	#Selenium as Se	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
30.	#Arsenic as As	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
31.	#Mercury as Hg	APHA 22nd Edition, 3111 B	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
32.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	<2/100ml	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit
#These parameter are not covered in our NABL scope.

(Tested By) (Checked By) (Approved By)

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Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
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Test Certificate

Sample Number:	**VEL/ ISL/W/01**	**Report No.:**	**VEL /W /1710/017**
Name of the Project :	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	**Format No.:**	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis:	**09/11/2017 to 14/11/2017**
Sample Description:	**Surface water (Beas River)**	**Receipt Date:**	**09/11/2017**
Sampling Location:	**Near Village –Sadarpur (SW 1)**	**Sampling Date:**	**08/11/2017**
Sample Collected by:	**Vardan Enviro Lab Representative**	**Sampling Quantity:**	**2.0 Ltr**
Preservation:	**Refrigerator**	**Sampling Type:**	**---**
Sampling and Analysis Protocol:	**IS-10500-2012,APHA 22nd Edition 2012**	**Parameter Required:**	**As Per Tor Latter**

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H$^+$B	7.37	--
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA 22nd Edition, 2130 B	7	NTU
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--
5.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	123.42	mg/l
6.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	22.33	mg/l
7.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	114.76	mg/l
8.	Chloride as Cl	APHA 22nd Edition, 4500-Cl$^-$ B	31.23	mg/l
9.	Residual free Chlorine	APHA 22nd Edition, 4500 Cl$^-$B	*BDL(**DL 0.20mg/l)	mg/l
10.	Cyanide as CN	APHA 22nd Edition, 4500 CN$^-$D	*BDL(**DL 0.02 mg/l)	mg/l
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	16.45	mg/l
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	178.00	mg/l
13.	Total Suspended solids	APHA 22nd Edition,2540 D	38.00	mg/l
14.	Dissolved Oxygen	APHA 22nd Edition,4500	6.6	mg/l
15.	Sulphate as SO^{-4}	APHA 22nd Edition, 4500 E	18.53	mg/l
16.	Fluoride as F	APHA 22nd Edition, 4500-F$^-$ D	0.42	mg/l
17.	BOD (3 Days at 27^{0}C)	IS 3025,P-44,1999 (R- 2003)	<5.0	mg/l
18.	COD	APHA 22nd Edition, 5220 B	10.25	mg/l

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample No.: **VEL/ISL/W/01**			Report No.: **VEL/W/1710/017**	
S. No.	**Parameter**	**Test-Method**	**Result**	**Unit**
19.	Conductivity	APHA 22nd Edition, 2120 B	298	µS/cm
20.	Nitrate as NO_3	IS 3025 (P-34) 1988	6.52	mg/l
21.	Sodium as Na	APHA 22nd Edition,3500 Na B	11	mg/l
22.	Potassium as K	APHA 22nd Edition, 3500 K B	3	mg/l
23.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.16	mg/l
24.	Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l
25.	Boron	APHA 22nd Edition, 4500B C	0.38	mg/l
26.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l
27.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l
28.	Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l
29.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l
30.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.31	mg/l
31.	Copper as Cu	APHA 22nd Edition, 3111 B	0.09	mg/l
32.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.10 mg/l)	mg/l
33.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.001 mg/l)	mg/l
34.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	622	MPN/100ml
35.	Fecal Coliform	IS 1622,1981(Reaffirmed 2003)	347	MPN/100ml

Note: -*BDL-Below Detection Limit, **DL- Detection Limit

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ ISL/W/01	**Report No.:**	VEL /W /1710/017
Name of the Project :	M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab	**Format No.:**	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis:	09/11/2017 to 14/11/2017
Sample Description:	Surface water (Beas River)	**Receipt Date:**	09/11/2017
Sampling Location:	Near Village –Sadarpur (SW 1)	**Sampling Date:**	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	**Sampling Quantity:**	2.0 Ltr
Preservation:	Refrigerator	**Sampling Type:**	---
Sampling and Analysis Protocol:	IS-10500-2012,APHA 22nd Edition 2012	**Parameter Required:**	As Per Tor Letter

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^{+}B	7.37	--
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA 22nd Edition, 2130 B	7	NTU
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--
5.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	123.42	mg/l
6.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	22.33	mg/l
7.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	114.76	mg/l
8.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^{-} B	31.23	mg/l
9.	Residual free Chlorine	APHA 22nd Edition, 4500 Cl B	*BDL(**DL 0.20mg/l)	mg/l
10.	Cyanide as CN	APHA 22nd Edition, 4500 CN D	*BDL(**LL 0.02 mg/l)	mg/l
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	16.45	mg/l
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	178.00	mg/l
13.	Total Suspended solids	APHA 22nd Edition,2540 D	38.00	mg/l
14.	Dissolved Oxygen	APHA 22nd Edition,4500	6.6	mg/l
15.	Sulphate as SO^{4}	APHA 22nd Edition, 4500 E	18.53	mg/l
16.	Fluoride as F	APHA 22nd Edition, 4500-F^{-} D	0.42	mg/l
17.	BOD (3 Days at 27^{0}C)	IS 3025,P-44,1999 (R- 2003)	<5.0	mg/l
18.	COD	APHA 22nd Edition, 5220 B	10.25	mg/l

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ ISL/W/02	**Report No.:**	VEL /W /1710/018
Name of the Project :	M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab	**Format No.:**	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis:	09/11/2017 to 14/11/2017
Sample Description:	Surface water (Beas River)	**Receipt Date:**	09/11/2017
Sampling Location:	Near Village-Tagar Kalan (SW2)	**Sampling Date:**	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	**Sampling Quantity:**	2.0 Ltr
Preservation:	Refrigerator	**Sampling Type:**	---
Sampling and Analysis Protocol:	IS-10500-2012,APHA 22nd Edition 2012	**Parameter Required:**	As Per Tor Letter

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H$^+$B	7.45	--
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA 22nd Edition, 2130 B	12	NTU
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--
5.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	112.35	mg/l
6.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	18.56	mg/l
7.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	96.88	mg/l
8.	Chloride as Cl	APHA 22nd Edition, 4500-Cl$^-$ B	28.54	mg/l
9.	Residual free Chlorine	APHA 22nd Edition, 4500 Cl B	*BDL(**DL 0.20mg/l)	mg/l
10.	Cyanide as CN	APHA 22nd Edition, 4500 CN D	*BDL(**DL 0.02 mg/l)	mg/l
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	16.05	mg/l
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	167.00	mg/l
13.	Total Suspended solids	APHA 22nd Edition,2540 D	33.00	mg/l
14.	Dissolved Oxygen	APHA 22nd Edition,4500	6.4	mg/l
15.	Sulphate as SO^{-1}	APHA 22nd Edition, 4500 E	16.44	mg/l
16.	Fluoride as F	APHA 22nd Edition, 4500-F D	0.36	mg/l
17.	BOD (3 Days at 27^{0}C)	IS 3025,P-44,1999 (R- 2003)	<5.0	mg/l
18.	COD	APHA 22nd Edition, 5220 B	12.32	mg/l

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample No.: **VEL/ISL/W/02** Report No.: **VEL/W/1710/018**

S. No.	Parameter	Test-Method	Result	Unit
19.	Conductivity	APHA 22nd Edition, 2120 B	279	µS/cm
20.	Nitrate as NO_3	IS 3025 (P-34) 1988	12.20	mg/l
21.	Sodium as Na	APHA 22nd Edition,3500 Na B	14	mg/l
22.	Potassium as K	APHA 22nd Edition, 3500 K B	4	mg/l
23.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.24	mg/l
24.	Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.02 mg/l)	mg/l
25.	Boron	APHA 22nd Edition, 4500B C	0.35	mg/l
26.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l
27.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l
28.	Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l
29.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l
30.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.24	mg/l
31.	Copper as Cu	APHA 22nd Edition, 3111 B	0.11	mg/l
32.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.10 mg/l)	mg/l
33.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.001 mg/l)	mg/l
34.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	586	MPN/100ml
35.	Fecal Coliform	IS 1622,1981(Reaffirmed 2003)	321	MPN/100ml

Note: -*BDL-Below Detection Limit, **DL- Detection Limit

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ ISL/W/03	**Report No.:**	VEL /W /1710/019
Name of the Project :	M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab	**Format No.:**	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	14/11/2017
		Period of Analysis:	09/11/2017 to 14/11/2017
Sample Description:	Surface water (Beas River)	**Receipt Date:**	09/11/2017
Sampling Location:	Near Village-Budhewal (SW3)	**Sampling Date:**	08/11/2017
Sample Collected by:	Vardan Enviro Lab Representative	**Sampling Quantity:**	2.0 Ltr
Preservation:	Refrigerator	**Sampling Type:**	---
Sampling and Analysis Protocol:	IS-10500-2012,APHA 22nd Edition 2012	**Parameter Required:**	As Per Tor Letter

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA 22nd Edition, 4500-H+B	7.21	--
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA 22nd Edition, 2130 B	16	NTU
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--
5.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	235.35	mg/l
6.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	35.45	mg/l
7.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	185.58	mg/l
8.	Chloride as Cl	APHA 22nd Edition, 4500-Cl- B	66.84	mg/l
9.	Residual free Chlorine	APHA 22nd Edition, 4500 Cl B	*BDL(**DL 0.20mg/l)	mg/l
10.	Cyanide as CN	APHA 22nd Edition, 4500 CN D	*BDL(**DL 0.02 mg/l)	mg/l
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	35.70	mg/l
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	367.00	mg/l
13.	Total Suspended solids	APHA 22nd Edition,2540 D	55.00	mg/l
14.	Dissolved Oxygen	APHA 22nd Edition,4500	7.9	mg/l
15.	Sulphate as SO_4^{--}	APHA 22nd Edition, 4500 E	36.35	mg/l
16.	Fluoride as F	APHA 22nd Edition, 4500-F- D	0.43	mg/l
17.	BOD (3 Days at 27°C)	IS 3025,P-44,1999 (R- 2003)	6.8	mg/l
18.	COD	APHA 22nd Edition, 5220 B	18.54	mg/l

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample No.: **VEL/ISL/W/03** | Report No.: **VEL/W/1710/019**

S. No.	Parameter	Test-Method	Result	Unit
19.	Conductivity	APHA 22nd Edition, 2120 B	612	µS/cm
20.	Nitrate as NO_3	IS 3025 (P-34) 1988	13.45	mg/l
21.	Sodium as Na	APHA 22nd Edition,3500 Na B	21	mg/l
22.	Potassium as K	APHA 22nd Edition, 3500 K B	3	mg/l
23.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.33	mg/l
24.	Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l
25.	Boron	APHA 22nd Edition, 4500B C	0.47	mg/l
26.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l
27.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l
28.	Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l
29.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l
30.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.52	mg/l
31.	Copper as Cu	APHA 22nd Edition, 3111 B	0.16	mg/l
32.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.10 mg/l)	mg/l
33.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.001 mg/l)	mg/l
34.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	42124	MPN/100ml
35.	Fecal Coliform	IS 1622,1981(Reaffirmed 2003)	9875	MPN/100ml

Note: -*BDL-Below Detection Limit, **DL- Detection Limit

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Test Certificate

Sample Number:	**VEL/ ISL/W/04**	**Report No.:**	**VEL /W /1710/020**
Name of the Project :	**M/s Indian Sucrose Ltd. Project Expansion of "Sugar Mill" Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Punjab**	**Format No.:**	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**14/11/2017**
		Period of Analysis:	**09/11/2017 to 14/11/2017**
Sample Description:	**Surface water (Beas River)**	**Receipt Date:**	**09/11/2017**
Sampling Location:	**Near Village –Nawan Alman (SW4)**	**Sampling Date:**	**08/11/2017**
Sample Collected by:	**Vardan Enviro Lab Representative**	**Sampling Quantity:**	**2.0 Ltr**
Preservation:	**Refrigerator**	**Sampling Type:**	**---**
Sampling and Analysis Protocol:	**IS-10500-2012,APHA 22nd Edition 2012**	**Parameter Required:**	**As Per Tor Letter**

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 ^{0}C)	APHA 22nd Edition, 4500-H^{+}B	7.52	--
2.	Colour	APHA 22nd Edition, 2120 B	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA 22nd Edition, 2130 B	14	NTU
4.	Odour	APHA 22nd Edition, 2150 B	Agreeable	--
5.	Total Hardness as $CaCO_3$	APHA 22nd Edition, 2340 C	132.24	mg/l
6.	Calcium as Ca	APHA 22nd Edition, 3500 Ca B	20.42	mg/l
7.	Alkalinity as $CaCO_3$	APHA 22nd Edition, 2320 B	108.53	mg/l
8.	Chloride as Cl	APHA 22nd Edition, 4500-Cl^{-} B	33.65	mg/l
9.	Residual free Chlorine	APHA 22nd Edition, 4500 Cl B	*BDL(**DL 0.20mg/l)	mg/l
10.	Cyanide as CN	APHA 22nd Edition, 4500 CN^{-}D	*BDL(**DL 0.02 mg/l)	mg/l
11.	Magnesium as Mg	APHA 22nd Edition, 2340 B	19.75	mg/l
12.	Total Dissolved Solids	APHA 22nd Edition, 2540 C	158.00	mg/l
13.	Total Suspended solids	APHA 22nd Edition,2540 D	37.00	mg/l
14.	Dissolved Oxygen	APHA 22nd Edition,4500	6.7	mg/l
15.	Sulphate as SO^{4}	APHA 22nd Edition, 4500 E	18.22	mg/l
16.	Fluoride as F	APHA 22nd Edition, 4500-F^{-} D	0.32	mg/l
17.	BOD (3 Days at 27^{0}C)	IS 3025,P-44,1999 (R- 2003)	<5.0	mg/l
18.	COD	APHA 22nd Edition, 5220 B	10.57	mg/l

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample No.: **VEL/ISL/W/04**			Report No.: **VEL/W/1710/020**	
S. No.	**Parameter**	**Test-Method**	**Result**	**Unit**
19.	Conductivity	APHA 22nd Edition, 2120 B	265	µS/cm
20.	Nitrate as NO_3	IS 3025 (P-34) 1988	8.69	mg/l
21.	Sodium as Na	APHA 22nd Edition,3500 Na B	15	mg/l
22.	Potassium as K	APHA 22nd Edition, 3500 K B	5	mg/l
23.	Iron as Fe	APHA 22nd Edition, 3500-Fe B	0.11	mg/l
24.	Aluminium as Al	APHA 22nd Edition, 3111 B	*BDL(**DL 0.03 mg/l)	mg/l
25.	Boron	APHA 22nd Edition, 4500B C	0.42	mg/l
26.	Chromium as Cr	APHA 22nd Edition, 3111 B	*BDL(**DL 0.01 mg/l)	mg/l
27.	Phenolic Compounds	APHA 22nd Edition, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l
28.	Mineral Oil	Clause 6 of IS:3025(Part 39)	*BDL(**DL 0.01mg/l)	mg/l
29.	Anionic Detergents as MBAS	APHA 22nd Edition, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l
30.	Zinc as Zn	APHA 22nd Edition, 3111 B	0.36	mg/l
31.	Copper as Cu	APHA 22nd Edition, 3111 B	0.12	mg/l
32.	Manganese as Mn	APHA 22nd Edition, 3111 B	*BDL(**DL 0.10 mg/l)	mg/l
33.	Cadmium as Cd	APHA 22nd Edition, 3111 B	*BDL(**DL 0.001 mg/l)	mg/l
34.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	650	MPN/100ml
35.	Fecal Coliform	IS 1622,1981(Reaffirmed 2003)	410	MPN/100ml

Note: -*BDL-Below Detection Limit, **DL- Detection Limit

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Test Certificate

Sample Number:	**VEL/ISL/AN/01**	Report No.:	**VEL/AN/1710/009**
Name & Address of the Project:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**22/11/2017**
		Receipt Date:	**19/11/2017**

Sample Description: **AMBIENT NOISE LEVEL MONITORING**

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Project Site (N1)**
Instrument Used	:	Sound Level Meter- 01
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	18/11/2017 to 19/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	67.70	59.20	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	54.60	45.40	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	63.79	56.49	dB(A)
4.	CPCB Limits in dB(A) Leq (Industrial Area)	-	75.00	70.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	**VEL/ ISL/AN/02**	Report No.:	**VEL/AN/1710/010**
Name & Address of the Project:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**22/11/2017**
		Receipt Date:	**19/11/2017**

Sample Description: **AMBIENT NOISE LEVEL MONITORING**

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village - Bishanpur (N2)**
Instrument Used	:	Sound Level Meter- 02
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	18/11/2017 to 19/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	59.70	52.50	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	48.80	38.20	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	54.28	43.68	dB(A)
4.	**CPCB Limits in dB(A) Leq (Residential Area)**	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ ISL/AN/03	Report No.:	VEL/AN/1710/011
Name & Address of the Project:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	22/11/2017
		Receipt Date:	19/11/2017

Sample Description: AMBIENT NOISE LEVEL MONITORING

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village - Mukerian (N3)**
Instrument Used	:	Sound Level Meter- 03
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	18/11/2017 to 19/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	58.70	51.60	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	46.50	39.70	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	53.89	44.18	dB(A)
4.	CPCB Limits in dB(A) Leq (Residential Area)	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ ISL/AN/04	Report No.:	VEL/AN/1710/012
Name & Address of the Project:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	22/11/2017
		Receipt Date:	19/11/2017

Sample Description: AMBIENT NOISE LEVEL MONITORING

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village – Dhaula Khera (N4)**
Instrument Used	:	Sound Level Meter- 04
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	18/11/2017 to 19/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	59.70	50.10	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	48.20	37.40	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	52.97	43.47	dB(A)
4.	CPCB Limits in dB(A) Leq (Residential Area)	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Vardan EnviroLab

Regd. Off: D-142, Sushant Lok-III, Sector-57, Gurgaon - 122003 (Haryana) Tel: 0124-4291036
Laboratory: Samaspur, Opposite Amity International School, Sector-51, Gurgaon - 122001 (Haryana)
Branch Off: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur - 302035 (Rajasthan) Tel: 0141-2983404
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Test Certificate

Sample Number:	**VEL/ISL/AN/05**	Report No.:	**VEL/AN/1710/013**
Name & Address of the Project:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**25/11/2017**
		Receipt Date:	**22/11/2017**

Sample Description: **AMBIENT NOISE LEVEL MONITORING**

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village - Mahdipur (N5)**
Instrument Used	:	Sound Level Meter- 01
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	21/11/2017 to 22/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	59.40	51.60	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	51.80	39.10	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	53.27	44.17	dB(A)
4.	CPCB Limits in dB(A) Leq (Residential Area)	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	**VEL/ISL/AN/06**	Report No.:	**VEL/AN/1710/014**
Name & Address of the Project:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**25/11/2017**
		Receipt Date:	**22/11/2017**

Sample Description: AMBIENT NOISE LEVEL MONITORING

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village - Naraingarh (N6)**
Instrument Used	:	Sound Level Meter- 02
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	21/11/2017 to 22/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	58.90	51.80	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	48.40	42.60	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	54.13	44.45	dB(A)
4.	CPCB Limits in dB(A) Leq (Residential Area)	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	**VEL/ISL/AN/07**	Report No.:	**VEL/AN/1710/015**
Name & Address of the Project:	**M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab**	Format No.:	**5.10 F-01**
		Party Reference No.:	**NIL**
		Reporting Date:	**25/11/2017**
		Receipt Date:	**22/11/2017**

Sample Description: **AMBIENT NOISE LEVEL MONITORING**

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village - Kaulpur (N7)**
Instrument Used	:	Sound Level Meter- 03
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	21/11/2017 to 22/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	59.70	51.30	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	50.40	38.90	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	53.89	42.87	dB(A)
4.	CPCB Limits in dB(A) Leq (Residential Area)	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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Test Certificate

Sample Number:	VEL/ ISL/AN/08	Report No.:	VEL/AN/1710/016
Name & Address of the Project:	M/s Indian Sucrose Ltd. Proposed Expansion of "Sugar Mill", Village- Chak Allabaksh and Mahiuldinpur Dalel, NH-1A, Tehsil- Mukerian, District- Hoshiarpur, Panjab	Format No.:	5.10 F-01
		Party Reference No.:	NIL
		Reporting Date:	25/11/2017
		Receipt Date:	22/11/2017

Sample Description: AMBIENT NOISE LEVEL MONITORING

General Information:-

Sample collected by	:	Vardan Enviro Lab Representative
Sampling Location	:	**Near Village - Kallchanng (N8)**
Instrument Used	:	Sound Level Meter- 04
Instrument Calibration Status	:	Calibrated
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	:	21/11/2017 to 22/11/2017
Time of Monitoring	:	06:00 AM to 06:00AM
Surrounding Activity	:	Human & Vehicular Activities
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	:	CPCB Guidelines & IS-9989
Sampling Duration	:	24 Hours
Parameter Required	:	As per TOR Letter

S. No.	Parameters	Protocol	Test Result dB (A)		Unit
			Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)	
1.	L_{max}	CPCB Guidelines/ IS 9989	58.90	47.60	dB(A)
2.	L_{min}	CPCB Guidelines/ IS 9989	48.50	39.50	dB(A)
3.	L_{eq}	CPCB Guidelines/ IS 9989	53.18	44.19	dB(A)
4.	CPCB Limits in dB(A) Leq (Residential Area)	-	55.00	45.00	dB(A)

(Tested By) (Checked By) (Approved By)

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BIOLOGICAL ENVIRONMENT FOR M/S INDIAN SUCROSE LIMITED CAPACITY EXPANSION FROM 5000 TCD ALONG WITH 19.5MW COGENERATION POWER PLANT TO 12000 TCD ALONG WITH 59.5MW COGENERATION POWER PLANT

By: Dr. NITEESH KUMAR

1. BIOLOGICAL ENVIRONMENT:

Study of biological environment is one of the important aspects for the Environmental Impact Assessment, in view of the need for conservation of Environmental quality and biodiversity of particular geographical area. Ecological systems show complex interrelationship between biotic and Abiotic components including dependence, competition and mutualism. Biotic components comprises of plant and animal communities which interact not only within and between themselves but also with the Abiotic components viz. Physical and Chemical; components of the environment.

Generally, biological communities are the good indicators of climatic and edaphic factors. Studies on biological aspects of ecosystems are important in Environmental Impact Assessment for safety of natural flora and fauna. Information on the impact of environmental stress on the community structure serves as an inexpensive and efficient early warning system to check the damage to a particular ecosystem. The biological environment includes mainly terrestrial and aquatic ecosystems.

The animal and plant communities exist in their natural habitats in well organized manner. Their natural settings can be disturbed by any externally induced anthropological activities or by naturally induced calamities or disaster. So, once this setting is disturbed, it becomes practically impossible or takes a longer time to come to its original state. Plants and animals are more susceptible to environmental stress. A change in the composition of biotic communities reflected by a change in the distribution pattern of natural species of flora and fauna existing in the ecosystem. The sensitivity of animal and plant species to the changes occurring in their existing ecosystem can therefore, be used for monitoring Environmental Impact Assessment studies of any project.

1.1 Objectives of Biological Study:

The main objectives of biological study were:

- To collect the baseline data for the study along with a description of the existing terrestrial, wetland and aquatic biodiversity.
- To assess the scheduled species in the proposed site (rare, endangered, critically endangered, endemic and vulnerable).

- To identify the locations and features of ecological significance.
- To identify the Impacts of proposed project before, after and during development phase.

Table: 1. Mode of data collection and parameters considered during the Survey

Sr. No.	Aspect	Mode of Data collection	Parameters monitored	Remarks
1.	Terrestrial Biodiversity	By field survey	Floral and Faunal diversity	**For Floral Diversity:** Random survey, sapling survey/forest inventory, walking transect, collection and identification with the help of relevant literature. **For Faunal Diversity:** direct and indirect sampling, walking transect, point sampling and nest sampling etc.
2.		From authentic sources like Forests department of Haryana and available published literatures from ZSI, BSI etc.	Floral and Faunal diversity and study of vegetation, forest type, importance etc.	Data collected from the working plan of the region, forest types from the authentic literature of Champion & Seth.
3.	Aquatic Biodiversity	By field survey	Floral and Faunal diversity	**For Plankton Study-** Lackey's drops method and light microscope **For other aquatic-** Random survey, opportunistic observations
4.		From authentic sources like Forests department of Haryana.	Floral and Faunal diversity and study of vegetation, forest type, importance etc.	Desktop literature review to indentify the representative spectrum of threatened species, population and ecological communities.

2. STUDY AREA:

M/s. Indian Sucrose Limited was established in 1990 and came in operational phase in 1991 with capacity 2500 TCD with cogeneration power plant of capacity 7.5 MW. The capacity of the plant was increased to 5000 TCD along with 19.5 MW Cogeneration power plant in year 2005. The Owner of the unit has proposed to expand the capacity to 12000 TCD along with Co-

generation power plant to 59.5 MW at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian District-Hoshiarpur, Punjab. The study area is divided into two parts i.e.:

a) **Core Zone:** Project Site i.e. Indian Sucrose Limited Plant.
b) **Buffer Zone:** Area within 10 Km radius from the project site.

3. RIPARIAN ENVIRONMENT:

The study of riparian vegetation of a river is an important as it strongly affects soil-water characteristics of the area and thus the aquatic life. Moreover, the vegetation provides the human population with vital life support and socio- economic security. Riparian zones often regulate aquatic-terrestrial linkages. Riparian vegetation is important for regulating nutrient cycle of the streams, preventing soil erosion and stabilizing river banks. Further, the riparian vegetation is modified or destroyed by grazing, logging, urbanization, road construction, water development, mining and recreation. Also, the riparian zone is thought to have a disproportionate influence (relative to its land area) on the running water because of its immediate effects on the transport of water, nutrients and sediments. Riparian flora of Beas River, Shah Canal and Mukerian Hydel canal is given in table along with the terrestrial flora.

Table 2: Location sites for the study of Riparian Vegetation

Sr. No.	Site Location	Direction
I.	Beas River (Down Stream)	South West
II.	Beas River (Up Stream)	West
III.	Shah Canal at Tansota	North East
IV.	Mukerian Hydel Canal at Singhowal	East
V.	Mukerian Hydel Canal at Jamalpur	South East
VI.	Mukerian Hydel Canal No. 2 at Sadrpur	South

4. TERRESTRIAL FLORA AND FAUNA:

Biological communities are the indicator environmental condition and resource of its distribution and survival. Biotic component comprises of both plants (Flora) and animal (Fauna) communities, which interact not only within and between them but also with the Abiotic components, viz. physical and chemical components of the environment. The changes in biotic community are studied in the pattern of distribution, abundance and diversity.

5. TERRESTRIAL FLORA:

The Vegetation and plant species composition observed and documented during field visit in and around the proposed location of the project. Besides primary surveys in the project sites, published literature and various floras were consulted to prepare an inventory of plant species growing at project sites. The vegetation of the study area is highly degraded and some areas consisting water bodies. The plant diversity is classified into various plant groups such as tree, shrubs, herbs, climbers, sedges and grasses. The plant diversity survey in the project area was undertaken during the summer season with the objectives of preparing a checklist of flora in the study area which is divided into two parts i.e. Core Zone & Buffer Zone.

Core Zone: Core zone of the proposed project is pre-existing Indian Sucrose Plant. The Owner of the unit/Plant has proposed to expand the capacity to 12000 TCD along with Co-generation power plant to 59.5 MW at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian District-Hoshiarpur, Punjab.

The proposed expansion of plant will be inside the existing plant. There is no vegetation and no fauna to be disturbed as part of expansion. During the field survey plantation under green belt development programme was recorded from the plant area.

Buffer Zone: The selection of terrestrial and aquatic ecological sampling location was based on land use pattern, topography and habitat patterns of the study area. The terrestrial ecological survey was carried out in forest and non-forest areas (agricultural fields, roadsides, urban & semi-urban wastelands etc) and the aquatic ecological survey was carried out at rivers & ponds/lakes within the study area.

5.1 Methodology:

The present study on the floral assessment for the project activity is based on field survey of the area. By the following forest inventory methodology; the survey of biological parameters has been conducted within the buffer zone (10 km radial distance) from project site at Village: Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian District-Hoshiarpur, Punjab, in accordance with the guidelines issued by the Ministry of Environment, Forests and Climate Change, CPCB, and SPCB during the study period.

A preliminary survey of the study area has been performed to get a general picture of the landscapes in vegetation. Traverses have been taken within different zone of the study area to note major vegetation patterns and plant communities including their growth form and dominant

species. A **forest inventory** is **"an attempt to describe the quantity and quality of forest trees and many of the characteristics of the land area upon which the trees are grown."** The objective this floral inventory of the study area, is to provide complete checklist of floristic structure within the core zone and buffer zone (10 km radial distance) from project site for formulating effective management and conservation measures.

5.2 Floristic Composition of Core/Buffer Zone:

The terrestrial flora of the study area i.e. buffer zone (10 km radial distance) from the project site could be categorized as agriculture vegetation, social forestry plantation, Agro-forestry plantation, plantation for green belt development and natural/forest vegetations.

5.2.1 Agricultural and Horticulture Crops:

Agriculture is the primary sector of Punjab State economy and majority of the population is directly or indirectly dependent on agriculture and its allied activities. The climatic conditions of a region affect the agricultural cropping pattern of different areas. Thus, it produces different crops. Amongst a host of climatic factors i.e. rainfall, temperature, humidity, wind velocity and duration of sunshine etc. affect the cropping pattern in a significant way. Annual rainfall and its distribution over the entire year and the regimes of diurnal and annual temperatures are by far, the prominent factors affecting agriculture and the life style of the people.

Table: 3: Cropping pattern of Study area

Crop Variety	Family	Botanical Name	Trade Name
Agriculture Crops			
Vegetable	Malvaceae	*Abelmoschus esculentus*	Lady Finger
	Cucurbitaceae	*Cucurbita pepo*	Kaddu
	Cucurbitaceae	*Momordica charantia*	Karela
	Solanaceae	*Capsicum fruitiscens*	chilli
	Solanaceae	*Solanum melongena*	Brinjal
	Solanaceae	*Solanum tuberosum*	Potato
	Solanaceae	*Lycopersicon lycopersicum*	Tomato
	Liliaceae	*Allium cepa*	Onion
	Brassicaceae	*Brassica oleracea var. capitata*	Cabbage
	Brassicaceae	*Brassica oleracea var. botrytis*	Cauliflower

Crop Variety	Family	Botanical Name	Trade Name
	Cucurbitaceae	*Cucumis melo*	Cucumber
	Cucurbitaceae	*Cucurbita maxima*	Pumpkin
	Apiaceae	*Daucus carota*	Carrot
	Convonvulaceae	*Ipomoea batatas*	Sweet Potato
	Brassicaceae	*Raphanus sativus*	Radish
	Chenopodiaceae	*Spinacia oleracea*	Spinach
Cereals	Poaceae	*Oryza sativa*	Rice
	Poaceae	*Triticum aestivum*	Wheat
	Poaceae	*Zea mays*	Maize
Pulses	Fabaceae	*Vigna radiate*	Moong
	Fabaceae	*Vigna mungo*	Urd
	Fabaceae	*Cajanus cajan*	Pigeon Pea
	Fabaceae	*Vigna umbellata*	Rice Bean
	Fabaceae	*Cicer arietinum*	Gram
	Fabaceae	*Lens culinaris*	Lentil
	Fabaceae	*Pisum sativum* Subsp. *arvense*	Field Pea
Spices	Amaryllidaceae	*Allium sativum*	Garlic
	Zingiberaceae	*Zingiber officinale*	Adrak
Oilseeds	Fabaceae	*Arachis hypogaea*	Ground Nut
	Asteraceae	*Helianthus annus*	Sunflower
	Pedaliaceae	*Sesamum indicum*	Sesamum
Other	Malvaceae	*Gossypium hirsutum*	Cotton
	Poaceae	*Saccharum officinarum*	Sugar Cane
Horticulture Crops			
Fruits	Moraceae	*Artocarpus heterophyllus*	Jack Fruit
	Caricaceae	*Carica papaya*	Papaya
	Rutaceae	*Aegle marmelos*	Bel
	Anacardiaceae	*Mangifera indica*	Mango
	Musaceae	*Musa paradasiaca*	Banana

Crop Variety	Family	Botanical Name	Trade Name
	Myrtaceae	*Psidium guajava*	Guava
	Myrtaceae	*Syzygium cumini*	Jamun
	Fabaceae	*Tamarindus indica*	Imli

5.2.2 Social/Agro-Forestry:

In India, natural forests are being conserved primarily for the environmental benefits. Serious efforts are also being done to plant large number of trees outside forest under social forestry programs to increase the tree cover and fulfill demand of various forest produce required by the people and forest based industries. Agricultural fields are one of the potential areas, where large scale planting of trees can be taken up along with the agricultural crops. Agro-forestry models adopted by the farmers in Haryana state are highly lucrative, therefore, attracting farmers in a big way.

Table 4: Agro Forestry Species of the Study Area (Buffer Zone)

Botanical Name	Trade Name	Family
Delonix regia	Gulmohar	Caesalpiniaceae
Dalbergia sisso	Shisham	Fabaceae
Azadirachta indica	Neem	Meliaceae
Mangifera indica	Aam	Anacardiaceae
Pongamia pinnata	Karanj	Euphorbiaceae
Musa paradisiacal	Banana	Musaceae
Ficus religiosa	Pipal	Moraceae
Eucalyptus cameldulensis	Nilgiri	Myrtaceae
Pisidium guava	Guava	Myrtaceae
Tectona grandis	Sagwan	Verbenaceae
Dendrocalamus strictus	Lathi bans	Poaceae
Butea monosperma	Kachnar	Fabaceae
Cassia fistula	Amaltas	Fabaceae
Saraca asoca	Asok	Fabaceae
Populous deltoids	Popular	Salicaceae
Shorea robusta	Sal	Dipterocarpaceae
Tectona grandis	Teak	Lamiaceae
Toona ciliata	Meliaceae	Cedar

5.2.3 Grasslands:

No prominent grass land ecosystem has been found in core and buffer zone of the project. However the grass lands were mixed with natural vegetation in low lands and cultivable waste lands are now being utilized as grazing grounds to the livestock species: Goat, Cow, Ox and Buffalo. The grass species and sedges of core and buffer zone are listed below with the natural vegetation of buffer zone.

5.2.4 Endemic/Endangered Flora:

No endangered and endemic flora was recorded from core and buffer zone of the project area.

5.2.5 Location of National Park/Sanctuaries:

There is no Bio-sphere Reserve, National Parks, Wildlife Sanctuary, Tiger Reserve and Elephant Reserve within 10 km radius of the project site.

5.2.6 Natural/Forest Vegetation:

The total study area is covered mostly with agriculture land. The flora of buffer zone comprises of plants growing in scattered vegetation, the edges of agricultural land, village woodlots and trees planted along the roads. Many tree species are planted in the area because of their usefulness, economic and aesthetic values. The tree species observed in the area are, Sal (*Shorea robusta*), Jamun (*Syzygium cumini*), Bel (*Aegle marmelos*), Bargad (*Ficus bengalensis*), Neem (*Azadirachta indica*), Peepal (*Ficus religiosa*), Popular (*Populus dealtoides*), Safeda (*Eucalyptus cameldulensis*), Sisam (*Dalbergia sissoo*) etc.

In agricultural waste land and along the road side, growth of weeds likes *Argemone mexicana, Cannabis sativa, Cenchrus cilitaris, Heteropogon contortus, Lantana camara*, *Parthenium hysterosporus,* etc. are very common. The species found in the core zone are also found all along the riverbed in the study area. These weeds are affecting the agricultural productivity of the region due to fast growth, short life cycle and enormous production of seeds.

In scrub area commonly seen plant species in such areas are *Cannabis sativa, Lantana camara, Ipomea carnea, Calotropis procera, Cassia tora, Parthenium hysterophorus, Ziziphus mauritiana, Heteropogon contortus, Argemone Mexicana,* etc. These weeds also affect the agricultural productivity of the region.

