

EXPANSION OF EXISTING FERTILIZER PLANT FOR MANUFACTURING OF NANO-UREA AT
PLOT NO. 72 HADBAST 532, KHATONI NO. 164, AT VILLAGE- NAYA NANGAL, DISTRICT-
ROOPNAGAR, PUNJAB-140126

Summary Report

For

EXPANSION OF EXISTING FERTILIZER PLANT FOR MANUFACTURING OF NANO-
UREA AT PLOT NO. 72 HADBAST 532, KHATONI NO. 164, AT VILLAGE- NAYA
NANGAL, DISTRICT-ROOPNAGAR, PUNJAB-140126.

Project or Activity of Schedule 5(a), Category-A (As per EIA Notification dated
14.09.2006)

File No. J-11011/1066/2007-IA-II(I); Proposal No. IA/PB/IND3/284709/2022

ToR issued: 03rd August, 2022

APPLICANT

M/s. National Fertilizers Limited, Nangal

BASELINE STUDY PERIOD: March to May, 2022.

MCPL/EMD/EIA&RA/2021-22 /DRAFT

EIA REPORT

prepared by

MANTEC CONSULTANTS PVT.LTD.

(QCI Accredited EIA Consultant at S.No.167 as per List of Accredited consultant Organizations/Rev.25/ Sept. 05, 2022
(NABET Accredited EIA consultant, MoEF&CC and NABL approved Laboratory) Environment
Division, D-36, Sector-6, Noida-201 301, U.P.,

EXPANSION OF EXISTING FERTILIZER PLANT FOR MANUFACTURING OF NANO-UREA AT PLOT NO. 72 HADBAST 532, KHATONI NO. 164, AT VILLAGE- NAYA NANGAL, DISTRICT- ROOPNAGAR, PUNJAB-140126

SUMMARY

1.1 PROJECT NAME, LOCATION AND ENVIRONMENTAL SETTINGS

The proposed project is for the Expansion of Existing fertilizer plant for Manufacturing of Nano-Urea within the fertilizer complex. As per EIA Notification dated 14th September, 2006, as amended from time to time; the project falls under Category “A”, Project or Activity 5(a) .

The existing unit is located at Plot No. 72 hadbast 532, Khatoni No.164, at Village Naya Nangal, District- Rupnagar, Punjab-140126 over an area of 500 acre (202.343 ha.). The geo-coordinate of the site is 31°22'3.72"N and 76°21'23.84"E. The project site area falls in Survey of India Toposheet No. 53A/7. Location of the proposed Nano Urea plant is shown in Figure-1.

