Environmental Audit Report

Jain Vishva Bharti Institute

(Deemed University)

Ladnun-341 306

Certificate by the Team of Independent Auditors

This is to certify that the Environmental Audit Report is based on the verification of the facts pertaining to Environmental Management of the Institution, during 1st April, 2018 to 31st July, 2019. Further, this is to place on record that the Questionnaire developed for the said Audit has been well responded by the Institution and responses have been authenticated by the Registrar.

We have complied with the ethical requirements of the Audit and have reported the findings/observations/remarks in objectivity, without any favour/bias/prejudice.

Members of the Audit Team, under the leadership of Prof.(Dr.) Nalin K. Shastree, Head, University Teaching Department of Environmental Sciences and Former Dean, Faculty of Science, Magadh University, Bodhgaya-824 234 put their signatures on this Certificate as under:

Prof.(Dr.) Nalin K. Shastree
Head, Univ. Teaching Dept. of Environmental Sciences,
Former Dean, Faculty of Science,
Magadh University, Bodhgaya
Leader of the Audit Team

Members of the Audit Team

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The Environmental Audit Report: A Conceptual Background

The Environmental Audit Report of the JVBI addresses the environmental related matters and the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989). Accordingly, this third-party exercise has been taken into consideration the Environmental Audit as a management tool comprising a systematic, documented, periodic and objective evaluation of how well the University's management, human resources, men and machinery are performing with the aim of safeguarding the environment and natural resources. It shall focus on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc.

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Environmental Management Systems (EMS), which is very popular in the industrial sector, has been a welcome initiative of the NAAC and the UGC. The third-party audit team has developed a compatible system by developing locally-applicable techniques. The team has envisaged a very simple indigenized system to monitor the environmental performance of the JVBI. It has come up with a series of questions, which have been answered on a regular basis. This innovative scheme is user-friendly and totally voluntary and has been aimed at helping the Institution to set environmental examples for the community and to educate young learners.

The present Environmental Audit Report is a snapshot in time, in which one can assess the campus performance in complying with applicable environmental laws and regulations. This shall hopefully become a helpful benchmark and pave a way to place some mechanism in place to continue the effort of monitoring environmental compliance.

This is very first environmental audit of the Institute, which has been aimed at the accreditation of the NAAC, which would highlight the institutional interventions towards environmental protection and increasing environmental awareness at local, regional and national front.

Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire has been used during audit. This audit report also contains observations and recommendations for improvement of environmental consciousness.

The expected outcomes of the eco-auditing system would be as under:

- Strengthening Environmental education through emphasizing systematic environmental management approach
- Improving environmental standards
- Benchmarking for environmental protection initiatives
- Reduction in consumption of resources
- Financial savings through a reduction in utilization of resources
- Curriculum enrichment through practical experience
- Development of ownership, personal and social responsibility for the Institute campus and its environment
- Enhancement of eco-friendly lifestyle on the Institute campus
- Developing an environmental ethic and value systems in young people

Ladnun : An Overview

Ladnun falls under the district Nagaur, which is located almost in the middle of the state of Rajasthan. It is 380 km west of Delhi and 225 km north-west of Jaipur. Its population is approx. 57,047 as of 2001 India census. It is situated 329 m high from the mean sea level. It's situated between 27° 39' 0" north latitude and 74° 23'-1" east longitude. It is a small city and local governance is managed through a municipality under Nagaur district.

Fig. 1: A. Map of Ladnun B. Ladnun Railway Station C. JVBI-Acharya Shree Tulsi Memorial

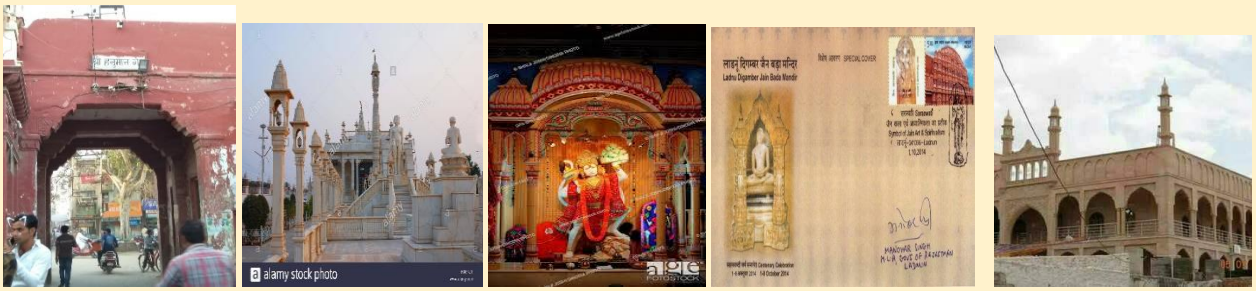


Fig. 2 Important Places of the City of Ladnun; A. Hanuman Dwar, Ladnun, B. Sukhashram Jain Mandir C. Karant Balaji Temple D. Digambar Jain Bada Mandir Postal Stamp and E. Mosque

It is also the tehsil headquarter and enjoys status of the subdivision. Ladnun Tehsil has 139 villages. There are 32 elected ward members in the Ladnun Municipality, in addition to one Panchayat Samiti, Tehsil and sub-division offices. Total Population (Census 2011) of the district is 3307743 including urban population of 637204 and rural population of 2670539.

The small town of Ladnun has gained its place on the map of the country being the headquarters of the famous 'Jain Vishva Bharati,' which has become a centre of spiritual learnings and knowledge under the leadership of Acharya Tulsi, a great Jain saint who was born here and who had propagated the philosophy of "ANUVRAT" and "Preksha Dhyan" in order to enlighten the people; irrespective of the cast and creed. On his inspiration, Jain Vishva Bharati Institute was established to start the schools of thoughts and the centres of spirituality and yogic purification.

This institution has been dedicated for Ahimsa and is a treasure of tranquility and indeed is an Fig. 3: Administrative Map of the District Nagaur depicting position of Ladnun

abode of humanity on earth. As a proud creation of Gandahipati Acharya Shree Tulsi., this institution is known as the place for evolution of the Preksha Meditation; a path of

Fig. 4: Preksha Meditation-the Central Idea

self- awakening and self- realization. It helps to connect the human body with the soul at its most profound level, enables a person to achieve a state of super consciousness and increased concentration. The process of meditation puts a person in touch with enlightenment, peace of mind and simple clarity.

Fig.5: Acharya Shree Tulsi; who dreamt to establish JVBI, along with Acharya Shree Mahaprajna and Acharya Shree Mahashraman

The city is heading towards spiritual tourist city. Famous Jain Vishva Bharati Institution (founded by Acharya Tulsi in 1970) situated here.

The Historical Legacy

Ladnun was earlier known as Chanderi Nagari. The city is heading towards spiritual tourist city. Glorified by the bards, the history of Ladnun finds mention even in the Mahabharata. The kingdom of Shisupal and after then Mohil Chauhan conquered it in the beginning of the 12th century BC. In 16th century AD king of Jodhpur, Maldev Rathore, annexed Ladnun and ruled before the merger of the states Ladnun was a part of erstwhile Jodhpur state. Ladnun has also witnessed the valour of Great Amarkot(Rathore) who challenged the mighty Mughal Empire.

Historical Monuments

Among the four famous dargahs of Ladnun, the most ancient one is that of the Dargah Umarshahpir, which has the inscription of the year Hizri 772.Thus, it was built before the year Hizri 772. The Jami mosque, the oldest of the fourteen known mosques, was originally built with monolithic beams and brackets on an Arab-type plan and consisting of a colonnade round a courtyard, in the Ghurid Of Khalji period, was restored during the period of Firoz Shah, nephew of Muhammad bin Tughluq.

Fig. 6: The historic image of Goddess Saraswati according to the Jain Tradition

The ancient Digambar Jain Bara mandir, situated in the heart of the city, has the idol of the deity Saraswati, one of the finest of that time. It has the inscription of the year 1229 AD. It has magnificent temple houses, several artistic and rare idols of Jain Tirthankaras, beautiful images, engraved pillars, rare pieces of art and old jaina dharma manuscripts. The Mool mandir, situated within it, is 10 feet deep inside the Earth and in its lowest floor, there is a beautiful idol of Lord Shantinath. On the crown of the Lord Shantinath an inscription clearly indicates that the temple was built on Ashad Sukla 8, Sanwat 1136. This shows that the temple is more than 1000 years old. In the second vedica chamber, there is an idol of second Thirthankar Bhagwan Ajitnathji. This idol is 74x60 cm in dimension and made of marble. An inscription on the idol is found of Baisak Sukla 13, Sanwat 1209. In front of Bhagwan Ajitnathji idol, there is also a marble door with two pillars. The two pillars are decorated with artistic jaina images. In the art gallery, there idols of Bhagwan Risbhadeva made of brown stone, and two idols of Bhagwan Parsavnath with nine headed serpents. A beautiful image of Bhagwan Neminath is also placed in the art gallery. Several other images made of metals, which had been found during excavation of the nearby areas of Ladnun have been placed in this art gallery. This temple is built and repaired several times but its magnificence, beauty, purity and calmness is preserved through ages.

Existing Infrastructure

Educational

The city is having more than 20 Educational Institutions out of which, one is the Deemed University, one is the Girls College and there are five Higher Secondary schools. Other schools are middle and primary schools. In addition, there are five secondary schools imparting education up to the high school.

Health Facilities

The details of health facilities are as follows:
Seth Ganpat Rai Saravagi Government Hospital, Mangalam Hospital, Raj Hospital, Teli Road, Jain Matra shisu Nursing Home, Station Road, M.N. Ghodavat Nursing Home, Didwana Road Aakash Hospital, Teli Road, Phoolchand Saravagi Government Ayurvedic Hospital, Sukhdev Netra Chikitsalya

Amenities

The city has one Post Office and three sub post office and four Nationalized Banks.

Electricity

The city is connected with electricity facilities. It has 33 kV and 132kV electric sub stations (G.S.) and one government electric supply office working under A.E.N. There remains high fluctuation in voltage supplied with 33kV & 132kV G.S., so due to increase in consumption of electricity, the present distribution of electricity supply system has become insufficient.

Connectivity through Roads

The roads are very narrow inside the city. It is connected with Sujangarh(12km) and Didwana(32km) By NH65 and Kishangarh-Hanumangarh Mega-highway.

Distance from Important Cities:
JAIPUR 220km, UDAIPUR 500km, BIKANER 200km, JODHPUR 240km, DELHI 400km

Buses Available from:
Jaipur, Ajmer, Bikaner, Kuchaman, Ahmedabad, Indore, Delhi.

Rail Network:
The Rail lines of Delhi-Rewari-Ratangarh-Degana-Jodhpur passes through Ladnun station.

Nearest Railway Station:
NAGAUR 97km, DEGANA 110km, KUCHAMAN CITY 98km, AJMER 180km, JAIPUR, 216km.

Nearest Airport:

- Indira Gandhi International Airport, Delhi 287km
- Jaipur Airport 168km
- Jodhpur Airport 203km
- Udaipur Airport 341km

Telecommunication
There is one Electronic Exchange with modern facilities.

Industries

Agricultural machinery, wooden camel cart, textile hand printing and dying industry, kutir udyog (papar, bari, sweet saffron, etc.) and khadi and handloom made blanket and shawl industry and building materials.

Agricultural Resources

Agriculture is the main occupation of a majority of the population of the Ladnun tehsil. Major crops include Bajra, wheat, jowar, til, barley and pulses are the major crops of Ladnun. Rabi crops are usually sown in November whereas Kharif crops are sown with the beginning of the first rains in July.

Climate

Ladnun has a dry climate with a hot summer. Sand storms are common in summer. The climate of the city is conspicuous by extreme dryness, large variations of temperature and highly variable rainfall. The mercury in the Barometer keeps on rising intensely from March till June. These are the hottest months. The maximum temperature recorded in the city is 47°C with 0°C as the lowest recorded temperature. The average temperature of the city remains 23.5°C. The winter season extends from mid-November till the beginning of March. Rainy season is of a short duration, which extends from July to mid-September. The average rainfall in the city is 36.16 cm & 51.5% humidity.