Table 5: Floristic composition of Buffer zone

Sr. No.	Botanical Name	Family	Common Name
TREES			
1.	*Aegle marmelos*	Rutaceae	Bel
2.	*Ailanthus excels*	Simaroubaceae	Adusa
3.	*Albizia procera*	Fabaceae	Safed Siris
4.	*Albizia lebbeck*	Fabaceae	Kala Siris
5.	*Anogeissus latifolia*	Combretaceae	Dhaura
6.	*Azadirachta indica*	Meliaceae	Neem
7.	*Acacia catechu*	Fabaceae	Khair
8.	*Adina cordifolia*	Rubiaceae	Haldu
9.	*Bauhinia acuminate*	Fabaceae	Safed Kachnar
10.	*Bauhinia vahlii*	Fabaceae	Malu Creeper
11.	*Bauhinia variegate*	Fabaceae	Kachnar
12.	*Bombax ceiba*	Malvaceae	Semal
13.	*Cassia fistula*	Fabaceae	Amaltas
14.	*Cassia siamea*	Fabaceae	Kasood
15.	*Dalbergia sissoo*	Fabaceae	Shisham
16.	*Delonix regia*	Fabaceae	Gulmohar
17.	*Emblica officinalis*	Phyllanthaceae	Amla
18.	*Eucalyptus camaldulensis*	Myrtaceae	Nilgiri
19.	*Ficus racemosa*	Moraceae	Gular
20.	*Ficus religiosa*	Moraceae	Pipal
21.	*Ficus benghalensis*	Moraceae	Bargad
22.	*Holoptelia integrifolia*	Ulmaceae	Kanju
23.	*Mallotus philippensis*	Euphorbiaceae	Kamala
24.	*Melia azedarach*	Meliaceae	Bakain
25.	*Morus alba*	Moraceae	Shehtoot
26.	*Neolamarckia cadamba*	Rubiaceae	Kadam
27.	*Phoenix sylvestris*	Palmaceae	Khajur

Sr. No.	Botanical Name	Family	Common Name
28.	*Populous deltoids*	Salicaceae	Poplar
29.	*Shorea robusta*	Dipterocarpaceae	Sal
30.	*Syzygium cumini*	Myrtaceae	Jamun
31.	*Tectona grandis*	Lamiaceae	Teak
32.	*Terminalia belerica*	Combretaceae	Baheda
33.	*Terminalia chebula*	Combretaceae	Harad
34.	*Toona ciliata*	Meliaceae	Toon, Cedar
SHRUBS & HERBS			
35.	*Abrus precatorius*	Fabaceae	Ratti
36.	*Abutilon indicum*	Malvaceae	Kanghi
37.	*Achyranthes aspera*	Amaranthaceae	Chirehitta
38.	*Adhatoda vasica*	Acanthaceae	Vasaka
39.	*Alternanthera sessilis*	Amaranthaceae	Garundi
40.	*Amaranthus spinosa*	Amaranthaceae	Kate Chawli
41.	*Amaranthus viridis*	Amaranthaceae	Jungle Chaulai
42.	*Argemmone maxicana*	Papaveraceae	Satyanashi
43.	*Barleria crisata*	Acanthaceae	Varja Danti
44.	*Bauhinia vahlii*	Leguminoceae	Maljhan
45.	*Boerhavia diffusa*	Nyctaginaceae	Punarnawa
46.	*Bulbostylis barbata*	Cyperaceae	Water Grass
47.	*Caesalpinia sepiaria*	Sapindaceae	Kainju Bel
48.	*Calotropis procera*	Asclepiadaceae	Aak
49.	*Calotropis gigantea*	Asclepiadaceae	Madar
50.	*Cannabis sativa*	Urticaceae	Bhang
51.	*Carrissa occidentalis*	Apocynaceae	Karaunda
52.	*Cassia tora*	Caesalpiniaceae	Panwar
53.	*Chinopodium album*	Amaranthaceae	Bathuwa
54.	*Clematis gouriana*	Ranuculaceae	Balkangu
55.	*Crotolaria medicaginea*	Papilionaceae	Rattle Weed

Sr. No.	Botanical Name	Family	Common Name
56.	*Cryptolepis buchanani*	Apocynaceae	Dudhi
57.	*Cyperus compressus*	Cyperaceae	Annual Sedge
58.	*Cyperus rotundus*	Cyperaceae	Nut grass
59.	*Datura metel*	Solanaceae	Datura
60.	*Denderocalamus strictus*	Poaceae	Lathi Baans
61.	*Eclipta alba*	Asteraceae	Bhangra
62.	*Eriophorum Comosum*	Cyperaceae	Nakli Bhabbar
63.	*Euphobia hirta*	Euphorbiaceae	Dudhi
64.	*Evolvulus alsinoides*	Convonvulaceae	--
65.	*Gloriosa superba*	Colchicaceae	Glory Lilly
66.	*Ipomoea carnea*	Convonvulaceae	Besharam
67.	*Lantana camara*	Verbenaceae	Raimuniya
68.	*Murraya koenigii*	Rutaceae	Gandhela
69.	*Nerium indicum*	Apocynaceae	Kaner
70.	*Ocimum sanctum*	Lamiaceae	Tulsi
71.	*Oxalis corniculata*	Oxalidaceae	Yellow sorrel
72.	*Parthenium hysterophorus*	Asteraceae	Gajar Ghas
73.	*Physalis minima*	Solanaceae	Rasbhari
74.	*Pueraria truberosa*	Leguminoceae	Sural
75.	*Ranunculus sceleratus*	Ranunculaceae	Jaldhaniya
76.	*Rumex dentatus*	Polygonaceae	Jungle Palak
77.	*Rauvolfia serpentine*	Apocynaceae	Sarpgandha
78.	*Scindapsus officianlis*	Araceae	Gajpipper
79.	*Sida acuta*	Malvaceae	--
80.	*Solonum erianthum*	Solanceae	Aradu, Ban
81.	*Solanum indicum*	Solanaceae	Makoi
82.	*Solanum viarum*	Solanaceae	Jungle Begun
83.	*Syzygium cumini*	Myrtaceae	Jamun
84.	*Tephrosia purpurea*	Fabaceae	Nili

Sr. No.	Botanical Name	Family	Common Name
85.	*Terminalia chebula*	Combretaceae	Bahera
86.	*Trichodesma indicum*	Boraginaceae	Chota Kalpa
87.	*Tridax procumbens*	Asteraceae	Kamarmodi
88.	*Typha angustifolia*	Typhaceae	Patera
89.	*Urena lobata*	Malvaceae	Caesar Weed
90.	*Vallaris solancea*	Apocynaceae	Buddhi Bel
91.	*Withania somnifera*	Solanceae	Asgandh
92.	*Xanthium stumarium*	Asteraceae	Chota Gokhru
93.	*Zizyphus nummularia*	Rhacnaceae	Beri
GRASSES			
94.	*Apluda mutica*	Poaceae	Banjura grass
95.	*Aristida hystrix*	Poaceae	
96.	*Cenchrus echinatus*	Poaceae	Sandbur
97.	*Chloris barbata*	Poaceae	
98.	*Cymbopogon □ernate*	Poaceae	Tikhadi
99.	*Cynodon dactylon*	Poaceae	Doob
100.	*Dactyloctenum aegyptium*	Poaceae	Crow foot grass
101.	*Digitaria □ernate*	Poaceae	
102.	*Echinochloa colona*	Poaceae	Jungle Rice
103.	*Eragrostiella bifaria*	Poaceae	
104.	*Eragrostis ciliaris*	Poaceae	
105.	*Panicum tripheron*	Poaceae	
106.	*Sacharrum spontanium*	Poaceae	

6. Wetland Diversity & Marsh Lands:

Wetlands are very useful to us. By producing resources, enabling recreational activities and controlling flood and pollution, they contribute to the national and local economies and environmental consequences. Wetlands provide important and incredible services to society, these services can neither be sold nor do they have the market value and tried to give wetlands an economic value.

Table 6: Wetland/Marshland Diversity of Study area

Family	Botanical Name	Local Name
Salviniaceae	*Azolla pinnata*	Mosquito Fern
Asteraceae	*Caesulia axillaris*	Maka
Ceratophyllaceae	*Ceratophyllum demersum*	Hornwort
Poaceae	*Chrysopogon zizanioides*	Vetiver
Poaceae	*Coix lacryma-jobi*	Adlay Millet
Araceae	*Colocasia esculenta*	Taro
Commelinaceae	*Commelina benghalensis*	Kana
Cyperaceae	*Cyperus alternifolius*	Umbrella Sedge
Dryopteridaceae	*Dryopteris filix-mas*	Fern
Dryopteridaceae	*Dryopteris sieboldii*	Fern
Poaceae	*Echinochloa colona*	Shama
Pontederiaceae	*Eichhornia crassipes*	Jal Kumbhi
Asteraceae	*Grangea maderaspatana*	Madras Carpet, Mustaru
Acanthaceae	*Hygrophila salicifolia*	---
Convonvulaceae	*Ipomea aquatic*	Kalmi Shak
Lemnaceae	*Lemna minor*	Duck Weed
Onagraceae	*Ludwigia adscendens*	Water Primrose
Marsileaceae	*Marsilea quadrifolia*	Four Leaf Clover
Sterculiaceae	*Melochia corchorifolia*	Bilpat
Nelumbonaceae	*Nelumbo nucifera*	Lotus, Kamal
Nymphaeaceae	*Nymphaea pubescens*	White Lotus
Oxalidaceae	*Oxalis corniculata*	Amrul
Pandanaceae	*Pandanus odoratissimus*	Keora
Urticaceae	*Pilea microphylla*	Gun Powder Plant
Polygonaceae	*Polygonum hydropiper*	Marsh Pepper Knot Weed
Portulacaceae	*Portulaca oleracea*	Little Hog-Weed
Potamogetonaceae	*Potamogeton natans*	Floating Pond Weed

Family	Botanical Name	Local Name
Lythraceae	*Trapa natans*	Water Chest Nut
Ranunculaceae	*Ranunculus sceleratus*	Aglaon
Polygonaceae	*Rumex dentatus*	Ambavati
Typhaceae	*Typha angustata*	Patera
Lentibulariaceae	*Utricularia gibba*	Floating Bladderwort
Plantaginaceae	*Veronica anagallis-aquatica*	Water Speedwell

7. Faunal Diversity:

To prepare a detailed report on the status of wildlife biodiversity within 10 km radial area along the existing pipeline to assess the impacts due to the project activity and evolve suitable mitigation measures to protect and conserve wildlife biodiversity following components were studied:

a) Wildlife Survey (Diversity)
b) Habitat Study (Feeding, Breeding and Roosting areas)
c) Distribution/Status of Birds
d) Rare & Endangered species of Fauna
e) Specific local characteristics of biodiversity in the study area.

7.1 Methodology for Faunal Diversity:

A linear transect of 1.0 km each was chosen for sampling at each site. Each transect was trekked for 1.5 hr for the sampling of faunal diversity through following methods for different categories. For the sampling of butterflies, the standard 'Pollard Walk' method was employed and all the species recorded daily. Voucher specimens of the species that could not be identified in the field were collected using a butterfly net besides photographing them.

For bird's sampling, 'Point Sampling' along the fixed transect (Foot trails) was carried out. All the species of birds were observed through a binocular and identified with the help of field guide book and photographs.

For the sampling of mammals, direct count on open width (20m) transect was used. In addition, information on recent sightings/records of mammals by the villagers/locals was also collected. For carnivores, indirect sampling was carried out and the mammals were identified by foot

marks, faeces and other marks/sign created by them. In case of reptiles mainly lizards were sampled by direct count on open width transects.

The study of fauna takes substantial amount of time to understand the specific faunal characteristic of area. The assessment of fauna has been done by extensive field survey of the area. During survey, the presence of wildlife was also inhabitants depending on animal sightings and the frequency of their visits in the project area which was later confirmed from forest department, Wildlife Department etc.

Table 7: Faunal Diversity from Study Area

S. No.	English Name	Scientific Name	Status/Schedule
		Mammals	
1.	Little Indian field mouse	*Mus booduga*	Schedule-V
2.	Nilgai	*Boselaphus tragocamelus*	Schedule-III
3.	Monkey	*Maccaca mulata*	Schedule-II
4.	Bat	*Rousettus leschenaultia*	Schedule-V
5.	Common Langur	*Semnopithecus entellus*	Schedule-II
6.	Five Striped Palm Squirrel	*Funambulus pennanii*	Schedule-IV
7.	Chachundar	*Suncus murinus*	Schedule-IV
		Amphibians	
1.	Indian pond frog	*Rana hexadactyla*	Schedule-IV
2.	Common Indian Toad	*Duttaphrynus melanostictus*	Not Listed
3.	Indian Bull Frog	*Hoplobatrachus tigerinus*	Schedule-IV
4.	Indian Skipper Frog	*Euphlyctis cyanophlyctis*	Schedule-IV
5.	Marble Toad	*Bufo stomaticus*	Not Listed
		Reptiles	
1.	House gecko	*Hemidactylus flavivridis*	Common
2.	Common garden lizard	*Calotes versicolor*	Common
3.	Brahminy skink	*Mabuya carinata*	Common
4.	Indian Cobra	*Naja naja*	Schedule-II
5.	Rat Snake	*Ptyas mucosa*	Schedule-IV
6.	Himalayan Pit Viper	*Ancistrodon himalayanus*	Schedule-IV
7.	Indian Krait	*Bungarus caeruleus*	Schedule-IV
8.	Russel Viper	*Daboia siamensis*	Schedule-II
		Butterflies	
1.	White orange tip	*Ixias marianne*	Common
2.	Lime butterfly	*Papilio demoleus*	Common
3.	Common crow	*Euploea core*	Common
4.	Common map	*Cyrestis thyodamas*	Common
5.	Common mormon	*Papilio polytes*	Common
6.	Common Grass Yellow	*Eurema hecabe*	Fairly Common
7.	Stripped Tiger	*Danaus genutia*	Common

S. No.	English Name	Scientific Name	Status/Schedule
8.	Danaid Egg Fly	*Hypolimanas misippus*	Common
9.	Common Bush Brown	*Mycalesis perseus*	Common
		Aves	
1.	House Crow	*Corvus splendens*	Schedule-V
2.	Rock Pigeon	*Columba livia*	Common
3.	Gery francolin	*Francolinus pondicerianus*	Least Concern
4.	Jungle babbler	*Turoides striatus*	Schedule-IV
5.	Common Myna	*Acridotheres tristis*	Schedule-IV
6.	Green bee-eater	*Merops orientalis*	Least Concern
7.	Indian roller	*Coracias benshalensis*	Schedule-IV
8.	Black Drongo	*Dicrirus macrocercus*	Schedule-IV
9.	Little cormorant	*Microcarbo niger*	Schedule-IV
10.	Common swift	*Apus apus*	Schedule-IV
11.	House swift	*Apus affinis*	Schedule-IV
12.	Shikra	*Accipiter badius*	Schedule-IV
13.	Cattle Egret	*Bubulcus ibis*	Schedule-IV
14.	Little Egret	*Egretta garzetta*	Schedule-IV
15.	Pond heron	*Ardeola grayii*	Schedule-IV
16.	Red wattled lapwing	*Vanellus indicus*	Schedule-IV
17.	Black Ibis	*Pseudibis papillosa*	Schedule-IV
18.	Ring dove	*Streptopelia decaocto*	Schedule-IV
19.	Spotted Dove	*Streptopelia chinensis*	Schedule-IV
20.	White Breasted Kingfisher	*Halcyon smyrnensis*	Schedule-IV
21.	Blue Cheeked Bee Eater	*Merops persicus*	Schedule-IV
22.	Asian Koel	*Eudynamys scolopacea*	Schedule-IV
23.	Drongo Cuckoo	*Srniculus lugubris*	Schedule-IV
24.	Pied Kingfisher	*Ceryle rudis*	Schedule-IV
25.	Red Jungle Fowl	*Gallus sallus*	Schedule-IV
26.	White breasted water hen	*Amaurornis phoenicurus*	Schedule-IV
27.	Common Moorhen	*Gallinule chloropus*	Schedule-IV
28.	Raven	*Corvus corax*	Schedule-IV
29.	Tree Pie	*Dendrocitta vagabunda*	Schedule-IV
30.	Indian Robin	*Saxicoloides fulicata*	Schedule-IV
31.	Pied Bush Chat	*Saxicola caprata*	Schedule-IV
32.	Purple Sun Bird	*Nectarinia asiatica*	Schedule-IV
33.	Small Sun Bird	*Nectarinia minima*	Schedule-IV
34.	House Sparrow	*Passer domesticus*	Schedule-IV
35.	Grey Tit	*Parus major*	Schedule-IV
36.	Red Vented Bulbul	*Pycnonotus cafer*	Schedule-IV
37.	Bank Myna	*Acridotheres ginginianus*	Schedule-IV
38.	Common Babbler	*Turdoides caudatus*	Schedule-IV
39.	Tailor Bird	*Orthotomus sutorius*	Schedule-IV
40.	Rose Ringed Parakeet	*Psittacula krameri*	Schedule-IV

S. No.	English Name	Scientific Name	Status/Schedule
41.	Baya	*Ploceus philippinus*	Schedule-IV
42.	Owl	*Bubo bubo*	Schedule-IV
43.	Indian Peafowl	*Pavo cristatus*	Schedule-I
		Pisces	
1.	Rohu	*Labeo rohita*	Least Concern
2.	Katla	*Catla catla*	Least Concern
3.	Calbasu	*Labeo calbasu*	Least Concern
4.	Cat fish	*Mystus cavasius*	Least Concern
5.	Black Fish	*Barbus chilinadea*	Least Concern
6.	Singi	*Clarias batrachus*	Least Concern
7.	Bronze Feather Back	*Notopterus notopterus*	Least Concern
8.	Ganges River Gizzard Shad	*Gonialosa manmina*	Least Concern
9.	Hilsa	*Tenualosa ilisha*	Not Listed
10.	Chelluah	*Aspidoparia morar*	Least Concern
11.	Barna Baril	*Barilius barna*	Least Concern
12.	Chaguni	*Chagunius chagunio*	Least Concern
13.	Common Carp	*Cyprinus carpio*	Least Concern
14.	Reba Carp	*Cirrhinus reba*	Least Concern
15.	Sind Danio	*Danio devario*	Least Concern
16.	Kharsa, Butter	*Labeo angra*	Least Concern
17.	Bata	*Labeo bata*	Least Concern
18.	Boga Bata	*Labeo boga*	Least Concern
19.	Kali, Boalla	*Labeo dyocheilus*	Least Concern
20.	Kuri, Khursa	*Labeo gonius*	Least Concern
21.	Swamp Barb	*Puntius chola*	Least Concern
22.	Great Snakehead	*Channa maruliuss*	Least Concern

7.2 Endangered Species:

Only single species i.e. ***Pavo cristatus*** is listed in the Schedule I under Wildlife Protection Act, 1972.

8. Aquatic Diversity:

8.1 Methodology For Aquatic Diversity:

The samples for qualitative and quantitative analysis of planktons were collected from the sub surface layer at knee depth. Water samples were filtered through plankton net of 20µ mesh size (APHA, 1971). The filtered samples were concentrated by using the centrifuge. By using Lackey's drops method and light microscope (Lackey, 1938), the qualitative analysis was carried

out for phytoplankton and zooplankton (Table 8). The standard flora and other literature were followed for the qualitative evaluation of Plankton.

Table 8: List of Phytoplankton & Zooplanktons from Study Area

PHYTOPLANKTON	ZOOPLANKTONS
Anabaena variabilis	*Anura Sp.*
Cladophora Sp.	*Arcella Sp.*
Cylindrospermum Sp.	*Asplancha Sp.*
Cypris Sp.	*Brachionus Sp.*
Desmodium Sp.	*Cyclops Sp.*
Diploneis Sp.	*Difflugia Sp.*
Euglena Sp.	*Horaella Sp.*
Gyrosigma Sp.	*Lecane Sp.*
Microcoleus chthonoplastes	*Nauplii Sp.*
Microcoleus paludosus	*Noctiluca Sp.*
Nostoc communae	*Testudinella Sp.*
Oedogonium Sp.	*Vorticella Sp.*
Oscillatoria Sp.	
Volvox Sp.	



CONSERVATION PLAN FOR INDIAN PEAFOWL

Biodiversity conservation plan is developed with the aim to reduce adverse impact on the natural habitat of various wild animals. Day by day issues related to threats to natural terrestrial and aquatic ecosystems arises due to high anthropogenic activities and loss of natural habitat due to climate change. A conservation plan is needed for the conservation of critical habitats of wildlife for endangered and schedule-I species along with their scientific management strategy. During the mining and conservation activities, natural resources (Land, Biodiversity, Forest, Animals and Humans) are likely to expert tremendous pressure due to various activities in the respective region, while the present management plan will ensure mitigation of such impacts. A separate Wildlife conservation Plan is proposed for M/s Indian Sucrose Limited at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian District-Hoshiarpur, Punjab.

1. INTRODUCTION:

For several centuries, in the West the peacock has been used for giving gardens and parks a graceful look. The ancient Greeks called it the Persian bird, which tells us that the peacock was originally traded between Persia and India.

Indian Peafowl (*Pavo cristatus*) is the largest of all pheasants and has been declared as the national bird of India since 1963 due to its flagship value founded on its glorious position in Indian mythology. It is believed to be widely distributed (IUCN Red List) and is fully protected under the Indian Wildlife Protection Act, 1972. In spite of the immense protection and wide distribution, the species is becoming locally extinct from several parts of its former range due to habitat conversion and changes in the cropping pattern, human interference, poaching, and pesticide-related issues. It is likely that some well-developed highly populated urban and industrial areas may not hold peafowl populations with exceptions of few pockets such as university or institutional campuses.

Table 2: Classification of Peafowl *(Pavo Cristatus)*

CLASSIFICATION	DETAILS
Kingdom	Animalia
Phylum	Chordata
Class	Aves
Order	Galliformes
Family	Phasianidat
Genus	*Pavo*

Species	*cristatus*
Vernacular Name	Mor or Peacock

2. GENERAL DESCRIPTION

Peacock or Indian peafowl (*Pavo cristatus*) is a familiar and universally known large pheasant. It is the National bird of India. The term “Peacock” is commonly used to refer to birds of both sexes. Technically, males are Peacock, females are peahens and together they are called peafowl. The male has a spectacular glossy green long tail feathers that may be more than 60 percent of the birds total body length. These feathers have blue, golden green and copper colored acelli (eyes). The long tail feathers are used for mating rituals like courtship displays. The feathers are arched into a magnificent shape across the back of the bird and almost touching on both sides. Females do not have these graceful tail feathers. They have the fan like crest with whitish face and throat, chestnut brown crown and hind neck, metallic green upper breast and mantle, white belly and brown back rump and tail. Their primaries are dark brown.

3. HABIT AND HABITAT

Peacocks are commonly found in dry areas, Forest areas and near the settlements. The male peacock has enormous tail feathers that fan out behind the peacock and can be nearly two meters in length. The male peacock attracts a female to mate with by showing off his array of elaborate feathers, and when the male peacock feels threatened, he will fan his tail out in order to make himself look bigger and therefore try to intimidate approaching predators. The Indian peacocks are also found in farmland, villages and increasingly more urban areas.

The peacock is an omnivorous bird and feeds on insects, plants, seeds, small mammals, reptiles and flowers. Male peacocks are known as mor and female peacocks are known as morni. The male peacock is generally about twice the size of the female peacock and even larger when the male peacock is displaying his feathers. The nest is made up of dry sticks, fodder, grass and leaves and is located on the ground, under shrubs. Breeding season between April to September. Indian peacock prefer a mostly solitary and isolated lifestyle. During the breeding season, a male will defend its territory and females will seek them out as mates. After and before of the breeding season, females live alone or with other females in groups of 2 or 4 and males also can live alone or with other males in groups.

4. PEAFOWL BEHAVIOR

- Indian peafowl stay in small flocks (harems) of 1 peacock (male) and 3-5 peahens (females).
- Peafowl run more than they fly. The only time they fly is when they have to cross a river or ravine, when trying to escape predators, and to roost up in trees.
- They forage in the early morning and shortly before sunset. In the morning they will bask on rock heaps or haystacks. They retreat to the shade and security of the forest for the hottest part of the day.
- Peafowl physically interact with each other usually during territorial disputes. They will attack each other with their beaks and claws, chasing and pecking at each other.
- Peafowl warn each other when danger approaches with loud, shrieking cries and honks. They also call during mating season.
- They usually roost in the same tree every night. They fly to the top branches of dead trees just a little after sunset and leave just before sunrise.

5. LIFE CYCLE

In captivity, birds have been known to live for 20-23 years but it is estimated that they live for only about 15 years in the wild. Males are called peacocks, females are peahens, and the young are known as peachicks.

Table 3: Life Cycle of Peafowl *(*Pavo Cristatus*)*

Call	Kee-ow, Kee-ow, Ka-an, Ka-an, Kok-kok, Kok-kok, cain-kok
Breeding	**April-September**
Nest side	On ground in undergrowth (wild), On buildings by semi-feral birds, in villages

6. REPRODUCTION

- Peafowl reach sexual maturity at approximately 2-3 years of age.
- Indian peafowl males pair with 2 or more females. Courtship displays happen in leks, which are breeding territories in close proximity to others. Females wander through several territories before choosing a male.
- During courtship, the male displays his train by fully fanning and lifting it above his head and performing various body movements. After mating, the male has no other involvement with the female or the chicks.

- Nests are a shallow depression dug in the ground concealed in scrub vegetation.
- Females lay a clutch size of 3-6 eggs. Incubation lasts 28-30 days.
- About 2 hours after hatching, the chicks are able to move around and follow the mother. They stay with her for about 9 months.

7. POPULATION STATUS

In the absence of reliable information and data, it is hard to place the current distribution status and population size of the species; although a conservative 'guesstimate' suggests that the population may exceed 100,000. While the species is becoming locally extinct from several parts of its former range due to habitat conversion and changes in the cropping pattern, poaching and pesticide related issues. There is no estimate of the size of surviving populations and the rate of loss from the entire country.

8. CONSERVATION STATUS

The Indian peafowl is listed as least concern species in the red list of international union for conservation of nature (Bird Life International, 2008), probably owing to its widespread distribution, occurrence of locally abundant semi-feral populations, and protection from people on religious grounds. In India, it is given the utmost protection by inclusion in the **Schedule I** of Wild Life Protection Act in 1972.

Table 4: Conservation Status of Peafowl *(Pavo Cristatus)*

IUCN	Others (Least Concern)
Wild Life (P) Act	Schedule-I
CITES	Not Listed

9. PREDATORS

Using their exceptionally keen eyesight and hearing peacocks often warn each other when danger approaches, by way of loud shrieking cries and honks. Normally they run to escape any threat, but will take to the air if necessary. Meanwhile, both Asian species have sharp, powerful spurs on their legs which they can use to protect themselves against lesser predators. Their greatest threat comes from animals like tigers and leopards, which treat them as a prime food source.

10. THREATS

The Indian peafowl is under threat from various quarters that include:

- The demand for feathers and wild meat, conflict with farmers during cropping season.
- Increased use of chemical fertilizers and pesticides.
- Habitat degradation and Fragmentation – more significantly from conversion of their habitat to agriculture, habitation, mining activities and industrial growth.
- Poisoning to counter crop damage.
- Consumption of eggs and fat extracts for alleged medicinal values.
- Killing for wild meat.
- Causalities caused by eating chemically treated agricultural crop seeds.
- Legal hunting by some communities.

10.1 IMPACT ON WATER QUALITY

The major sources of water pollution during mining are as follows:

a) Sewage from Plant offices and plant wastage etc.
b) Stacking of solid waste.

Adequate control measures are proposed by construction of sanitary toilets, segregation and storage of community waste in covered containers, proper solid waste management by construction of retaining walls at the toe dump, garland drains; check dams, siltation tanks, burying any unwanted offensive material etc. at appropriate places.

10.2 IMPACT DUE TO HUMAN ACTIVITY

Human activities are directly or indirectly responsible for loss of biodiversity. Some of the major issues are:

- Habitat loss, fragmentation and degradation result due to agricultural activities, extraction and development (human settlements, plant/industries and associate infrastructure).
- Habitat loss and fragmentation leads to the formation of isolated, small, scattered populations. These small populations are increasingly vulnerable to inbreeding depression, high infant mortality and are susceptible to stochastic environmental events and consequently, possible extinction.
- Poaching and hunting
- Invasive species and over exploitation of wild bio-resources.
- Air, water and noise pollution.

10.3 IMPACT DUE TO MOVEMENT OF VEHICLES

Due to plant, there will be increased vehicular movement for the transportation of sugarcane and their products, so, mineral dust is likely to be generated due to the movement of vehicles on unpaved and paved roads. Additionally packed material loaded on vehicles in this condition will also slightly generate dust in the environment. Water spraying on unpaved roads will be done to suppress the dust.

10.4 HABITAT THREAT

Loss of forest/Natural Vegetational area outside parks and reserve poses a major threat to wild animals because it causes population fragmentation, thereby leaving small, nonviable populations within the parks or their movements in human territories which raise conflicts. Furthermore, habitat degradation outside the parks, caused by overgrazing, overharvest of forest products, expansion of agricultural areas, and pollution due to plant activity, also possess threats to the habitat of species.

- **Habitat Improvement**

Wild animals in specific Habitat/forests, and also in some grassland, where scattered shrubs and trees provide shelter. Habitat of specie will be improved by planting suitable species in surrounding areas. The prey species preferred by carnivore animals will be conserved to insure sufficient prey availability, which will also reduce the conflict with humans.

Table 8 Budget for Conservation/Management Plan

S. No.	Component	Budget in Rs (Lakh)
1	Planting of trees groves in surrounding area and Promotion of agro forest in villages planting fruits trees	**10.00**
2	Artificial nests, feeding and watering arrangement for animals	**2.00**
4	Workshops, Training and awareness programs	**1.00**
5	Water supply	**1.00**
6	Contingency	**1.00**
Total		**15.00**

Socio-Economic Environment

Any developmental activity exerts a direct impact on the socio-economic environment of the region. Usually, the beneficial impacts such as better job opportunities, improved education, communication, energy, housing, health, transportation facilities etc. outweighs the adverse impacts, if any.

The study of socio-economic component of environment is incorporating various facets, viz. demographic structure, availability of basic amenities such as housing, education, health and medical services, occupation, water supply, sanitation, communication and power supply, prevailing diseases in the region as well as features such as places of tourist attraction and monuments of archaeological importance. The study of these parameters helps in identifying predicting and evaluating the likely impacts due to project activity in the surrounding region.

M/s. Indian Sucrose Limited is an existing Sugar mill of capacity 5000 TCD along with 19.5MW cogeneration power plant. The Owner of the unit has proposed to expand the capacity to 12000 TCD along with Co-generation power plant to 59.5 MW at Village- Chak Allabaksh and Mahiuldinpur Dalel, Tehsil-Mukerian Distt-Hoshiarpur, Punjab.

As per EIA Notification dated 14th Sep, 2006, as amended from time to time; the project falls under Category "B", Project or Activity 5(j) Sugar Industry, hence require Environmental Clearance. Presently there is no SEIAA/SEAC in Punjab hence the case is applied under category A and the case will be appraised at the level of MoEF&CC.

Baseline data such as demographic pattern, occupational status, educational, health and other amenities as existing in the study area have been studied.

I. Baseline Status

The latest available data has been complied to generate the existing socio-economic scenario of the study area. Information on socio-economic profile was collected from the Primary Census Abstract CD 2011 including the population details of the region.

District Profile

Hoshiarpur District-The district takes its name from Hoshiarpur town, which serves as district headquarters. Hoshiarpur derives its name. Firstly, it is said to have been founded by Hargobind and Ram Chand, Diwans of Muhammed Bin Tuglak (AD 1325-1351). The Second ascribes the foundation of the town to one Khan, a resident of Bajwara (a suburb village of Hoshiarpur) who lived about the same period and after whom the town was named.

According to 2011 census, Hoshiarpur district covers an area of 3386 sq. km and ranks eleventh in the state, out of which 142.29 sq. km is urban and 3243.71 sq. km is rural. The area has been derived by subtracting urban area of the district from the total area as supplied by the Surveyor General, India. The tehsil wise area as supplied by the Director, Land records, Punjab,is Dasua (842.37 sq. km), Hoshiarpur (1118.99 sq. km.), Garhshankar (795.67 sq. km.) and Mukerian (628.97 sq. km.) As of 2011 India census, Hoshiarpur had a population of 189,371. Males constitute 50.9% of the population and females 49.1%. Hoshiarpur has an average literacy rate of 85.40%, compared to 81.00% of 2001. Male literacy is 89.90%, and female literacy is 80.80%. In Hoshiarpur, 10% of the population is under 11 years of age.

- Females per 1,000 males: 962
- Density of population (per km².): 396
- Percentage increase in population (2001–2011): 7.1%
- Child sex ratio (0–6 Age): 859
- The Scheduled Caste population in this district is 34.3%

Mukerian Tehsil is a city and biggest municipal council of Hoshiarpur district of Punjab. As of 2011 India census, Mukerian city had a population of 129889. Males constitute 52% of the population and females 48%. Mukerian has an average literacy rate of 77%, higher than the national average of 59.5%: male literacy is 80%, and female literacy is 74%. In Mukerian, 11% of the population is under 6 years of age.Mukerian has about 150 villages around it. Majority of the population is employed in agriculture and are serving in Indian Defence forces in several capacities. Mukerian is a permanent base of the Indian Armed forces and its south part hosts Unchi Bassi cantonment and Mansar in north. Region hosts majority of military exercises and war games of Indian army.

The Socio-Economic Status of the study areas is mentioned below and the villages surveyed are enlisted in **Table 1**

Village

The basic unit for rural areas is the revenue village which has definite surveyed boundaries. The revenue village may comprise of one or more hamlets but the entire village is treated as one unit for presentation of data.

Study Area

The study area was defined as an area within 10 km radius around the proposed project site. Total 124 villages are coming within the 10 km radius of the study area. The villages are from Mukerian, Hazipur and Dasua Tehsil of Hoshiarpur District of Punjab State. Chak Allah Baksh comes in Mukerian Municipal Corporation.

Demographic Structure

Demographic structure of the study area was estimated for the selected parameters as households, population, sex ratio, scheduled caste, scheduled tribes, literacy from primary census abstract, CD 2011 of Punjab State. The summarized demographic structure of the study area is presented in **Table 2**, while the details of the parameters of demographic structure of the villages within 10 kms are shown in **Table 3**. The population details with the distribution of Scheduled Caste and Scheduled Tribes are shown in **Fig. 1**

Demographic Profile of the Study Area

- Total number of households are about 23091
- Total population of villages under the study area is 110139 out of which males are 55582 (50.46%) and females are 54557 (49.53%)
- The average family size is about 4.7 persons per family
- Sex ratio (No. of females per 1000 males) is 981 which indicates that females are less in number than their male counterpart in the study area
- Out of the total population, the population of children within the age of 0-6 age-group is about 11773 (10.68%)
- Child Sex ratio is 817 i.e No.of female child per 1000 male child

- Scheduled caste population is about 25107 (22.79%) while the Scheduled tribes population is Nil in the region
- Out of the total population in the region 83886 i.e 76.16% are literates

It can be inferred from the data obtained that area is on an average populated while it is observed that the adult female population is quite higher as compared to female population with the age-group of 0-6 years. Scheduled tribe population is nil in the study area.

Occupational Pattern/ Economic Resource Base

'Work' has been defined as participation in any economically productive activity. Such participation may be physical or mental. Persons on leave and under training are also treated as workers. However, rent receivers and pensioners are not treated as workers.

Total Workers

Occupational pattern of the villages within 10 km is presented in **Table 4.** Occupational pattern of any region mainly depends upon its economically active group i.e. the working populations involved in different economically productive activities. The total workers further categorized as main worker, marginal and the non-working population.

The workers coming under the main and marginal workers category are cultivators, agricultural labors and those engaged in live stock, forestry, fishing, hunting, and plantations, orchards and allied activities, mining and quarrying, manufacturing, processing, servicing and repairs in household industry, construction trade and commerce, transport, storage & communication, and other services

Different types of workers in total worker population may be classified and described below while presented in **Fig 2**–

A. Main Workers

Main workers are those who have worked for a major part of the year (i.e. at least six months or 183 days). Main activity of a person who was engaged in more than one activity was reckoned in terms of time disposition. 24681 (22.40%) of the total population comes under the main workers category from the villages coming in the project site. Main workers

are further classified into 4 categories viz., cultivators, agricultural laborers and household workers and other main workers

Cultivators

For purposes of the Census a person is classified as cultivator if he or she is engaged in cultivation on land owned or held from government or held from private persons or for payment in money, kind or share. The person who is engaged either as employer, single worker or family worker in cultivation of land is recognized as a cultivator. Cultivation involves ploughing, sowing, harvesting and production of cereals and millet crops such as wheat, paddy, jowar, bajra, ragi, etc., and other crops such as sugarcane, tobacco, ground-nuts, tapioca, etc., and pulses, raw jute and kindred fiber crop, cotton, cinchona and other medicinal plants, fruit growing, vegetable growing or keeping orchards or groves, etc. Cultivation does not include the following plantation crops–tea, coffee, rubber, coconut and betel-nuts (areca).

Maximum populations in the study area are engaged as Cultivators'i.e depended on agriculture. The cultivator population within the study area of rural region is 6530 i.e 26.45%.

Agricultural Laborers

Persons working on land owned by others for wages or share in the yield have been treated as agricultural laborers. Out of the total main worker category very few population are agricultural laborers i.e about 7.13%

Laborers in Household Industry

The laborers engaged in household activity are quite low in all the study area. Among the total main workers very few population are engaged in household activity i.e 886 in rural area

Other Workers

All main workers i.e. those who have been engaged in some economic activity during the last one year and who are neither cultivators nor agricultural laborers or household industry workers are classified as other main workers. The type of workers that come under this category includes factory workers, plantation workers, those in trade, commerce, business, transport, construction, political or social works, all government servants, municipal

employees, teachers, priests, entertainers, artists etc. The other worker category includes maximum population of 15505 (62.82%) from rural region

It can be concluded that maximum population from the villages are engaged in other activities which means either in service or business activity.

B. Marginal Workers

Marginal workers are those who have worked any time in the year for less than six months or 183 days but have not worked for a major part of the year. The population of marginal workers within the project site comprises of about 5236(4.75%)

C. Non-Workers

Non-Workers are those who have not worked any time at all in the year. Non-workers constitute householders, students, dependents, retired persons etc.

The economy of the study area is primarily based on agriculture. The agriculture sector has thus absorbed a major portion of the working force.

The categories of main workers, marginal workers & non workers are complementary to each other. Therefore, in areas where the proportion of main workers & marginal workers are high, the proportion of non workers would be naturally low. At present main workers category outweighs the marginal and non workers in the study area.

The proportion of female main worker population is high as compared to their male worker counterpart because in general rural areas offer more opportunities for men & women to work in agriculture & animal husbandry etc. In view of the labor intensive nature of agricultural economy a large number of women are required to participate in work especially during the peak seasons of agricultural operations like sowing & harvesting which are to be carried out in a short span of time covering large areas in each village. Non-worker population in rural area is 80222(72.83%)

Infrastructure Resource Base

The details of infrastructure resources base of the study area with reference to education, medical facility, water supply, post and telegraph, transportation, communication

facility, power supply, existence of nearest town etc. are presented in **Table 5**. The significant features of these important parameters for each study area are discussed as below:

. **Educational Facility**

The numbers of educational institution in the study area are primary schools (104) and private primary school are in 60 villages out of the total 124 villages, middle school (42), and Secondary schools (20), and 7 senior secondary school . For further studies people have to avail the facility from the nearest town i.e. Mukerian and Hoshiarpur town.