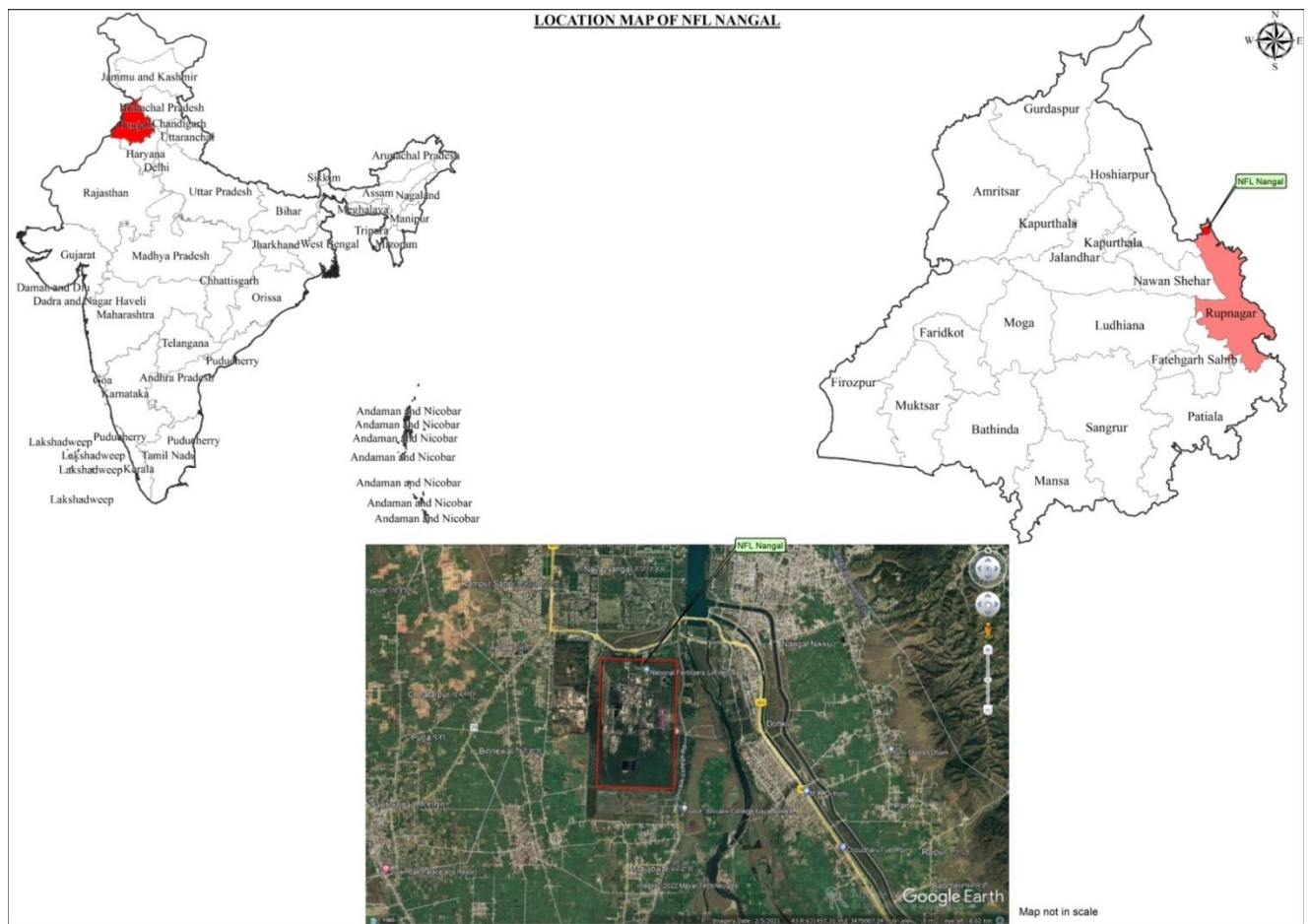


Figure 1.1: Location of the Project

Table 1.1: Project at glance

S. No.	Particular	Unit	As per granted EC	At present	Proposed	Total after Expansion	Impact/Remark
1.	Total plot area	Acres.	~500	~500	Within existing plant	~500	-
2.	Green area	%	~35%	~35%	~0.3%	~35.3%	-
3.	Fresh Water Requirement	KLD	74400	74400	85	74485	-

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S. No.	Particular	Unit	As per granted EC	At present	Proposed	Total after Expansion	Impact/Remark
4.	Wastewater generation including domestic		Trade Effluent = 1584 KLD Domestic Effluent = 290 KLD Total Wastewater generation = 1874 KLD	Trade Effluent = 1584 KLD Domestic Effluent = 290 KLD Total Wastewater generation = 1874 KLD	Trade Effluent=1 KLD Domestic Effluent = 10 KLD	Trade Effluent = 1585 KLD Domestic Effluent = 300 KLD Total Wastewater generation = 1885 KLD	-
5.	Wastewater Treatment Unit- ETP		1584 KLD	1584 KLD	1 KLD	1585 KLD	Separate Effluent Treatment System (ETS) of capacity 1 KLD cum neutralization tank for treatment of Reactor Wash / Floor wash will be installed in Nano Urea Plant for Zero Liquid Discharge
6.	Power Requirement			20 MW	2 MW	22 MW	-
7.	Power Backup		DG sets of capacity 320 kVA (1 no.), 1450 kVA (2 nos.) and 125 kVA (1no.)	DG sets of capacity 320 kVA (1 no.), 1450 kVA (2 nos.) and 125 kVA (1no.)	-	DG sets of capacity 320 kVA (1 no.), 1450 kVA (2 nos.) and 125 kVA (1no.)	-
8.	Manpower Requirement			1453*	300	1753	-
9.	Project Cost	Cr.	651	-	257	908	-
10.	Capacity of Boiler – Coal + Natural Gas	MTH	-	117	0	117	-
11.	HRSR	MTH	-	100	0	100	-

Table 1.2: Salient features

S. No.	Description	Proposed Project Details
1.	Project Name	Expansion of Existing fertilizer plant for Manufacturing of Nano-Urea at Plot No. 72 hadbast 532, Khatoni No. 164, at Village Naya Nangal, District-Rupnagar,Punjab-140126 by M/s National Fertilizers Ltd.
2.	Total Plot Area	~500 acre
3.	Location	Plot No.: 72 hadbast 532, Khatoni No. 164, at Village Naya Nangal, District Rupnagar,Punjab-140126 by M/s National Fertilizers Ltd.

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4.	Category of Project	5(a) Category "A" of EIA notification																																					
5.	Toposheet No.	53A/7																																					
	Topography	Plain terrain																																					
6.	Project Cost	Rs. 257 Cr.																																					
7.	Proposed Products with capacity	Nano Urea (Liquid) - 75 KL/day																																					
	Raw Material Requirement	<table border="1"> <thead> <tr> <th>S. No.</th> <th>Code name of Materials</th> <th>Unit</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>A</td> <td>Kg</td> <td>360</td> </tr> <tr> <td>2.</td> <td>B1</td> <td>Ltr.</td> <td>174</td> </tr> <tr> <td>3.</td> <td>C</td> <td>Kg</td> <td>37.5</td> </tr> <tr> <td>4.</td> <td>D</td> <td>Kg</td> <td>7.5</td> </tr> <tr> <td>5.</td> <td>B2</td> <td>Ltr.</td> <td>132</td> </tr> <tr> <td>6.</td> <td>F1</td> <td>Kg</td> <td>7200</td> </tr> <tr> <td>7.</td> <td>G</td> <td>Ltr.</td> <td>69750</td> </tr> <tr> <td>8.</td> <td>H</td> <td>Kg</td> <td>84</td> </tr> </tbody> </table>			S. No.	Code name of Materials	Unit	Quantity	1.	A	Kg	360	2.	B1	Ltr.	174	3.	C	Kg	37.5	4.	D	Kg	7.5	5.	B2	Ltr.	132	6.	F1	Kg	7200	7.	G	Ltr.	69750	8.	H	Kg
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8.	H	Kg	84																																				
8.	Environmental Study																																						
i)	Nearest Habitation	Nangal - 1Km/NE																																					
ii)	Nearest Town, city, district Headquarters along with distance in kms.	Nangal - 1Km/NE																																					
iii)	Nearest Railway Station	Nangal Dam Railway Station - 1 Km/E																																					
iv)	Nearest Airport	Chandigarh International Airport - 86.58 Km/SE																																					
9.	Resource Requirement																																						
i)	Water Requirement	<table border="1"> <thead> <tr> <th>Particular</th> <th>As per granted EC</th> <th>After expansion</th> </tr> </thead> <tbody> <tr> <td>Operation phase</td> <td>77400</td> <td>77485</td> </tr> </tbody> </table>			Particular	As per granted EC	After expansion	Operation phase	77400	77485																													
		Particular	As per granted EC	After expansion																																			
Operation phase	77400	77485																																					
ii)	Source of water	River Sutlej																																					
iii)	Power Requirement	2 MW																																					
iv)	Internal Power Generation	GTG – capacity 20 MW. Power shall be sourced from GTG																																					
v)	External Power Requirement	In case of non-availability of GTG, power shall be sourced from PSPCL																																					

