EXECUTIVE SUMMARY

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT (EIA)
&
ENVIRONMENTAL MANAGEMENT PLAN (EMP)

FOR

ESTABLISHMENT OF DISTILLERY UNIT

(MOLASSES BASED) CAPACITY: 40.0 KLPD (RS/ENA/AA)

ALONGWITH 2.0 MW COGENERATION OF POWER

OF

LAKSHMI SUGAR MILLS CO. LIMITED
(UNIT: DISTILLERY) AT VILLAGE & PO: IQBALPUR
TEHSIL : ROORKEE, DISTRICT: HARIDWAR (UK)

पर्यावरणीय अधिप्रभाव मूल्यांकन आख्या

का

''सारांश''

आसवनी की स्थापना क्षमता 40 के0 एल0 डी0 तथा

सह–ऊर्जा प्लान्ट क्षमता 2.0 मेगावाट संबंधी

द्वारा

मे0 लक्ष्मी शुगर मिल्स क0 लि0 (आसवनी इकाई)

ग्राम एवं पोस्ट : इकबालपुर, तहसील : रुडकी,

जिला : हरिद्वार (उत्तराखण्ड)

EXECUTIVE SUMMARY

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

The **M/s Lakshmi Sugar Mill Co Ltd , Unit : Distillery** proposed the establishment of Molasses based Distillery **from 40 KLD** along with co-generation power **– 2.0 MW** at village & PO : Iqbalpur, Tehsil : Roorkee, District : Haridwar (UK).

1.2 PROPOSED PROJECT DETAILS and Project Proponent

The **M/s Lakshmi Sugar Mill Co Ltd , Unit : Distillery** proposed the establishment of Molasses based Distillery **from 40 KLD** along with co-generation power **– 2.0 MW** at village & PO : Iqbalpur, Tehsil : Roorkee, District : Haridwar (UK). The proposed project will be adjacent to the sugar unit of Lakshmi Sugar mills. About 12.0 acres of land has been proposed and is available within existing sugar mill premises.

Sufficient area will be made available for the green belt and Effluent Treatment Facilities as it plans for zero discharge. A good network of internal as well as main approach roads is already available as the site is within existing sugar premises.

1.3 PROJECT JUSTIFICATION

1.3.1 THE NATIONAL POLICY ON BIOFUELS

The Ministry of Petroleum and Natural Gas (MoPNG) issued a notification in September 2002 for mandatory blending of 5 per cent ethanol in nine major sugar-producing states and four union territories. In 2003, the Report of the Committee on Development of Bio fuel, under the auspices of the Planning Commission, recommended a phase-wise implementation programme to blend bio fuels with petrol and diesel. However, due to a supply shortage from 2004 to 2005, the ethanol-blending mandate was made optional in October 2004, but it resumed in twenty states in October 2006. In October 2007, the Government of India made it mandatory to blend 5 per cent ethanol in petrol across the country, with the exception of J&K, the Northeast and island territories. In 2008, the Government of India announced its National Biofuel Policy, mandating a phase-wise implementation of the programme of ethanol blending in petrol in various states. The blending level of bio-ethanol at 5 per cent with petrol was made mandatory from October 2008, leading to a target of 20

per cent blending of bio-ethanol by 2017. This was taken up by the oil marketing companies (OMCs) in twenty states and four union territories.

1.3.2 OBJECTIVE OF THE STUDY

The overall objective of any EIA studies is to identify and assess the adverse and beneficial impacts of the project in the planning stage itself, so that necessary mitigation measures to prevent or minimize these adverse impacts could be planned early and cost effectively. In view of this objective, the scope of EIA study broadly includes-

i). Introduction along with scope of EIA studies (Chapter-1).

ii). Project description including process, resource required and products formed along with sources of pollution and built in mitigation measures with respect to wastewater, gaseous emissions and solid wastes (Chapter-2).

iii). Existing baseline status of the relevant environmental parameters in the specified study area through primary and secondary source. The environmental parameters include meteorology, air, water, land, soil, noise, and ecology and socio economics (Chapter-3).

iv). Anticipated environmental impacts of the proposed project on environment and measures for mitigation of the predicted adverse impacts, air pollution dispersion modeling studies (Chapter-4).

v). Analysis of Alternate Site and Technology (Chapter-5)

vi) Environmental Monitoring Programs (Chapter-6)

vii). Additional Studies including Risk Assessment, DMP, Emergency Action Plan (Chapter-7).

viii). Project Benefits (Chapter-8).

ix) Environment management Plan, Mitigation measure, Rainwater Harvesting and Green Belt development (Chapter – 9)

x). Recommendation (Chapter- 10).

1.4 Project Cost

The total capital investment would be of **Rs. 8389.90 Lakhs**. Capital Cost of Effluent Treatment (Multi effect evaporation, Incineration boiler, and Secondary effluent treatment plant) is **Rs. 2400 Lakhs** and Recurring Cost effluent treatment plant is **Rs. 0.40 Crores / Annum.** The project would be formulated in such a fashion and manner so that the utmost care of Safety Norms & Environment Protection shall be taken care of.

1.5 Project Location

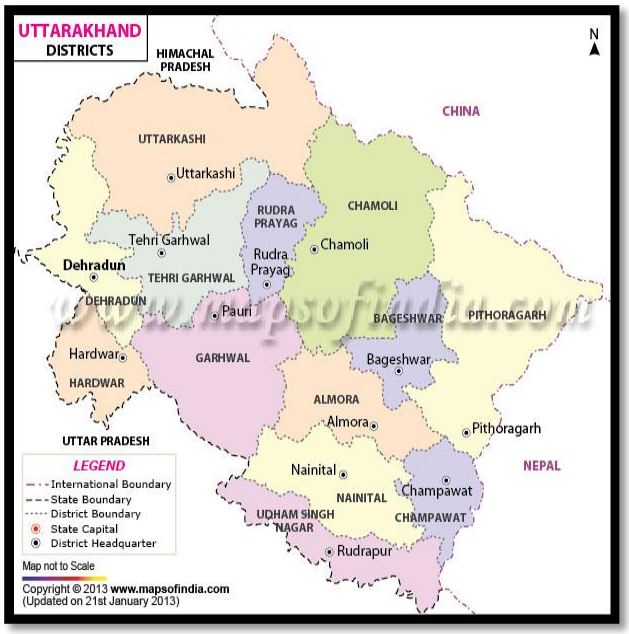
The proposed distillery project site is located at Iqbalpur, Tehsil : Roorkee, in District Haridwar (Uttarakhand). Administrative location map shown in the **Fig :1.1**. For EIA Study 10.0 km radial study area is covered and the same is shown on SOI Topo sheets 53 G/9 and 53 G/13 in the map below **Fig : 1.2** & 1.3.

