




**DISTRICT SURVEY REPORT**  
**FOR**  
**SAND MINING OR RIVER BED MINING**  
**OF**  
**DISTRICT NARMADAPURAM**



**IN COMPLIANCE OF MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE,  
NOTIFICATION DATED 25.07.2018 (THE GAZETTE OF INDIA)**

**PREPARED BY**  
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**MINING INSPECTOR (M.Sc. Geology)**  
**DISTRICT NARMADAPURAM**

**YEAR-2022**

  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-3, Anara Colony, Bhopal (M.P.)

कार्यालय कलेक्टर (खनिज शाखा) जिला-नर्मदापुरम (म0प्र0)

ई-मेल :- [modgmhos@mp.gov.in](mailto:modgmhos@mp.gov.in)

क्रमांक / ..6.50.../खनिज / 2022-23  
प्रति,

नर्मदापुरम, दिनांक /16.../...9.../2022


कार्यपालक संचालक,  
राज्य स्तरीय पर्यावरणीय समाघात समिति (SEIAA/SEAC)  
पर्यावरण परिसर, ई-5, अरेरा कॉलोनी,  
भोपाल (म0प्र0)

विषय:- जिला-नर्मदापुरम की रेत खनिज की संशोधित जिला सर्वेक्षण रिपोर्ट (DSR) के संबंध में।

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उपरोक्त विषयान्तर्गत राज्य स्तरीय मूल्यांकन समिति की 588 वीं बैठक दिनांक 16/08/2022 में दिये गये निर्देशानुसार जिला-नर्मदापुरम की रेत खनिज की संशोधित जिला सर्वेक्षण रिपोर्ट (DSR) अग्रिम कार्यवाही हेतु मूलतः अग्रेषित है।

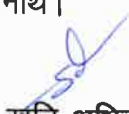
संलग्न:- उपरोक्तानुसार।

  
जिला खनि अधिकारी  
जिला-नर्मदापुरम(म0प्र0)

पृ0क्रमांक / ..... / खनिज / 2022-23  
प्रतिलिपि :-

नर्मदापुरम, दिनांक / ..... / ..... / 2022

- 1- प्रमुख सचिव, मध्यप्रदेश शासन, खनिज साधन विभाग, मंत्रालय भोपाल की ओर सादर सूचनार्थ संप्रेषित।
- 2- संचालक, प्रशासन एवं खनिकर्म म.प्र. भोपाल की ओर सादर सूचनार्थ संप्रेषित।
- 3- कार्यवाहक संचालक दि.म.प्र. स्टेट माईनिंग कार्पोरेशन लि. भोपाल की ओर सूचनार्थ।

  
जिला खनि अधिकारी  
जिला-नर्मदापुरम(म0प्र0)

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**PREFACE**

The district survey report for minor mineral has been prepared with Reference to amended Notification on 25<sup>th</sup> July 2020 of Ministry of Environment, Forest and Climate Change, & Enforcement & Monitoring and direction given by Directorate of Geology & Mining (DGM) Bhopal for the preparation of District survey report applicable for Sand Mining or River Bed Mining.



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State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parishad  
E-5, Arera Colony, Bhopal (M.P.)

**1. INTRODUCTION**

Narmadapuram formerly known as Hoshangabad district has predominantly an agricultural based economy. It is situated in the eastern part of Madhya Pradesh. Prior to 1998-99 District Harda was a part of Hoshangabad District. After the division of the district, the present area of the district is 5408 Sq. Km. It is surrounded by Sehore and Raisen districts in the North, Narsinghpur district in the east, Chhindwara district in the south west, Betul district in the south and Harda district in the west. Hoshangabad district lies between north latitudes 22° 15' and 23° 00' and east longitudes 77° 15' and 78° 42' in part of survey of India toposheet Nos, 55F & 55J. Hoshangabad is the district headquarter and Itarsi, Sohagpur, Piparia, Pachmarhi and Bankheri are some of the major towns. Itarsi is a very important railway Junction lying on Delhi-Chennai, Delhi-Bangalore and Patna- Mumbai railway routes. National Highway No. 69 and State Highway No. 21 and 22 pass through the district. The villages in the district are approachable by fair weather motorable tract.

The district is divided into eight Tehsils namely Babai, Bankhedi, Hoshangabad, Itarsi, Piparia, Seonimalwa, Sohagpur and Dolaria and seven development Blocks, namely Bankhedi Block, Pipariya Block, Sohagpur Block, Babai Block, Hoshangabad Block, Kesla Block (Itarsi Tehsil) and Seoni Malwa Block. The total population of the district is 1,240,975 as per Census 2011.

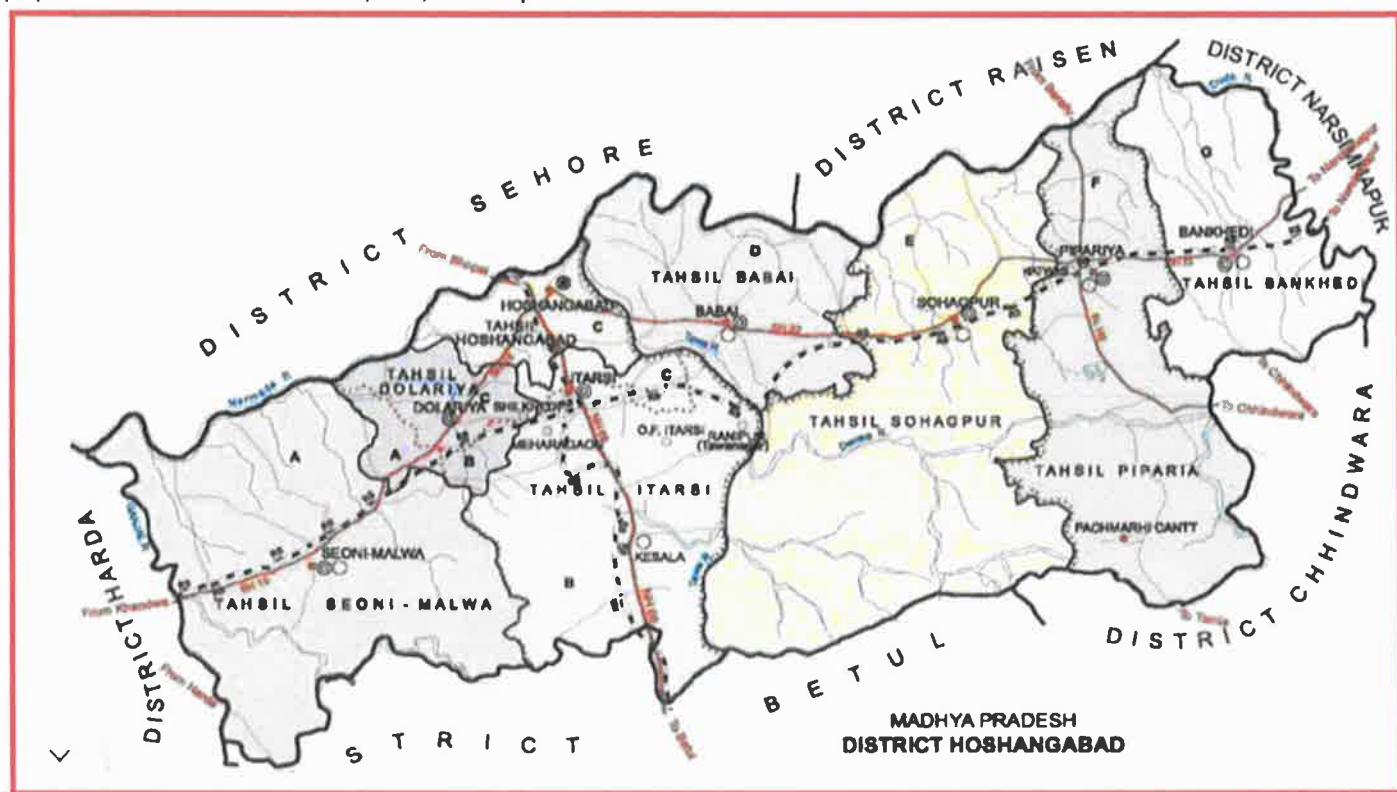


Image showing tehsil map of Narmadapuram district

## DISTRICT SURVEY REPORT OF NARMADAPURAM

### LOCATION:

District Narmadapuram lies in the central Narmada valley and on the northern fringe of Satpura plateau. It lies between 21° 53' and 22° 59' North latitude and 76° 47' and 78° 44' East longitudes. In shape, it is an irregular strip elongated along the southern banks of Narmada River. Its greatest length from south-east to north-east is 160 kms. Northern boundary of the district is river Narmada. Across this, the district of Raisen and Sehore lies. The district of Betul lies in the south, whereas the Harda district faces with the western and south-western boundaries and Narsimhapur and Chhindwara districts lies to the north-eastern and southeastern sides of the district respectively. As per the 2011 Census, its geographical area is 6,703 Sq.kms. It is the 18th largest district of the state in respect of area which is 2.17% of the total area 308,244 Sq.km. of Madhya Pradesh. Physiographically the district may be divided under two natural divisions, viz., Satpura plateau and the Narmada valley. state boundary.



2. OVERVIEW OF MINING ACTIVITY IN THE DISTRICT:

Narmadapuram district holds a distinct place in the state with respect to ideal geographical position in the state and the availability of sand mineral resources.

In the district mainly lime-stone (for minor extent), clay, gitti, murum and sand are found. Out of this limestone is considered as major mineral and rest clay, and sand is considered as minor mineral.

Majority of sand has been extracted from Narmada and Tawa rivers. In the district bricks kiln based on chimney is major industry.

DISTRICT SURVEY REPORT OF NARMADAPURAM

**3. THE LIST OF MINING LEASES IN THE DISTRICT WITH LOCATION, AREA AND PERIOD OF VALIDITY:**

Sr No.	Tehsil	Village	Khasra No.	Area (In Ha)	River Name	Latitude-Longitude
1	Narmadapuram	Bandrabhan	207	10.555	Tawa	(A) 22°47'28.332"N 77°47'34.446"E (B) 22°47'31.726"N 77°47'26.764"E (C) 22°47'19.696"N 77°47'12.470"E (D) 22°47'19.547"N 77°47'26.261"E
2	Narmadapuram	Jasalpur-1	691/1	10.000	Tawa	(A) 22°44'19.48"N 77°48'19.11"E (B) 22°44'26.99"N 77°48'22.68"E (C) 22°44'18.27"N 77°48'34.73"E (D) 22°44'11.49"N 77°48'30.67"E
3	Narmadapuram	Nimsadiya-2	1163	20.243	Tawa	(A) 22°43'21.75"N, 77°49'26.44"E (B) 22°43'15.50"N, 77°49'33.59"E (C) 22°43'28.94"N, 77°49'54.23"E (D) 22°43'35.55"N, 77°49'49.74"E
4	Narmadapuram	Devlakhedi	60	12.145	Tawa	(E) 22°42'55.22"N 77°49'54.26"E (F) 22°42'56.66"N 77°50'0.52"E (G) 22°42'36.62"N 77°50'6.55"E (H) 22°42'35.32"N 77°49'59.89"E
5	Narmadapuram	Mehraghat-10	365	11.655	Tawa	(A) 22°41'18.84"N 77°50'16.18"E (B) 22°41'19.16"N 77°50'38.28"E (C) 22°41'13.26"N 77°50'40.40"E (D) 22°41'13.10"N 77°50'18.42"E
6	Narmadapuram	Horiyapipar	226	19.746	Tawa	(A) 22°40'22.53"N, 77°51'11.84"E (B) 22°40'17.00"N, 77°51'20.20"E (C) 22°40'9.98"N, 77°51'1.53"E (D) 22°40'3.99" N, 77°51'13.82"E
7	Makhannagar	Rajon-1	181/1	17.500	Tawa	(A) 22°40'13.51"N 77°55'30.53"E (B) 22°40'20.55"N 77°55'39.35"E (C) 22°40'6.85"N 77°55'47.68"E (D) 22°40'2.60"N 77°55'41.51"E (E) 22°40'2.99"N 77°55'39.32"E
8	Makhannagar	Rajon-2	181/1	17.500	Tawa	(A) 22°40'20.61"N 77°55'39.36"E (B) 22°40'26.95"N 77°55'47.44"E (C) 22°40'24.27"N 77°55'50.80"E (D) 22°40'13.27"N 77°55'58.06"E (E) 22°40'6.62"N 77°55'48.04"E
9	Makhannagar	Sangakheda khurd	1	10.000	Narmada	1. 22°48'7.60"N, 78° 2'21.60"E 2. 22°48'24.67"N, 78° 2'47.77"E 3. 22°48'4.34"N, 78° 2'24.09"E 4. 22°48'20.38"N, 78° 2'48.65"E
10	Itarsi	Maroda-1	1	22.500	Tawa	(A) 22°40'5.08"N 77°54'42.04"E (B) 22°40'27.45"N 77°54'47.19"E (C) 22°40'21.89"N 77°54'58.63"E (D) 22°40'2.57"N 77°54'52.58"E
11	Sohagpur	Revamuhari	114	10.000	Narmada	1. 22°51'27.05"N, 78° 9'19.15"E 2. 22°51'25.30"N, 78° 9'21.25"E 3. 22°51'48.96"N, 78° 9'46.30"E 4. 22°51'45.77"N, 78° 9'46.88"E



DISTRICT SURVEY REPORT OF NARMADAPURAM

12	Sivni Malwa	Ramgarh-1	1/1	11.000	Narmada	1. 22°35'56.76"N, 77°15'14.31"E 2. 22°35'53.24"N, 77°15'18.61"E 3. 22°36'7.99"N, 77°15'26.94"E 4. 22°36'2.67"N, 77°15'30.54"E
13	Sivni Malwa	Ramgarh-2	1/1	11.000	Narmada	1. 22°36'10.02"N, 77°15'29.00"E 2. 22°36'19.29"N, 77°15'41.53"E 3. 22°36'4.36"N, 77°15'33.19"E 4. 22°36'11.06"N, 77°15'45.31"E
14	Sivni Malwa	Dethi-2	291,559	6.433	Ganjal	1. 22°24'9.34"N, 77°18'45.06"E 2. 22°24'8.20"N, 77°18'44.13"E 3. 22°24'6.84"N, 77°18'59.27"E 4. 22°24'5.65"N, 77°18'59.64"E 5. 22°24'8.55"N, 77°19'19.23"E 6. 22°24'7.38"N, 77°19'19.34"E 7. 22°24'17.08"N, 77°19'44.84"E 8. 22°24'15.52"N, 77°19'45.42"E
15	Sivni Malwa	Guranjghat	1/1	9.000	Ganjal	1. 22°21'39.06"N 77°21'57.35"E 2. 22°21'38.69"N 77°21'59.62"E 3. 22°21'24.40"N 77°22'32.92"E 4. 22°21'23.17"N 77°22'32.84"E
16	Pipariya	Jamara	137	19.938	Korni	1. 22°50'42.85"N, 78°18'39.52"E 2. 22°50'40.95"N, 78°18'36.94"E 3. 22°49'23.17"N, 78°19'20.29"E 4. 22°49'22.29"N, 78°19'18.65"E
17	Pipariya	Surelakala	1	8.377	Korni	1. 22°49'19.27"N, 78°19'26.26"E 2. 22°49'20.15"N, 78°19'26.62"E 3. 22°49'24.08"N, 78°19'54.83"E 4. 22°49'27.67"N, 78°19'52.95"E
18	Pipariya	Dhadiyakishore-2	115	8.522	Anjan	1. 22°54'53.90"N, 78°23'32.98"E 2. 22°54'54.29"N, 78°23'34.32"E 3. 22°54'45.45"N, 78°24'3.53"E 4. 22°54'46.71"N, 78°24'3.22"E
19	Pipariya	Singhodi	206	6.00	Anjan	1. 22°45'48.02"N, 78°27'39.73"E 2. 22°45'45.29"N, 78°27'40.56"E 3. 22°45'24.09"N, 78°27'37.89"E 4. 22°45'27.64"N, 78°27'35.28"E
20	Bankhedhi	Bedar	58	16.976	Dudhi	(A) 22°56'54.86"N 78°30'10.86"E (B) 22°57'2.51"N 78°30'16.39"E (C) 22°57'2.01"N 78°30'34.99"E (D) 22°56'52.77"N 78°30'34.80"E
21	Narmadapuram	Bandrabhan	207	4.858	Tawa	(A) 22°48'2.73"N 77°47'0.34"E (B) 22°48'8.07"N 77°47'13.77"E (C) 22°48'4.59"N 77°47'14.39"E (D) 22°47'58.71"N 77°47'1.65"E
22	Narmadapuram	Dogarwada	3	5.00	Narmada	(A) 22°44'30.79"N 77°40'45.11"E (B) 22°44'41.36"N 77°40'50.21"E (C) 22°44'37.57"N 77°40'56.71"E (D) 22°44'30.88"N 77°40'51.44"E (E) 22°44'28.05"N 77°40'49.40"E
23	Narmadapuram	Barandua	118/1	11.000	Narmada	(A) 22°44'14.27"N, 77°37'1.10"E (B) 22°44'11.65"N, 77°37'4.63"E (C) 22°44'31.24"N, 77°37'15.67"E (D) 22°44'26.86"N, 77°37'20.52"E

DISTRICT SURVEY REPORT OF NARMADAPURAM

24	Makhannagar	Balabhet-1	1/1	5.00	Tawa	(A) 22°46'28.49"N 77°47'4.76"E (B) 22°46'29.93"N 77°47'12.78"E (C) 22°46'23.05"N 77°47'14.13"E (D) 22°46'21.75"N 77°47'6.08"E
25	Makhannagar	Chaplasar-1	1	5.00	Tawa	(A) 22°45'26.37"N 77°47'30.44"E (B) 22°45'29.96"N 77°47'36.30"E (C) 22°45'22.86"N 77°47'40.51"E (D) 22°45'19.49"N 77°47'34.74"E
26	Makhannagar	Jhalsarseth-1	92/1.93/ 3,94/1	5.00	Tawa	(A) 22°44'18.54"N 77°49'30.97"E (B) 22°44'15.62"N 77°49'39.89"E (C) 22°44'9.21"N 77°49'38.13"E (D) 22°44'11.34"N 77°49'30.58"E
27	Makhannagar	Jawli	380	5.00	Tawa	(A) 22°41'9.16"N 77°53'57.41"E (B) 22°41'8.75"N 77°54'6.72"E (C) 22°41'2.58"N 77°54'6.22"E (D) 22°41'3.00"N 77°53'57.16"E
28	Makhannagar	Rajon-3	181/1	4.00	Tawa	(A) 22°40'58.39"N 77°54'37.69"E (B) 22°40'57.15"N 77°54'45.52"E (C) 22°40'50.84"N 77°54'45.40"E (D) 22°40'51.96"N 77°54'38.09"E
29	Itarsi	Kesla	432/1	4.00	Khahra	(A) 22°28'7.60"N 77°50'20.34"E (B) 22°28'9.23"N 77°50'20.84"E (C) 22°28'8.74"N 77°50'36.55"E (D) 22°28'7.21"N 77°50'46.66"E (E) 22°28'6.26"N 77°50'45.99"E (F) 22°28'6.78"N 77°50'36.64"E
30	Itarsi	Kasdakhurd	263,283	4.000	Sukhtawa	(A) 22°24'36.28"N 77°48'47.07"E (B) 22°24'36.46"N 77°48'48.26"E (C) 22°24'22.06"N 77°48'58.09"E (D) 22°24'20.55"N 77°48'57.57"E (E) 22°24'24.46"N 77°48'38.32"E (F) 22°24'25.43"N 77°48'38.01"E (G) 22°24'23.31"N 77°48'51.36"E (H) 22°24'24.63"N 77°48'49.74"E (I) 22°24'24.73"N 77°48'51.02"E (J) 22°24'23.07"N 77°48'52.69"E (K) 22°24'23.14"N 77°48'53.84"E (L) 22°24'27.91"N 77°48'50.70"E (M) 22°24'28.34"N 77°48'47.08"E (N) 22°24'28.86"N 77°48'47.69"E (O) 22°24'28.53"N 77°48'50.54"E
31	Itarsi	Kasdaraiyatwadi	18	4.00	Sukhtawa	(A) 22°24'27.22"N 77°49'43.33"E (B) 22°24'30.75"N 77°50'8.19"E (C) 22°24'28.56"N 77°50'8.51"E (D) 22°24'25.91"N 77°49'43.78"E

DISTRICT SURVEY REPORT OF NARMADAPURAM

32	Itarsi	Choukipura	76,80	2.820	Sukhtawa	(A) 22°24'4.44"N 77°50'22.50"E (B) 22°24'4.10"N 77°50'22.58"E (C) 22°24'2.20"N 77°50'22.39"E (D) 22°24'2.20"N 77°50'22.03"E (E) 22°23'55.71"N 77°50'20.67"E (F) 22°23'54.13"N 77°50'24.50"E (G) 22°23'49.25"N 77°50'29.02"E (H) 22°23'45.09"N 77°50'28.64"E (I) 22°23'45.10"N 77°50'27.99"E (J) 22°23'48.78"N 77°50'27.39"E (K) 22°23'53.48"N 77°50'23.89"E (L) 22°23'54.15"N 77°50'21.95"E (M) 22°23'47.31"N 77°50'12.45"E (N) 22°23'47.78"N 77°50'12.31"E (O) 22°23'55.06"N 77°50'19.39"E (P) 22°24'4.65"N 77°50'19.62"E (Q) 22°24'5.11"N 77°50'21.31"E
33	Pipariya	Sarrakishore	32	4.00	Narmada	1. 22°55'8.02"N,78°19'38.34"E 2. 22°55'5.05"N,78°19'39.41"E 3. 22°55'1.31"N,78°19'25.96"E 4. 22°54'58.55"N,78°19'27.53"E
34	Pipariya	Markadhana	86	4.00	Korni	(A) 22°48'53.01"N 78°22'19.00"E (B) 22°48'52.89"N 78°22'21.13"E (C) 22°48'34.71"N 78°22'46.33"E (D) 22°48'34.33"N 78°22'46.10"E
35	Bankhedhi	Malhanwada	344	4.00	Dudhi	(A) 22°49'59.56"N 78°36'16.19"E (B) 22°50'0.47"N 78°36'17.70"E (C) 22°49'40.59"N 78°36'21.44"E (D) 22°49'41.16"N 78°36'20.04"E
36	Bankhedhi	Murgidhana	354	4.00	Dudhi	(A) 22°45'43.31"N 78°37'48.51"E (B) 22°45'44.24"N 78°37'50.78"E (C) 22°45'27.58"N 78°37'56.24"E (D) 22°45'26.23"N 78°37'54.83"E
37	Bankhedhi	Kamti	332	5.00	Dudhi	(A) 22°47'0.74"N, 78°38'0.30"E (B) 22°47'0.74"N, 78°38'2.50"E (C) 22°46'32.74"N, 78°38'3.08"E (D) 22°46'32.39"N, 78°38'4.63"E
38	Bankhedhi	Khapakhurd	89	4.00	Dudhi	(A) 22°48'54.25"N,78°36'53.34"E (B) 22°49'10.61"N, 78°37'3.17"E (C) 22°48'53.24"N,78°36'55.30"E (D) 22°49'8.09"N, 78°37'3.90"E
39	Bankhedhi	Junheta	1	4.00	Dudhi	(A) 22°48'42.18"N 78°35'49.70"E (B) 22°48'37.86"N 78°35'50.47"E (C) 22°48'38.42"N 78°36'4.00"E (D) 22°48'42.65"N 78°36'3.11"E
40	Bankhedhi	Vahravan	141	4.00	Dudhi	(A) 22°51'20.63"N 78°34'58.42"E (B) 22°51'22.16"N 78°34'59.15"E (C) 22°51'13.09"N 78°35'18.97"E (D) 22°51'11.20"N 78°35'18.23"E
41	Bankhedhi	Pipariya Raja-2	118	4.040	Dudhi	(A) 22°57'16.42"N 78°31'11.44"E (B) 22°57'19.46"N 78°31'18.19"E (C) 22°57'14.83"N 78°31'22.20"E (D) 22°57'14.37"N 78°31'21.29"E (E) 22°57'11.02"N 78°31'14.73"E