The district experiences arid to semi-arid type of climate. Mean annual rainfall (1971-2005) of the district is 410 mm whereas normal rainfall (1901-1970) is lower than average rainfall and placed at 363.1 mm. It is obvious that there is significant increase in rainfall during the last 30 years. The rainy days are limited to maximum 15 in a year. Almost 80% of the total annual rainfall is received during the southwest monsoon. The probability of occurrence of mean annual rainfall is 38%. Based on agriculture criteria, the district is prone to mild and normal type of droughts. Occurrence of severe and very severe type of drought is very rare. There is not much variation in aerial distribution of rainfall. However, the southern part of the district gets slightly more rainfall than northern part. The monsoon enters the district in the first week of July and withdraws by the middle of September. As the district lies in the desert area, extremes of heat in summer and cold in winter are the characteristics of the desert. Both day and night temperatures increase gradually and reach their maximum values in May and June respectively. The temperature varies from 46 degree in summer to 7 degree in winter. The winter season starts by middle of November and lasts till February. January is the coldest month with both mean maximum and minimum temperatures being lowest at 22.5° and 6.7° respectively. The minimum temperature sometimes drops down to below the freezing point of water and frost occurs. The diurnal variation in temperature during winter is as high as 16°C. Both maximum and minimum temperatures begin to rise rapidly from February onwards, reaching their respective maximum in late May or early June. The mean daily maximum temperature in May is 40.4°C and the mean daily minimum temperature is 25.7°C. Night temperatures in June are much higher than in May with mean daily minimum temperature of 27.9°C. Atmosphere is generally dry except

during the monsoon period. Humidity is the highest in August with mean daily relative humidity at 80%. The annual maximum potential evapotranspiration in the district is quite high and it is the highest (255.1 mm) in the month of May and the lowest (76.5 mm) in the month of December.

Geomorphology & Soil Type

The general topography of the area is fairly even. Slope of the area is fairly even. Slope of the land surface is towards west and elevation varies from 250 meter above msl in south to 640 m above msl in north. South-eastern part of the district comprises small scattered hillocks. The northern, north-western and north-eastern parts of the district are covered by sand dunes. The offshoots of Aravalli range are projected along the common boundary of Ajmer district and Metra, Nawa and Parbatsar tehsils of Nagaur district.

There is no river originating in the district. However, the river Luni which rises near Pushkar in Ajmer district, draining western slopes of the Aravalli, crosses the district in the southern part flowing for about 37 km in western direction. It is an ephemeral river and carries runoff that is generated in the upper reaches. Channel deposits of Luni facilitate percolation during rainstorm, thereby feeding the neighboring wells along its bank. Other nalas and streams are also ephemeral in nature which originate and die out in the district itself.

Soil Characteristics

Four types of soils have been reported in the district viz, clay, clay loam, sandy loam and sandy soil. The general texture of the soil in the area is sandy loam to clayey loam which is further classified into "Barani" or un-irrigated and "Chahi" or irrigated soil. A part of Nagaur tehsil and south-eastern part of Merta tehsil have deep sandy loam, while red loamy soil exists elsewhere in Metra tehsil except on the banks of river Luni. Light loamy soil occurs in Parbatsar tehsil away from hill ranges. A longitudinal belt from Didwana to Nawa extending up to Sambhar Lake has the characteristics of alkaline soil. Distribution of different types of soils is shown in table 2.

Table 1: Soil Types in Nagaur District

S. No.	Soil type	Area (hectare)	Block
1	Clay	22,840	Nagaur, Jayal, Merta, Riyan, Parbatsar
2	Clay loam	1,34,450	Nagaur, Kuchaman, Jayal, Riyan, Merta, Degana, Makarana, Ladnun, Parbatsar, Mundwa, Didwana.
3	Sandy loam	4,72,905	Makarana, Ladnun, Parbatsar, Mundwa, Didwana, Nagaur, Kuchaman, Jayal, Riyan, Merta, Degana.
4	Sandy	5,65,705	Nagaur, Khuchaman, Jayal, Riyan, Merta, Degana, Makarana, Ladnun, Parbatsar, Didwana.

Water

Ground water level at Ladnun is gradually going deep down and water contains salts, nitrates and fluorides beyond the permissible limits. The salinity levels fluctuates between less than 500 u/S/cm to as high as 32000 u/S/cm. The availability of water falls broadly in three categories; viz. fresh(32%), mixed(33%) and chloride type(35%). The high fluoride content has been reported to be beyond permissible levels; i.e. >1.5 mg/L and therefore has been found unsuitable for drinking. Nearly 64.3% well waters have been reported to contain fluoride content above to 1.5 mg/L. Nearly, 68% ground waters have nitrate concentration above 100 mg/L, which too is beyond the permissible limits. Despite of salinity problem, the city is characterized by low hardness in ground water. This is due to low percentage of calcium and magnesium in water. One government water supply office "Water works" works under a J.En. Drinking water is supplied to more than 80 villages and towns from Ladnun.

Systematic Hydrogeological survey in the district was initially carried out by GSI during 1964-65. Various studies including Systematic and Reappraisal Hydrogeological Surveys have been carried out in the district from time to time by Central Ground Water Board.

Geological Framework

The geological set up of the district is presented by different sedimentary, igneous and metamorphic rocks belonging to Bhilwara Super Group, Delhi Super Group, Marwar Super Group, Palana Formation and Quaternary alluvium. A few outcrops of gneisses belonging to the Mangalwar Complex of the Bhilwara Supergroup are exposed north-east of Nawa. The Delhi Super Group includes Alwar, Ajabgarh/ Kumbhalgarh and Punagarh Group in descending order of antiquity. The rocks of Alwar Group are well exposed in the eastern part of the district and comprise of arkose, grit, conglomerate and schist. The overlying Ajabgarh/ Kumbhalgarh Group of rocks are exposed between Kerkeri and Bijathal. The Ajabgarh Group mainly consists of Quartzite with schist and marble. Kumbhalgarh comprises mica schist and marble. The overlying Punagarh Group of rocks (quartzite, slate phyllite, marble etc.) occur as isolated outcrops. The rocks of Bhilwara Super Group and Delhi Super Group are structurally isoclinal and recline fold which are exposed along south eastern margin (trend NE-SW) of the district adjacent to Ajmer district.
The rocks of Delhi Super Group have been intruded by Erinpura granite and Malani igneous suite. All these rocks are overlain by marine sedimentary sequence of the Marwar Super Group which is subdivided into Jodhpur, Bilara and Nagaur group representing arenaceous, calcareous and areno-argillaceous facies respectively. These rocks are overlain by sandstone and bentonite of the Palana formation. The Marwar Super Group of rocks have horizontal to gently inclined disposition of different beds, which are displaced by different faults. Palana and other Tertiary formations are showing same altitude.

Hydrogeology

Hydro geologically the whole district can be classified into three formations viz. consolidated formation, semi-consolidated formation and unconsolidated formation.

Consolidated Formations

The consolidated formations comprise of metamorphics like schists, gneisses, quartzites and phyllites of Precambrian age and limestone & sandstone of Marwar Super Group. Metamorphics are normally impervious except in the presence of a few weak planes, joints, weathered zones and kinks which contain moderate and limited quantity of ground water. These are basically phreatic aquifers and availability of ground water depends on good amount of precipitation. Such aquifers are mainly confined to eastern part of Riyan and Parbatsar blocks, central part of Makarana block, eastern part of Ladnun block and northern part of Didwana block.

Jodhpur sandstone mainly consists of medium to coarse grained sand, cemented with silica and ferruginous matrix. The sandstone is intercalated with siltstone and shale. The sandstone is hard, compact and forms medium aquifer. Wherever, ground water occurs, it mainly occupies either void space between the adjacent grains (primary porosity) and in the secondary porosity zones. Jodhpur sandstone, which mainly occurs in southwestern part of Mundwa block and central part of Ladnun block. Ground water in this formation occurs under semi-confined to unconfined condition. Thickness of sandstone varies from 100-250m.

Bilara limestone forms the most important and potential aquifer comprising limestone, dolomite and shale. The limestone is white to grey in colour, hard and compact, cherty and dolomitic in nature. However, it is cavernous at places and susceptible to solution activity which gives rise to high discharge in wells. This formation covers western and north-central parts of Nagaur block, central part of Mundwa block, west central & eastern parts of Jayal block and part of Ladnun block. Thickness of limestone varies from 100- 300 m.

Nagaur sandstone is coarse to fine grained, loosely cemented with gravel at basal part which acts as good aquifer and occupies mainly parts of Nagaur, Jayal, Mundwa and Merta blocks. The associated rocks are siltstone and shale. Its thickness varies from 140-240 m.

Semi-consolidated Formation. These include only Palana sandstone consisting of very coarse grained, gravelly sand with intercalations of clay with kankar and lignite. Ground water occurs under phreatic to confined condition and saturated thickness of 40 m constitutes a potential aquifer. This mainly occurs in parts of Merta, Mundwa and Jayal blocks. Its thickness varies from 100-250 m.

Unconsolidated Formation

Quaternary alluvium is the main aquifer which is comprised of unconsolidated to loosely consolidated fine to coarse grained sand having intercalations and intermixing with silt, clay with `kankar`. Ground water occurs under unconfined to semi-confined conditions, Quaternary alluvium covers parts of Riyan, Merta, Degana, Parbatsar, Makarana, Kuchaman, Didwana, Ladnun and Jayal blocks. Its thickness is limited to 200m.

A map depicting hydrogeological features is presented as Figure-7:

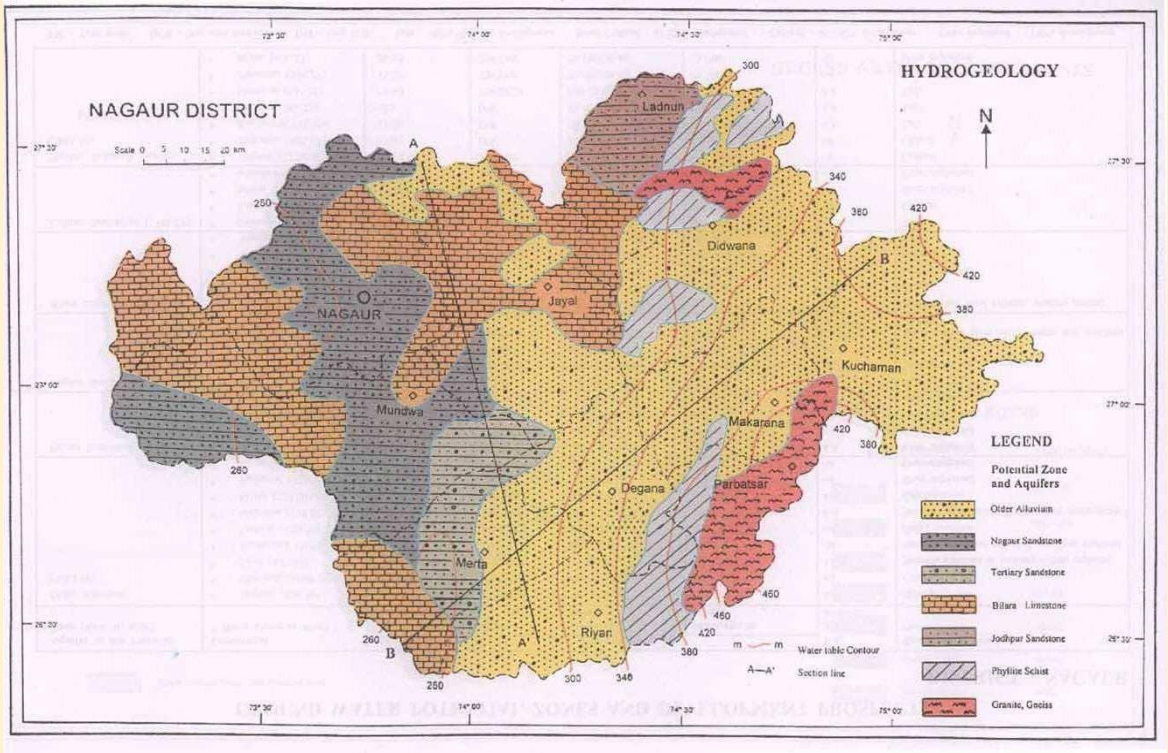


Fig.-7: Hydrogeology

Aquifer Parameters

The aquifer parameters of dug wells and tube wells have been studied from pumping tests. The yield of tube wells\ dug wells in metamorphic rocks like schists, gneisses, quartzites, phyllites and gneisses ranges from 5-20 m³\hr. The tube wells in Jodhpur sandstone give discharge in range of 12 to 32 m³\hr. Discharge\yield of tube wells in Bilara limestone varies from 5 to 40 m³\hr and that of Nagaur sandstone varies from 6.5 m³\hr to 36 m³\hr. The discharge of tube wells in Palana sandstone ranges from 5.0 m³\hr to 30 m³\hr and that of tube wells\dug wells in Quaternary alluvium varies from 12 m³\hr to 32 m³\hr. The deeper aquifers are being exploited extensively through low to medium duty tube wells.