Drinking Water Facility

The numbers of major sources of drinking water in the study area is through Hand Pump in all 77 villages, Uncovered Well (37), Covered Well (29), untreated Tap water in 45 villages and Treated tap water in 92 villages of the study area.

Medical Facility

Medical institutions in rural parts of the region are inadequate, as per the data recorded in the village amenities CD there is Community Health Centre in 5 villages, Primary health Centre only in 6 villages, Primary health sub-centre in 8 villages, Maternal Child Welfare Centre in 10 villages and Dispensary in 14 villages. People generally prefer for private hospitals because of the inadequate and poor facilities at government hospitals.

Sanitation & Drainage Facility

Sanitation facility is poor in the villages of the study area. 97 Villages have the open drainage system while the covered drainage system is available in 42 villages.

Communication Facility

Communication facility is available in the form of Post office is available in only 5 villages and telephone connections are available in 122 villages.

Transportation Facilty

Public Bus Service is the main mode of transportation available in 25 villages and Railway Station is in 6 villages while the nearest railway station is at Mukerian approximately 4.5 kms from the project site.

Approach Road

Pucca roads are available in 122 villages . This shows that the approach roads are available in all the villages which makes easier to travel to long distances.

Power Supply

Electricity is available for domestic in the 122 villages of the study area but is available for only 10-12 hours a day. Electricity is also available for agriculture purpose in 121 villages.

ATMs and COMMERCIAL BANKS

The data collected from the census village directory shows that the ATM facility is available in only 1 village while the commercial banks are in 5 villages.

Economic Resource Base

Agriculture:

Out of a total cultivated area of 363,000 hectares, (food crops alone account for 316,000 hectares and area under non-food crops is only 47,000 hectares) 183,000 hectares in Kharif season whereas 180,000 hectares in Rabi season. The important crops as per area during the year 2009-10 are wheat 153,000 hectares, Maize 67,000 hectares, Rice 70,000 hectares, Sugarcane 14,000 hectares and potato 16.800 hectares. The reason for poor output is because sizeable areas of the district are hilly and sub-mountain, where availability of irrigation facilities are far from satisfactory.

Health Status

Health of the people is not only a desirable goal, but it is also an essential investment in human resources. As per the National Health Policy (1983), Primary Health Care has been accepted as main instrument for achieving this goal of development and strengthening rural health infrastructure through a three-tier system, viz., Primary Health Center (PHCs), Primary Health Subcentres (PHS) and Community Health Centers have been established to provide heath care facility not only to the resident population of the concerned villages but also to the neighboring villages.

Primary Health Centers - PHC is the first contact point between village community and the Medical Officer. The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care.

Primary Health Sub-Centers - Sub-Centers are assigned tasks relating to interpersonal communication in order to bring about behavioral change and provide services in relation to

maternal and child health, family welfare, nutrition, immunization, diarrhea control and control of communicable diseases programmes.

Community Health Centre - Community Health Centre (CHCs) are being established and maintained by the State Government under MNP/BMS programme. As per minimum norms, a CHC is required to be manned by four medical specialists i.e. Surgeon, Physician, Gynecologist and Pediatrician supported by 21 paramedical and other staff.

Lack of building, shortage of manpower and inadequate provision of drug supplies are hampering the operation of these units. The standards to be met according to National Rural Health Care System are given below:

Population	Medical Facility & Infrastructure	Personnel
3000-5000	1 Sub centre (Contact Unit of PHC and Community)	1 Health Worker (Female)/ Auxiliary Nurse Midwives & 1 Health Worker (Male)
20,000-30,000	1 PHC (Unit of 6 Sub-Centers)- 6 beds	Medical officers & 14 Paramedical Staff
80,000-1,20,000	Community Health Centre (Referral Unit-4 PHCs)- 30 Bedded Hospital	Medical superintendent

Source: National Rural Health Care System in India (2005-12)

During the study it was revealed that within the study area of 10 km radius there are Community Health Centre(5), Primary Health Centres in 6 villages while the Primary Health Sub-centres are in 8 villages of study area. As per the data of District Human Development Report the prevalence of diseases, it was noted that in Hoshiarpur district 37 persons per 100,000 populations were reported to be suffering from Tuberculosis (RCH-RCS-2002). Tuberculosis (TB) was the most prevalent disease in the villages. In Hoshiarpur district prevalence of Malaria was 121 per 100,000 populations in 2002- 04 (RCH-RHS, 2002-04). It is attributed from the data that different health problems are reported which could be attributed to improper sanitation, lack of health awareness among the people and lack of health related infrastructure facilities.

II. Cultural and Aesthetic Attributes

As such no culturally and aesthetically important places are located within the 10 kms radius of the study area.

Socio-economic Survey

In order to access and evaluate likely impacts arising out of any development projects on socio economic environment, it is necessary to gauge the apprehensions of the people in the study areas.

III. Methodology applied for selection of sample & data collection

The methodology which is applied for primary source of data collection i.e. gathering data through field survey for socio-economic environment is depicted below:

A Sampling Method

A judgmental and purposive sampling method was used for choosing respondents of various sections of the society i.e. Sarpanch, adult males and females, teachers, medical practitioners, businessmen, agriculture laborers, unemployed group etc. Judgmental and purposive sampling method includes the right cases from the total population that helps to fulfill the purpose of research needs.

B Data Collection Method

For the process of data collection through primary source certain methods are used among that are:

Field Survey and Observations

Field survey and observations is made at each sampling village and the socioeconomic status of that region is studied. Visits are made at hospitals, primary health centers and sub-centers to know the health status of the region. Various governmental organizations such as statistical department, department of census operations are visited to collect the population details of that region.

Interview Method

Structured interview method is used to collect data regarding the awareness and opinion from the samples selected of the various socio- economic sections of the community. Structured interviews involve the use of a set of predeterprojectd questions that includes fixed and alternative questions. The questionnaire mainly highlights the parameters such as income,

employment and working conditions, housing, food, water supply, sanitation, health, energy, transportation and communication, education, environment and pollution to assess the standard of living of that particular region and general awareness, opinion and expectation of the respondents about the proposed project. Interview method helps to collect more correct and accurate information as the interviewer is present during the field survey.

Socio-economic survey was conducted in the villages within the study areas located in all directions with reference to the clusters. 8 villages were surveyed from study area.

The respondents were asked for their awareness / opinion about the existing plant and also of their opinion about the impacts of the project which are an important aspect of socio-economic environment, viz. job opportunities, education, health care, housing, transportation facility and economic status.

The salient observations recorded during socio economic survey in the study areas are depicted below:

- Majority of main workforce are engaged in others activity such as service and business
- Majority of workers are practicing farming activities without any irrigation source, it means that area under irrigation is very low and maximum area is covered by unirrigated land
- Most of the villages have Primary School (PS) while in some villages it is extended up to Middle School (MS). While for further education villagers go to the town place that is to Mukerian and Hoshiarpur town.
- The main source of drinking water supply is through treated tap water facility, Hand pump and uncovered well. But majority of respondents expressed unsatisfactory opinion regarding the availability of drinking water facility as the villages mainly have open wells which are not portable for drinking
- The Government medical facilities in the form of primary health sub- centre and private medical representatives are available in village. ANM (Auxiliary Nurse Midwife) frequently visits all the villages and regular vaccination and health checkup camps are organized by the health centre

- Two wheelers, Private jeep & bus facility are the main mode of transportation used by natives in the study area
- Power supply is available in mostly all the sampling villages. Street lights are also available in all villages
- Wood and LPG gas fuel is used for cooking purpose while is gas agency is available only with few villages
- Majority of surveyed population opted positive response regarding the proposed project activities as most of the local population will be given preference in employment and the activity will help in development of auxiliary as well as ancillary jobs in the region.

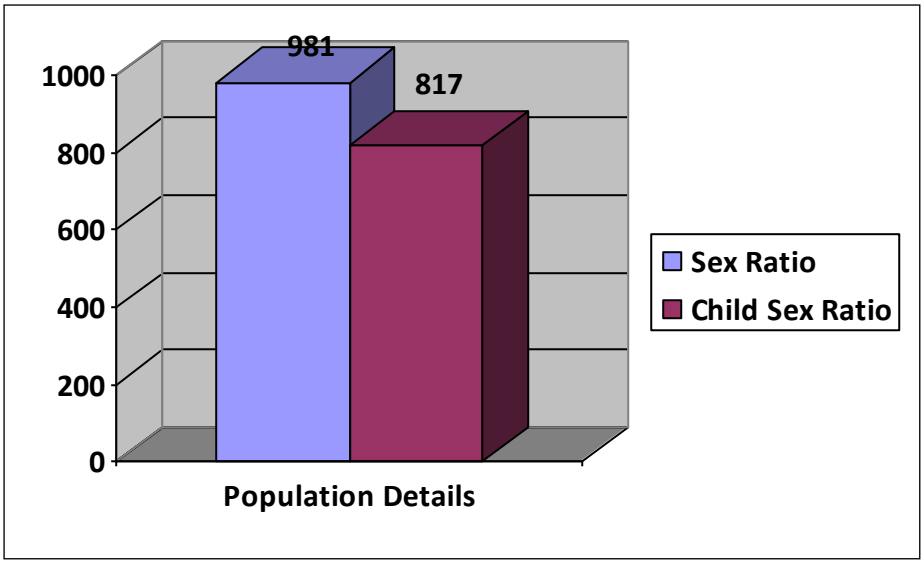


FIG 1 BAR DIAGRAM REPRESENTING RATIO OF ADULT SEX RATIO AND CHILD SEX RATIO (RURAL &URBAN AREA)

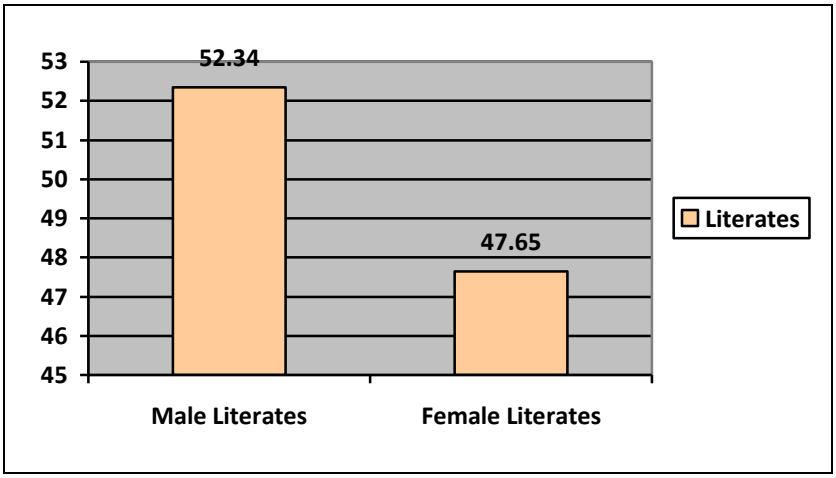


FIG 2 REPRESENTING THE PERCENTAGE OF LITERATES IN THE STUDY AREA

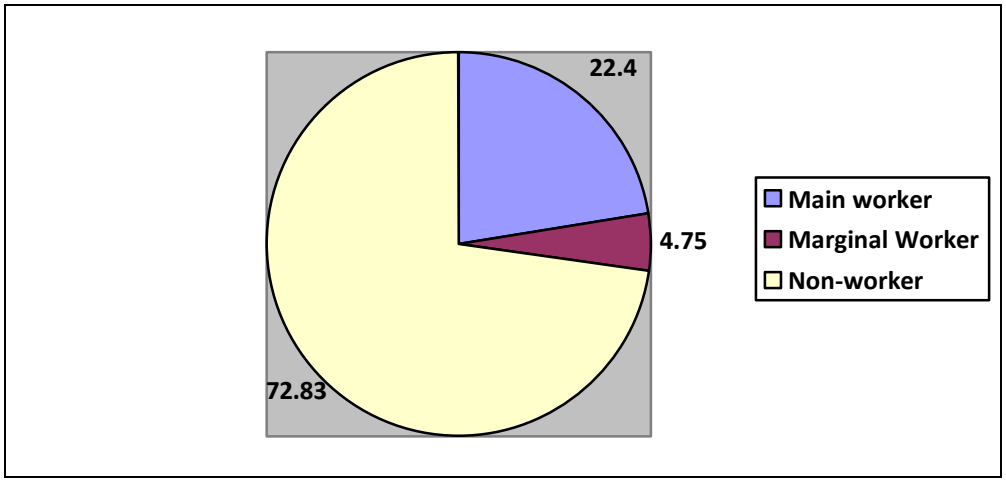


FIG.3 OCCUPATIONAL PATTERN OF THE STUDY AREA

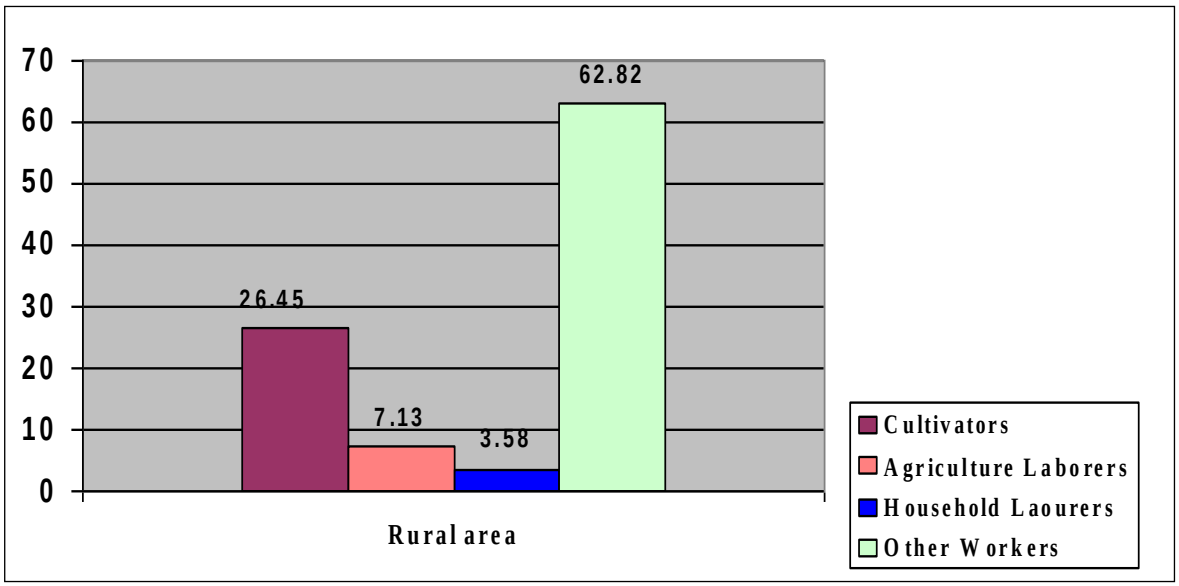


FIG 4 BAR DIAGRAM REPRESENTING THE PERCENTAGE OF CATEGORY OF WORKERS

TABLE 1

LIST OF THE VILLAGES FOR FIELD SURVEY OF SOCIO-ECONOMIC ENVIRONMENT

Sr. No.	Villages	Direction from the Project Site
1.	Mahi Ul Dinpur	Project Site
2.	Bishanpur	S
3.	Mukerian	N
4.	Attalgarh	NW
5.	Dugri Raj Putan	W
6.	Latifpur	S
7.	Khanpur	SE
8.	Panjdhera Kalan	E

TABLE 2

SUMMARIZED DEMOGRAPHIC STUCTURE OF THE STUDY AREA

Sr.No.	Parameter	Study Area
1.	No. of Villages	124
2.	Household	23091
3.	Household Ratio	4.7
4.	Total Population	110139
5.	Male Population	55582(50.46)
6.	Female Population	54557(49.53)
7.	Population (0-6 Years)%	11773(10.68)
8.	Sex Ratio	981
9.	Child Sex Ratio	817
10.	Scheduled Caste %	25107(22.79)
11.	Scheduled Tribes %	Nil
12.	Literates %	83886(76.16)
13.	Main Workers %	24681(22.40)
i)	Cultivators %	6530(26.45)
ii)	Agricultural Labourers %	1760(7.13)
iii)	Household Labourers %	886(3.58)
iv)	Other workers %	15505(62.82)
14.	Marginal Workers %	5236(4.75)
15.	Non-Workers %	80222(72.83)

Source: PCA Census 2011, Punjab State

TABLE 3

DEMOGRAPHIC STRUCTURE OF THE STUDY AREA

Sr.No.	Villages	Households	Total Population	Population (0-6 Years)	Scheduled Caste	Literates
Punjab State						
Hoshiarpur District						
Mukerian Tehsil						
1.	Mahi-Ul-Dinpur Gazi(311)	159	741	74	152	528
2.	Bishanpur (235)	178	817	64	76	634
3.	Latifpur (238)	133	609	62	211	468
4.	Bhatian Jattan (247)	141	695	63	164	529
5.	Salehrian Khurd (248)	207	942	113	114	706
6.	Dugri Raj Putan (237)	425	2052	217	775	1604
7.	Muradpur (242)	175	925	94	112	665
8.	Chhangla (241)	191	891	109	230	703
9.	Umarpur (209)	76	380	39	4	284
10.	Alipur (210)	96	524	49	69	419
11.	Taggar Khurd (211)	94	432	39	38	341
12.	Khanpur (212)	228	1110	118	118	860
13.	Samra (243)	94	484	61	89	369
14.	Chakowal (440)	179	961	86	105	740
15.	Amirpur (438)	115	610	92	13	472
16.	Baopur (437)	88	418	41	39	308
17.	Bagrohi (435)	69	353	38	0	257
18.	Papin (244)	56	260	25	0	188
19.	Mehndipur (434)	251	1120	138	41	799
20.	Mauli (433)	113	526	55	0	392
21.	Abdullapur (432)	260	1313	140	0	1043
22.	Barota Urf Puro Nangal (245)	109	462	59	176	336
23.	Tanda Ram Sahai (246)	578	2478	296	209	1887
24.	Golra (251)	146	657	69	296	530
25.	Kalas (250)	130	623	57	186	461
26.	Attalgarh (249)	389	1856	214	635	1207
27.	Manj Kala (265)	157	740	80	154	576
28.	Pawar (266)	159	767	91	20	576

29.	Khichian (261)	391	1860	204	488	1409
30.	Bhattian Rajputtan (260)	151	700	64	101	557
31.	Porika (259)	368	1671	154	155	1293
32.	Ghalian (252)	59	292	33	40	217
33.	Talwandi Khurd (253)	4	15	2	0	13
34.	Kale Bagh (254)	83	402	43	89	292
35.	Miani Malahan (430)	6	41	8	0	18
36.	Taggar Kalan (431)	214	1065	129	48	768
37.	Zahidpur (428)	240	1197	151	12	847
38.	Tur (255)	84	418	54	29	297
39.	Taluwal (256)	59	271	27	6	206
40.	Kolian (258)	288	1395	152	291	1053
41.	Chhant (257)	153	721	83	118	521
42.	Noshehra (427)	436	2172	229	279	1651
43.	Kalechpur Kalota (426)	137	637	69	110	497
44.	Chhanian Kalan (268)	60	290	40	0	218
45.	Man (267)	147	646	63	117	505
46.	Budhupur (269)	257	1279	130	161	975
47.	Talwandi Kalan (270)	154	763	69	85	597
48.	Musahibpur (312)	415	2040	213	442	1615
49.	Chhanian Rai Ide Khan (314)	86	434	45	0	323
50.	Hoshiarpur Kalota (425)	246	1195	120	278	843
51.	Sadullapur Kalota (424)	205	1006	118	87	731
52.	Salehrian Kalan (313)	253	1226	170	364	914
53.	Ghasitpur (271)	160	865	105	333	633
54.	Manjpur (317)	275	1127	100	170	863
55.	Bhangala (322)	1405	6786	686	2324	5204
56.	Naharpur (335)	93	446	51	117	291
57.	Dhaula Khera(310)	226	1201	134	279	944
58.	Gujjar Katrala (281)	191	849	72	445	637
59.	Singo Katrala (282)	244	1120	133	403	841
60.	Nangal Awana (336)	105	487	47	244	400
61.	Saroa (337)	48	253	31	80	184
62.	Kajla (334)	26	128	12	27	102

63.	Sahota (325)	99	455	40	47	370
64.	Mahiul-Dinpur Dalel (234)	378	1716	162	423	1376
65.	Kharak Balrah (274)	139	625	59	311	482
66.	Fattuwal (272)	221	975	107	339	757
67.	Budhewal (273)	67	313	38	125	243
68.	Trangalian (276)	147	747	73	169	602
69.	Dhido Katrala (280)	33	155	12	61	131
70.	Pandori (192)	432	2108	209	471	1648
71.	Mehatpur (216)	131	644	70	191	519
72.	Mansurpur (215)	406	1786	164	299	1349
73.	Sherpur (214)	140	644	74	210	473
74.	Aima Mangat (213)	224	1005	100	167	834
75.	Pind Sahibka (201)	119	547	63	15	411
76.	Gaunspur (199)	120	504	50	250	403
77.	Devi Dass (198)	165	760	71	279	599
78.	Makha (200)	134	703	71	578	523
79.	Langah (202)	87	419	49	199	319
80.	Aulia (207)	124	597	58	96	478
81.	Jamalpur Khurd (208)	4	17	1	6	16
82.	Sihan (203)	104	497	56	110	396
83.	Dhanoya (206)	389	1895	184	358	1454
Total		**15928**	**75856**	**8035**	**16452**	**57724**
Hazipur Tehsil						
84.	Khizarpur (366)	277	1453	167	0	1082
85.	Daggan (290)	408	2042	235	637	1545
86.	Dalowal (291)	136	608	64	200	457
87.	Begpur Kamloh (292)	140	691	63	196	551
88.	Zahidpur (289)	142	663	72	302	574
89.	Patial (288)	116	560	72	76	415
90.	Kalo Chahang (287)	185	905	106	156	676
91.	Gahlarian (275)	212	953	87	131	773
92.	Piru Chak (279)	0	0	0	0	0
93.	Chahang Hamel (285)	190	872	107	93	642
94.	Malkowal (286)	115	563	57	164	447
95.	Chima (283)	86	422	50	123	320
96.	Pota (284)	144	659	59	277	548
97.	Nansota (296)	72	360	46	7	278
98.	Bariah (295)	122	564	50	265	451
99.	Dhamian (294)	211	931	113	110	682
100.	Mohri Chak (293)	125	630	83	141	482

101.	Ransota (228)	166	865	98	228	688
102.	Ittian (229)	160	836	119	181	497
103.	Dhirowal (232)	71	353	25	77	283
104.	Sunderpur (227)	85	387	30	3	323
105.	Barnala (222)	167	766	84	432	579
106.	Singhpur (223)	175	866	105	205	658
107.	Kaulpur (189)	139	599	63	206	437
108.	Daulowal (188)	165	859	93	352	667
109.	Balhaddah (190)	109	527	58	53	398
110.	Jhigla Pind (191)	60	297	43	0	231
111.	Jamalpur Kalan (193)	57	268	31	0	207
112.	Bhagran (221)	74	340	35	65	258
113.	Barota Urf Puro Nangal (220)	134	687	69	204	530
114.	Muradpur (233)	309	1418	133	298	1109
115.	Panjdhera Gazi (218)	24	101	6	0	86
116.	Panjdhera Rahia (219)	140	589	58	62	439
117.	Panjdhera Kalan (217)	197	966	99	366	725
118.	Singowal (231)	251	1261	126	256	1062
Total		**5164**	**24861**	**2706**	**5866**	**19100**
Dasua Tehsil						
119.	Chak Kasim (150)	93	456	72	100	303
120.	Unchi Bassi (195)	718	3273	323	541	2676
121.	Lamin (194)	343	1573	170	504	1206
122.	Fatehgarh (151)	131	607	52	254	492
123.	Gag Sultan (182)	157	762	101	627	518
124.	Ghogra (183)	557	2751	314	763	1867
Total		**1999**	**9422**	**1032**	**2789**	**7062**
Grand Total		**23091**	**110139**	**11773**	**25107**	**83886**

Source: PCA Census 2011, Punjab State

TABLE 4

OCCUPATIONAL STRUCTURE OF THE STUDY AREA

Sr.No.	Villages	Total Main Workers	Main Workers				Marginal Workers	Non-Workers
			Cultivators	Agricultural Laborers	Household Laborers	Other Workers		
Hoshiarpur District								
Mukerian Tehsil								
1.	Mahiul-Dinpur Dalel (234)	331	90	20	12	209	18	1367
2.	Bishanpur (235)	224	58	23	9	134	47	546
3.	Latifpur (238)	159	49	12	5	93	24	426
4.	Bhatian Jattan (247)	166	34	1	8	123	2	527
5.	Salehrian Khurd (248)	178	5	11	3	159	57	707
6.	Dugri Raj Putan (237)	502	49	11	9	433	50	1500
7.	Muradpur (242)	130	55	3	2	70	121	674
8.	Chhangla (241)	164	70	18	15	61	80	647
9.	Umarpur (209)	60	38	1	3	18	31	289
10.	Alipur (210)	118	4	41	3	70	4	402
11.	Taggar Khurd (211)	106	26	4	1	75	4	322
12.	Khanpur (212)	221	55	25	12	129	52	837
13.	Samra (243)	113	32	43	4	34	15	356
14.	Chakowal (440)	347	29	56	130	132	23	591
15.	Amirpur (438)	5	3	1	1	0	43	562
16.	Baopur (437)	97	11	7	1	78	4	317
17.	Bagrohi (435)	78	33	6	0	39	57	218
18.	Papin (244)	57	32	1	0	24	49	154
19.	Mehndipur (434)	180	74	14	8	84	19	921
20.	Mauli (433)	132	75	12	2	43	3	391
21.	Abdullapur (432)	283	44	6	0	233	30	1000
22.	Barota Urf Puro Nangal (245)	84	39	2	0	43	22	356
23.	Tanda Ram	430	128	38	11	253	56	1992

	Sahai (246)							
24.	Golra (251)	137	41	37	6	53	26	494
25.	Kalas (250)	135	28	12	4	91	3	485
26.	Attalgarh (249)	365	38	7	1	319	114	1377
27.	Manj Kala (265)	183	47	5	2	129	47	510
28.	Pawar (266)	163	16	5	3	139	23	581
29.	Khichian (261)	453	41	10	1	401	13	1394
30.	Bhattian Rajputtan (260)	181	26	1	0	154	1	518
31.	Porika (259)	361	86	7	13	255	7	1303
32.	Ghalian (252)	118	28	2	20	68	2	172
33.	Talwandi Khurd (253)	6	2	0	0	4	0	9
34.	Kale Bagh (254)	94	3	6	5	80	10	298
35.	Miani Malahan (430)	8	0	0	0	8	1	32
36.	Taggar Kalan (431)	227	32	15	0	180	73	765
37.	Zahidpur (428)	276	115	76	7	78	82	839
38.	Tur (255)	102	21	4	2	75	5	311
39.	Taluwal (256)	75	17	10	2	46	7	189
40.	Kolian (258)	406	115	11	3	277	18	971
41.	Chhant (257)	276	27	8	0	241	0	445
42.	Noshehra (427)	529	140	8	6	375	156	1487
43.	Kalechpur Kalota (426)	125	22	2	0	101	12	500
44.	Chhanian Kalan (268)	82	29	0	1	52	15	193
45.	Man (267)	150	73	8	3	66	16	480
46.	Budhupur (269)	341	102	9	2	228	13	925
47.	Talwandi Kalan (270)	123	32	0	1	90	63	577
48.	Musahibpur (312)	472	187	35	10	240	119	1449
49.	Chhanian Rai Ide Khan (314)	138	28	10	2	98	53	243
50.	Hoshiarpur Kalota (425)	131	50	0	0	81	164	900
51.	Sadullapur Kalota (424)	135	39	6	0	90	86	785
52.	Salehrian Kalan (313)	218	64	25	14	115	107	901

53.	Ghasitpur (271)	229	35	47	8	139	7	629
54.	Manjpur (317)	274	87	5	0	182	19	834
55.	Bhangala (322)	1594	229	66	156	1143	211	4981
56.	Naharpur (335)	67	29	0	1	37	43	336
57.	Dhaula Khera(310)	285	47	14	2	222	9	907
58.	Mahi-Ul-Dinpur Gazi(311)	201	91	1	0	109	1	539
59.	Gujjar Katrala (281)	247	26	12	15	194	22	580
60.	Singo Katrala (282)	276	40	27	14	195	26	818
61.	Nangal Awana (336)	75	10	0	0	65	19	393
62.	Saroa (337)	57	27	4	0	26	2	194
63.	Kajla (334)	29	11	2	0	16	0	99
64.	Sahota (325)	93	39	5	1	48	1	361
65.	Kharak Balrah (274)	137	1	36	7	93	4	484
66.	Fattuwal (272)	239	55	20	3	161	11	725
67.	Budhewal (273)	76	27	2	1	46	2	235
68.	Trangalian (276)	176	129	12	14	21	9	562
69.	Dhido Katrala (280)	41	11	4	4	22	3	111
70.	Pandori (192)	419	125	10	15	269	114	1575
71.	Mehatpur (216)	184	89	25	5	65	2	458
72.	Mansurpur (215)	444	142	57	2	243	9	1333
73.	Sherpur (214)	113	50	3	1	59	45	486
74.	Aima Mangat (213)	246	172	5	1	68	21	738
75.	Pind Sahibka (201)	77	52	6	0	19	55	415
76.	Gaunspur (199)	107	28	7	0	72	4	393
77.	Devi Dass (198)	189	67	34	10	78	31	540
78.	Makha (200)	46	15	0	4	27	117	540
79.	Langah (202)	53	29	7	0	17	55	311
80.	Aulia (207)	71	10	3	2	56	72	454
81.	Jamalpur	0	0	0	0	0	5	12

	Khurd (208)							
82.	Sihan (203)	36	10	8	0	18	146	315
83.	Dhanoya (206)	476	122	35	3	316	9	1410
Total		**16732**	**4287**	**1132**	**616**	**10697**	**3121**	**56003**
Hazipur Tehsil								
84.	Khizarpur (366)	204	96	4	6	98	138	1111
85.	Daggan (290)	381	79	7	36	259	187	1474
86.	Dalowal (291)	145	64	1	0	80	4	459
87.	Begpur Kamloh (292)	93	52	1	1	39	58	540
88.	Zahidpur (289)	139	58	6	6	69	246	278
89.	Patial (288)	134	58	17	0	59	1	425
90.	Kalo Chahang (287)	200	110	22	5	63	33	672
91.	Gahlarian (275)	171	62	12	2	95	0	782
92.	Piru Chak (279)	0	0	0	0	0	0	0
93.	Chahang Hamel (285)	189	72	15	2	100	41	642
94.	Malkowal (286)	91	36	2	1	52	51	421
95.	Chima (283)	120	38	27	15	40	18	284
96.	Pota (284)	97	45	7	5	40	97	465
97.	Nansota (296)	112	8	0	2	102	81	167
98.	Bariah (295)	111	30	7	1	73	20	433
99.	Dhamian (294)	342	58	13	126	145	55	534
100.	Mohri Chak (293)	107	59	3	0	45	103	420
101.	Ransota (228)	241	53	1	17	170	16	608
102.	Ittian (229)	291	68	23	0	200	44	501
103.	Dhirowal (232)	95	64	0	0	31	12	246
104.	Sunderpur (227)	90	35	1	4	50	12	285
105.	Barnala (222)	126	40	19	5	62	80	560
106.	Singhpur (223)	187	56	7	1	123	64	615
107.	Kaulpur (189)	102	33	7	0	62	45	452
108.	Daulowal (188)	191	31	28	3	129	48	620
109.	Balhaddah (190)	135	95	3	0	37	20	372
110.	Jhigla Pind (191)	51	23	9	0	19	19	227
111.	Jamalpur Kalan (193)	52	16	0	0	36	1	215
112.	Bhagran (221)	89	40	7	0	42	14	237
113.	Barota Urf	151	1	55	4	91	17	519

	Puro Nangal (220)							
114.	Muradpur (233)	332	56	32	2	242	4	1082
115.	Panjdhera Gazi (218)	27	16	1	0	10	4	70
116.	Panjdhera Rahia (219)	101	31	10	1	59	36	452
117.	Panjdhera Kalan (217)	298	124	27	2	145	32	636
118.	Singowal (231)	261	86	134	2	39	2	998
Total		**5456**	**1793**	**508**	**249**	**2906**	**1603**	**17802**
Dasua Tehsil								
119.	Chak Kasim (150)	82	43	1	0	38	48	326
120.	Unchi Bassi (195)	1045	108	64	4	869	95	2133
121.	Lamin (194)	362	60	8	0	294	83	1128
122.	Fatehgarh (151)	169	35	23	0	111	6	432
123.	Gag Sultan (182)	200	22	15	0	163	39	523
124.	Ghogra (183)	635	182	9	17	427	241	1875
Total		**2493**	**450**	**120**	**21**	**1902**	**512**	**6417**
Grand Total		**24681**	**6530**	**1760**	**886**	**15505**	**5236**	**80222**

TABLE 5

INFRASTRUCTURE RESOURCE BASE OF THE STUDY AREA

Sr.No.	Amenities	Availability in Number
1.	Education Facility	P(104),Pvt.P(60), M(42), S(20), SSc(7)
2.	Medical Facility	CHC(5), PHC(6), PHS(8), MCW(10),D(14)
3.	Drinking Water Facility	T (92) , UCW(37), HP(77)
4.	Drainage Facility	OD(97),CD(42)
5.	Communication Facility	PO(5), M(122)
6.	Transportation Facility	BS(25),RS(6)
7.	Approach Roads	PR(122)
8.	Power Supply	ED(122), EAG(121)

Source: Village amenities 2011, Punjab State

Abbreviations:

Educational Institutions			**Medical Facilities**			**Drinking Water Supply**			**Communication**		
P	:	Primary School	PHC	:	Primary health Centre	T	:	Tap Water	PO	:	Post Office
M	:	Middle School	PHS	:	Primary health sub centre	W	:	Well Water	PH	:	Phone connections
S	:	Secondary School	MCW	:	Maternal & Child Welfare	HP	:	Hand pump	**Drainage Facility**		
SSc	:	Senior Secondary School							OD	:	Open Drainage
Power Supply			**Approach Road**			**Transportation**					
ED	:	Electricity for domestic purpose	PR	:	Pucca Road	BS	:	Bus			
EAG	:	Electricity for Agriculture Purpose	KR	:	Kuccha road	RS	:	Railway Station			

CHAPTER 4 (IMPACTS AND MITIGATION)

IMPACT ON SOCIO-ECONOMIC ENVIRONMENT

Critically analyzing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate both positive and negative impacts of the proposed project in the region that are stated below.

Positive Impacts

No Rehabilitation

The villages and their inhabitants at the project site will not be disturbed from their settlements due to the proposed project. Therefore neither villages nor any part of village or any hamlet will be disturbed during the project. As the project operations will not disturb or relocate any village or settlement, no adverse impact is anticipated on any human settlement.

Employment potential –skilled; semi-skilled and unskilled:

- As per the survey it has been observed that the population in general do not have opportunities of earning from employment and the non worker population is higher in the region so the project in general will require total manpower of about 350 persons for the proposed project which will include all Categories of unskilled, semiskilled, skilled personnel and contract labour.
- The proposed project will help to increase in demand of ancillary services including hotels, lodges, retail shops, banks, automobile workshops, school, health care centres, public transport and other logistics services.
- This will help in upliftment of local people in terms of economy and social welfare and will lead economic upliftment of the area.

Indirect Employment Potential

The project might be creating more demand for cane cultivating people and labor and business people.The project shall have positive impact on demand for the land value, which will generate more income for the local people.

No burden in the existing Infrastructure Facilities

Local work force will be given first preference in the activity due to which influx of the outsiders is not envisaged or it will be very minimal. Thus, there will not be the necessity of provision of housing facility for the local workers and not stressing on the existing civic amenities of the area. If sufficient number of local workers will not be available, then workers from outside will be engaged. For the outside workers if any, housing arrangement and the facilities will be provided at the project site. The projects will benefit the local people due to the civil construction and transportation companies.

Improvement in Infrastructure

The activity will benefit the local people due to provision of more infrastructural facilities such as developments of approach routes within the village area, street light, health facilities etc.

Adverse Impacts:

Impacts on Human Health

As discussed adequate air, water and noise pollution control measures in compliance to the regulatory standards will be provided in the proposed project.

- Boiler ash and ETP sludge will be collected and given to the farmers. Molasses will be sold and press mud will be given to the farmers.
- Waste water from domestic use and industrial use will be treated in STP and ETP respectively and after treatment the water will used in green belt development, floor washing and sprinkling
- The overall impact on human health will be insignificant during operation phase.

Impacts on Agriculture

Productivity of crops may be deteriorated affecting the agriculture based livelihood due to the pollution arising out of the project activity, if proper mitigation measures are not implemented.