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42	Sivni Malwa	Bavri-1	137/1	4.000	Narmada	(A) 22°36'12.45"N,77°21'45.61"E (B) 22°36'19.43"N,77°21'57.59"E (C) 22°36'10.11"N,77°21'47.24"E (D) 22°36'16.12"N,77°21'58.88"E
43	Sivni Malwa	Gwadi	37/1	4.00	Narmada	(A) 22°38'31.29"N,77°27'37.19"E (B) 22°38'33.36"N,77°27'35.79"E (C) 22°38'41.63"N,77°27'33.36"E (D) 22°38'39.00"N,77°27'54.37"E (E) 22°38'35.60"N,77°27'46.68"E (F) 22°38'36.13"N,77°27'46.26"E (G) 22°38'33.48"N,77°27'38.83"E (H) 22°38'32.38"N,77°27'39.10"E
44	Sivni Malwa	Surajpur	27	2.000	Ganjal	1. 22°22'15.35"N 77°26'1.22"E 2. 22°22'13.94"N 77°25'59.29"E 3. 22°22'7.12"N 77°26'6.18"E 4. 22°22'5.89"N 77°26'4.17"E
45	Sivni Malwa	Kothra	01	10.000	Ganjal	1. 22°25'37.59"N, 77°18'24.40"E 2. 22°25'33.64"N, 77°18'26.06"E 3. 22°24'34.00"N, 77°18'19.43"E 4. 22°24'36.20"N, 77°18'20.80"E
46	Narmadapuram	Bandrabhan	207	7.815	Ganjal	(A) 22°48'9.04"N, 77°47'25.11"E (B) 22°48'4.13"N, 77°47'41.96"E (C) 22°47'58.85"N, 77°47'31.13"E (D) 22°47'59.65"N, 77°47'29.49"E (E) 22°48'0.62"N, 77°47'29.56"E (F) 22°48'3.79"N, 77°47'24.19"E
47	Narmadapuram	Bandrabhan	207	11.00	Tawa	(A) 22°47'58.85"N, 77°47'31.15"E (B) 22°48'2.88"N, 77°47'39.20"E (C) 22°47'45.73"N, 77°47'40.70"E (D) 22°47'45.63"N, 77°47'33.58"E
48	Narmadapuram	Bandrabhan	207	10.000	Tawa	(A) 22°47'32.26"N, 77°47'27.18"E (B) 22°47'42.55"N, 77°47'33.94"E (C) 22°47'28.46"N, 77°47'34.21"E (D) 22°47'42.49"N, 77°47'43.28"E
49	Narmadapuram	Bandrabhan	207	10.000	Tawa	(A) 22°47'21.00"N, 77°47'14.24"E (B) 22°47'20.49"N, 77°47'26.81"E (C) 22°47'10.45"N, 77°47'17.55"E (D) 22°47'14.64"N, 77°47'5.71"E
50	Narmadapuram	Bandrabhan	207	10.555	Tawa	(A) 22°47'13.81"N, 77°47'4.53"E (B) 22°47'9.66"N, 77°47'16.53"E (C) 22°47'2.15"N, 77°47'10.35"E (D) 22°47'2.55"N, 77°46'55.27"E
51	Narmadapuram	Bandrabhan	207	10.00	Tawa	(A) 22°47'5.59"N, 77°46'58.83"E (B) 22°47'4.34"N, 77°47'12.96"E (C) 22°46'56.34"N, 77°47'8.27"E (D) 22°46'57.61"N, 77°46'53.33"E
52	Narmadapuram	Bandrabhan	207	10.00	Tawa	(A) 22°46'35.04"N, 77°46'44.45"E (B) 22°46'35.35"N, 77°47'03.92"E (C) 22°46'29.24"N, 77°47'3.85"E (D) 22°46'29.34"N, 77°46'43.29"E

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53	Narmadapuram	Bandrabhan	207	31.110	Tawa	(A) 22°46'36.24"N, 77°46'47.35"E (B) 22°46'36.02"N, 77°47'6.33"E (C) 22°46'18.58"N, 77°47'7.09"E (D) 22°46'18.49"N, 77°46'47.00"E
54	Narmadapuram	Bandrabhan	207	10.000	Tawa	(A) 22°46'11.98"N, 77°46'45.27"E (B) 22°46'12.93"N, 77°47'5.80"E (C) 22°46'7.68"N, 77°47'7.10"E (D) 22°46'6.65"N, 77°46'46.43"E
55	Narmadapuram	Bandrabhan	207	10.555	Tawa	(A) 22°46'6.65"N, 77°46'46.38"E (B) 22°46'7.63"N, 77°47'7.15"E (C) 22°46'1.90"N, 77°47'8.45"E (D) 22°46'1.16"N, 77°46'48.22"E
56	Narmadapuram	Raipur-21,22,23	01	30.555	Tawa	(A) 22°45'36.78"N, 77°46'53.98"E (B) 22°45'37.54"N, 77°47'17.33"E (C) 22°45'24.90"N, 77°47'23.20"E (D) 22°45'23.41"N, 77°46'54.18"E
57	Narmadapuram	Raipur-24	01	10.555	Tawa	(A) 22°45'23.46"N, 77°46'54.20"E (B) 22°45'25.01"N, 77°47'23.36"E (C) 22°45'20.63"N, 77°47'26.15"E (D) 22°45'19.86"N, 77°46'56.41"E
58	Narmadapuram	Raipur-25	01	10.000	Tawa	(A) 22°45'19.82"N, 77°46'56.50"E (B) 22°45'20.58"N, 77°47'26.24"E (C) 22°45'15.73"N, 77°47'28.73"E (D) 22°45'14.93"N, 77°46'0.42"E
59	Narmadapuram	Raipur-26	01	10.555	Tawa	(A) 22°45'17.51"N, 77°47'1.57"E (B) 22°45'18.16"N, 77°47'31.51"E (C) 22°45'14.03"N, 77°47'33.96"E (D) 22°45'13.63"N, 77°47'5.40"E
60	Narmadapuram	Raipur-30	01	10.555	Tawa	(A) 22°44'47.64"N, 77°47'46.23"E (B) 22°44'51.15"N, 77°47'50.82"E (C) 22°44'42.49"N, 77°48'3.70"E (D) 22°44'22.86"N, 77°47'56.76"E (E) 22°44'25.84"N, 77°47'55.05"E (F) 22°44'39.47"N, 77°48'0.71"E
61	Narmadapuram	Jasalpur-2	691/2	31.240	Tawa	(A) 22°44'29.75"N, 77°47'59.80"E (B) 22°44'42.77"N, 77°48'3.83"E (C) 22°44'27.94"N, 77°48'37.69"E (D) 22°44'14.36"N, 77°48'31.64"E (E) 22°44'18.49"N, 77°48'22.79"E (F) 22°44'25.78"N, 77°48'27.78"E (G) 22°44'32.03"N, 77°48'14.96"E (H) 22°44'24.57"N, 77°48'10.25"E
62	Narmadapuram	Nimsadiya-1	1163	20.243	Tawa	(A) 22°43'15.50"N, 77°49'33.59"E (B) 22°43'28.94"N, 77°49'54.23"E (C) 22°43'20.08"N, 77°49'57.52"E (D) 22°43'7.93"N, 77°49'39.52"E
63	Narmadapuram	Nimsadiya-3	1163	30.00	Tawa	(A) 22°44'7.86"N, 77°48'55.88"E (B) 22°44'21.82"N, 77°49'1.56"E (C) 22°44'27.94"N, 77°48'37.69"E (D) 22°44'14.36"N, 77°48'31.64"E

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64	Narmadapuram	Nimsadiya-4	1163	30.00	Tawa	(A) 22°43'57.91"N, 77°49'13.04"E (B) 22°44'9.70"N, 77°49'22.68"E (C) 22°43'55.10"N, 77°49'43.32"E (D) 22°43'43.10"N, 77°49'33.23"E
65	Narmadapuram	Devlakhedi	61	30.00	Tawa	(A) 22°43'1.39"N, 77°50'2.23"E (B) 22°43'4.70"N, 77°50'16.09"E (C) 22°42'40.50"N, 77°50'18.99"E (D) 22°42'38.21"N, 77°50'4.43"E
66	Narmadapuram	Mehraghat-9	365	11.655	Tawa	(A) 22°41'20.28"N, 77°50'10.18"E (B) 22°41'22.94"N, 77°50'33.37"E (C) 22°41'16.71"N, 77°50'36.13"E (D) 22°41'14.30"N, 77°50'13.20"E
67	Narmadapuram	Khojanpur (A)	1	20.405	Narmada	(A) 22°45'55.34"N 77°41'37.03"E (B) 22°46'01.76"N 77°41'58.28"E (C) 22°45'51.90"N 77°41'59.57"E (D) 22°45'44.30"N 77°41'38.50"E
68	Narmadapuram	Khojanpur (B)	1	20.405	Narmada	(A) 22°45'37.29"N 77°41'15.77"E (B) 22°45'55.14"N 77°41'36.71"E (C) 22°45'44.22"N 77°41'38.21"E (D) 22°45'31.10"N 77°41'20.67"E
69	Narmadapuram	Khojanpur (C)	1	17.100	Narmada	(A) 22°45'21.13"N 77°41'4.73"E (B) 22°45'17.08"N 77°41'13.75"E (C) 22°44'59.15"N 77°41'5.88"E (D) 22°45'2.36"N 77°40'57.06"E
70	Narmadapuram	Khojanpur (D)	1	17.100	Narmada	(A) 22°45'5.96"N 77°40'58.37"E (B) 22°45'1.59"N 77°41'6.91"E (C) 22°44'41.23"N 77°40'57.16"E (D) 22°44'44.96"N 77°40'50.25"E
71	Dolariya	Dolariya	218,267	2.500	Hathed	(A) 22°35'37.22"N 77°38'1.95"E (B) 22°35'39.23"N 77°38'2.93"E (C) 22°35'29.05"N 77°38'7.53"E (D) 22°35'29.61"N 77°38'6.24"E
72	Makhannagar	Sangakhedakala	778/1	10.00	Tawa	(A) 22°47'8.60"N, 77°47'21.17"E (B) 22°47'9.66"N, 77°47'16.53"E (C) 22°47'2.15"N, 77°47'10.35"E (D) 22°46'55.30"N, 77°47'6.65"E (E) 22°46'49.70"N, 77°47'5.34"E (F) 22°46'49.92"N, 77°47'10.30"E
73	Makhannagar	Balabhet-2	1/1	18.733	Tawa	(A) 22°46'37.37"N, 77°47'3.96"E (B) 22°46'35.35"N, 77°47'3.92"E (C) 22°46'29.24"N, 77°47'3.85"E (D) 22°46'12.99"N, 77°47'5.90"E (E) 22°46'1.88"N, 77°47'8.45"E (F) 22°46'3.34"N, 77°47'15.20"E (G) 22°46'30.83"N, 77°47'10.91"E (H) 22°46'30.14"N, 77°47'7.58"E (I) 22°46'38.08"N, 77°47'6.49"E

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74	Makhannagar	Chaplasar-2	1	29.00	Tawa	(A) 22°45'37.57"N, 77°47'17.36"E (B) 22°45'42.29"N, 77°47'30.68"E (C) 22°45'29.08"N, 77°47'38.15"E (D) 22°45'25.00"N, 77°47'32.29"E (E) 22°45'17.92"N, 77°47'36.50"E (F) 22°45'21.96"N, 77°47'42.41"E (G) 22°45'19.38"N, 77°47'44.00"E (H) 22°45'11.51"N, 77°47'30.95"E
75	Makhannagar	Pilikarar	1	14.366	Tawa	(A) 22°44'51.17"N, 77°47'50.77"E (B) 22°44'42.57"N, 77°48'3.83"E (C) 22°44'27.94"N, 77°48'37.69"E (D) 22°44'31.13"N, 77°48'39.13"E (E) 22°44'44.75"N, 77°48'5.80"E (F) 22°44'53.67"N, 77°47'53.85"E
76	Makhannagar	Jhalsarseth	92/1,93/ 2,94/1	15.691	Tawa	(A) 22°44'11.57"N, 77°49'20.21"E (B) 22°44'19.51"N, 77°49'27.89"E (C) 22°44'10.12"N, 77°49'40.52"E (D) 22°44'5.05"N, 77°49'36.01"E (E) 22°43'58.96"N, 77°49'42.30"E (F) 22°43'56.87"N, 77°49'40.46"E
77	Makhannagar	Anchalkheda-1	87/2	10.000	Tawa	(A) 22°42'58.51"N, 77°50'20.99"E (B) 22°43'2.43"N, 77°50'41.88"E (C) 22°42'56.77"N, 77°50'42.65"E (D) 22°42'53.55"N, 77°50'22.31"E
78	Makhannagar	Anchalkheda-2	87/2	10.00	Tawa	(A) 22°42'53.44"N, 77°50'22.34"E (B) 22°42'56.49"N, 77°50'42.60"E (C) 22°42'49.83"N, 77°50'43.67"E (D) 22°42'48.83"N, 77°50'26.93"E (E) 22°42'50.71"N, 77°50'26.39"E (F) 22°42'50.48"N, 77°50'23.30"E
79	Makhannagar	Anchalkheda-3	87/2	10.00	Tawa	(A) 22°42'54.78"N, 77°50'21.19"E (B) 22°42'56.51"N, 77°50'40.70"E (C) 22°42'50.81"N, 77°50'43.41"E (D) 22°42'49.96"N, 77°50'22.51"E
80	Makhannagar	ANchalkheda-4	87/2	10.486	Tawa	(A) 22°42'44.00"N,77°50'20.21"E (B) 22°42'46.49"N,77°50'41.23"E (C) 22°42'39.04"N,77°50'21.98"E (D) 22°42'40.87"N,77°50'42.55"E
81	Makhannagar	Anchalkheda	87/2	15.490	Tawa	(A) 22°42'27.33"N,77°50'22.15"E (B) 22°42'31.50"N,77°50'40.81"E (C) 22°42'21.26"N,77°50'42.95"E (D) 22°42'14.41"N,77°50'25.15"E
82	Makhannagar	Pawarkhedakhu rd-1	1/1	15.00	Tawa	(A) 22°40'36.95"N,77°51'35.18"E (B) 22°40'36.22"N,77°51'54.54"E (C) 22°40'27.18"N,77°51'53.76"E (D) 22°40'26.94"N,77°51'35.90"E
83	Makhannagar	Pawarkhedakhu rd-2	1/1	18.00	Tawa	(A) 22°41'18.61"N,77°50'35.33"E (B) 22°41'23.63"N,77°50'50.82"E (C) 22°41'12.31"N,77°50'55.45"E (D) 22°41'6.89"N,77°50'40.22"E

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84	Makhannagar	Pawarkhedakhu rd-3	1/1	23.00	Tawa	(A) 22°41'6.85"N, 77°50'40.25"E (B) 22°41'12.22"N, 77°50'55.31"E (C) 22°40'53.59"N, 77°51'3.44"E (D) 22°40'46.46"N, 77°50'50.55"E
85	Makhannagar	Pawarkhedakhu rd-4	1/1	17.000	Tawa	(A) 22°40'58.04"N, 77°51'10.13"E (B) 22°40'52.97"N, 77°51'15.39"E (C) 22°40'38.99"N, 77°50'56.76"E (D) 22°40'46.46"N, 77°50'50.55"E
86	Mkahannagar	Dudiyaghat	315	45.00	Tawa	(A) 22°40'32.58"N, 77°52'17.26"E (B) 22°40'47.42"N, 77°52'54.30"E (C) 22°40'36.22"N, 77°52'59.55"E (D) 22°40'19.72"N, 77°52'22.34"E
87	Makhannagar	Rajon-4	181/1	0.405	Tawa	(A) 22°40'40.00"N, 77°55'29.66"E (B) 22°40'37.84"N, 77°55'32.07"E (C) 22°40'36.70"N, 77°55'31.04"E (D) 22°40'39.03"N, 77°55'29.60"E
88	Makhannagar	Kirpura	253	20.200	Tawa	(A) 22°39'34.96"N 77°56'15.44"E (B) 22°39'41.28"N 77°56'23.88"E (C) 22°39'16.58"N 77°56'38.35"E (D) 22°39'12.64"N 77°56'33.92"E
89	Makhannagar	Kirpura	253	26.00	Tawa	(A) 22°39'34.25"N 77°56'14.43"E (B) 22°39'38.22"N 77°56'19.60"E (C) 22°39'12.72"N 77°56'40.25"E (D) 22°39'14.76"N 77°56'42.40"E (E) 22°39'8.77"N 77°56'47.83"E (F) 22°39'1.19"N 77°56'41.00"E
90	Makhannagar	Aamkhedi	48	10.000	Narmada	(A) 22°49'26.70"N,77°59'17.26"E (B) 22°49'23.97"N,77°59'33.00"E (C) 22°49'17.08"N,77°59'30.90"E (D) 22°49'19.78"N,77°59'15.13"E
91	Itarsi	Somalwada	1	45.00	Tawa	(A) 22°39'58.24"N,77°51'14.45"E (B) 22°40'16.47"N,77°51'20.13"E (C) 22°40'14.95"N,77°51'28.88"E (D) 22°40'18.17"N,77°51'55.78"E (E) 22°40'6.19"N,77°51'49.93"E
92	Itarsi	Pahanvarri	1/1	54.000	Tawa	(A) 22°40'20.76"N,77°52'17.73"E (B) 22°40'37.04"N,77°53'0.82"E (C) 22°40'24.90"N,77°53'3.23"E (D) 22°40'9.25"N,77°52'24.29"E
93	Itarsi	Maroda-2	1	22.500	Tawa	(A) 22°40'21.53"N, 77°54'58.75"E (B) 22°40'13.56"N, 77°55'11.70"E (C) 22°40'2.57"N, 77°54'52.72"E (D) 22°39'57.75"N, 77°55'6.14"E
94	Itarsi	Gwadikala	108	4.00	Tawa	(A) 22°39'2.68"N, 77°56'7.66"E (B) 22°38'57.47"N, 77°56'15.41"E (C) 22°39'1.87"N, 77°56'18.36"E (D) 22°39'6.04"N, 77°56'9.87"E
95	Itarsi	Gwadikala-1	124,125	22.500	Tawa	(A) 22°38'56.95"N, 77°56'21.73"E (B) 22°39'3.38"N, 77°56'35.63"E (C) 22°38'49.14"N, 77°56'43.60"E (D) 22°38'42.95"N, 77°56'29.98"E
96	Itarsi	Gwadikala-2	124,125	18.000	Tawa	(A) 22°38'49.14"N, 77°56'43.60"E (B) 22°38'42.95"N, 77°56'29.98"E (C) 22°38'31.34"N, 77°56'36.67"E (D) 22°38'37.46"N, 77°56'50.79"E



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97	Sivni Malwa	Dimawar	107	2.00	Narmada	(A) 22°34'45.08"N, 77°20'56.14"E (B) 22°34'44.96"N, 77°20'59.99"E (C) 22°34'38.49"N, 77°20'58.32"E (D) 22°34'38.90"N, 77°20'55.05"E
98	Sivni Malwa	Dimawar-1	107	16.500	Narmada	(A) 22°34'50.51"N, 77°20'53.45"E (B) 22°34'49.83"N, 77°21'1.16"E (C) 22°34'44.93"N, 77°20'60.00"E (D) 22°34'45.09"N, 77°20'56.11"E (E) 22°34'38.87"N, 77°20'55.00"E (F) 22°34'38.50"N, 77°20'58.32"E (G) 22°34'21.55"N, 77°20'54.43"E (H) 22°34'24.17"N, 77°20'47.46"E
99	Sivni Malwa	Bavri-2	137/1	18.00	Narmada	(A) 22°35'54.28"N, 77°21'27.22"E (B) 22°36'0.48"N, 77°21'22.66"E (C) 22°36'15.88"N, 77°21'47.50"E (D) 22°36'11.79"N, 77°21'49.80"E (E) 22°36'9.28"N, 77°21'46.67"E (F) 22°36'8.71"N, 77°21'47.16"E (G) 22°36'1.71"N, 77°21'4.53"E
100	Sivni Malwa	Gwadi-1	37/1	12.795	Naramada	(A) 22°38'31.29"N, 77°27'37.19"E (B) 22°38'33.36"N, 77°27'35.79"E (C) 22°38'37.50"N, 77°27'43.90"E (D) 22°38'39.39"N, 77°27'42.68"E (E) 22°38'26.64"N, 77°27'12.78"E (F) 22°38'21.79"N, 77°27'15.86"E
101	Sivni Malwa	Gwadi-2	37/2	12.795	Narmada	(A) 22°38'39.63"N, 77°27'54.14"E (B) 22°38'41.63"N, 77°27'53.36"E (C) 22°38'37.50"N, 77°27'43.90"E (D) 22°38'39.39"N, 77°27'42.68"E (E) 22°38'51.28"N, 77°28'10.81"E (F) 22°38'44.52"N, 77°28'13.68"E
102	Sivni Malwa	Dethi-1	1	0.809	Ganjal	(A) 22°24'10.02"N, 77°18'43.48"E (B) 22°24'8.12"N, 77°18'45.64"E (C) 22°24'6.02"N, 77°18'43.69"E (D) 22°24'7.99"N, 77°18'41.41"E
103	Sivni Malwa	Shahpur	1/1, 1/2, 1/3, 1/4, 2/1	1.315	Morand	(A) 22°24'2.76"N, 77°18'50.25"E (B) 22°24'4.24"N, 77°18'59.37"E (C) 22°24'2.62"N, 77°18'59.55"E (D) 22°24'1.83"N, 77°18'50.41"E
104	Sivni Malwa	Navalgaon	20/1	0.708	Morand	(A) 22°21'55.63"N, 77°23'14.82"E (B) 22°21'52.67"N, 77°23'20.05"E (C) 22°21'51.73"N, 77°23'18.54"E (D) 22°21'54.82"N, 77°23'13.13"E
105	Sohagpur	Revavankhedi	1/1	10.00	Narmada	(A) 22°51'01.08"N, 78°8'49.63"E (B) 22°51'16.65"N, 78°9'6.29"E (C) 22°51'08.41"N, 78°9'5.01"E (D) 22°50'57.41"N, 78°8'52.97"E
106	Sohagpur	Madanpur	1	20.00	Narmada	(A) 22°53'24.80"N, 78°12'1.29"E (B) 22°53'33.54"N, 78°11'59.01"E (C) 22°53'40.25"N, 78°12'8.89"E (D) 22°53'40.51"N, 78°12'19.90"E (E) 22°53'29.86"N, 78°12'20.8"E

DISTRICT SURVEY REPORT OF NARMADAPURAM

107	Pipariya	Khaparkheda	24	0.809	Korni	(A) 22°48'39.00"N, 78°21'25.66"E (B) 22°48'42.46"N, 78°21'29.60"E (C) 22°48'41.38"N, 78°21'31.36"E (D) 22°48'37.74"N, 78°21'26.17"E
108	Pipariya	Dhadiyakishore-1	115	1.00	Anjan	(A) 22°55'2.72"N, 78°23'33.04"E (B) 22°54'55.83"N, 78°23'33.67"E (C) 22°54'55.58"N, 78°23'31.50"E (D) 22°55'1.79"N, 78°23'31.16"E
109	Pipariya	Rampur	148	7.00	Anjan	(A) 22°46'25.28"N, 78°23'53.01"E (B) 22°46'40.70"N, 78°23'41.49"E (C) 22°46'42.71"N, 78°23'45.01"E (D) 22°46'25.58"N, 78°23'58.86"E
110	Pipariya	Buchal	98	7.607	Anjan	(A) 22°43'43.21"N, 78°25'2.43"E (B) 22°43'44.46"N, 78°25'6.94"E (C) 22°43'22.08"N, 78°25'10.41"E (D) 22°43'19.03"N, 78°25'10.59"E
111	Bankhedi	Malhanwada-1	344	10.500	Dudhi	(A) 22°49'12.44"N, 78°35'38.89"E (B) 22°49'14.37"N, 78°35'37.15"E (C) 22°49'44.51"N, 78°36'20.50"E (D) 22°49'43.46"N, 78°36'22.96"E
112	Bankhedi	Malhanwada-2	344	10.500	Dudhi	(A) 22°50'8.83"N, 78°36'6.99"E (B) 22°50'10.13"N, 78°36'8.83"E (C) 22°51'3.09"N, 78°36'9.12"E (D) 22°51'1.01"N, 78°36'6.81"E
113	Bankhedi	Paraswada	312	15.00	Dudhi	(A) 22°52'2.42"N, 78°34'31.59"E (B) 22°52'1.73"N, 78°34'38.73"E (C) 22°51'20.63"N, 78°34'59.56"E (D) 22°51'17.67"N, 78°34'55.63"E
114	Bankhedi	Anhai	357	14.400	Dudhi	(A) 22°53'55.42"N, 78°34'55.31"E (B) 22°54'26.26"N, 78°35'13.96"E (C) 22°54'28.50"N, 78°35'17.74"E (D) 22°53'52.03"N, 78°34'58.69"E
115	Bankhedi	Dumar	1	30.00	Dudhi	(A) 22°57'19.78"N, 78°31'17.10"E (B) 22°57'34.23"N, 78°31'59.77"E (C) 22°57'26.83"N, 78°31'58.97"E (D) 22°57'13.72"N, 78°31'20.37"E
116	Bankhedi	Imaliya	269	20.00	Dudhi	(A) 22°57'34.90"N, 78°29'54.66"E (B) 22°57'2.59"N, 78°30'7.28"E (C) 22°57'6.50"N, 78°30'12.94"E (D) 22°57'36.55"N, 78°30'0.59"E
117	Bankhedi	Umardlia	1498	20.671	Dudhi	(A) 22°57'39.62"N, 78°27'44.32"E (B) 22°57'24.93"N, 78°28'19.99"E (C) 22°57'20.06"N, 78°28'19.81"E (D) 22°57'32.93"N, 78°27'44.21"E
118	Bankhedi	Pipariya Raja-1	64	23.572	Dudhi	(A) 22°56'53.30"N, 78°30'40.97"E (B) 22°57'1.75"N, 78°30'40.90"E (C) 22°57'16.46"N, 78°31'11.36"E (D) 22°57'10.64"N, 78°31'14.38"E
Total				1540.063		



**4. DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE FINANCIAL YEARS:**

SR. NO.	YEAR	AMOUNT (IN. RS.)
1	2019-20	34,76,43,866
2	2020-21	65,50,00,000
3	2021-22	81,47,71,693

**5. DETAIL OF PRODUCTION OF SAND OR BAJARI OR MINOR MINERAL IN LAST THREE SAND YEARS:**

SR. NO.	YEAR	PRODUCTION(IN CU.MT.)
1	2019-20	11,02,744.841
2	2020-21	36,36,644.97
3	2021-22	0



ASSISTANT

E-5, 41

## 6. REPLENISHMENT REPORT/ PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS OF THE DISTRICT:

### 6.1 General

Sediment refers to the conglomerate of materials, organic and inorganic, that can be carried away by water, wind or ice. While the term is often used to indicate soil-based, mineral matter (e.g. clay, silt and sand), decomposing organic substances and inorganic biogenic material are also considered sediment. Most mineral sediment comes from erosion and weathering, while organic sediment is typically detritus and decomposing material such as algae. Sediment particles come in different sizes and can be inorganic or organic in origin. These particulates are typically small, with clay defined as particles less than 0.00195 mm in diameter, and coarse sand reaching up only to 1.5 mm in diameter. However, during a flood or other high flow event, even large rocks can be classified as sediment as they are carried downstream. Sediment is a naturally occurring element in many bodies of water, though it can be influenced by anthropogenic factors.