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vi)	No. of working days	330 days
vii)	Manpower requirement	<ul style="list-style-type: none"> • During construction phase – 150 nos. • During operation phase – 300 nos.

1.2 PRODUCTS AND CAPACITIES

The proposed project is for the manufacturing of nano-urea of capacity 75 KL/day. The existing and proposed productions are detailed in below tables:

Table 1.3 : Total production Capacity of NFL, Nangal (After Expansion)

S. No.	Product	Unit	As per latest CTO	Additional/Proposed	After Expansion
1.	Urea	MTD	1450	0	1450
2.	Ammonia	MTD	950	0	950
3.	Nitric Acid	MTD	554	0	554
4.	Ammonium Nitrate	MTD	690	0	690
5.	Methanol	MTD	67	0	67
6.	Nano Urea	KLD	-	75	75

Table 1.4: By-product details

S. No.	Product	Unit	As per latest CTO	Additional/Proposed	After Expansion
1.	Sodium Nitrate / Sodium Nitrite	MTD	9	0	9

1.3 MATERIAL/MASS BALANCE

Material balance is given below as:

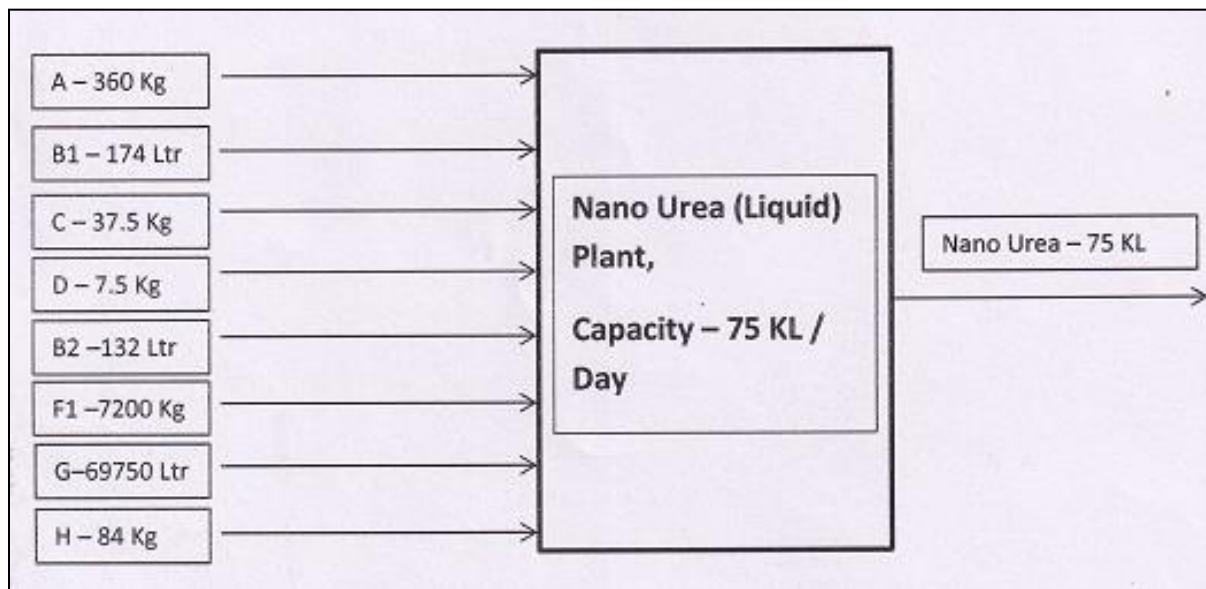


Figure 1.2: Mass Balance of Nano Urea

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1.4 RAW MATERIAL REQUIRMENT

Raw materials to be required for production of Nano Urea are given in

Table 0-1: Raw Material of Nano-Urea

S. No.	Code name of Materials	Unit	Quantity
1.	A	Kg	360
2.	B1	Ltr.	174
3.	C	Kg	37.5
4.	D	Kg	7.5
5.	B2	Ltr.	132
6.	F1	Kg	7200
7.	G	Ltr.	69750
8.	H	Kg	84

Transportation

The finished product will be sold in domestic market. It will be transported through Rail and trucks. The Rail yard has been established within the plant for transportation of finished product all over India. Nano Urea shall be transported through Road network in cartons of 500 mL bottles to the desired locations.

Storage Details:

Product will be stored in cartons of 500 mL bottles within the Nano-Urea plant.