Qualitative Effects on Socio-economic Environment

Parameter	Local	Regional	Direct	Indirect	Reversible	Irreversible
Employment	+	•	+	+	•	+
Income	+	•	+	+	•	+
Transport	+	+	+	+	•	+
Education	+	•	+	•	•	+
Medical facilities	+	•	+	•	•	+
Communication	+	+	+	•	•	+
Sanitation	-	•	-	•	•	-
Housing	+	•	+	•	•	+
Health	-	•	-	-	•	-
Recreation	+	+	•	+	•	+
Agriculture	-	•	-	-	•	-
Cost of living	+	•	•	-	•	+
Business	+	+	+	•	•	+
Per Capita Income	+	+	+	•	•	+
Pollution	-	•	-	•	•	•

+ : Positive
- : Negative
• : Insignificant

MITIGATION MEASURES OF SOCIO ECONOMIC ENVIRONMENT

- Adequate measures have been envisaged in the project design to control air pollution. Proposed adequate & effective control measures will be provided to mitigate the impacts
- Awareness programs shall be arranged on health, hygiene and sanitation
- Periodic health checkup camps, shall be organized by project authority for villagers, contract laborers, employees and their family
- Apart from the normal health check up, emphasis shall also be given to prevent specific diseases originating due to emission of different pollutants such as respiratory aliments, skin problems, water borne diseases, hearing abilities etc.
- Job oriented training courses must be organized through industrial / technical training institutions for educated youth like electrical, tailoring, plumbing, type writing, shorthand and machine repairing, welding fabrication, and other skill developing trades
- Whenever necessary, collaboration between project authority and local bodies will be done on regular basis with an objective to build and maintain a good relationship which is necessary for smooth functioning of the project as well as progress and welfare of the people in the study area
- Awareness programs will be taken to make people aware about the environmental protection, need of water conservation etc.
- At the work place, first aid facilities shall be maintained at a readily accessible place with necessary appliances including sterilized cotton wool etc. Ambulance facility shall also be provided during emergency
- Sufficient supply of water fit for drinking shall be provided at suitable places.
- Sanitary facilities shall be provided at accessible place within the work zone and kept in a good condition.

Proposed CSR Activities - Apart from the various environmental protection measures, the project proponent is conscious of its social responsibility and as any good corporate citizen, it is proposed to undertake the following works in the surrounding areas of the project site:

The CSR policy of the company needs to be comprehensive to deal with the various issues that concern the welfare of the local people. The interventions can be divided into two main categories-

a) Employee Wellbeing

b) Community Development

To begin with the company can conduct a rapid need assessment in the community. Under the above category focus shall be on the areas like healthcare, education, infrastructure development, livelihood and skill building, women empowerment, child care, environment sanitation, etc. This will help the local people stay healthy and will help to gain local support.

This will help to establish an identity among the people and gain their support. The participation of the people from the beginning will ensure greater sustainability of the efforts.

- Community Health Improvement activities such as periodically medical checkup camps and health awareness camps for child and mother care, health and hygiene practices shall be implemented
- Disinfection of dug wells and other potable water sources and awareness camps shall be organized on water borne diseases, health and hygiene etc.
- Scholarships shall be given to bright students from the local community
- Awareness campaign shall be organized by the project proponent for water conservation
- Improvement in community educational activities will cover the distribution of educational books, stationary and aids and other infrastructure facilities etc.
- Decrease water scarcity problem at a possible extent during scarcity period through conducting water conservation programs and by built up rain water harvesting pits

- Afforestation programs will involve the activities such as greenbelt development, plantation of trees in villages' road side and development of nursery for maintaining the greenery of the area & preventing pollution

Therefore the proposed project can be considered "significantly positive" i.e. keep regular watch on adverse impacts through practicing pollution control measures and post monitoring with simultaneous contribution towards raising standard of living of the people in study area together with its development.

As per the guidelines on Corporate Social Responsibility & Sustainability for Central Public Sector Enterprises, Every year, each CPSE shall with the approval of its Board of Directors make a budgetary allocation for CSR and Sustainability activities / projects for the year. The budgetary allocation will be based on the profitability of the company. More specifically, it will be determined by the Profit after Tax (PAT) of the company in the previous year as shown here under:

PAT of CPSE in the previous year	Range of Budgetary allocation for CSR and Sustainability activities (as % of PAT in previous year)
(i) Less than Rs. 100 Crore	3%-5%
(ii) Rs. 100 Crore to Rs. 500 Crore	2%-3%
(iii) Rs. 500 Crore and above	1%-2%

FOLLOWING ACITVITIES CAN BE PROPOSED IN THE STUDY AREA

As per the information gathered from the proponent and through the socio economic survey in the study area it has been observed that the project authority is carrying out various CSR activities for the welfare of people in the region but as per the perceptions and exceptations of the villages certain activities can be proposed in the surrounding areas of the site with the consent of gram panchayat and by identifying the priorities needs of the villagers.

Sr.No.	Proposed Planned Activities under CSR	
1.	**Health Facility**	• Organizing medical checkup camps atleast once in a month in the villages adjacent to the project site • Provision to supply medicines at the Primary Health Centre • Eye-checkup camps in the adjacent village • Providing the facility for blood test, sugar test for the villagers of adjacent area • Malaria eradication camps (collection of blood sample & detection of virus & free medicine distribution • Providing infrastructure facilities such as beds, medical instruments etc in the Primary Health Centre • Health awareness camps for child and mother care, health and hygiene practices.
2.	**Educational Facility**	• Distribution of educational books, stationary, uniforms and aids etc in schools of villages of the project site • Awarding meritorious school students in SSC & HSC • Repairing and maintenance of school building and construction of toilets and provision of water facility such as water cooler in the schools • Supports for sport & cultural competitions in schools
3.	**Infrastructural Development**	• Installation/ Repair of Hand Pumps/ Bore wells in the project area • Construction and mantainence of roads approach road of village adjacent to project site
4.	**Afforestation**	• Plantation of trees in villages road side of

	Programs	project site
5.	**Community Welfare Activities** .	• Provide sanitation facilities to villagers along with provision of garbage disposal system • Development & beautification of Worship places of core area villages • Annual Distribution of seeds & saplings in the villages
6.	**Community Water Conservation**	• Water harvesting systems in nearby villages. • Landscaping and greenbelt development in and around of the project site. • Rain water harvesting ponds and ground water recharge pits in villages of project site

Air Quality Modeling Report

Expansion from 5000 TCD to 12000 TCD unit along with Cogeneration power plant of capacity 19.5 MW to 59.5 MW at Mukerian, Punjab
by
M/s Indian Sucrose Limited

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Air Quality Modeling Report

1.0 Air Quality Models

1.1 ISCST3 Dispersion Model

The Industrial Source Complex (ISC) Short Term model provides options to model emissions from a wide range of sources that might be present at a typical industrial source complex. ISCST3 is US-EPA approved model to predict the air quality. The model uses urban dispersion and regulatory defaults options as per guidelines on air quality models (PROBES/70/1997-1998). Emission sources are categorized into four basic types of sources, i.e., point sources, volume sources, area sources, and open pit sources. The volume source option and the area source option may also be used to simulate line sources. The model assumes receptors on flat terrain. The ISC short term area source model is based on a numerical integration over the area in the upwind and cross wind directions of Gaussian plume formula. This can be applied to the Point, Area, Line or Volume sources simultaneously and their resultant incremental concentration of the pollutant can be predicted.

- **Model Options Used For Computations**

  The options used for short-term computations are:

  - The plume rise is estimated by Briggs formulae, but the final rise is always limited to that of the mixing layer;
  - Stack tip down-wash is not considered;
  - Buoyancy Induced Dispersion is used to describe the increase in plume dispersion during the ascension phase;
  - Calms processing routine is used by default;
  - It is assumed that the pollutants do not undergo any physio-chemical transformation and that there is no pollutant removal by dry deposition;
  - Washout by rain is not considered;
  - Flat terrain is assumed / used for computations;
  - Cartesian co-ordinate system has been used for computations; and
  - The model computations have been done for 10 km with 100 m grid interval.

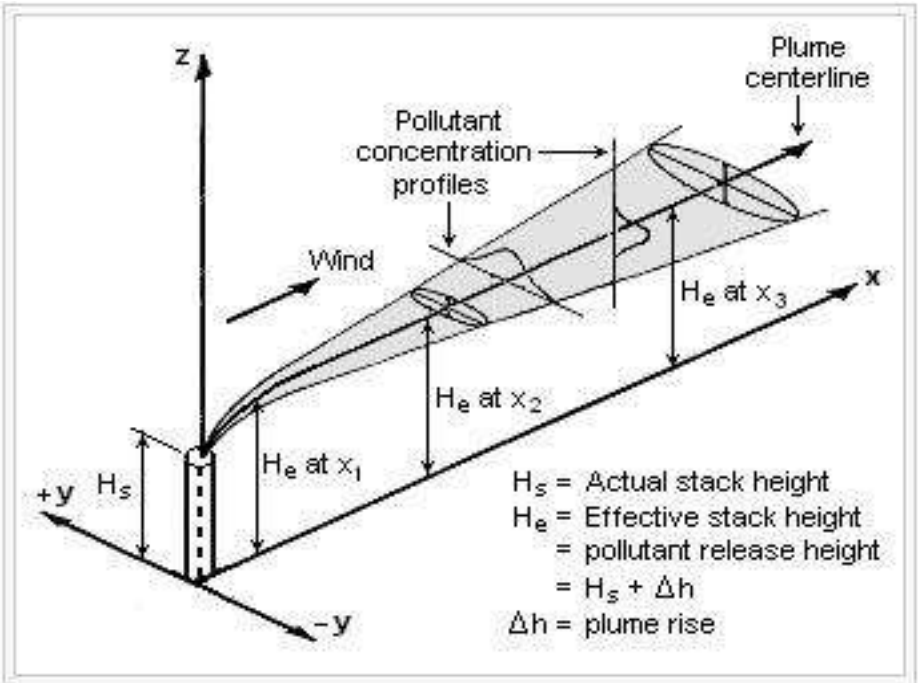
- **Gaussian Plume Model**

Ground Level Concentration (χ) (GLC) from a point source at any receptor is given by -

$$\chi = \frac{Qg_1g_2}{(2\pi\sigma_y\sigma_z u)} \quad \text{(USEPA ISCST3, 1987)}$$

where,
g_1 = exp(-y2/2σy2)
g_2 = exp[-(z-H)2/2σz2] + exp[-(z+H)2/2σz2]
Q = source strength
Z = receptor height above the ground
H_e = effective stack height (Plume rise + Physical stack height)
u = wind speed at stack level
σ_y & σ_z = dispersion parameters

Figure 1 – Gaussian Plume Model



Visualization of a buoyant Gaussian air pollutant dispersion plume

- **Dispersion Parameters**

Dispersion parameters σ_y and σ_z for open country conditions (Briggs, 1974) are used, as the project is located on in a rural area. Atmospheric dispersion coefficients vary with downwind distance (x) from emission sources for different atmospheric stability conditions. (CPCB – PROBES/70/1997-98).

Table 1 - Dispersion parameters as per stability class

Stability Class	σ_y	σ_z
A	$0.22x(1+0.0001x)^{-.5}$	0.20x
B	$0.16x(1+0.0001x)^{-.5}$	0.12x
C	$0.11x(1+0.0001x)^{-.5}$	$0.08x(1+0.0002x)^{.5}$
D	$0.08x(1+0.0001x)^{-.5}$	$0.06(1+0.0015x)^{.5}$
E	$0.06x(1+0.0001x)^{-.5}$	$0.03x(1+0.0003x)^{-1}$
F	$0.04x(1+0.0001x)^{-.5}$	$0.16x(1+0.0003x)^{-1}$

- **Plume Rise**

  Plume rise ∆h has been determined according to Brigg's formula (CPCB guideline)

  $\Delta h = 21.425 \frac{F^{3\,4}}{U_s}$ for F<55

  $\Delta h = 38.71 \frac{F^{3\,5}}{U_s}$ for F>55

  F = g VsD2(Ts-Ta)/4Ts
  Where
  Us = wind speed at stack level (m/s)
  Vs = stack gas velocity (m/s)
  Ts = stack gas temperature (0K)
  Ta = ambient temperature (0K)
  F = Buoyancy flux parameter (m4/s3)
  ∆h = Plume rise (m)
  D = Diameter of the stack (m)
  g = acceleration due to gravity, 9.807 (m/s2)

1.2 Stack details

Boiler will be based on Bagasse,

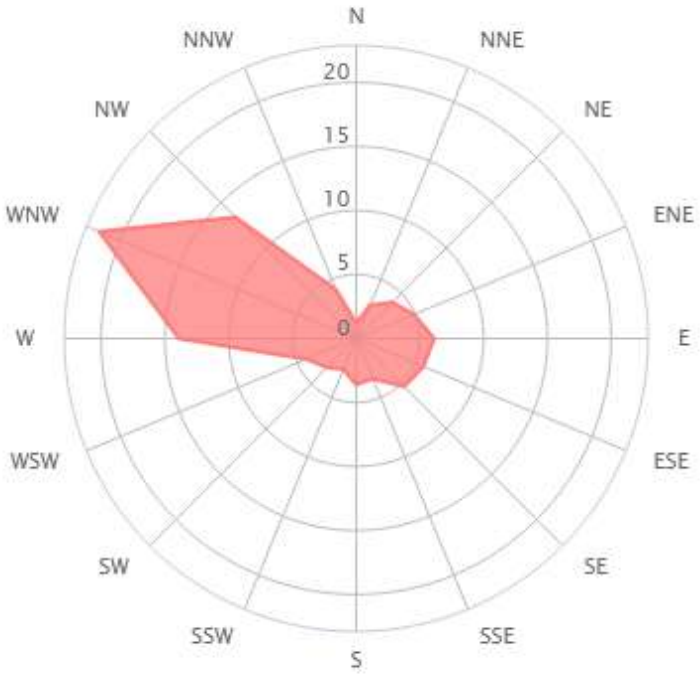
Location	Capacity	Stack Height (m)	Stack Diameter (m)	Flow Rate (Nm^3/s)	Exit Gas Temp.* (^oC)
Boiler	40 TPH	40	3	41	75
Boiler	40 TPH				75
Boiler	80 TPH	50	3	81	75
Boiler	200 TPH (Proposed)	78	4.5	200	110-120

Table 2 – Stack details

2.0 Meteorological Data

The meteorology of the project area plays very important role in dispersion of pollutants and buildup of pollution within the atmosphere. In the present study, one season (October 2017 – December 2017) meteorological data has been taken to find the dispersion of pollutant concentration. The mixing height for study period, which is an important parameter to express the dispersive potential of atmosphere, has been taken from the atlas of hourly mixing height and assimilative capacity of atmosphere in India (S.D. Attri et al., 2008). Windrose diagram of one season meteorological data used for modeling is shown given below in **Figure 2**.

Figure 2 - Windrose Diagram



3.0 Results

- The maximum cumulative GLC concentration of PM10 wiz. 94.606 ug/m^3 was predicted inside the study area. As the distance from source increases, the incremental concentration of PM10 drops drastically due to settling of PM10 particles under gravity.
- The maximum cumulative GLC concentration of SO2 wiz. 15.770 ug/m^3 was predicted inside the study area.
- The maximum cumulative GLC concentration of NOx wiz. 34.254 ug/m^3 was predicted inside the study area.

Table 3 – Predicted GLC of PM10 at Ambient Air Quality Monitoring Stations

Location Code	Location Name	Parameter	Max Baseline Conc. ($\mu g/m^3$)	Predicted GLC ($\mu g/m^3$) – ISCST3 Model	Cumulative GLC ($\mu g/m^3$)
A1	Project Site	PM10	90.60	0.0455	90.646
		SO2	13.60	2.1700	15.770
		NOx	31.40	0.4160	31.816
A2	Near Village- Khanpur	PM10	91.50	0.0101	91.510
		SO2	15.20	0.3261	15.526
		NOx	30.50	0.0731	30.573
A3	Near Village- Mukerian	PM10	91.50	0.0076	91.508
		SO2	15.20	0.0225	15.222
		NOx	32.60	0.0419	32.642
A4	Near Village- Dhaula Khera	PM10	88.30	0.0015	88.302
		SO2	14.20	0.0396	14.240
		NOx	32.60	0.0077	32.608
A5	Near Village- Mahdipur	PM10	94.60	0.0059	94.606
		SO2	14.20	0.1580	14.358
		NOx	32.50	0.0410	32.541
A6	Near Village- Naraingarh	PM10	93.20	0.0022	93.202
		SO2	15.10	0.0770	15.177
		NOx	32.30	0.0191	32.319
A7	Near Village- Kaulpur	PM10	91.20	0.0034	91.203
		SO2	15.30	0.1427	15.443
		NOx	33.20	0.0277	33.228
A8	Near Village- Kallchanng	PM10	90.20	0.0054	90.205
		SO2	15.20	0.2543	15.454
		NOx	34.20	0.0540	34.254

The contour maps showing the predicted concentration levels of PM10, SO2, NOx are presented in **Figure 3, Figure 4** and **Figure 5**.

Figure 3 – Spatial distribution of predicted GLCs of PM10

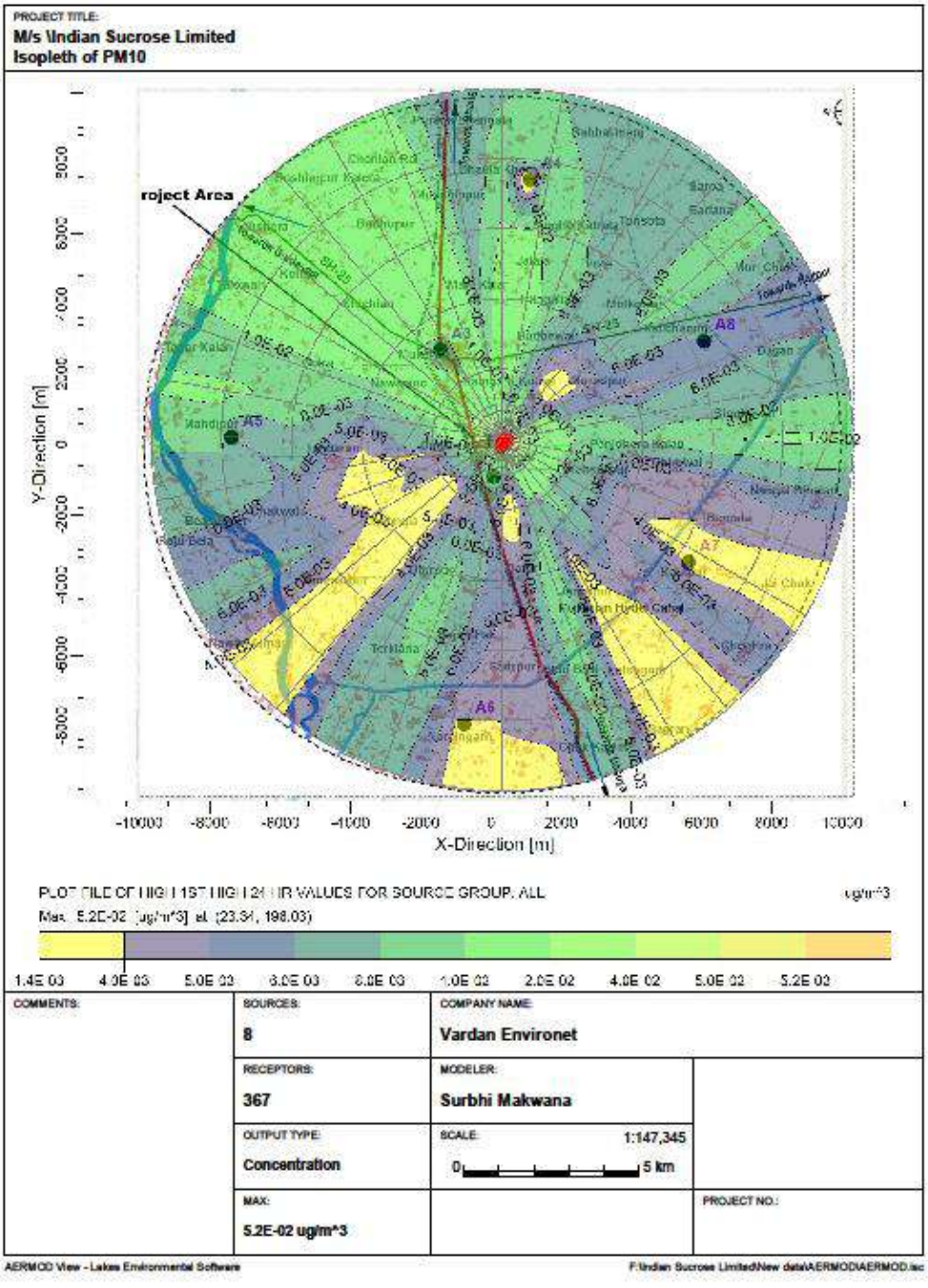


Figure 4 – Spatial distribution of predicted GLCs of SO_2

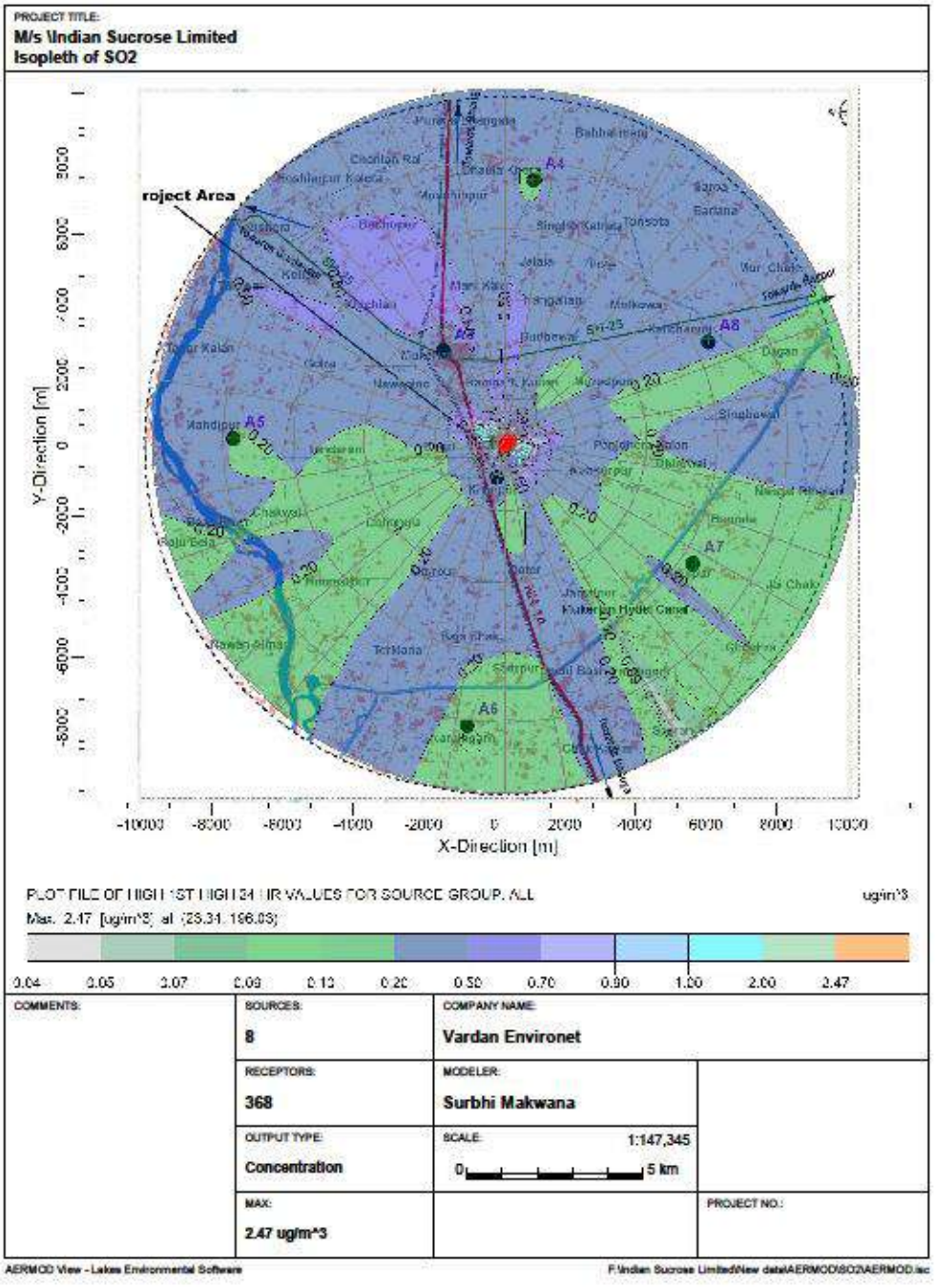
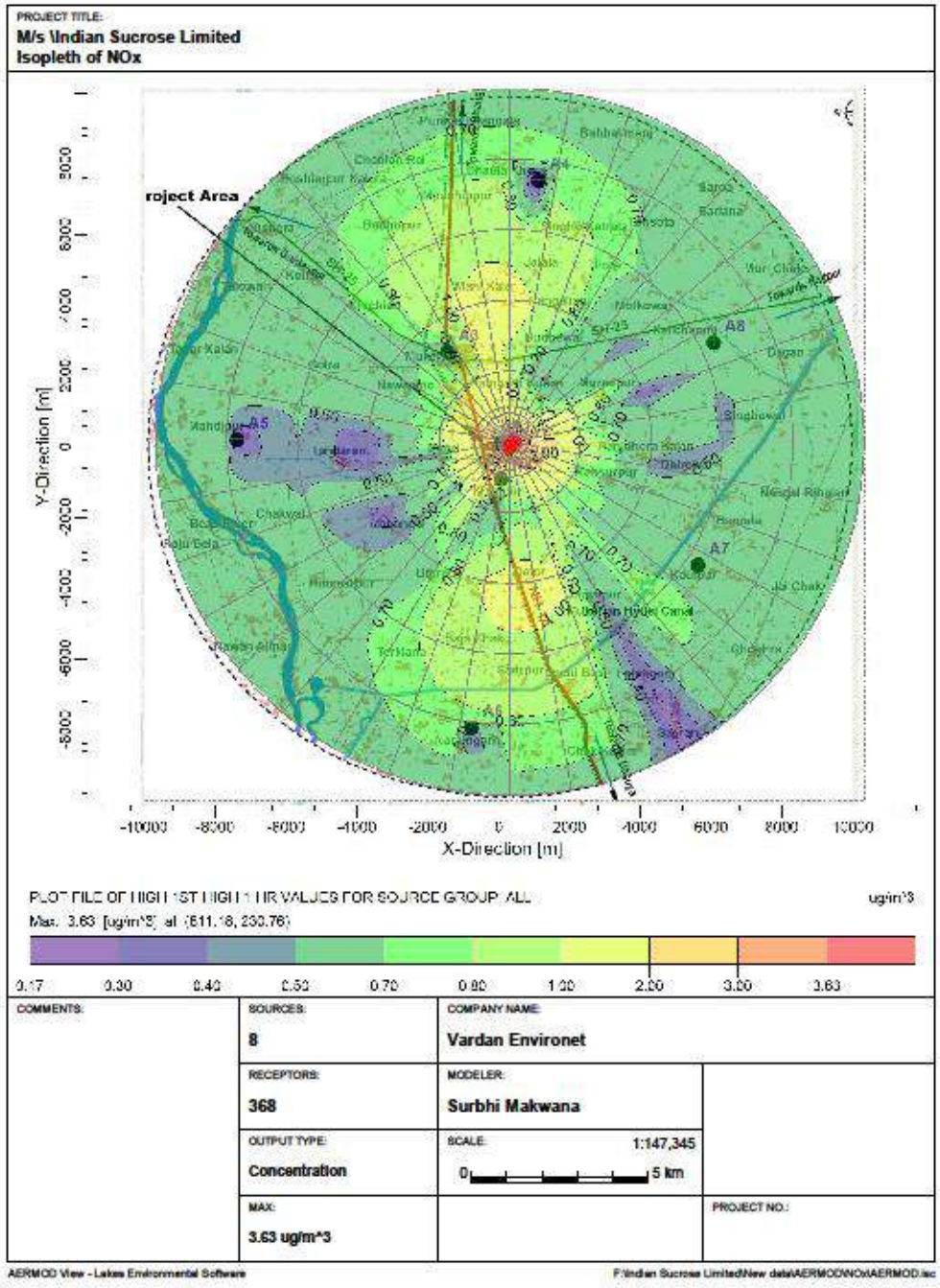


Figure 5 – Spatial distribution of predicted GLCs of NOx



4.0 Impacts

- During construction phase, suspended particulate matter will be the main pollutant, which will be generated due to the site development activities and vehicular movement, because of vehicular traffic there may be a marginal increase in the concentrations of NOx and SO2. The impact of such activities would be temporary and restricted to the construction phase only. Proper upkeep and maintenance of vehicles, sprinkling of water on roads at construction site, providing sufficient vegetation etc. are some of the proposed measures that would greatly reduce the impact on the air quality during the construction phase of the project. The impact of such activities would be temporary and restricted to the construction phase only and will be confined within the project premises.

5.0 Mitigation Measures

- The following air pollution control systems are to be installed in this project to reduce the anticipated adverse impacts: Air quality marginally may get affected due to emissions generated from burning fuel In boiler and D.G. sets; they are Particulate matter and small amount of SOX an NOX.
- To mitigate the impact, stack of appropriate height will be provided for all the three existing and one proposed boilers. To reduce particulate matter concentration Wet Scrubbers will be installed. Green belt will develop in 7.08 Ha area.
- Additional 33% area will be developed as Green belt for proposed expansion which will acts like adsorbent of air pollutants. To combat fugitive emissions roads are paved and regularly swept.
- Water sprinklers are provided for suppression of dust. Vehicular exhaust is being maintained by providing regular maintenance and servicing of vehicles. Same will be continued for future also.

6.0 References

- Attri, S.D., Singh, S., Mukhopadhyay B., and Bhatnagar, A.K., (2008). Atlas of hourly mixing height and assimilative capacity of atmosphere in India, IMD, New Delhi,
- Workbook on Atmospheric Dispersion Estimates, US Public Health Service Publication No 26, 1970; Second Edition, Lewis Publishers, 1994

- CPCB (1998): Assessment of Impact to air environment: Guidelines for conducting air quality modeling, PROBES/70/1997-98.
- USEPA AP-42 Guidelines
- ISCST3 User Guide

INDIAN SUCROSE LIMITED
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EPABX No. +91-1883-244532, 7574; e-mail : info.isl@yaducorporation.com
CIN - L15424PB1990PLC010903

Dt. 31.12.2017

UNDERTAKING

We hereby undertake that we have been disposing the Hazardous Waste disposal (Used Oil) as per Rules and Regulations of the Punjab Pollution Control Board.

For Indian Sucrose Limited

For Indian Sucrose Ltd.

Director/Authorised Signatory
(Geoffrey Frederick)
Director

YADU CORPORATION
Rising Through Innovision
Corporate Office : 5A, 2nd Floor,18 Poorvi Marg, Vasant Vihar, New Delhi -57
Tel: + 91-11-42426262

INDIAN SUCORSE LIMITED: MUKERIAN

Company Environment Policy

Mr. Geoffrey Frederick, Director of M/s Indian Sucrose Limited, Chak Alla Baksh & Mahiuldinpur Dalel, G. T. Road, Mukerian, Distt. Hoshiarpur, Punjab acknowledges its responsibility to manage the environmental issues associated with the Sugar Manufacturing Unit at above said place, as we pursue our goal of generating value for our employees and our local communities.

Implementation:

- Effectively manage, monitor, improve and communicate the environmental performance.
- Take all reasonable steps to prevent pollution.
- Set realistic and measurable objectives and targets for continual improvement of the environmental performance.
- Ensure that all employees and contractors are trained to understand their environmental responsibilities and create an environment that adheres to the company's Policies, Procedures and Application Regulations.
- Hold leadership accountable for good environment performance of our operations and projects, inherent in that accountability will be the commitment of senior management to provide resources and successfully create an appropriate environment.
- Comply fully with all relevant legal requirements, codes of practice and regulations.
- Reduce, recycle and reuse natural resources.
- Minimize waste and increase recycling within the frame work of waste management procedures.
- Identify and manage environmental risks and hazards.
- The project proponent shall regularly review this policy and ensure that corrective and preventative actions are taken in order to ensure continual improvement.
- To treat all the pollutants viz liquid and gaseous, which contribute to the degradation of the environment, with appropriate technologies.
- To comply with all regulations stipulated by the Central/ State Pollution Control Boards related to air emission and liquid effluent discharge as per air and water pollution control laws.
- To handle hazardous wastes as per the hazardous Waste (Management and Handling Rules), 2009 of the Environment (Protection) Act, 1986.
- To encourage support and conduct development work for the purpose of achieving environmental standards and to improve the methods of environmental management.
- To create good working conditions (devoid of air and noise pollution) for employees.
- To minimize fire and accident hazards.
- Perspective bed getting and allocation of funds for environment management expenditure.
- Preventive maintenance and regular checking of machineries and equipments.
- To make continuous efforts in waste minimization.
- For the equipments and pipe lines, leakage detection and repair shall be scheduled to minimize fugitive emissions.
- Continuous efforts with energy audist for the reduction of fuel and energy consumption.
- The system of reporting of non-conformance/ violation of any Environmental Law/ Policy will be as per quality management system. The internal audit will be conducted on periodic basis and any non-conformance/ violation to Environmental Law/ Policy will be closed and discussed during Management Review Meetings of Board of Directors/ Partners.
- Environmental Management Cell will be responsible to implement the Environmental Policy.

For Indian Sucrose Limited

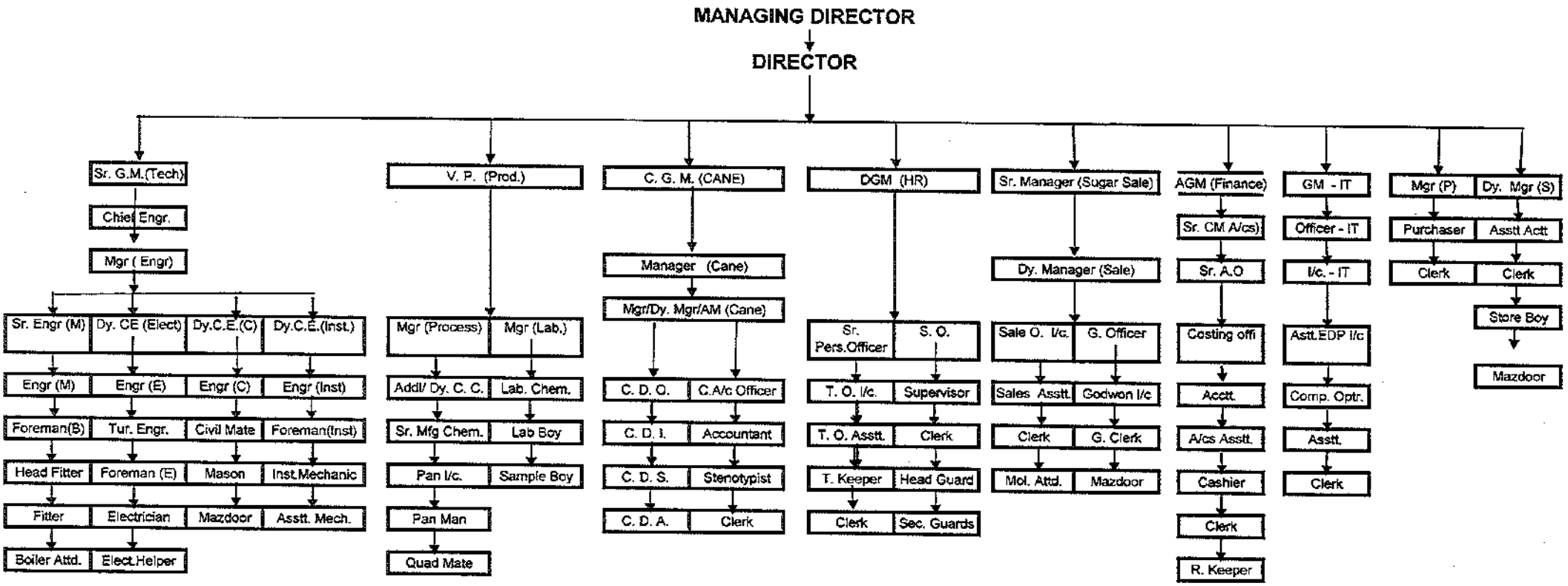
For Indian Sucrose Ltd.

Director/Authorised Signatory

Director

INDIAN SUCROSE LIMITED: MUKERIAN

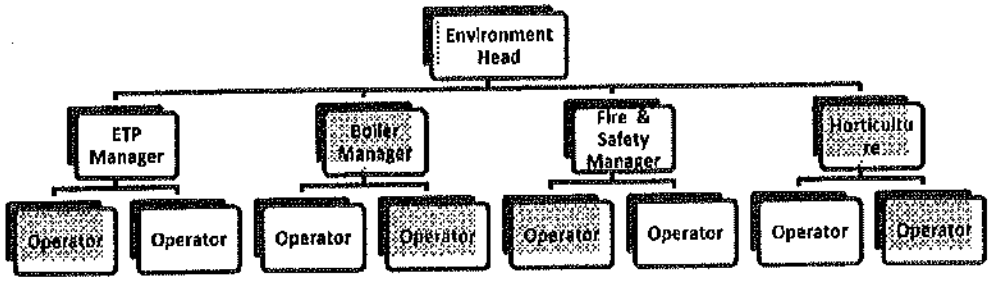
HIERARCHICAL SYSTEM OR ADMINISTRATIVE ORDER OF THE COMPANY



Indian Sucros Limited

VIII. Chak Alla Baksh & Mahluldinpur, Mukerian – 144 211
Distt. Hoshiarpur, Punjab.

Flow Chart of Environment Management Cell



INDIAN SUCROSE LIMITED

G.T. ROAD, MUKERIAN-144121
DISTRICT HOSHIARPUR (PUNJAB)

FEASIBILITY REPORT UPON UPGRADATION OF

WASTE WATER TREATMENT PLANT

CAPACITY 2000 m3/d TO 3000 m3/d

EFFLUENT EQUIPMENTS
D-95, FOCAL POINT, RAJPURA-140 401 (PB.) INDIA
TEL: 01762-231113; FAX: 01762-231122
email: eeq95@effluentindia.com; eeq5@dataone.in
website: www.effluentindia.com
26.11.2014

EFFLUENT EQUIPMENTS

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EFFLUENT EQUIPMENTS

PRELUDE

Messers Indian Sucrose Limited, G.T. Road, Mukerian-144121 (District Hoshiarpur, (Punjab) India has appointed Effluent Equipments, Rajpura (Punjab) to upgrade/modify the existing waste water treatment plant from 2000 m3/d to 3000 m3/d.