In an aquatic environment, sediment can either be suspended (floating in the water column) or bedded (settled on the bottom of a body of water). In other words, waterflow tries to scour its surface whenever it flows in the channel. Silt or gravels even larger boulders are detached from its bed or banks. The moving water sweeps these detached particles in downstream along its flow. Silting and scouring is not very uncommon and must be avoided by proper designs. It reduces supply level of water. The channel section gets reduced by silt and reduces discharging capacity. Sediments seriously threaten various projects due to silt carried out by rivers up to point of interceptions. Sediment is also threatening denudation of forests. Sediment is a major obstruction on the flow line. It shortens longevity of channel. It causes soil erosion. Therefore data base must be needed for policy making and planning.

The mineral potential is calculated based on field investigation and geology of the catchment area of the river/ streams. As per the policy of the State and location, depth of minable mineral is defined. The area for removal of mineral in a river or stream can be decided depending on geomorphology and other factors, it can be 50% to 60% of the area of a particular river/stream, e.g. in river mineral constituents like sand up to a depth of three meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river/ stream.

The specific gravity of each mineral constituent is different. The percent of mineral constituent like boulder, river Bajri, and sand also varies for different river and streams. While calculating the mineral potential, the percentage of each mineral constituent is taken as 25-30% for sand and 5- 10% for silt and clay.

The quantum of deposition varies from stream to stream depending upon factors like catchment lithology, discharge, river profile and geomorphology of the river course. There are certain geomorphological features developed in the river beds such as channel bar, point bar etc where annual deposition is more even two to three meters.

### 6.2 Process of Deposition:-

Sediment is a naturally occurring material that is broken down by processes of weathering and erosion, and is subsequently transported by the action of wind, water and/or by the force of gravity acting on the particles. Sediments are most often transported by water. Sediment is transported based on the strength of the flow that carries it and its own size, volume, density, and shape. Stronger flows will increase the lift and drag on the particle, causing it to rise, while larger or denser particles will be more likely to fall through the flow.

Deposition is the processes where material being transported by a river is deposited. Deposition occurs when a river loses energy. This can be when a river enters a shallow area (this could

  
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 DISTRICT SURVEY  
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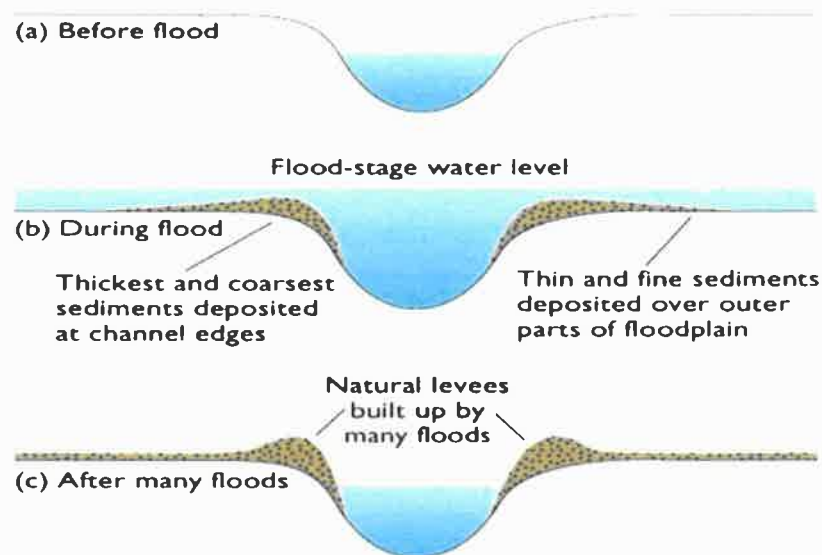
be when it floods and comes into contact with the flood plain) or towards its mouth where it meets another body of water.

Deposition is the geological process in which sediments, soil and rocks are added to a landform or land mass. Wind, ice, and water, as well as sediment flowing via gravity, transport previously eroded sediment, which, at the loss of enough kinetic energy in the fluid, is deposited, building up layers of sediment.

Rivers flood on a regular basis. The area over which they flood is known as the floodplain and this often coincides with regions where meanders form. Meanders support the formation of flood plains through lateral erosion.

When river floods the velocity of water slows. As the result of this the river's capacity to transport material is reduced and deposition occurs. This deposition leaves a layer of sediment across the whole floodplain. After a series of floods, layers of sediment form along the floodplain.

## Formation of Natural Levees



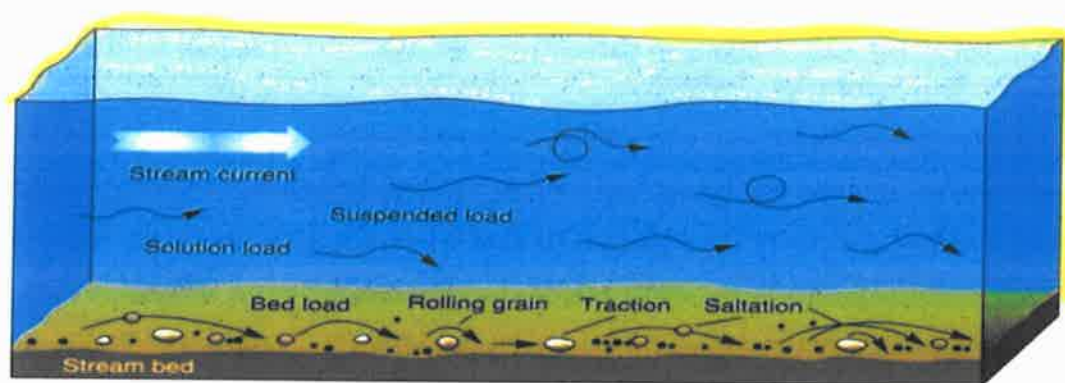
### 6.3 Modes of Sediment Transport

The sediment load of a river is transported in various ways although these distinctions are to some extent arbitrary and not always very practical in the sense that not all of the components can be separated in practice:

- ✓ Dissolved load
- ✓ Suspended load
- ✓ Intermittent suspension (saltation) load
- ✓ Wash load
- ✓ Bed load

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State Level  
Assessment

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The sand deposits being an integral part of the dynamic river system to which it belongs. Therefore, as a part of natural cycle, the monsoon flow of every river carries with it replenishment of silt and washed-out soil and clay from upstream areas in the catchment. This silt shall be removed during the sieving of sand before it is loaded into truck/tipper/trailer to carry to the consumers.

Sand mining is critical to infrastructure development around the globe. Sand is an essential minor mineral used extensively across the country as a useful construction constituent and variety of other uses in sports, agriculture, glass making (a form of sand with high silica content) etc. The rivers are the most important source of Sand. It acts as source of transportation and deposition of sand etc.

#### 6.4 Annual Replenishment of Mineral in River Bed Area/ Sedimentation

The deposition in a river bed is more pronounced during rainy season although the quantum of deposition varies from stream to stream depending upon numbers of factors such as catchment, lithology, discharge, river profile and geomorphology of the river course where annual deposition is one meter, but it is noticed that during flood season whole of the pit so excavated is completely filled up and as such the excavated area is replenished with new harvest of minerals.

In order to calculate the mineral deposits in the stream beds, the mineral constituents have been categorized as clay, silt, sand, Bajri and boulder. However, during present calculation, the waste material i.e. silt which varies from 10 to 20% in different streams has also been included in the total production. Further, the Survey of India Topo-Sheets has been used as base map to know the extent of river course. The mineral reserves have been calculated only upto 3.0 meter depth although there are some portions in the river beds such as channel bars, point bars and central islands where the annual deposition is raising the level of river bed thus causing shifting of the rivers towards banks resulting in to cutting of banks and at such locations, removal of this material upto the bed level is essential to control the river flow in its central part to check the bank cutting. While calculating the mineral potentials, the mineral deposits lying in the sub-tributaries of that particular stream/river has not been taken into consideration. Since these mineral deposits are adding annually.

Sedimentation is generally considered by geologists in terms of the textures, structures, and fossil content of the deposits lay down in different geographic and geomorphic environments. The factors which affects the "Computation of Sediment":

- Geomorphology & Drainage Pattern: The following geomorphic units plays important role:
  - Structural Plain
  - Structural Hill
  - Structural Ridge
  - Denudation Ridge & Valley
  - Plain & Plateau

- Highly Dissected pediment
- Undissected pediment
- Distribution of Basin Area River wise
- Drainage System/Pattern of the area, Rainfall & Climate: Year wise Rainfall data

### 6.5 Replenishment Study (As per EMGSM guidelines, 2020)

Replenishment study for a river solely depends on estimation of sediment load for any river system and the estimation is a time consuming and should be done over a period. The process in general is very slow and hardly measurable on season-to-season basis except otherwise the effect of flood is induced which is again a cyclic phenomenon. Usually, replenishment or sediment deposition quantities can be estimated in the following ways as given below:

- A. Direct measurement of the sand bar upliftment, monitoring of the new sand bars created in the monsoon within the channel, elimination of sand bars during the monsoon etc. With systematic data acquisition, over a period, regression equations can be developed for modeling of the sediment yield and annual replenishment with variable components. In this report, for volume estimation of sand, —Depth x Area has been followed. The sand bars are interpreted with the help of satellite imageries. Ground truthing done for 100% of the total identified sand bars. While ground truthing, width and length of each segment were physically measured. It has also been observed that in few cases, sand bars have attained more than 3 meters height from the average top level of the river beds. Considerations of sand resources have been restricted within 3 meters from the average top surface of the river bed. Thus, in few occasions, heights for sand reserve estimation are found to be more than 3 meters.
- B. The replenishment estimation based on a theoretical empirical formula with the estimation of bed-load transport comprising of analytical models to calculate the replenishment estimation.

#### C. Replenishment estimation

Sedimentation in any river is dependent on sediment yield and sediment yield depends on soil erosion in river's catchment area. Catchment yield is computed using Strange's Monsoon runoff tables for runoff coefficient against rainfall return period. Peak flood discharge calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using Ackers and White Equation.

**Methodology Adopted:** To delineate replenishment percentage in the river bed of the district, below mentioned steps have been followed.

- **Field data collation:**

Field data collations were done during April-2020, June-2020, November-2020 & March-2021 for starting period, pre monsoon period, post monsoon period & end period for the river ghats on continuous basis. However, the nonoperational areas were covered through traverses. In both the cases, relative elevation levels were captured through DGPS/ Electronic Total Station. Thickness of the sand bars was measured through sectional profiles. In few instances, sieve analysis of the sands was carried out to derive the size frequency analysis.

- **Selection of Study profiles:**

Study profiles are selected based on the occurrence of the sand bars in the channel profiles. Aerial extents of each of the profiles are mapped from satellite imageries. Frequency distribution did while selection of the ground truthing of the blocks.

## DISTRICT SURVEY REPORT OF NARMADAPURAM

### o Data Compilation:

Following data were compiled for generation of this annual replenishment report:

- o Elevation levels of the different sand Ghats and Sand Bar's as measured at site.
- o Extents of the sand bars are measured from the pre monsoon satellite imageries.
- o Sand production data of the district.

### o Assessment of sediment load in the river:

Assessment of sediment load in a river is subjective to study of the whole catchment area, weathering index of the various rock types which acts as a source of sediments in the specific river bed, rainfall data over a period not less than 20 years, and finally the detail monitoring of the river bed upliftment with time axis. Again, the sediment load estimation is not a dependent variable of the imaginary district boundary, but it largely depends upon the aerial extents of the catchment areas, which crossed the district and state boundaries.

### o Estimation of annual sand deposition:

The major sand producing river of the Narmadapuram district is Narmada, Tawa, Dudhi, Kornj, Anjan, Sukhtawa & Ganjal. Planning has been done for systematic sand mining in the rivers.

While calculation of the areas of sand bar, a classification system has been adopted with three categories of land identified within the channel areas. the class which followed for classification are as follows:

- a. The untapped Sand Bars.
- b. The Sand bars worked in the pre-monsoon period.
- c. Main channel course within the channel.

Details of sand replenishment in each sand mine in district with their sand resources in pre monsoon and post monsoon period are provided in below table:



DISTRICT SURVEY REPORT OF NARMADAPURAM

REPLENISHMENT STUDY FOR YEAR 2021

District	Name of river	Name of Mine	Total area in Sq.m.	Length of the Mine (In Km)	Average Width of the Mine (In Meters)	Pre-Monsoon		Post-Monsoon		
						Average depth of sand mine (in meter)	Total quantity of sediment load (in cum.)	Average depth of sand mine (in meter)	Total quantity of sediment load (in cum.)	Mineable mineral potential (in Cubic meter) (60% of total mineral potential)
Narmada- puram	Tawa	Bandrabhan Kh No. 207 Area 10.555H	105550	0.470	224	1.60	168880	3.0	316650	189990
	Tawa	Jaasalpur-1 Kh No. 691/1 Area 10.000H	100000	0.400	250	2.20	220000	3.0	300000	180000
	Tawa	Nimsadiya-2 Kh No. 1163 Area 20.243H	202430	0.700	289	1.20	242916	2.0	404860	242916
	Tawa	Devlakhedi Kh No.60 Area 12.145H	121450	0.709	171	1.20	145740	2.0	242900	145740
	Tawa	Mehraghat-10 Kh No.365 Area 11.655H	116550	0.688	169	1.40	163170	2.0	233100	139860
	Tawa	Horiyapipar Kh No. 226 Area 19.746H	197460	0.387	510	0.60	118476	1.5	296190	177714
	Tawa	Rajon-1 Kh No.181/1 Area 17.500H	175000	0.530	330	2.20	385000	2.5	437500	262500
	Tawa	Rajon-2 Kh No.181/1 Area 17.500H	175000	0.500	350	2.20	385000	2.5	437500	262500
	Narmada	Sangakhedakhurd Kh No.1 Area 10.000H	100000	0.800	125	1.50	150000	2.0	200000	120000
	Tawa	Maroda-1 Kh No. 1 Area 22.500H	225000	0.376	598	2.50	562500	2.8	630000	378000
Narmada	Rewamuhari Kh No. 114 Area 10.00H	100000	0.700	143	1.60	160000	2.0	200000	120000	

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Narmada	Ramgarh-1 Kh No. 1/1 Area 11.000H	110000	0.439	250	2.50	275000	2.8	308000	184800
Narmada	Ramgarh-2 Kh No. 1/1 Area 11.000H	110000	0.402	273	2.00	220000	2.7	297000	178200
Ganjal	Dethi-2 Kh No. 291.559 Area 6.433H	64330	1.110	58	2.20	141526	2.5	160825	96495
Ganjal	Curanjghat Kh No. 1/1 Area 9.00H	90000	1.089	82	2.20	198000	2.5	225000	135000
Korni	Jamara Kh No. 137 Area 19.938H	199380	2.767	72	0.10	19938	0.2	39876	23926
Korni	Surelakala Kh No. 1 Area 8.377H	83770	2.793	30	0.10	8377	0.2	16754	10052
Aanjan	Dhadiyakishore-2 Kh No. 115 Area 8.522H	85220	1.133	75	1.00	85220	1.5	127830	76698
Aanjan	Singhodi Kh No. 206 Area 6.000H	60000	0.946	63	1.60	96000	2.0	120000	72000
Dudhi	Bedar Kh No. 58 Area 16.976H	169760	0.611	277	2.50	424400	2.8	475328	285197
Tawa	Bandrabhan Kh No. 207 Area 4.858H	48580	0.450	107	2.60	126308	3.0	145740	87444
Narmada	Dogarwada Kh No. 3 Area 5.000H	50000	0.352	142	2.0	100000	3.0	150000	90000
Narmada	Barandua Kh No. 118/1 Area 11.00H	110000	0.640	171	2.30	253000	2.6	286000	171600
Tawa	Balabhet-1 Kh No. 1/1 Area 5.000H	50000	0.250	200	1.50	75000	1.8	90000	54000
Tawa	Chaplasar-1 Kh No. 1 Area 5.000H	50000	0.250	200	1.00	50000	1.8	90000	54000
Tawa	Jhalsarseeth-1 Kh No. 92/1.93/3.94/1 Area 5.000H	50000	0.260	192	1.50	75000	1.8	90000	54000
Tawa	Jawli Kh No. 380 Area 5.000H	50000	0.258	140	2.50	125000	2.8	140000	84000
Tawa	Rajon-3 Kh No. 181 Area 4.000H	40000	0.400	100	1.80	72000	2.2	88000	52800
Khahra	Kesla Kh No. 432/1 Area 4.000H	40000	0.800	50	1.20	48000	1.5	60000	36000

Narmada-  
puram

State Level Environment Impact  
Assessment Authority, M.P.  
15/06/2011  
Narmada Puram, Jabalpur

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Sukhtawa	Kaasdakshurd Kh No. 263,283 Area 4.000H	40000	0.613	65	2.20	80810	2.6	104000	62400
Sukhtawa	Kaasda rtwadi Kh No. 18 Area 4.00H	40000	0.731	54	2.50	100000	2.8	112000	67200
Sukhtawa	Choukipura Kh No. 76,80 Area 2.820H	28200	1.128	25	1.80	50760	2.0	56400	33840
Narmada	Sarrakishore Kh No. 32 Area 4.000H	40000	0.400	100	2.60	104000	2.8	112000	67200
Korni	Markadhana Kh No. 86 Area 4.000H	40000	1.000	40	1.0	40000	1.1	44000	26400
Dudhi	Malhanwada Kh No. 344 Area 4.000H	40000	0.666	60	2.40	96000	2.8	112000	67200
Dudhi	Murgidhana Kh No. 354 Area 4.000H	40000	0.444	90	2.50	100000	2.7	108000	64800
Dudhi	Kaamti Kh No. 332 Area 5.000H	50000	0.877	57	2.50	125000	2.8	140000	84000
Dudhi	Khapakshurd Kh No.89 Area 4.000H	40000	0.583	68	2.50	100000	2.8	112000	67200
Dudhi	Junheta Kh No. 1 Area 4.000H	40000	0.370	108	2.40	96000	2.8	112000	67200
Dudhi	Vahravan Kh No.141 Area 4.000H	40000	0.430	93	2.40	96000	2.8	112000	67200
Dudhi	Pipariya Raja Kh No. 118 Area 4.040H	40400	0.231	175	2.50	101000	2.8	113120	67872
Narmada	Baavri-1 Kh No. 137/1 Area 4.000H	40000	0.388	103	2.20	88000	2.6	104000	62400
Narmada	Gwadi Kh No. 37/1 Area 4.00H	40000	0.560	71	2.50	100000	2.8	112000	67200
Ganjaj	Surajpur Kh No. 27 Area 2.000H	20000	0.454	44	2.50	50000	2.8	56000	33600
Ganjaj	Kothra Kh No. 1 Area 10.000H	100000	1.017	98	2.50	250000	2.8	280000	168000
Tawa	Bandrabhan Kh No. 207 Area 7.815H	78150	0.371	210	2.80	218820	3.0	234450	140670
Tawa	Bandrabhan Kh No. 207 Area 11.00H	110000	0.637	172	2.80	308000	3.0	330000	198000
Tawa	Bandrabhan Kh No. 207 Area 10.00H	100000	0.420	280	2.80	280000	3.0	300000	180000
Narmada- puram									

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Tawa	Bandrabhan Kh No. 207 Area 10.00H	100000	0.333	300	2.60	260000	3.0	300000	180000
Tawa	Bandrabhan Kh No. 207 Area 10.555H	105550	0.373	282	2.80	295540	3.0	316650	189990
Tawa	Bandrabhan Kh No. 207 Area 10.00H	100000	0.220	454	2.80	280000	3.0	300000	180000
Tawa	Bandrabhan Kh No. 207 Area 10.00H	100000	0.575	173	2.80	280000	3.0	300000	180000
Tawa	Bandrabhan Kh No. 207 Area 31.110H	311100	0.513	606	2.60	808860	3.0	933300	559980
Tawa	Bandrabhan Kh No. 207 Area 10.00H	100000	0.166	602	2.60	260000	3.0	300000	180000
Tawa	Bandrabhan Kh No. 207 Area 10.555H	105550	0.178	592	2.80	295540	3.0	316650	189990
Tawa	Raipur 21 22 23 Kh No. 01 Area 30.555H	305550	0.408	748	2.60	794430	3.0	916650	549990
Tawa	Raipur 24 Kh No. 01 Area 10.555H	105550	0.120	879	2.60	274430	2.8	295540	177324
Tawa	Raipur 25 Kh No. 01 Area 10.000H	100000	0.150	666	2.60	260000	2.8	280000	168000
Tawa	Raipur 26 Kh No. 01 Area 10.555H	105550	0.138	764	2.80	295540	3.0	316650	189990
Tawa	Raipur 30 Kh No. 01 Area 10.555H	105550	1.013	104	2.60	274430	2.8	295540	177324
Tawa	Jaasalpur-2 Kh no. 691/2 Area 31.240H	312400	1.044	299	2.60	812240	2.8	874720	524832
Tawa	Nimsadiya-1 Kh no. 1163 Area 20.243H	202430	0.265	763	1.80	364374	2.2	445346	267207.6
Tawa	Nimsadiya-3 KH No. 1163 Area 30.000H	300000	0.712	421	2.00	600000	2.4	720000	432000
Tawa	Nimsadiya-4 Kh No. 1163 Area 30.000H	300000	0.737	407	2.00	600000	2.4	720000	432000
Tawa	Devlakhedi Kh No. 61 Area 30.000H	300000	0.729	411	1.80	540000	2.2	660000	396000
Tawa	Mehraghat-9 Kh No. 365 Area 11.655H	116550	0.201	579	2.20	256410	2.5	291375	174825


**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Narmada	Khojanpur (A) Kh No. 1 Area 50.405H	504050	0.727	693	2.20	1108910	2.5	1260125	756075
Narmada	Khojanpur (B) Kh No. 1 Area 20.405H	204050	0.782	260	2.20	448910	2.5	510125	306075
Narmada	Khojanpur (C) Kh No. 1 Area 17.100H	171000	0.695	246	2.20	376200	2.5	427500	256500
Narmada	Khojanpur Kh No. 1 Area 17.100H	171000	0.618	276	2.20	376200	2.5	427500	256500
Hathed	Dolariya Kh No. 218,267 Area 2.500H	25000	0.427	58	1.0	25000	1.2	30000	18000
Tawa	Sangakhedakalan Kh No. 778/1 Area 10.000H	100000	0.671	149	2.60	260000	2.8	280000	168000
Tawa	Balabheth-2 Kh No.1/1 Area 18.733H	187330	1.090	171	1.60	299728	2.0	374660	224796
Tawa	Chaplasar-2 Kh No.1 Area 29.000H	290000	0.861	336	2.00	580000	2.2	638000	382800
Tawa	Pijikarar Kh No. 1 Area 14.366H	143660	1.500	95	2.00	287320	2.2	316052	189631.2
Tawa	Jhalsarseth Kh No.92/1,93/2 Area 15.691H	156910	0.729	215	1.80	282438	2.0	313820	188292
Tawa	Anchalikheda-1 Kh No.87/2 Area 10.000H	100000	0.178	561	2.60	260000	2.8	280000	168000
Tawa	Anchalikheda-2 Kh No. 87/2 Area 10.000H	100000	0.175	571	2.60	260000	2.8	280000	168000
Tawa	Anchalikheda-3 Kh No. 87/2 Area 10.000H	100000	0.165	606	2.60	260000	2.8	280000	168000
Tawa	Anchalikheda-4 Kh No. 87/2 Area 10.486H	104860	0.600	174	2.60	272636	2.8	293608	176165
Tawa	Anchalikheda Kh No.87/2 Area 15.490H	154900	0.281	550	2.60	402740	2.8	433720	260232
Tawa	Pawarkhedakhurd-1 Kh No. 1/1 Area 15.000H	150000	0.534	280	2.80	420000	3.0	450000	270000
Tawa	Pawarkhedakhurd-2 Kh No. 1/1 Area 18.000H	180000	0.384	468	2.80	504000	3.0	540000	324000

Narmada-  
puram

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Tawa	Pawarkhedakhurd-3 Kh No. 1/1 Area 23.000H	230000	0.654	351	2.80	644000	3.0	690000	414000
Tawa	Pawarkhedakhurd-4 Kh No.1/1 Area 17.000H	170000	0.248	685	2.80	476000	3.0	510000	306000
Tawa	Dudiyaghat Kh No.315 Area 45.000H	450000	1.174	383	2.60	1170000	3.0	1350000	810000
Tawa	Rajon-4 Kh No.181/1 Area 0.405H	4050	0.098	41	2.80	11340	3.0	12150	7290
Tawa	Kirpura Kh No.253 Area 20.200H	202000	0.984	205	2.80	565600	3.0	606000	363600
Tawa	Kirpura Kh No. 253 Area 26.000H	260000	1.252	207	2.80	728000	3.0	780000	468000
Narmada	Aamkhedhi Kh No. 48 Area 10.000H	100000	0.482	207	2.80	280000	3.0	300000	180000
Tawa	Somalwada Kh No.1 Area 45.000H	450000	0.986	456	2.80	1260000	3.0	1350000	810000
Tawa	Paahanvarri Kh No.1/1 Area 54.000H	540000	1.125	480	2.80	1512000	3.0	1620000	972000
Tawa	Maroda-2 Kh No.a Area 22.500H	225000	0.390	576	2.80	630000	3.0	675000	405000
Tawa	Gwadikala Kh No.108 Area 4.000H	40000	0.271	147	2.80	112000	3.0	120000	72000
Tawa	Gwadikala-1 Kh No.124.125 Area 22.500	225000	0.875	257	2.80	630000	3.0	675000	405000
Tawa	Gwadikala-2 Kh.No.124.125 Area 18.000	180000	0.845	213	2.80	504000	3.0	540000	324000
Narmada	Dimavar Kh.No.107 Area 2.000	20000	0.196	102	2.80	56000	3.0	60000	36000
Narmada	Dimavar-1 Kh.No.107 Area 16.500H	165000	0.845	195	2.80	462000	3.0	495000	297000
Narmada	Bavri-2 Kh.No.137/1 Area 18.000	180000	0.845	213	2.80	504000	3.0	540000	324000
Narmada	Gwadi-1 Kh.No.37/1 Area 12.795	127950	0.934	137	2.80	358260	3.0	383850	230310
Narmada	Gwadi-2 Kh.No.37/1 Area 12.795	127950	0.868	147	2.80	358260	3.0	383850	230310

  
 State Level Environmental Impact  
 Assessment and Audit  
 E-30/2011-12  
 12/12/2011

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Narmada- puram	Ganjaal	Daithi Kh.No.1 Area 0.809	8090	0.150	53	1.80	14562	2.0	16180	9708
	Moran	Sahapura Kh.No.1/1,1/2,1/3,1 Area 1.315H	13150	0.262	50	2.00	26300	2.3	30245	18147
	Moran	Navalgaoon Kh.No.20/1 Area 0.708	7080	0.177	40	2.00	14160	2.3	16284	9770.4
	Narmada	Revavankhedi Kh.No.1/1 Area 10.000	100000	0.512	195	2.80	280000	3.0	300000	180000
	Narmada	Madanpur Kh.No.1 Area 20.000	200000	0.602	332	2.80	560000	3.0	600000	360000
	Korni	Khaparkheda Kh.No. 244 Area 0.809	8090	0.179	45	0.10	809	0.2	1618	970
	Aanjan	Dhadiyakishor-1 Kh.No.115 Area 1.000	10000	0.205	48	1.80	18000	2.0	20000	12000
	Aanjan	Rampur Kh.No.148 Area 7.000	70000	0.567	123	1.80	126000	2.0	140000	84000
	Aanjan	Buchal Kh.No.98 Area 7.607	76070	0.906	83	1.80	136926	2.0	152140	91284
	Dudhi	Malhanwara-1 Kh.No.344 Area 10.500	105000	1.600	65	2.20	231000	2.5	262500	157500
	Dudhi	Malhanwara-2 Kh.No.344 Area 10.500	105000	1.674	62	2.20	231000	2.5	262500	157500
	Dudhi	Paraswara Kh.No.312 Area 15.000	150000	1.636	91	2.20	330000	2.5	375000	225000
	Dudhi	Anhaai Kh.No.357 Area 14.400	144000	1.244	116	2.20	316800	2.5	360000	216000
	Dudhi	Dumar Kh.No.1 Area 30.000	300000	1.475	203	2.20	660000	2.5	750000	450000
	Dudhi	Emliya Kh.No.269 Area 20.000	200000	1.005	199	2.20	440000	2.5	500000	300000
	Dudhi	Umradha Kh.No.1498 Area 20.671	206710	1.330	155	2.20	454762	2.5	516775	310065
Dudhi	Pipariya Raja-1 Kh.No.64 Area 23.572	235720	1.036	227	2.20	518584	2.5	589300	353580	

- Normal date of onset of monsoon for year 2021 is 30 June.
- Normal date of offset of monsoon for year 2021 is 01 October.