1.5 WATER REQUIREMENT

Water requirement for the proposed Nano-Urea plant is 85 KLD whereas existing requirement is 74400 KLD. Therefore, the total requirement is 74485 KLD.

The water required for the proposed expansion project will be met by existing water supply system sourced from River Sutlej.

1.6 POWER/ELECTRICITY

The power requirement after expansion will be 22 MW that will be sourced from Internal Generation or PSPCL . For Power backup, existing DG sets of capacity of 320 kVA (1 no.), 1450 kVA (2 nos.) and 125 kVA (1 no.) will be used. DG Sets provides power supply only to some of the equipment which are necessary to operate for process requirement during total power failure. The details of Power requirement and fuel requirement are given in below Table:

Table 1.6 : Details of power requirement

Particular	Unit	As per EC	After Expansion	Source
Power Requirement	MW	20	22	GTG or PSPCL
Power Backup - DG Set	kVA	DG sets of capacity 320 kVA (1 no.), 1450 kVA (2 nos.) and 125 kVA (1no.)	DG sets of capacity 320 kVA (1 no.), 1450 kVA (2 nos.) and 125 kVA (1no.)	DG Sets

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1.7 MANPOWER DETAILS

During construction phase, approx.150 nos. of labours will be required which will be hired by Contractor from nearby area for civil construction and installation of machinery.

After proposed expansion, total 300 employees (100 regular and 200 contractual) will be required during operation phase. Therefore, the total manpower after proposed expansion will be 1753nos.(973 regular and 780 contractual).

Table 1.7: Population Projection

S. No.	Particular	Existing	Additional	Total after expansion
1.	Temporary Employees	580	200	780
2.	Permanent Employees	873	100	973
Total		1453	300	1753

1.8 PROCESS DESCRIPTION

Nano Urea manufacturing involves preparation reactors, final formulation reactor, and filtration. In one of the preparation reactors, a naturally occurring carbohydrate polymer made of glucose units is hydrolyzed in presence of acid and water to form nanofiber of oligosaccharide. The length of Nano oligosaccharide formation formed depends on the temperature and the rate of hydrolysis. Nitrogenous compound is dissolved in another reactor to form a solution of desired concentration.

All the materials in the preparation reactors are transferred to final formulation reactor where oligosaccharide Nano fiber dispersed in deionized water interact with amide and / or nitrate particles as a result of nucleation and attachment efficiency leads to formation of stable Nano cluster on the carbon skeleton of oligo and polysaccharide.

After completing a full-length cycle in final formulation reactor, the sample is analyzed for particle size along with other performance parameters to ensure the stability of Nano Urea. Once, the sample is tested OK, Nano Urea is stored in Storage tanks from where it is sent to Bottling line for packing in 500 mL bottles and dispatched through road to desired destination.

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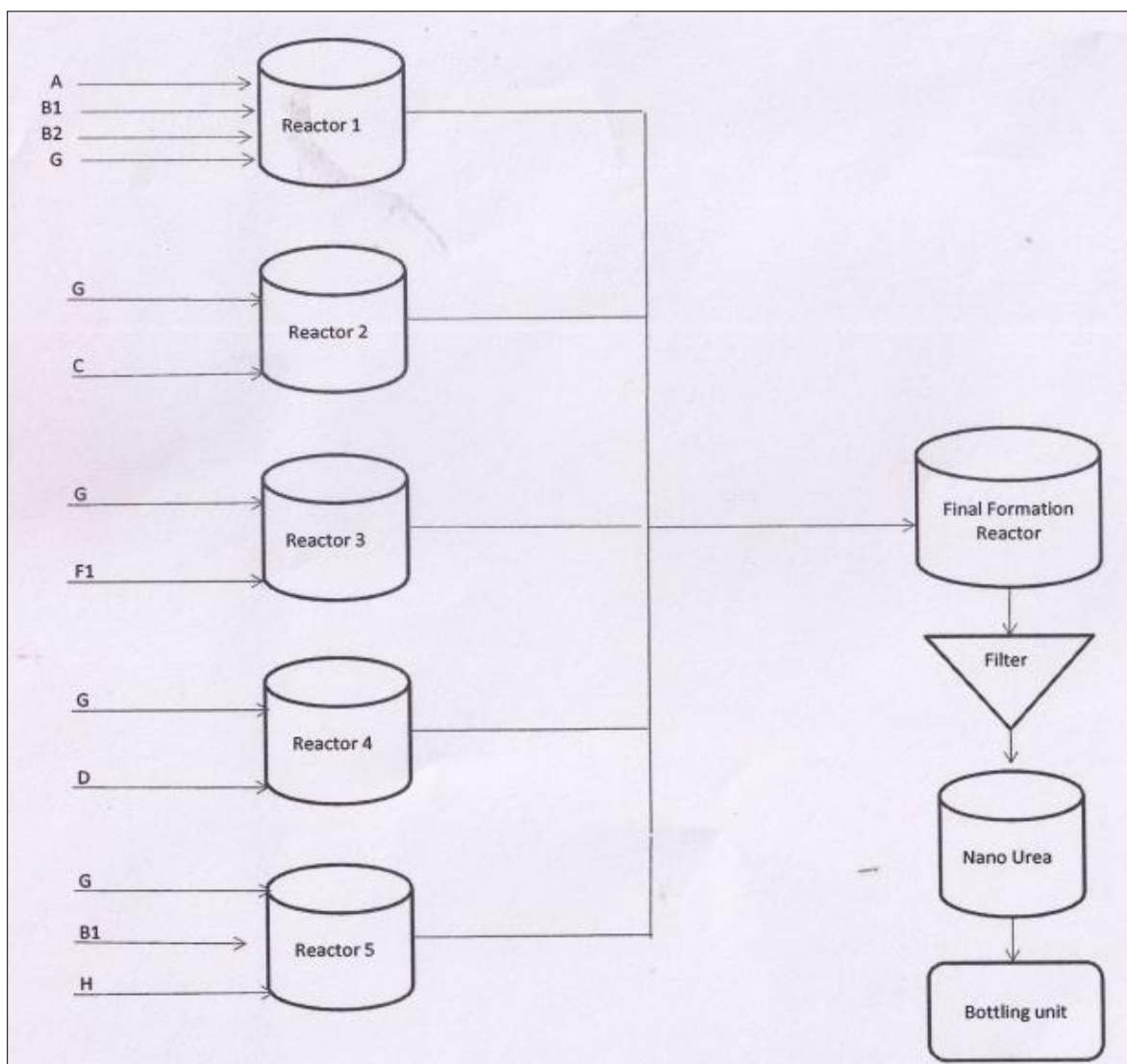