This is a report upon the upgradation of the existing waste water treatment plant to increase its capacity to 3000 m3/d. The treated waste waters shall be discharged onto land for irrigation conforming to standards prescribed by the Punjab Pollution Control Board for such discharges.

The details of the proposal are enclosed as follows:

1. Untreated waste water flow & characteristics considered for design
2. Waste water treatment scheme.
3. Treated waste water characteristics and prescribed standards.
4. Basic design criteria.
5. Unit & equipment existing and proposed.
6. Cost estimate for upgradation.

EXISTING WASTE WATER TREATEMT SCHEME

The existing waste water treatment scheme comprises of single stage aerobic biological treatment. Essentially it comprises of the following units:

1. Bar Screens/Grit Chamber
2. Oil & Grease Trap
3. Equalisation
4. Aeration
5. Secondary Sedimentation
6. Filtration
7. Sludge Drying Beds

The waste water flowing out of the sugar mills is screened and then passed through a gravity type oil & grease trap. It is then equalized and neutralized as per requirement.

From the equalization tank, the waste water is pumped into the aeration tank for aerobic treatment. The liquor in the tank is kept thoroughly mixed and oxygenated with the help of mechanical surface as well as diffused aeration. Nutrients, as per requirement are added in the aeration tank. The mixed liquor from the aeration tank then flows into the secondary sedimentation tank for separation of bio-mass. The settled sludge is totally re-circulated back into the aeration tank to seed and maintain desired bio-mass concentration in the aerobic system.

The surplus sludge in the recirculation system is pumped onto the sludge drying beds for dewatering.

The overflow from the top of the secondary sedimentation tank is treated waste water for ultimate disposal. This waste water is conforms to the tolerance limits prescribed by the Punjab Pollution Control Board for such discharges onto land for irrigation.

To further bring down the suspended solids in the treated waste water granular media pressure sand filters are provided.

The scheme is schematically presented in Figure-1.

The units and equipment existing are detailed in Table-1.

The scheme treating 2000 m3/d waste waters having the following characteristics

S.NO.	PARAMETER		CONCENTRATION	
			Untreated	Treated
	Flow	:	2000	2000
1.	Temperature	:	30-40	20-30
2.	pH	:	4.5 – 8.0	7.0-8.0
3.	Total Suspended Solids	:	300	<100
4.	Bio-chemical Oxygen Demand	:	800	<100
5.	Chemical Oxygen Demand	:	1500	<250
6.	Oil & Grease	:	100	<10

All concentrations except pH expressed as mg/l. Temperature expressed as degree Celsius. Flow expressed as m3/d.

FIGURE-2: SCHEMATIC FLOW SHEET OF WASTE WATER TREATMENT FOR UPGRADATION TO CAPACITY 3000 m3/d

EFFLUENT EQUIPMENTS

EFFLUENT EQUIPMENTS

TABLE-1

UNITS AND EQUIPMENT EXISTING 2000 m3/d

A. UNITS:

2 No.- 5.70 x 2.85 x 1.50 m SWD	Oil & Grease Trap
1 No.- 24.62 x 7.86 x 1.42 m SWD	Collection Sump (228 m3)
1 No.- 24.48 x 20.40 x 4.085 m SWD	Aeration Tank (1540 m3)
1 No.- 14.25 diameter, 3.75 m SWD	Secondary Sedimentation Tank
2 No.- 8.00 diameter, 3.75 m SWD	Secondary Sedimentation Tank
9 No.- 14.00 x 8.00 x 0.60 m SWD	Sludge Drying Beds

B. EQUIPMENT:

3 No.- 15-20 lph capacity	Oil Skimmer
1 No.- 25 lps, 12 m head	Waste Water Lift Pump.
1 No.- 15 lps, 12 m head	Waste Water Lift Pump.
4 No.- 320 m3/h @0.50 kg/cm2	Air Blowers
3 No.- 20 hp	Fixed Surface Aerator
6 No.- 20 hp	Floating Surface Aerator
1 No.- 14.25 m diameter	Scrapper Mechanism
2 No.- 8.00 m diameter	Scrapper Mechanism
4 No.- 8.90 lps, 8 m head	Sludge Recirculation Pump
2 No.- 2.00m diameter, 2.50 m SWD	Pressure Sand Filters
1 No.- 1.25m diameter, 1.65 m SWD	Pressure Sand Filters
1 No.- 25 lps, 24 m head	Filter Feed Pump
1 No.- 12 lps, 24 m head	Filter Feed Pump
1 Lot -	Interconnecting Pipes, Valves & Specials.
1 Lot -	Electricals.

PROPOSED TREATEMT SCHEME (FOR CAPACITY 3000 m3/d)

To treat the increased waste water flow upto 3000 m3/d (Table-2) conforming to prescribed standards for discharges onto land for irrigation, capacity enhancement of available units and equipment is required. While it is simpler to upgrade capacity of the equipment to match increased loads, enhancing capacity of units requires larger or more tanks through civil construction.

A techno-economical solution which utilizes all existing units and equipment lies in adding one more biological treatment stage to the existing single stage biological treatment.

As such an anaerobic biological treatment stage upstream to the existing aerobic (aeration) biological stage is suggested. Figure-2. The anaerobic process, which does not require aeration, is designed to reduce the organic load entering the aeration tank by 55-65%. Thus, enabling the use of aeration tank without any additions/alternations.

The anaerobic process adopted is the Upflow Anaerobic Sludge Blanket (UASB) reactor.

The generation of bio-gas (50-60% CH4) is estimated to be 980 m3/d (equivalent to 60 kW power or 1600 kg/d rice husk or 500 litres/day diesel).

The UASB reactor, briefly described, is a system in which substrate passes through an expanded sludge bed containing high concentration of biomass. The sludge in the reactor may be granular or flocculent. Most of the substrate removal takes place in the sludge bed. The remaining portion of the substrate passes through a less dense biomass, called the sludge blanket.

Provision of sufficient volume of sludge blanket is necessary above the sludge bed, which provides further treatment to the waste water bye-passed from the sludge bed due to channeling and helps in maintaining stable effluent quality. Above the sludge blanket the reactor has a three-phase separator, Gas-Liquid-Solid (GLS) which separates the solid particles from the liquid and gas, allowing liquid and gas to leave the system.

Proper design of the device ensures that maximum sludge is retained in the digester to affirm high Solid Retention Time (SRT) and to facilitate treatment with short Hydraulic Retention Time (HRT). Generally the sludge bed occupies 30 to 60% of the total reactor volume, 20 to 30% of the total volume is provided for sludge blanket and GLS separator occupies remaining 15 to 30% of the total volume.

The existing aeration tank capacity 1540 m3 having mechanical surface aeration as well as diffused aeration facility is proposed to be replaced with 2800 m3 aeration tank having only diffused aeration system. An old abandoned tank is available with the industry near the WWTP site. This tank is suggested to be utilized after minor modifications and laying the diffused aeration equipment inside it. The existing inter connecting pipelines, valves, etc. shall also have to be modified and upgraded as required.

The existing secondary sedimentation tanks are sufficient. The overflow from the sedimentation tank shall conform to the standards prescribed by the Punjab Pollution Control Board for such discharges onto land for irrigation. Table-3

The existing sludge drying beds shall suffice.

TABLE-2

UNTREATED WASTE WATER FLOW & CHARACTERISTICS CONSIDERED FOR DESIGN OF WASTE WATER TREATMENT PLANT

S.NO.	PARAMETER		CONCENTRATION
	Flow	:	3000
1.	Temperature	:	30-40
2.	pH	:	4.5 – 8.0
3.	Total Suspended Solids	:	500
4.	Bio-chemical Oxygen Demand	:	1000
5.	Chemical Oxygen Demand	:	2000
6.	Oil & Grease	:	15

All concentrations except pH expressed as mg/l. Temperature expressed as degree Celsius. Flow expressed as m3/d.

TABLE-3

TREATED WASTE WATER CHARACTERISTICS (TWW) AND PRESCRIBED STANDARDS (PS) FOR DISCHARGE OF TREATED WASTE WATER ONTO LAND FOR IRRIGATION (INLAND SURAFCE WATERS)

S.NO.	PARAMETER	CONCENTRATION	
		TWW	PS
	Flow	3000	
1.	Total Suspended Solids	<100	100 (30)
2.	Bio-chemical Oxygen Demand	<100	100 (30)

All concentration except pH expressed as mg/l.
Flow expressed as m3/d.

EFFLUENT EQUIPMENTS

BASIC DESIGN CRITERIA

Flow	:	3000	m3/d
TSS	:	500	mg/l
BOD	:	1000	mg/l
COD	:	2000	mg/l
O&G	:	15	mg/l

1. Equalization Tank

Detention Time	:	4.5	h

2. Anaerobic Digester

Flow	:	1500	m3/d
COD	:	2000	mg/l
Detention Time	:	5.5	h
Organic Loading	:	0.36	kg COD/kg VSS/d
Hydraulic Loading	:	8.50	kg COD/m3/d
BOD Removal Efficiency	:	55	%
COD Removal Efficiency	:	65	%

3. Aerobic Stage

Flow	:	3000	m3/d
		(Anaerobic Digester + 1500 Untreated)	
BOD	:	730	mg/l
Aeration			
Detention Time	:	22	h
MLSS	:	5500	mg/l
MLVSS	:	3000	mg/l
F/M	:	0.25	1/d
Volumetric Loading	:	0.75	kg BOD/m3/d
SRT	:	21	d

Sedimentation

Overflow Rate	:	12	m3/m2/d
Solids Loading	:	2.6	kg/m2/h
BOD Removal Efficiency	:	97	%

4. Sludge Drying Beds

Application Depth	:	0.60	m
Cycle	:	6	d

EFFLUENT EQUIPMENTS

UNITS AND EQUIPMENT PROPOSED FOR 3000 m3/d CAPACITY

A. UNITS:

3 No.- 05.70 x 02.85 x 1.50 m SWD	Oil & Grease Trap (Addition)
1 No.- 24.62 x 07.86 x 2.80 m SWD	Collection Sump (560 m3) (Alteration/Addition)
1 No.- 2800 m3	Aeration Tank (Alteration/Addition)
1 No.- 05.00 diameter, 18.00 m SWD	UASB Reactor (Addition)
2 No.- 8.00 diameter, 3.75 m SWD	Secondary Sedimentation Tank
1 No.- 14.25 diameter, 3.75 m SWD	Secondary Sedimentation Tank
9 No.- 14.00 x 8.00 x 0.60 m SWD	Sludge Drying Beds

B. EQUIPMENT:

3 No.-15-20 lph each	Oil Skimmers (Addition)
3 No.- 20 lps, 10 m head	Waste Water Lift Pump (Addition)
3 No.- 20 lps, 26 m head	Waste Water Re-lift Pump (Alteration)
1 No.- 05.00m diameter	UASB GLSS Appurtenances (Addition)
4 No.- 320 m3/h @0.50 kg/cm2	Air Blower (Existing)
3 No.- 1875 m3/h @0.50 kg/cm2	Air Blower (Addition)
2 No.- 8.00 m diameter	Scrapper Mechanism
1 No.- 14.25 m diameter	Scrapper Mechanism
3 No.- 20 lps, 10 m head	Sludge Recirculation Pump
1 Lot -	Interconnecting Pipes, Valves & Specials (Alteration/Addition)
1 Lot -	Electricals (Alteration/Addition)

Annx-VI

INDIAN SUCROSE LIMITED

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CIN - L15421PB1990PLC010

REF:ISL:AS:2015-16/ 304 Dt. 22.09.2015

The Environmental Engineer,
Punjab Pollution Control Board,
Regional Office,
E-18-A, Focal Point,
HOSHIARPUR.
Email – ppcb_ppcb@rediffmail.com
Phone/ Fax – 1882 – 248020.

Subject: Enhancement of cane crushing capacity to 6500 TCD.

Dear Sir,

With reference to our letter Nos.ISL:DGM(P&A):2012-13/802 dt. 20.09.2012 and No.ISL:DGM(P&A):2012-13/1521 dt. 21.03.2013 (feasibility report of ETP capacity upto 3000 KLD already submitted to your office). In the past years, we have done modifications/additions in our plant to enhance of cane crushing capacity to 6500 TCD. Now, we shall able to crush sugarcane 6500 TCD w. e. f. the coming crushing season 2015-16.

This is for your kind information please.

Thanking you,

Yours faithfully,
FOR INDIAN SUCROSE LIMITED

AUTORISED SIGNATORY

23-9-2015

O/C

INDIAN SUCROSE LIMITED

G.T.Road, Mukerian - 144 211 Distt. Hoshiarpur, (Punjab) India Fax:+91-1883-244532
EPABX No. ..... Info.isl@yadu.co.in, 97800 5960/70/71
CIN...L15124PB1990PLC010...

REF:ISL:AS:2015-16/ 536 Dt. 11.12.2015

The Superintendent,
Central Excise & Service Tax Range - 2,
Model Town,
Hoshiarpur.

Subject:- Enhancement of cane crushing capacity to 6500 TCD.

Dear Sir,

We wish to inform that in the past years, we have done continuously modifications/additions in our plant to enhance of cane crushing capacity to 6500 TCD. Now, we shall able to crush sugarcane 6500 TCD during the crushing season 2015-16.

This is for your kind information please.

Thanking you,

Yours faithfully,
FOR INDIAN SUCROSE LIMITED

AUTHORISED SIGNATORY

15/12/15

1
Ann-II

ਵੱਲੋਂ

ਪਬਲਿਕ ਇੰਨਫਰਮੇਸ਼ਨ ਅਫਸਰ
-ਕਮ-ਸਹਾਇਕ ਕੇਨ ਕਮਿਸ਼ਨਰ,
ਖੇਤੀ ਭਵਨ, ਐਸ.ਏ.ਐਸ.ਨਗਰ।

ਵੱਲ

ਸ੍ਰੀ ਦਵਿੰਦਰ ਕੁਮਾਰ ਗੁਪਤਾ,
ਮਕਾਨ ਨੰ: 320, ਅਨੰਦ ਨਗਰ-ਏ,
ਤ੍ਰਿਪੜੀ, ਪਟਿਆਲਾ ।

ਪੱਤਰ ਨੰ: ਗਕ/ਐਫ/ 162 ਮਿਤੀ: 10-1-2017

ਵਿਸ਼ਾ: ਆਰ.ਟੀ.ਆਈ.ਐਕਟ 2005 ਤਹਿਤ ਮੰਗੀ ਗਈ ਸੂਚਨਾ ਦੇਣ ਸਬੰਧੀ।

ਹਵਾਲਾ: ਆਪ ਦਾ ਪੱਤਰ ਮਿਤੀ 15.12.2016

ਉਪਰੋਕਤ ਵਿਸ਼ੇ ਦੇ ਸਬੰਧ ਵਿੱਚ ਆਪ ਵੱਲੋਂ ਮੰਗੀ ਗਈ ਸੂਚਨਾ ਹੇਠ ਲਿਖੇ ਅਨੁਸਾਰ ਇਸ ਪੱਤਰ ਨਾਲ ਨੱਥੀ ਕਰਕੇ ਭੇਜੀ ਜਾਂਦੀ ਹੈ।

1. ਮੈਸ: ਇੰਡੀਅਨ ਸੂਕਰੋਜ਼ ਲਿਮ:, ਮੁਕੇਰੀਆਂ ਵੱਲੋਂ ਪਿੜਾਈ ਸੀਜਨ 2005-2006 ਦੌਰਾਨ ਭੇਜੇ ਪੱਤਰ ਨੰ: 299 ਮਿਤੀ: 25.09.2005 (ਅਨੁਲੱਗ-ੳ)।

2. ਮੈਸ: ਇੰਡੀਅਨ ਸੂਕਰੋਜ਼ ਲਿਮ:, ਮੁਕੇਰੀਆਂ ਵੱਲੋਂ ਪਿੜਾਈ ਸੀਜਨ 2005-2006 ਦੌਰਾਨ ਭੇਜੇ ਪੱਤਰ ਨੰ: 922 ਮਿਤੀ: 13.08.2005 (ਅਨੁਲੱਗ-ਅ)।

10.1.2017
ਪਬਲਿਕ ਇੰਨਫਰਮੇਸ਼ਨ ਅਫਸਰ
-ਕਮ-ਸਹਾਇਕ ਕੇਨ ਕਮਿਸ਼ਨਰ,
ਖੇਤੀ ਭਵਨ, ਐਸ.ਏ.ਐਸ.ਨਗਰ।

OSWAL SUGARS LIMITED

Ref : LSL/CO/0003/284 Dated : 26-9-05

The Cane Commissioner, Punjab
SCO 1020-21 Sector 22-B
Chandigarh

Subject : Information regarding Private Cane Capacity

Sir,

Please refer to your letter No. CC/421 dated 19-9-05.

It is submitted for your kind information that duly awaiting capacity certificate has already been sent to your respective office vide letter No. CO/LSL/0099 dated 10-3-05 and Fax was made on 09-3-05 and confirmed. Your letter quoted under reference have not been received. Please forward a proforma vide which said report is required to facilitate this office timely submission of the said report.

Thanks.

General Manager (Cane)

Agri. Deft. Officer
O/o Cane Commissioner, Pb.
S.A.S. Nagar

(18) (17)

...WAL SUGARS LIMITED

Ref : ISL/CO/0003/ 829 Dated : 13-8-05

The Cane Commissioner, Punjab
SCO 1020-21 Sector 22-B
Chandigarh

Subject : Submission of informations for the season 2005-06

Sir,

Please refer to Cane Commissioner Pb. letter no CC/F/3480-3501 dated 03-8-05.

Serial wise reply is as under :-

1. Production/Cane requirement — Copy attached
2. Installation of OEC 2005-06 — (a) Basantpur (b) Nand Majuah

3. SDF loan sanctioned	Due for refund	Due dt for refund	Remarks
Rs 100 Lac	215.31 Lac	July 1999	

4. Cane dues dtd. 2004-05	Paid	Balance	
Rs 2155914/-	Rs 1778069/-	377845/-	It will be deposited in the coming season.

5. Application for purchasing agent — Duly sent
6. Cane area affected by red rot — Nil
7. Balance cane price payment 2002-03, 2003-04 & 2004-05 — Nil
8. Start of mill date — 15-11-05 Approximately
9. Information points asked for regarding policy of sugar Industry — Duly sent separately.

It is submitted for your kind information please.

General Manager (Cane)

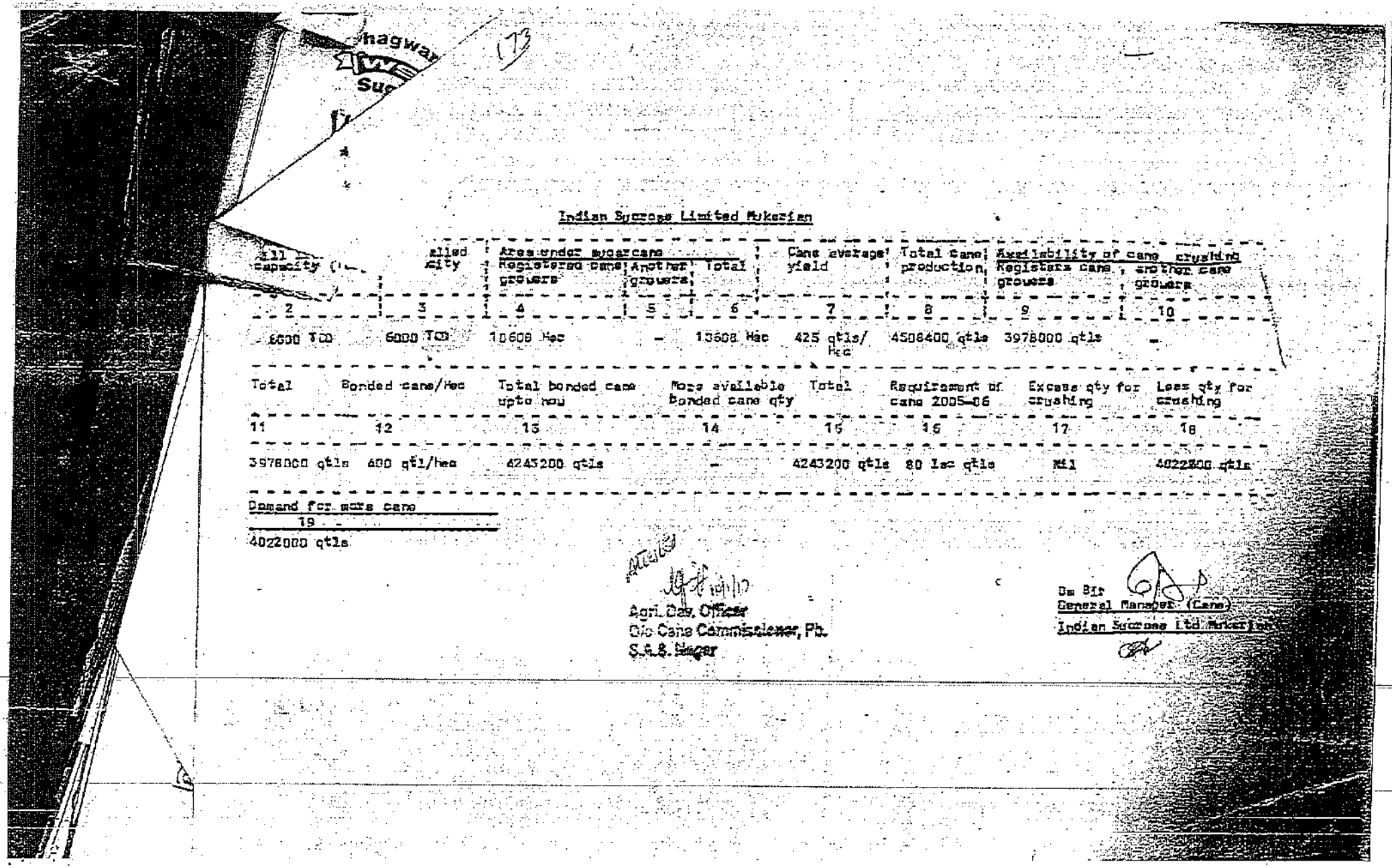
cc to

ACDO Gurdaspur for information please.

Attested
Asstt. Cane Officer
o/o Cane Commissioner, Pb.
S.A.S. Nagar

Contd..2...

COPY



Indian Sucrose Limited Mukerian

1	2	3	4	5	6	7	8	9	10
Crushing capacity (...)		Allied capacity	Area under sugarcane: Registered cane growers	Another growers	Total	Cane average yield	Total cane production	Availability of cane crushing: Registers cane growers	another cane growers
	6000 TCD	6000 TCD	10608 Hec	–	10608 Hec	425 qtls/ Hec	4508400 qtls	3978000 qtls	–

11	12	13	14	15	16	17	18
Total	Bonded cane/Hec	Total bonded cane upto now	More available Bonded cane qty	Total	Requirement of cane 2005-06	Excess qty for crushing	Less qty for crushing
3978000 qtls	400 qtl/hec	4243200 qtls	–	4243200 qtls	80 lac qtls	Nil	4022800 qtls

Demand for more cane
19
4022000 qtls

Agri. Dev. Officer
O/o Cane Commissioner, Pb.
S.A.S. Nagar

Dy Dir
General Manager (Cane)
Indian Sucrose Ltd Mukerian

(2) Copy (compliance) 197

INDIAN SUCROSE LIMITED

G.T. Road, Mukerian 144211 Hoshiarpur, (Punjab) India Ph: +91-1883-249000/1/2/3/4/5
Fax: +91-1883-244532 Mail: dposl@jla.vsnl.net.in

Ref : ISL/CD/0003/ 922 Dated : 13-8-05

The Cane Commissioner, Punjab
SCO 1020-21 Sector 22-B
Chandigarh

3165 22-8-05 16

Subject : Submission of informations for the season 2005-06

Sir,

Please refer to Cane Commissioner pb letter No CC/F/3480-3501 dated 03-8-05.

Serial wise reply is as under :-

1. Production/cane requirement - Copy attached
2. Installation of OPC 2005-06 - (a) Basantpur
   (b) Mand Majwah
3. SDF loan sanctioned Rs 108 Lac — Due for refund 215.31 Lac — Due dt for refund July 1999 — Remarks
4. Cane cess due 2004-05 Rs 2155914/- — Paid Rs 1778069/- — Balance 377845/- — It will be deposited in the coming season.
5. Application for purchasing agent - Being sent
6. Cane area affected by red rot - Nil
7. Balance cane price payment 2002-03, 2003-04 & 2004-05 - Nil
8. Start of mill date - 15-11-05 Approximately
9. Information points asked for regarding policy of sugar Industry - Being sent separately.

It is submitted for your kind information please.

ADO (F) 23/8

General Manager (Cane)

CC to

ACDO Gurdaspur For information please.

Received 19-8-05
Agri. Dev. Officer
O/o Cane Commissioner, Pb.
S.A.S. Nagar

199

Indian Sucrose Limited Mukerian

Installed capacity	Area under sugarcane: Registered cane growers	Another growers	Total	Cane average yield	Total cane production	Availability of cane crushing: Registers cane growers	another cane growers
3	4	5	6	7	8	9	10
6000 TCD	10608 Hec	-	10608 Hec	425 qtls/ Hec	4508400 qtls	3978000 qtls	-

Total	Bonded cane/Hec	Total bonded cane upto now	More available bonded cane qty	Total	Requirement of cane 2005-06	Excess qty for crushing	Less qty for crushing
11	12	13	14	15	16	17	18
3978000 qtls	400 qtl/hec	4243200 qtls	-	4243200 qtls	80 lac qtls	Nil	4022000 qtls

Demand for more cane

19

4022000 qtls

Attested

Agri. Dev. Officer
C/o Cane Commissioner, Pb.
S.A.S. Nagar

Om Bir
General Manager (Cane)
Indian Sucrose Ltd Mukerian

Regd

Punjab Pollution Control Board

Zonal office, Near PSIEC, Water Tank, Focal Point, Jalandhar
Phone No. 0181-2601612 www.ppcb.gov.in Email ID – seeppcbjal@gmail.com

No. 6546 Date 27/5/16

VP(Prod)/DGM(HR)

To

M/s Indian Sucrose Limited,
Village Chak Alla Baksh, Mukerian,
Hoshiarpur.

Subject : **Show cause notice for refusal of consent to operate u/s 25/26 of the Water (Prevention & Control of Pollution) Act 1974 as amended in 1988.**

Whereas it is obligatory on the part of industry to obtain the 'consent to operate' of the Board u/s 25/26 of the Water (Prevention & Control of Pollution) Act 1974 as amended in 1988 and for discharge of effluent from its premises and to operate an outlet.

And whereas, it is mandatory on the part of industry to install proper and adequate Water Pollution Control Device so that the concentration of various pollutants conforms to the effluent standards prescribed by the Board.

And whereas, the industry was granted consent to operate under Water act, 1974, valid upto 31-03-2016 for the manufacturing of the SUGAR @500 Metric Tonnes /Day by using SUGAR CANE @ @5000 Metric Tonnes/Day alongwith others raw materials for the discharged of trade effluent @ 2000 KLD and domestic effluent 25 KLD. The daily installed cane crushing capacity of the industry is 5000 TCD and daily manufacturing capacity of the sugar is 500 TPD with certain terms and conditions.

And whereas, industry has applied renewal of consent to operate under the Water (Prevention & Control of Pollution) Act, 1974 as amended in 1988 through OCMMS for manufacturing of sugar @ 650 MT/day using by sugar cane @ 6500 MT/day.

And whereas, the industry was visited by officers of the Board on 29.03.2016 and & observed that the industry was in operation & effluent treatment plant was also in operation. The effluent was being discharged onto land for plantation. The effluent sample of the industry was collected and as per the analysis report various parameters are within the limit pH 7.2 2. TDS (mg/l) 870 3. TSS(mg/l) 32 4. BOD (mg/l) 12 5. COD(mg/l) 52 6. O & G (mg/l) 2.8 7. MLSS (mg/l) 2350 The industry has already installed online monitoring system in the final outlet of ETP for online monitoring of the effluent parameters i.e. pH, COD, BOD and TSS in compliance to the directions u/s 18(1)(b) and same is connected with the Board's website.

And whereas, the industry was again visited by officers of the Board on 19.05.2016 and observed that the industry was in not operation. The industry has installed ETP for the treatment of trade effluent. The ETP consisting of Oil Skimmer (Oil & Grease Trap), collection tank, Equalization tank with air diffuser system, Aeration tank, 3 nos. clarifier (Parallel), and sludge drying beds and same was not in operation due to off season. The industry has installed STP for the treatment of the domestic effluent and STP is consisting of Oil & Grease Trap, Equalization tank, Aeration tank, settling tank, filter and same was in operation. The industry has also submitted the copy of detail of the additional machinery installed at site as it has submitted the returns to the Central Board of Excise and Customs. As per return the industry for the year 2012-13, it has added condensate heater, rotary screen and has added 60T BATCH Pan, UASB at ETP in the year 2013-14 and has added D.C motor 1000 Hp and ETP aeration tank in the year 2014-15. 4. The industry has already submitted bank guarantee of Rs. 10.00 lacs, which is valid upto 30.06.2016 as assurance to comply with provisions of Water Act and to achieve the standards prescribed by the Board for discharge of treated effluent. The industry has also submitted another bank guarantee of Rs. 03.00 lacs, which was valid upto 31.03.2016 as assurance to install online monitoring system for monitoring of effluent parameters as per requirement of CPCB and the industry has already installed online effluent monitoring system.The industry has modification/ additions in their plant to enhance of cane crushing capacity 5000 TCD to 6500 TCD. The plant has run the crushing capacity of 6500 TCD and produced of sugar 650 TPD during the season 2015-16, as such, the industry has increased the capacity of the plant without obtaining prior Environmental

Abbreviations are as under:
BR: Branch Name , Csh: Cash , Chq: Cheque , Rel:Returning , Chq: Cheque , SI:Standing instructions , Tr: Transfer , Int: Interest , Chrg: Charges
CAB:Quarterly Average Balances , LF:Chq. Ledger Folio Charges , Int: Interest , Chrg: Charges
Tr: Transfer , Int: Interest , Chrg: Charges , Rel:Returning , Chq: Cheque , SI:Standing instructions , Csh: Cash , Chq: Cleaning , TSS: Inter Solids

Clearance from the MoEF, New Delhi. The industry has further mentioned that the treatment capacity of the ETP is 3000 KLD and has submitted the copy of the feasibility of the ETP and the industry are having sanctioned / certificate for total capacity after expansion upto 7500 TCD, (issued by Govt. of India, Ministry of Commerce and Industry, Secretariat for Industrial System Public Relation and complaint section, New Delhi issued on 12.02.2008).

And whereas, the industry has failed to comply with the condiitions of consent granted to it and is violating various provisions of the Water (Prevention & Control of Pollution) Act 1974 as amended in 1988.

And whereas, it has now been proposed refuse the consent to operate applied under the Water (Prevention & Control of Pollution) Act 1974 as amended in 1988, after affording an opportunity.

Before, the above action is taken, you are, hereby given an opportunity of personal hearing, to file objections, if any, on the proposed action before the Chairman of the Board in the office at Vatavaran Bhavan, Nabha Road, Patiala on 9/8/2016 at 11.30 AM, failing which it will be presumed that the industry has nothing to say and the Board shall go ahead to take proposed action under the Water (Prevention & Control of Pollution) Act 1974 as amended in 1988, without giving any further notice / opportunity.

For Sr. Environmental Engineer

Endst. No. _____ Dated. _____

A copy of the above is forwarded to the Environmental Engineer, Punjab Pollution Control Board, Regional Office, Hoshiarpur necessary action. He is requested to inform the industry regarding the hearing well before the date of hearing.

For Sr. Environmental Engineer

(1)
Ann T.

IN THE COURT OF CHIEF JUDICIAL MAGISTRATE, HOSHIAPRUR

Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala through its Assistant Environmental Engineer Sh. Sukhwant Singh, Regional Office, E18-A, Focal Point, Hoshiarpur through Sh. Kulraj Rai, Senior Law Officer, Zonal Office, Focal Point, Jalandhar

--Complainant

Versus

1. M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur (through accused no. 2 to 5).
2. Sh. Kunal Yadav, Managing Director of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
3. Sh. Ved Parkash Gupta, Vice President of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
4. Sh. Geoffery Frederick Francis, Director of M/s Indian Sucrose Ltd. Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
5. Sh. Rajinder Dhir, Assistant Manager Legal of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.

--Accused

Criminal complaint under sections 25/26/33-A of the Water (Prevention and Control of Pollution) Act, 1974 read with sections 43/44/47 of the said Act, 1974 & under section 15 / 16 of Environment (protection) Act 1986.

Sir,

Most respectfully, it is submitted as under:

1) That the complainant Board was constituted on 30.05.1979 under section 4(1) of the Water (Prevention and Control of Pollution) Act, 1974 (herein after described as the Act) and the Board is deemed to be State Board for the Prevention and Control of Air Pollution as

constituted under section 5(1) of the Air (Prevention & Control of Pollution) Act, 1981 (Prevention and Control of Pollution) Act, 1981. The Board, thus, have paramount duty for the Prevention and Control of Water Pollution, maintaining or restoring the wholesomeness of water, preservation of the quality of air and control of water pollution in the territory under i.e. State of Punjab.

2) That the Punjab Pollution Control Board is having its Head office/Regional officers on the address mentioned above for achieving the objectives of the above mentioned Acts. The Board is a body corporate with the name aforesaid having perpetual succession and common seal with the power to sue and be sued in its own name.

3) That in exercise of the powers conferred on the Board, it has delegated its powers to sign, verify and file the complaint to Environmental Engineer and its Assistant Environmental Engineer (vide resolution dated 30.09.1985, copy is enclosed as Annexure C1). However "No court shall take cognizance of any offence under this Act except on complaint made by

a) A Board or any officer authorized in this behalf by it; or

b) Any Person who has given notice of not less than sixty days, in the manner prescribed, of the alleged offence and of his intention to make a complaint, to the Board or officer authorized as aforesaid and no court inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall try any offence punishable under this Act. (Copy of the resolution dated 30.09.1985 & it notification is enclosed as Annexure C-1 & C-2).

4) That M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur is a large scale existing unit and is engaged in manufacturing of sugar by processing sugar cane. The consent granted under Water (Prevention & Control of Pollution) Act, 1974 vide No. CTO/W/Renewal/HSP/2016/4039437 dated 07.10.2016 valid utpo 31.03.2020 to industry was amended for cane crushing upto 5000 TCD with discharge of treated waste water upto 1000 Kl/day with special condition not to increase its installed capacity beyond 5000 TCD without obtaining Environmental Clearance from MoEF and complying with notification issued by CPCB, New Delhi vide No. GSR 35(E) dated 14.01.2016 for sugar mills. The consent granted under Air (Prevention & Control of Pollution) Act, 1981 vide No. R15HSPCTOA2588818 dated 07.10.2015 valid upto 31.03.2017 was also amended as in case of consent granted under Water (Prevention & Control of Pollution) Act, 1974 (Annexure –C-3 & C-4). The accused No. 2 to 4 are namely- Accused no. 2 Sh. Kunal Yadav, Managing Director; Accused no. 3 Sh. Ved Parkash Gupta, Vice President; Accused no. 4 Sh. Geoffery Frederick Francis, Director and accused no. 5 Sh. Rajnish Dhir, A.G.M. (HR & Legal). Accused no. 2 Sh. Kunal Yadav is Managing Director of accused no. 1 and accused no. 3 Sh. Ved Parkash Gupta is Vice President of the accused no. 1. The other accused No. 4 Sh. Geoffery Frederick Francis and accused no. 5 Sh. Rajnish Dhir, A.G.M. (HR & Legal) are the responsible persons for accused no. 1 i.e. M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur. All accused are

supervising, managing, controlling the affairs of the company i.e. accused no. 1 from time to time. Thus, they all are liable for the offences committed by the accused no. 1.

5) That the complainant Board had provided personal hearing to the accused industry i.e. M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur on 23.08.2016 before the Chairman of the Board. Sh. G.S. Majithia, Chief Environmental Engineer and Sh. Sandeep Behl, Senior Environmental Engineer were present on behalf of the Zonal Office, Jalandhar & Sh. Ved Parkash Gupta, Vice President of the Industry i.e. accused no.1 was present, where in it was decided that the industry shall not do the sugar cane crushing more than 5000 TCD without obtaining Environment Clearance and industry shall apply to the complainant Board within 15 days. Further, the Regional Office, Hoshiarpur shall monitor and ensure that the accused industry shall not be allowed to crush cane more than allowed capacity, (Copy of the personal hearing is enclosed as Annexure C-5). However, despite of the directions of the Competent Authority, the accused had increased its capacity which were earlier allowed by the complainant Board. Thus, all the accused have violated the provisions of Water (Prevention & Control of Pollution) Act, 1974, which punishable u/s 43/44/47 of the said Act. Moreover, the accused have failed to get the Environment Clearance from the Competent Authority, which was main condition of the amended consent granted by the Board under the Water (Prevention & Control of Pollution) Act, 1974. Therefore, accused are continuously

and intentionally violating the conditions of the consent granted by the Board. Thus, they all are liable for offences committed by the accused no.1.