Water Level Scenario

Central Ground Water Board periodically monitors ground water levels four times in a year during the months of January, May (Pre-monsoon), August and November (Post-monsoon). In Nagaur district water levels are monitored through a network of 89 observation wells (National Hydrograph Network Stations).

Depth to Water Level (2019)

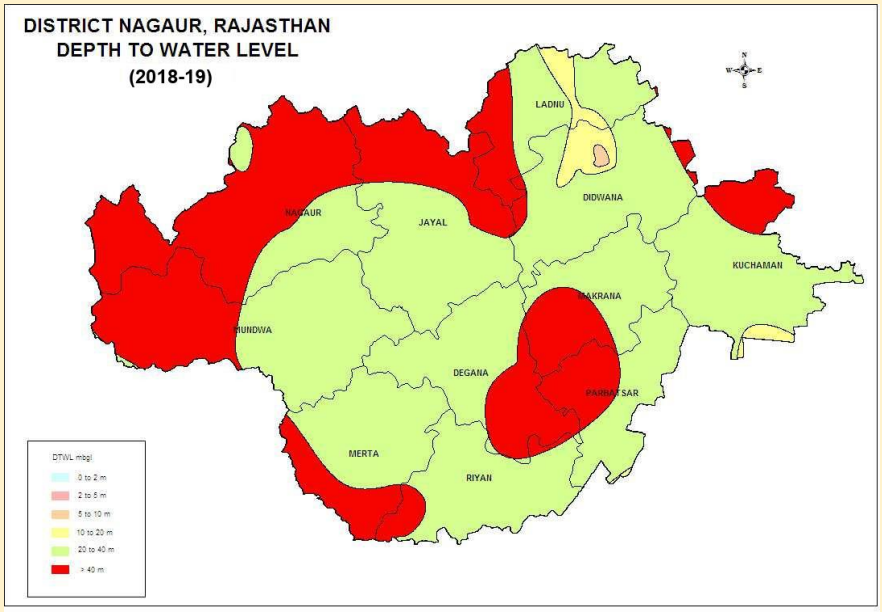
Depth to water level in the district varied from 5.00 to 68.46 mbgl and 4.97 to 68.06 mbgl during Pre-monsoon (May, 2019) and monsoon (July, 2019) periods respectively. Block-wise depth to water levels during Pre-monsoon and Post- monsoon and water level fluctuation between the two seasons are given in Table 3.

Table-2: Block wise details of depth to water level during May, 2019 and July, 2019 and water level fluctuation during May-July, 2019:

Block	Pre-monsoon water level in m bgl		Monsoon water level in m bgl		Water level fluctuation in m (Pre– Mn.)			
					Rise		Fall	
	Min	Max	Min	Max	Min	Max	Min	Max
Degana	5.00	36.74	5.34	45.22	0.90	1.05	-	-
Didwana	5.37	30.47	4.97	28.67	0.40	9.70	0.00	0.30
Jayal	37.06	51.43	37.36	51.53	-	-	0.10	0.30
Kuchaman	22.12	-	21.19	-	0.93	-	-	-
Ladnun	**19.87**	**-**	**25.62**	**28.47**	**-**	**-**	**8.60**	**-**
Merta	-	-	-	-	-	-	-	-
Mundwa	53.68	-	53.88	54.81	-	-	0.20	-
Nagaur	32.30	68.46	32.30	68.06	0.00	0.40	0.30	-
Parbatsar	-	-	-	-	-	-	-	-
Riyan	-	53.00	12.99	50.66	2.34	-	-	-
District	5.00	68.46	4.97	68.06	0.00	9.70	0.00	0.30

Fig.-8: Depth to Water Level

Depth to water level maps for Pre-monsoon 2018, Post Monsoon 2018 and Seasonal water level fluctuation (Pre & Monsoon, 2019) of district have been presented. During Pre-monsoon, the water levels in major part of the district varied in depth from 20 to 40 m. Deeper water levels (> 40 m) were observed in northwestern, northeastern, western, southwestern and central parts of the district. Shallow water levels (5 to 20 m) were observed in localized pockets in the northern part of the district.



During Post-monsoon season again, water levels in major part of the district varied from 20 to 40 m and deeper water levels (>40 m) were observed in northwestern, western, southwestern and northeastern parts and localized pockets in central part of the district. Water levels in the range of 5 to 20 m were observed in the southeastern part of the district.

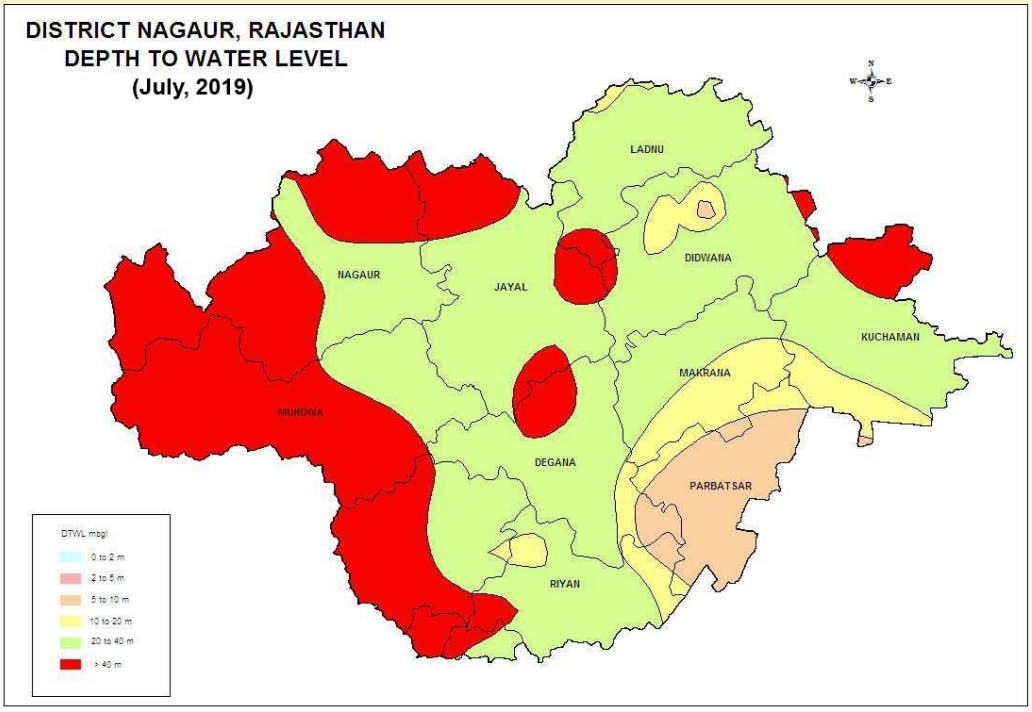


Figure-9: Depth to Water Level - Post-monsoon 2019 (July, 2019)

Seasonal water level fluctuation (May, 2019 – July, 2019):

Seasonal water level fluctuation map during Pre- and Post-monsoon season indicates rise in ground water levels in all the blocks except, parts of Mundwa, Nagaur, Jayal and Ladnun blocks. Major part of the district has registered rise in the range of 0-2 m. Decline of >4m has been observed in parts of Ladnun and Didwana blocks.

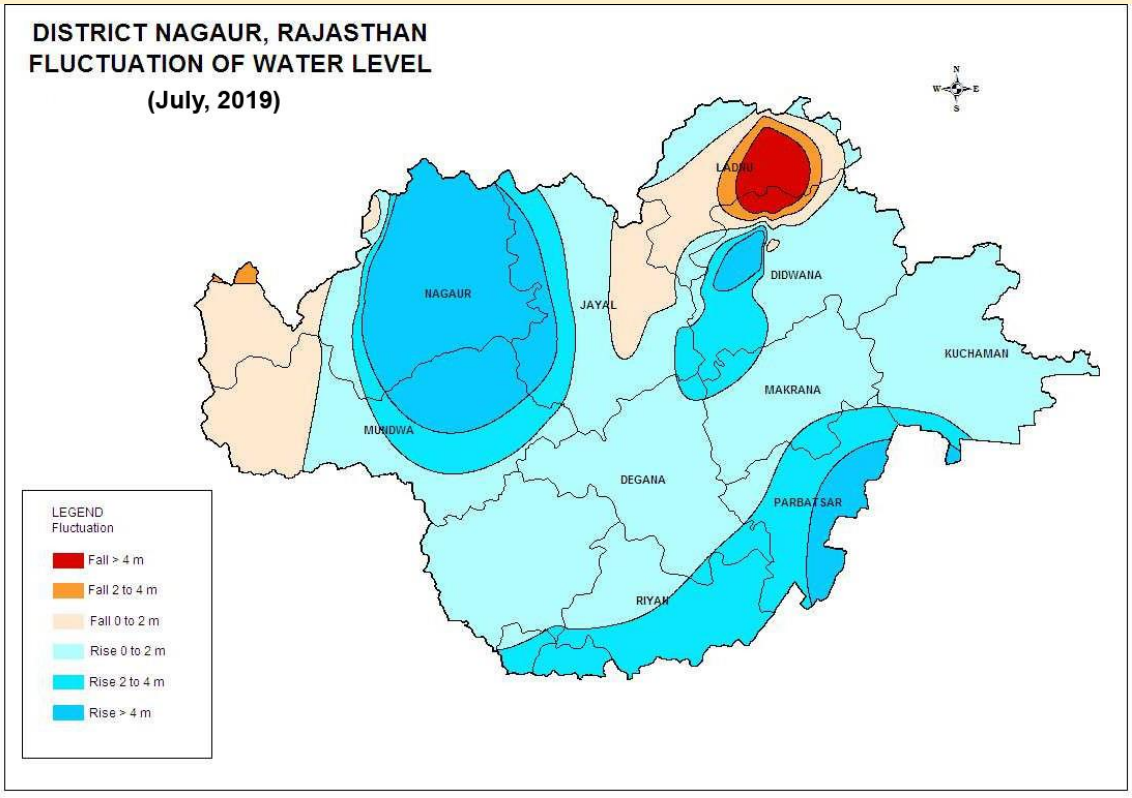


Figure 10: Seasonal water level fluctuation (Pre & Post-monsoon)

Water Level Trend

Water Level fluctuation Trend for Pre monsoon, 2002–2018 and Post monsoon, 2002 - 2018 reveal the declining trend of ground water levels in the range of 0 to 0.25 m/year has been observed in major part of the district except parts of Mundwa, Merta, Didwana, Parbatsar blocks, where rising trend in the range of 0 to 0.5 m/year in ground water levels has been noticed.

During Post-monsoon period in the long term, major part of the district has registered declining trend in the range of 0 to 0.25 m/ year while the remaining part of the district has registered rising trend in water levels in the range of 0 to 0.25 m/ year. Increased ground water draft to meet the increased demand of agriculture and domestic sector is the main cause for declining trend of ground water levels.