Figure 1.3: Flow-chart of manufacturing Process of Nano Urea (Liquid)

1.9 ENVIRONMENTAL BASELINE STUDY

Various environmental factors as existing in the study area which are liable to be affected by the activities have been assessed both quantitatively and qualitatively. Baseline environmental data generation of study area was carried out during the period from March to May, 2022

Table 1.8: Baseline environmental data (March to May, 2022)

Parameters	No. of Sites	Description	Permissible Level
Air Quality	8	PM ₁₀ - 50.75 µg/m ³ and 76.0µg/m ³ PM _{2.5} - 27.0 µg/m ³ to 43.0 µg/m ³ SO ₂ - 06.0 µg/m ³ to 18.0 µg/m ³ NO ₂ - 12.0 µg/m ³ to 32.0 µg/m ³ CO - 0.52 mg/m ³ to 1.08 mg/m	100 µg/ m ³ 60 µg/ m ³ 80 µg/ m ³ 80 µg/ m ³ 2 mg/ m ³
Ground Water Quality	8	pH - 6.2 to 7.79 Hardness - 214 to 322 mg/l TDS - 442 to 540 mg/l.	6.5-8.5 200-600 mg/l 500-2000 mg/l
Surface Water Quality	5	pH - 6.56 to 7.71 Hardness - 148 to 172 mg/l	5-15 75-200 mg/l

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Parameters	No. of Sites	Description	Permissible Level
		TDS - 265 to 346 mg/l BOD - 6 to 12 mg/l COD - 28 to 42 mg/l	500-2000 mg/l --- ---
Soil Quality	8	pH - 6.48 to 7.82 Nitrogen - 13.1 to 17.4 mg/100gm Organic Matter - 1.24 % - 2.26%	---
Noise Level	8	Noise Level (Day) - 40.8-62.5 Leq dB (A) Noise Level (Night) -36.5-56.4Leq dB(A)	For industrial: 75 (day) – 70 (night)
			For commercial: 65 (day) – 55 (night)
			For residential: 55 (day) –45 (night)
			For silence zone: 50 (day) – 40 (night)

1.10 ECOLOGICAL ENVIRONMENT

Ecological data has been collected through secondary sources. Babul (*Acacia nilotica*), Batta (*Acacia leucopholea*), Neem (*Azadirachta indica*), Shisham (*Dalbergia sissoo*), Peepal (*Ficus religiosa*), Siris (*Albizia lebeck*), Arjun Tree (*Terminalia arjuna*), Kandiali (*Argemone mexicana*), Amar bel (*Cuscuta reflexa*), Himalayan Weeping Bamboo (*Arundinaria falcate*), Nilgai, Golden Jackal, Indian pangolin, Black rat Small Indian civet etc. are reported in the area. Among birds crow, sparrow, pigeon, myna, bulbul, etc. are common in the study area.

1.11 SENSITIVE ECOSYSTEM

The major environment sensitive areas have been studied in 10 km radius of the project site using Google earth images. Following ESZ exist in the study area;

The Nangal Wildlife Sanctuary & ESZ is located at 1.23 km & 1.13 km /N Direction and Jhajjar Bachawali WLS 17.78km/SE & ESZ 17.35 km/SE direction.

The Palsed Protected Forest at 7.19km/ENE, Thalpal Protected Forest at 6.81Km/NE, Bour Protected Forest at 7.29Km/NEbN, Ramgarh Parla Protected Forest at 9.16Km/NbE, Ramgarh Awarla Protected Forest at 9.26Km/NNE, Khulmi Protected Forest at 9.16Km/ENE and Lehri Protected Forest at 9.70Km/EbN respectively.

The Satluj River at 0.155km/E and Soan River at 3.51 km/W direction.

