

EXECUTIVE SUMMARY**1. Introduction**

M/s Sequent Scientific Ltd it is an expansion project at. Plot No. B-32, G/2, G/3, MIDC, Industrial Area, Mahad, Raigad Maharashtra . M/s Sequent Scientific Ltd has a modern & versatile plant, with stainless steel & Glass lined reactors capable of carrying out reactions under different conditions. The expansion facility is used for manufacturing of API products. The capacity of the expansion project is 71 MT/M. The existing capacity of manufacturing of API products is 40 MT/M. The total production after expansion activity will be around 111 MT/M. Also the Bye products like 10 % Sodium Bromide will be generated of capacity 301 MT/M which would be saleable.

M/s Sequent Scientific Ltd is committed to the health and safety of their employees, the welfare of the community and environment protection. They play a proactive role in creating awareness, imparting training and minimizing the pollution.

2. About the project

M/s Sequent Scientific Ltd is an expansion project at Plot No. B-32, G/2, G/3, MIDC, Industrial Area, Mahad, Raigad. which falls under the 'B' category of 5 (f) as per the provision of "EIA Notification .S.O 1533(E)" dated 14.09.2006 amended on January 19, 2009 as it is located in the notified industrial area. The capacity of the expansion project is 71.0 MT/M. The total area covered by the project is 24,259 Sq. m Salient features of the Project are given in the below Table 1.

Table 1: Salient Features of the Expansion Project

Sr. No	Components	Description
1	Location	M/s. Sequent Scientific Ltd., Plot No. B-32, G/2, G/3, MIDC, Industrial Area, Mahad, Raigad, State – Maharashtra.
2	Co-ordinates of the location	-Latitude : 18° 6'3.87" N and longitude 73 ° 29'34.49"E -Elevation above Mean Sea Level (meters): 20 meters

Sr. No	Components	Description		
		The industry is surrounded by In South:- Kharvali village at 1.86 Km (Aerial distance), In North: Khaire Tarf Birwadi village at 0.93 Km (Aerial distance), In West: Nadgaon Tarf Birwadi at 3.86 Km, In East: Birwadi at 1.78 Km.		
3	Location accessibility	-Railway Station – Veer railway station is 20 km away from project site -Airport – Pune Airport around 120 away from the industry		
4	Type of Industry	Medium Scale Manufacturing Unit		
		Existing	Proposed	Total
5	Area	Total Plot area: 24259 sq.m Total built up area : 10087 sq.m Green belt : 5906 sq.m Open space : 8266 sq.m	Total Plot Area: Same as the existing Proposed built up area : Same as the existing Green belt area: 2100 Sq.m Open area : Area used for green belt	Total Plot Area: 24259 sq.m Total built up area : 10087 sq.m Green belt : 8006 sq.m Open space : 6166 sq.m
6	Products	Existing	Proposed	Total
		Albendazole 29MT/Month	Albendazole 51 MT/Month	Albendazole 80 MT/Month
		Fenbendazole 6 MT/Month	Fenbendazole 2 MT/Month	Fenbendazole 8 MT/Month
		Ricobendazole 3 MT/Month	--	Ricobendazole 3 MT/Month
		Nitroscannate 0.5 MT/Month	Nitroscannate 0.5 MT/Month	Nitroscannate 1 MT/Month
		S-Methoprene 0.5 MT/Month	S-Methoprene 0.5 MT/Month	S-Methoprene 1 MT/Month
		Buparvaquone 0.5 MT/Month	Buparvaquone 0.5 MT/Month	Buparvaquone 1 MT/Month
		Parvaquone 0.5 MT/Month	Parvaquone 0.5 MT/Month	Parvaquone 1 MT/Month