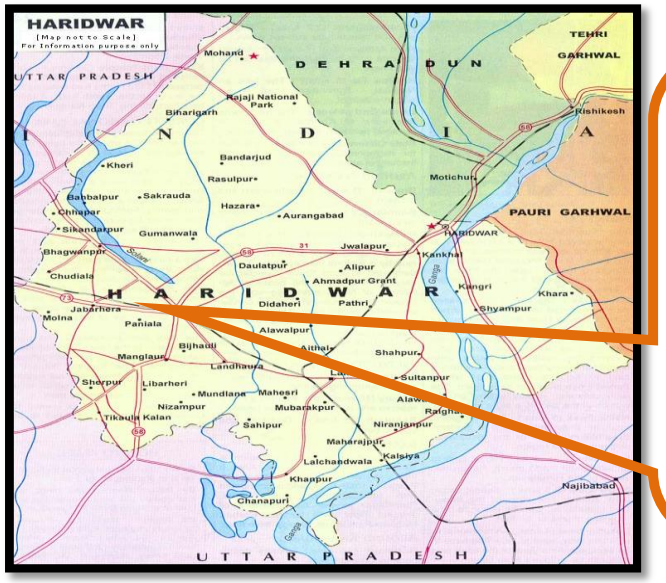
Latitude and Longitude of the site at four corners and in the centre given below:

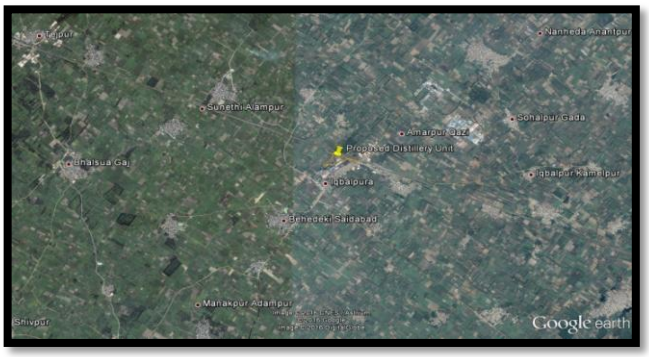
Corners	Directions	Latitude and Longitude
1st	Southwest	Lat : 29°52'30.43" N, Long: 77°47'40.51" E
2nd	West	Lat : 29°52'29.96" N, Long: 77°47'34.41" E
3rd	North	Lat : 29°52'38.14" N, Long: 77°47'40.39" E
4th	East	Lat : 29°52'35.10" N, Long: 77°47'49.24" E
-	Centre	Lat : 29°52'34.11" N, Long: 77°47'41.85" E

TABLE -1.1; SALIENT FEATURES OF THE PROJECT

1.	Name and Address of project proponent	**M/s** Lakshmi Sugar Mills Co. Ltd.	
2.	Location of the site	Village & Post : Iqbalpur,**Tehsil** – Roorkee, **District**- Haridwar, **Uttarakhand**	
3.	Project	Establishment of Molasses based **Distillery (40.0 KLD)** and **CPP (2.0 MW)**	
4.	New/expansion/modernization	New Project	
5.	Accessibility	Nearest Town	Roorkee : 12.5 km in East
		Nearest Railway Station	Roorkee Railway station: 12.0 km in East.
		Nearest Airport	Jolly Grant Airport Dehradun: 70.1 km in north direction.
6.	Total water requirement	364.0 KLD	
8.	Raw material requirement	Molasses	180 MT/Day (from own adjacent sugar mill)
7.	Fuel Requirement	Concentrated SLOP : 133.0 KLD along with Bagasse as support fuel 107.52 TPD	
8.	No. of working days in a year	330.0 days per annum	
9.	Project Cost	**8389.90 Lakhs**	







ESTABLISHMENT OF NEW DISTILLERY UNIT: 40.0 KLD (RS/AA/ENA) AT VILLAGE: IQBALPUR, TEHSIL: ROORKEE, DISTRICT: HARIDWAR (UK)