The Environmental Sensitivity map has been shown below:

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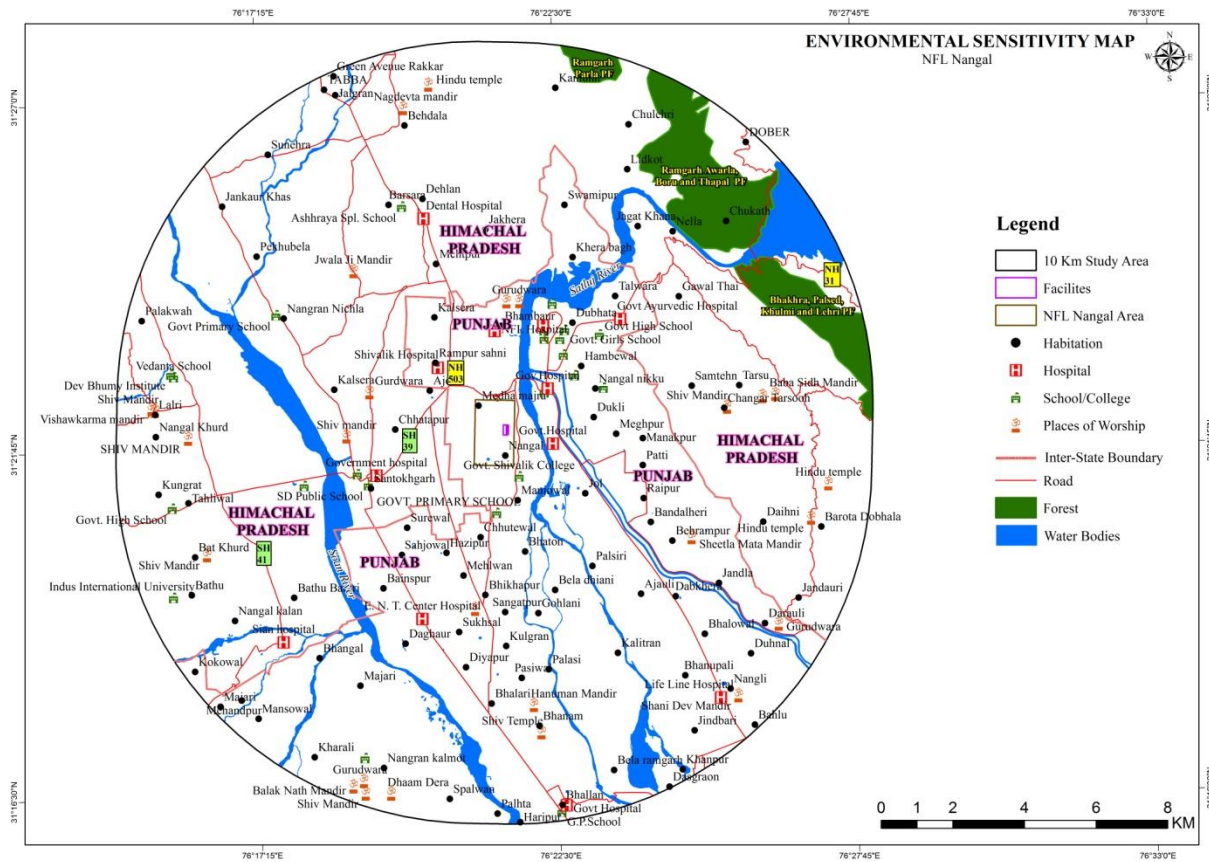


Figure 1.4: Environmental Sensitive map of 10 km study area

Nangal Wildlife Sanctuary

Nangal Wildlife Sanctuary is Located in the Shiwalik foothills of Punjab is the highly eco-sensitive Nangal Wildlife Sanctuary, which supports abundant flora and fauna including threatened species, such as the endangered Indian pangolin (*Manis crassicaudata*) and Egyptian vulture (*Neophron percnopterus*) and the vulnerable leopard (*Panthera pardus*). It occupies a human-made reservoir constructed as part of the Bhabra-Nangal Project in 1961. The site is of historic importance as the Indian and Chinese Prime Ministers formalized the “Five Principles of Peaceful Coexistence” there in 1954. More than half a million people downstream benefit from the reservoir as the flow of water is regulated, reducing the risks to both people and property from floods. The Department of Forests and Wildlife Preservation (Rupnagar Wildlife Division), Punjab is responsible for managing the Sanctuary.