  
 State Environment Impact  
 Assessment Authority, M.P.  
 E-5, 1st Floor, Sector-10, Gandhinagar,  
 Bhopal (M.P.)

## 7. GENERAL PROFILE OF THE DISTRICT

### Historical Background:

#### How District Got Its Name:

The district takes its own name from the headquarters town Hoshangabad which was founded by "SULTANHUSHANG SHAH GORI", the second king of Mandu (Malwa) in early 15<sup>th</sup> century. But now this district has been known as NARMADAPURAM.

#### Location:

Narmadapuram district lies in the central Narmada Valley and on the northern fringe of the Satpura Plateau. It lies between the parallels of 22 degree 15 minute and 22 degree 44 minute east. In shape, it is an irregular strip elongated along the southern banks of Narmada River. Its greatest length from south-east to north-east is 160 kms.

### Geographical Information:

Geography & Climate	
Latitude	21° 53" to 22° 59"
Longitude	76° 47" to 78° 44"
Height from Sea Level	331 mts.
Average Rainfall	1343.6 mm.
Temperature (Avg Min)	32° C to 19° C
Area & Population	
Geographical Area	5408.23 sq.km.
Forest Area	2229.74 sq.km.
Total Populated Villages	923 Nos.
Tehsils	8 Nos.
Blocks	7 Nos.
Total Gram Panchayats	428 Nos.
Total Zanjpad Panchayats	7 Nos.
No. of Urban Areas	11 Nos.
Total Municipals	4 Nos.
Total Populations	12,40,975 Nos.
Total Rural Population	8,51,126 Nos.
Total Urban Population	3,89,849 Nos.
Total Males	6,48,970 Nos.
Total Females	5,92,005 Nos.
Commercial Banks	
Total Nationalized Banks	94 Nos.
Total Co-operative Banks	13 Nos.
Land Development Banks	8 Nos.
Post/Sub-Post Offices	175 Nos.
Telephone Connections	12561 Nos.
Agriculture	
Net Sown Area	291785 hect.
Double Cropped Area	179557 hect.
Net Irrigated Area	227795 hect.
Education	
Primary Schools	960 Nos.



## DISTRICT SURVEY REPORT OF NARMADAPURAM

Middle Schools	207 Nos.
Senior Secondary Schools	69 Nos.
Colleges	11 Nos.
Enrolled Studenets in Colleges	10221 Nos.
Technical College (Polytechnic)	01 No.
I.T.I.	02 Nos.
<b>Public Health &amp; Family Welfare</b>	
Health Centres	17 Nos.
Sub-Health Centres	150 Nos.
Ayurvedic Hospitals	39 Nos.
Homeopathic Dispensaries	6 Nos.
Community Health Centres	3 Nos.
<b>Literacy(as per Census-2001)</b>	
Total (Literates :6,35,839)	76.5 %
Male (Literates :3,88,376)	85.2 %
Female(Literates:2,47,463)	67.0 %

### River/Lake:

In Narmadapuram district, there are two main rivers namely the Narmada and the Tawa., which join each other at the village Bandra Bhan. In the spot, a holy mela also organise on the occassion of Kartik purnima. Other small rivers are the Dudhi and the Denwa. A very big lake is also at Pachmarhi, which is one of the main tourist place of the district and it is open for boating for all tourists.

### Boundaries:

Northern boundary of the district is river Narmada. Across this the district of Raisen and Sehore lies. The district of Betul lies in the south, where as the Harda district faces with the western and south-western boundaries and Narsingpur and Chhindwara districts, close to the north-eastern and south-eastern sides of the district respectively.

### Climate:

The climate of Narmadapuram district is normal. All the seasons come in the district. An average height from the sea level is 331 mts.and avearge rain fall is 134 cms. The average maximum and minimum temperatures are 32 deg.C and 19 deg.C respectively. Overall, the climate of the district is neither morehot nor more cool except the winter season of the Pachmarhi.

### Approach Road/Rail:

Narmadapuram is freely connected by road and rail from the state capital, Bhopal and it is about 70 kms. away from it. It is connected by rail with all major cities of the state. One of its tehsil namely Itarsi is linked with all major cities of the country due to main railway junction of the central railway, which is 18 kms. far away from the district head- quarter. From Itarsi, you can also move to Pachmarhi by road, which is one of the most popular tourist spot of the district.

### Narmadapuram Dist. Profile

S.N.	Land	Area
1	Total geographical area	668690
2	Cultivated area	325500
3	Forests	256100
4	Pasture	26300
5	Land reform able for cultivation	7610

DISTRICT SURVEY REPORT OF NARMADAPURAM

6	Fallow Land	5390
7	Waste Land	2620

General Information

S.N.	Particular	No.
1	Tehsil	8
2	Block	7
3	Gram Panchayat	424
4	Village	926

Official website of krishi vigyan Kendra bankhedi Narmadapuram

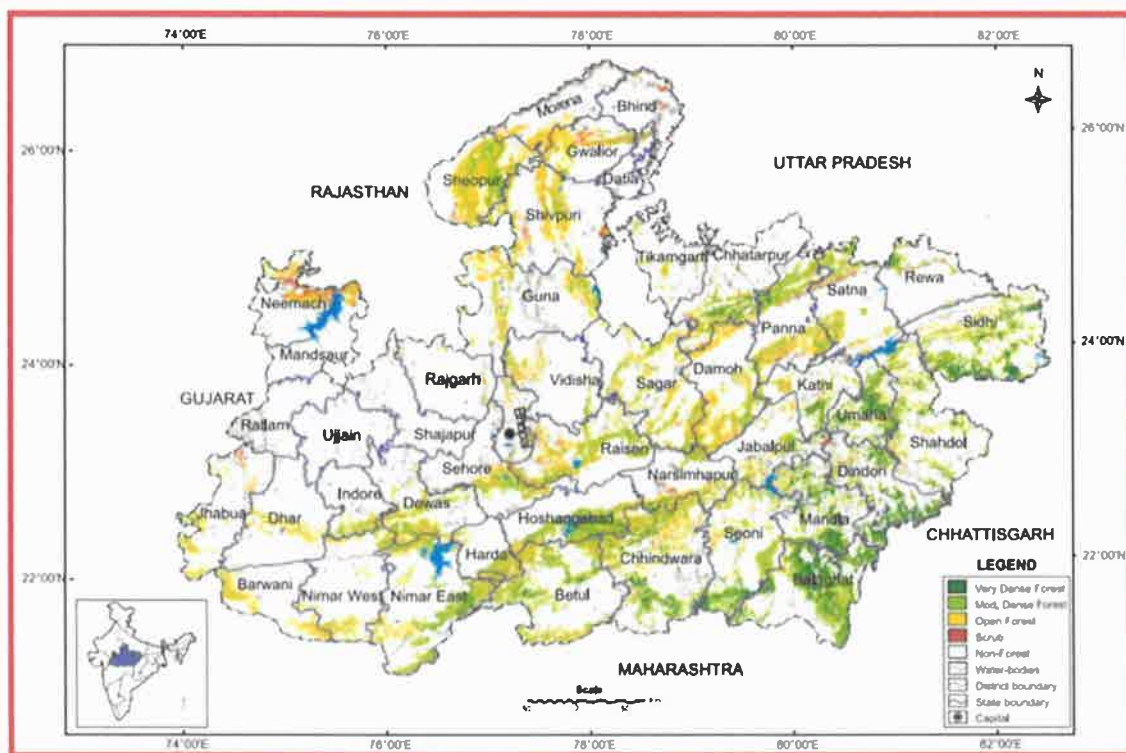
State Council for Agricultural Extension  
 Ahmedabad  
 District Survey Report  
 Narmadapuram  
 District  
 2011-12

**8. LAND UTILISATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, HORTICULTURAL, MINING ETC:**

Famed for its fertility, the prevailing soil of the Narmada valley is black alluvial loam, commonly known as "black-cotton" is highly argillaceous and remarkable for its great porosity and consequent retentiveness of moisture. The total geographical area of the district is 670,400 hectares, out of which, forest area was 257,593 hectares i.e 38.41 % of total area. The non-agricultural land was 19,124 hectares, uncultivable and barren land was 25,256 hectares, cultivable land was 24,954 hectares and waste land was 6,354 hectares. In the hilly tracts the soil is sandy and generally unsuited for the cultivation of spring crops.

**FOREST:**

Narmadapuram is a forest dominant district with 23 % forest area and 30.49 % SC & ST population. 38 % of the population is below poverty line. Narmadapuram Distt. is blessed with rich forests and lifelines of the state the NARMADA, TAWA & DENWA rivers. Narmadapuram is an Agriculturally rich district but the population failing within fringe forest area is Agriculturally poor. Life style of the people living in the villages, with in 5 km. of the forest area revolves around the Forest



State Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parishad  
E-5, Arera Colony, Bhopal (M.P.)

**AGRICULTURE:**

Traversed by the sacred Narmada River and its tributaries, Narmadapuram district represents rich agricultural land and has been a predominantly rabi producing area. Locally rabi crops are known as "Unhari". Rabi crops dominate the rural economy to such an extent that the the Kharif crops known as "Sihari" were despised in the past. Rabi cultivation is almost synonymous with agriculture. Among rabi crops wheat is the main crop followed by gram, masoor, pea and linseed.

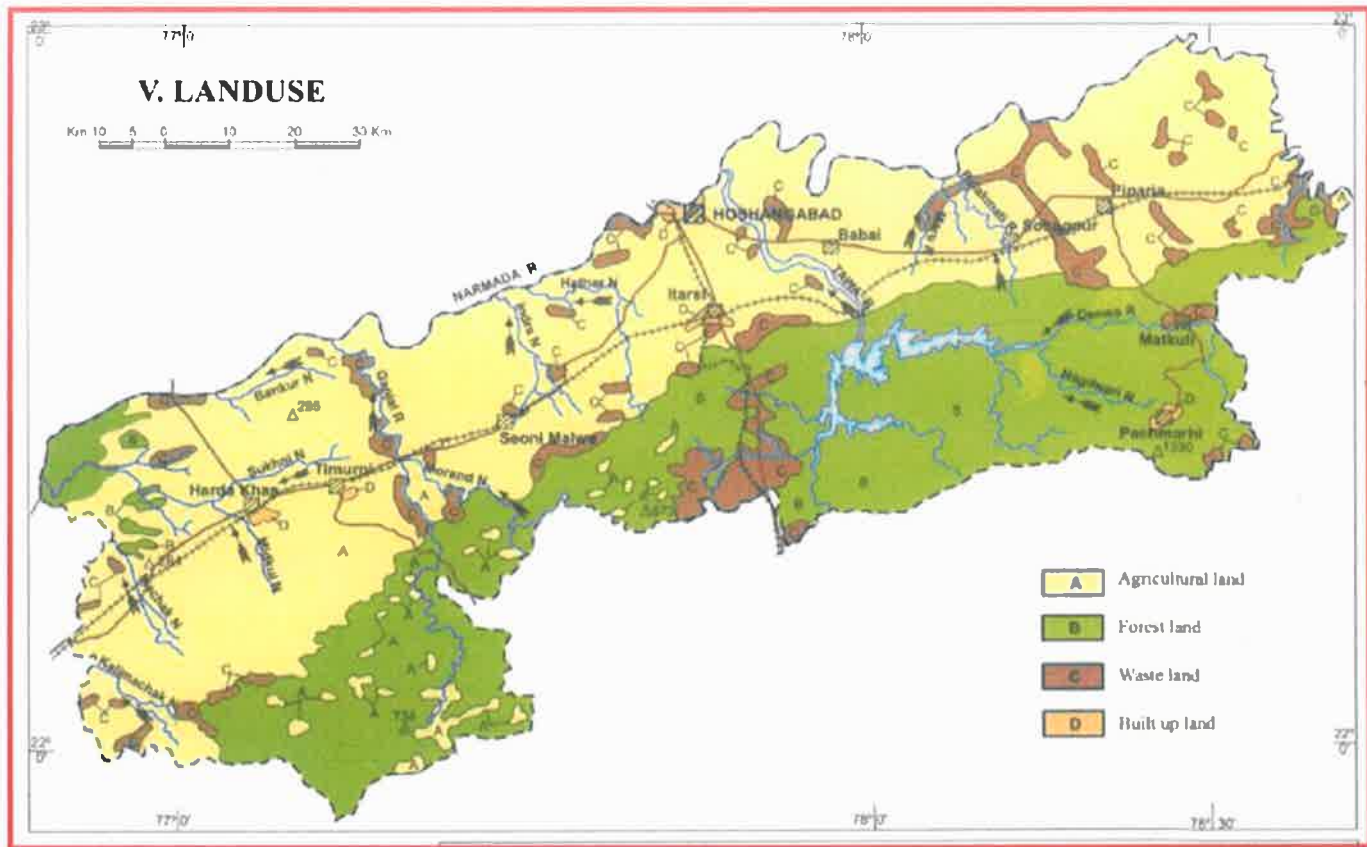


**HORTICULTURE:**

Livelihood promotion by Horticulture activities in the district has greater possibility because district has better atmosphere, good environmental condition and soil type. From the point of view of horticulture in Narmadapuram district mainly mango, amla, lemon, guava, banana, jackfruits, papaya and in vegetables mainly tomato, brinjal, Gourd, lady finger, cauliflower etc is produced.

**MINING:**

Narmadapuram district holds a distinct place in the state with respect to sand mining in different rivers and the availability of clay mineral resources. In the district mainly lime-stone, clay, gitti, murum and sand are found. Out of this limestone is considered as major mineral and rest clay, and sand is considered as minor mineral. Majority of sand has been extracted from Narmada and Tawa rivers.



Map showing land-use pattern of Narmadapuram district

## 9. PHYSIOGRAPHY OF THE DISTRICT

### Physiography:

District Narmadapuram lies in the central Narmada valley and on the northern fringe of Satpura plateau. It lies between 21°53' and 22°59' North latitude and 76°47' and 78°44' East longitudes. In shape, it is an irregular strip elongated along the southern banks of Narmada river. Its greatest length from south-east to north-east is 160 kms. Northern boundary of the district is river Narmada. Across this, the district of Raisen and Sehore lies. The district of Betul lies in the south, whereas the Harda district faces with the western and south-western boundaries and Narsimhapur and Chhindwara districts lies to the north-eastern and southeastern sides of the district respectively. As per the 2011 Census, its geographical area is 6,703 Sq.kms. It is the 18th largest district of the state in respect of area which is 2.17% of the total area 308,244 Sq.km. of Madhya Pradesh.

Physiographically the district may be divided under two natural divisions, viz., A. Satpura plateau and B. The Narmada valley.

### A. THE SATPURA RANGE

The range of hills running from east to west between the Narmada and the Tapti was originally styled, either satpura (the seven sons) of the Vindhychal mountain or satpuda (the seven folds), referring to the numerous parallel ridges in Nimar, thousand kilometres, with homogenous nature, led to the term applied for the whole range commencing from Amarkantak in the east to the proximity of the western coast. Many of the hill chains were mapped and recognized later even in Europe and other continents. Customarily the term is applied to the whole range, The major sections of which are known as the Raj Pipla, Kalibhit, Asirgarh, Satpura proper, Mahadeo, Maikal and Saletkri. The ranges between the Mahadeo and the Maikal are generally referred by the names of local features of importance.

### THE MAHADEO

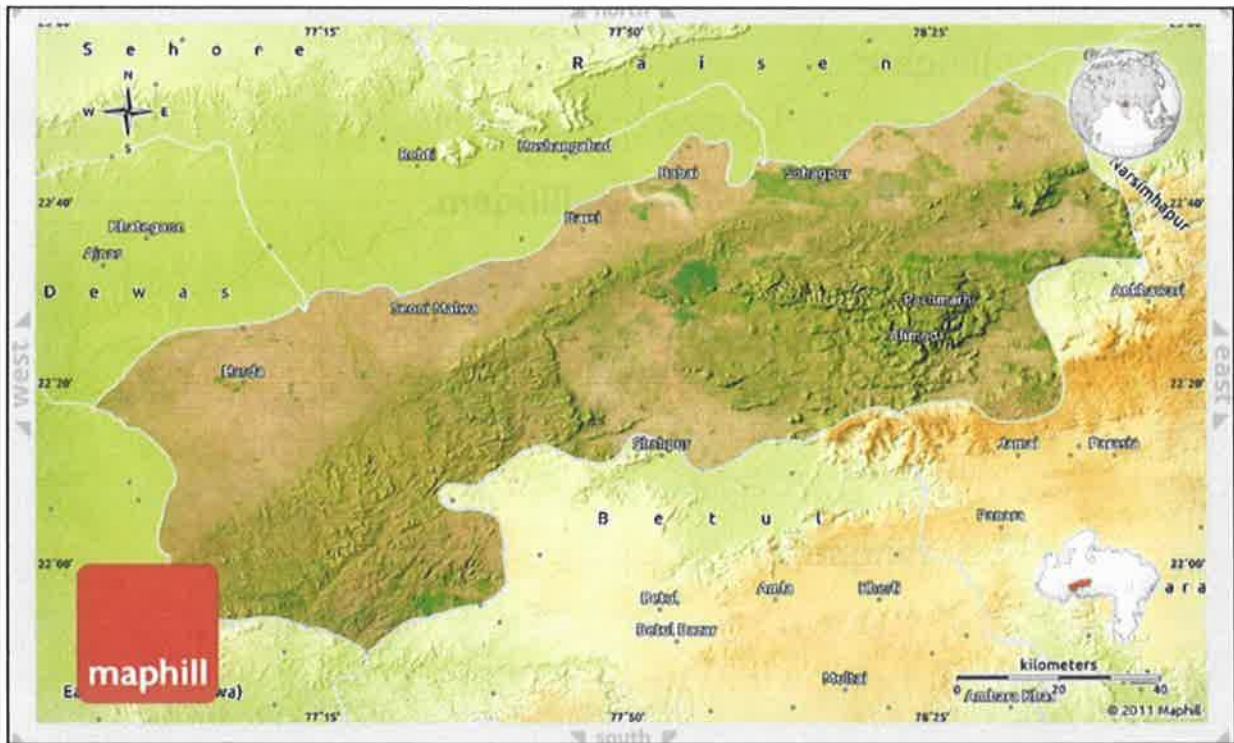
Originally applied to include the wider mass of sandstone hills encircled by the Denwa and the Sonbhadra rivers, the name 'Mahadeo' especially denotes a single peak, 1,336 metres high at the southern edge of the small but raised land of Pachmarhi, at the bottom of which are the sacred cave and the shrine of Mahadeo. The main range of the Satpura Mountains or Mahadeo hills extends from east to west in part of the district. The upstream of the Sonbhadra and the Denwa mark its southern limits. Further in the east the range reappears as Nandkot and Chauragarh across the Dudhi in Gadarwara and Amarwara tahsils. The hills to the west of the Sonbhadra extending along the Malni river are known as Malni hills. These are washed by the Denwa in the north which separates the low outer (northern most) range of hills of Satpura. The Mahadeo massif contains the Pachmarhi plateau and a complex of hills around including Dhupgarh 1,352 metres, the highest point between the Nilgiris and the Himalayas except Mount Abu. Other important peaks are Chauragarh 1,316 metres and Belkandhar 1,152 metres which are the finest hills in the entire Satpura range. At places the superficial stratum on the top of the hills is trappean but at Pachmarhi hills sandstones are uncovered. The plateau is most dissected, traversed in all directions by narrow deep ravines, hollowed out by the action of streams and rivers, and covered throughout their extent with forest. The northern face of the

plateau is also distinct from the plain by the sudden up lift. The outer range is the northern most line of low hills. It extends from the Dudhi in the east to the Morand in the west. This range is separated from the main range by the narrow valley along the east-west courses of the tributary streams, viz the Denwa, the Suk Tawa and the Morand. The outer range distinctly falls away from the main range in the centre, where it is crossed by the Tawa river which has carved a flat basin behind on the plateau itself. The outer range gradually rises in the east and merges with the main range beyond the Dudhi.

Dorla Pahar (885 metres) is the highest peak on south-eastern boundary.

**B.THE NARMADA VALLEY**

The northern half of the district is almost a long narrow plain covered under the black cotton soil and old sandy alluvium. It is the first in sequence among the three valleys along the course of the Narmada. Below the foot hills of the Satpura the country is flat with even surface in its centre. The country is monotonous to the horizon, except where the Vindhyan hills outcrop as knolls in the valley to the south of the river. The undulation increases towards Sohagpur in the east and the Charwa tract in the west. The Charwa tract is stony and forested but Bairi is nothing but a hilly country. The Vindhyan rocks across the Narmada are represented in low narrow ranges and denuded hillocks. The resultant soil is also light in addition to its gravelly nature and shallow depth. The Sohagpur tahsil is more undulating due to a multitude of streams flowing down the Satpuras, creating ravines and washing away the finer constituents of the soil. However, these undulations break the view of the wider plains and relieve the monotony of the scenery. The grand Mahadeo hills are in full sight. The plain is narrowest at the section of Semri in Sohagpur tahsil.



**10. RAINFALL: MONTH-WISE :**

The climate of Narmadapuram district is characterized by a hot summer and general dryness except during the south west monsoon season. The year may be divided into four seasons. The cold season, December to February is followed by the hot season from March to about the middle of June. The period from the middle of June to September is the southwest monsoon season. October and November form the post monsoon or transition period.

The normal rainfall of Narmadapuram district is 1225.9 mm. It receives maximum rainfall during southwest monsoon period. About 92.8% of the annual rainfall received during monsoon seasons and only 7.2 % of the annual rainfalls take place during October to May period. Rainfall forms the sole source of natural recharge to ground water regime and the rain water is available mainly during the southwest monsoon period only. The maximum rainfall received in district at Pachmarhi i.e. 2122 mm and minimum at Narmadapuram i.e. 1302.3 mm.

The normal maximum temperature received during the month of May is 42.1oC and minimum during the month of January is 11.7oC. The normal annual means maximum and minimum temperature of Narmadapuram district is 32.8oC and 19.8oC respectively. During the southwest monsoon season the relative humidity generally exceeds 91%(August month). In rest of the year is drier. The driest part of the year is the summer season, when relative humidity is less than 33%. April is the driest month of the year. The wind velocity is higher during the pre-monsoon period as compared to post monsoon period. The maximum wind velocity 7.7 km/hr observed during the month of June and is minimum 2.9 km/hr during the month of December. The average normal annual wind velocity of Narmadapuram district is 5.0 km/hr.