6) That M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur was visited by Smt. Pooja Sharma, Assistant Environmental Engineer on 20.02.2017 and Sh. Ved Parkash Gupta, Vice President was contacted at site. The observations made during visit are as under:-

1) The ETP installed by the industry was in operation and the treated effluent was being discharged onto land for plantation. The online meters were in operation and reading was observed COD = 90.6, BOD 6.34, TSS = 120, pH = 7.10. The EMF reading at outlet of ETP was observed 654855.4 m^3, flow rate 40.9 m^3/hr.
2) The STP installed for treatment of domestic effluent was also in operation. The treated effluent was being discharged onto land for plantation.
3) The industry has installed wet scrubber as APCD with bagasse fired boilers and same was in operation during visit.
4) No new construction has been carried out for the expansion of unit at site.
5) The representative informed that 40 Megawatt turbine will be installed near the store room. The boiler of capacity 200 Ton (100 +100) will be installed near the baggase storage area.

6) The representative informed that the effluent generated from the expansion of unit will be treated in the existing ETP of capacity 3000 KLD.

7) The representative of the industry Sh. Ved Parkash Gupta informed that the machinery installed in the existing building has already been upgraded/ modified for crushing capacity 7500 TPD since 2015.

8) The record of cane crushed is being given by the industry to the Cane Commissioner and Excise Department on regular basis. The copy of the record regarding cane crushed by this industry from 25.11.2016 to 07.01.2017 is enclosed herewith as per which the industry has crushed cane more than 5000 TPD in violation to the direction of the Board and EIA notification 2006 (Annexure C-6).

Thus, from above, it is clear that accused no.1 is violating the provisions of law by operating the unit at higher capacity without getting the Environment Clearance from the Competent Authority as directed by the Punjab Pollution Control Board,

7. That keeping in view of the above circumstances and relevant record of the Regional Office, Hoshiarpur, the Competent Authority has accorded the sanction for prosecution against the accused no. 1 to 5 i.e. accused no. 2 Sh. Kunal Yadav, Managing Director, accused no. 3 Sh. Ved Parkash Gupta, Vice President, accused no. 4 Sh. Geoffery Frederick Francis, Director and accused no. 5 Sh. Rajnish Dhir, A.G.M. (HR & Legal) as they all are responsible persons for violation of provisions of law, which is punishable under the Water (Prevention

(67)

& Control of Pollution) Act, 1974 read with section 43/44/47 of said Act 1974 and under section 15/16 of the Environment (Protection) Act, 1986.

It is therefore prayed that all the accused be summoned in the interest of justice and administration of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur be restrained to further increase its capacity as they have failed to get the Environment Clearance from Punjab Pollution Control Board and environmental clearance as well as the accused i.e. responsible persons be punished in accordance with law for violation of provision of Water (Prevention & Control of Pollution) Act 1974 and Environment (Protection) Act, 1986, please.

Further, the application under section 319 of Cr. P. C for including the additional accused shall be filed later on.

DA/ List of witnesses is attached
and additional list of witnesses
shall be produced later on.

Place: Hoshiarpur
Date:

Submitted by

(Sukhwant Singh)
Assistant Environmental Engineer
Through

(KuljaRat)
Sr. Law officer
Zonal Office, Jalandhar

IN THE COURT OF CHIEF JUDICIAL MAGISTRATE, HOSHIAPRUR

Punjab Pollution Control Board, VatavaranBhawan, Nabha Road, Patiala through its Assistant Environmental Engineer Mrs. Pooja Sharma, Regional Office, E18-A, Focal Point, Hoshiarpur through Sh. Kulraj Rai, Senior Law Officer, Zonal Office, Focal Point, Jalandhar

--Complainant

Versus

1. M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
2. Sh. Kunal Yadav, Managing Director of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
3. Sh. Ved Parkash Gupta, Vice President of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
4. Sh. Geoffery Frederick Francis, Director of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
5. Sh. Rajinder Dhir, Assistant Manager Legal of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.

-- Accused

List of Witnesses

1. Mrs. Pooja Sharma (AEE) (Regional office, Hosharpur)	To prove the complaint & record
2. Sh. G.S. Majithia (CEE) (Focal Point, Jalandhar)	To prove the personal hearing dated 23.08.2016
3. Er. Sandeep Behl (SEE) (Zonal office, Jalandhar)	To prove the personal hearing dated 23.08.2016
4. Assistant/Record Keeper (Regional office, Hoshiarpur)	To prove record
5. Assistant/Record Keeper (Zonal office, Jalandhar)	To prove record

Additional List of Witnesses shall be produced later on.

Place: Hoshiarpur
Date:

Submitted by

(Pooja Sharma)
Assistant Environmental Engineer
Through

(Kulraj Rai)
Sr. Law officer
Zonal Office, Jalandhar

(9)

IN THE COURT OF CHIEF JUDICIAL MAGISTRATE, HOSHIAPRUR

Punjab Pollution Control Board, VatavaranBhawan, Nabha Road, Patiala through its Assistant Environmental Engineer Mrs. ~~Pooja Sharma~~ Sukhwinder Singh, Regional Office, E18-A, Focal Point, Hoshiarpur through Sh. Kulraj Rai, Senior Law Officer, Zonal Office, Focal Point, Jalandhar

--Complainant

Versus

1. M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
2. Sh. Kunal Yadav, Managing Director of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
3. Sh. Ved Parkash Gupta, Vice President of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
4. Sh. Geoffery Frederick Francis, Director of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
5. Sh. Rajinder Dhir, Assistant Manager Legal of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.

-- Accused

List of Documents

1)	Copy of the Resolution dated 30.09.1985 and its notification	Annexure – C-1 & C-2
2.	Copy of the consent granted dated	Annexure –C3
3.	Copy of the amended consent	Annexure – C-4
4.	Copy of the personal hearing dated 23.08.2016	Annexure –C-5
5.	Copy of the visit report dated 20.02.2017	Annexure – C-6

Place: Hoshiarpur
Date:

Submitted by
Er Sukhwinder Singh
(~~Pooja Sharma~~)
Assistant Environmental Engineer
Through

(Kulraj Rai)
Sr. Law officer
Zonal Office, Jalandhar

(10)

IN THE COURT OF CHIEF JUDICIAL MAGISTRATE, HOSHIAPRUR

Punjab Pollution Control Board, VatavaranBhawan, Nabha Road, Patiala through its Assistant Environmental Engineer Mrs. Pooja Sharma, Regional Office, B18-A, Focal Point, Hoshiarpur through Sh. Kulraj Rai, Senior Law Officer, Zonal Office, Focal Point, Jalandhar

--Complainant

Versus

1. M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
2. Sh. Kunal Yadav, Managing Director of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.
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5. Sh. Rajinder Dhir, Assistant Manager Legal of M/s Indian Sucrose Ltd., Vill. Chak Alah Bakash, Tehsil Mukerian, Distt. Hoshiarpur.

-- Accused

Application for the exemption of personal hearing.

Sir,

It is respectfully submitted as under;

1) That the undersigned complainant is a busy official of the Board as I used to remain busy in the field work. Due to which I cannot attend each and every hearing due to the business and I undertake to attend the court as and when desired my presence in the interest of justice and administration.

It is therefore prayed that my presence may be considered through Sh. Kulraj Rai, Senior Law Officer, Zonal Office, Jalandhar.

Thanking you,

Place: Hoshiarpur
Date:

Submitted by
Er. Swichwant Singh
(Pooja Sharma)
Assistant Environmental Engineer
Through

(Kulraj Rai)
Sr. Law officer
Zonal Office, Jalandhar

Sr. No. 21866 (18)

POWER OF ATTORNEY
VAKALATNAMA

Assistant Secretary
District Bar Association
Jalandhar

IN THE COURT OF Chief Judicial Magistrate Hoshiarpur

In re: Punjab Pollution control Board Plaintiff /Appellant /Petitioner/ Complainant

VERSUS

M/s Indian Sucrose Ltd (Formerly) Defendant/Respondent/ Accused

Know all to whom these presents shall come that I / We the undersigned appoint

Sh. Kuljeet Rai Senior Law Officer/ Sr Advocate

Advocate at Hoshiarpur for

(herein after called the advocate/s) to be my/our Advocate in the above noted case authorize him:-

1. To act, appear and plead in the above-noted case in this Court or in any other Court in which the same may be tried or heard and also in the appellate Court including High Court subject to payment of fees separately for each Court by me/us.
2. To sign, file, verify and present pleadings, appeals, cross-objections or petitions for executions review revision, withdrawal, compromise or other petitions or affidavits or other documents as may be deemed necessary or proper for the prosecution of the said case in all its stages subject to payment of fees for each stage.
3. To file and take back documents, to admit and/or deny the documents of opposite Party.
4. To withdraw or compromise the said case or submit to arbitration any differences or disputes that may arise touching or in any manner relating to the said case. .
5. To take execution proceedings.
6. To deposit, draw and receive monthly cheques, cash and grant receipts thereof and to do all other acts and things which may be necessary to be done for the progress and in the course of the prosecution of the said case.
7. To appoint and instruct any other Legal Practitioner authorizing him to exercise the power and authority hereby conferred upon the Advocate whenever he may think fit to do so and to sign the power of attorney on our behalf.
8. And I/We the undersigned do hereby agree to ratify and confirm all acts done by the Advocate or his substitute in the matter as my/our own acts, as if done by me/us to all intents and purposes.
9. And I/We undertake that I/We or my/our duly authorised agent would appear in Court on all hearings and will inform the Advocate for appearance when the case is called.
10. And I/We the undersigned do hereby agree not to hold the advocate or his substitute responsible for the result of the said case.
11. The adjournment costs whenever ordered by the Court shall be of the Advocate which he shall receive and retain for himself.
12. And I/We the undersigned do hereby agree that in the event of the whole or part of the fee agreed by me/us to be paid to the advocate remaining unpaid he shall be entitled to withdraw from the prosecution of the said case until the same is paid up. The fee settled is only for the above case and above Court. I/we hereby agree that once fee is paid, I/We will not be entitled for the refund of the same in any case whatsoever and if the case prolongs for more than 3 years the original fee shall be paid again by me/us.

IN WITNESS WHEREOF I/We do hereunto set my/our hand to these presents the contents of which have been understood by me/us on this 6 day of 12 2017

Kuljeet Rai Sr Advocate/SLO

Enr. No. PB-52/1988

M. No. 98-89-50558

Advocate

Accepted subject to the terms of the fees etc.

(Signature of thumb impression)

G. Sukhmeet Singh (Adv)

Published for the welfare of the Members of District Bar Association of Jalandhar.

53, Residency Bank Enclave
Phase 8 Jalandhar

OFFICERS AUTHORISED FOR TAKING COGNIZANCE OF OFFENCES

NOTIFICATION

S.O. 394(E).-In exercise of the powers conferred under clause (a) of section 19 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby authorises the officers and authorities listed in column (2) of the Table hereto for the purpose of the said section with the jurisdiction mentioned against each of them in column (3) of that Table.

TABLE

Serial No	Officer	Jurisdiction
(1)	(2)	(3)
1.	Any Director, Joint Secretary, Adviser or Additional Secretary to the Government of India in the Department of Environment, Forests and Wildlife,	Whole of India
2.	The Chairman [or Member-Secretary] of the Central Pollution Control Board constituted under section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974).	Whole of India
3.	The Government of the State (represented by the Secretary to the State Government incharge) of environment.	Whole of State
4.	The Chairman or Member-Secretary of the State Pollution Control Board constituted under section 4 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or a State Pollution Control Board constituted under section 5 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981).	Whole of State
5.	Collector.	Whole of Revenue District
6.	Zonal Officers of the Central Pollution Control Board who have been delegated powers under sections 20, 21, 23 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and section 24 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981).	Area as laid down by the Central Board

[Inserted by Notification S.O.624(E), dated 3.9.1998.
[Inserted by Notification G.S.R.381(E), dated 1.9.2006.

सत्यमेव जयते

CIN U00000PB1990PLC10903

FRESH CERTIFICATE OF INCORPORATION CONSEQUENT ON CHANGE OF NAME

IN THE OFFICE OF THE REGISTRAR OF COMPANIES, PUNJAB, HIMACHAL PRADESH & CHANDIGARH AT JALANDHAR

(UNDER THE COMPANIES ACT, 1956) (1 OF 1956)

IN THE MATTER OF OSWAL SUGARS LIMITED

I hereby certify that OSWAL SUGARS LIMITED

which was originally incorporated on 12-12-1990 under the Companies Act, 1956 and under the name of OSWAL SUGARS LIMITED

having duly passed the necessary resolution in terms of Section 21 of the Companies Act, 1956, approval of the Central Government is hereby accorded thereto and the name of said company is this day changed to INDIAN SUCROSE LIMITED and this certificate is issued pursuant to Section 23 (1) of the said Act.

Given under my hand at JALANDHAR this 4th day of December two thousand Three.

(13th Agrahayana, Saka, 1925)

Certified to be True Copy
For Oswal Sugar Limited
Dy. Secretary

(DIWAN CHAND)
Registrar of Companies
Punjab, H.P. & Chandigarh

Annexure-15

No.PB/10903/ 4596 Dated: 04-12-2003

Indian Sucrose Limited,

G.T.Road, Mukerian-144 211.

ਜਮਾਬੰਦੀ– 2018 2019 ਪਿੰਡ– ਮਹਿਉਲਦੀਨ ਪੁਰ ਦਲੇਲ ਹਦਬਸਤ ਨੰ:– 234 ਤਹਿਸੀਲ– ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ– ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ:/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
124/ 114 ਕੁਲ 1.63 ਮਾਲ 1.02 ਸਵਾਈ 0.61 (ਪੱਤੀ) . (ਨੰਬਰਦਾਰ) ਸਰਬ ਸ਼੍ਰੀ ਬਚਿੱਤਰ ਸਿੰਘ 3/4, ਵਿਜੇ ਕੁਮਾਰ 1/4	174	ਦਲਾਵਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ 1/8 ਹਿੱਸਾ ਅਵਤਾਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 1/8 ਹਿੱਸਾ ਪਿਆਰਾ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 1/8 ਹਿੱਸਾ ਜਸਵਿੰਦਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 1/8 ਹਿੱਸਾ ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਓਸਵਾਲ ਢੰਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ 1/2 ਹਿੱਸਾ	ਮਕਬੂਜਾ		60 // 19	5-3 (0-26-5.16) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	ਰਪਟ ਨੰ 118 ਆੜ ਰਹਿਨ ਮਿਤੀ 7/12/2017 ਖਸਰਾ ਨੰਬਰ60//19 ਰਕਬਾ5-3 ਦਾ1/2 ਹਿੱਸਾ ਬਕਦਰ ਰਕਬਾ 2-11 ਵਾ ਖਸਰਾ ਨੰਬਰ 60//10/2,60//11,60//12,60//2,60//20,60//9ਰਕਬਾ 42-8 ਦਾ2/3ਬਿੱਸਾ ਬਕਦਰ ਰਕਬਾ 28-5 ਵਾ ਖਸਰਾ ਨੰਬਰ 57//21,57//22,58//14/2,58//17,58//24,58//25/1,58//25/2,59//14,59//15,59//16,59//17,59//4,59//5/1,59//5/2,59//6/1,59//6/2,59//7,60//1,60//10/1ਰਕਬਾ104-15 ਵਲੋ ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਬਾਂਹਕ ਪੰਜਾਬ ਨੈਸ਼ਨਲ ਬੈਂਕ ਬਰਾਂਚ ਮੁਕੇਰੀਆਂ ਪਾਸ ਬਦਲੇ2,00,00,00,000/-(ਦੋ ਸੌ ਕਰੋੜ)ਵਿਚ ਇਕੁਟੇਵਲ ਮਰੋਟਗੇਜ਼ ਹੋ ਚੁੱਕੀ ਹੈ।
				ਕੁਲ	ਕਿੱਤੇ 1	5-3 (0-26-5.16)	
					5 ਕਨਾਲ 3 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 26 ਏਅਰ 5.16 ਸੈਂਟੇਅਰ) ਨੋਟਮਜ਼ਰੂਆ		
					5 ਕਨਾਲ 3 ਮਰਲਾ (0 ਹੈਕਟੇਅਰ 26 ਏਅਰ 5.16 ਸੈਂਟੇਅਰ) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ		
635/ 588 ਕੁਲ 19.33 ਮਾਲ 12.08 ਸਵਾਈ 7.25 (ਪੱਤੀ) . (ਨੰਬਰਦਾਰ) ਸਰਬ ਸ਼੍ਰੀ ਬਚਿੱਤਰ ਸਿੰਘ 3/4, ਵਿਜੇ ਕੁਮਾਰ 1/4	865	ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਓਸਵਾਲ ਢੰਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ 2/3 ਹਿੱਸਾ ਪੂਨੇ ਦੇਵੀ ਪੁੱਤਰੀ ਸਾਧੂ ਸਿੰਘ ਪੁੱਤਰ ਮੋਦੀਆ ਸਿੰਘ 2/45 ਹਿੱਸਾ ਧਰਮ ਕੌਰ ਪੁੱਤਰੀ ਸਾਧੂ ਸਿੰਘ ਪੁੱਤਰ ਮੋਦੀਆ ਸਿੰਘ 2/45 ਹਿੱਸਾ ਦਿਲਾਵਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ ਅਵਤਾਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ ਪਿਆਰਾ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ ਜਸਵਿੰਦਰ ਸਿੰਘ ਪੁੱਤਰ ਜਗਤ ਰਾਮ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਵਾਸੀ ਬਿਸ਼ਨਪੁਰ 11/180 ਹਿੱਸਾ	ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਓਸਵਾਲ ਢੰਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ ਹਿਸੇਦਾਰ		60 // 2	7-11 (0-38-19.22) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	ਰਪਟ ਨੰ 118 ਆੜ ਰਹਿਨ ਮਿਤੀ 7/12/2017 ਖਸਰਾ ਨੰਬਰ60//19 ਰਕਬਾ5-3 ਦਾ1/2 ਹਿੱਸਾ ਬਕਦਰ ਰਕਬਾ 2-11 ਵਾ ਖਸਰਾ ਨੰਬਰ 60//10/2,60//11,60//12,60//2,60//20,60//9ਰਕਬਾ 42-8 ਦਾ2/3ਬਿੱਸਾ ਬਕਦਰ ਰਕਬਾ 28-5 ਵਾ ਖਸਰਾ ਨੰਬਰ 57//21,57//22,58//14/2,58//17,58//24,58//25/1,58//25/2,59//14,59//15,59//16,59//17,59//4,59//5/1,59//5/2,59//6/1,59//6/2,59//7,60//1,60//10/1ਰਕਬਾ104-15 ਵਲੋ ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਬਾਂਹਕ ਪੰਜਾਬ ਨੈਸ਼ਨਲ ਬੈਂਕ ਬਰਾਂਚ ਮੁਕੇਰੀਆਂ ਪਾਸ ਬਦਲੇ2,00,00,00,000/-(ਦੋ ਸੌ ਕਰੋੜ)ਵਿਚ ਇਕੁਟੇਵਲ ਮਰੋਟਗੇਜ਼ ਹੋ ਚੁੱਕੀ ਹੈ।
					60 // 9	8-0 (0-40-46.86) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	
					60 // 10/2	6-4 (0-31-36.31) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	
					60 // 11	8-0 (0-40-46.86) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	
					60 // 12	8-0 (0-40-46.86) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	
					60 // 20	4-13 (0-23-52.24) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ	
				ਕੁਲ	ਕਿੱਤੇ 6	42-8 (2-14-48.34)	
					42 ਕਨਾਲ 8 ਮਰਲਾ (2 ਹੈਕਟੇਅਰ 14 ਏਅਰ 48.34 ਸੈਂਟੇਅਰ) ਨੋਟਮਜ਼ਰੂਆ		
					42 ਕਨਾਲ 8 ਮਰਲਾ (2 ਹੈਕਟੇਅਰ 14 ਏਅਰ 48.34 ਸੈਂਟੇਅਰ) ਗੈ. ਮੂ. ਸ਼ੂਗਰ ਮਿਲ		

ਦਸਤੇਖਤ ਨੰ 6369 ਕੁੱਲ ਪੰਨੇ: 3 ਕੁੱਲ ਦੀਮ: 75 ਕਰਮਚਾਰੀ ਦਾ ਨਾਮ/ਅਹੁਦਾ: Amarjit Kaur ਕੰਪਿਊਟਰ ਸਾਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਤਿਆਰ ਹੈ।

ਪੰਨਾ 3 ਦਾ 1 ਪ੍ਰਿੰਟਿਡ ਮਿਤੀ: 31-07-2020 10:48:06:243 ਸਵੇਰ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 29/07/2020 ਬੁਕ ਕੰਪਿਊਟਰ ਵਿਚ ਚਢਸ ਹੈ। ਕਨੂਗਗੋ ਦੇ ਹਸਤਾਖਰ

ਸਾਲ:- 2018 2019 ਪਿੰਡ:- ਮਹਿਉਲਦੀਨ ਪੁਰ ਦਲੇਲ ਖਸਰਾ ਨੰ:- 234 ਤਹਸੀਲ:- ਮੁਕੇਰੀਆ ਜ਼ਿਲਾ:- ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖਵਟ ਨੰ./ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਸਰਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਕੇ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
701/ 653 ਕੁਲ 49.44 ਮਾਲ 30.90 ਸਵਾਈ 18.54 (ਪੱਤੀ) . (ਨੰਬਰਦਾਰ) ਸਰਬ ਸ੍ਰੀ ਬਚਿੱਤਰ ਸਿੰਘ 3/4, ਵਿਜੈ ਕੁਮਾਰ 1/4	953	ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਪੁੱਤਰ ਮਿਲਖੀ ਰਾਮ ਓਸਵਾਲ ਵੱਡਾਰੀ ਕਲਾਂ ਜੀ ਟੀ ਰੋਡ ਲੁਧਿਆਨਾ	ਮਕਬੂਜਾ ਮਾਲਕ		57 // 21 57 // 22 58 // 14/2 58 // 17 58 // 24 58 // 25/1 58 // 25/2 59 // 4 59 // 5/1 59 // 5/2 59 // 6/1 59 // 6/2 59 // 7 59 // 14	8-0 (0-40-46.86) ਸ਼ੂਗਰ ਮਿਲ 8-0 (0-40-46.86) ਸ਼ੂਗਰ ਮਿਲ 1-8 (0-7-8.20) ਸ਼ੂਗਰ ਮਿਲ 6-17 (0-34-65.12) ਸ਼ੂਗਰ ਮਿਲ 7-8 (0-37-43.34) ਸ਼ੂਗਰ ਮਿਲ 6-4 (0-31-36.31) ਸ਼ੂਗਰ ਮਿਲ 1-16 (0-9-10.54) ਸ਼ੂਗਰ ਮਿਲ 7-16 (0-39-45.69) ਸ਼ੂਗਰ ਮਿਲ 6-8 (0-32-37.49) ਸ਼ੂਗਰ ਮਿਲ 1-12 (0-8-9.37) ਸ਼ੂਗਰ ਮਿਲ 1-11 (0-7-84.08) ਸ਼ੂਗਰ ਮਿਲ 6-9 (0-32-62.78) ਸ਼ੂਗਰ ਮਿਲ 8-0 (0-40-46.86) ਸ਼ੂਗਰ ਮਿਲ 8-2 (0-40-97.44) ਸ਼ੂਗਰ ਮਿਲ	ਰਪਟ ਨੰ 118 ਆਜ਼ ਰਹਿਨ ਮਿਤੀ 7/12/2017 ਖਸਰਾ ਨੰਬਰ60//19 ਰਕਬਾ5-3 ਦਾ1/2 ਹਿੱਸਾ ਬਕਦਰ ਰਕਬਾ 2-11 ਦਾ ਖਸਰਾ ਨੰਬਰ 60//10/2,60//11,60//12,60//2,60//20,60//9ਰਕਬਾ 42-8 ਦਾ2/3ਹਿੱਸਾ ਬਕਦਰ ਰਕਬਾ 28-5 ਦਾ ਖਸਰਾ ਨੰਬਰ 57//21,57//22,58//14/2,58//17,58//24,58//25/1,58//25/2,59//14,59//15,59//16,59//17,59//4,59//5/1,59//5/2,59//6/1,59//6/2,59//7,60//1,60//10/1ਰਕਬਾ104-15 ਵਲੋ ਮੈਸਰਜ ਓਸਵਾਲ ਸ਼ੂਗਰਜ ਲਿਮਟਿਡ ਮੁਕੇਰੀਆਂ ਰਾਹੀ ਨੀਲਮ ਕੁਮਾਰ ਓਸਵਾਲ ਪੁੱਤਰ ਵਿਦਿਆ ਸਾਗਰ ਓਸਵਾਲ ਬਾਂਕ ਪੰਜਾਬ ਨੈਸ਼ਨਲ ਬੈਂਕ ਬਰਾਂਚ ਮੁਕੇਰੀਆਂ ਪਾਸ ਬਦਲੇ2,00,00,00,000/-(ਦੋ ਸੋ ਕਰੋੜ)ਵਿਚ ਇਕੁਟੇਵਲ ਮਰੋਟਗੇਜ ਹੋ ਚੁੱਕੀ ਹੈ।

ਨਾਮਜ਼ਦ ਨੰ 6380 ਕੁਲ ਪੰਨੇ 3 ਕੁਲ ਨੀਲ 75 ਤਹਸੀਲਦਾਰ ਦਾ ਦਸਤਖਤ ਕੰਪਿਊਟਰ ਮਿਲ ਰਿਕਾਰਡ ਮੁਤਾਬਿਕ ਨਕਲ ਦਰੁਸਤ ਹੈ)

ਪ੍ਰਿੰਟਿੰਗ ਮਿਤੀ : 31-07-2020 10.48.06.243 ਸਵੇਰ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 29/07/2020 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ) ਤਹਸੀਲਦਾਰ ਦੇ ਹਸਤਾਖਰ

ਜਮਾਂਬੰਦੀ- ਰਿੱਛ-

1	2	3					
ਖੇਵਟ ਨੰ:/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਖਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕਾਂ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ					ਵਿਸ਼ੇਸ਼ ਕਥਨ

ਜਮਾਬੰਦੀ 2018 2019 ਪਿੰਡ- ਮਹਿਮੂਦੀਨ ਪੁਰ ਦਲੇਲ ਪਟਵਾਰ ਨੰ:- 234 ਤਹਿਸੀਲ- ਮਕੇਰੀਆ ਜ਼ਿਲ੍ਹਾ- ਹੁਸ਼ਿਆਰਪੁਰ

1	2	3	4	5	6	7	8
ਖੇਵਟ ਨੰ:/ ਮਾਲ/ਪੱਤੀ, ਨੰਬਰਦਾਰ	ਪਤੌਨੀ ਨੰਬਰ/ ਲਗਾਨ	ਮਾਲਕ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਕਾਸ਼ਤਕਾਰ ਦਾ ਨਾਂ ਅਤੇ ਵੇਰਵਾ	ਸਿੰਚਾਈ ਦਾ ਸਾਧਨ	ਮੁਰੱਬਾ ਅਤੇ ਖਾਨਾ ਨੰਬਰ	ਰਕਬਾ ਅਤੇ ਭੌਂ ਦੀ ਕਿਸਮ	ਵਿਸ਼ੇਸ਼ ਕਥਨ
					59 // 15	8-0 (0-40-46.86) ਸ਼ੂਗਰ ਮਿਲ	
					59 // 16	4-9 (0-22-51.06) ਸ਼ੂਗਰ ਮਿਲ	
					59 // 17	4-7 (0-22-0.48) ਸ਼ੂਗਰ ਮਿਲ	
					60 // 1	7-4 (0-36-42.17) ਸ਼ੂਗਰ ਮਿਲ	
					60 // 10/1	1-4 (0-6-7.03) ਸ਼ੂਗਰ ਮਿਲ	
				ਕੁਲ	ਕਿੱਤੇ 19	104-15 (5-29-88.53)	
						104 ਕਨਾਲ 15 ਮਰਲਾ (5 ਹੈਕਟੇਅਰ 29 ਏਅਰ 88.53 ਸੈਂਟੇਅਰ) ਗੈਰਮਜਰੂਆ	
						104 ਕਨਾਲ 15 ਮਰਲਾ (5 ਹੈਕਟੇਅਰ 29 ਏਅਰ 88.53 ਸੈਂਟੇਅਰ) ਸ਼ੂਗਰ ਮਿਲ	

ਮਿਤੀ 31/7/20

ਪ੍ਰਮਾਣ ਲੈਂਡ ਰਿਕਾਰਡ

ਟ੍ਰਾਂਜੈਕਸ਼ਨ ਨੰ 0389 ਕੁੱਲ ਪੰਨੇ: 3 ਕੁੱਲ ਫੀਸ: 75 ਜਨਮਦਾਤੀ ਦਾ ਨਾਮ/ਅਨੁਦਾ: ਕੰਪਿਊਟਰ ਮਾਲ ਰਿਕਾਰਡ ਪ੍ਰਮਾਣਿਤ ਨਕਲ ਦਰੁਸਤ ਹੈ।

ਪੰਨਾ 3 ਦਾ 3 ਪ੍ਰਿੰਟਿੰਗ ਮਿਤੀ : 31-07-2020 10:48:06:243 ਸਵੇਰ ਪਟਵਾਰੀ ਵਲੋ ਮਾਲ ਰਿਕਾਰਡ ਮਿਤੀ 29/07/2020 ਤਕ ਕੰਪਿਊਟਰ ਵਿਚ ਦਰਜ ਹੈ। ਕਲਰਕ-ਦਾਤੀ ਦੇ ਹਸਤਾਖਰ

सत्यमेव जयते

CIN U00000PB1990PLC10903

FRESH CERTIFICATE OF INCORPORATION CONSEQUENT ON CHANGE OF NAME

IN THE OFFICE OF THE REGISTRAR OF COMPANIES, PUNJAB, HIMACHAL PRADESH & CHANDIGARH AT JALANDHAR

(UNDER THE COMPANIES ACT, 1956) (1 OF 1956)

IN THE MATTER OF OSWAL SUGARS LIMITED

I hereby certify that OSWAL SUGARS LIMITED

which was originally incorporated on 12-12-1990 under the Companies Act, 1956 and under the name of OSWAL SUGARS LIMITED

having duly passed the necessary resolution in terms of Section 21 of the Companies Act, 1956, approval of the Central Government is hereby accorded thereto and the name of said company is this day changed to INDIAN SUCROSE LIMITED and this certificate is issued pursuant to Section **23 (1) of the said Act.**

Given under my hand at JALANDHAR this 4th day of December Two thousand Three.

(13th Agrahayana Saka, 1925)

(DIWAN CHAND)

Registrar of Companies

Punjab, H.P. & Chandigarh

No.PB/10903/ 4596 Dated: 04-12-2003

Indian Sucrose Limited,

G.T.Road, Mukerian-144 211.

प्रारूप आई. आर.

Form No. I. R.

निगमन का प्रमाण-पत्र

CERTIFICATE OF INCORPORATION

ता०.....का सं० .....

No 16-10903 ...of 1990

मैं एतद् द्वारा प्रमाणित करता हूं कि आज ओसवाल शुगर्स लिमिटेड .....

.....

कम्पनी अधिनियम 1956 (1956 का 1) के अधीन निगमित की गई है और यह कम्पनी परिसीमित है।

I hereby certify that OSWAL SUGARS LIMITED .....

.....is this day incorporated under the Companies Act, 1956 (No 1 of 1956) and that the Company is Limited.

मेरे हस्ताक्षर से आज ता०.....को दिया गया।

Given under my hand at JALANDHAR this 12th day of DECEMBAR .....One Thousand Nine Hundred and Ninety.

21st AGRAHAYANA, SAKA, 1912

Satyendra Singh

(SATYENDRA SINGH)

कम्पनियों का रजिस्ट्रार

Registrar of Companies

पंजाब, हि. प्र. एवं चण्डीगढ़

Punjab, H. P. & Chandigarh

कारोबार प्रारम्भ करने के लिए प्रमाण पत्र
Certificate for Commencement of Business

कम्पनी अधिनियम, 1956 की धारा 149(3) के अनुसरण में

Pursuant of Section 149(3) of the Companies Act, 1956

Company No. 16-10903

मैं एतद्द्वारा प्रमाणित करता हूं कि.....ओसवाल शुगार्स लिमिटेड.....

.....

.....

जो कम्पनी अधिनियम, 1956 के अधीन तारीख.....को निगमित की गई थी और जिसने आज विहित प्ररुप में सम्यक् रूप से सत्यापित घोषणा फाइल कर दी है कि उक्त अधिनियम की धारा 149(1) (क) से लेकर (घ) तक/149(2) (क) से लेकर (ग) तक की शर्तों का अनुपालन किया गया है, कारोबार प्रारम्भ करने की हकदार है ।

I hereby certify that the.....OSWAL SUGARS LIMITED.....

.....

.....

which was incorporated under the Companies Act, 1956, on the...12th..... day of.....DECEMBER....19 90 and which has this day filed a duly verified declaration in this prescribed form that the conditions of section 149.1) (a) to (d)//149(2) (a) to (c) of the said Act, have been complied with is entitled to commence business.

मेरे हस्ताक्षर से यह तारीख.....को.....

में दिया गया ।

Given under my hand at...JALANDHAR.....

this.....18th.....day of...DECEMBER.....One thousand nine hundred and....NINETY.....

27th AGRAHAYANA, SAKA, 1912

(SATYENDRA SINGH)
कम्पनियों का रजिस्ट्रार
Registrar of Companies
Punjab, Himachal Pradesh & Chandigarh

THE COMPANIES ACT, 1956
PUBLIC COMPANY LIMITED BY SHARES
MEMORANDUM OF ASSOCIATION
OF
INDIAN SUCROSE LIMITED

I. The name of the company is INDIAN SUCROSE LIMITED.

II. The Registered Office of the Company will be situated in the State of Punjab.

III. The objects for which the Company is established are:

A. MAIN OBJECTS TO BE PURSUED BY THE COMPANY ON ITS INCORPORATION ARE:

1. To carry on all or any of the business of manufacturers, importers, exporters and dealers in all types and grades of Sugar and its allied products.

2. To generate, distribute, supply and employ electricity, all kinds of power and energy out of the steam generated in the process of manufacturing of sugar and its by-products.

3. To carry on all or any business of manufactures, importers, exporters, distributors and otherwise dealer in sugar and its bye-products such as molasses, baggase, alcohal and other chemicals extracted from sugar, molasses and baggase, manures, breweries, distilleries, manufacturers of all kinds of preserved food, sauces, jams, alcoholic and non-alcoholic drinks and pharmaceuticals for domestic and hotel use.

4. To carry on all or any of the business of cultivators, planters, growers, processors, buyers, millers and dealers of all types of sugar cane, sugar beet and other agricultural products of the soil as may be required for the purpose of the Company.

5. To carry on all or any of the business of manufacturers, importers and exporters, distributors, processors and otherwise dealers in all types of raw materials like Sulphur, Lime, Chemicals packing materials, gunny bags, plastic and synthetic bags, metallic and non-metallic bag & containers and things required for the production of sugar, its by-products and electricity.

(B) OBJECTS INCIDENTAL OR ANCILLARY to the attainment of main objects :

1. To manufacture, buy, sell, exchange, install, work, alter, improve, import, export or otherwise deal in all kinds of plant, machinery, wagons, rolling stock, apparatus, tools, utensils, substances, materials and things necessary or convenient for carrying on any of the business, which the Company is authorised to carry on or usually dealt in by persons engaged in such business.

2. To, construct, produce, prepare, manufacture, rebuild, repair, purchase, sell, import, export, rent machine and machinery of any kind which may appear to be necessary or convenient for or incidental to any business of the company.

3. To invest and deal with the moneys of the Company not immediately required in or upon such securities and in such manners as from time to time be determined.

4. To purchase, take on lease, or otherwise acquire, either absolute or for any limited interest any immovable or movable property or rights or things in action for use in or in connection with any business of the Company and. in particular, any lands, tenements or Hereditary in any part of the world, or any rights or privileges in connection therewith, and any patents or patent rights or other similar privilege and any licenses or authorities, whether in respect of any invention in

Sections 70 of the Act) at a discount and at such times as they may from time to time think fit and proper, and wit~ full power to give to any person the option to be allotted shares of the company either at par or at a premium, or subject as aforesaid, at a discount such option being exercisable at to such time, and for such consideration as the Director think fit, provided that option or right to call of shares shall not be given to any person or persons without any sanction of the Company in general meeting.

Power of General meeting to other share to such powers as the Company may resolve

8. In addition to and without derogating from the power for the purpose conferred in the Directors under" article 7 the company in general meeting may be special resolution determine to issue further shares out of the authorised. but un-issued capital of the Company and may -determine that any shares (whether forming part. of the original capital or, of any increased capital of the Company) shall be offered to such persons (whether members or holders of debentures of the Company or not) in such proportion and on such terms and conditions and either at a premium or at par or, subject to compliance with the provisions of Section 79 of the Act, at a discount as such general meeting shall determine and with full power to give any person (whether a member or holder of debentures of the company or not) the option to be allotted shares of any class of the company either at a premium, or at par or, (subject to compliance with the provisions of Section 79 of the Act) at a discount, such option being exercisable at such times and for such considerations as may be directed by such general meeting or the Company in general meeting may make any other provision whatsoever for the issue, allotment or disposal of any shares, Subject to any direction given by the Company in general meeting as aforesaid the provisions of the Article 68 hereof shall apply to any issue of new shares.

Directors may allot shares as fully paid up.