Fig : 1.1 ; Location map of Proposed Distillery Site

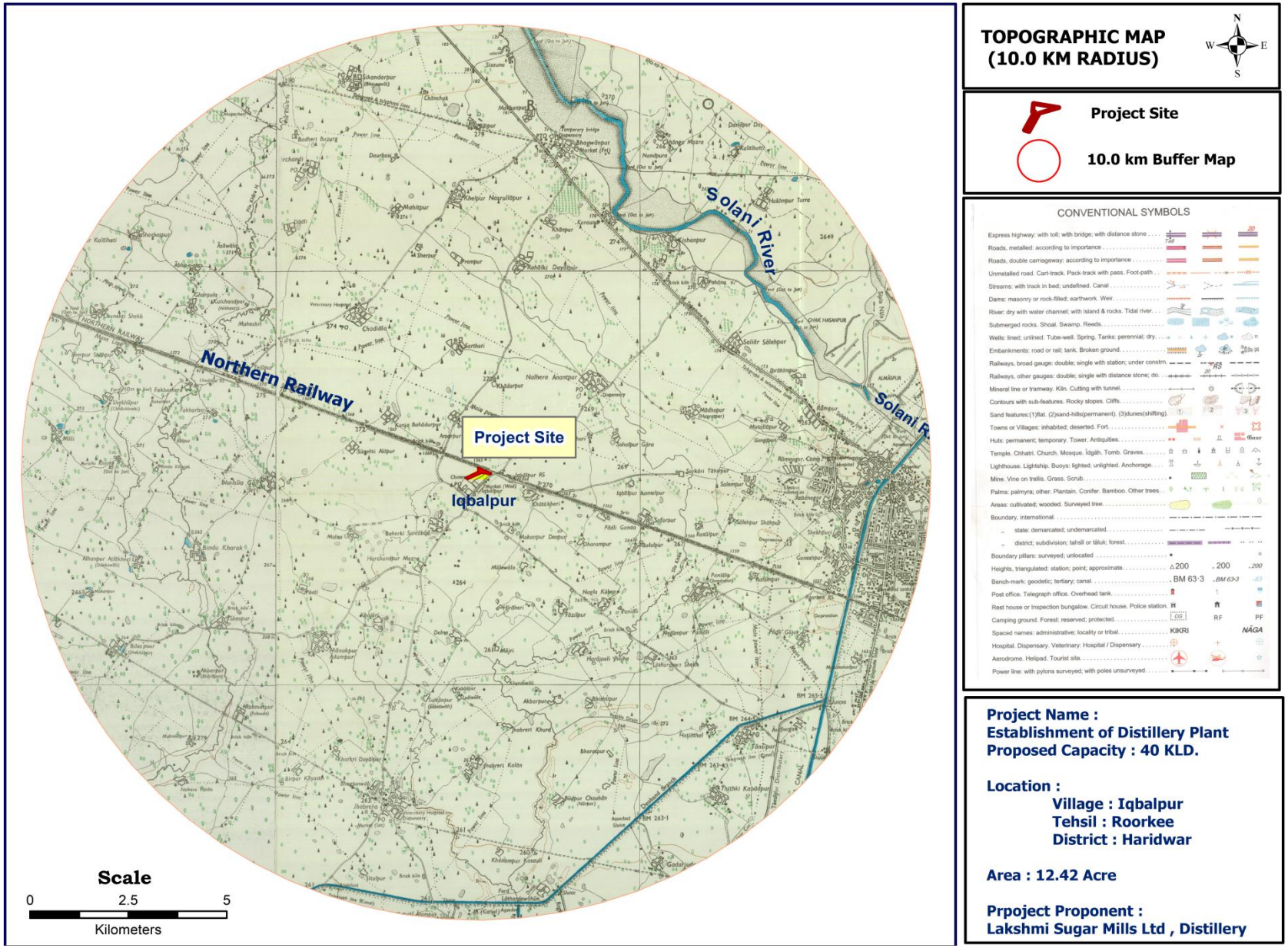


Fig : 1.2, Topo Sheet map within 10.0 Km radius of the project site

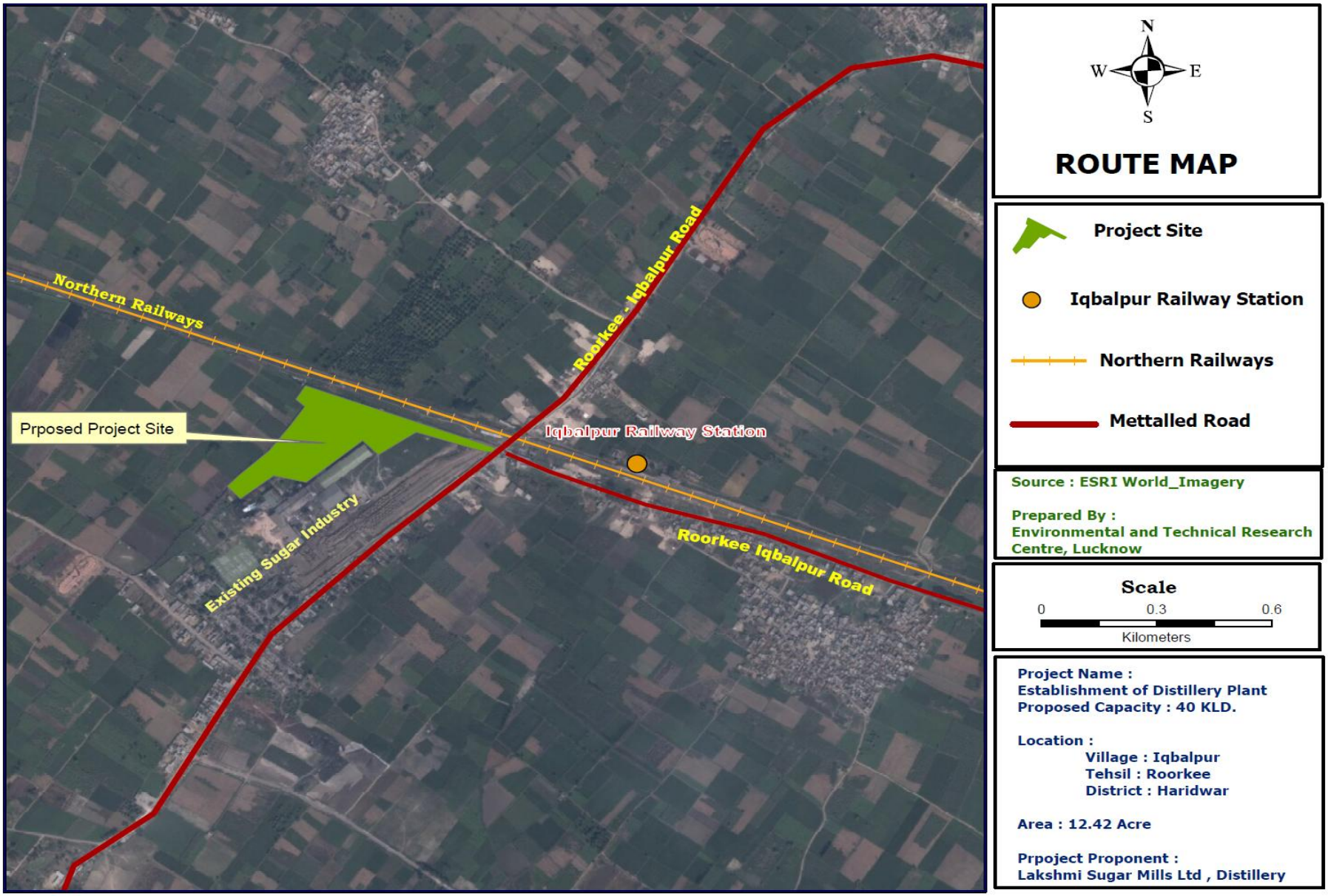


Fig : 1.3, Route Map of Project Site

1.6 PROCESS DESCRIPTION AND SOURCES OF POLLUTION

1.6.1 Process Description

Technology and Process Description

Alcohol production mainly involves three main Processes;

A. Fermentation
B. Distillation
C. Dehydration

The process of alcohol manufacturing involve various sections are;

I. Molasses Storage and Handling Section
II. Fermentation Section
III. Distillation for Production of rectified spirit and extra neutral alcohol molecular sieve for production of absolute alcohol.
IV. RS/ENA /AA receiver and Storage Section
V. Effluent treatment plant comprising Evaporation plant and incineration for Spent wash treatment and other effluent (Condensates, Spent lees etc) will be treated in Condensate Polishing Unit.