Sr. No	Components	Description		
			DPS (Di phenyl Sulphite) Pure (Purification) 16MT/M	DPS (Di phenyl Sulphite) Pure (Purification) 16MT/M
	Total	40 MT/M	71 MT/M	111 MT/M
7	Bye Products	--	10% Sodium Bromide 301 MT/Month	10% Sodium Bromide 301 MT/Month
8	Water requirement	115.5 m ³ /day	110 m ³ /day	225.5 m ³ /day
9	Power requirement	710 KVA	289 KVA	999 KVA
10	Boiler capacity	Steam Boiler : 3 T/hr Thermic Fluid Heater : 2 Lakh Kcal/hr	Thermic Fluid Heater : 4 Lakh Kcal/hr	Steam Boiler : 3 T/hr Thermic Fluid Heater : 2 Lakh Kcal/hr Thermic Fluid Heater : 4 Lakh Kcal/hr
11	Effluent generation	63 CMD	45 CMD	108 CMD
12	ETP capacity	115 CMD ETP +100CMD RO + 50 CMD MEE	50 CMD MEE	115 CMD ETP + 100 CMD RO +2 Nos. 50 CMD MEE
13	Hazardous waste Generation	Spent Oil: 5 Kg/M	Spent Oil: 12 Kg/M	Spent Oil: 17 Kg/M
		Residue & Waste: 5 Kg/M	Residue & Waste: 12 Kg/M	Residue & Waste: 17 Kg/M
		Spent Organic Solvent: 250Lit/M	Spent Organic Solvent: 594Lit/M	Spent Organic Solvent: 844Lit/M
		Distillation Residue: 55Kg/D	Distillation Residue: 250 Kg/D	Distillation Residue: 305 Kg/D
		ETP Sludge: 100kg/D	ETP Sludge: 238kg/D	ETP Sludge: 338kg/D

Sr. No	Components		Description		
			Evaporate Residue: 100kg/D	Evaporate Residue: 450 kg/D	Evaporate Residue: 550 kg/D
			-	Product Floor Dust: 250kg/M	Product Floor Dust: 250kg/M
			-	Filtration Waste: 12kg/M	Filtration Waste: 12kg/M
14	Stack height		30 mtr for Steam boiler 15 mtr for Thermic fluid Heater from Ground Level	30mtr for Thermic fluid Heater from Ground Level	30 mtr for Steam boiler 15 mtr for Thermic fluid Heater and 30mtr for other Thermic fluid Heater from Ground Level
15	Fuel requirement	Briquette	416 kg/hr	142 kg/hr	558 kg/hr
		Diesel	200 L/hr	-	200 L/hr
		LDO	25 L/hr	-	25 L/hr
16	D.G.Set		2 No. of D.G set of 500 KVA	-	2 No. of D.G set of 500 KVA
17	Scrubber		Alkali Scrubber : 3 X 500 CFM	Alkali Scrubber: 1 X 500 CFM	Alkali Scrubber: 4 X 500 CFM
18	EMP budget		1.2 Cr .	3.2 Cr.	4.4 Cr.
19	Project cost		15 Cr.	40 Cr	55 Cr

3. Justification of Project

Albendazole is widely used as medicine. Albendazole is on the World Health Organization's List of Essential Medicines. Project proponent justifies it needs for expansion for narrowing the

demand & supply gap. Also the project would lead to addition of foreign exchange as the product has an excellent export potential.

4. Baseline Environmental Status:

The study area is 10 km radial distance from centre of proposed plant site. All the monitoring has been completed in various locations within the study area during the period of March 2014 – May 2014. The findings of the baseline environmental status on land (topography, soil quality, land use pattern), meteorology (Temperature, Humidity, rainfall, wind speed), air (ambient air quality- PM₁₀, PM_{2.5}, SO₂, NO_x), noise level, ecological environment (flora and fauna), socio economic conditions, are presented in the report and interpreted with reference to environment standards.

4.1 Ambient Air Quality: Air monitoring was carried out for PM_{2.5}, PM₁₀, SO₂ & NO_x at five various locations and it was observed that the Maximum and minimum recorded values of air pollutants are PM_{2.5} – 33 & 24 µg/m³, PM₁₀ -71 & 52 µg/m³, SO₂ – 20 & 12 µg/m³ NO_x- 28 & 18 µg/m³ which are within the allowable limit of Maharashtra pollution control board limit (MPCB) & CPCB. In addition Stack Monitoring was also carried out for the existing plant.

4.2 Ambient Noise level: The ambient noise levels monitored at five different locations , it was observed that the maximum and minimum recorded values at Day and Night time were 63 & 42 dB(A) and 55 & 34 dB(A) respectively which indicate that they are within the prescribed limits.

4.3 Water Quality: Water monitoring was carried out at five different locations i.e 3 samples for surface water and 2 sample for GW, it was observed that the water parameters for surface & ground water were well within the permissible limits. Only total coliform of all the surface water samples were on the higher side of the prescribed limit. The predicted reason for the presence of total coliform in the SW can be due to the anthropogenic activity around the surface water. The analysis indicates that the surface & ground water is not severely affected by pollution as all the other parameters were under the limit as per IS (10500) 2012.

4.4 Soil Quality: Soil samples were collected from two different locations. The analysis results indicate that the soil is not contaminated.