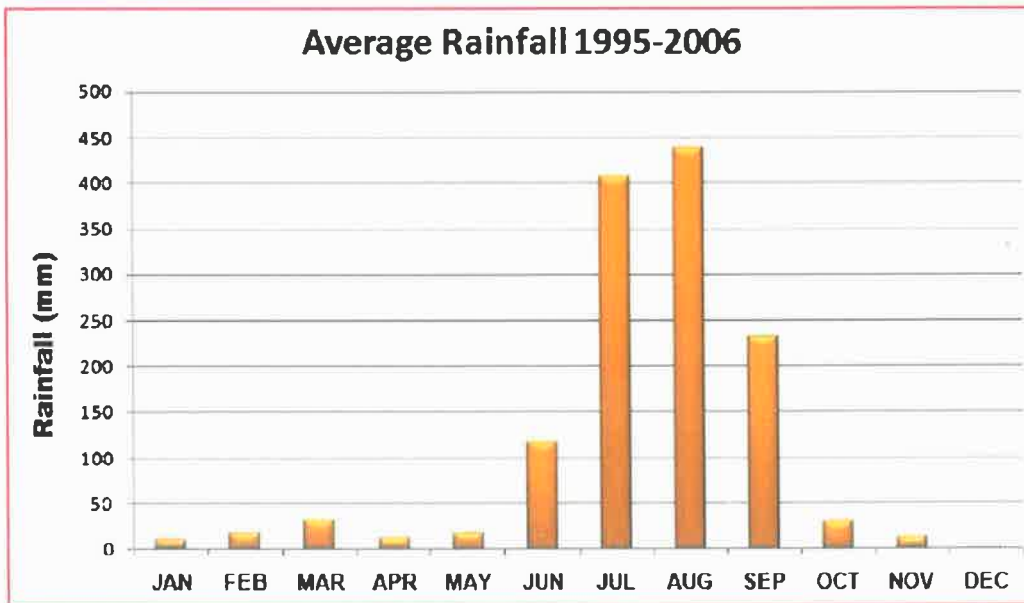
NARMADAPURAM	JAN	FEB	MAR	APR	MAY	JUN
Mean Monthly Rainfall (mm)	9.28	11.76	1.72	2.24	20.26	138.72

JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
331.92	489.22	141.92	23.76	3.08	1.04	1174.92

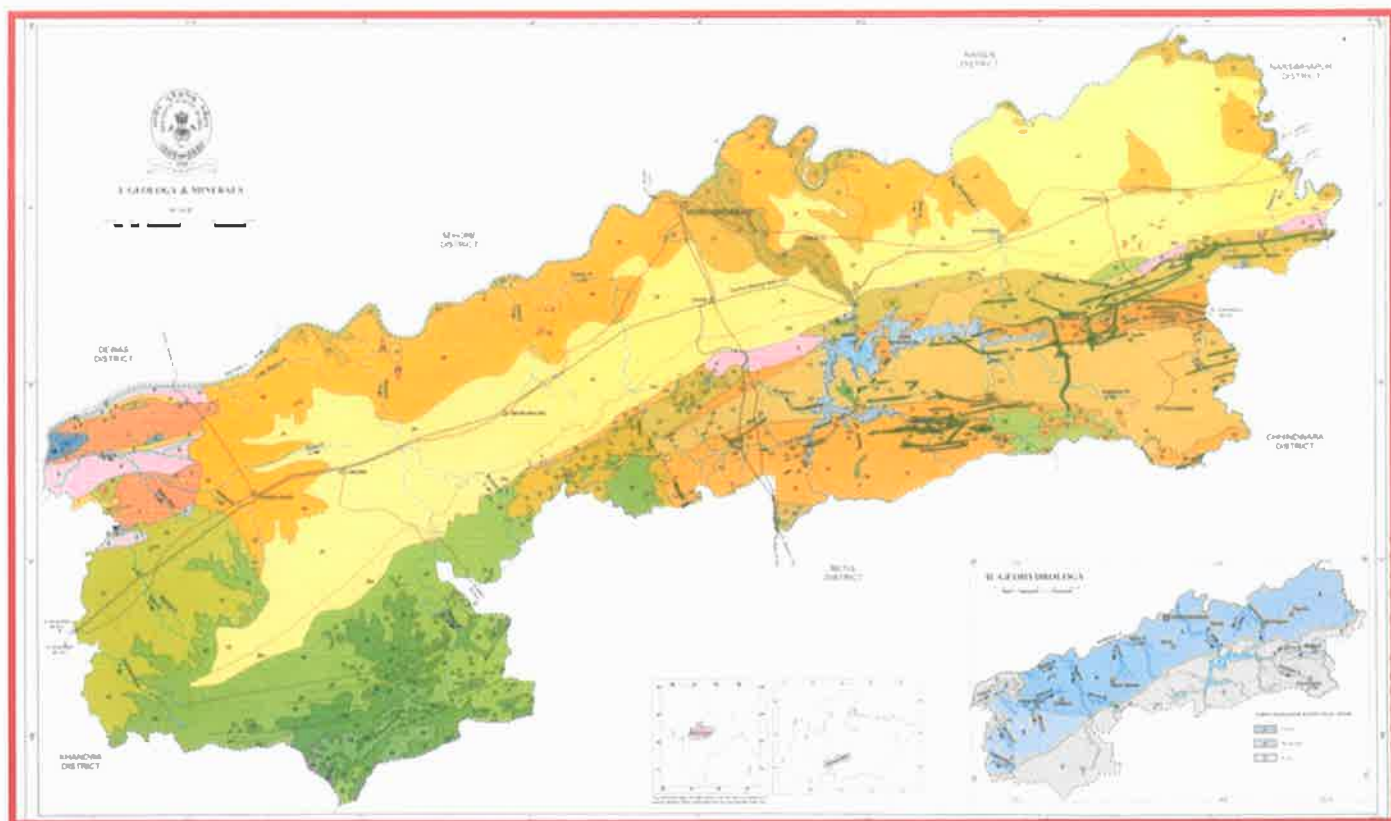


DISTRICT SURVEY REPORT OF NARMADAPURAM

Average Rainfall (mm)													
Months	Years												Avg.
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
JAN	29.8	11.8	6.4	0	5.3	0	0	0	6.4	40	17.8	0	9.791667
FEB	5	46	0	0	97	0	0	12.4	46.4	0	5	0	17.65
MAR	34.1	0		253.2	0	0	4.8	3.2	0	0	9.2	54.4	32.62727
APR	31.8	0		101.1	0	0	5.8	0.4	4.4	0.6	0.6	0	13.15455
MAY	0.6				20.6	19.6	32.6	11.8	4.6	32.7	0.2	42	18.3
JUN	138.2	14		55.2	200.2	68.8	250.6	167.3	148.6	58.3	155.8	26.6	116.6909
JUL	581.7	411.5		363.6	485.2	358.6	384.6	55.4	537.7	323.3	518.3	449.4	406.3455
AUG	489.4	248.8		205.8	399	284.5	244.2	957.4	274.2	685.8	128.9	896.8	437.7091
SEP	169.6	124.8	300.4	323.4	577.1	28.8	20.6	285.8	351.6	22.8	192.4	382.6	231.6583
OCT	13.6		53.4	30	97.4	0	84.8	13	2.8	18.2	3.8	13.2	30.01818
NOV	0		110.4	13.4	0	0	0	6.2	8.4	0.8	0	0.2	12.67273
DEC	4.6	0		0	0	0	0	0	6.2	0	0	32	1.181818



**11. GEOLOGY AND MINERAL:**



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# DISTRICT SURVEY REPORT OF NARMADAPURAM

Lithology	Stratigraphic Status	Group	Age	Nature and characteristic
21 Non-calcareous silt, sand and clay	Ramgarh Formation	QUATERNARY	Holocene	Pebbly sand, fine to medium sand and clays
20 Gravel, silt, sand and conglomerate	Bauras Formation		Holocene	Unconsolidated gravel, light grey to dark grey inter layered silt, medium to coarse sand and conglomerate
20a Silt and Silty sand/29a- sand, gravel and conglomerate	Hirdepur Formation		Late Pleistocene	Light grey silt and silty sand of flood plain deposits, coarse sand, gravels and conglomerate of fan facies
28 Calcareous sand, silt, clay, gravel and conglomerate	Baneta Formation		Late Pleistocene	Flood plain deposit comprising calcareous brown silt, fine sand with lenses of volcanic ash bed and charcoal bearing red silt sand, gravel and conglomerate
27 Sandy silt, silt, clay, gravel and conglomerate	Surajkund Formation		Middle Pleistocene	Flood plain deposit comprising yellow and steel grey silty clay, brown fine sand, silt, gravel and conglomerate
20b Sand and silty sand	Dhansi Formation		Lower Pleistocene	Flood plain deposits comprising red and brown silty sand, medium to coarse, yellow and orange and fine to medium grained grey sand
25 Gravel and sand	Palikavav Formation			Flood plain deposits comprising gravels and large scale cross bedded very coarse sand
20c Dykes and sills	Intrusive			Dark grey, medium grained dense and hard rock
23 3 simple and Aa basaltic lava flows	DECCAN TRAP (SATPURA GROUP)	Unclassified	Cretaceous to Palaeogene	Dark grey, fine to medium grained, hard and compact rock, non porphyritic in nature
22 3-4 simple and Aa basaltic lava flows				Dark grey, fine to medium grained dense and hard rock, non porphyritic to moderately porphyritic
21 3-5 simple, Aa and compound basaltic lava flows				Dark grey, fine to medium grained, dense and hard rock, mostly non porphyritic in nature
20 6-7 compound to simple and Aa basaltic lava flows with mega crystal unit				Dark grey, fine to medium grained, dense and hard rock, non porphyritic to sparsely porphyritic
19 3-5 Aa and compound pahoehoe basaltic lava flows with mega crystal unit				Dark grey, fine to medium grained, hard and compact rock, non porphyritic to moderately porphyritic
18 Unclassified basalts				Dark grey, fine to medium grained, hard and compact rock
17 Nodular limestone, clay and ferruginous shale	LAMETA GROUP	Late Cretaceous	White, pink, ferruginous, soft and friable rock	
16 Sandstone, shale, clay, siltstone, and conglomerate.	Jabalpur Formation	Cretaceous	Pinkish to yellowish white, fine to medium grained sandstone interbedded with soft friable red clay and carbonaceous material. Conglomerate has pebbles of quartz	
15 Variegated shale, conglomerate with limestone bands	Bagra Formation	Triassic	Brown coarse conglomerate unit with variegated shale and subordinated limestone	
14 Variegated clay and sandstone	Denwa Formation		Green, red to buff coloured, soft to moderately hard rock. Clays are fossiliferous	
13 Sandstone and pebble bed	Pachmarhi Formation	GONDWANA SUPERGROUP	Lower Triassic	White, fine to coarse grained sandstone with pebble bed
12 Clay, shale and gritty sandstone	Bijori Formation			Olive, buff clay and shale alternating with massive sandstone
11 Sandstone with pebbly interbands and variegated shale and clay	Motur Formation		Permian	Coarse grained sandstone with pebbly interbands and variegated shale and clay
10 Sandstone, shale and Carbonaceous Shale	Barakar Formation			Dirty white, white, grey, medium to coarse grained sandstone with carbonaceous shale
9 Tillite-Diamictite, olive shale and sandstone	Talchir Formation	Carboniferous to Permian	Tillite-Diamictite consisting of heterogenous class assemblages and soft to moderately hard, current bedded sandstone	
8 Lower Bhander sandstone and shale	BHANDER GROUP	VINDHYAN SUPERGROUP	Neoproterozoic (Late)	Pink, pinkish brown, dark red, fine to coarse grained, thickly bedded, massive hard sandstone with intra-formational conglomerate and shale
7 Upper Kaimur sandstone	KAIMUR GROUP		Meso-proterozoic	Bright purple, pink, buff, fine to coarse grained hard sandstone with gritty and pebbly horizon at base
6 Granite			Whitish to grey, medium to coarse grained, massive hard and compact rock	
5 Phyllite			Whitish to greenish black, fine grained, soft rock	
4 Quartzite	MAHAKOSHAL GROUP	Palaeo-proterozoic		Dull white to red coloured, fine grained, hard and compact rock
3 Chert breccia and ferruginous breccia			Dull white to reddish yellow, fine grained, hard and compact rock	
2 Dolomite			Bluish grey, white, crystalline, fine grained, massive and hard rock	
1 Metabasil			Dark green, greenish grey in colour, fine to medium grained, hard and compact rock.	

## DISTRICT SURVEY REPORT OF NARMADAPURAM

Narmadapuram district is situated in the southern part of Madhya Pradesh and covers an area of about 6704sq. kms. It falls in Survey of India degree sheet nos. 55B&C, 55F, 55J and 55G between latitudes 21°54' and 23°00'N and longitudes 76°46' and 78°43'E. The district is bounded by Dewas district in the northwest, Sehore and Raisen districts in the north, Narsinghpur district in the east, Chindwara district in the southeast, Betul district in the south and East Nimar district in the west. The district lies south of Narmada River and has a rectangular shape. Narmadapuram is the district headquarters and Itarsi, Harda, Sohagpur, Piparia and Matkuli are other important towns. The district is well connected by roads with the state capital, Bhopal and the adjacent district headquarters, Khandwa and Narsinghpur. Itarsi is one of the biggest railway junctions in the country, located on the Howrah-Mumbai and Chennai-New Delhi railway lines. Pachmarhi is an important hill station and center of tourist attraction. Physiographically, the district can be divided in two major divisions : 1. The central and northern plains and, 2. the southern Satpura hill ranges. The area is mainly drained by Narmada, Tawa and Ganjal rivers and their tributaries. The lowest elevation in the district is 280m above m.s.l. lies in the Narmada valley while the highest elevation is 1330m in the southwest of Pachmarhi.

The rocks occurring in the district range in age from Palaeoproterozoic to Quaternary. The Mahakoshal Group of rocks mainly comprise quartzite and chert breccia. The rocks of Vindhyan Supergroup comprise the Kaimur Group and Bhandar Group. The Kaimur Group is represented by Upper Kaimur sandstone comprising mainly sandstone, which is purplish red in colour, fine to medium grained and flaggy in nature. Bhandar Group consists of Lower Bhandar sandstone which is fine to coarse grained and at places, pebbly and quartzitic. The Gondwana sequence belonging to the Gondwana basin of Central India, comprises of Talchir, Barakar, Motur, Bijori, Pachmarhi, Denwa, Bagra and Jabalpur Formations. The Talchir Formation comprises tillite, diamictite, fine to medium grained sandstone and grey to olive green shales. The Barakar Formation is dominantly made up of coarse-grained feldspathic sandstone, grey shales and carbonaceous shale. Motur Formation overlies Barakar's Formation with a gradational contact. It comprises coarse-grained sandstone with pebbly interbands, variegated shales and clay. The Bijori Formation is exposed as a broad band. It comprises olive and buff coloured clays and shales, alternating with massive sandstone. The Pachmarhi Formation consists of thick beds of coarse to granular, white, arenite or quartzwacke, separated by lenses or thin layers of clast supported conglomerate and thin red clays bands. The Denwa Formation consists mainly of alternating bands of sandstone and red to variegated calcareous clay. The Bagra Formation comprises of conglomerate, variegated shales and subordinate limestone bands.

The youngest Gondwana sequence is represented by Jabalpur Formation. It consists mainly of massive sandstone alternating with white clays. Lenses of conglomerate are common. Discontinuous patchy exposures of Lameta Group are seen east of Barapura, Gotabari and Tangna. The basaltic lava flows of Deccan Trap are well exposed in the southern and southwestern part of the district. These flows, grouped under Satpura Group are mainly of Aa type and non-porphyritic to porphyritic to mega-porphyritic in nature. The thickness of individual flows varies from 15m to 47m. The Satpura Group comprises of 18 to 21 basaltic flows which are further classified in 5 Formations. Numerous dykes and sills, mostly of doleritic composition intrude the Gondwana rocks and basaltic flows. The dykes range in the length from few hundred meters to few kilometers, with width ranging from few metres to few hundred metres. Most of the dykes trend in E-W to NE-SW direction. Quaternary Narmada alluvial deposits occupy a major part of the district have been subdivided into seven litho-stratigraphic formations viz. Surajkund Formation, Baneta Formation, Hirdepur Formation, Bauras Formation and Ramgarh Formation, on the basis of lithological characters, degree of oxidation, calcification of the sediments, erosional unconformities, soil stratigraphy, morpho-stratigraphy and presence of volcanic ash. The Quaternary sediments contain the richest vertebrate fossil assemblage including *Bos sp.*, *Gazelle sp.*, *Stegodon namadicus*, *SUS namadicus*. The successive faunal zones belonging to early to middle Pleistocene and Upper Pleistocene respectively have been recognized. Palynological studies of carbonaceous clays of the Baneta Formation have shown presence of angiosperms, pollens, pteridophytes and fungal spores. A fossil of human skull, *Narmada Homoerectus* (Middle Pleistocene) has been discovered from Hatthnora village, northeast of Narmadapuram. The handaxes, cleavers, scrappers' etc. indicate the Paleolithic culture prevalent in the area. The Vindhyan sandstone serves as a good building stone while Basalt

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DISTRICT SURVEY REPORT OF NARMADAPURAM

is useful as road metal. Occurrences of lead and manganese, ores are reported from the district. A hot spring is located at Anhoni village discharging hot water.

**The regional succession is as follows:**

Lithology	Stratigraphic Status	Group	Age	Nature and Characteristic
non-calcareous silt, sand and clay	Ramagarh Formation	QUATERNARY	Holocene	<b>Pebbly sand, fine to medium sand and clays</b>
Gravel, silt, sand and conglomerate	Bauras Formation		Holocene	Unconsolidated gravel, light grey to dark grey inter layered silt, mecum to coarse sand and conglomerate
Silt and Silty sand/29a-sand, gravel and conglomerate	Hirdepur Formation		Late Pleistocene	Light grey silt and silty sand of flood plain deposits/coarse sand, gravels and conglomerate of fan facies
Calcareous sand, silt, clay, gravel and conglomerate	Baneta Formation		Late Pleistocene	Flood plain deposit comprising calcareous brown silt, fine sand with lenses of volcanic ash bed and charcoal bearing red silt sand, gravel and conglomerate
Sandy silt, silt, clay, gravel and conglomerate	Surajkund Formation		Middle Pleistocene	Flood plain deposit comprising yellow and steel grey silty clay, brown fine sand, silt, gravel and conglomerate
Sand and silty sand	Dhansi Formation		Lower Pleistocene	Flood plain deposits comprising red and brown silty sand, medium to coarse, yellow and orange and fine to medium grained grey sand.
Gravel and sand	Palikavar Formation			Flood plain deposits comprising gravels and large scale cross bedded very coarse sand
Dykes and sills	Intrusive		DECCAN TRAP (SATPURA GROUP)	
3 simple and Aa basaltic lava flows				Dark grey, fine to medium grained, hard and compact rock, non-porphyrific in nature
3-4 simple and Aa basaltic lava flows				Dark grey, fine to medium grained dense and hard rock, non-porphyrific to moderately

DISTRICT SURVEY REPORT OF NARMADAPURAM

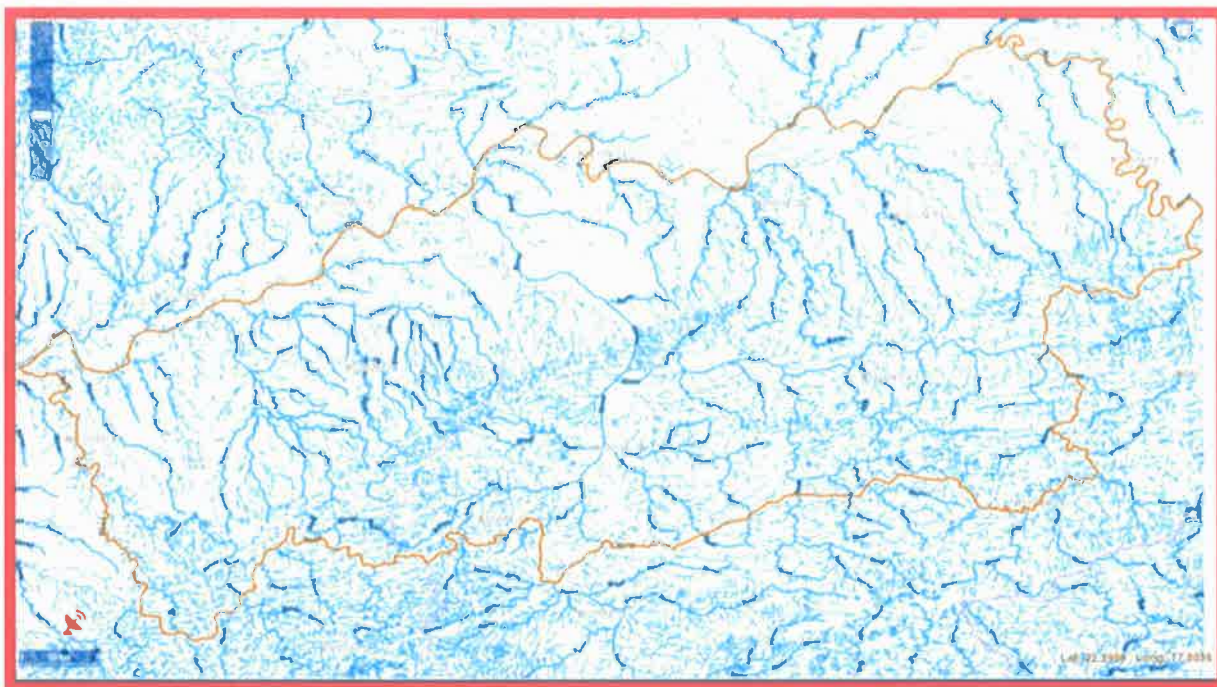
				porphyritic
3-5 simple, Aa and compound basaltic lava flows			Cretaceous to Palaeogene	Dark grey, fine to medium grained, dense and hard rock mostly non-porphyritic in nature
6-7 compound to simple and Aa basaltic lava flows with mega crystal unit				Dark grey, fine to medium grained, dense and hard rock, non-porphyritic to sparsely porphyritic
3-5 Aa and compound pahoehoe basaltic lava flows with mega crystal unit				Dark grey, fine to medium grained, hard and compact rock, non-porphyritic to moderately porphyritic
Unclassified basalts	Unclassified			Dark grey, fine to medium grained, hard and compact rock
Nodular limestone, clay and ferruginous shale		LAMETA GROUP	Late Cretaceous	White, pink, ferruginous, soft and friable rock
Sandstone, shale, clay, siltstone, and conglomerate.	Jabalpur Formation	GONDWANA SUPERGROUP	Cretaceous	Pinkish to yellowish white, fine to medium grained sandstone interbedded with soft friable red clay and carbonaceous material. Conglomerate has pebbles of quartz
Variegated shale, conglomerate with limestone bands	Bagra Formation		Triassic	Brown coarse conglomerate unit with variegated shale and subordinated limestone
Variegated clay and sandstone	Denwa Formation			Green, red to buff coloured, soft to moderately hard rock. Clays are fossiliferous
Sandstone and pebble bed	Pachmarhi Formation		Lower Triassic	White, fine to coarse grained sandstone with pebble bed.
Clay, shale and gritty sandstone	Bijori Formation		Permian	Olive, buff clay and shale alternating with massive sandstone
Sandstone with pebbly	Motur			Coarse grained sandstone with pebbly interbands and

DISTRICT SURVEY REPORT OF NARMADAPURAM

interbands and variegated shale and clay	Formation		variegated shale and clay
Sandstone, shale and Carbonaceous Shale	Barakar Formation		Dirty white, white, grey, medium to coarse grained sandstone with carbonaceous shale
Tillite-Diamictite, olive shale and	Talchir Formation	Carboniferous to Permian	Tillite-Diamictite consisting of heterogenous clasts

**12. ADDITIONAL NOTES:****A. Details of river or stream and other sand source of the district:**

In Narmadapuram district Chief source of sand and gravel is rivers and stream. details of major river is hereunder.

**The Narmada**

The Narmada finds its place in almost all the old books of references except in Rig Veda and Sutras of Panini. The river was known to Ptolemy and the author of Periplus as the Nommadios or Nammadius. It is considered to be one of the seven sacred rivers of India, since Manu. The Rewa khand of the Skandapuram has a chapter devoted to the Narmada. In one of the many legends described therein, Narmada, the damsel, sprang from the body of Lord Shiva and was named so, meaning delighting since all the Gods were captivated by her beauty. In central India the river is held to be far more sacred than the Ganga. Even sighting of the Narmada is equal in removing sins of a person as a dip in the Ganga. The Pradakshina (clockwise marching) of Narmada from Broach/Handia is considered to be a performance of highest religious efficacy. The Narmada rises from Amarkantak at an elevation of about 1,057 m. and flows through the district of Shahdol, Mandla, Seoni (boundary) and Jabalpur. The fall at Kapil dhara and Dhuandhar below Amarkantak and Bheraghat respectively are worth mention. The river enters a narrow plain here and flows through the northern boundaries of Narsimhapur, Narmadapuram, East Nimar and West Nimar on the left and the southern boundaries of Raisen, Sehore, Dewas, Dhar and Jhabua on the right. The long narrow valley (350 km) is closed by the hills approaching from both sides near Handia. Along the course of the river are several important crossing ghats and ferries, which join the Uttar Bharat(North) with the Deccan and several paurani/pouranic and religious sites especially devoted to Lord Shiva, providing historical, religious and cultural links. The hill temple of Mandhata located on a river-island is one such link. It is also the starting point of the central basin, wider than the first and about 150 m. long, the Mandleshwar plain. The ancient capital of the Haihaya king Shahastrarajuna, Mahismati is now identified with the town of Maheshwar located in this plain. The total length of the river is estimated 1,290 km. The Narmada touches the northern boundary of Narmadapuram district at Khara village near its confluences with the



## DISTRICT SURVEY REPORT OF NARMADAPURAM

Dudhi, a tributary on the left bank. The width of the river channel in this part is about one kilometer. About 8 km. north-west of Narmadapuram, the Tawa joins it on the left bank. The Hather, the Ganjal and the Machak also join the left bank one after the other draining the northern parts of the Satpura plateau first, and then southern side of the Narmada valley. As the Dudhi in the north-east and Machak in the south-west form the district boundary of Narmadapuram, the Hather and the Ganjal mark the western boundaries of Narmadapuram and Seoni-Malwa tahsils respectively.