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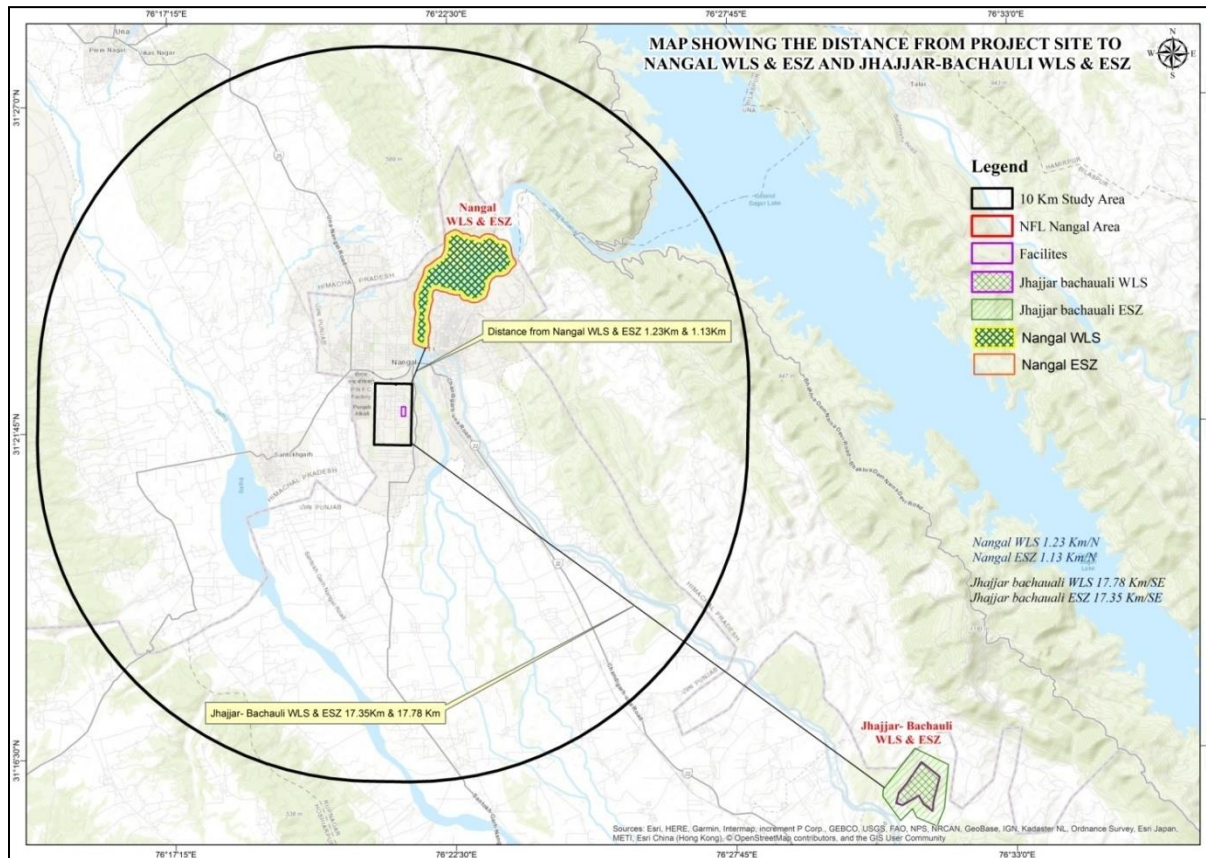


Figure 1.5 : Map Showing Distance from Project site to Nangal Wildlife Sanctuary

1.12 SOCIO-ECONOMIC CONDITION

Socio-economic status has been studied after visiting the site and through secondary sources. The proposed expansion project would prove to be beneficial for the people by providing cheap/safe plant nutrient to local farmers/ generating employment opportunities for them. This would lead to improvement in the socio-economic status of the household in the study area habitations. The overall social impact of the project seems to be positive.

1.13 CER ACTIVITIES (CORPORATE ENVIRONMENTAL RESPONSIBILITY)

NFL has done and will further carry out various CER activities in the surrounding area. The focus will be given to the growth of the surrounding areas by increased direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure. Special emphasis on Financial and Social benefits will be given to the local people.

1.14 GREEN BELT DEVELOPMENT

Greenbelt development involves raising trees suitable for a particular agro-climate zone and soil characteristics in a place which would make the area cooler, reduce air pollution, prevent soil erosion and further improve the soil fertility and reduce noise. The green plants are capable of absorbing air pollutants and act as sinks for pollutants. Leaves with their vast area in a tree crown, absorb pollutants on their surface, effectively reducing their concentration and noise level in the ambient. Normally a green belt is created in the project area around the periphery of project side and along the road side. NFL, nangal has developed greenbelt in more than 33% of its area. Further growth in Green Belt plantation will be carried out in available area

1.15 MITIGATION MEASURES

S. No.	Particulars	Mitigation measures adopted
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S. No.	Particulars	Mitigation measures adopted
1.	Air Environment	<ul style="list-style-type: none"> • The ammonia vapours generated in Ammonia storage tanks are normally diverted to the refrigeration compressor of Ammonia plant. In addition, a separate holding compressor is provided in each ammonia storage tank to take care of ammonia vapours in case ammonia plant is not running. Further, a separate flare stack has been provided in each ammonia storage tank to burn off ammonia vapours in case of any emergency. During upset conditions of Ammonia plant, ammonia vapours and process gases are burnt in Flare stack through a common header. • Due to endothermic nature of formulation reaction of Nano-Urea and production of stable Nano fertilizer, there will be no such air emissions. • All the exhaust of Prilling Towers are provided with the appropriate stack height to maintain the emission norms given by the PPCB. • Dust Extraction system are installed in the plant to reduce the fugitive emission and recover Urea. • Complete combustion of fuel in primary reformer is envisaged. Complete combustion of fuel is also ensured by on-line Oxygen analyzers. • The fuel used in the Primary Reformer is Natural Gas containing "Sulphur" causing negligible SOx emissions. • Coal and Natural Gas Based Boiler (117 MTH) are installed with ESP and 80 m stack to maintain ground level concentration of pollutants within the prescribed limits. • CO₂ recovery plant is installed in plant to tap CO₂ from flue gases to increase urea production and reduce CO₂ emission • In the event of failure of any pollution control device adopted by the unit, corrective measures are being taken and then respective unit is restarted. • Preventive measures like SOP, Work Permit System, and Physical inspection / Monitoring of equipment are taken to eliminate the chance of accident on account of explosion, spillages, fire, or hazardous substances etc. • The finished product is being transported through Rail and trucks. The rail yard exists within the plant for transportation of finished product. • Automatic weighing and Bagging machine are provided with system to reduce fugitive emission. • Any Spillage/emission of Urea dust during different activities of urea handling/ manufacturing process is being collected by de-dusting system and recirculated within the process after making urea solution. • All trucks with are transported after proper covering from the top. • Regular maintenance of valves, pumps and other equipment are being done to prevent leakages and thus minimizing the fugitive emissions of VOCs. • Routine plant rounds by Production, Maintenance & Technical groups to detect any abnormality in early stage. Pro-active maintenance culture to stop/reduce fugitive emissions due to fault in mechnionary, leaks or abnormal plant operating parameters. • Good housekeeping, proper maintenance and continuous observation will prevent the chances of any fugitive emission from the process plant. • PPE is provided to all labour. • EMC cell is developed in the plant for compliance of all associated norms.
2.	Water Environment	<ul style="list-style-type: none"> • For Nano plant, separate Effluent Treatment System (ETS) of capacity 1 KLD cum neutralization tank for treatment of Reactor Wash / Floor wash will be installed in Nano Urea Plant for Zero Liquid Discharge. • The wastewater generated from Urea plant containing Ammonia and urea is being treated in urea Hydrolyser to recover CO₂ and ammonia from wastewater. Recover Ammonia and CO₂ is being reused in the process. • In Ammonia plant, the process condensate stripper has been provided to stripped off the Ammonia, CO₂, methanol, etc. and recycled back to the process. • In existing plant, wastewater streams are collected in Guard Pond-1 & 2 and segregated into two categories i.e., Weak effluent containing – Low TDS and Strong