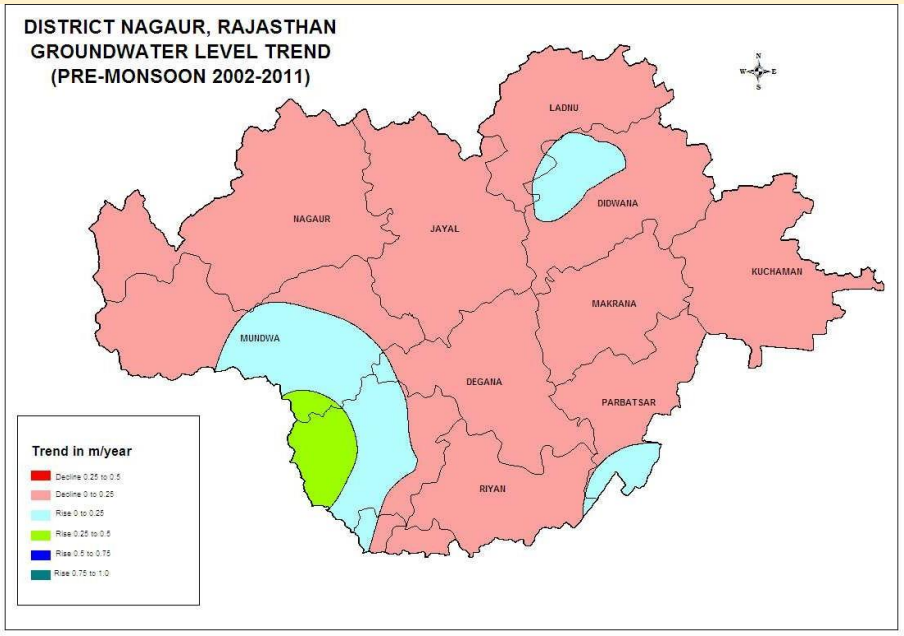


Figure 11: Water Level Trend

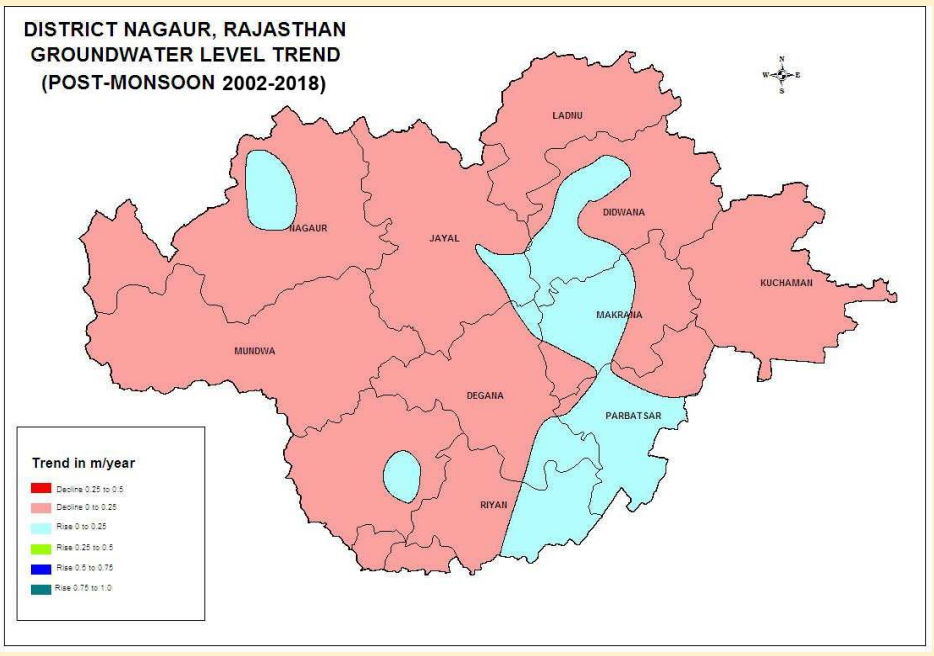


Figure 12: Water Level Trend (Post-monsoon, 2002 - 2018)

Ground Water Resources

Central Ground Water Board and Ground Water Department, Government of Rajasthan have jointly estimated the ground water resources of Nagaur district based on GEC-97 methodology. The same are presented in Table 4 below. Ground Water Resources estimation was carried out for 17718.25 sq. km. area out of which nil sq. km. is under command, 16378.50 sq. km. area is non-command. Ground Water Resources estimation was also carried out for 1339.75 sq. km. of saline area.

Table-3: Estimates of fresh ground water resources in Nagaur district (As on July, 2019):

Block	Type of area	Total annual replenishable resource (mcm)	Net annual ground water availability (mcm)	Annual ground water withdrawal for irrigation (mcm)	Annual groundwater withdrawal for domestic and other uses (mcm)	Annual ground water withdrawal for all uses (mcm)	Stage of ground water develop-ment (%)	Category
Degana (Excluding Saline)	NC	42.7205	38.4485	46.7125	14.9088	61.6213	160.27	OVER EXPLO.
Didwana (Excl. Saline)	NC	63.2149	56.8934	74.0685	18.1200	92.1885	162.04	OVER EXPLO.
Jayal (Excl. Saline)	NC	59.3985	53.4587	37.4225	19.9040	57.3265	107.24	OVER EXPLO.
Kuchaman (Excl. Saline)	NC	72.3797	65.9525	160.0143	16.2400	176.2543	267.24	OVER EXPLO.
Ladnun (Excl. Saline)	**NC**	**42.8697**	**38.5827**	**23.6406**	**11.8307**	**35.4714**	**91.94**	**CRITICAL**
Makrana (Excl. Saline)	NC	49.2807	44.3526	32.2364	14.9456	47.1820	106.38	OVER EXPLO.
Merta (Excl. Saline)	NC	50.7527	45.6774	120.8390	13.4400	134.2790	293.97	OVER EXPLO.
Mundwa (Excl. Saline)	NC	70.8171	63.7354	170.5655	29.9520	200.5175	314.61	OVER EXPLO.
Nagaur (Excl. Saline)	NC	55.8985	50.5966	24.7045	17.0560	41.7605	82.54	SEMICRITICAL
Parbatsar (Excl. Saline)	NC	38.4671	34.6204	42.0653	7.9083	49.9736	144.35	OVER EXPLO.
Riyan (Excl. Saline)	NC	58.3085	52.4776	61.4845	11.2704	72.7549	138.64	OVER EXPLO.
TOTAL OF DISTRICT (Excluding Saline)	NC	604.1080	544.7959	793.7536	175.5758	969.3294	177.93	
TOTAL OF SALINE		**54.9100**	**49.4189**	**8.3073**	**4.9440**	**13.2513**	**26.81**	

Stage of ground water development in the district as on 31.7.2019 is 177.93%, which indicates that the scope of ground water development is already exhausted. Nine blocks viz. Degana, Didwana, Jayal, Kuchaman, Makarana, Merta, Mundwa, Parbatsar and Riyan have been categorized as "Over-exploited".

Ladnun block has been categorized as "Critical" and Nagaur block as "Semi-critical. Stage of ground water development is even more than 300% in Mundwa block, above 250% in Kuchaman and Merta blocks, above 150% in Degana and Didwana blocks, above 125% in Riyan and Parbatsar blocks and above 100% in Makarana and Jayal blocks.

Ground Water Quality

A perusal of analytical results of water samples collected during May 2019 indicates that the quality of ground water in phreatic aquifer varies widely from saline to fresh. Electrical Conductivity (EC) ranges between 1380 to 16240 µS/ cm at 25°C. It has been observed that by and large, EC conforms broadly with chloride concentration. In greater part of the area, it is within 5000 µS/cm at 25°C. Higher values of EC have been observed in the west central part of the district and also in depressions in the vicinity of the saline lakes. The chloride content ranges from 50 to 5069 ppm in phreatic aquifer.

Fluoride in the ground water ranges between traces and 11.20 mg/l. Fluoride concentration in excess of maximum permissible limit of 1.5 mg/liter has been noticed in central and northeastern parts of the district.Nitrate concentration in ground water varies widely. Its concentration ranges between traces to as high as 1000 ppm.

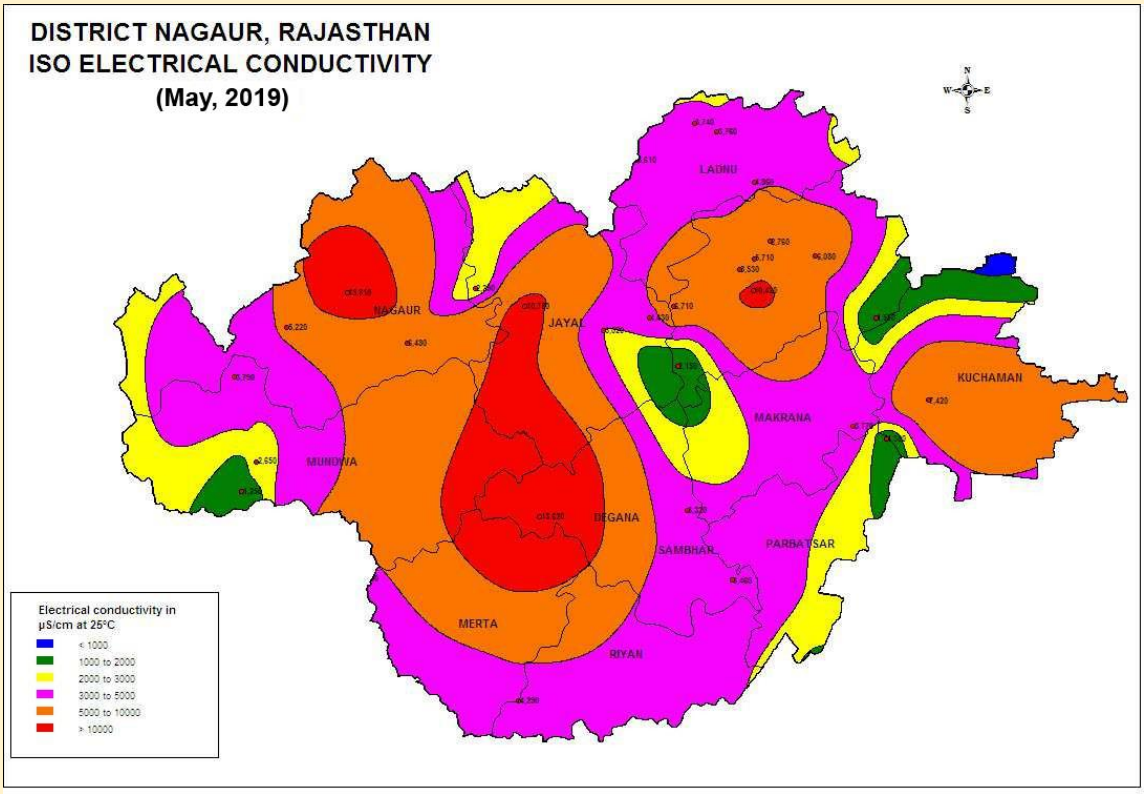


Figure-13: Map showing distribution of Electrical Conductivity in Nagaur District