### THE DUDHI

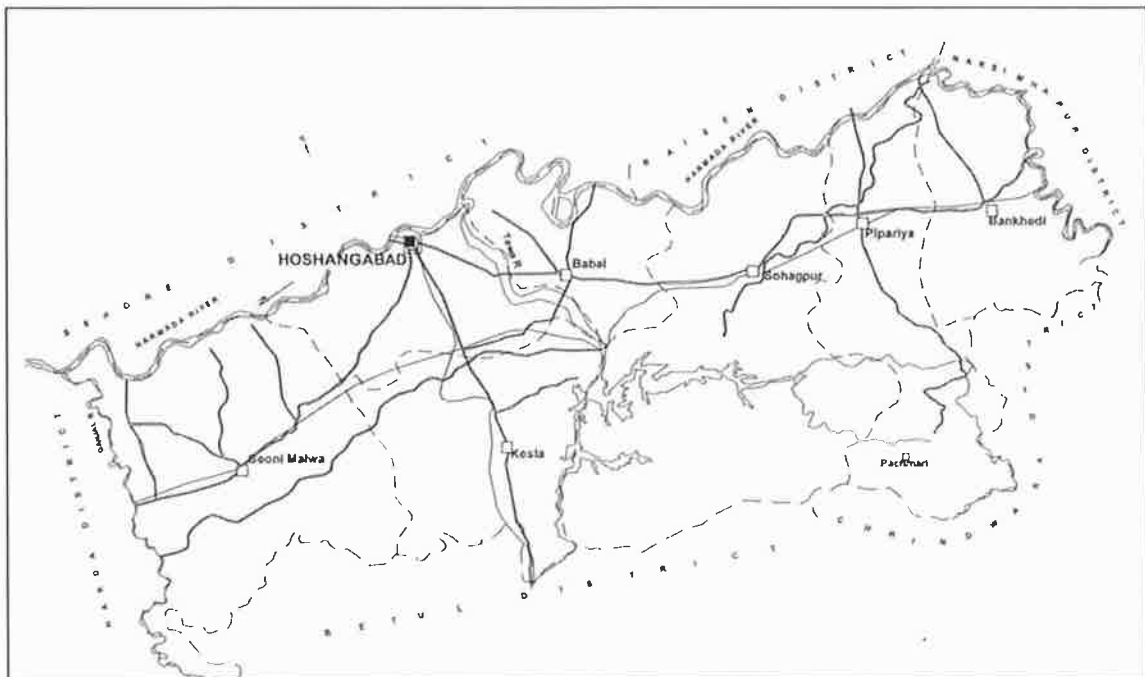
Dudhi (the milky) is the eastern most tributary of the Narmada in the Narmadapuram district. The entire boundary separating Narsimhapur is aligned by this river. It rises at Satalba on the north-eastern flank of the Mahadeo hills in Chhindwara. Some of its streams also wash the southern face of the scarp above Patalkot. It flows to the north among the hills but meanders in a north-westerly direction in the valley, joining the Narmada at Kharia after meandering of 106 km.

### THE TAWA

The Tawa is the largest tributary (about 185 km) to river Narmada of which about 70 km. lies in Narmadapuram district. The Tawa rises from the Chhindhana hill and has a westerly course between the two hill ranges in Chhindwara and Betul districts. The river takes to the north near Ghoradongri and is broadened considerably after receiving the Phopas, the Machna and the Sukh Tawa on the left bank and the Malini and the Denwa on the right bank. It is heard that its wide sandy bed is responsible for the name Tawa (wide baking pot). It also marks the central part of the boundary between Narmadapuram and Sohagpur tahsils and joins the Narmada.

### THE DENWA

Joining the Tawa near Bagra, the Denwa is an important stream. Among the complex of hills around Pachmari plateau a line of hills extends from Dhupgarh (1,350 metres) to Burimal (1,088 metres) located about 15 km. in the south. The Denwa rises at Denwa Khud south of the plateau and circuits it flowing to the south, east, north and the west. The circle is completed by the course of the Sonbhadra which joins the Denwa after flowing first to the west and then to the north. The Denwa carves a narrow valley extending east to west between the two northern ranges of the Mahadeo hills. The Denwa valley is separated from the Narmada valley.



o Tehsil wise detail of river or stream and other sand source

S.No.	Tehsil	River or River stream for Sand Source
1	Narmadapuram	Narmada River, Tawa River
2	Makhananagar	Tawa River
3	Itarsi	Sukhtawa River, Khahra River, Tawa River
4	Sohagpur	Narmada River
5	Sivni Malwa	Narmada River, Ganjal River, Moran River
6	Pipariya	Anjan River, Narmada River, Kornu River
7	Bankhedi	Dudhi River
8	Dolariya	Hathed River

o Tehsil wise Availability of sand or gravel or aggregate resources

SN	Tehsil	River Name	Name of Sand Ghat
1	Narmadapuram	Narmada River, Tawa River	Bandrabhan, Jaasalpur-1, Nimsadiya-2, Devlakhedi, Mehraghat-10, Horiyapipar, bandbhan, Sogarwada, Barandua, Bandabhan-1, Bandrabhan-2, Bandrabhan-3, Bandrabhan-5, Bandrabhan-6, Bandrabhan-7, Bandrabhan-11, Bandrabhan-12-13-14, Bandrabhan-15, bandrabhan-16, Raipur-21-22-23, Raipur-24, Raipur-25, Raipur-26, Raipur-30, Jasalpur-2, Nimsadiya-1, Nimsadiya-3, Nimsadiya-4, Devlakhedi, Mehraghat-9, Khojanpur-A, Khojanpur-B, Khojanpur-C, Khojanpur-D,
2	Makhananagar	Tawa River	Rajon-1, Rajon-2, Sangakhedakhurd, Balabhet-1, Chaplasar-1, Jhalsarseth-1, Jawli, Rajon-3, Sangakhedakala, Balabhet-2, Chaplsar-2, Pilikarar, Jhalsarseth, ANchalkheda-1, Anchalkheda-2, Anchalkheda-3, Anchalkheda-4, Anchalkheda, Pawarkhedakhurd-1, Pawarkhedakhurd-2, Pawarkhedakhurd-3, Pawarkhedakhurd-4, Dudiyaaghat, Rajon-4, Kirpura, Kirpura-2, Aamkhedi,
3	Itarsi	Sukhtawa River, Khahra River, Tawa River	Maroda-1, Kesla, Kasdakhurd, Kasda-rytwadi, Choukipura, Somalwada, Pahanvarri, MAroda-2, Gwadikala, Gwadikala-1, Gwadikala-2,
4	Sohagpur	Narmada River	Revamuhari, Revavankhedi, Madanpur

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

5	Sivni Malwa	Narmada River, Ganjal River, Moran River	Ramgarh-1, Ramgarh-2, Dethi-2, Guranjghat, Babri-1, Gwadi, Surajpur, Kothra, Dimawar, Dimawar-1, Babri-2, Gwadi-1, Gwadi-2, Deyhi-1, Shahpur, Navalgaon
6	Pipariya	Anjan River, Narmada River, Korni River	Jamara, Surelakala, Dhadiyakishore-2, Singhodi, Sarrakishore, Markadhana, Khaparkheda, Dhadiyakishore-1, Rampur, Buchal
7	Bankhedi	Dudhi River	Bedar, Malhanwada, Khapakhurd, Kaamti, Murgidhana, Junheta, Vahravan, Pipariyaraja-2, Malhanwada-1, Malhanwada-2, Paraswada, Anhai, Dumar, Imaliya, Umardha, Pipariyaraja-1
8	Dolariya	Hathed River	Dolariya

**o River wise Recommended Sand Ghats for availability of sand**

S.No.	Resource of Sand	No. of Sand Ghats
1	Narmada River	21
2	Tawa River	60
3	Dudhi River	16
4	Ganjal River	05
5	Anjan River	05
6	Korni River	04
7	Sukhtawa River	03
8	Hathed River	01
9	Khahra River	01
10	Moran River	02
<b>Total</b>		<b>118</b>

List of Potential Mining Leases (Existing & Proposed)

Sr No.	Name of river	Name of Tehsil	Name of Mine & Details	Distance in km from PA/BR/WC	Distance from Forest Area (in meter)	Mineral Potential (in cum)	Existing /Proposed	Mineral to be Mined out (Sand/Bajari/RBM etc)
1	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.555H	>10km	>250m	189990	Existing	Sand
2	Tawa	Narmadapuram	Jaasalpur-1 Kh No. 691/1 Area 10.000H	>10km	>250m	180000	Existing	Sand
3	Tawa	Narmadapuram	Nimsadiya-2 Kh No. 1163 Area 20.243H	>10km	>250m	242916	Existing	Sand
4	Tawa	Narmadapuram	Devlakhedi Kh No.60 Area 12.145H	>10km	>250m	145740	Existing	Sand
5	Tawa	Narmadapuram	Mehraghat-10 Kh No.365 Area 11.655H	>10km	>250m	139860	Existing	Sand
6	Tawa	Narmadapuram	Horiyapipar Kh No. 226 Area 19.746H	>10km	>250m	177714	Existing	Sand
7	Tawa	Makhannagar	Rajon-1 Kh No.181/1 Area 17.500H	>10km	>250m	262500	Existing	Sand
8	Tawa	Makhannagar	Rajon-2 Kh No.181/1 Area 17.500H	>10km	>250m	262500	Existing	Sand
9	Narmada	Makhannagar	Sangakhedakhurd Kh No.1 Area 10.000H	>10km	>250m	120000	Existing	Sand
10	Tawa	Itarsi	Maroda-1 Kh No. 1 Area 22.500H	>10km	>250m	378000	Existing	Sand
11	Narmada	Sohagpur	Rewamuhari Kh No. 114 Area 10.00H	>10km	>250m	120000	Existing	Sand
12	Narmada	Sivni Malwa	Ramgarh-1 Kh No. 1/1 Area 11.000H	>10km	>250m	184800	Existing	Sand
13	Narmada	Sivni Malwa	Ramgarh-2 Kh No. 1/1 Area 11.000H	>10km	>250m	178200	Existing	Sand
14	Ganjal	Sivni Malwa	Dethi-2 Kh No. 291,559 Area 6.433H	>10km	>250m	96495	Existing	Sand



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15	Ganjal	Sivni Malwa	Guranjghat Kh No. 1/1 Area 9.00H	>10km	>250m	135000	Existing	Sand
16	Korni	Pipariya	Jamara Kh No. 137 Area 19.938H	>10km	>250m	23926	Existing	Sand
17	Korni	Pipariya	Surelakala Kh No. 1 Area 8.377H	>10km	>250m	10052	Existing	Sand
18	Aanjan	Pipariya	Dhadiyakishore-2 Kh No. 115 Area 8.522H	>10km	>250m	76698	Existing	Sand
19	Aanjan	Pipariya	Singhodi Kh No. 206 Area 6.000H	>10km	>250m	72000	Existing	Sand
20	Dudhi	Bankhedhi	Bedar Kh No. 58 Area 16.976H	>10km	>250m	285197	Existing	Sand
21	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 4.858H	>10km	>250m	87444	Existing	Sand
22	Narmada	Narmadapuram	Dogarwada Kh No. 3 Area 5.000H	>10km	>250m	90000	Existing	Sand
23	Narmada	Narmadapuram	Barandua Kh No. 118/1 Area 11.00H	>10km	>250m	171600	Existing	Sand
24	Tawa	Makhannagar	Balabhet-1 Kh No. 1/1 Area 5.000H	>10km	>250m	54000	Existing	Sand
25	Tawa	Makhannagar	Chaplasar-1 Kh No. 1 Area 5.000H	>10km	>250m	54000	Existing	Sand
26	Tawa	Makhannagar	Jhalsarseth-1 Kh No. 92/1,93/3,94/1 Area 5.000H	>10km	>250m	54000	Existing	Sand
27	Tawa	Makhannagar	Jawli Kh No. 380 Area 5.000H	>10km	>250m	84000	Existing	Sand
28	Tawa	Makhannagar	Rajon-3 Kh No. 181 Area 4.000H	>10km	>250m	52800	Existing	Sand
29	Khahra	Itarsi	Kesla Kh No. 432/1 Area 4.000H	>10km	>250m	36000	Existing	Sand
30	Sukhtawa	Itarsi	Kaasdakhurd Kh No. 263,283 Area 4.000H	>10km	>250m	62400	Existing	Sand
31	Sukhtawa	Itarsi	Kaasda rytwadi Kh No. 18 Area 4.00H	>10km	>250m	67200	Existing	Sand
32	Sukhtawa	Itarsi	Choukipura Kh No. 76,80	>10km	>250m	33840	Existing	Sand

DISTRICT SURVEY REPORT OF NARMADAPURAM

33	Narmada	Pipariya	Area 2.820H Sarrakishore Kh No. 32 Area 4.000H	>10km	>250m	67200	Existing	Sand
34	Korni	Pipariya	Markadhana Kh No. 86 Area 4.000H	>10km	>250m	26400	Existing	Sand
35	Dudhi	Bankhedi	Malhanwada Kh No. 344 Area 4.000H	>10km	>250m	67200	Existing	Sand
36	Dudhi	Bankhedi	Murgidhana Kh No. 354 Area 4.000H	>10km	>250m	64800	Existing	Sand
37	Dudhi	Bankhedi	Kaanti Kh No. 332 Area 5.000H	>10km	>250m	84000	Existing	Sand
38	Dudhi	Bankhedi	Khapakhurd Kh No.89 Area 4.000H	>10km	>250m	67200	Existing	Sand
39	Dudhi	Bankhedi	Junheta Kh No. 1 Area 4.000H	>10km	>250m	67200	Existing	Sand
40	Dudhi	Bankhedi	Vahravan Kh No.141 Area 4.000H	>10km	>250m	67200	Existing	Sand
41	Dudhi	Bankhedi	Pipariya Raja Kh No. 118 Area 4.040H	>10km	>250m	67872	Existing	Sand
42	Narmada	Sivni Malwa	Baavri-1 Kh No. 137/1 Area 4.000H	>10km	>250m	62400	Existing	Sand
43	Narmada	Sivni Malwa	Gwadi Kh No. 37/1 Area 4.00H	>10km	>250m	67200	Existing	Sand
44	Ganjal	Sivni Malwa	Surajpur Kh No. 27 Area 2.000H	>10km	>250m	33600	Existing	Sand
45	Ganjal	Sivni Malwa	Kothra Kh No. 1 Area 10.000H	>10km	>250m	168000	Existing	Sand
46	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 7.815H	>10km	>250m	140670	Existing	Sand
47	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 11.00H	>10km	>250m	198000	Existing	Sand
48	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.00H	>10km	>250m	180000	Existing	Sand
49	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.00H	>10km	>250m	180000	Existing	Sand
50	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.555H	>10km	>250m	189990	Existing	Sand

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51	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.00H	>10km	>250m	180000	Existing	Sand
52	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.00H	>10km	>250m	180000	Existing	Sand
53	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 31.110H	>10km	>250m	559980	Existing	Sand
54	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.00H	>10km	>250m	180000	Existing	Sand
55	Tawa	Narmadapuram	Bandrabhan Kh No. 207 Area 10.555H	>10km	>250m	189990	Existing	Sand
56	Tawa	Narmadapuram	Raipur 21 22 23 Kh No. 01 Area 30.555H	>10km	>250m	549990	Existing	Sand
57	Tawa	Narmadapuram	Raipur 24 Kh No. 01 Area 10.555H	>10km	>250m	177324	Existing	Sand
58	Tawa	Narmadapuram	Raipur 25 Kh No. 01 Area 10.000H	>10km	>250m	168000	Existing	Sand
59	Tawa	Narmadapuram	Raipur 26 Kh No. 01 Area 10.555H	>10km	>250m	189990	Existing	Sand
60	Tawa	Narmadapuram	Raipur 30 Kh No. 01 Area 10.555H	>10km	>250m	177324	Existing	Sand
61	Tawa	Narmadapuram	Jaasalpur-2 Kh No. 691/2 Area 31.240H	>10km	>250m	524832	Existing	Sand
62	Tawa	Narmadapuram	Nimsadiya-1 Kh no.1163 Area 20.243H	>10km	>250m	267207.6	Existing	Sand
63	Tawa	Narmadapuram	Nimsadiya-3 KH No. 1163 Area 30.000H	>10km	>250m	432000	Existing	Sand
64	Tawa	Narmadapuram	Nimsadiya-4 Kh No. 1163 Area 30.000H	>10km	>250m	432000	Existing	Sand
65	Tawa	Narmadapuram	Devlakhedi Kh No. 61 Area 30.000H	>10km	>250m	396000	Existing	Sand
66	Tawa	Narmadapuram	Mehraghat-9 Kh No. 365 Area 11.655H	>10km	>250m	174825	Existing	Sand
67	Narmada	Narmadapuram	Khojanpur (A) Kh No. 1 Area 50.405H	>10km	>250m	756075	Existing	Sand
68	Narmada	Narmadapuram	Khojanpur (B) Kh No. 1 Area 20.405H	>10km	>250m	306075	Existing	Sand

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69	Narmada	Narmadapuram	Khojanpur (C) Kh No. 1 Area 17.100H	>10km	>250m	256500	Existing	Sand
70	Narmada	Narmadapuram	Khojanpur Kh No. 1 Area 17.100H	>10km	>250m	256500	Existing	Sand
71	Hathed	Dolariya	Dolariya Kh No. 218,267 Area 2.500H	>10km	>250m	18000	Existing	Sand
72	Tawa	Makhannagar	Sangakhedakalan Kh No. 778/1 Area 10.000H	>10km	>250m	168000	Existing	Sand
73	Tawa	Makhannagar	Balabhet-2 Kh No. 1/1 Area 18.733H	>10km	>250m	224796	Existing	Sand
74	Tawa	Makhannagar	Chaplasar-2 Kh No. 1 Area 29.000H	>10km	>250m	382800	Existing	Sand
75	Tawa	Makhannagar	Pilikar Kh No. 1 Area 14.366H	>10km	>250m	189631	Existing	Sand
76	Tawa	Makhannagar	Jhalsarseth Kh No. 92/1,93/2 Area 15.691H	>10km	>250m	188292	Existing	Sand
77	Tawa	Makhannagar	Anchalkheda-1 Kh No. 87/2 Area 10.000H	>10km	>250m	168000	Existing	Sand
78	Tawa	Makhannagar	Anchalkheda-2 Kh No. 87/2 Area 10.000H	>10km	>250m	168000	Existing	Sand
79	Tawa	Makhannagar	Anchalkheda-3 Kh No. 87/2 Area 10.000H	>10km	>250m	168000	Existing	Sand
80	Tawa	Makhannagar	Anchalkheda-4 Kh No. 87/2 Area 10.000H	>10km	>250m	176165	Existing	Sand
81	Tawa	Makhannagar	Anchalkheda Kh No. 87/2 Area 15.490H	>10km	>250m	260232	Existing	Sand
82	Tawa	Makhannagar	Pawarkhedakhurd -1 Kh No. 1/1 Area 15.000H	>10km	>250m	270000	Existing	Sand
83	Tawa	Makhannagar	Pawarkhedakhurd -2 Kh No. 1/1 Area 18.000H	>10km	>250m	324000	Existing	Sand
84	Tawa	Makhannagar	Pawarkhedakhurd -3 Kh No. 1/1 Area 23.000H	>10km	>250m	414000	Existing	Sand
85	Tawa	Makhannagar	Pawarkhedakhurd -4 Kh No. 1/1 Area 17.000H	>10km	>250m	306000	Existing	Sand



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86	Tawa	Makhannagar	Dudiyaghat Kh No.315 Area 45.000H	>10km	>250m	810000	Existing	Sand
87	Tawa	Makhannagar	Rajon-4 Kh No.181/1 Area 0.405H	>10km	>250m	7290	Existing	Sand
88	Tawa	Makhannagar	Kirpura Kh No.253 Area 20.200H	>10km	>250m	363600	Existing	Sand
89	Tawa	Makhannagar	Kirpura Kh No. 253 Area 26.000H	>10km	>250m	468000	Existing	Sand
90	Narmada	Makhannagar	Aamkhedi Kh No. 48 Area 10.000H	>10km	>250m	180000	Existing	Sand
91	Tawa	Itarsi	Somalwada Kh No.1 Area 45.000H	>10km	>250m	810000	Existing	Sand
92	Tawa	Itarsi	Paahanvarri Kh No.1/1 Area 54.000H	>10km	>250m	972000	Existing	Sand
93	Tawa	Itarsi	Maroda-2 Kh No.a Area 22.500H	>10km	>250m	405000	Existing	Sand
94	Tawa	Itarsi	Gwadikala Kh No.108 Area 4.000H	>10km	>250m	72000	Existing	Sand
95	Tawa	Itarsi	Gwadikala-1 Kh No.124.125 Area 22.500	>10km	>250m	405000	Existing	Sand
96	Tawa	Itarsi	Gwadikala-2 Kh.No.124.125 Area 18.000	>10km	>250m	324000	Existing	Sand
97	Narmada	Sivni Malwa	Dimavar Kh.No.107 Area 2.000	>10km	>250m	36000	Existing	Sand
98	Narmada	Sivni Malwa	Dimavar-1 Kh.No.107 Area 16.500H	>10km	>250m	297000	Existing	Sand
99	Narmada	Sivni Malwa	Bavri-2 Kh.No.137/1 Area 18.000	>10km	>250m	324000	Existing	Sand
100	Narmada	Sivni Malwa	Gwadi-1 Kh.No.37/1 Area 12.795	>10km	>250m	230310	Existing	Sand
101	Narmada	Sivni Malwa	Gwadi-2 Kh.No.37/1 Area 12.795	>10km	>250m	230310	Existing	Sand
102	Ganjaal	Sivni Malwa	Daithi Kh.No.1 Area 0.809	>10km	>250m	9708	Existing	Sand
103	Moran	Sivni Malwa	Sahapura Kh.No.1/1,1/2,1/ 3,1 Area 1.315H	>10km	>250m	18147	Existing	Sand

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104	Moran	Sivni Malwa	Navalgaon Kh.No.20/1 Area 0.708	>10km	>250m	9770.4	Existing	Sand
105	Narmada	Sohagpur	Revavankhedi Kh.No.1/1 Area 10.000	>10km	>250m	180000	Existing	Sand
106	Narmada	Sohagpur	Madanpur Kh.No.1 Area 20.000	>10km	>250m	360000	Existing	Sand
107	Korni	Pipariya	Khaparkheda Kh.No.244 Area 0.809	>10km	>250m	970	Existing	Sand
108	Aanjan	Pipariya	Dhadiyakhoshor-1 Kh.No.115 Area 1.000	>10km	>250m	12000	Existing	Sand
109	Aanjan	Pipariya	Rampur Kh.No.148 Area 7.000	>10km	>250m	84000	Existing	Sand
110	Aanjan	Pipariya	Buchal Kh.No.98 Area 7.607	>10km	>250m	91284	Existing	Sand
111	Dudhi	Bankhedi	Malhanwara-1 Kh.No.344 Area 10.500	>10km	>250m	157500	Existing	Sand
112	Dudhi	Bankhedi	Malhanwara-2 Kh.No.344 Area 10.500	>10km	>250m	157500	Existing	Sand
113	Dudhi	Bankhedi	Paraswara Kh.No.312 Area 15.000	>10km	>250m	225000	Existing	Sand
114	Dudhi	Bankhedi	Anhaai Kh.No.357 Area 14.400	>10km	>250m	216000	Existing	Sand
115	Dudhi	Bankhedi	Dumar Kh.No.1 Area 30.000	>10km	>250m	450000	Existing	Sand
116	Dudhi	Bankhedi	Emliya Kh.No.269 Area 20.000	>10km	>250m	300000	Existing	Sand
117	Dudhi	Bankhedi	Umradha Kh.No.1498 Area 20.671	>10km	>250m	310065	Existing	Sand
118	Tawa	Bankhedi	Pipariyaraja-1 Kh.No.644 Area 23.572H	>10km	>250m	353580	Existing	Sand

• DRAINAGE SYSTEM WITH DESCRIPTION OF MAIN RIVERS :

S.No.	Name of River	Area Drained (Sq Km)	% Area Drained in the District
1	Narmada River	98796	5.47
2	Tawa River	6333	100
3	Dudhi River	1541	46
4	Ganjal River	834	38
5	Anjan River	234	100
6	Moran River	211	44

• List of Main Rivers and Drained flowing in Narmadapuram District

S.No.	Name of River	Length in the District (km.)	Brief information of the River	Altitude at Origin (MSL)
1	Narmada River	180	Originates Near Amarkantak (Madhya Pradesh)	1032
2	Tawa River	117	Originates Near Junnardeo Village, Chhindwara (MP)	709
3	Dudhi River	74	Originates at Mahadeo Hills of Chhindwara District (MP)	664
4	Ganjal River	64	Originates near Lahi-Badilai Village in Satpura Range	341
5	Anjan River	50	Originates Near Mahuljhir, Chhindwara (MP)	438
6	Moran River	23	Originates at near Malegaon, Harda District Satpura Range	650



• Portion of the River or Stream Recommended for Mineral Concession Area in District :