1.7 Infrastructural Facilities And Raw Material Requirement

Land Requirement

The land requirement for the proposed 40.0 KLPD distillery and 2.0 MW captive power plant is approximately 12.42 acres amounting to an area of 124200 sqm which is available within premises of existing sugar factory of Lakshmi sugar mills. Out of 12.42 Acre of total land 4.35 acre (> 33% of total plot area) will be used for green belt development and rest for plant and machinery.

1.8 Raw Material Requirement

Molasses will be the basic raw materials for making 40.0 KLPD Rectified Spirit/Extra Neutral alcohol/Absolute Alcohol. The total requirement of raw material (Molasses) for the distillery will be 180 MT/ day (59400 MT/Annum). As the sugar plant will crush about 4.57 lakh MT of sugarcane at the rate of 4500 MT/Day, molasses of around 22674.3 MT will be produced and will be utilized by the distillery unit, rest quantity 36725.7 MT will be procured from nearby sugar mills as the total molasses requirement is 59400 MT for optimum level of operation.

1.9 Water Requirement

Total water requirement for the proposed project 364.0 m3/day. Water requirement for first run would be 1245.0 m3/day, which will be reduced through recycling of 881.0 m3/ day of treated water/ Condensates. Water requirement for the proposed project will be met from ground water as well as recycled water. Permission for ground water extraction is under process.

WATER REQUIREMENT FOR THE PROJECT

S. No	Operations	Water required
1	Molasses Based Distillery and **2.0 MW** Power co-generation	**364.0 KLD** (Net fresh water requirement after recycling)

Source: *Pre Feasibility Report*

2.0 Man Power

For the establishment of proposed distillery 37.0 person will be employed which include all categories of unskilled, semiskilled, skilled personnel and contract labour. Employment in unskilled category, preference will be given to local people. Selection of employ will be done by interview. Employment in skilled category will be done from outside if the skilled labour force is not available in local areas. Indirect employment generation will be 80 nos.

2.1 Fuel Requirement

SLOP along with bagasse will be used as fuel for incineration boiler (01 no. 16 TPH). Details regarding quantity of fuel required, their source along with distance & mode of transportation for proposed project are given below.

Fuel Requirement

Fuel	Total Quantity	Source
SLOP	133.0 KLD	In - House waste from the process
Bagasse	107.52 TPD	From own sugar mill (adjacent)

Source: *Prefeasibility Report*

2.2 SOURCES OF POLLUTION

The major sources of pollution are particulate matter from proposed establishment of distillery plant based on Molasses. The emissions of particulate matters from the stacks will be limited to 150 mg/Nm3. Stack is with height of 50 meters which is

attached to boiler through proposed Bag filters. Bag filters will be used as pollution control equipment to reduce the emission of PM.

2.0 Waste Water Generation and Treatment

Proposed distillery Plant will be based on semi Continuous fermentation system along with re-boilers to reduce the effluent up to 8.0 KL/KL of Product. The Effluent (Spent Wash) generation will be 320 KLD. Further this Effluent will be concentrated in Multi effect evaporator and then incinerated in 01 No (16.0 TPH) SLOP fired Boiler. Approx 461 KLD of other very less polluted effluent will be generated which will be treated in separate condensate polishing unit (secondary effluent treatment plant) and after treatment, the treated water will be recycled back to ensure complete zero liquid discharge unit.

2.1 Solid Waste Generation and Utilization

The total Fly Ash generations will 21.56 TPD from the proposed Slop fired Boiler and Air Pollution Control Device of distillery project. Fly ash is used as manure due to its high nutritive value.

Fermenter Sludge: 18.0 TPD will be used as manure in agriculture field.

2.3 Baseline Environmental Status

Primary baseline environmental monitoring studies were conducted during pre monsoon seasons from 1st March 2016 to 31st May 2016 and details are as follows:

Soil Environment

It has been observed that the pH of the soil quality ranged from 7.4 to 8.0 indicating that the soil is neutral or slightly alkaline in nature. The Electrical conductivity was observed to be in the range of 294.0 to 424.0 µs/cm, with maximum (424 µs/cm) observed at SQ 5 and with the minimum (294.0 µs/cm) observed at SQ 3 during the study period.

Available potassium was observed to be in the range of 94.00 mg/ kg to 187.47 mg/ kg which is under more than sufficient category. The nitrogen values range between 156.28 mg/kg to 186.40 mg/kg which falls in less category. The phosphorus values observed in sampling found to be in good amount.

Meteorological Data Generated at Site

The meteorological parameters were recorded on hourly basis during the study period near proposed plant site and comprises of parameters like wind speed, wind direction

(from 0 to 360 degrees), temperature, relative humidity, atmospheric pressure, rainfall and cloud cover. The predominant wind directions during study period are from East, South East and North East.

Air Quality

The study area represents mostly rural/residential environment. Eight Ambient air quality monitoring stations were selected in and around project site and studies were carried out as per BIS standards. Ambient air quality analysis reveals that these results are well within limits in all locations as per National Ambient Air Quality standards 2009.

Water Quality

Water samples were collected from 8 sampling locations. These samples were taken as grab samples and were analyzed for various parameters to compare with the standards.

Ground Water Quality

The pH of the water samples collected ranges between pH 7.06 – 7.51. The Total Hardness recorded in between 188.42 to 466.78 mg/l in the sample. Total Dissolve Solid ranging from 280.78 – 576.8 mg/l.