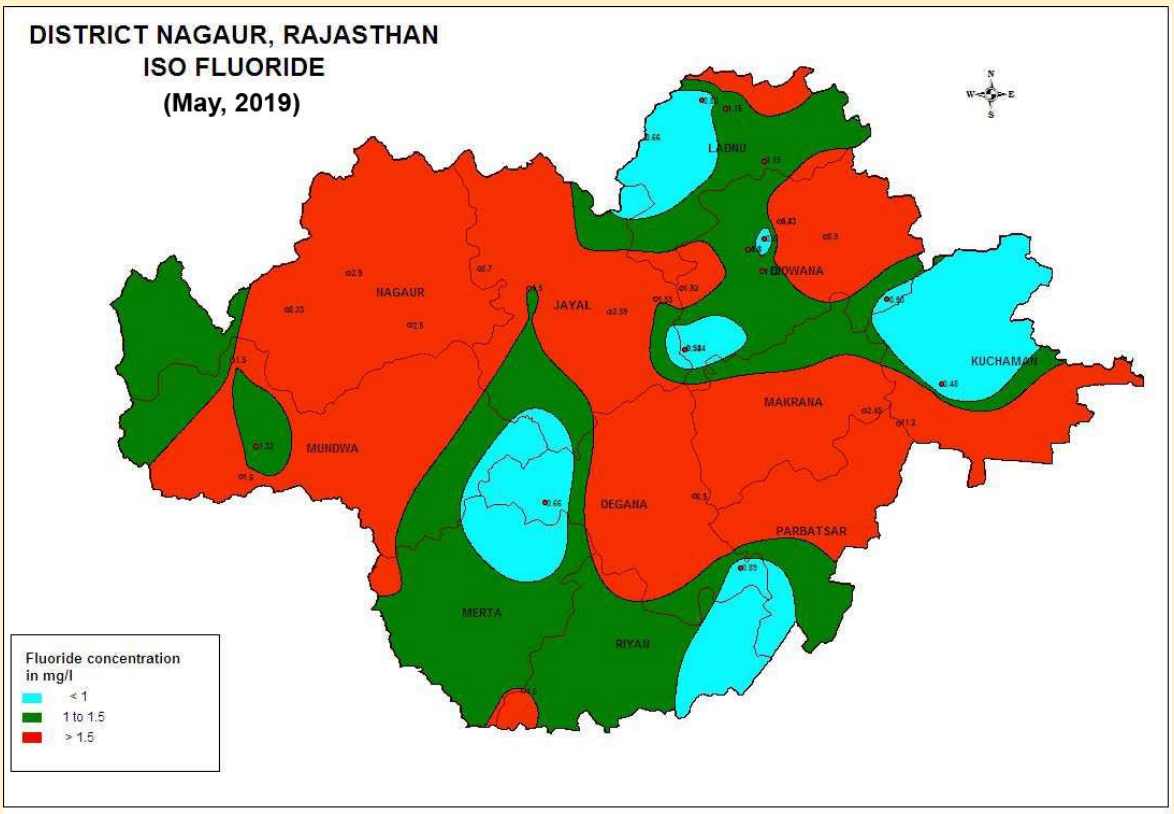


Figure-14: Map Showing Distribution of Fluoride in Nagaur District

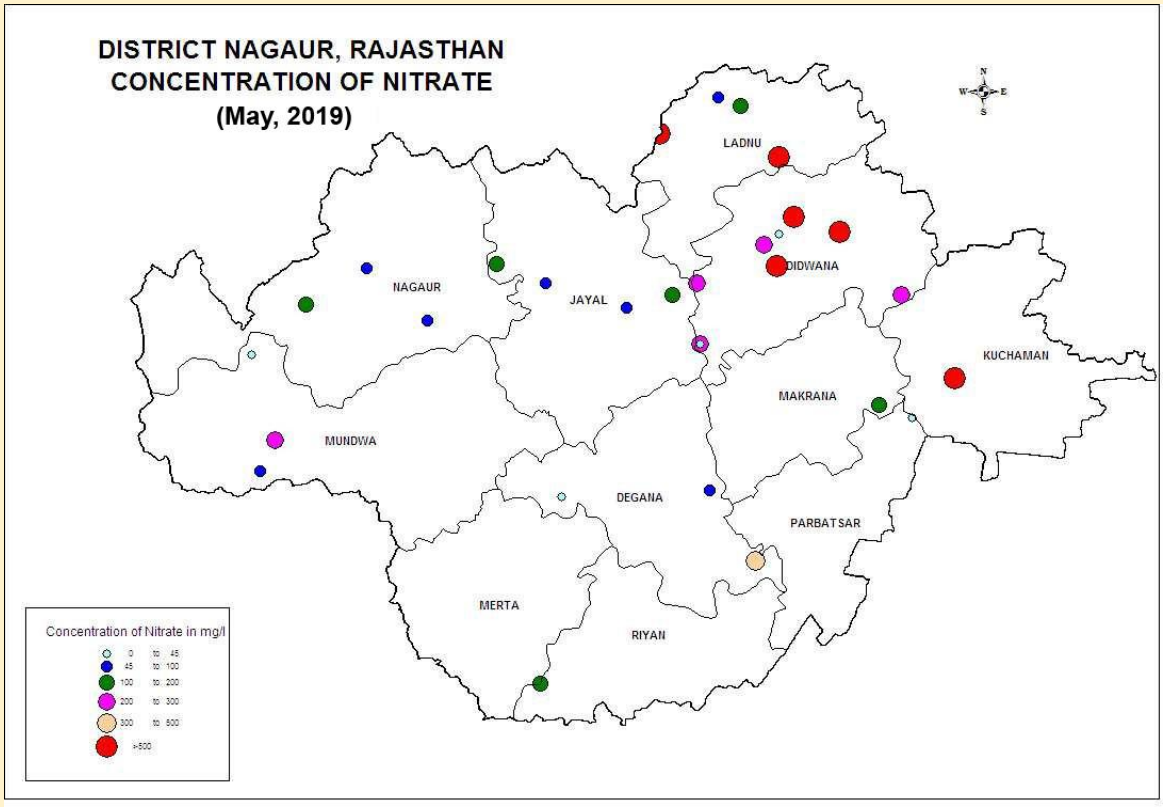


Figure-15: Map Showing Distribution of Nitrate in Nagaur District

The Iron concentration ranges between nil to 2.21 mg/l in the district. Iron concentration in excess of permissible limit of 1 mg/liter has been noticed in localized pockets in Nagaur, Mundwa and Didwana blocks.

Ground Water Quality in Deeper Aquifers

Ground water quality is brackish to saline from east of Merta to Degana and from Didwana to Nagaur via Jayal block in the central part of the district. In this big pocket covering about 6000 km2 area the E.C. of ground water is more than 5000 µS / cm at 25°C. There are three pockets namely around Nimri in Ladnun block, around Gotan in Merta block and in a longitudinal belt in the eastern part of the district where the E.C. of ground water is within 2000 µS /cm at 25°C.

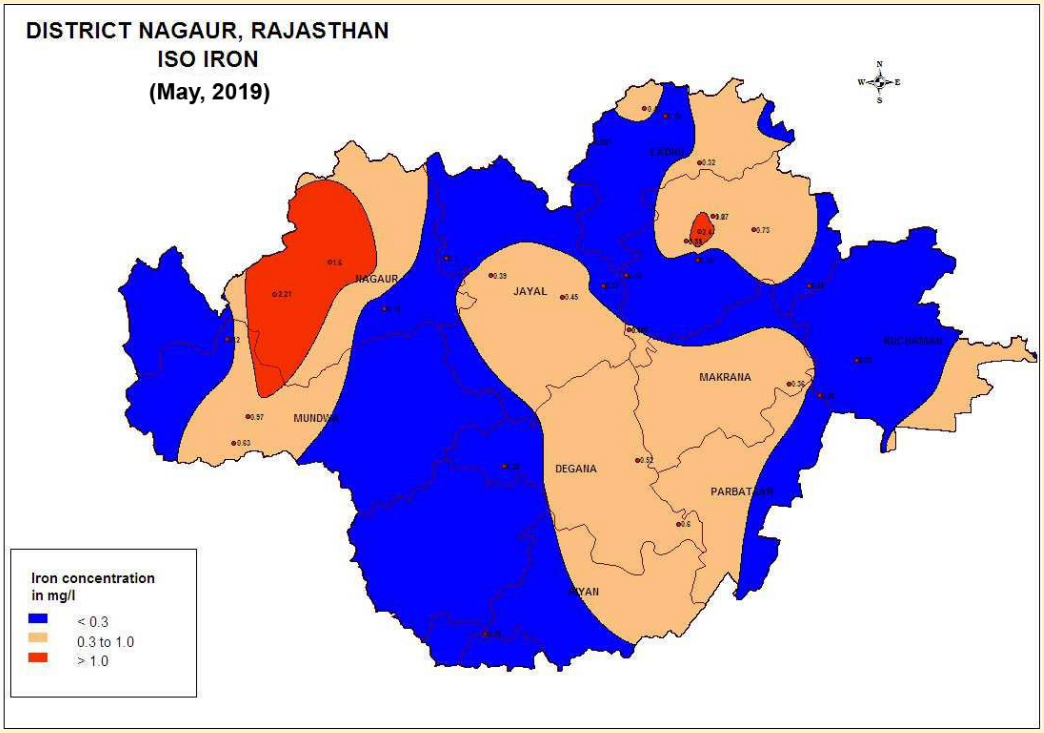


Fig. 16: Depiction of Iron Content

Ground water in the alluvium is in general better in quality than that found in the sandstones of Nagaur and Palana series. Ground water in Quaternary alluvium has T.D.S. less than 1000 ppm (E.C. less than 2000 micro mhos/ cm) only, whereas in the eastern part, the range of T.D.S is between 1000-3000 ppm. In the wells penetrating Tertiary sediments the T.D.S exceeds 3000 ppm.

The E.C. of ground water in the shallow aquifer of Nagaur and Palana sandstone varies from 900 to 6000 micro mhos/cm at 25°C. However, the quality of water deteriorates with depth. In a borehole of 421.20 m depth at Merta City, EC as high as 28496 µS/cm was observed. In tube wells of average depth of around 80 m tapping sandstones, the EC of ground water is around 2000 µS/cm. In tube wells tapping phyllites, schists and gneisses, quality of ground water is very poor.

The fluoride content in ground water of tube wells constructed at Kanwai (Didwana block) and Roru and As Ki Dhani (Ladnun block) was observed to be more than 3 ppm. The production well at Luniawas (Merta block) and Gorera (Nagaur block) also yielded water with more than 3 ppm fluoride.

Status of Ground Water Exploration

Status of ground water exploration as on 31.07.2019 in Nagaur district is furnished in Table-4.

Table-4: Status of exploratory wells drilled in Nagaur district

Type of borehole	Formation			Total
	Unconsolidated	Semi-consolidated	Consolidated	
EW	16	15	22	53
OW	-	19	-	19
SH	17	4	1	23
PZ	4	6	-	10

A total of 16 exploratory wells, 17 slim holes and 4 piezometers have been drilled in unconsolidated formation. Most of the exploratory wells drilled in alluvium have been drilled in the depth range of 32 to 275 meters with depth of well construction varying from 58 to 80m. Discharge of wells ranges from 220 lpm to 1513 lpm for drawdown up to 15 meters indicating potential of aquifer. Transmissivity value varies from 50 to 156 m2/day.

A total of 15 exploratory wells, 19 observation wells, 4 slim holes and 6 piezometers have been constructed in semi consolidated formation [Tertiary sandstone (Palana) and Nagaur Sandstone]. Depth of drilling varied from 49 to 443 m and depth of construction of wells varied from 49 to 257 m. Discharge of wells varied from 100 to 550 lpm with draw down varying from 1.14 to 4.05 m. Transmissivity of formation varies from 51 to 528 m2/day.

A total of 22 exploratory wells and 1 slim hole have been drilled in consolidated formation (Jodhpur sandstone, Bilara limestone of Marwar Super Group, quartzite, schist, limestone of Delhi Super Group and schist and gneisses of Bhilwara Super Group). The depth of bore wells ranges from 80 to 223.30 m. Discharge of wells varies from <50 lpm to 800 lpm.

Ground Water Related Issues & Problems

Major part of the district is covered by hard rock formations such as Jodhpur sandstone, Nagaur sandstone Bilara Limestone, Delhi Super Group metamorphics and granites. These have poor water yielding capacity except rocks of Marwar Super Group. Also, such areas suffer from water quality problem and in some of the areas ground water is highly saline. Villages located in such areas have the basic problem of scarcity of drinking water and the situation becomes very critical in summers and in drought years.

Another problem of concern in the district is that most of the potential zones have witnessed heavy ground water development causing lowering of water table and drying up of large number of shallow wells or reduction in their yields. Heavy decline of more than 15 m has been observed in Mundwa, Merta, Jayal and Kuchaman blocks during last 10 years.

Ground Water Management Strategy

Water Conservation and Artificial Recharge

Precious ground water resources have to be conserved for sustainable availability. Artificial recharge measures need to be implemented on large scale for augmenting ground water resources by roof top rain water harvesting, construction of sub surface barriers, anicuts and other suitable recharge structures at appropriate locations.

The Institutional Background

Jain Vishva Bharati Institute (JVBI) is committed to provide highest quality of educational services to the utmost satisfaction of the students and give them an opportunity to cultivate an integrated personality blended with spirituality and moral values. University torch bearers have taken a responsibility for this investment to nurture the Next-Gen leaders with a vision to bridge the existing skill gap by way of providing not only the skilled personnel but also the human resources with values.

University fosters a culture of Continuous Learning through its Directorate of Distance Learning to develop future innovative leaders of international repute, who are quick to learn & implement, understand changing customer needs, respect humanitarian values, are highly comfortable and creative with change and have the ability to revamp operations modestly.

The modern infrastructure and learner centric andragogy at JVBI extend full support to the learners and the University is focused to invest more in "Nurturing Future Leaders" to produce much more resourceful and productive employee respecting human values for each level in the organization, who can emerge as a "Green Graduates" or a "Tenured Senior Managers". To map the galloping pace of innovations blended with changing technology and HR systems. The University Administration is determined to inculcate Domain Specific Skills and Soft Skills to our emerging innovative leaders and make them future ready. University has focused to inculcate skills and behaviors for a good cultural fit along with right academic background. Salient features of its infrastructure are as follows:

• Total Area	75 Acres
• Total plinth area of Academic & Admin Blocks	2.53 lakhs Sq. Ft.
• Total class rooms	56
Smart class rooms	20
Academic block	14
Administrative block	06
Education block	12
Constituent block	24

The Institutional Legacy

JVBI was established with the inspiration of Gurudev Tulsi in Ladnun, Dist Nagaur, Rajasthan. In 1991, Government of India notified JVBI as Deemed-to-be University under Section 3 of University Grants Commission Act, 1956. The Institute continues to be housed in the common campus of its parent body organization Jain Vishva Bharati. Gurudev Shri Tulsi remained its first constitutional Anushasta (moral and spiritual guide) followed by Acharya Shri Mahaprajna as its second Anushasta. Acharya Mahashraman is its present Anushasta. The goal of the JVBI is has been clearly spelt out in the Preamble of its Constitution (Memorandum and Articles of Association) which reads as under:

"The Jain Vishva Bharati Institute is an endeavour in the direction of putting into practice, promote and propagate the high ideals of Anekant, Ahimsa, Tolerance and Peaceful Co-existence for the weal of the mankind. We, the members of the Jain Vishva Bharati, therefore resolve to constitute and establish the said University of Advanced Studies, Research & Training in Jainology in the context of comparative studies in Indology, World Religions, Ahimsa and World Peace."