Sr No.	Name of river	Name of Mine	Length of the Mine (In km)	Average Width of the Mine (In m)	Total area in Sq.m.	Average depth of sand mine (in mete)	Total quantity of sediment load (in cum.)	Mineable mineral potential (60% of total mineral Concession) in Cubic meter	Production of Sand Mines in year 2019-20 in Cubic meter	Production of Sand Mines in year 2020-21 in Cubic meter	Production of Sand Mines in year 2021-22 in Cubic meter
1	Tawa	Bandrabhan Kh No. 207 Area 10.555H	0.470	224	105550	3.0	316650	189990 Cum	80669.2	234158	0
2	Tawa	Jaasalpur-1 Kh No. 691/1 Area 10.000H	0.400	250	100000	3.0	300000	180000 Cum	87378.95	180000	0
3	Tawa	Nimsadiya-2 Kh No. 1163 Area 20.243H	0.700	289	202430	2.0	404860	242916 Cum	94469.911	196047.06	0
4	Tawa	Devlakhedi Kh No.60 Area 12.145H	0.709	171	121450	2.0	242900	145740 Cum	74928.63	120198.72	0
5	Tawa	Mehraghat-10 Kh No.365 Area 11.655H	0.688	169	116550	2.0	233100	139860 Cum	79497.47	114008.27	0
6	Tawa	Horiyapipar Kh No. 226 Area 19.746H	0.387	510	197460	1.5	296190	177714 Cum	78925.70	148039.51	0
7	Tawa	Rajon-1 Kh No.181/1 Area 17.500H	0.530	330	175000	2.5	437500	262500 Cum	0	258002.05	0
8	Tawa	Rajon-2 Kh No.181/1 Area 17.500H	0.500	350	175000	2.5	437500	262500 Cum	168578.86	182657.73	0
9	Narmada	Sangakhedakhard Kh No.1 Area 10.000H	0.800	125	100000	2.0	200000	120000 Cum	0	55916	0
10	Tawa	Maroda-1 Kh No.1 Area 22.50	0.376	598	225000	2.8	630000	378000 Cum	0	361944.52	Page / 58

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11	Narmada	Rewamuhari Kh No. 114 Area 10.00H	0.700	143	100000	2.0	200000	120000 Cu	0	53650.95	0
12	Narmada	Ramgarh-1 Kh No. 1/1 Area 11.000H	0.439	250	110000	2.8	308000	184800 Cum	0	158077.88	0
13	Narmada	Ramgarh-2 Kh No. 1/1 Area 11.000H	0.402	273	110000	2.7	297000	178200 Cum	0	128350.92	0
14	Ganjaj	Dethi-2 Kh No. 291,559 Area 6.433H	1.110	58	64330	2.5	160825	96495 Cum	0	73404.18	0
15	Ganjaj	Guranjghat Kh No. 1/1 Area 9.00H	1.089	82	90000	2.5	225000	135000 Cum	0	51687	0
16	Korni	Jamara Kh No. 137 Area 19.938H	2.767	72	199380	0.2	39876	23926 Cum	0	10102	0
17	Korni	Surelakala Kh No. 1 Area 8.377H	2.793	30	83770	0.2	16754	10052 Cum	0	7877	0
18	Aanjan	Dhadiyakishore-2 Kh No. 115 Area 8.522H	1.133	75	85220	1.5	127830	76698 Cum	0	28503.72	0
19	Aanjan	Singhodi Kh No. 206 Area 6.000H	0.946	63	60000	2.0	120000	72000 Cum	0	51605.13	0
20	Dudhi	Bedar Kh No. 58 Area 16.976H	0.611	277	169760	2.8	475328	285197 Cum	134087.63	73675.03	0
21	Tawa	Bandrabhan Kh No. 207 Area 4.858H	0.450	107	48580	3.0	145740	87444 Cum	0	0	0
22	Narmada	Dogarwada Kh No. 3 Area 5.000H	0.352	142	50000	3.0	150000	90000 Cum	0	58253.04	0
23	Narmada	Barandua Kh No. 118/1 Area 11.00H	0.640	171	110000	2.6	286000	171600 Cum	0	133301.14	0
24	Tawa	Balabhet-1 Kh No. 1/1 Area 5.00	0.250	200	50000	1.8	90000	54000 Cum	0	42578	0

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25	Tawa	Chaplasar-1 Kh No. 1 Area 5.000H	0.250	200	50000	1.8	90000	54000 Cum	0	44675.81	0
26	Tawa	Jhalsarseth-1 Kh No. 92/1,93/3,94/1 Area 5.000H	0.260	192	50000	1.8	90000	54000 Cum	0	0	0
27	Tawa	Jawli Kh No. 380 Area 5.000H	0.258	140	50000	2.8	140000	84000 Cum	0	80160	0
28	Tawa	Rajon-3 Kh No. 181 Area 4.000H	0.400	100	40000	2.2	88000	52800 Cum	0	0	0
29	Khahra	Kesla Kh No. 432/1 Area 4.000H	0.800	50	40000	1.5	60000	36000 Cum	0	26920	0
30	Sukhtawa	Kaasdakhurd Kh No. 263,283 Area 4.000H	0.613	65	40000	2.6	104000	62400 Cum	0	57497.92	0
31	Sukhtawa	Kaasda rytwadi Kh No. 18 Area 4.00H	0.731	54	40000	2.8	112000	67200 Cum	88509.9	87177.39	0
32	Sukhtawa	Choukipura Kh No. 76,80 Area 2.820H	1.128	25	28200	2.0	56400	33840 Cum	0	22215	0
33	Narmada	Sarrakishore Kh No. 32 Area 4.000H	0.400	100	40000	2.8	112000	67200 Cum	0	13645.99	0
34	Korni	Markadhana Kh No. 86 Area 4.000H	1.000	40	40000	1.1	44000	26400 Cum	0	20323	0
35	Dudhi	Malhanwada Kh No. 344 Area 4.000H	0.666	60	40000	2.8	112000	67200 Cum	0	63990.65	0
36	Dudhi	Murgidhana Kh No. 354 Area 4.000H	0.444	90	40000	2.7	108000	64800 Cum	0	67893.44	0
37	Dudhi	Kaamti Kh No. 332 Area 5.000H	0.877	57	50000	2.8	140000	84000 Cum	0	81790.33	0

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38	Dudhi	Khapakhurd Kh No.89 Area 4.000H	0.583	68	40000	2.8	112000	67200 Cum	0	57000	0
39	Dudhi	Junheta Kh No. 1 Area 4.000H	0.370	108	40000	2.8	112000	67200 Cum	0	62080	0
40	Dudhi	Vahravan Kh No.141 Area 4.000H	0.430	93	40000	2.8	112000	67200 Cum	0	22	0
41	Dudhi	Pipariya Raja Kh No. 118 Area 4.040H	0.231	175	40400	2.8	113120	67872 Cum	0	0	0
42	Narmada	Baavri-1 Kh No. 137/1 Area 4.000H	0.388	103	40000	2.6	104000	62400 Cum	0	0	0
43	Narmada	Gwadi Kh No. 37/1 Area 4.00H	0.560	71	40000	2.8	112000	67200 Cum	0	15393.9	0
44	Ganjal	Surajpur Kh No. 27 Area 2.000H	0.454	44	20000	2.8	56000	33600 Cum	0	26474.56	0
45	Ganjal	Kothra Kh No. 1 Area 10.000H	1.017	98	100000	2.8	280000	168000 Cum	0	129778.72	0
46	Tawa	Bandrabhan Kh No. 207 Area 7.815H	0.371	210	78150	3.0	234450	140670 Cum	0	0	0
47	Tawa	Bandrabhan Kh No. 207 Area 11.00H	0.637	172	110000	3.0	330000	198000 Cum	0	0	0
48	Tawa	Bandrabhan Kh No. 207 Area 10.00H	0.420	280	100000	3.0	300000	180000 Cum	0	0	0
49	Tawa	Bandrabhan Kh No. 207 Area 10.00H	0.333	300	100000	3.0	300000	180000 Cum	0	0	0
50	Tawa	Bandrabhan Kh No. 207 Area 10.555H	0.373	282	105550	3.0	316650	189990 Cum	0	0	0
51	Tawa	Bandrabhan Kh No.207 Area 10.0	0.220	454	100000	3.0	300000	180000 Cum	0	0	0

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52	Tawa	Bandrabhan Kh No. 207 Area 10.00H	0.575	173	100000	3.0	300000	180000 Cum	0	0	0
53	Tawa	Bandrabhan Kh No. 207 Area 31.110H	0.513	606	311100	3.0	933300	559980 Cum	0	0	0
54	Tawa	Bandrabhan Kh No. 207 Area 10.00H	0.166	602	100000	3.0	300000	180000 Cum	0	0	0
55	Tawa	Bandrabhan Kh No. 207 Area 10.555H	0.178	592	105550	3.0	316650	189990 Cum	0	0	0
56	Tawa	Raipur 21 22 23 Kh No. 01 Area 30.555H	0.408	748	305550	3.0	916650	549990 Cum	0	0	0
57	Tawa	Raipur 24 Kh No. 01 Area 10.555H	0.120	879	105550	2.8	295540	177324 Cum	0	0	0
58	Tawa	Raipur 25 Kh No. 01 Area 10.000H	0.150	666	100000	2.8	280000	168000 Cum	0	0	0
59	Tawa	Raipur 26 Kh No. 01 Area 10.555H	0.138	764	105550	3.0	316650	189990 Cum	582888.01	0	0
60	Tawa	Raipur 30 Kh No. 01 Area 10.555H	1.013	104	105550	2.8	295540	177324 Cum	0	0	0
61	Tawa	Jaasalpur-2 Kh No. 691/2 Area 31.240H	1.044	299	312400	2.8	874720	524832 Cum	0	0	0
62	Tawa	Nimsadiya-1 Kh no.1163 Area 20.243H	0.265	763	202430	2.2	445346	267208 Cum	0	0	0
63	Tawa	Nimsadiya-3 KH No. 1163 Area 30.000H	0.712	421	300000	2.4	720000	432000 Cum	0	0	0
64	Tawa	Nimsadiya-4 Kh No. 1163 Area 30.000H	0.737	407	300000	2.4	720000	432000 Cum	0	0	0
65	Tawa	Devlakhedi Kh No.61Area 30.00	0.729	411	300000	2.2	660000	396000 Cum	0	0	0



DISTRICT SURVEY REPORT OF NARMADAPURAM

66	Tawa	Mehraghat-9 Kh No. 365 Area 11.655H	0.201	579	116550	2.5	291375	174825 Cum	0	0	0
67	Narmada	Khojanpur (A) Kh No. 1 Area 50.405H	0.727	693	504050	2.5	1260125	756075 Cum	0	0	0
68	Narmada	Khojanpur (B) Kh No. 1 Area 20.405H	0.782	260	204050	2.5	510125	306075 Cum	0	0	0
69	Narmada	Khojanpur (C) Kh No. 1 Area 17.100H	0.695	246	171000	2.5	427500	256500 Cum	0	0	0
70	Narmada	Khojanpur Kh No. 1 Area 17.100H	0.618	276	171000	2.5	427500	256500 Cum	0	0	0
71	Hathed	Dolariya Kh No. 218,267 Area 2.500H	0.427	58	25000	1.2	30000	18000 Cum	0	0	0
72	Tawa	Sangakhedakalan Kh No. 778/1 Area 10.000H	0.671	149	100000	2.8	280000	168000 Cum	0	0	0
73	Tawa	Balabhet-2 Kh No.1/1 Area 18.733H	1.090	171	187330	2.0	374660	224796 Cum	0	0	0
74	Tawa	Chaplasar-2 Kh No.1 Area 29.00	0.861	336	290000	2.2	638000	382800 Cum	0	0	0
75	Tawa	Pilikarar Kh No. 1 Area 14.366H	1.500	95	143660	2.2	316052	189631 Cum	0	0	0
76	Tawa	Jhalsarseth Kh No.92/1,93/2 Area 15.691H	0.729	215	156910	2.0	313820	188292 Cum	0	0	0
77	Tawa	Anchalikheda-1 Kh No.87/2 Area 10.000H	0.178	561	100000	2.8	280000	168000 Cum	0	0	0
78	Tawa	Anchalikheda-2 Kh No. 87/2 Area 10.000H	0.175	571	100000	2.8	280000	168000 Cum	0	0	0
79	Tawa	Anchalikheda-3 Kh No. 87/2 Area 10.000H	0.165	606	100000	2.8	280000	168000 Cum	0	0	0

DISTRICT SURVEY REPORT OF NARMADAPURAM

80	Tawa	Anchalkheda-4 Kh No. 87/2 Area 10.486H	0.600	174	104860	2.8	293608	176165 Cum	55028.09	57567.54	0
81	Tawa	Anchalkheda Kh No. 87/2 Area 10.590H	0.281	550	154900	2.8	433720	260232 cum	0	0	0
82	Tawa	Pawarkhedakhurd-1 Kh No. 1/1 Area 15.000H	0.534	280	150000	3.0	450000	270000 Cum	0	0	0
83	Tawa	Pawarkhedakhurd-2 Kh No. 1/1 Area 18.000H	0.384	468	180000	3.0	540000	324000 Cum	0	0	0
84	Tawa	Pawarkhedakhurd-3 Kh No. 1/1 Area 23.000H	0.654	351	230000	3.0	690000	414000 Cum	0	0	0
85	Tawa	Pawarkhedakhurd-4 Kh No. 1/1 Area 17.000H	0.248	685	170000	3.0	510000	306000 Cum	89905.67	0	0
86	Tawa	Dudiyaghat Kh No. 315 Area 45.000H	1.174	383	450000	3.0	1350000	810000 Cum	0	0	0
87	Tawa	Rajon-4 Kh No. 181/1 Area 0.405H	0.098	41	4050	3.0	12150	7290 Cum	0	0	0
88	Tawa	Kirpura Kh No. 253 Area 20.200H	0.984	205	202000	3.0	606000	363600 Cum	0	0	0
89	Tawa	Kirpura Kh No. 253 Area 26.000H	1.252	207	260000	3.0	780000	468000 Cum	0	0	0
90	Narmada	Aamkhedi Kh No. 48 Area 10.000H	0.482	207	100000	3.0	300000	180000 Cum	0	0	0
91	Tawa	Somalwada Kh No. 1 Area 45.00	0.986	456	450000	3.0	1350000	810000 Cum	0	0	0
92	Tawa	Paahanvarri Kh No. 1/1 Area 54.000H	1.125	480	540000	3.0	1620000	972000 Cum	0	0	0
93	Tawa	Maroda-2 Kh No. a Area 22.500H	0.390	576	225000	3.0	675000	405000 Cum	0	0	0

State Level Environment Impact  
Assessment Authority, M. P.  
Bhopal  
E-5, Arera Colony, Bhopal (M. P.)

DISTRICT SURVEY REPORT OF NARMADAPURAM

94	Tawa	Gwadikala Kh.No.108 Area 4.000H	0.271	147	40000	3.0	120000	72000 Cum	12476.82	0	0
95	Tawa	Gwadikala-1 Kh.No.124.125 Area 22.500	0.875	257	225000	3.0	675000	405000 Cum	0	0	0
96	Tawa	Gwadikala-2 Kh.No.124.125 Area 18.000	0.845	213	180000	3.0	540000	324000 Cum	0	0	0
97	Narmada	Dimavar Kh.No.107 Area 2.000	0.196	102	20000	3.0	60000	36000 Cum	0	0	0
98	Narmada	Dimavar-1 Kh.No.107 Area 16.500H	0.845	195	165000	3.0	495000	297000 Cum	0	0	0
99	Narmada	Bavri-2 Kh.No.137/1 Area 18.000	0.845	213	180000	3.0	540000	324000 Cum	0	0	0
100	Narmada	Gwadi-1 Kh.No.37/1 Area 12.795	0.934	137	127950	3.0	383850	230310 Cum	0	0	0
101	Narmada	Gwadi-2 Kh.No.37/1 Area 12.795	0.868	147	127950	3.0	383850	230310 Cum	0	0	0
102	Ganjaal	Daithi Kh.No.1 Area 0.809	0.150	53	8090	2.0	16180	9708 Cum	0	0	0
103	Moran	Sahapura Kh.No.1/1,1/2,1/3,1 Area 1.315H	0.262	50	13150	2.3	30245	18147 Cum	0	0	0
104	Moran	Navalgaon Kh.No.20/1 Area 0.708	0.177	40	7080	2.3	16284	9770 Cum	0	0	0
105	Narmada	Revavankhedi Kh.No.1/1 Area 10.00	0.512	1953	100000	3.0	300000	180000 Cum	0	0	0
106	Narmada	Madanpur Kh.No.1 Area 20.000	0.602	3322	200000	3.0	600000	360000 Cum	0	0	0
107	Korni	Khaparkheda Kh.No. 244 Area 0.809	0.179	451	8090	0.2	1618	970 Cum	0	0	0

State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Prakash Chandra Parisar  
E-8, Ashoka Colony, Bhopal (M.P.)

DISTRICT SURVEY REPORT OF NARMADAPURAM

108	Aanjan	Dhadiyakishor-1 Kh.No.115 Area 1.000	0.205	487	10000	2.0	20000	12000 Cum	0	0	0	
109	Aanjan	Rampur Kh.No.148 Area 7.00	0.567	1234	70000	2.0	140000	84000 Cum	0	0	0	
110	Aanjan	Buchal Kh.No.98 Area 7.607	0.906	839	76070	2.0	152140	91284 Cum	0	0	0	
111	Dudhi	Malhanwara-1 Kh.No.344 Area 10.500	1.600	656	105000	2.5	262500	157500 Cum	0	0	0	
112	Dudhi	Malhanwara-2 Kh.No.344 Area 10.500	1.674	627	105000	2.5	262500	157500 Cum	0	0	0	
113	Dudhi	Paraswara Kh.No.312 Area 15.000	1.636	916	150000	2.5	375000	225000 Cum	0	0	0	
114	Dudhi	Anhaai Kh.No.357 Area 14.400	1.244	116	144000	2.5	360000	216000 Cum	0	0	0	
115	Dudhi	Dumar Kh.No.1 Area 30.000	1.475	203	300000	2.5	750000	450000 Cum	0	0	0	
116	Dudhi	Emliya Kh.No.269 Area 20.000	1.005	199	200000	2.5	500000	300000 Cum	0	0	0	
117	Dudhi	Umradha Kh.No.1498 Area 20.671	1.330	155	206710	2.5	516775	310065 Cum	0	0	0	
118	Tawa	Pipariyaraja-1 Kh No. 644 Area 23.572H	1.036	2275	235720	2.5	589300	353580 Cum	0	0	0	
Total									1102744.8 41	2,45,78,367 cum	36366644.9 7	0

अिन खदानो में ० दबाया है इससे खदाने विगत वर्षों में संचालित नही हुई है

16/05/2022

DISTRICT SURVEY REPORT OF NARMADAPURAM

• MINERAL POTENTIAL :

Sr No.	Name of Mine	Total area in Sq.m.	Average depth of sand mine (in meter)	Total quantity of sediment load (in cum.)	Mineable mineral potential (60% of total mineral Potential) (In CUM)	Mineable mineral potential (60% of total mineral Potential) (In Metric Tonne)
1	Bandrabhan	105550	3	316650	189990 Cum	265986 MT
2	Jaasalpur-1	100000	3	300000	180000 Cum	252000 MT
3	Nimsadiya-2	202430	2	404860	242916 Cum	566804 MT
4	Devlakhedi	121450	2	242900	145740 Cum	340060 MT
5	Mehraghat-10	116550	2	233100	139860 Cum	195804 MT
6	Horiyapipar	197460	1.5	296190	177714 Cum	248799 MT
7	Rajon-1	175000	2.5	437500	262500 Cum	367500 MT
8	Rajon-2	175000	2.5	437500	262500 Cum	367500 MT
9	Sangakhedakhurd	100000	2	200000	120000 Cum	168000 MT
10	Maroda-1	225000	2.8	630000	378000 Cum	529200 MT
11	Rewamuhari	100000	2	200000	120000 Cum	168000 MT
12	Ramgarh-1	110000	2.8	308000	184800 Cum	258720 MT
13	Ramgarh-2	110000	2.7	297000	178200 Cum	249480 MT
14	Dethi-2	64330	2.5	160825	96495 Cum	135093 MT
15	Guranjghat	90000	2.5	225000	135000 Cum	189000 MT
16	Jamara	199380	0.2	39876	23926 Cum	33496 MT
17	Surelakala	83770	0.2	16754	10052 Cum	14073 MT
18	Dhadiyakishore-2	85220	1.5	127830	76698 Cum	107377 MT

DISTRICT SURVEY REPORT OF NARMADAPURAM

19	Singhodi	60000	2	120000	72000 Cum	100800 MT
20	Bedar	169760	2.8	475328	285196.8 Cum	399275 MT
21	Bandrabhan	48580	3	145740	87444 Cum	122421 MT
22	Dogarwada	50000	3	150000	90000 Cum	126000 MT
23	Barandua	110000	2.6	286000	171600 Cum	240240 MT
24	Balabhet-1	50000	1.8	90000	54000 Cum	75600 MT
25	Chaplasar-1	50000	1.8	90000	54000 Cum	75600 MT
26	Jhalsarseth-1	50000	1.8	90000	54000 Cum	75600 MT
27	Jawli	50000	2.8	140000	84000 Cum	117600 MT
28	Rajon-3	40000	2.2	88000	52800 Cum	73920 MT
29	Kesla	40000	1.5	60000	36000 Cum	50400 MT
30	Kaasdakhurd	40000	2.6	104000	62400 Cum	87360 MT
31	Kaasda rytwadi	40000	2.8	112000	67200 Cum	94080 MT
32	Choukipura	28200	2	56400	33840 Cum	47376 MT
33	Sarrakishore	40000	2.8	112000	67200 Cum	94080 MT
34	Markadhana	40000	1.1	44000	26400 Cum	36960 MT
35	Malhanwada	40000	2.8	112000	67200 Cum	94080 MT
36	Murgidhana	40000	2.7	108000	64800 Cum	90720 MT
37	Kaamti	50000	2.8	140000	84000 Cum	117600 MT
38	Khapakhurd	40000	2.8	112000	67200 Cum	94080 MT
39	Junheta	40000	2.8	112000	67200 Cum	94080 MT
40	Vahravan	40000	2.8	112000	67200 Cum	94080 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

41	Pipariya Raja	40400	2.8	113120	67872 Cum	95020.8 MT
42	Baavri-1	40000	2.6	104000	62400 Cum	87360 MT
43	Gwadi	40000	2.8	112000	67200 Cum	94080 MT
44	Surajpur	20000	2.8	56000	33600 Cum	47040 MT
45	Kothra	100000	2.8	280000	168000 Cum	235200 MT
46	Bandrabhan	78150	3	234450	140670 Cum	196938 MT
47	Bandrabhan	110000	3	330000	198000 Cum	277200 MT
48	Bandrabhan	100000	3	300000	180000 Cum	252000 MT
49	Bandrabhan	100000	3	300000	180000 Cum	252000 MT
50	Bandrabhan	105550	3	316650	189990 Cum	265986 MT
51	Bandrabhan	100000	3	300000	180000 Cum	252000 MT
52	Bandrabhan	100000	3	300000	180000 Cum	252000 MT
53	Bandrabhan	311100	3	933300	559980 Cum	783972 MT
54	Bandrabhan	100000	3	300000	180000 Cum	252000 MT
55	Bandrabhan	105550	3	316650	189990 Cum	265986 MT
56	Raipur 21 22 23	305550	3	916650	549990 Cum	769986 MT
57	Raipur 24	105550	2.8	295540	177324 Cum	248253.6 MT
58	Raipur 25	100000	2.8	280000	168000 Cum	235200 MT
59	Raipur 26	105550	3	316650	189990 Cum	265986 MT
60	Raipur 30	105550	2.8	295540	177324 Cum	248254 MT
61	Jaasapur-2	312400	2.8	874720	524832 Cum	734765 MT
62	Nimsadiya-1	202430	2.2	445346	267208 Cum	374091 MT

DISTRICT SURVEY REPORT OF NARMADAPURAM

63	Nimsadiya-3	300000	2.4	720000	432000 Cum	604800 MT
64	Nimsadiya-4	300000	2.4	720000	432000 Cum	604800 MT
65	Devlakhedi	300000	2.2	660000	396000 Cum	554400 MT
66	Mehraghat-9	116550	2.5	291375	174825 Cum	244755 MT
67	Khojanpur (A)	504050	2.5	1260125	756075 Cum	1058505 MT
68	Khojanpur (B)	204050	2.5	510125	306075 Cum	428505 MT
69	Khojanpur (C)	171000	2.5	427500	256500 Cum	359100 MT
70	Khojanpur	171000	2.5	427500	256500 Cum	359100 MT
71	Dolariya	25000	1.2	30000	18000 Cum	25200 MT
72	Sangakhedakalan	100000	2.8	280000	168000 Cum	235200 MT
73	Balabhet-2	187330	2	374660	224796 Cum	314714 MT
74	Chaplasar-2	290000	2.2	638000	382800 Cum	535920 MT
75	Pilikarar	143660	2.2	316052	189631 Cum	265483 MT
76	Jhalsarseth	156910	2	313820	188292 Cum	263609 MT
77	Anchalkheda-1	100000	2.8	280000	168000 Cum	235200 MT
78	Anchalkheda-2	100000	2.8	280000	168000 Cum	235200 MT
79	Anchalkheda-3	100000	2.8	280000	168000 Cum	235200 MT
80	Anchalkheda-4	104860	2.8	293608	176165 Cum	246631 MT
81	Pawarkhedakhurd-1	150000	3	450000	270000 Cum	378000 MT
82	Pawarkhedakhurd-2	180000	3	540000	324000 Cum	453600 MT
83	Pawarkhedakhurd-3	230000	3	690000	414000 Cum	579600 MT
84	Pawarkhedakhurd-4	170000	3	510000	306000 Cum	428400 MT