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S. No.	Particulars	Mitigation measures adopted
		<p>effluent containing - High TDS. High TDS stream is being sent to the RO based ETP for treatment and treated water is used in Cooling Tower. Low TDS stream is being sent for Horticulture, Irrigation, coal yard spraying in power plant, de-ashing operation in Power plant.</p> <ul style="list-style-type: none"> • Online monitoring instruments for measurement of pH, flow and ammonical nitrogen at the discharge line of ETP have been installed and connectivity has been established with CPCB Servers. • Separate storm water and effluent line is already provided in the plant. • Plant is maintaining all standards laid down by MoEF&CC and PPCB. • Regular monitoring of effluent is being done at site.
3.	Solid/Hazardous Waste Environment	<ul style="list-style-type: none"> • An exhaustive SOP for disposal of HW has been prepared and being implemented at existing facility and same will be adopted for proposed expansion project. • Catalysts and molecular sieves after fixed service life have to be replaced with fresh batch for efficient process operation. During shutdowns and annual turnarounds, reactors and dryer beds are packed with fresh catalyst with removal of spent catalyst. • ETP Sludge will be collected and disposed at TSDF site. • Discarded plastic bags sold to authorized recyclers. • Waste paper and packaging material will be recycled. • Used lead Acid batteries will be exchanged for new batteries. • Electrical and electronic waste will be sold to authorized recyclers.
4.	Noise Environment	<ul style="list-style-type: none"> • Boundary wall all around the project site and wide green belt is already provided. The same will reduce the noise level. • PPE is being given to labour. • Earmuffs are being used while in high noise areas. • Separate cabins are provided. • Acoustical Enclosures and Mufflers are provided at all required locations. • Proper and timely maintenance of machineries and preventive maintenance of vehicles is being done. • Important Instructions are displayed all over the plant area. • Regular Noise monitoring is being done to check the noise level and implement corrective action in case of high noise.
5.	Soil Environment	<ul style="list-style-type: none"> • All PPCB/MoEF&CC norms are maintained during use of treated water in horticulture. • Spillage are managed by detection of leaks in the first place from structures or vessels. Spillage during loading unloading is channelized properly to drains. • Paved area is provided near the process area to avoid soil contamination. Same shall be followed further. • The loading unloading activity are done with a safe zone defined and in a marked safe area. • All underground tanks are provided with extra prevention to avoid leakage. Sensors are provided to detect leakage. • Closed Effluent channelization is provided all over the plant area. • Water less cleaning is adopted wherever spill occurs to avoid runoff. • Drains are already provided near machinery area to collect spillage or leakage

1.16 CONCLUSION

M/s NFL, Nangal proposed project will produce Nano Urea as replacement to conventional urea. Nano urea will consume negligible energy/fuel/raw materials (as NG) as compared to Urea etc. There will be huge saving in terms of energy/other raw materials. It will generate a fair amount of direct, indirect and induced employment in the region. The local economy will receive a boost 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 expansion project would rapidly increase the social status of the people residing nearby. Apart from this, following benefits will be get due to proposed expansion project:

EXPANSION OF EXISTING FERTILIZER PLANT FOR MANUFACTURING OF NANO-UREA AT
PLOT NO. 72 HADBAST 532, KHATONI NO. 164, AT VILLAGE- NAYA NANGAL, DISTRICT-
ROOPNAGAR, PUNJAB-140126

- With the use of Nanotechnology, the consumption of conventional fertilizer could be reduced. Nanotechnology is an emerging field with potential to provide efficient nutrient management as compared to existing fertilizer management practices. Nano Urea bottle of 500 mL is equivalent to one Urea Bag of 45 kg
- Nano Fertiliser application improves soil health (by not contaminating it) and will reduce the demand of conventional Fertilizer like Urea on farmer's field for achieving optimum or targeted crop yields
- Nano urea enhances the yield and quality parameter of plant as compared to conventional urea
- Production of Nano Urea as replacement of conventional urea will result in huge saving of NG/energy and other raw materials.
- It will reduce the subsidy burden of Government of India (GOI).
- It will reduce the import of Urea fertilizer to some extent
- It is expected to improve the profitability of NFL.
- It will maintain stability in Indigenous / domestic market for Fertilizer.
- There will be employment generation during construction & operation period.