4.5 Ecology: There are no ecologically sensitive receptors or endangered species within the 5 kms of the study area. The area is developed by M.I.D.C for industrial use, no clustered green belt is found in the vicinity, hence there will not be any kind of deforestation. No rare or endangered species of flora and fauna are present in the immediate vicinity as well as in the 5 Km area. Thus, there will not be any adverse negative impact on flora and fauna.

4.6 Socio-economic: The project will provide positive impact on the economic development of the region in terms of employment opportunities.

5. Prediction of Impacts and its Mitigation:

Due to project activity two types of impact are envisaged, temporary impact during minor construction phase and permanent impact during operational phase. The permanent impact will be mitigated by providing appropriate pollution control devices. Based on the impact analysis, it is predicted that there will be minimal impact on environment during construction phase. Below table summarizes the impact and mitigation from operational and construction phase.

5.1 Mitigation Measures

A) Minor Construction Phase				
Sr.No	Environmental Parameters	Impact Attributes	Existing Mitigation	Proposed Mitigation Measures
1.	Air Quality	Dust due to the minor construction activity, material handling etc.	-	Water Spraying, Traffic management for loading and unloading of the materials,
2.	Noise Quality	Noise generated from machinery used for minor construction work	Green Belt is provided at the periphery of the company	Using Acoustic enclosure for the machinery used. PPEs will be provided for the workers.



3.	Water Quality	Water used for construction activity and domestic use of the temporary workers	Existing facilities will be used.	Proper Water Management
4.	Solid Waste Management	No demolition work is envisaged hence debris will not be generated. Only waste like plastic bags, empty drums is envisaged	-	It will be sold to authorized dealer.

B) Operational Phase

Sr.No	Environmental Parameters	Impact Attributes	Existing Mitigation	Proposed Mitigation Measures
1.	Air Quality	Unreacted Gases from Manufacturing process, Emission from Utilities	Three Alkali Scrubber to deal with process emission Dust collector for Boiler	One Alkali Scrubber will be installed Wet Scrubber will be installed for Boiler.
2.	Noise Quality	D.G sets, Boilers & reactors	Presence of Green Belt Acoustic enclosure provided.	Green Belt Development, Total Green belt area 8006 sq.m
3.	Water Quality	Process water	115 CMD ETP followed by 100 CMD R.O & 50 CMD MEE.	115 CMD ETP followed by 100 CMD R.O & 50 CMD MEE. Also additional one MEE of 50 CMD is proposed.
4.	Solid Waste Management	Hazardous waste from ETP and distillation residue	Disposal to CHWTSDF at Taloja.	Disposal to CHWTSDF at Taloja.

6. Risk assessment plan

Risks likely to pose a harm to man, environment or property associated with various activities are addressed in this report. Such activities include transport, storage; handling and usage of fuels. To calculate the risk involved in the process of the proposed expansion project; ALOHA 5.2.2 is performed. For the solvent which are stored in the drums DOW index has been calculated. Mond's Index for the toxic materials is also performed for quantification of risk associated with the proposed activity. Hazop study is done for quantifying the process related risk.

7. Disaster management plan

Onsite and Offsite emergency plan has been prepared for the industry. During operational phase surrounding population shall be made aware of safety precautions to be taken in case of any mishap in plant. On-site disaster management and off-site emergency plans, commands communication and controls will be established and maintained. Adequate provisions like emergency response, response organization, response plan, material safety data sheet, command and control, capabilities, transportation, medical facilities, mitigation measures, training, education, public awareness emergency plan review etc. to control any disaster situation will be made available.

8. CSR Activities

M/s Sequent Scientific Ltd is involved in CSR activities like they have employed local peoples as permanent employees of the company. The school stationary distribution to nearby villages, the blood donation camps have been organized, sport promotional activities conducted in the nearby villages. They have contributed One day salary of all employees + equivalent amount from management towards Uttarakhand flood relief funds.

9. Conclusion

The Expansion of the project is to be carried out within the area located in Mahad MIDC, which means that there will be no displacement of human population. The mitigation measures proposed are adequate and would meet the requirement of MPCB and would not cause any adverse environmental impacts. The proposed manufacturing activity will not create any major

air pollution problem. The hazardous waste generated from ETP would be send to CHWTSDF at Taloja. Overall it can be said that the proposed expansion project will not cause any adverse environmental impact if at all it will have positive socio-economic impacts around the project area by generating employment for the local people.