Surface Water Quality

pH of the water samples collected ranges in between 7.76 to 8.1. The BOD recorded in Solani River is under permissible limit as per IS 2296 Class "B & C". Highest COD was observed in Pond in Chodiala (18.4 mg/L). The hardness of water samples in between 160.54 to 248.66 mg/litre. The highest hardness value was found in Chodiala Pond.

Noise Level Survey

The noise monitoring has been conducted for determination of noise levels at Eight locations in the study area. Noise monitoring results reveal ambient noise levels in all locations are well within the limits as per Ambient Noise standards.

Flora and Fauna Studies

A preliminary survey was made for determination of baseline details of flora. During field survey many plant of different species were recorded at proposed project site.

The study area did not record the presence of any critically threatened plant species. The records of Botanical Survey of India and Forest department also did not indicate presence of any endangered or rare and vulnerable plant species in this area.

2.4 IMPACT ASSESMENT

2.4.1 Impact during Construction Phase

Impact on Land Use

The land use of proposed distillery land is under industrial category. More than 33 % of total area will be develop as green belt and it will be maintained during the operation phase.

Impact on Soil

Vegetation on topsoil is to be removed prior to commencement of bulk earthwork. The construction activities will result in minimum loss of vegetation and topsoil in the plant area. Many plant present at the proposed project site. Vegetation is less in the site to be developed and will be disturbed only in the bare minimum area required for construction. Apart from localized constructional impacts at the plant site, no significant adverse impact on the soil in the surrounding area is anticipated.

Impact on Air Quality

During construction phase, dust generation will be the main pollutant, which would generate from the site development activities and vehicular movement on the road. However, concentration of NOx and CO may also be slightly increased due to increased vehicular traffic movement. To mitigate these impacts, regular sprinkling of water will be done at the construction site. The approach roads will be black carpeted and vehicles will be kept in good order to minimize automobile exhaust.

However, the impact of such activities would be temporary and restricted to the construction phase and will be confined to the project boundary and is expected to be negligible outside the plant boundaries. Proper up keep and maintenance of vehicles, sprinkling of water on roads, providing sufficient vegetation etc are some of the measures that would greatly reduce the negative impacts during the construction phase.

Impact on Noise Levels

The major sources of noise during the construction phase are vehicular traffic, construction equipment like dozers, scrapers, concrete mixers, cranes, generators pumps, compressors, rock drills, pneumatic tools, saws, vibrators etc. The operation of this equipment will generate noise ranging between 70-85 dB (A). The noise produced during the construction will have significant impact on the existing ambient noise levels. The major work will be carried out during the daytime. The construction equipment may have high noise levels, which can affect the personnel operating the machines. Use of proper personal protective equipment will mitigate any significant impact of the noise, generated by such equipment.

Demography and Socio-Economics

The non-workers constitute about 40-50% of the total population in 10-km radius study area. Some of them will be available for employment in the proposed plant during construction activities. As the laborers are generally un-skilled, the locals would get opportunities for employment during construction activities.

2.4.2 Impacts during Operational Phase

Impact on Soil vis-à-vis Solid Waste

All the solid wastes generated will be used as manure in crops, or in ancillary activities, hence, no impact of solid waste is envisaged on soil quality of the area.

Impact on Air Quality

Adequate stack heights have been provided to disperse gaseous emissions over a wider area. In order to control emissions of Particulates, adequate control equipment bag filters will be install.

Prediction of impacts on air environment has been carried out by using Aermod 8.2 and the Short term incremental concentration for PM and SOx are observed as 0.98 and 1.45µg/m3 at a distance under of 515.0 and 600 respectively and meter on South East direction. After the implementation of the proposed project, these concentrations are found to be well below the permissible NAAQS norms for rural/residential zone and Industrial/Mixed zone. Therefore, the proposed activity is not likely to have any significant adverse impact on the air environment.

Impact on Water Resources

Proposed distillery plant has estimated the water will be 364.0 M^3/Day and For Domestic 10 M^3/Day. Daily makeup water Requirement of distillery Plant will be 364.0 M3 / Day. The water will be sourced from the ground water through tube well. The application for Ground water abstraction is applied. As the area comes under Safe ground water level, hence no impact is envisaged on the water resources of the area.

Impact on Water Quality

General water is essential for human, agriculture, industry and commercial use. The industrial activity shall have direct impact on the end users. The water environment broadly covers the following points for consideration of impact.

- Industrial operations, their effect on water quality and ground water potential of study area.
- Identifying potential sources of pollutants focusing specifically zero discharge of the wastewater.
- Impact of raw water usage

The main source of water supply for the industrial operations is bore well and site is not under critical area, permission from CGWA has been granted for extraction of water from ground.

There is no waste water discharge in this process. Distillery is based on Zero Discharge. Domestic Waste water Generation will 7 M^3/day will be disposed through soak pit and Septic Tank. Hence there is no disposal of waste water in this process so no impact on water quality of the area.

Impact on Noise Levels

The industry is located in rural area away from major human settlement. The adequate steps are proposed to control the noise. The proposed Distillery Plant will not result in any significant impact on noise environment. The minor increase in vehicular transportation due to increase material handling will not generate any significant excessive noise. Hence, there shall not be any significant negative impact on noise environment of the study area.

Impact on Ecology

The impact of air pollutants on vegetation due to the proposed project, is identified and quantified by using air dispersion modeling. The simulations have been done to evaluate PM10 and SOx likely to be contributed by the proposed activities, the

resultant concentrations for study period are within the limits as per National Ambient Air Quality Standards. Hence no impact on ecology of study area is identified.

2.5 ENVIRONMENT MANAGEMENT PLAN

During construction, some of the vegetation in the plant premises is required to be cleared. The measures required to be undertaken to minimize the impact on the ecology are:

a. The felling of trees will be kept at minimum;
b. Proper Canteen, Sanitation and shelter facility will be provided to worker and truck driver during construction.
c. To control air pollution proper sprinkling of water shall be done.
d. The greenbelt having vegetation density of 1500 trees/ha shall be developed.