9. Subject to the provisions of the Act and these Articles the Directors may allot and issue shares in the capital of the Company in payment or part payment for any property or assets of any kind whatsoever (including the good- will of any business) sold or transferred goods or machinery or know how supplied, or for services rendered to the company either in or about the formation or promotion of the Company or the conduct of its business and any shares which may be so allotted maybe issued as, fully paid up or partly paid up in cash or otherwise than in cash and if so issued shall be deemed to be fully paid up or partly paid up shares as aforesaid. The Directors shall cause returns to be field of any such allotment as provided by Section 75 of the Act.

Shares to be numbered progressively.

10. The Share in the Capital of the Company shall be numbered progressively according to their denomination and except in the manner hereinafter mentioned, no share shall be sub-divided.

Acceptance of Shares.

11. An application signed by or on behalf of an applicant for shares in

Si. No.	Name Father's/Husband's Name, Address, Occupation of each subscriber	Number of Equity Shares taken by each Subscriber	Name, Address, Description and Signature of Witness
1	G.P.S. Sahi, IAS S/o Sh. Ajit Singh Sahi 3, Sector-3, Chandigarh (Govt. Service)	Sd/-	Witness of all RAJ GUPTA (Chartered Accountants) S/o Sh. Jagan Nath Gupta G.T. Road Miller Gunj, Ludhiana
2	S.R.K. Agnihotri S/o Late Sh. Jagan Nath Agnihotri 270, Sector-2, Panchkula (Service)	Sd/-	
3	Om Sahai S/o Sh. R. N. Sahai General Manager (Projects) Punjab Agro Ind., Corp. S.C.O. 315-316 Sector 35-B, Chandigarh (Service)	Sd/-	
4	Neelam Kumar Oswal S/o Sh. Vidya Sagar Oswal 369, Civil Lines, Opp. Ravi Cold Store, Ludiana (Business)	Sd/-	
5	Kamal Oswal S/o Sh. Jawahar Lal Oswal 514 Cololege Road, Civil Lines, Ludhiana (Business)	Sd/-	
6	Narayan Dass Jain S/o Sh. Suraj Bhan Jain 2557, Urban Estate, Phase-I Dugri Road, Ludhiana (Service)	Sd/-	
7	Rakesh Kumar Verma S/o Sh. Wali Ram Verma 37A, Green Park, Ludhiana (Service)	Sd/-	

Place : Ludhiana
Date : 12th December, 1990

INDIAN SUCROSE LIMITED

CIN - L15424PB1990PLC010903
e-mail : info.isl@yaducorporation.com | Website : www.muksug.com

TO WHOM IT MAY CONCERN

I, Ved Prakash Gupta on behalf of M/s. Indian Sucrose Ltd. hereby undertake that our company:-

1. Without permission of CGWA we will not install new tube well for ground water abstraction.
2. The Project area does not fall under the provision of PLPA Act, 1900, in this regard undertaking is enclosed.
3. Follows the guidelines of PPCB as mentioned in CTO.
4. Constitution of Environment Monitoring Cell which shall be responsible for implementation of EMP
5. To provide Fire Fighting System

For Indian Sucrose Ltd.

For Indian Sucrose Ltd

Authorised Signatory

(Ved Prakash Gupta)
Vice President

Date: 28.07.2020

GREENBELT & LANDSCAPE PLAN FOR
CAPACITY EXPANSION FROM 5000 TCD ALONG WITH 19.5MW COGENERATION POWER PLANT TO 12000 TCD ALONG WITH 59.5MW COGENERATION POWER PLANT AT VILLAGE- CHAK ALLABAKSH & MAHIULDINPUR DALEL, TEHSIL- MUKERIAN, DISTRICT- HOSHIARPUR (PUNJAB).

BY- M/S INDIAN SUCROSE LTD.

Objective of Plan:

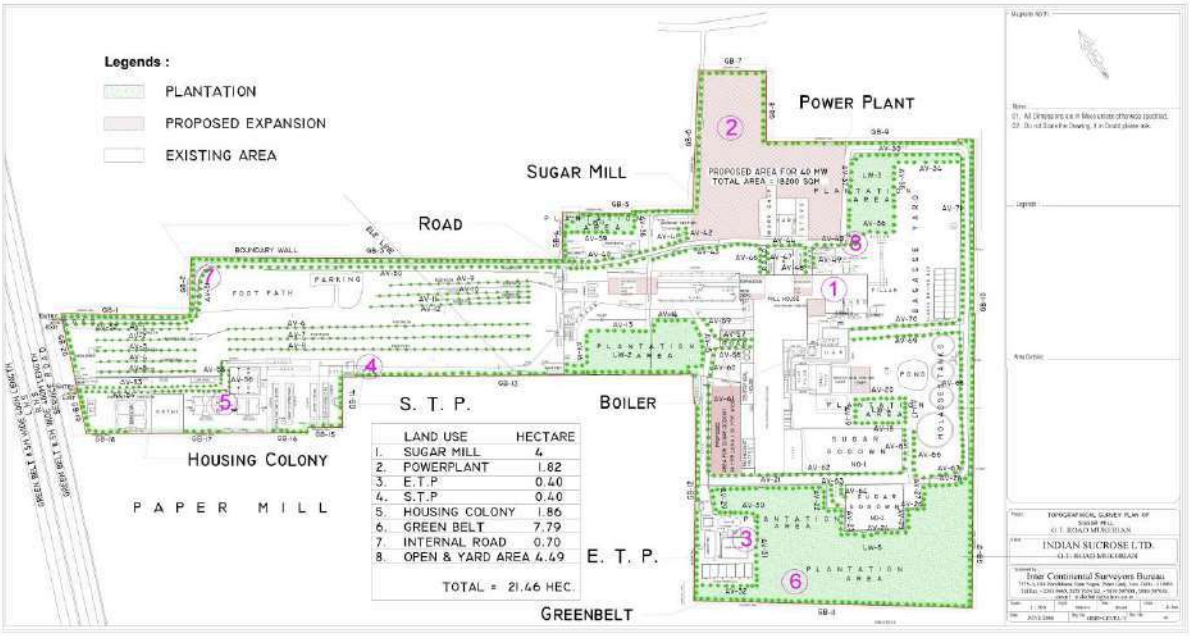
The main purpose of this plan is to develop greenbelt and landscape at project site so that following specific purpose are met with after completion of the project:

a. General pollution abatement
b. Air pollution attenuation
c. Dust absorption

As envisaged in the National Forest Policy 1988 that one third of the total area should be under green cover to maintain ecological balance in the country. In State Forest Policy 2006 it is envisaged that State will try to attain at least 20% green cover in the phased manner. It is very difficult target to attain agricultural state like Punjab but their enormous scope for attaining this target under the developmental projects where the project is designed as fresh and there is change of land use from agriculture primarily to other uses.

Therefore, to attain the target as envisaged under State Forest Policy and National Forest Policy, the provision of green belts/avenue plantations is made under developmental projects. The species proposed should be long rotation, ornamental, evergreen, hardy, wind firm. The species suitable for urban areas should have capacity to combat pollution.

Project Layout:



The project site is located at Village- Chak Allabaksh & Mahiuldinpur Dalel, Tehsil- Mukerian, District- Hoshiarpur (Punjab).

The project will be implemented on an area of **21.46 Ha**. As per recent guidelines; the green space for the projects should be 33 % of the total plot area. Therefore, the total green area provided is 33.39% of total plot area which is 7.79 Ha after completion of project. The plan has been prepared considering the above view in mind and the plan has been divided into following components:

1. Greenbelt Plantation
2. Periphery Plantation
3. Lawn & Grass Pavers

The detail of the areas proposed under various components is given below:

1. Greenbelt Plantation: 10024.064m2
2. Avenue Plantation: 11493.954 m2
3. Periphery Plantation : 0 m^2
4. Lawn Area: 56381.982 m2

Total Green area: 77900.0 m^2 which is 36.30 % of the total plot area

The details of the above components have been shown as under and also have been shown in map/drawing enclosed as under:

1. Greenbelt:

The greenbelt will be planted at-least two rows at a spacing of 2m x 2m. The details as per drawing are given below:

Green Belt Details				Green Belt area	No. of trees
	L	x	W		
GB-1	124.025	x	4.000	496.100	31
GB-2	59.996	x	4.000	239.984	15
GB-3	360.035	x	4.000	1440.140	90
GB-4	47.486	x	4.000	189.944	12
GB-5	125.558	x	4.000	502.232	31
GB-6	142.249	x	4.000	568.996	36
GB-7	66.795	x	4.000	267.180	17
GB-8	72.456	x	4.000	289.824	18
GB-9	202.564	x	4.000	810.256	51
GB-10	352.369	x	4.000	1409.476	88
GB-11	130.058	x	4.000	520.232	33
GB-12	198.991	x	4.000	795.964	50
GB-13	336.648	x	4.000	1346.592	84
GB-14	52.299	x	4.000	209.196	13
GB-15	29.465	x	4.000	117.860	7
GB-16	36.255	x	4.000	145.020	9
GB-17	34.289	x	4.000	137.156	9
GB-18	35.773	x	4.000	143.092	9
GB-19	46.558	x	4.000	186.232	12
GB-20	52.147	x	4.000	208.588	13
	Total			10024.064	627

Total no. of plants to be planted :

The species prescribed for the greenbelt should be planted to provide a continuous green curtain to the site. Dense leaved Cassia Fistula (Amaltash), Neem, Peepal **(Ficusreligiosa), Ashoka** & Plumeria alba (Champa) have been proposed for the green belt to combat all kinds of pollution i.e. noise, dust and air pollution.

2. Avenue:

Avenue plantation details as per drawing are given below-

Avenue Plant Details				Avenue Area	No. of trees
AV-1	90.126	x	2.000	180.252	45
AV-2	96.154	x	2.000	192.308	48
AV-3	96.154	x	2.000	192.308	48
AV-4	96.154	x	2.000	192.308	48
AV-5	96.154	x	2.000	192.308	48
AV-6	295.658	x	2.000	591.316	148
AV-7	295.658	x	2.000	591.316	148
AV-8	295.658	x	2.000	591.316	148
AV-9	140.365	x	2.000	280.73	70
AV-10	90.356	x	2.000	180.712	45
AV-11	151.745	x	2.000	303.49	76
AV-12	91.256	x	2.000	182.512	46
AV-13	158.995	x	2.000	317.99	79
AV-14	63.882	x	2.000	127.764	32
AV-15	47.443	x	2.000	94.886	24
AV-16	58.849	x	2.000	117.698	29
AV-17	21.578	x	2.000	43.156	11
AV-18	51.158	x	2.000	102.316	26
AV-19	21.578	x	2.000	43.156	11
AV-20	51.158	x	2.000	102.316	26
AV-21	113.257	x	2.000	226.514	57
AV-22	24.447	x	2.000	48.894	12
AV-23	23.169	x	2.000	46.338	12
AV-24	61.587	x	2.000	123.174	31

AV-25	**22.284**	**x**	**2.000**	**44.568**	**11**
AV-26	**19.364**	**x**	**2.000**	**38.728**	**10**
AV-27	**24.168**	**x**	**2.000**	**48.336**	**12**
AV-28	**47.998**	**x**	**2.000**	**95.996**	**24**
AV-29	**29.997**	**x**	**2.000**	**59.994**	**15**
AV-30	**37.654**	**x**	**2.000**	**75.308**	**19**
AV-31	**74.294**	**x**	**2.000**	**148.588**	**37**
AV-32	**54.785**	**x**	**2.000**	**109.57**	**27**
AV-33	**102.268**	**x**	**2.000**	**204.536**	**51**
AV-34	**59.909**	**x**	**2.000**	**119.818**	**30**
AV-35	**68.256**	**x**	**2.000**	**136.512**	**34**
AV-36	**40.258**	**x**	**2.000**	**80.516**	**20**
AV-37	**85.369**	**x**	**2.000**	**170.738**	**43**
AV-38	**14.283**	**x**	**2.000**	**28.566**	**7**
AV-39	**65.778**	**x**	**2.000**	**131.556**	**33**
AV-40	**110.356**	**x**	**2.000**	**220.712**	**55**
AV-41	**15.364**	**x**	**2.000**	**30.728**	**8**
AV-42	**15.364**	**x**	**2.000**	**30.728**	**8**
AV-43	**187.556**	**x**	**2.000**	**375.112**	**94**
AV-44	**37.145**	**x**	**2.000**	**74.29**	**19**
AV-45	**35.556**	**x**	**2.000**	**71.112**	**18**
AV-46	**30.005**	**x**	**2.000**	**60.01**	**15**
AV-47	**30.005**	**x**	**2.000**	**60.01**	**15**
AV-48	**30.005**	**x**	**2.000**	**60.01**	**15**
AV-49	**30.005**	**x**	**2.000**	**60.01**	**15**
AV-50	**343.339**	**x**	**2.000**	**686.678**	**172**

AV-51	54.458	x	2.000	108.916	27
AV-52	123.355	x	2.000	246.71	62
AV-53	132.227	x	2.000	264.454	66
AV-54	140.217	x	2.000	280.434	70
AV-55	26.246	x	2.000	52.492	13
AV-56	22.114	x	2.000	44.228	11
AV-57	34.154	x	2.000	68.308	17
AV-58	34.154	x	2.000	68.308	17
AV-59	27.446	x	2.000	54.892	14
AV-60	28.569	x	2.000	57.138	14
AV-61	91.117	x	2.000	182.234	46
AV-62	188.589	x	2.000	377.178	94
AV-63	23.234	x	2.000	46.468	12
AV-64	18.654	x	2.000	37.308	9
AV-65	46.489	x	2.000	92.978	23
AV-66	46.458	x	2.000	92.916	23
AV-67	40.228	x	2.000	80.456	20
AV-68	143.336	x	2.000	286.672	72
AV-69	107.887	x	2.000	215.774	54
AV-70	107.887	x	2.000	215.774	54
AV-71	166.254	x	2.000	332.508	83
	Total			11493.95	2828

4. Lawns :

The lawn consume lots of water therefore, grass variety should be carefully selected. The most suitable grass variety is selection No. 1 which consumes less than other varieties. The details of area where lawn & Grass Pavers has been prescribed in the drawings in given below:

Lawn Area			
RECT.	NOS	L. & B	AREA IN SQM.
LW-1	1	AS PER PLAN	2236.479
LW-2	1	AS PER PLAN	10303.246
LW-3	1	AS PER PLAN	6083.119
LW-4	1	AS PER PLAN	1904.337
LW-5	1	AS PER PLAN	35854.801
		TOTAL	56382.0

The grass area is planted after soil preparation and mixing of compost. The grass is planted by way of dibbling at a spacing of 5 cm x 5 cm for early spread and for formation of carpet.

Suitable species of shrubs as mentioned under may also be planted based on availability in open spaces and surrounding lawns:

1. Tabernaemontana coronaria (Chandani)
2. Cestrum nocturnum (Rat-rani)
3. Hamelia patens
4. Nerium oleander (Kaner)
5. Cassia glauca
6. Calliandra calothyrsus (Powder-puff)

The hedges are generally planted at a spacing of 30 cm x 30 cm in two rows along with paths. The hedges may also be planted along the boundary of the lawns for beautification of the site. The species proposed as per availability are given below:

1. Duranta repens (Golden duranta)
2. Clerodendron inermi (Clerodendron)

3. Ficus panda (Ficus Hedge)

Accent and feature plantation

Maintenance of Plantation Components

Maintenance is an important component under greenbelt and landscape development and for beautification of the area/site. All the plants-trees, shrubs, hedges and lawns should be provided manuring and watering for the good growth. Pesticides may be applied as per requirement especially for the protection of the plants from termites. The grass should be mowed regularly for proper maintenance of the lawn. Trimming of shrubs and hedges be mowed regularly for proper maintenance. Protection from biotic factors is also required.

Other ornamental plants may also be planted at the site if they are suitable to the site as per site condition i.e. soil & water. The soil is loamy sand and pH as informed by project proponent is 7. The tree species specified above should be given importance. Bamboos, Palms etc planted for beautification of the site should be in addition to the number of trees to be actually planted for greenbelt/avenue development.

Cost Statement:

Sr. No.	Year	Total Plants	Cost (lakhs)
1	1st Year	6500	10
2	2nd Year	6000	9.5
3	3rd Year	5500	9
4	4th Year	700	3.5
5	5th Year	500	2
Total		**19,200**	**34**

Annexure-19

INDIAN SUCROSE LIMITED

CIN - L15424PB1990PLC010903
e-mail : info.isl@yaducorporation.com | Website : www.muksug.com

ISL/Sugar/2020-21/

28th July 2020

UNDERTAKING

On behalf of Indian Sucrose Limited, Mukerian, I hereby undertake that the following two Projects of Indian Sucrose Limited, situated at village Chak Alla Baksh and Mahiuldinpur Dalel of Tehsil Mukerian, Distt. Hoshiarpur, Punjab, does not fall under the provisions of Punjab Land Preservation (CHOS) Act, 1900:

1. Proposed capacity expansion of Sugar Plant from 5000 TCD to 12000 TCD.
2. Expansion of 19.5 MW Co-Generation Plant from 19.5 MW to 59.5 MW.

For Indian Sucrose Limited,
AUTHORISED SIGNATORY

(Rajeev Kumar)
General Manager – HR & Legal

INDIAN SUCROSE LIMITED

G.T. ROAD, MUKERIAN-144121
DISTRICT HOSHIARPUR (PUNJAB)

FEASIBILITY REPORT UPON UPGRADATION OF

WASTE WATER TREATMENT PLANT

CAPACITY 2000 m3/d TO 3000 m3/d

EFFLUENT EQUIPMENTS
D-95, FOCAL POINT, RAJPURA-140 401 (PB.) INDIA
TEL: 01762-231113; FAX: 01762-231122
email: eeq95@effluentindia.com; eeq5@dataone.in
website: www.effluentindia.com
26.11.2014

EFFLUENT EQUIPMENTS

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EFFLUENT EQUIPMENTS

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EFFLUENT EQUIPMENTS

PRELUDE

Messers Indian Sucrose Limited, G.T. Road, Mukerian-144121 (District Hoshiarpur, (Punjab) India has appointed Effluent Equipments, Rajpura (Punjab) to upgrade/modify the existing waste water treatment plant from 2000 m3/d to 3000 m3/d.

This is a report upon the upgradation of the existing waste water treatment plant to increase its capacity to 3000 m3/d. The treated waste waters shall be discharged onto land for irrigation conforming to standards prescribed by the Punjab Pollution Control Board for such discharges.

The details of the proposal are enclosed as follows:

1. Untreated waste water flow & characteristics considered for design
2. Waste water treatment scheme.
3. Treated waste water characteristics and prescribed standards.
4. Basic design criteria.
5. Unit & equipment existing and proposed.
6. Cost estimate for upgradation.

EXISTING WASTE WATER TREATEMT SCHEME

The existing waste water treatment scheme comprises of single stage aerobic biological treatment. Essentially it comprises of the following units:

1. Bar Screens/Grit Chamber
2. Oil & Grease Trap
3. Equalisation
4. Aeration
5. Secondary Sedimentation
6. Filtration
7. Sludge Drying Beds

The waste water flowing out of the sugar mills is screened and then passed through a gravity type oil & grease trap. It is then equalized and neutralized as per requirement.

From the equalization tank, the waste water is pumped into the aeration tank for aerobic treatment. The liquor in the tank is kept thoroughly mixed and oxygenated with the help of mechanical surface as well as diffused aeration. Nutrients, as per requirement are added in the aeration tank. The mixed liquor from the aeration tank then flows into the secondary sedimentation tank for separation of bio-mass. The settled sludge is totally re-circulated back into the aeration tank to seed and maintain desired bio-mass concentration in the aerobic system.

The surplus sludge in the recirculation system is pumped onto the sludge drying beds for dewatering.

The overflow from the top of the secondary sedimentation tank is treated waste water for ultimate disposal. This waste water is conforms to the tolerance limits prescribed by the Punjab Pollution Control Board for such discharges onto land for irrigation.

To further bring down the suspended solids in the treated waste water granular media pressure sand filters are provided.

The scheme is schematically presented in Figure-1.

The units and equipment existing are detailed in Table-1.

The scheme treating 2000 m3/d waste waters having the following characteristics

S.NO.	PARAMETER		CONCENTRATION	
			Untreated	Treated
	Flow	:	2000	2000
1.	Temperature	:	30-40	20-30
2.	pH	:	4.5 – 8.0	7.0-8.0
3.	Total Suspended Solids	:	300	<100
4.	Bio-chemical Oxygen Demand	:	800	<100
5.	Chemical Oxygen Demand	:	1500	<250
6.	Oil & Grease	:	100	<10

All concentrations except pH expressed as mg/l. Temperature expressed as degree Celsius. Flow expressed as m3/d.

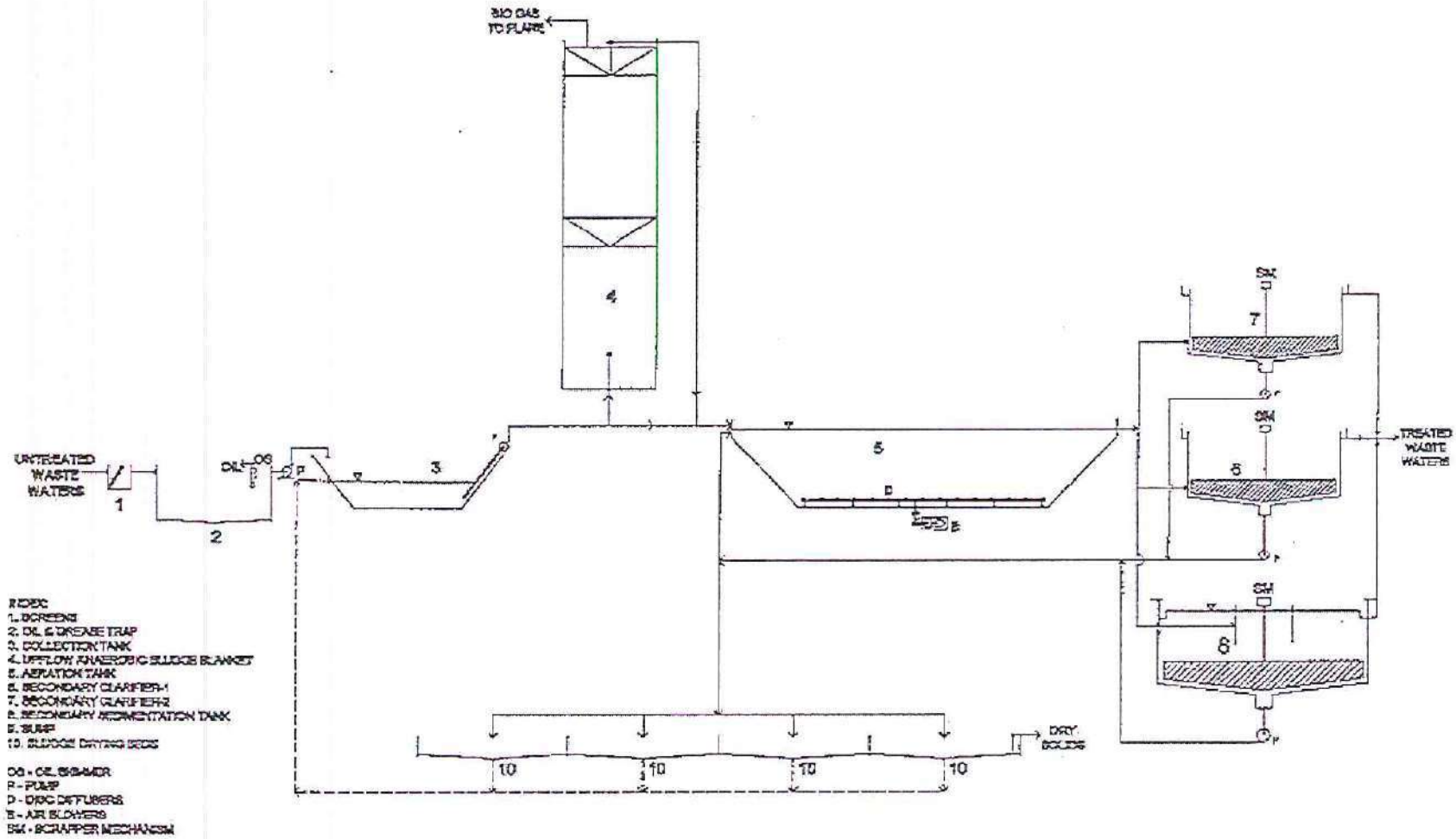


FIGURE-2: SCHEMATIC FLOW SHEET OF WASTE WATER TREATMENT FOR UPGRADATION TO CAPACITY 3000 m3/d

EFFLUENT EQUIPMENTS

EFFLUENT EQUIPMENTS

TABLE-1

UNITS AND EQUIPMENT EXISTING 2000 m3/d

A. UNITS:

2 No.- 5.70 x 2.85 x 1.50 m SWD	Oil & Grease Trap
1 No.- 24.62 x 7.86 x 1.42 m SWD	Collection Sump (228 m3)
1 No.- 24.48 x 20.40 x 4.085 m SWD	Aeration Tank (1540 m3)
1 No.- 14.25 diameter, 3.75 m SWD	Secondary Sedimentation Tank
2 No.- 8.00 diameter, 3.75 m SWD	Secondary Sedimentation Tank
9 No.- 14.00 x 8.00 x 0.60 m SWD	Sludge Drying Beds

B. EQUIPMENT:

3 No.- 15-20 lph capacity	Oil Skimmer
1 No.- 25 lps, 12 m head	Waste Water Lift Pump.
1 No.- 15 lps, 12 m head	Waste Water Lift Pump.
4 No.- 320 m3/h @0.50 kg/cm2	Air Blowers
3 No.- 20 hp	Fixed Surface Aerator
6 No.- 20 hp	Floating Surface Aerator
1 No.- 14.25 m diameter	Scrapper Mechanism
2 No.- 8.00 m diameter	Scrapper Mechanism
4 No.- 8.90 lps, 8 m head	Sludge Recirculation Pump
2 No.- 2.00m diameter, 2.50 m SWD	Pressure Sand Filters
1 No.- 1.25m diameter, 1.65 m SWD	Pressure Sand Filters
1 No.- 25 lps, 24 m head	Filter Feed Pump
1 No.- 12 lps, 24 m head	Filter Feed Pump
1 Lot -	Interconnecting Pipes, Valves & Specials.
1 Lot -	Electricals.

PROPOSED TREATEMT SCHEME (FOR CAPACITY 3000 m3/d)

To treat the increased waste water flow upto 3000 m3/d (Table-2) conforming to prescribed standards for discharges onto land for irrigation, capacity enhancement of available units and equipment is required. While it is simpler to upgrade capacity of the equipment to match increased loads, enhancing capacity of units requires larger or more tanks through civil construction.

A techno-economical solution which utilizes all existing units and equipment lies in adding one more biological treatment stage to the existing single stage biological treatment.

As such an anaerobic biological treatment stage upstream to the existing aerobic (aeration) biological stage is suggested. Figure-2. The anaerobic process, which does not require aeration, is designed to reduce the organic load entering the aeration tank by 55-65%. Thus, enabling the use of aeration tank without any additions/alternations.

The anaerobic process adopted is the Upflow Anaerobic Sludge Blanket (UASB) reactor.

The generation of bio-gas (50-60% CH4) is estimated to be 980 m3/d (equivalent to 60 kW power or 1600 kg/d rice husk or 500 litres/day diesel).

The UASB reactor, briefly described, is a system in which substrate passes through an expanded sludge bed containing high concentration of biomass. The sludge in the reactor may be granular or flocculent. Most of the substrate removal takes place in the sludge bed. The remaining portion of the substrate passes through a less dense biomass, called the sludge blanket.

Provision of sufficient volume of sludge blanket is necessary above the sludge bed, which provides further treatment to the waste water bye-passed from the sludge bed due to channeling and helps in maintaining stable effluent quality. Above the sludge blanket the reactor has a three-phase separator, Gas-Liquid-Solid (GLS) which separates the solid particles from the liquid and gas, allowing liquid and gas to leave the system.

Proper design of the device ensures that maximum sludge is retained in the digester to affirm high Solid Retention Time (SRT) and to facilitate treatment with short Hydraulic Retention Time (HRT). Generally the sludge bed occupies 30 to 60% of the total reactor volume, 20 to 30% of the total volume is provided for sludge blanket and GLS separator occupies remaining 15 to 30% of the total volume.

The existing aeration tank capacity 1540 m3 having mechanical surface aeration as well as diffused aeration facility is proposed to be replaced with 2800 m3 aeration tank having only diffused aeration system. An old abandoned tank is available with the industry near the WWTP site. This tank is suggested to be utilized after minor modifications and laying the diffused aeration equipment inside it. The existing inter connecting pipelines, valves, etc. shall also have to be modified and upgraded as required.

The existing secondary sedimentation tanks are sufficient. The overflow from the sedimentation tank shall conform to the standards prescribed by the Punjab Pollution Control Board for such discharges onto land for irrigation. Table-3

The existing sludge drying beds shall suffice.

TABLE-2

UNTREATED WASTE WATER FLOW & CHARACTERISTICS CONSIDERED FOR DESIGN OF WASTE WATER TREATMENT PLANT

S.NO.	PARAMETER		CONCENTRATION
	Flow	:	3000
1.	Temperature	:	30-40
2.	pH	:	4.5 – 8.0
3.	Total Suspended Solids	:	500
4.	Bio-chemical Oxygen Demand	:	1000
5.	Chemical Oxygen Demand	:	2000
6.	Oil & Grease	:	15

All concentrations except pH expressed as mg/l. Temperature expressed as degree Celsius. Flow expressed as m3/d.

TABLE-3

TREATED WASTE WATER CHARACTERISTICS (TWW) AND PRESCRIBED STANDARDS (PS) FOR DISCHARGE OF TREATED WASTE WATER ONTO LAND FOR IRRIGATION (INLAND SURAFCE WATERS)

S.NO.	PARAMETER	CONCENTRATION	
		TWW	PS
	Flow	3000	
1.	Total Suspended Solids	<100	100 (30)
2.	Bio-chemical Oxygen Demand	<100	100 (30)

All concentration except pH expressed as mg/l.
Flow expressed as m3/d.

EFFLUENT EQUIPMENTS

BASIC DESIGN CRITERIA

Flow	:	3000	m3/d
TSS	:	500	mg/l
BOD	:	1000	mg/l
COD	:	2000	mg/l
O&G	:	15	mg/l

1. **Equalization Tank**

Detention Time	:	4.5	h

2. **Anaerobic Digester**

Flow	:	1500	m3/d
COD	:	2000	mg/l
Detention Time	:	5.5	h
Organic Loading	:	0.36	kg COD/kg VSS/d
Hydraulic Loading	:	8.50	kg COD/m3/d
BOD Removal Efficiency	:	55	%
COD Removal Efficiency	:	65	%

3. **Aerobic Stage**

Flow	:	3000	m3/d
		(Anaerobic Digester + 1500 Untreated)	
BOD	:	730	mg/l
Aeration			
Detention Time	:	22	h
MLSS	:	5500	mg/l
MLVSS	:	3000	mg/l
F/M	:	0.25	1/d
Volumetric Loading	:	0.75	kg BOD/m3/d
SRT	:	21	d

Sedimentation

Overflow Rate	:	12	m3/m2/d
Solids Loading	:	2.6	kg/m2/h
BOD Removal Efficiency	:	97	%

4. **Sludge Drying Beds**

Application Depth	:	0.60	m
Cycle	:	6	d

EFFLUENT EQUIPMENTS

UNITS AND EQUIPMENT PROPOSED FOR 3000 m3/d CAPACITY

A. UNITS:

3 No.- 05.70 x 02.85 x 1.50 m SWD	Oil & Grease Trap (Addition)
1 No.- 24.62 x 07.86 x 2.80 m SWD	Collection Sump (560 m3) (Alteration/Addition)
1 No.- 2800 m3	Aeration Tank (Alteration/Addition)
1 No.- 05.00 diameter, 18.00 m SWD	UASB Reactor (Addition)
2 No.- 8.00 diameter, 3.75 m SWD	Secondary Sedimentation Tank
1 No.- 14.25 diameter, 3.75 m SWD	Secondary Sedimentation Tank
9 No.- 14.00 x 8.00 x 0.60 m SWD	Sludge Drying Beds

B. EQUIPMENT:

3 No.-15-20 lph each	Oil Skimmers (Addition)
3 No.- 20 lps, 10 m head	Waste Water Lift Pump (Addition)
3 No.- 20 lps, 26 m head	Waste Water Re-lift Pump (Alteration)
1 No.- 05.00m diameter	UASB GLSS Appurtenances (Addition)
4 No.- 320 m3/h @0.50 kg/cm2	Air Blower (Existing)
3 No.- 1875 m3/h @0.50 kg/cm2	Air Blower (Addition)
2 No.- 8.00 m diameter	Scrapper Mechanism
1 No.- 14.25 m diameter	Scrapper Mechanism
3 No.- 20 lps, 10 m head	Sludge Recirculation Pump
1 Lot -	Interconnecting Pipes, Valves & Specials (Alteration/Addition)
1 Lot -	Electricals (Alteration/Addition)

Punjab Biotechnology Incubator

(Department of Science, Technology & Environment, GoP)

A Component of Agri Food Biotechnology Cluster, Knowledge City, Mohali

BIS Approved | FSSAI Empanelled | EIC Approved | APEDA Approved | PPCB Approved | Notified State Water Lab - GoP | Notified Under EPA - GoI

No.PBTI/FA0/010620/000364 /376 Dated : 12/06/2020

TEST REPORT

ULR : TC611720000003435P

Sample Registration No. : PBTI/FA0/010620/000364

Sample code given by customer : Water Supply Tank, Village Bishanpur

Issued to:

Indian Sucrose Limited,
G.T Road,

Mukerian -144211
Punjab.

SAMPLE PARTICULARS

Your Ref. No.	:	Email dt. 28/05/2020
Date & Time of Sample Collection	:	01/06/2020 at 11:30am
Date & Time of Sample Receipt in Lab	:	01/06/2020 at 4:30pm
Sample Identification No	:	PBTI/010620/02 ,dt. 01/06/2020
Site of Sample Collection	:	Indian Sucrose Limited, Village Chak Alla Bakash, Mukerian
Name/Nature of sample	:	Ground Water
Type of Sample	:	Grab
Point of Sample Collection	:	Outlet
Condition of the sample on Receipt	:	Intact coded sample under refrigerated and preserved conditions
Qty/Pkg.	:	15.750L approx in plastic and glass bottles
Sampling Method	:	Sample drawn by PBTI (Mr. Parveen Danu) as per APHA guidelines
Test Start Date	:	02/06/2020
Test Completion Date	:	12/06/2020

Mohali

12/6/2020

Authorized Signatory
Punjab Biotechnology Incubator
Employee Code: 16

Note:

1. The above results pertain only to the sample tested.
2. The report shall not be used for advertising or any legal purpose without written permission from the Chief Executive Officer, Punjab Biotechnology Incubator.
3. This report cannot be re-produced, except when in full, without the written permission from the Chief Executive Officer, Punjab Biotechnology Incubator.
4. Perishable samples will be destroyed after testing, others after one month from the date of issue of the report, unless otherwise agreed with the customer or as required by the applicable regulations.