Vision

The vision of the Jain Vishva Bharati Institute is to create a niche for itself in the field of higher education in the field of practice, promotion and propagation of the core Human Values and Ethics as enshrined in the Jain Traditions in particular and in respect of Anekant. It endeavors in the direction of putting into practice and to promote as well as to propagate Anekant (Non-absolutic outlook), Ahimsa (Non-violence), Tolerance, Peaceful Co-existence for the weal of mankind.

Mission

The mission of JVBI is to integrate modern science with the ancient wisdom of the great spiritual practitioners and visionary seers. The University seeks to interweave moral and spiritual norms and values with the materialistic and economic fibers of mankind to foster and develop universal human relationships for the peaceful co-existence of individuals, groups, communities, sects, races, religions and nations.

The first and foremost task of this University has been to develop an International Center of Jainological Studies and Research. It aims at imparting higher education and preparing scholars in this little-explored treasure of knowledge and conducting research in different Sciences hidden in Jain Agamas as well as to bring to light before the common masses and the international community by translating them from Prakrit into Hindi, English and other major languages of the world.

Objectives

Jain Vishva Bharati Institute is solely an educational institution dedicated to cultivate and practice high ideals of "Anekant" including tolerance and peaceful co-existence for the weal of the mankind at the global level as propagated by the Anushasta. The objectives for which the Institute is established are:

- To enable creation of institutions deemed to be university under the 'de novo' category devoted to unique and emerging areas of knowledge, not being pursued by conventional or existing institutions - particularly in specific areas of study and research preferably sponsored by the Government of a State / UT or the Central Government regarded as important for strategic needs of the country or for the preservation of our cultural heritage, so determined by a well laid-out process of wide consultation with the eminent peers of academic community with the prior approval of Central Government;
- However, it shall not be an Institution imparting education leading to conventional degrees only, without strong inter-disciplinary and innovative programmes with matching research capabilities, and should have achieved peer recognition and verifiable scholarly attainment and research output.
- to provide for research and for advancement of and dissemination of knowledge and extension activities in the Oriental Learning— Prakrit Language and Literature, Pali, Sanskrit, Apabhramsha, Jainology, Philosophy, Religion, Comparative Studies in Philosophy and World Religions, Astrology, Mantravidya, Avadhanvidya (Memonics), Yoga and Sadhana, Ayurveda, Naturopathy, Colour Therapy, Magnet Therapy, Epigraphy, Paleography, Jeevan Vigyan & Preksha Dhyan (Science of Living & Preksha Meditation) and the fundamental principles of Shramana Culture and such other related and ancilliary or supplementary subjects as may be permitted under the UGC regulations and /or guidelines and the higher education policies by the Government;
- to provide facilities for study and research & extension in discipline of Indian Yoga with special emphasis on spiritual discipline embedded in the Jain Agamas;
- to encourage students of higher education in critical study of the above - mentioned & related disciplines and to equip them with an analytical outlook to discover the elements of social sciences in the various disciplines;
- to edit the original works for a comparative and critical study of the aforesaid & related subjects;
- to prepare and publish reference books such as Dictionary and Encyclopedias on Prakrit Language and Literature, Jain Philosophy and Culture and related aspects; to provide for the teaching of other Indian and foreign languages and research in the context of the aim of the Institute;
- to give special emphasis on the synthesis of the spiritual heritage of the ancient Indian Shramana Culture with the modern scientific outlook in the field of education and research and inculcate amongst students the essential values and ideals of ancient Indian culture and civilization;

- to organize residential community of students and teachers for living together on patterns of ancient Indian Educational Centres and Ashramas;
- to establish courses of study, research & extension and to provide the instruction & extension in such branches of study as the Institute deems appropriate for the advancement of learning and dissemination of knowledge in such disciplines;
- to sanction and award financial assistance in the form of scholarships, stipends, awards, prizes, loans, etc. to students, scholars, researchers, spiritually devoted persons, social workers, and the institutions and to manage and arrange with cost or free for their boarding and lodging;
- to undertake suitable extension activities for the public welfare and social advancements;
- to disseminate the popular aspects of Prakrit and Jain learnings among the common people by holding meetings, conferences, seminars and discourses by inviting eminent scholars etc.;
- to supervise, control and regulate the discipline of the students of the Institute and to make arrangements for promoting their health, general welfare and cultural and corporate life.
- to establish laboratories as part of the Institute for the practice of Yoga, Meditation and Self-realization and to arrange for the training in these disciplines;
- to publish books, journals, monographs and periodicals and papers in furtherance of the objects of the Institute and to establish a library of CD's;
- to establish museum(s) and preserve rare manuscripts, letters, pictures, stone images, artistic works, and archaeological and historical exhibits;
- to build up and equip an up-to-date library of printed books, manuscripts, journals and periodicals relating to the abovementioned and related subjects and to establish reading rooms;
- to institute awards for outstanding contributions made by individuals or institutions for the promotion of and to the cause of global peace, propagation of Ahimsa, harmony and goodwill and in such other fields of national integration and in international understanding through literary, scientific or humanistic pursuits in accordance with Rules and Bye-laws adopted from time to time;
- to have well established, broad based and viable under-graduate, post-graduate and research programmes in several disciplines with firm inter-disciplinary orientation and linkages;
- The institution shall be a not-for-profit organization and shall not be engaged in commercialization of higher education, under-graduate, post-graduate and research programmes.

Provided, however, no object shall be pursued unless permissible under the rules of the UGC.

Major Thrusts

- Non-absolute Outlook (*Anekanta*)
- Nonviolence (*Ahimsa*)
- Tolerance (*Sahishnuta*)
- Peaceful Co-existence
- Inclusiveness
- Creating a culture of understanding, communal harmony and social-services
- Indological Studies
- Platform of Inter-faith Dialogues
- Value-based Studies
- Synthesis of Ancient Indian Shraman Culture with the modern scientific outlook

Major Tasks

- Development of Oriental Studies
- Establishment of an International Centre of Jainology Studies and
- Research
- Provide a knowledge platform for the rural masses of backward region
- Enhance Women Empowerment
- Organization of integrated value-based courses

Core-Departments

- Department of Jainology and Comparative Religion & Philosophy
- Department of Prakrit and Sanskrit
- Department of Nonviolence and Peace
- Department of Yoga and Science of Living

Other Departments

- Department of Social Work
- Department of Education
- Department of English

Courses offered by the Constituent College

- B.A., B.Com., B.Sc.

Directorate of Distance Education

Programmes:

- M.A. in Jainology and Comparative Religion & Philosophy, Yoga and Science of Living, Hindi, English, Political Science, B.A. and B.Com.

Quality of Life Support Systems in the Institute Campus

Air Quality

AQI, the yardstick running from 0 to 500 for understanding the overall air quality was taken into consideration, as higher the AQI value, the greater shall be the level of air pollution and would be of the greater health concern.

- For each pollutant an AQI value of 100 generally corresponds to an ambient air concentration that equals the level of the short-term national ambient air quality standard for protection of public health. AQI values at or below 100 are generally thought of as satisfactory. When AQI values are above 100, air quality is unhealthy: at first for certain sensitive groups of people, then for everyone as AQI values get higher.
- The AQI has been divided into six categories. Each category corresponds to a different level of health concern. Each category also has a specific colour code. The colour code makes it easy for people to quickly determine whether air quality is reaching unhealthy levels in their communities.

AQI calculation

- Generally an AQI (Air Quality Index) number is calculated from 6 key pollutants. While this is true, the AQI formula itself does not use all 6 pollutants in one equation. Rather, each of the 6 pollutants has both a concentration and AQI value. The pollutant with the highest AQI level, or 'risk to health', is deemed the "main pollutant" and that pollutant's AQI determines the overall AQI number across all the included pollutants.
- AQI is calculated by using the following formula:
- Ip = [(Ihi-Ilow)/(BPhi-BPlow)] (Cp-BPlow)+Ilow,
- Where Ip is the index of the pollutant; Cp is the rounded concentration of pollutant p; BPhi is the breakpoint greater or equal to Cp; BPlow is the breakpoint less than or equal to Cp; Ihi is the AQI corresponding to BPhi; Ilow is the AQI corresponding to BPlow.
- While overall AQI is the highest AQI of the 6 main pollutants, for a majority of locations, the main pollutant in the air is PM2.5 most of the time, which is why we put primary importance on measuring this pollutant. Less frequently, during summer months in many locations the main pollutant may be Ozone, while in particularly sandy or dusty locations it may be PM10.
- There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. The proposed AQI will consider eight pollutants (PM10, PM2.5, NO2, SO2, CO, O3, NH3, and Pb) for which short-term (up to 24-hourly averaging period) National Ambient Air Quality Standards are prescribed. Based on the measured ambient concentrations, corresponding standards and likely health impact, a sub-index is calculated for each of these pollutants. The worst sub-index reflects overall AQI. The AQI values and corresponding ambient concentrations (health breakpoints) as well as associated likely health impacts for the identified eight pollutants are as follows (Table 5):

Table-5 : AQI Category, Pollutants and Health Breakpoints								
AQI Category (Range)	**PM10 (24hr)**	**PM2.5 (24hr)**	**NO2 (24hr)**	**O3 (8hr)**	**CO (8hr)**	**SO2 (24hr)**	**NH3 (24hr)**	**Pb (24hr)**
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5-1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1-10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-250	281-400	209-748	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	**430+**	**250+**	**400+**	**748+**	**34+**	**1600+**	**1800+**	**3.5+**

- AQI value for the JVBI Campus Ladnun as on 31st July 2019 was 45 and the same was Good.
- Main pollutant: PM10
- Temp.: 27°Cclear sky

NO2	9.18 µg/m³, AQI 11 Good
O3	25.95 µg/m³, AQI 25 Good
PM2.5	24.9 µg/m³, AQI 24 Good
SO2	6.33 µg/m³, AQI 6 Good
PM10	45.0 µg/m³, AQI 45 Good
CO	360.0 µg/m³, AQI 43 Average
Humidity	32.0 %
Barometric Pressure	1005.0 hPa
Wind Speed	8.12 m/s
Wind Direction	161.0 degrees

Water Quality Assessment

- Water samples were collected from five sampling stations and analysis was made by way of using the standard APHA methods. The sampling stations were as follows:
  - A – Administrative Block
  - B – Academic Block
  - C – Kalu Kanya Mahavidyalay
  - D – Hostels
  - E – Staff Quarters

Results have been presented as under:

Table-6: Determination of Iron Content

S.No.	Samples	Observed value (mg/ltr)	IS 10500:2012 Desirable limit (mg/ltr)	Remarks
1.	A	0.30	0.3 – 1	Within the limit.
2.	B	0.43	0.3 – 1	
3.	C	0.65	0.3 – 1	
4.	D	0.30	0.3 – 1	
5.	E	0.30	0.3 – 1	

Table-7: Determination of Turbidity

S.No.	Samples	Observed Value (N.T.U)	IS 10500:2012 Desirable Limit (N.T.U)	Remarks
1.	A	0	1 – 5	Below desirable Limit
2.	B	3	1 - 5	Within desirable Limit
3.	C	2	1 - 5	Within desirable limit
4.	D	0	1 - 5	Below desirable limit
5.	E	1	1 - 5	Within desirable limit

Table-8: Total Dissolved Solids

S.No.	Samples	Observed value (mg/ltr)	Desirable limit as per IS 10500:2012 (mg/ltr)	Remarks
1.	A	38	500 - 2000	Suitable for use
2.	B	38	500 - 2000	
3.	C	38	500 - 2000	
4.	D	38	500 - 2000	
5.	E	38	500 - 2000	

Table-9: Determination of Total Hardness

S.No.	Samples	Observed value (mg/ltr)	IS 10500:2012 Desirable limit (mg/ltr)	Remarks
1.	A	60	200 – 600	Below desirable limit
2.	B	76	200 - 600	Below desirable limit
3.	C	154	200 - 600	Below desirable limit
4.	D	232	200 - 600	Within desirable limit
5.	E	32	200 - 600	Below desirable limit

Table-10: Determination of Chloride Content

S.No.	Samples	Observed value (mg/ltr)	IS 10500:2012 Desirable limit (mg/ltr)	Remarks
1.	A	4	250 - 1000	Suitable for drinking
2.	B	6	250 - 1000	
3.	C	4	250 - 1000	
4.	D	8	250 – 1000	
5.	E	6	250 – 1000	