2.5.1 Environment Management during Operation Phase

Air Pollution Management

Air Pollution Control Equipment - Proposed Distillery plant to reduce the emission of particulate matters Bag filters will be installed with maximum efficiency. Bag filters is connected with boiler through Duct. The particulate matter in stack will be limited to less than 150 µg/m3.

Noise Pollution Management

The greenbelt already developed around the boundary of the plant will attenuate the noise emitted by the various sources in the plant. Earplugs will be provided for the personnel working close to the noise generating units as a part of the safety policy. Apart from this, some of the design features provided to ensure low noise levels are as follows:

Provision of silencers will be made wherever possible;

a. The insulation provided for prevention of loss of heat and personnel safety will also act as noise reducers;
b. Necessary enclosures will also be provided on the working platforms/areas to provide local protection in high noise level areas;
c. The workers will be provided with ear plugs; and
d. Plantation in the zone between plant and township would attenuate noise in the residential area.

Water Pollution Management

Waste water generated in different process, will be treat in effluent treatment plant

For Spent Wash: Spent wash evaporated in Multi effect evaporator then concentrate from MEE will be incinerated in SLOP fired Boiler.

For Other Effluent: Other Effluent Contains MEE Condensate, Spent Lees, Floor Washing and Blow Downs. Other effluent will be treated in Condensate Polishing Unit (Secondary Effluent Treatment Plant)and after the treatment it will be recycled back in the process. There will be no wastewater discharge from the Distillery. Hence, there will not be any contamination of surface water bodies.

Solid Waste Management

Fly ash will be generated in the process. Dust collected from air pollution control equipment will be stored in fly ash yard. Fly ash will be used in as manure in agriculture.

Greenbelt Development

Due care will be taken to ensure that a greenbelt is developed around the plant. All areas devoid of vegetation and having low density will be systematically and scientifically planted. Distillery will develop greenbelt in 33% (Approx: 4.35 Acre) of total area of distillery plant and shall maintain it.

लक्ष्मी शुगर मिल्स क0 लि0 (आसवनी इकाई)

ग्राम एवं पोस्ट : इकबालपुर, तहसील : रुडकी,

जिला : हरिद्वार (उत्तराखण्ड)

द्वारा

आसवनी की स्थापना क्षमता 40 के0 एल0 डी0

तथा

सह–ऊर्जा प्लान्ट क्षमता 2.0 मेगावाट

संबंधी

पर्यावरणीय अधिप्रभाव मूल्यांकन आख्या

का

''सारांश''

द्वारा

मे0 लक्ष्मी शुगर मिल्स क0 लि0 (आसवनी इकाई)

हरिद्वार (उत्तराखण्ड)

पर्यावरण अधिप्रभाव मूल्यांकन आख्या का सारांश

मे0 लक्ष्मी शुगर मिल्स का0 लि0, आसवनी इकाई ग्राम एवं पोस्ट : इकबालपुर, तहसील : रुडकी, जिला : हरिद्वार, (उत्तराखण्ड) द्वारा 40 के0 एल0 डी0 आसवनी इकाई तथा **2.0 मेगावाट** सह–ऊर्जा प्लान्ट को स्थापना किया जाना प्रस्तावित है। इस स्थापना प्रक्रिया द्वारा विभिन्न पर्यावरणीय घटकों जैसे मृदागुणता, जलगुणता, वायुगुणता, ध्वनि तीव्रता, स्थानीय जनजोवन, स्थानीय जलवायु आदि पर पर्यावरणीय अधिप्रभाव अधिरोपित किया जाना स्वाभाविक है। इसके आकलन हेतु विस्तृत अधिप्रभाव अध्ययन किया गया है जिसके अंतर्गत महत्वपूर्ण पर्यावरणीय घटकों की वर्तमान स्थिति की समीक्षा करते हुए क्षेत्रीय अध्ययन के माध्यम से स्थापना प्रक्रिया द्वारा भूमि, जल, वायु, ध्वनि, सामान्य जनजीवन आदि पर पड़ने वाले सम्भावित अधिप्रभाव को गणितीय विश्लेषण द्वारा अनुश्रवित किया गया है। इसके उपरान्त इन समग्र अधिप्रभावों के प्रभावी निराकरण हेतु विभिन्न संस्तुतियों का निर्धारण किया गया है। इस प्रक्रिया में यह पाया गया है कि उद्योग द्वारा प्रस्तावित इकाई का पर्यावरण पर समग्र अधिप्रभाव सकारात्मक एवं धनात्मक आकलित हुआ है इसमे उद्योग स्थापना के कारण औद्योगीकरण में वृद्धि, सामान्य जनजोवन के रहन–सहन में सुधार, जीवोपयोगी सुविधओं में वृद्धि के अतिरिक्त महत्वपूर्ण उपलब्धि उद्योग द्वारा प्रस्तावित है।

इकाई का विवरण : प्रस्तावित उद्योग द्वारा आसवनी एवं सह–ऊर्जा का उत्पादन करने हेतु उद्योग द्वारा पर्यावरण एवं जलवायु परिवर्तन मंत्रालय भारत सरकार को पर्यावरण संस्तुति हेतु प्रस्ताव दिया गया है ।

प्रोजेक्ट विवरण

क्र0सं0	प्रोजेक्ट विवरण	
1	आसवनी क्षमता	40 किलो लीटर प्रतिदिन
2	सह–ऊर्जा	2.0 मेगावाट
3	ईंधन की खपत	बैगास–107.52 टन प्रतिदिन स्लॉप–133.0 टन प्रतिदिन स्लॉप के साथ बैगास को सह–ईंधन के रूप में प्रयोग में लाया जायेगा है।
4	शीरा (मोलैसेस) की खपत	180 टन प्रतिदिन
5	जल की खपत • औद्योगिक • घरेलू	 • 364 किलो लीटर प्रतिदिन (@ 9.1 के0 एल0/के0 एल0 अल्कोहल) • 10 किलो लीटर प्रतिदिन
6	उत्प्रवाह की मात्रा	शन्य
7	ऐशश्जनरेषन	21.56 टन प्रतिदिन
8	फर्मेण्टर स्लज	18 टन प्रतिदिन
9	ब्वायलर	18 टन प्रतिघंटा (स्लॉप फायर्ड)
9	वायु प्रदूषण नियंत्रण संयत्र	बैग फिल्टर प्रस्तावित
10	चिमनी की ऊॅचाई	50 मीटर भूतल से
11	ऊर्जा की मात्रा	1300–1400 किलोवाट/घण्टा