Format No : PBTI/F/5.10/02
Revision No. 00 & 25.04.2019

National Referral Lab for LMO/GMO Detection under Seeds Act 1966 & Referral Lab under Food Safety and Standards Act 2006

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E-mail : pbti2005@yahoo.com, Website : www.pbtilabs.com

TC611720000003435P

Sample Registration No. : PBTI/FAO/010620/000364

Sample code given by customer : Water Supply Tank, Village Bishanpur

Test Results

Sr. No	Parameter	Acceptable limit as per IS 10500: 2012	Observed Value	Remarks (Conformity)	Standard/ Specification/ Method Followed
Physical & Chemical Parameters					
1.	pH at 25°C	6.5 to 8.5	7.97	C	IS 3025 (Part 11)
2.	Colour	5 Hazen, *Max*	BDL (MDL: 1 mg/l)	C	IS 3025 (Part 4)
3.	Odour	Agreeable	Agreeable	C	IS 3025 (Part 5)
4.	Turbidity	1 NTU	BDL (MDL : 1 mg/l)	C	IS 3025 (Part 10)
5.	Total Dissolved Solids	500 mg/l, *Max*	265 mg/l	C	IS 3025 (Part 16)
6.	Aluminium	0.03 mg/l, Max	BDL (MDL : 0.01 mg/l)	C	IS 3025 (Part 55)
7.	Ammonia Free	0.5 mg/l, *Max*	BDL (MDL : 0.2 mg/l)	C	IS 3025 (Part 34)
8.	Anionic Detergents (as MBAS)	0.2 mg/l, *Max*	BDL (MDL : 0.05 mg/l)	C	Annexure K of IS 13428
9.	Barium	0.7 mg/l, *Max*	0.07 mg/l	C	Annexure F of IS 13428
10.	Boron	0.5 mg/l, *Max*	0.02 mg/l	C	APHA 3125 B (By ICP-MS)
11.	Calcium	75 mg/l, *Max*	59.3 mg/l	C	IS 3025 (Part 40)
12.	Chloramines	4.0 mg/l, *Max*	BDL (MDL : 0.1 mg/l)	C	APHA 4500 Cl-G
13.	Chloride (as Cl)	250 mg/l, *Max*	16 mg/l	C	IS 3025 (Part 32)
14.	Fluoride (as F)	1.0 mg/l, Max	BDL (MDL : 0.1 mg/l)	C	IS 3025 (Part 60)
15.	Residual Free Chlorine	0.2 mg/l, *Min* (if chlorinated)	BDL (MDL : 0.1 mg/l)	NA	IS 3025 (Part 26)
16.	Iron (as Fe)	1 mg/l, *Max*	BDL (MDL : 0.01mg/l)	C	APHA 3125 B (By ICP-MS)
17.	Magnesium (as Mg)	30 mg/l, *Max*	5.8 mg/l	C	IS 3025 (Part 46)
18.	Mineral oil	0.5 mg/l, *Max*	BDL (MDL : 0.05 mg/l)	C	PBTI/SOP/20/TP-13 by FTIR
19.	Nitrate (as NO_3)	45 mg/l, *Max*	6.4 mg/l	C	IS 3025 (Part 34)
20.	Phenolic Compounds	0.001 mg/l, Max	BDL (MDL : 0.0006 mg/l)	C	IS 3025 (Part 43)
21.	Sulphate (as SO_4^{2-})	200 mg/l, *Max*	BDL (MDL : 2 mg/l)	C	IS 3025 (Part 24)
22.	Sulphide	0.05 mg/l, *Max*	BDL (MDL : 0.01 mg/l)	C	IS 3025 (Part 29)
23.	Alkalinity	200 mg/l, *Max*	180 mg/l	C	IS 3025 (Part 23)
24.	Total Hardness (as $CaCO_3$)	200 mg/l, *Max*	172 mg/l	C	IS 3025 (Part 21)
25.	Cyanide	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	IS 3025 (Part 27)
26.	Copper (as Cu)	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	APHA 3125 B (By ICP-MS)
27.	Manganese (as Mn)	0.1 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
28.	Selenium (as Se)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
29.	Silver	0.1 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
30.	Zinc (as Zn)	5 mg/l, *Max*	0.01 mg/l	C	
31.	Cadmium (as Cd)	0.003 mg/l, *Max*	BDL (MDL : 0.001 mg/l)	C	
32.	Lead (as Pb)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
33.	Mercury (as Hg)	0.001 mg/l, *Max*	BDL (MDL : 0.0005 mg/l)	C	
34.	Molybdenum	0.07 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
35.	Nickel	0.02 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
36.	Arsenic (as As)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
37.	Total Chromium	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
38.	Polynuclear aromatic hydrocarbons (PAH)	0.0001 mg/l, *Max*	BDL (MDL : 0.0001 mg/l)	C	PBTI/SOP/15/TP-08_GCMSMS
39.	Polychlorinated biphenyls (PCB)	0.0005 mg/l, *Max*	BDL (MDL : 0.0001 mg/l)	C	

BDL Below Detection Limit MDL: Method Detection Limit C: Conforming NA: Not Applicable

12/6/2020

Authorized Signatory

TC611720000003435P

Sample Registration No. : PBTI/FAO/010620/000364

Sample code given by customer : Water Supply Tank, Village Bishanpur

Test Results

Sr. No.	Parameter	Acceptable limit as per IS 10500: 2012	Observed Value	Remarks (Conformity)	Standard/ Specification/ Method Followed
Microbiological Parameters					
40.	Coliform	Absent/100 ml	Present/100 ml	NC	IS 15185:2016
41.	E.coli	Absent/100 ml	Absent/100 ml	C	
Pesticide Residues					
42.	1. Alachlor	20 µg/l	BDL (MDL : 0.04 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	2. Atrazine	2 µg/l	BDL (MDL : 0.08 µg/l)	C	
	3. Aldrin/ Dieldrin	0.03 µg/l	BDL (MDL : 0.01 µg/l)	C	
	4. Alpha HCH	0.01 µg/l	BDL (MDL : 0.005 µg/l)	C	
	5. Beta HCH	0.04 µg/l	BDL (MDL : 0.01 µg/l)	C	
	6. Butachlor	125 µg/l	BDL (MDL : 0.04 µg/l)	C	
	7. Chlorpyrifos	30 µg/l	BDL (MDL : 0.04 µg/l)	C	
	8. Delta HCH	0.04 µg/l	BDL (MDL : 0.01 µg/l)	C	
	9. 2, 4-Dichlorophenoxyacetic acid (2,4-D)	30 µg/l	BDL (MDL : 0.1 µg/l)	C	PBTI/SOP/97/TP-61_HPLC
	10. DDT (o,p and p,p-Isomers of DDT, DDE and DDD	1 µg/l	BDL (MDL : 0.01 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	11. Endosulfan (alpha, beta, Sulfate)	0.4 µg/l	BDL (MDL : 0.04 µg/l)	C	
	12. Ethion	3 µg/l	BDL (MDL : 0.04 µg/l)	C	
	13. Gamma HCH (Lindane)	2 µg/l	BDL (MDL : 0.01 µg/l)	C	
	14. Isoproturon	9 µg/l	BDL (MDL : 0.1 µg/l)	C	PBTI/SOP/97/TP-61_HPLC
	15. Malathion	190 µg/l	BDL (MDL : 0.04 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	16. Methyl Parathion	0.3 µg/l	BDL (MDL : 0.08 µg/l)	C	
	17. Monocrotophos	1 µg/l	BDL (MDL : 0.08 µg/l)	C	
	18. Phorate	2 µg/l	BDL (MDL : 0.08 µg/l)	C	

BDL Below Detection Limit MDL : Method Detection Limit C : Conforming NC: Non Conforming

12/6/2020

Authorized Signatory

Punjab Biotechnology Incubator

(Department of Science, Technology & Environment, GoP)

A Component of Agri Food Biotechnology Cluster, Knowledge City, Mohali

BIS Approved | FSSAI Empanelled | EIC Approved | APEDA Approved | PPCB Approved | Notified State Water Lab - GoP | Notified Under EPA - GoI

No.PBTI/FA0/010620/000365 /377 Dated :12/06/2020

TEST REPORT

ULR : TC611720000003436P

Sample Registration No. : PBTI/FA0/010620/000365

Sample code given by customer : Outside of Gurudwara, Chack Allabaksh Area

Issued to:

Indian Sucrose Limited,
G.T Road,

Mukerian -144211
Punjab.

SAMPLE PARTICULARS

Your Ref. No.	:	Email dt. 28/05/2020
Date & Time of Sample Collection	:	01/06/2020 at 11:45am
Date & Time of Sample Receipt in Lab	:	01/06/2020 at 4:30pm
Sample Identification No.	:	PBTI/010620/03 ,dt. 01/06/2020
Site of Sample Collection	:	Indian Sucrose Limited, Village Chak Alla Bakash, Mukerian
Name/Nature of sample	:	Ground Water
Type of Sample	:	Grab
Point of Sample Collection	:	Outlet
Condition of the sample on Receipt	:	Intact coded sample under refrigerated and preserved conditions
Qty/Pkg.	:	15.750L approx in plastic and glass bottles
Sampling Method	:	Sample drawn by PBTI (Mr. Parveen Danu) as per APHA guidelines
Test Start Date	:	02/06/2020
Test Completion Date	:	12/06/2020

[illegible] testing on the basis of [illegible]

PBTI, Mohali

12/6/2020

Authorized Signatory
Punjab Biotechnology Incubator
Employee Code: 16

Note:

1. The above results pertain only to the sample tested.
2. The report shall not be used for advertising or any legal purpose without written permission from the Chief Executive Officer, Punjab Biotechnology Incubator.
3. This report cannot be re-produced, except when in full, without the written permission from the Chief Executive Officer, Punjab Biotechnology Incubator.
4. Perishable samples will be destroyed after testing, others after one month from the date of issue of the report, unless otherwise agreed with the customer or as required by the applicable regulations.

Format No : PBTI/F/5.10/02
Revision No. 00 & 25.04.2019

National Referral Lab for LMO/GMO Detection under Seeds Act 1966 & Referral Lab under Food Safety and Standards Act 2006

SCO: 7&8, Phase-V, SAS Nagar (Mohali) - 160 059, Punjab, India
Phone : +91-172-5020893, 5093595, 5020895, Tele. Fax : +91-172-5020895
E-mail : pbti2005@yahoo.com, Website : www.pbtilabs.com

TC611720000003436P

Sample Registration No. : **PBTI/FAO/010620/000365**

Sample code given by customer : Outside of Gurudwara, Chack Allabaksh Area

Test Results

Sr. No.	Parameter	Acceptable limit as per IS 10500: 2012	Observed Value	Remarks (Conformity)	Standard/ Specification/ Method Followed
Physical & Chemical Parameters					
1.	pH at 25°C	6.5 to 8.5	7.47	C	IS 3025 (Part 11)
2.	Colour	5 Hazen, *Max*	BDL (MDL: 1 mg/l)	C	IS 3025 (Part 4)
3.	Odour	Agreeable	Agreeable	C	IS 3025 (Part 5)
4.	Turbidity	1 NTU	BDL (MDL : 1 mg/l)	C	IS 3025 (Part 10)
5.	Total Dissolved Solids	500 mg/l, *Max*	320 mg/l	C	IS 3025 (Part 16)
6.	Aluminium	0.03 mg/l, Max	BDL (MDL : 0.01 mg/l)	C	IS 3025 (Part 55)
7.	Ammonia Free	0.5 mg/l, *Max*	BDL (MDL : 0.2 mg/l)	C	IS 3025 (Part 34)
8.	Anionic Detergents (as MBAS)	0.2 mg/l, *Max*	BDL (MDL : 0.05 mg/l)	C	Annexure K of IS 13428
9.	Barium	0.7 mg/l, *Max*	0.11 mg/l	C	Annexure F of IS 13428
10	Boron	0.5 mg/l, *Max*	0.03 mg/l	C	APHA 3125 B (By ICP-MS)
11.	Calcium	75 mg/l, *Max*	68.1 mg/l	C	IS 3025 (Part 40)
12.	Chloramines	4.0 mg/l, *Max*	BDL (MDL : 0.1 mg/l)	C	APHA 4500 Cl-G
13.	Chloride (as Cl)	250 mg/l, *Max*	51 mg/l	C	IS 3025 (Part 32)
14.	Fluoride (as F)	1.0 mg/l, Max	BDL (MDL : 0.1 mg/l)	C	IS 3025 (Part 60)
15.	Residual Free Chlorine	0.2 mg/l, *Min* (if chlorinated)	BDL (MDL : 0.1 mg/l)	NA	IS 3025 (Part 26)
16.	Iron (as Fe)	1 mg/l, *Max*	BDL (MDL : 0.01mg/l)	C	APHA 3125 B (By ICP-MS)
17.	Magnesium (as Mg)	30 mg/l, *Max*	7.3 mg/l	C	IS 3025 (Part 46)
18	Mineral oil	0.5 mg/l, *Max*	BDL (MDL : 0.05 mg/l)	C	PBTI/SOP/20/TP-13 by FTIR
19	Nitrate (as NO_3)	45 mg/l, *Max*	9.7 mg/l	C	IS 3025 (Part 34)
20	Phenolic Compounds	0.001 mg/l, Max	BDL (MDL : 0.0006 mg/l)	C	IS 3025 (Part 43)
21	Sulphate (as SO_4^{2-})	200 mg/l, *Max*	BDL (MDL : 2 mg/l)	C	IS 3025 (Part 24)
22	Sulphide	0.05 mg/l, *Max*	BDL (MDL : 0.01 mg/l)	C	IS 3025 (Part 29)
23.	Alkalinity	200 mg/l, *Max*	196 mg/l	C	IS 3025 (Part 23)
24	Total Hardness (as $CaCO_3$)	200 mg/l, *Max*	200 mg/l	C	IS 3025 (Part 21)
25.	Cyanide	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	IS 3025 (Part 27)
26.	Copper (as Cu)	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	APHA 3125 B (By ICP-MS)
27.	Manganese (as Mn)	0.1 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
28.	Selenium (as Se)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
29.	Silver	0.1 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
30.	Zinc (as Zn)	5 mg/l, *Max*	0.02 mg/l	C	
31.	Cadmium (as Cd)	0.003 mg/l, *Max*	BDL (MDL : 0.001 mg/l)	C	
32.	Lead (as Pb)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
33	Mercury (as Hg)	0.001 mg/l, *Max*	BDL (MDL : 0.0005 mg/l)	C	
34	Molybdenum	0.07 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
35	Nickel	0.02 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
36.	Arsenic (as As)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
37.	Total Chromium	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
38	Polynuclear aromatic hydrocarbons (PAH)	0.0001 mg/l, *Max*	BDL (MDL : 0.0001 mg/l)	C	PBTI/SOP/15/TP-08_GCMSMS
39.	Polychlorinated biphenyls (PCB)	0.0005 mg/l, *Max*	BDL (MDL : 0.0001 mg/l)	C	

BDL : Below Detection Limit MDL: Method Detection Limit C: Conforming NA: Not Applicable

12/6/2020

Authorized Signatory

TC611720000003436P

Sample Registration No. : PBTI/FAO/010620/000365

Sample code given by customer : Outside of Gurudwara, Chack Allabaksh Area

Test Results

Sr. No.	Parameter	Acceptable limit as per IS 10500: 2012	Observed Value	Remarks (Conformity)	Standard/ Specification/ Method Followed
Microbiological Parameters					
40.	Coliform	Absent/100 ml	Absent/100 ml	C	IS 15185:2016
41.	E.coli	Absent/100 ml	Absent/100 ml	C	
Pesticide Residues					
42.	1. Alachlor	20 µg/l	BDL (MDL : 0.04 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	2. Atrazine	2 µg/l	BDL (MDL : 0.08 µg/l)	C	
	3. Aldrin/ Dieldrin	0.03 µg/l	BDL (MDL : 0.01 µg/l)	C	
	4. Alpha HCH	0.01 µg/l	BDL (MDL : 0.005 µg/l)	C	
	5. Beta HCH	0.04 µg/l	BDL (MDL : 0.01 µg/l)	C	
	6. Butachlor	125 µg/l	BDL (MDL : 0.04 µg/l)	C	
	7. Chlorpyrifos	30 µg/l	BDL (MDL : 0.04 µg/l)	C	
	8. Delta HCH	0.04 µg/l	BDL (MDL : 0.01 µg/l)	C	
	9. 2, 4-Dichlorophenoxyacetic acid (2,4-D)	30 µg/l	BDL (MDL : 0.1 µg/l)	C	PBTI/SOP/97/TP-61_HPLC
	10. DDT (o,p and p,p-Isomers of DDT, DDE and DDD	1 µg/l	BDL (MDL : 0.01 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	11. Endosulfan (alpha, beta, Sulfate)	0.4 µg/l	BDL (MDL : 0.04 µg/l)	C	
	12. Ethion	3 µg/l	BDL (MDL : 0.04 µg/l)	C	
	13. Gamma HCH (Lindane)	2 µg/l	BDL (MDL : 0.01 µg/l)	C	
	14. Isoproturon	9 µg/l	BDL (MDL : 0.1 µg/l)	C	PBTI/SOP/97/TP-61_HPLC
	15. Malathion	190 µg/l	BDL (MDL : 0.04 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	16. Methyl Parathion	0.3 µg/l	BDL (MDL : 0.08 µg/l)	C	
	17. Monocrotophos	1 µg/l	BDL (MDL : 0.08 µg/l)	C	
	18. Phorate	2 µg/l	BDL (MDL : 0.08 µg/l)	C	

BDL : Below Detection Limit MDL : Method Detection Limit C : Conforming

12/6/2020

Authorized Signatory

Punjab Biotechnology Incubator

(Department of Science, Technology & Environment, GoP)

A Component of Agri Food Biotechnology Cluster, Knowledge City, Mohali

BIS Approved | FSSAI Empanelled | EIC Approved | APEDA Approved | PPCB Approved | Notified State Water Lab - GoP | Notified Under EPA - GoI

No.PBTI/FA0/010620/000363/375 Dated : 12/06/2020

TEST REPORT

ULR : TC611720000003434P

Sample Registration No. : PBTI/FA0/010620/000363

Sample code given by customer : House No.-65, Ward No.5, Khanpur, Mukerian

Issued to:

Indian Sucrose Limited,
G.T.Road,

Mukerian -144211
Punjab.

SAMPLE PARTICULARS

Your Ref. No.	:	Email dt. 28/05/2020
Date & Time of Sample Collection	:	01/06/2020 at 11:05am
Date & Time of Sample Receipt in Lab	:	01/06/2020 at 4:30pm
Sample Identification No	:	PBTI/010620/01 ,dt. 01/06/2020
Site of Sample Collection	:	Indian Sucrose Limited, Village Chak Alla Bakash, Mukerian
Name/Nature of sample	:	**Ground Water**
Type of Sample	:	Grab
Point of Sample Collection	:	Outlet
Condition of the sample on Receipt	:	Intact coded sample under refrigerated and preserved conditions
Qty/Pkg.	:	15.750L approx in plastic and glass bottles
Sampling Method	:	Sample drawn by PBTI (Mr. Parveen Danu) as per APHA guidelines
Test Start Date	:	02/06/2020
Test Completion Date	:	12/06/2020

Report for Self Monitoring of the industry on Request basis
PBTI, Mohali

12/6/2020

Authorized Signatory
Punjab Biotechnology Incubator
Employee Code: 16

Note:

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Format No : PBTI/F/5.10/02
Revision No. 00 & 25.04.2019

National Referral Lab for LMO/GMO Detection under Seeds Act 1966 & Referral Lab under Food Safety and Standards Act 2006

SCO: 7&8, Phase-V, SAS Nagar (Mohali) - 160 059, Punjab, India

Phone : +91-172-5020893, 5093595, 5020895, Tele. Fax : +91-172-5020895

E-mail : pbti2005@yahoo.com, Website : www.pbtilabs.com

TC611720000003434P

Sample Registration No. : **PBTI/FAO/010620/000363**

Sample code given by customer : House No.65, Ward No.5, Khanpur,Mukerian

Test Results

Sr. No	Parameter	Acceptable limit as per IS 10500: 2012	Observed Value	Remarks (Conformity)	Standard/ Specification/ Method Followed
Physical & Chemical Parameters					
1.	pH at 25°C	6.5 to 8.5	8.13	C	IS 3025 (Part 11)
2.	Colour	5 Hazen, *Max*	BDL (MDL: 1 mg/l)	C	IS 3025 (Part 4)
3.	Odour	Agreeable	Agreeable	C	IS 3025 (Part 5)
4.	Turbidity	1 NTU	BDL (MDL : 1 mg/l)	C	IS 3025 (Part 10)
5.	Total Dissolved Solids	500 mg/l, *Max*	267 mg/l	C	IS 3025 (Part 16)
6.	Aluminium	0.03 mg/l, Max	BDL (MDL : 0.01 mg/l)	C	IS 3025 (Part 55)
7.	Ammonia Free	0.5 mg/l, *Max*	BDL (MDL : 0.2 mg/l)	C	IS 3025 (Part 34)
8.	Anionic Detergents (as MBAS)	0.2 mg/l, *Max*	BDL (MDL : 0.05 mg/l)	C	Annexure K of IS 13428
9.	Barium	0.7 mg/l, *Max*	0.10 mg/l	C	Annexure F of IS 13428
10.	Boron	0.5 mg/l, *Max*	0.03 mg/l	C	APHA 3125 B (By ICP-MS)
11.	Calcium	75 mg/l, *Max*	60.9 mg/l	C	IS 3025 (Part 40)
12.	Chloramines	4.0 mg/l, *Max*	BDL (MDL : 0.1 mg/l)	C	APHA 4500 Cl-G
13.	Chloride (as Cl)	250 mg/l, *Max*	20 mg/l	C	IS 3025 (Part 32)
14.	Fluoride (as F)	1.0 mg/l, Max	BDL (MDL : 0.1 mg/l)	C	IS 3025 (Part 60)
15.	Residual Free Chlorine	0.2 mg/l, *Min* (if chlorinated)	BDL (MDL : 0.1 mg/l)	NA	IS 3025 (Part 26)
16.	Iron (as Fe)	1 mg/l, *Max*	BDL (MDL : 0.01mg/l)	C	APHA 3125 B (By ICP-MS)
17.	Magnesium (as Mg)	30 mg/l, *Max*	3.9 mg/l	C	IS 3025 (Part 46)
18.	Mineral oil	0.5 mg/l, *Max*	BDL (MDL : 0.05 mg/l)	C	PBTI/SOP/20/TP-13 by FTIR
19.	Nitrate (as NO_3)	45 mg/l, *Max*	5.2 mg/l	C	IS 3025 (Part 34)
20.	Phenolic Compounds	0.001 mg/l, Max	BDL (MDL : 0.0006 mg/l)	C	IS 3025 (Part 43)
21.	Sulphate (as SO_4^{2-})	200 mg/l, *Max*	BDL (MDL : 2 mg/l)	C	IS 3025 (Part 24)
22.	Sulphide	0.05 mg/l, *Max*	BDL (MDL : 0.01 mg/l)	C	IS 3025 (Part 29)
23.	Alkalinity	200 mg/l, *Max*	192 mg/l	C	IS 3025 (Part 23)
24.	Total Hardness (as $CaCO_3$)	200 mg/l, *Max*	168 mg/l	C	IS 3025 (Part 21)
25.	Cyanide	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	IS 3025 (Part 27)
26.	Copper (as Cu)	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	APHA 3125 B (By ICP-MS)
27.	Manganese (as Mn)	0.1 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
28.	Selenium (as Se)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
29.	Silver	0.1 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
30.	Zinc (as Zn)	5 mg/l, *Max*	0.01 mg/l	C	
31.	Cadmium (as Cd)	0.003 mg/l, *Max*	BDL (MDL : 0.001 mg/l)	C	
32.	Lead (as Pb)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
33.	Mercury (as Hg)	0.001 mg/l, *Max*	BDL (MDL : 0.0005 mg/l)	C	
34.	Molybdenum	0.07 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
35.	Nickel	0.02 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
36.	Arsenic (as As)	0.01 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
37.	Total Chromium	0.05 mg/l, *Max*	BDL (MDL : 0.005 mg/l)	C	
38.	Polynuclear aromatic hydrocarbons (PAH)	0.0001 mg/l, *Max*	BDL (MDL : 0.0001 mg/l)	C	PBTI/SOP/15/TP-08_GCMSMS
39.	Polychlorinated biphenyls (PCB)	0.0005 mg/l, *Max*	BDL (MDL : 0.0001 mg/l)	C	

BDL: Below Detection Limit MDL: Method Detection Limit C: Conforming NA: Not Applicable

12/6/2020

Authorized Signatory

Report for Self Monitoring of the Industry as per ...

TC611720000003434P

Sample Registration No. : PBTI/FAO/010620/000363

Sample code given by customer : House No.65, Ward No.5, Khanpur,Mukerian

Test Results

Sr. No.	Parameter	Acceptable limit as per IS 10500: 2012	Observed Value	Remarks (Conformity)	Standard/ Specification/ Method Followed
Microbiological Parameters					
40.	Coliform	Absent/100 ml	Present/100 ml	NC	IS 15185:2016
41.	E.coli	Absent/100 ml	Present/100 ml	NC	
Pesticide Residues					
42.	1. Alachlor	20 µg/l	BDL (MDL : 0.04 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	2. Atrazine	2 µg/l	BDL (MDL : 0.08 µg/l)	C	
	3. Aldrin/ Dieldrin	0.03 µg/l	BDL (MDL : 0.01 µg/l)	C	
	4. Alpha HCH	0.01 µg/l	BDL (MDL : 0.005 µg/l)	C	
	5. Beta HCH	0.04 µg/l	BDL (MDL : 0.01 µg/l)	C	
	6. Butachlor	125 µg/l	BDL (MDL : 0.04 µg/l)	C	
	7. Chlorpyrifos	30 µg/l	BDL (MDL : 0.04 µg/l)	C	
	8. Delta HCH	0.04 µg/l	BDL (MDL : 0.01 µg/l)	C	
	9. 2, 4-Dichlorophenoxyacetic acid (2,4-D)	30 µg/l	BDL (MDL : 0.1 µg/l)	C	PBTI/SOP/97/TP-61_HPLC
	10. DDT (o,p and p,p-Isomers of DDT, DDE and DDD	1 µg/l	BDL (MDL : 0.01 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	11. Endosulfan (alpha, beta, Sulfate)	0.4 µg/l	BDL (MDL : 0.04 µg/l)	C	
	12. Ethion	3 µg/l	BDL (MDL : 0.04 µg/l)	C	
	13. Gamma HCH (Lindane)	2 µg/l	BDL (MDL : 0.01 µg/l)	C	
	14. Isoproturon	9 µg/l	BDL (MDL : 0.1 µg/l)	C	PBTI/SOP/97/TP-61_HPLC
	15. Malathion	190 µg/l	BDL (MDL : 0.04 µg/l)	C	PBTI/SOP/59/TP-37_GCMSMS
	16. Methyl Parathion	0.3 µg/l	BDL (MDL : 0.08 µg/l)	C	
	17. Monocrotophos	1 µg/l	BDL (MDL : 0.08 µg/l)	C	
	18. Phorate	2 µg/l	BDL (MDL : 0.08 µg/l)	C	

BDL Below Detection Limit MDL : Method Detection Limit C : Conforming NC: Non Conforming

12/6/2020

Authorized Signatory

ASSESSMENT OF THE ECOLOGICAL DAMAGE, REMEDIATION PLAN AND NATURAL AND COMMUNITY RESOURCE AUGMENTATION PLAN

1.1 INTRODUCTION

M/s Indian Sucrose has been applied the application for the proposed expansion from 500 TCD along with 19.5 MW co-generation power plants to 12000 TCD along with 59.5 MW co-generation power plants in the SEAC/SEIAA Punjab on the 26, March 2018 under the Violation window for the grant of Environment Clearance**.**

The project was considered in the **166th SEAC meeting held on 24.05.2018.** SEIAA/SEAC has proposed the prescribed ToR vide letter no **SEIAA/2018/858** on dated **16.07.2018** for the preparation of Environmental Impact Assessment Report and Environmental Management Plan (Including Assessment of ecological damage and the remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA).

In order to carry out the environmental/ ecological damage assessment and formulation of related remediation plan and the natural and community resource augmentation plan with respect to Capacity Expansion from **5000 TCD to 6500 TCD** without obtaining prior Environmental Clearance under the Environment Impact Assessment Notification, 2006 (as amended from time to time).

In order to carry out the environmental/ ecological damage assessment and formulation of related remediation plan and the natural and community resource augmentation plan with respect to Construction and operation without obtaining prior Environmental Clearance under the Environment Impact Assessment Notification, 2006 (as amended from time to time).

1.2 DAMAGE ASSESSMENT REPORT & REMEDIATION PLAN

1.2.1 METHODOLOGY OF ASSESSMENT

As per notification vide **S.O. 804(E) dated 14.03.2017** it has been notified that the violation cases/non-Compliance will involve the assessment of ecological damage, remediation plan and natural and community resource augmentation plan.

We have collected and analysed the data, for assessment of ecological damage, preparation of remediation plan and natural and community resource augmentation plan and following methodology will be adopted.

The overall impact on air, water, noise, soil and land environment will be assessed. In addition, it will be weighed against the positive impact created on the socioeconomic scenario. To estimate the impact produced, a framework has been designed as given ahead:

- The place of activity is permissible for the purpose (like it should not fall in eco-sensitive zones etc.)
- Environmental Sensitivity to be clearly defined
- Status of work done till date
- Status of activities (in quantitative terms) undertaken during violation period and extent of damage

1.2.2 CRITERIA OF ASSESSMENT

- Negative impact indicates increase pollution load, vibration and public inconveniences
- Positive impact in terms of increased income due to employment, or other ancillary activities. Also benefits generated due to activities undertaken under corporate social responsibility
- Criteria to be used to assess the impact due to the construction (as per the table below):

Table: Criteria to assess the impact

Score	Rating
4	Major
3	Moderate
2	Minor
1	Negligible
0	None
-1	Negligible
-2	Minor
-3	Moderate
-4	Major

Table: Scoring criteria to assess the damage

Damage Scale	
Particulars	**Score Range**
Extremely Damaging	-61 to -80
Damaging	-41 to -60
Minutely Damaging	-21 to -40
Not Damaging Significantly	<-20

1.2.3 OBJECTIVES OF REMEDIATION PLAN

- To suggest control measures for preventing deterioration of air quality along with approximate cost.
- To suggest control measures for preventing deterioration of noise quality along with approximate cost.
- To suggest control measures for preventing deterioration of water quality along with approximate cost.
- Remediation plan of loss of top soil, loss of vegetation including trees and their approximate cost.

- To suggest control measures for keeping community safe from adverse effects of activity approximate cost.
- Plan and suggest Development of shelter of green belt to improve environment.

1.2.4 NATURAL AND COMMUNITY RESOURCE AUGMENTATION PLAN WILL INCLUDE:

Augmentation plan will include various activities to be taken for augmentation of Natural Resources like water, land vegetative cover in a time bound manner and estimation of financial implication.

- Activities to be taken for augmentation of community resources. The key community resources include −
- It can be a physical structure or place -- a school, hospital, library, recreation centre. It might also be an unused building that could house a community Centre, a community owned forest, a park, a pond, or other pasture and open space belonging to community.
- It can be a community service that makes life better for majority of community members
    - public transportation, early childhood education centre, community recycling facilities, cultural organization.
- It can be an activity that provides jobs and supports the local economy.

  The score calculated based on the above criteria along with the conditions given in TOR will be used for damage assessment for estimation of the penal amount to be provided against creating impact under violation.

1.3 DAMAGE ASSESSMENT

For assessment of damage to environment following Environmental aspects has been identified:

1. Air Environment
2. Water Environment
3. Soil Environment
4. Waste management
5. Noise Environment
6. Ecological Environment
7. Community welfare
8. Use of Natural resources
9. Topography and Natural drainage
10. Local Issues

11. Environmental accidents
12. Geological changes
13. Hydrological changes
14. Traffic planning

To assess these environmental parameters team has been deputed to assess preliminary assessment of damage to environment. Based on site inspection and the documentary evidences the environmental aspects vs activity has been filled.

1.3.1 ENVIRONMENTAL DAMAGE ASSESSED AND ITS REMEDIATION

The Construction has been done by the contractor. The Damage Assessment and Remediation of environmental parameters along with Cost basis is explained in the table No. 5:

Environmental Attributes	Cause of Pollution/Impact	Damage	Remediation
Air Environment	• Transportation of Construction material. • The transportation of material was done using 8-10 trucks & tractor daily (average)	Air emission from vehicular exhausts and handling of construction material	Plantation of trees around in nearby area road.

	Operation of machineries and DG sets	**Air pollution due to particulates and gases** During operation phase, Four D.G. sets of capacity 1045 KVA were exist at the project site which used for backup in case of power failure, the main source of Air pollution.	Dust suppression and water sprinkling system has been installed. APCD has been installed.
Water Environment	Operation activity	460 KLD of water for manufacturing Process was sourced from ground water.	ETP of 3000 KLD has been installed for treatment of water.

Soil Quality	Soil Excavation	No major excavation done only some pit was dig.	Land reclamation of nearby area- The excavated soil was re-used for backfilling; Top soil has already been used in green area development.
Waste Management	Waste generated during manufacturing process	Contamination/degradation of soil/water quality	Sludge is handling in 10 sludge beds having size 8X14 with in the plant premises.

	Generation of Hazardous wastes	Used DG oil was generated as Hazardous waste	Used oil generated from the 4 Nos. DG sets of total capacity 1045 KVA given to DG set service provider for disposal of used oil.
Noise Environment	Operation of machineries and DG sets	Health issue to the workers due to increase in noise levels	Plantation of trees around the project periphery including green crippers will act as Barricades around the project.
Ecological Environment	Site clearance	No significant flora and fauna at project site	Total plantation area after complete development of the project, will be 7.79 ha (33.39 % of net plot area). Total 2000 no. of trees have already been planted and 17,200 trees to be plant in future.
Community welfare		Secure facilities to the workers	Structure of road
			Infrastructure at plant area.
Use of natural resources		Energy use was through diesel and petrol	Rain water Harvesting for Ground water recharge
			Sprinkling and watering of plantation on nearby roads

Local Issues		Land was already allotted at the name of M/s Indian Sucrose Ltd.	-
Environmental Accident		The project work was done by experienced and qualified persons hence no environmental accident happened.	
Geological changes		There was no mineral at project site and there was only ordinary soil.	
Hydrological changes		The project does not possess any adverse impact on nearby hydrogeology.	

1.3.2 DAMAGE MATRIX

DAMAGE DUE TO PRODUCTION																												
			Emission to Air		Release to Water			Waste Generation			Land Degredation				Use of Natural Resource and Raw Materials			Local Issues			Transportation Issues	Environmental Accidents		Effects on Biodiversity	Noise Pollution	Soil Quality and Management	Geology	Hydrology	Total
Steps	Work	Current Status	PM	Gaseous Emissions	Execution of foundations and retaining walls	Cleaning Process of Machinary & Tools	Sanitary Water	C&D water	Non- Hazardous Waste	Hazardous & E-waste, Battery Waste	Dumping due to use construction material	Use of concrete release and surface cleaning agents	Dumping of other liquid	Change in Natural Drainage and Topography	Water	Energy	Raw Materials	Noise and Vibrations	Odour	Dust	Landscape Alteration								
Step 1	Land Occupati	100																										0

	on																												
Step 2	Removal of vegetation	100																											**0**
Step 3	Excavation Work	100	-3	-1		-1				-1	-1		-2	-1		-1	-2	-2		-2		-2			-2	-2		-1	**-24**
Step 4	Foundation	100																											**0**
Step 5	Masonary Work	100	-3	-1	-3			-4	-1		-3				-3	-2	-4								-2				**-25**
Step 6	Drainage System	100																											**0**
Step 7	STP/ ETP	80	-1	-3	-1		-1	-1	-2						-2				-3	-1								-2	**-16**
Step 8	Rainwater Harwesting	100																											**0**
Step 9	Plantation	95	1	2			1								-1		1	2	1		1			1		1			**10**
Step 10	Roads	100																											**0**
Step 11	Installation of Electrical, mechanical items and fire	100																											**0**
Total			**-8**	**-7**	**-4**	**-1**	**2**	**-5**	**-3**	**-1**	**-4**	**0**	**-2**	**-1**	**-6**	**-3**	**-7**	**-4**	**-4**	**-3**	**1**	**-2**	**0**	**1**	**-4**	**-3**	**0**	**-3**	**-125**

1.3.3 IMPACT SUMMARY

S.No.	Identification Environmental Element/Units	Base Scale	Damage Scale
1	Emission to Air	-15	Not Damage Significantly
2	Release to Water	-7	Not Damage Significantly
3	Waste Generation	-9	Not Damage Significantly
4	Land Contamination	-7	Not Damage Significantly
5	Use of Natural resources and Raw materials	-16	Not Damage Significantly
6	Local issues	-11	Not Damage Significantly
7	Transport Issues	1	Positive
8	Environmental Accidents	-2	Not Damage Significantly
9	Effects on Biodiversity	1	Positive
10	Noise Pollution	-4	Not Damage Significantly
11	Soil Quality and Management	-3	Not Damage Significantly
12	Geology	0.0	Positive
13	Hydrology	-3	Not Damage Significantly

Summarized Remediation Cost Summary

S. No.	Environmental Component	Remediation Proposed	Further Remarks	Rate	Quantity	Total Cost	Year I	Year II	Year III
1	Air Environment	Road & Paved Area	Construction and Maintenance of Road & Paved Area in nearby village			100,000	50,000	-	50,000
		Health Checkup	Health Checkup Camp in nearby village	50,000	**2**	100,000	50,000	50,000	-
		Plantation in Nearby Area Road	Plant 500 @ 100 (including maintenance)	100	500	100,000	50000	25000	25,000
			TOTAL COST			**300,000**	**150,000**	**75,000**	**75,000**
2	Water Environment	Ground water Recharge	Pond adoptation	3,000,000	1	3,000,000	2000000	500000	500000
			TOTAL COST			**3,000,000**	**2000000**	**500000**	**500000**
3	Soil Environment	Park Maintenance	Maintenance of park in nearby village			50000	50000	-	-
			TOTAL COST			**50000**	**50000**	**-**	**-**
4	Waste Management	Providing bins	100 bin @2500/pc.	2500	100	250000	100000	100000	50000
			TOTAL COST			250000	100000	100000	50000

5	Noise Environment	Distribution of PPE to labour	Cost of 300000			300000	150000	150000	-
			TOTAL COST			**300000**	**150000**	**150000**	**-**
6	Ecological Environment	Plantation in nearby Area	100 trees @ Rs. 200/tree	200	100	20,000	10,000	10000	-
		Development of Park	In consideration with Panchayat, development of Panchayat Park			20,000	20000		-
			TOTAL COST			**40000**	**30000**	**10000**	**0**
COST OF REMEDIATION						**3,940,000**	**2,480,000**	**835,000**	**625,000**
			SUMMARISED AUGMENTATION COST SUMMARY						
S. No.	**Component**	**Activity Proposed**	**Further Remarks**	**Rate**	**Quantity**	**Total Cost**	**Year I**	**Year II**	**Year III**
1	Natural Augmentation	Providing Solar Lighting in the Village	-			300000	150000	150000	
		Providing Solar Lighting in the School	-			200000	100000	100000	
			TOTAL COST			**500000**	**250000**	**250000**	**0**
2	Community Welfare	Construction of Sanitation facilities	Toilets will be provided			80000	50000	30000	
		Temple Renovation	Renovation of temple in nearby site			20000	20000		
			TOTAL COST		-	**100000**	**70000**	**30000**	**0**
COST OF NATURAL AUGMENTATION AND COMMUNITY						**600000**	**320000**	**280000**	**0**

YEARWISE BREAKUP OF REMEDIATION AND AUGMENTATION COST									
S. No.	**Item**	**Total Cost**	**Year I**	**Year II**	**Year III**				
1	Cost on Remediation Plan based on Damage Assessment due to violation	**3940000**	**2480000**	**835000**	**625000**				
2	Natural Resource and Community Resource Augmentation Plan	**600000**	**320000**	**280000**	**0**				
TOTAL COST TO BE SPENT		**4540000**	**2800000**	**1115000**	**625000**				