Table-11: Determination of Nitrate Content

S.No	Samples	Observed value (mg/ltr)	IS 10500:2012 Desirable limit (mg/ltr)	Remarks
1.	A	0	45	Nitrate content is nil.
2.	B	0	45	
3.	C	0	45	
4.	D	0	45	
5.	E	0	45	

Table-12: Determination of pH

S.No.	Samples	Observed value (pH)	IS 10500:2012 Desirable Limit (pH)	Remarks
1.	A	6.71	6.5 - 8.5	Suitable for Drinking
2.	B	5.64	6.5 - 8.5	Not suitable for Drinking
3.	C	5.35	6.5 - 8.5	Not suitable for Drinking
4.	D	6.79	6.5 - 8.5	Suitable for Drinking
5.	E	5.42	6.5 - 8.5	Not suitable for Drinking

Table-13: Determination of Fluoride Content

S.No.	Samples	Observed value (mg./ltr.)	IS 10500:2012 Desirable Limit (mg./ltr.)	Remarks
1.	A	1.30	1 – 1.5	Within desirable limit
2.	B	0.18	1 – 1.5	Below desirable limit
3.	C	1.28	1 – 1.5	Within desirable limit
4.	D	1.32	1 – 1.5	Within desirable limit
5.	E	1.30	1 – 1.5	Within desirable limit

Part B: Environmental Practices

B1. WATER MANAGEMENT

Sl. No	Department/Block	Wise use of water	Water leakage	Use of water	Rain Harvest	Use of water	Water quality	Water Use per day in liters	Water Storage	Water tank cleaning
1	Vice Chancellor's Office	√	√	√	√	√	√	50	√	√
2	Registrar's Office	√	√	√	√	√	√	40	√	√
3	Finance Branch	√	√	√	√	√	√	60	√	√
4	Establishment & other offices	√	√	√	√	√	√	50	√	√
5	Computer Centre & Server Maintenance Facility	√	√	√	√	√	√	70	√	√
6	Academic Block	√	√	√	√	√	√	100	√	√
7	Kalu Kanya Mahavidyalay	√	×	√	√	√	√	500	√	√
8	Boys Hostel	√	√	√	√	√	√	500	√	√
9	Girls Hostel	√	×	√	√	√	√	500	√	√
10	Guest House	√	×	√	√	√	√	200	√	√
11	Student's Canteen	√	×	√	√	√	√	500	√	√
12	Play Ground for Girls	√	×	√	×	√	√	50	√	√
13	Play Ground for Boys	√	√	√	×	√	√	100	√	√
14	Professor's Qrs.	√	√	√	√	√	√	1000	√	√
15	Teacher's Lodge	√	√	√	√	√	√	1000	√	√
16	Employees Qrs.	√	√	√	√	√	√	1000	√	√
17	Gardens	√	√	√	×	√	√	1000	√	√
18	Library	√	√	√	×	√	√	50	√	√

B2. WASTE MANAGEMENT

		a	B	c	d	e	f	g	i
Sl. No	Department/Block	Food/Organic waste/day	Non Plastic dry waste	Plastic, Thermocol/	Other (e-waste)	Manageement of Organic Waste	Management of Other Waste?	Waste dumping pit?	Waste Management Practices
1	Vice Chancellor's Office	L	√	√	√	-	-	√	√
2	Registrar's Office	L	√	√	√	√	×	√	√
3	Finance Branch	L	√	√	√	√	×	√	√
4	Establishment & other offices	L	√	√	√	×	×	√	×
5	Computer Centre & Server Maintenance Facility	√	√	√	√	×	×	√	×
6	Academic Block	√	√	×	×	×	×	√	√
7	Kalu Kanya Mahavidyalay	√	√	×	×	√	×	√	×
8	Boys Hostel	√	√	√	√	×	×	√	-
9	Girls Hostel	√	√		√	×	×	√	×
10	Guest House	√	√	√	×	×	×	×	×
11	Student's Canteen	H	√	×	×	×	×	√	√
12	Play Ground for Girls	Nil	√	√	Nil	-	-	√	×
13	Play Ground for Boys	Nil	Nil	Nil	Nil	√	√	√	√
14	Professor's Qrs.	H	√	√	×	×	×	√	×
15	Teacher's Lodge	H	√	×	√	√	√	×	×
16	Employees Qrs.	L	√	√		×	×	√	√
17	Gardens	Nil	Nil	Nil	×	×	×	√	√
18	Library	L	√	√	√	×	√	√	√

B3. ENERGY MANAGEMENT

Sl. No	Department /Block	No. of Tubes + Bulbs	No. of A/C	No. of LCD Projector	No. of Photocopier	Computers+ Printer	LEDs	Non-conventional (solar)	Star rating	Energy Management Practices
1	Vice Chancellor's Office	100	2	2	2	04	-	-	√	√
2	Registrar's Office	60	1	X	1	02	×	×	√	√
3	Finance Branch	80	1	X	1	10	×	×	√	√
4	Establishment & other offices	30	2	X	1	09	×	×	√	√
5	Computer Centre & Server Maintenance Facility	111	5	1	1	146	×	×	√	√
6	Academic Block	35	2	2	3	130	×	×	×	×
7	Kalu Kanya Mahavidyalay	1429	8	10	2	318	×	×	×	×
8	Boys Hostel	60	X	X	X	2	×	×	√	×
9	Girls Hostel	30	X	X	X	3	×	×	√	√
10	Guest House	25	6	X	X	X	×	×	×	×
11	Student's Canteen	20	X	X	X	X	×	×	×	-
12	Play Ground for Girls	10	X	X	X	X	×	×	√	×
13	Play Ground for Boys	10	X	X	X	X	×	×	√	√
14	Professor's Qrs.	500	3	X	X	10	×	×	×	-
15	Teacher's Lodge	400	2	X	X	08	×	×	×	×
16	Employees Qrs.	350	X	X	X	05	×	×	√	√
17	Gardens	10	X	X	X	X	×	×	×	√
18	Library	235	1	1	2	40	×	×	√	×

B4. LANDSCAPE/ENVIRONMENT

Sl. No	Department/Block	Over all Green cover	Garden	Indigenous Trees/Plants	Exotic Plants /Animals	Overall Biodiversity	Landscape Management Plan	Natural water bodies
1	Vice Chancellor's Office	G	√	√	√	√	√	√
2	Registrar's Office	G	√	√	√	√	√	√
3	Finance Branch	G	√	√	√	√	√	√
4	Establishment & other offices	G	√	×	×	√	×	-
5	Computer Centre & Server Maintenance Facility	A	×	√	×	×	×	×
6	Academic Block	A	×	×	×	A	×	×
7	Kalu Kanya Mahavidyalay	A	×	P	×	A	×	×
8	Boys Hostel	G	×	×	×	A	×	×
9	Girls Hostel	A	×	×	×	A	×	×
10	Guest House	A	×	×	×	×	×	×
11	Student's Canteen	A	×	P	×	A	×	×
12	Play Ground for Girls	G	×	A	Nil	√	Nil	Nil
13	Play Ground for Boys	G	√	G	√	G	√	×
14	Professor's Qrs.	G	√	G	×	A	×	×
15	Teacher's Lodge	G	√	G	×	A	×	×
16	Employees Qrs.	G	√	G	×	G	×	Nil
17	Gardens	G	√	√	×	√	√	×
18	Library	A	×	A	√	Avg	×	×
G-Good, A-Average, P-Poor								

B5. BUILT-UP ENVIRONMENT

		*a	b	c	d	e	*f	g	*h	*i	j
Sl. No	Department/Block	Building type	Area in Sq. ft	Eco-friendliness	Fire prevent.	Aesthetic	Serenity of	Ladies	Recreation	Provision for differently abled	Toilets; Men, women,
1	Vice Chancellor's Office	C*i		G	√	G	G	√	×	√	2
2	Registrar's Office	C		G	√	G	√	×	×	×	1
3	Finance Branch	C		√	×	√	G	√		×	5-common
4	Establishment & other offices	C		G	×	G	G	×	×	×	--
5	Computer Centre & Server Maintenance Facility	C		P	×	P	A	×	×	√	1
6	Academic Block	C*i		G	√	A	A	√	√	√	8
7	Kalu Kanya Mahavidyalay	C*i		G	×	A	A	√	√	√	10
8	Boys Hostel	C*i		A	×	A	A	x	√	√	3
9	Girls Hostel	C*i		G	√	G	G	√	√	×	3
10	Guest House	C		A	√	A	A	×	×	√	5
11	Student's Canteen	C*i		G	×	A	A	×	×	√	1
12	Play Ground for Girls	C		A	×	A	G	x	×		x
13	Play Ground for Boys	C		G	√	G	G	×	×	√	x
14	Professor's Qrs.	C		G	×	√	*f	×	×	×	10
15	Teacher's Lodge	C		-	×		-	×	×	√	10
16	Employees Qrs.	C		G	√	G	√	×	×	√	10
17	Gardens	G		√	Nil	Nil	√	x	×	√	X
18	Library	*a		P	×	A	A	√	×	√	4

G-Good, A-Average, P-Poor C-Concrete,

3)* a-Concrete with heritage look

*i- Ramp available.

*a- Concrete- 3 floors

*f—Clean air- good; Paint- Good; Spacious

B6. TRANSPORTATION

	Description	a	b	c	d	e
Sl. No	Department/Block	Dept. Vehicle No	Members with own vehicles	Members using public transportation (%)	Use of Bicycles?	Vehicle pooling?
1	Vice Chancellor's Office	1	1	5	2	-
2	Registrar's Office	3	Staff cars	04	1	×
3	Finance Branch	√	x	8	2	×
4	Establishment & other offices	×	x	9	1	×
5	Computer Centre & Server Maintenance Facility	×	2	6	×	×
6	Academic Block	×	7	25	3	×
7	Kalu Kanya Mahavidyalay	×	3	20	4	×
8	Boys Hostel	√	x	x	×	×
9	Girls Hostel	√	x	x	×	×
10	Guest House	×	x	<60	×	×
11	Student's Canteen	×	x	<85	×	×
12	Play Ground for Girls	×	x	80	×	×
13	Play Ground for Boys	×	x	83	×	√
14	Professor's Qrs.	×	6	90%	×	×
15	Teacher's Lodge	×	3	<90%	×	×
16	Employees Qrs.	×	8	90%	×	×
17	Gardens	×	3	80%	×	×
18	Library	×	x	50%	-	×

B7. GREEN AGENDA IN SYLLABUS

Sl. No	Department /Block	Environmental education in syllabus	Green Research	Green Clubs	Animal Experiments ?.	Ethics committee?	Extension related to Environment
1	Non violence and Peace	√	√	√	×	√	√
2	Prakrit	-	×	√	x	x	x
3	Jain Philosophy	×	√	√	x	√	x
4	Yoga & Science of Living	√	×	√	x	√	√
5	Social Work	×	×	√	×	×	√
6	Education	×	-	×	×	×	√
7	English	√	×	×	×	×	x
8	Undergraduate Studies	√	×	√	×	×	√

Summary Observations

Water management: As such, wise use of water is a general practice in University. Rainwater harvesting is in practice.

Waste management: Land filling is the general waste management strategy adopted by the University. Waste is segregated into biodegradable and non-biodegradable categories for which dustbins have been placed in sufficient numbers. The biodegradable waste is subjected for composting.

Energy management: In addition to a 100kW Grid of Rajasthan Electricity Power Corporation, Solar Panels have been installed at the roof-top of various buildings and also on roads for lighting the streets. The University has replaced the conventional lighting system with the modern LED lights and has reduced the consumption, which is significantly visible in the relevant data.

Landscape/environment: Gardens have been developed on the campus and fairly good type of biodiversity is viewed around the campus.

Transportation: Majority of the students in the campus rely on public transport, indicating lesser carbon foot print of the student community. A good number of students use bicycles also for commuting. Vehicle pooling has also been promoted among students and faculty. The faculty and non-teaching staff voluntarily do not use any motorized vehicle on the first day of the calendar month with a view to reduce the carbon emission.

Increase of Awareness through teaching-learning process: Environmental studies is being taught as a compulsory subject in all the academic programmes.

Water Quality: Sweet potable water is available and treated water is used for human consumption at large. Some people also use the water stored in the underground tanks. Presence of coliform bacteria was not found in the samples tested. Contamination with sewage has not been found.

Swachhata Mission : Swacchta Mission has exhibited its success and as a result use of plastic carry bags, thermocole cups/plates and flex boards have decreased substantially inside the University campus. For managing organic wastes, installation of biogas plant is under consideration. There exists a system for segregation of the hazardous wastes. Toilets have been installed in good number on the campus and also in the hostels.