12	स्टीम की मात्रा	16 टन प्रतिघंटा

इस पर्यावरणीय अधिप्रभाव मूल्यांकन आख्या के महत्वपूर्ण बिन्दुओं को ''परस्पर संबंधी मैट्रिक्स के माध्यम से निर्धारित किया गया है जो संलग्न है।

उद्योग द्वारा प्रस्तावित स्थल के आस–पास के 10.0 किमी0 की परिधि में पर्यावरण के विभिन्न घटकों पर जॉच की गयी है जो निम्नवत् है :–

1.0 **<u>वायु परिवेश पर प्रभाव तथा निराकरण :</u>**

उद्योग के संचालन के पश्चात् वायु प्रदूषण होने की सम्भावना है जिसके निराकण हेतु उद्योग ने जो प्रस्ताव दिये हैं वो प्रेषित हैं।

1.1 **<u>वायु प्रदूषण के श्रोत मुख्यता निम्न हैं :</u>**

(1) कच्चे माल बैगास के रख–रखाव व हथालन द्वारा।

(2) चिमनी से उत्सर्जन होने वाले धुएं द्वारा।

(3) ब्वायलर द्वारा उत्पन्न फ्लाई एष के एकत्रण तथा निस्तारण द्वारा।

प्रमुख वायु प्रदूषण घटकों में मुख्यता पार्टीकुलेट मैटर, सल्फर डाईआक्साइड है। उक्त प्रदूषण घटकों को प्रदूषण नियंत्रण बोर्ड के मानको के अनुरूप रखने हेतु उद्योग द्वारा निम्न प्रस्ताव प्रेषित किया है।

1.2 **वायु प्रद्षण निराकरण :**

(1) कच्चे माल के हथालन में विषेष रूप से सावधानी बरती जायेगी।

(2) पावर के उत्पाद प्रक्रिया के दौरान होने वाले वायु प्रदूषण की रोकथाम हेतु उच्च क्षमता के बैग फिल्टर की स्थापना की जायेगी तथा उत्सजित वायु मे घटकों की मात्रा प्रदूषण नियंत्रण बोर्ड के अनुसार रखी जायेगी।

वर्तमान में आस–पास के वायु परिवेशोय अध्ययन कराया गया है जो निम्न है :–

घटक	प्राप्त रिजल्ट
पी0एम0 10	48.6 – 89.2 माइक्रो ग्राम प्रति घन मीटर
पी0एम0 2.5	15.24 – 46.8 माइक्रो ग्राम प्रति घन मीटर
सल्फर डाईआक्साइड	5.22 – 21.4 माइक्रो ग्राम प्रति घन मीटर
नाइट्रस आक्साइड	6.72 – 22.8 माइक्रो ग्राम प्रति घन मीटर

वर्तमान में किये गये जांच में सभी घटक बोर्ड के मानका के अनुरूप है। उद्योग लगने के पश्चात भी किसी प्रकार के वायु प्रदूषण होने के संभावना नहीं है।

2.0 <u>जलीय पर्यावरण :</u>

उद्योग के संचालन हेतु 364.0 घनमीटर /दिन की जल की आवश्यकता होगी जो कि ट्यूबवेल द्वारा जमीन से निकाला जायेगा।

पर्यावरण अधिप्रभाव मूल्यांकन के दौरान आस–पास के गॉवों में लगभग 8 स्थानों के नम्ने एकत्रित किये गये तथा विश्लेषण कराया गया तथा पाया गया कि जल में पाये जाने वाले मुख्य घटक जैसा कि पी0एच0, कठोरता, क्लोराइड, इत्यादि बोर्ड के मानको के अनुरूप पाये गये हैं। सभी स्थानों पर जल पीने योग्य है।

साथ ही साथ आस–पास क नदियों की भी गुणवत्ता की जांच की गयी है जो कि मानकों के अनुरूप पायी गयी।

<u>उत्प्रवाह तथा शद्धिकरण :</u>

उद्योग की आसवनी इकाई जीरो इफ्लुएण्ट लिक्विड डिस्चार्ज सिस्टम पर आधारित होगी । उद्योग के संचालन में लगभग 320 घनमीटर/दिन स्पेन्ट वॉष जनित होगा जिसको मल्टी इफेक्ट इवैपोरेटर द्वारा सान्द्रित करके एम0 ई0 ई0 से प्राप्त सान्द्रण को 16 टी0 पी0 एच0

के ब्वायलर में ईंधन के रूप में प्रयोग किया जायेगा। प्रक्रिया द्वारा जनित अन्य उत्प्रवाहों (स्पेन्ट लीज़ ब्यालर ब्लो डाउन, एम0 ई0 ई0 कन्डनषेट, कूलिंग टावर ब्लो डाउन एवं फ्लोर वाषिंग) को द्वितियक षुद्धिकरण संयंत्र (कन्डनसेट प्रोसेसिंग युनिट) द्वारा षुद्धिकरण के पष्चात प्रक्रिया में पुनः उपयोग में लाया जायेगा। अतः उद्योग द्वारा कोई भी उत्प्रवाह निस्तारित नहीं किया जायेगा।

3.0 ठोस अपशिष्ट :

उद्योग संचालन के समय उद्योग से निम्नलिखित ठोस जनित होंगे।

अपशिष्ट की मात्रा तथा श्रोत :

- ऐष – 21.56 टन/दिन
- फर्मेण्टर स्लज – 18.0 टन/दिन

निराकरण :

(1) ब्वायलरों द्वारा जनित ऐष को खाद के रूप में प्रयोग किया जायेगा।

(2) फर्मेण्टर स्लज को खाद बनाने के प्रयोग में लाया जायेगा ।

4.0 ध्वनि गुणवत्ता :

उद्योग के आस–पास परिवेशोय ध्वनि का आकलन कराया गया है जो पूर्ण रूप से मानकों के अनुरूप है। उद्योग द्वारा परिवेशीय वायु तथा ध्वनि के नियंत्रण हेतु ग्रीन वेल्ट के स्थापना हेतु प्रस्ताव दिया गया है।

5.0 पारिस्थितिकी पर्यावरण :

प्रस्तावित उद्योग के परिक्षेत्र में वनस्पति एवं पशु वर्ग की किसी भी प्रकार की कोई संवेदनशील प्रजाति नहीं है तथा उद्योग स्थापना के फलस्वरूप इस पर कोई विपरीत अधिप्रभाव नहीं होगा।

6.0 सामाजिक एवं आर्थिक परिवेश पर प्रभाव :

उद्योग की स्थापना प्रक्रिया के फलस्वरूप सामान्य जनजीवन पर अधिप्रभाव पड़ना स्वाभाविक है। औद्योंगीकरण मे प्रगति के फलस्वरूप आस–पास के क्षेत्रों में रोजगार के अवसरों में वृद्धि, सामान्य जनउपयोगी वस्तुओं की उपलब्धता, शौक्षिक, स्वास्थ्य एवं रहन–सहन के स्तर में समानुपाती परिवर्तन होना स्वाभाविक है।

7.0 पर्यावरण अधिप्रभाव मूल्यांकन बिन्दु :

- औद्योगिक स्थापना से भूप्रयोग पैटर्न परिवर्तन सम्भावित है।
- प्राप्त जल–वायु आंकड़े के आधार पर क्षेत्रीय मौसमी आंकड़े विचलित नहीं है।
- प्रक्रिया के उपरान्त प्रस्तावित स्थापना के द्वारा जलीय वातावरण पर विपरीत प्रभाव नहीं होगा जिसका मुख्य कारण शून्य उत्प्रवाह निस्तारण की स्थिति है।
- वायु गुणता के अनुश्रावित आंकड़ों गुणता का मानकों के अनुरूप होना इंगित करते हैं तथा उद्योग से जनित अतिरिक्त उत्सर्जन का प्रभावी नियंत्रण उच्च क्षमता के वायु प्रदषण नियंत्रण संयंत्र के माध्यम से किया जायेगा जिससे परिवेशीय वायु गुणवत्ता मानकों के अनुरूप संरक्षित रहगी।
- ध्वनि तीव्रता का प्रभावी निराकरण प्राविधानित है तथा जनित ठोस अपषिष्ट से पर्यावरण पर विपरीत प्रभाव नहीं पड़ेगा।
- औद्योगिक स्थापना से स्थानीय वनस्पति तथा पशु वर्ग प्रजाति पर कोई संवेदनशील अधिप्रभाव जनित नहीं होगा।

- स्थानीय जनसामान्य मे औद्योगिक स्थापना के फलस्वरूप शिक्षा, रोजगार तथा स्वास्थ्य के क्षेत्र में सकारात्मक परिवर्तन सम्भावित है।

8.0 संस्तुतियॉ :

उद्योग की स्थापना प्रक्रिया हेतु प्रभावी योजना विकसित किये जाने हेतु निम्नलिखित संस्तुतियॉ निर्धारित हैं जिनके क्रियान्वयन के पश्चात प्रभावी नियंत्रण व्यवस्था विकसित की जा सकती है।

(क) स्थापना प्रक्रिया मे स्थल क्लीयरिंग चरण में एस्कावेाषन, लेवलिंग तथा ट्रान्सपोर्टेषन के दौरान जनित कणीय पदार्थों के उत्सर्जन नियंत्रण हेतु जल स्प्रे प्रक्रिया अपनायी जा सकती है।

(ख) स्थापना प्रक्रिया में कार्यरत कार्मिकों हेतु समुचित पेयजल तथा घरेलू उत्प्रवाह के निस्तारण का प्रभावी प्रबन्ध किया जाना उचित है जिससे आस–पास के वातावरण पर इसके कारण नियंत्रित प्रभाव पड़े।

(ग) समस्त निर्माण तथा अधिष्ठापना संबंधी कार्या का संचालन इस प्रकार से सुनिश्चित किया जाये किसी भी पकार के जनित उत्प्रवाह का प्रभावी निराकरण किया जा सके। इस दौरान वाहन के आवागमन को समुचित रूप से नियंत्रित किया जाये न्यूनतम उत्सर्जन हो। आयल स्पिलेज का समुचित निस्तारण किया जाये । अन्य ठोस अपषिष्टों का उचित निराकरण किया जाये, स्थापना के दौरान ध्वनि तीव्रता को इस प्रकार नियंत्रित किया जाये जिससे आवासीय क्षेत्र के निकट ध्वनि तोव्रता का स्तर 75 डेसिबल सुनिश्चित किया जा सके।

(घ) औद्योगिक संचालन में जल का प्रयोग नियंत्रित किया जाये तथा फ्लोर वाषिंग, कूलिंग से जनित उत्प्रवाह को पुनः प्रयोग किया जाये। उत्प्रवाह

लीकेज को कलक्षन पिट का प्रावधान करते हुए नियंत्रित किया जाये। प्रक्रिया में पुनः प्रयुक्त किये जाने का प्रयास किया जाये।

(छ) उद्योग द्वारा प्रक्रिया में जल का प्रयोग एवं संरक्षण का प्रभावी नियंत्रण हेतु उत्प्रवाह मापी यंत्र का प्रावधान स्त्रोत बिन्दुओं तथा संवाहन बिन्दुओं पर सुनिश्चित किया जाये जिससे जल का प्रयोग को नियमित आधार पर अनुश्रवित किया जा सके।

(ज) उद्योग द्वारा संचालन के द्वारा विभिन्न पर्यावरण घटको के प्रभावी नियंत्रण हेतु प्रबन्ध तंत्र स्तर पर रेटिंग सिस्टम का प्राविधान किया जाये।

निष्कष :–

पर्यावरण से संबंधित प्रस्तावों का पूर्ण रूप से अनुपालन किया जायेगा तथा प्रस्तावित उद्योग से किसी भी दशा में पर्यावरण पर प्रतिकूल प्रभाव नही पड़ेगा।

मे0 लक्ष्मी शुगर मिल्स का0 लि0 (आसवनी इकाई)

हरिद्वार (उत्तराखण्ड)