Plantation of trees: Indigenous trees have been planted on the campus and there is a marked increase in the number of trees every year. The campus enjoys very good number of birds which find their nests on these trees. Number of peacocks has increased substantially.

Governance: The University has come forward in a major way to have a paper-less office, which has resulted substantially in lessening the consumption of paper. The human resources are optimizing the use of electricity in day-to-day discharge of activities.

Areas of Improvement: Some Suggestions

- Framing of an explicit Environment Policy and it's early adoption should be taken up on priority by the University.
- JVBI should regularly organize mass awareness campaigns to educate the stakeholders regarding conservation of water and need for adoption of rain water harvesting and artificial recharge measures.
- The University should also strive hard to conduct training programmes for capacity building of teachers/officers/employees.
- Use of water saving devices like sprinklers, drip irrigation, close field distribution channels etc. should be encouraged.
- Modern horticultural management techniques need to be adopted for effective and optimum utilization of the available water resources for gardening and landscaping. This can be achieved by maintaining irrigation through minimum pumping hours.
- Salt resistant plants should be encouraged for sowing.
- Traditional rainwater harvesting structures like 'Tankas' for roof top rain water storage should be more encouraged for meeting day to day requirements. This will help in reducing ground water withdrawal.
- Small check dams or earthen dams, at suitable sites, may be constructed to store rainwater. This will increase recharge to ground water which ultimately result in increase of yield of wells.

- Metering of Water from bore well and other sources in different uses are not available.
- Water Meter should be installed and maintain the inventory of water resource.
- Stack height should be as per government rules.
- Storage of chemicals like; paints, gums resins, oils, lubricants, acids etc. in designated place and safety/warning signs should be displayed.
- Internal inspection system should be developed for various equipment available in campus.
- Waste Management plan should be put more effectively in place.
- Environmental drills for response against spillage and leakage of chemicals in the campus.
- Plastic usage can be reduced in university campus.
- The monthly inventory of e-waste is required to be maintained in formats on regular basis.

CONCLUDING REMARKS

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to Environmental aspects. The JVBI has taken a pro-active step to constitute an Environmental Committee for sustainable use of resources. An overall 30% of university campus has been dedicated for landscaping. The audit has identified several observations for making the campus premise more environment- friendly. The recommendations are also mentioned with observations for university campus team to initiate actions.

The audit team opines that the overall site is maintained well from environmental perspective. There is no negative observations but few things are important to initiate at an early date, which include maintenance of waste management records of hazardous waste, increase in rainwater harvesting and ground recharge facilities; enrichment of water balance cycle, periodic inspection of buildings; framing of an explicit environment policy, increase of alternative sources of energy; very specifically the solar energy and increase of composting facilities at campus.

APPENDIX: QUESTIONNAIRE

Jain Vishva Bharti Institute (Deemed University)
Ladnun, Rajasthan

ENVIRONMENTAL AUDIT -QUESTIONNAIRE

A. What is the total population of the Institute?

	Male	Female	Total
Students			
Teachers			
Non Teaching Staff			
Sub Total			
Approximate Number of Visitors (Per day)			50
What is the total number of working days of your campus in a year?			286

B. Where is the campus located?

The campus is Located in the heart of Ladnun under the District Nagaur (Rajasthan).

C. Which of the following are available in your institute?

Garden area	Available
Play ground	Available
Kitchen with non-smoking cooking facilities	Available
Toilets	Available
Garbage Or Waste Store Yard	Available
Laboratory	Available
Canteen	Available
Hostel Facility (numbers)	Available
Guest House	Available

D. Which of the following are located near your institute?

Municipal dump yard	Not in vicinity of institute
Garbage heap	No Garbage heaps
Public convenience	Yes , public convenience is available
Sewer line	No
Stagnant water	No stagnant water
Open drainage	No
Industry – (Mention the type)	No
Bus / Railway station	Yes; within 2 kms.
Market / Shopping complex / Public halls	Yes; within 1-2 kms.

E. WASTE MINIMIZATION AND RECYCLING

1.	Does your institute generate any waste? If so, what are they?	Yes, Solid waste, Canteen waste, paper, plastic, Horticulture Waste etc			
2.	What is the approximate amount of waste generated per day? (in Kilograms/month) (approx.)	Bio Degradable	Non-Biodegradable	Hazardous	others
		100kg	25kg	Limited	<1kg
3.	How is the waste generated in the institute managed? By Composting Recycling Reusing Others (specify)	Reuse of one side printed Paper for internal communication. Toilet water is discharged to sealed sumps. Domestic Waste is collected by the local Municipality. Dedicated Waste bins are provided at campus for biodegradable and non-biodegradable waste. Horticulture waste is composted.			
4.	Do you use recycled paper in institute?	Yes			
5.	Do you use reused paper in institute?	Yes			
6.	How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, please specify.	Not done in locality for awareness of resource crunches.			
7.	Can you achieve zero garbage in your institute? If yes, how?	Not yet achieved. Possible through waste management plan.			

F. GREENING THE CAMPUS

8.	Is there a garden in your institute?	Yes, about 5000Sq. Meter area developed as Gardens.	
9.	Do students spend time in the garden?	2-4 Hours during winters	
10.	Total number of Plants in Campus	Plant type	Approx. number
		Trees	1180
		Ornamental	1020
11.	Dominant plants on the campus. (Trees, vegetables, herbs, etc.)	Ashoka, Ficus Religeosa, Boganvellia, Arjuna, Mango etc.	
12.	Is the university campus have any Horticulture Department	No But Gardeners have been appointed	
		Services of External Experts are also taken occasionally	
13.	Number of Tree Plantation Drives organized by School per annum. (If Any)	Yes, Two Tree Plantation Drives have been Organized every year during Monsoon. 150 trees and 50 shrubs planted during 2918-19.	
14.	Number of Trees Planted in Last Year.	100	
	Survival Rate	75%	
15.	Plant Distribution Program for Students and Community	Yes, Saplings are distributed to Students and visitors at various Occasions. Besides this landscape of some area in city are developed by Institute.	
16	Plant Ownership Program	Various Trees are Planted and owned by Visitors as well as students. The Name plates are also displayed near the plants.	

G. ENERGY

13.	List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.	Electricity saves by use of CFL/LED bulbs for illumination, LPG is saved by use of Pressure cookers for cooking food. Alternate source of energy i.e. Solar Heater has been installed.
14.	Are there any energy saving methods employed in your institute? If yes, please specify. If no, suggest some	Yes, Renewable source of energy through solar plant (110 KW) in in commissioning phase. Massages are displayed at various locations to Aware the Peoples about Energy Savings. Use of Natural Lights and Natural Ventilation are promoted.

15.	How many CFL/LED bulbs has your institute installed?	95 % of Total Conventional bulbs are replaced by LED/CFL Lights.
16.	Are any alternative energy sources employed / installed in your institute? (photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Specify.	Yes, photovoltaic cells for solar energy, energy efficient stoves
17.	Do you run "switch off" drills at institute?	Yes
18.	Are your computers and other equipment's put on power-saving mode?	Yes, In Practice
19.	Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?	No

H. WATER CONSERVATION

20.	List four uses of water in your institute	Basic use of water in campus: Drinking – 2000KL/month Gardening – STP treated water Kitchen and Toilets – 651KL/month Others – 1350 KL/month
21.	How does your institute store water? Are there any water saving techniques followed in your institute?	01# Overhead Water Tanks and 05# Underground Water tank installed for storage of water. Overflow of water is controlled by valves Which have been provided in water supply system.
22.	If there is water wastage, specify why and How can the wastage be prevented / stopped?	No
23.	Locate the point of entry of water and point of exit of waste water in your institute. Entry- Exit-	Entry- Water comes from two Submersible Pumps at campus Exit- From Water Drainage System to STP and ETP
24.	Write down four ways that could reduce the amount of water used in your institute	Basic Four ways: Closing the taps after usage Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage. Water Conservation awareness for Students, Non-teaching employees and Teachers

25.	Record water use from the institute water meter for six months (record at the same time of each day). At the end of the period, compile a table to show how many litres of water have been used.	No, Water Meters not available for calculation of usage of total quantity only.
26.	Does your institute harvest rain water?	Yes. Modern rain water harvesting systems are available.
27.	Is there any water recycling System.	No

I. CLEAN AIR

28.	Are the Rooms in Campus are Well Ventilated?	Yes				
29.	Window Floor ratio of the Rooms	Very Good				
30.	What is the ownership of the vehicles used (Please Tick · only one)		Yes			
			Operator-owned vehicles			
		·	Universityl-owned vehicles			
			A combination of campus-owned and operator-owned vehicles			
31.	Provide details of University-owned motorized vehicles?	Buses	Cars	Vans	Other	Total
	No. of vehicles	4	11	02	09	26
	No. of vehicles more than five years old	--	--	02	02	--
	No. of Air conditioned vehicles	--	11	01	--	12
	PUC done	Yes	Yes	Yes	Yes	Yes
32.	Specify the type of fuel used by your school's vehicles:	Buses	Cars	Vans	Other	
	Diesel	All	03	01	--	
	Petrol	--	-08	01	--	
	CNG	--	--	--	--	
	LPG	--	--	--	--	
	Electric	--	--	--	1	
33.	Air Quality Monitoring Program (If Any)	Yes, Monitoring is being done by approved Laboratory				
34.	Students suffer from respiratory ailments? (IfAny)	No				
35.	Details of Genset	Yes, 4 Numbers of Kirlosker Silent DG Set The capacities of DG's are 125 KVA				

J. ANIMAL WELFARE

37	List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)	Birds and Squirrels are commonly found in campus. Dominant bird is Peacock. A variety of birds species and other flora and fauna available, which are not harmful to human. Gardens are well protected and hunting is strictly prohibited.
36.	How many dogs in your area have undergone Animal Birth Control - Anti Rabies (ABC - AR)?	Not applicable since stray dogs are rare/
37.	Does your institute have a Biodiversity Programme?	Awareness programmes are run often by the Dept. of Education and Social Work.

J. ENVIRONMENTAL LEGISLATIVE COMPLIANCE

38.	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
39.	Does your institute have any rules to protect the environment? List possible rules you could include.	No framed, but awareness activities are carried out.
40.	Dose Environmental Ambient Air Quality Monitoring conducted by the Institute?	Yes
41.	Dose Environmental Water and Wastewater Quality monitoring conducted by the Institute?	Yes
42.	Dose stack monitoring of DG sets conducted bythe Institute?	Yes
43.	Is any warning notice, letter issued by state government bodies?	No
44.	Dose any Hazardous waste generated by the Institute? If yes explain its category and disposal method	No
45.	Dose any Bio medical waste generated by the Institute? If yes explain its category and disposal method	No

K. GENERAL

46.	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
47.	Does your institute have any rules to protect the environment? List possible rules you could include.	No
48.	Does housekeeping schedule in your campus?	Yes, under the Swatch Bharat movement
49.	Are students and faculties aware of environmental cleanliness ways? If Yes Explain	Yes, Periodically pollution reduction, plantation, energy conservation awareness programmes are organized campaigns carried out by institute
50.	Dose Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?	Yes
51.	Dose Institute participated in National and Local Environmental Protection Movement?	Yes, Swatch Bharat Abhiyan by students at campus.
52.	Dose Institute has any Recognition/certification for environment friendliness?	No
53.	Dose Institute using renewable energy?	Yes
54.	Dose Institution conducts a green/environmental audit of its campus?	No, This is first environmental audit done by institution
55.	Has the institution been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	Yes. NAAC has accredited the University on three occasions in the past

L. BEST PRACTICES/INITIATIVES FOR ENVIRONMENT

A	Renewable Energy Solar water Heater (02 Numbers) at the campus.	
B	Biodiversity Conservation Flora and fauna consurvation	It is in schedule plan of Campus Environment committee
C	Tree Plantation Drives Two Drives Annually as well as Every Guest is honored by Tree Plantation at Campus.	Yes
d	Ground Water Recharge 5 units of Rain Water Harvesting System.	Yes
E	Pollution Reduction Personal Vehicles (Students) not allowed at campus	Reduction in Air Pollution through vehicular emission. Usage of public transport is encouraged.
F	E Waste Management	Old Computers Donated to Vimal Vidya Vihar and other Schools
G	Solid Waste Management Lifting of garbage from SGT campus on alternate day by Municipal Corporation.	Yes
H	Adoption of Village CSR	5 Villages have been adopted
I	Water Conservation	No
j	Corporate Resource Center (CRC)	JVBI Corporate Resource Center (CRC) is dedicated to nurturing future leaders