**DISTRICT SURVEY REPORT OF NARMADAPURAM**

85	Dudiyaghat	450000	3	1350000	810000 Cum	1134000 MT
86	Rajon-4	4050	3	12150	7290 Cum	10206 MT
87	Kirpura	202000	3	606000	363600 Cum	509040 MT
88	Kirpura	260000	3	780000	468000 Cum	655200 MT
89	Aamkhedi	100000	3	300000	180000 Cum	252000 MT
90	Somalwada	450000	3	1350000	810000 Cum	1134000 MT
91	Paahanvarri	540000	3	1620000	972000 Cum	1360800 MT
92	Maroda-2	225000	3	675000	405000 Cum	567000 MT
93	Gwadikala	40000	3	120000	72000 Cum	100800 MT
94	Gwadikala-1	225000	3	675000	405000 Cum	567000 MT
95	Gwadikala-2	180000	3	540000	324000 Cum	453600 MT
96	Dimavar	20000	3	60000	36000 Cum	50400 MT
97	Dimavar-1	165000	3	495000	297000 Cum	415800 MT
98	Bavri-2	180000	3	540000	324000 Cum	453600 MT
99	Gwadi-1	127950	3	383850	230310 Cum	322434 MT
100	Gwadi-2	127950	3	383850	230310 Cum	322434 MT
101	Daithi-1	8090	2.0	16180	9708 Cum	13591 MT
102	Sahapura	13150	2.3	30245	18147 Cum	25406 MT
103	Navalgaon	7080	2.3	16284	9770 Cum	13678 MT
104	Revavankhedi	100000	3	300000	180000 Cum	252000 MT
105	Madanpur	200000	3	600000	360000 Cum	504000 MT
106	Khaparkheda	8090	0.2	1618	970 Cum	1358 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

107	Dhadiyakishor-1	10000	2	20000	12000 Cum	16800 MT
108	Rampur	70000	2	140000	84000 Cum	117600 MT
109	Buchal	76070	2	152140	91284 Cum	127798 MT
110	Malhanwara-1	105000	2.5	262500	157500 Cum	220500 MT
111	Malhanwara-2	105000	2.5	262500	157500 Cum	220500 MT
112	Paraswara	150000	2.5	375000	225000 Cum	315000 MT
113	Anhaai	144000	2.5	360000	216000 Cum	302400 MT
114	Dumar	300000	2.5	750000	450000 Cum	630000 MT
115	Emliya	200000	2.5	500000	300000 Cum	420000 MT
116	Umradha	206710	2.5	516775	310065 Cum	434091 MT
117	Pipariyaraja-1	235720	2.5	589300	353580 Cum	495012 MT
118	Anchalkheda	154900	2.8	433720	260232 cum	364325 MT
<b>Total</b>					<b>2,45,78,367 cum</b>	<b>3,44,09,714 MT</b>

DISTRICT SURVEY REPORT OF NARMADAPURAM

• Annual Deposition:

Sr No.	Name of river	Name of Mine	Length of the Mine (In meter)	Average Width of the Mine (In Meters)	Area × Depth	Total quantity of sediment load (in cum.)	Mineable mineral potential (60% of total mineral Concession) in Cubic meter	Mineable mineral potential (60% of total mineral Concession) (In Metric Tonne)
1	Tawa	Bandrabhan Kh No. 207 Area 10.555H	470	224.5	105550 × 3.0	316650	189990 Cum	265986 MT
2	Tawa	Jaasapur-1 Kh No. 691/1 Area 10.000H	400	250	100000 × 3.0	300000	180000 Cum	252000 MT
3	Tawa	Nimsadiya-2 Kh No. 1163 Area 20.243H	700	289	202430 × 2.0	404860	242916 Cum	566804 MT
4	Tawa	Devlakhedi Kh No.60 Area 12.145H	709	171.2	121450 × 2.0	242900	145740 Cum	340060 MT
5	Tawa	Mehraghat-10 Kh No.365 Area 11.655H	688	169.4	116550 × 2.0	233100	139860 Cum	195804 MT
6	Tawa	Horiyapipar Kh No. 226 Area 19.746H	387	510.2	197460 × 1.5	296190	177714 Cum	248799 MT
7	Tawa	Rajon-1 Kh No.181/1 Area 17.500H	530	330	175000 × 2.5	437500	262500 Cum	367500 MT
8	Tawa	Rajon-2 Kh No.181/1 Area 17.500H	500	350	175000 × 2.5	437500	262500 Cum	367500 MT
9	Narmada	Sangakhedakhurd Kh No.1 Area 10.000H	800	125	100000 × 2.0	200000	120000 Cum	168000 MT
10	Tawa	Maroda-1 Kh No. 1 Area 22.500H	376	598.4	225000 × 2.8	630000	378000 Cum	529200 MT
11	Narmada	Rewamuhari Kh No. 114 Area 10.00H	700	143	100000 × 2.0	200000	120000 Cum	168000 MT
12	Narmada	Ramgarh-1 Kh No. 1/1 Area 11.000H	439	250	110000 × 2.8	308000	184800 Cum	258720 MT
13	Narmada	Ramgarh-2 Kh No. 1/1 Area 11.000H	402	273.6	110000 × 2.7	297000	178200 Cum	249480 MT
14	Ganjal	Dethi-2 Kh No. 291,559 Area 6.433H	1110	58	64330 × 2.5	160825	96495 Cum	135093 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

15	Ganjal	Guranjghat Kh No. 1/1 Area 9.00H	1089	82.6	90000 × 2.5	225000	135000 Cum	189000 MT
16	Korni	Jamara Kh No. 137 Area 19.938H	2767	72	199380 × 0.2	39876	23926 Cum	33496s MT
17	Korni	Surelakala Kh No. 1 Area 8.377H	2793	30	83770 × 0.2	16754	10052 Cum	14073 MT
18	Aanjan	Dhadiyakishore-2 Kh No. 115 Area 8.522H	1133	75.2	85220 × 1.5	127830	76698 Cum	107377 MT
19	Aanjan	Singhodi Kh No. 206 Area 6.000H	946	63.4	60000 × 2.0	120000	72000 Cum	100800 MT
20	Dudhi	Bedar Kh No. 58 Area 16.976H	611	277.8	169760 × 2.8	475328	285197 Cum	399275 MT
21	Tawa	Bandrabhan Kh No. 207 Area 4.858H	450	107.9	48580 × 3.0	145740	87444 Cum	122421 MT
22	Narmada	Dogarwada Kh No. 3 Area 5.000H	352	142	50000 × 3.0	150000	90000 Cum	126000 MT
23	Narmada	Barandua Kh No. 118/1 Area 11.00H	640	171.8	110000 × 2.6	286000	171600 Cum	240240 MT
24	Tawa	Balabhet-1 Kh No. 1/1 Area 5.000H	250	200	50000 × 1.8	90000	54000 Cum	75600 MT
25	Tawa	Chaplasar-1 Kh No. 1 Area 5.000H	250	200	50000 × 1.8	90000	54000 Cum	75600 MT
26	Tawa	Jhalsarseth-1 Kh No. 92/1,93/3,94/1 Area 5.000H	260	192	50000 × 1.8	90000	54000 Cum	75600 MT
27	Tawa	Jawli Kh No. 380 Area 5.000H	258	140	50000 × 2.8	140000	84000 Cum	117600 MT
28	Tawa	Rajon-3 Kh No. 181 Area 4.000H	400	100	40000 × 2.2	88000	52800 Cum	73920 MT
29	Khahra	Kesla Kh No. 432/1 Area 4.000H	800	50	40000 × 1.5	60000	36000 Cum	50400 MT
30	Sukhtawa	Kaasdakhurd Kh No. 263,283 Area 4.000H	613	65.2	40000 × 2.6	104000	62400 Cum	87360 MT
31	Sukhtawa	Kaasda rytwadi Kh No. 18 Area 4.00H	731	54.7	40000 × 2.8	112000	67200 Cum	94080 MT
32	Sukhtawa	Choukipura Kh No. 76,80 Area 2.820H	1128	25	28200 × 2.0	56400	33840 Cum	47376 MT
33	Narmada	Sarrakishore Kh No. 32 Area 4.000H	400	100	40000 × 2.8	112000	67200 Cum	94080 MT
34	Korni	Markadhana Kh No. 86 Area 4.00H	1000	40	40000 × 1.1	44000	26400 Cum	36960 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

35	Dudhi	Malhanwada Kh No. 344 Area 4.000H	666	60	40000 × 2.8	112000	67200 Cum	94080 MT
36	Dudhi	Murgidhana Kh No. 354 Area 4.000H	444	90	40000 × 2.7	108000	64800 Cum	90720 MT
37	Dudhi	Kaamti Kh No. 332 Area 5.000H	877	57	50000 × 2.8	140000	84000 Cum	117600 MT
38	Dudhi	Khapakhurd Kh No.89 Area 4.000H	583	68.6	40000 × 2.8	112000	67200 Cum	94080 MT
39	Dudhi	Junheta Kh No. 1 Area 4.000H	370	108	40000 × 2.8	112000	67200 Cum	94080 MT
40	Dudhi	Vahravan Kh No.141 Area 4.000H	430	93	40000 × 2.8	112000	67200 Cum	94080 MT
41	Dudhi	Pipariya Raja Kh No. 118 Area 4.040H	231	175	40400 × 2.8	113120	67872 Cum	95021 MT
42	Narmada	Baavri-1 Kh No. 137/1 Area 4.000H	388	103	40000 × 2.6	104000	62400 Cum	87360 MT
43	Narmada	Gwadi Kh No. 37/1 Area 4.00H	560	71.4	40000 × 2.8	112000	67200 Cum	94080 MT
44	Ganjal	Surajpur Kh No. 27 Area 2.000H	454	44	20000 × 2.8	56000	33600 Cum	47040 MT
45	Ganjal	Kothra Kh No. 1 Area 10.000H	1017	98.3	100000 × 2.8	280000	168000 Cum	235200 MT
46	Tawa	Bandrabhan Kh No. 207 Area 7.815H	371	210.6	78150 × 3.0	234450	140670 Cum	196938 MT
47	Tawa	Bandrabhan Kh No. 207 Area 11.00H	637	172.6	110000 × 3.0	330000	198000 Cum	277200 MT
48	Tawa	Bandrabhan Kh No. 207 Area 10.00H	420	280	100000 × 3.0	300000	180000 Cum	252000 MT
49	Tawa	Bandrabhan Kh No. 207 Area 10.00H	333	300.3	100000 × 3.0	300000	180000 Cum	252000 MT
50	Tawa	Bandrabhan Kh No. 207 Area 10.555H	373	282.9	105550 × 3.0	316650	189990 Cum	265986 MT
51	Tawa	Bandrabhan Kh No. 207 Area 10.00H	220	454.5	100000 × 3.0	300000	180000 Cum	252000 MT
52	Tawa	Bandrabhan Kh No. 207 Area 10.00H	575	173.9	100000 × 3.0	300000	180000 Cum	252000 MT
53	Tawa	Bandrabhan Kh No.207Area 31.11	513	606.4	311100 × 3.0	933300	559980 Cum	783972 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

54	Tawa	Bandrabhan Kh No. 207 Area 10.00H	166	602.4	100000 × 3.0	300000	180000 Cum	252000 MT
55	Tawa	Bandrabhan Kh No. 207 Area 10.555H	178	592.9	105550 × 3.0	316650	189990 Cum	265986 MT
56	Tawa	Raipur 21 22 23 Kh No. 01 Area 30.555H	408	748.8	305550 × 3.0	916650	549990 Cum	769986 MT
57	Tawa	Raipur 24 Kh No. 01 Area 10.555H	120	879.5	105550 × 2.8	295540	177324 Cum	248254 MT
58	Tawa	Raipur 25 Kh No. 01 Area 10.000H	150	666.6	100000 × 2.8	280000	168000 Cum	235200 MT
59	Tawa	Raipur 26 Kh No. 01 Area 10.555H	138	764.8	105550 × 3.0	316650	189990 Cum	265986 MT
60	Tawa	Raipur 30 Kh No. 01 Area 10.555H	1013	104.1	105550 × 2.8	295540	177324 Cum	248254 MT
61	Tawa	Jaasalpur-2 Kh No. 691/2 Area 31.240H	1044	299.2	312400 × 2.8	874720	524832 Cum	734765 MT
62	Tawa	Nimsadiya-1 Kh no.1163 Area 20.243H	265	763.8	202430 × 2.2	445346	267208 Cum	374091 MT
63	Tawa	Nimsadiya-3 KH No. 1163 Area 30.000H	712	421.3	300000 × 2.4	720000	432000 Cum	604800 MT
64	Tawa	Nimsadiya-4 Kh No. 1163 Area 30.000H	737	407	300000 × 2.4	720000	432000 Cum	604800 MT
65	Tawa	Devlakhedi Kh No. 61 Area 30.000H	729	411.5	300000 × 2.2	660000	396000 Cum	554400 MT
66	Tawa	Mehraghat-9 Kh No. 365 Area 11.655H	201	579.8	116550 × 2.5	291375	174825 Cum	244755 MT
67	Narmada	Khojanpur (A) Kh No. 1 Area 50.405H	727	693.3	504050 × 2.5	1260125	756075 Cum	1058505 MT
68	Narmada	Khojanpur (B) Kh No. 1 Area 20.405H	782	260.9	204050 × 2.5	510125	306075 Cum	428505 MT
69	Narmada	Khojanpur (C) Kh No. 1 Area 17.100H	695	246	171000 × 2.5	427500	256500 Cum	359100 MT
70	Narmada	Khojanpur Kh No. 1 Area 17.100H	618	276.6	171000 × 2.5	427500	256500 Cum	359100 MT
71	Hathed	Dolariya Kh No. 218,267 Area 2.500H	427	58.5	25000 × 1.2	30000	18000 Cum	25200 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

72	Tawa	Sangakhedakalan Kh No. 778/1 Area 10.000H	671	149	100000 × 2.8	280000	168000 Cum	235200 MT
73	Tawa	Balabhet-2 Kh No.1/1 Area 18.733H	1090	171.8	187330 × 2.0	374660	224796 Cum	314714 MT
74	Tawa	Chaplasar-2 Kh No.1 Area 29.000H	861	336.8	290000 × 2.2	638000	382800 Cum	535920 MT
75	Tawa	Pilikarar Kh No. 1 Area 14.366H	1500	95.7	143660 × 2.2	316052	189631 Cum	265483 MT
76	Tawa	Jhalsarseth Kh No.92/1,93/2 Area 15.691H	729	215.2	156910 × 2.0	313820	188292 Cum	263609 MT
77	Tawa	Anchalkheda-1 Kh No.87/2 Area 10.000H	178	561.7	100000 × 2.8	280000	168000 Cum	235200 MT
78	Tawa	Anchalkheda-2 Kh No. 87/2 Area 10.000H	175	571.4	100000 × 2.8	280000	168000 Cum	235200 MT
79	Tawa	Anchalkheda-3 Kh No. 87/2 Area 10.000H	165	606	100000 × 2.8	280000	168000 Cum	235200 MT
80	Tawa	Anchalkheda-4 Kh No. 87/2 Area 10.486H	600	174.7	104860 × 2.8	293608	176165 Cum	246631 MT
81	Tawa	Anchalkheda Kh No. 87/2 Area 10.590H	281.6	550	154900 × 2.8	433720	260232 cum	364325 MT
82	Tawa	Pawarkhedakhurd-1 Kh No. 1/1 Area 15.000H	534	280.8	150000 × 3.0	450000	270000 Cum	378000 MT
83	Tawa	Pawarkhedakhurd-2 Kh No. 1/1 Area 18.000H	384	468.7	180000 × 3.0	540000	324000 Cum	453600 MT
84	Tawa	Pawarkhedakhurd-3 Kh No. 1/1 Area 23.000H	654	351.6	230000 × 3.0	690000	414000 Cum	579600 MT
85	Tawa	Pawarkhedakhurd-4 Kh No.1/1 Area 17.000H	248	685.4	170000 × 3.0	510000	306000 Cum	428400 MT
86	Tawa	Dudiyaghat Kh No.315 Area 45.000H	1174	383.3	450000 × 3.0	1350000	810000 Cum	1134000 MT
87	Tawa	Rajon-4 Kh No.181/1 Area 0.405H	98	41.3	4050 × 3.0	12150	7290 Cum	10206 MT
88	Tawa	Kirpura Kh No.253 Area 20.200H	984	205.2	202000 × 3.0	606000	363600 Cum	509040 MT
89	Tawa	Kirpura Kh No.253Area 26.0H	1252	207.6	260000 × 3.0	780000	468000 Cum	655200 MT
90	Narmada	Aamkhedi Kh No. 48 Area 10.000H	482	207.4	100000 × 3.0	300000	180000 Cum	252000 MT

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

91	Tawa	Somalwada Kh No.1 Area 45.000H	986	456.3	450000 × 30	1350000	810000 Cum	1134000 MT
92	Tawa	Paahanvarri Kh No.1/1 Area 54.000H	1125	480	540000 × 3.0	1620000	972000 Cum	1360800 MT
93	Tawa	Maroda-2 Kh No.a Area 22.500H	390	576.9	225000 × 3.0	675000	405000 Cum	567000 MT
94	Tawa	Gwadikala Kh No.108 Area 4.000H	271	147.6	40000 × 3.0	120000	72000 Cum	100800 MT
95	Tawa	Gwadikala-1 Kh No.124.125 Area 22.500	875	257.1	225000 × 3.0	675000	405000 Cum	567000 MT
96	Tawa	Gwadikala-2 Kh.No.124.125 Area 18.000	845	213	180000 × 3.0	540000	324000 Cum	453600 MT
97	Narmada	Dimavar Kh.No.107 Area 2.000	196	102	20000 × 3.0	60000	36000 Cum	50400 MT
98	Narmada	Dimavar-1 Kh.No.107 Area 16.500H	845	195.2	165000 × 3.0	495000	297000 Cum	415800 MT
99	Narmada	Bavri-2 Kh.No.137/1 Area 18.000	845	213	180000 × 3.0	540000	324000 Cum	453600 MT
100	Narmada	Gwadi-1 Kh.No.37/1 Area 12.795	934	137	127950 × 3.0	383850	230310 Cum	322434 MT
101	Narmada	Gwadi-2 Kh.No.37/1 Area 12.795	868	147.4	127950 × 3.0	383850	230310 Cum	322434 MT
102	Ganjaal	Daithi Kh.No.1 Area 0.809	150	53.9	8090 × 2.0	16180	9708 Cum	13591 MT
103	Moran	Sahapur Kh.No.1/1,1/2,1/3,1 Area 1.315H	262	50	13150 × 2.3	30245	18147 Cum	25406 MT
104	Moran	Navalgaon Kh.No.20/1 Area 0.708	177	40	7080 × 2.3	16284	9770 Cum	13678 MT
105	Narmada	Revavankhedi Kh.No.1/1 Area 10.000	512	195.3	100000 × 3.0	300000	180000 Cum	252000 MT
106	Narmada	Madanpur Kh.No.1 Area 20.000	602	332.2	200000 × 3.0	600000	360000 Cum	504000 MT
107	Korni	Khaparkheda Kh.No. 244 Area 0.809	179	45.1	8090 × 0.2	1618	970 Cum	1358 MT
108	Aanjan	Dhadiyakishor-1 Kh.No.115 Area 1.000	205	48.7	10000 × 2.0	20000	12000 Cum	16800 MT
109	Aanjan	Rampur Kh.No.148 Area 7.00	567	123.4	70000 × 2.0	140000	84000 Cum	117600 MT
110	Aanjan	Buchal Kh.No.98 Area 7.607	906	83.9	76070 × 2.0	152140	91284 Cum	127798 MT



**DISTRICT SURVEY REPORT OF NARMADAPURAM**

111	Dudhi	Malhanwara-1 Kh.No.344 Area 10.500	1600	65.6	105000 × 2.5	262500	157500 Cum	220500 MT
112	Dudhi	Malhanwara-2 Kh.No.344 Area 10.500	1674	62.7	105000 × 2.5	262500	157500 Cum	220500 MT
113	Dudhi	Paraswara Kh.No.312 Area 15.000	1636	91.6	150000 × 2.5	375000	225000 Cum	315000 MT
114	Dudhi	Anhaai Kh.No.357 Area 14.400	1244	116	144000 × 2.5	360000	216000 Cum	302400 MT
115	Dudhi	Dumar Kh.No.1 Area 30.000	1475	203	300000 × 2.5	750000	450000 Cum	630000 MT
116	Dudhi	Emliya Kh.No.269 Area 20.00	1005	199	200000 × 2.5	500000	300000 Cum	420000 MT
117	Dudhi	Umradha Kh.No.1498 Area 20.671	1330	155	206710 × 2.5	516775	310065 Cum	434091 MT
118	Tawa	Pipariyaraja-1 Kh No. 644 Area 23.572H	1036	227.5	235720 × 2.5	589300	353580 Cum	495012 MT
Total							2,45,78,367 cum	3,44,09,714 MT

Other InformationDetails of Sand Mine Cluster in the District

Sr No.	Cluster No.	River Name	Location (Reverbed/ Patta Land)	Village	Area(Ha)	Total Mineral Excavation (cum)
1	1	Tawa	River Bed	Bandrabhan -1	7.815	140670
2			River Bed	Bandrabhan -2	11.000	198000
3			River Bed	Bandrabhan-3	10.000	180000
4			River Bed	Bandrabhan-4	10.555	189990
5			River Bed	Bandrabhan -5	10.000	180000
6			River Bed	Bandrabhan-6	10.555	189990
7			River Bed	Bandrabhan -7	10.000	180000
8			River Bed	Sangakhedakala	10.000	168000
9			River Bed	Bandrabhan	4.858	87444
10			River Bed	Bandrabhan	10.000	180000
11			River Bed	Bandrabhan-11	10.000	180000
12			River Bed	Bandrabhan 12,13,14	31.110	559980
13			River Bed	Bandrabhan 16	10.555	189990
14			River Bed	Balabhet 1	5.00	54000
15			River Bed	Balabhet 2	18.733	224796
16			River Bed	Bandrabhan 21,22,23	30.555	549990
17	2	River Bed	Bandrabhan 24	10.555	189990	
18		River Bed	Bandrabhan 25	10.000	180000	
19		River Bed	Bandrabhan 26	10.555	189990	
20		River Bed	Chaplasar 1	29.000	382800	
21	River Bed	Chaplasar 2	5.000	54000		
22	3	River Bed	Bandrabhan 30	10.555	189990	
23		River Bed	Jasalpur-1	10.000	180000	
24		River Bed	Jasalpur-2	31.240	524832	
25	River Bed	Nimsadiya	30.000	432000		
26	River Bed	Pilikarar	14.366	189631		
27	4	River Bed	Nimsadiya	30.000	432000	
28		River Bed	Jhalsarseth	15.691	188292	
29	River Bed	Jhalsarseth	5.000	54000		
30	5	River Bed	Nimsadiya 1	20.243	242916	
31		River Bed	Nimsadiya 2	20.243	267208	
32		River Bed	Diwalakhedi	12.145	145740	
33		River Bed	Anchalkheda 1	10.000	168000	
34		River Bed	Anchalkheda 2	10.000	168000	
35		River Bed	Anchalkheda 3	10.000	168000	
36		River Bed	Diwalakhedi 2	30.000	396000	
37		River Bed	Anchalkheda 4	10.000	176165	
38	River Bed	Anchalkheda	15.490	260232		
39	6	River Bed	Mehraghat 9	11.655	174825	
40		River Bed	Mehraghat 10	11.655	139860	

DISTRICT SURVEY REPORT OF NARMADAPURAM

41			River Bed	Pawarkhedakhurd 2	18.000	324000
42			River Bed	Pawarkhedakhurd 3	23.000	414000
43			River Bed	Pawarkhedakhurd 4	17.000	306000
44			River Bed	Horiyapipar	19.746	177714
45	7		River Bed	Somalwada	45.000	810000
46			River Bed	Pawarkhedakhurd 2	15.000	270000
47			River Bed	Dudiyaghat	45.000	810000
48	8		River Bed	Pahanvarri	54.000	972000
49			River Bed	Maroda 1	22.500	378000
50	9		River Bed	Maroda 2	22.500	405000
51			River Bed	Rajon-1	17.500	262500
52			River Bed	Rajon-2	17.500	262500
53	10		River Bed	Rajon-3	4.000	52800
54			River Bed	Rajon 4	0.405	7290
55			River Bed	Kirpura 1	20.200	363600
56			River Bed	Kirpura 2	26.000	468000
57	11		River Bed	Gwadikala 1	22.500	405000
58			River Bed	Gwadikala 2	18.000	324000
59			River Bed	Gwadikala	4.000	72000
60			River Bed	Khojanpur A	50.405	756075
61			River Bed	Khojanpur B	20.405	306075
62	12		River Bed	Khojanpur C	17.100	256500
63			River Bed	Khojanpur D	17.100	256500
64			River Bed	Dongarwada	5.000	90000
65			River Bed	Babri 1	4.000	62400
66	13		River Bed	Babri 2	18.000	324000
67		Narmada	River Bed	Dimawar	2.000	36000
68	14		River Bed	Dimawar 1	16.500	297000
69			River Bed	Ramgarh 1	11.000	184800
70	15		River Bed	Ramgarh 2	11.000	178200
71			River Bed	Gwadi	4.000	67200
72	16		River Bed	Gwadi 1	12.795	230310
73			River Bed	Gwadi 2	12.795	230310
74			River Bed	Pipariyaraja 1	4.040	67872
75			River Bed	Pipariyaraja 2	23.572	353580
76	17		River Bed	Dumar	30.000	450000
77			River Bed	Bedar	16.976	285197
78		Dudhi	River Bed	Imaliya	20.000	300000
79			River Bed	Paraswada	15.000	225000
80	18		River Bed	Bahrawan	4.000	67200
81			River Bed	Malhanwada 1	10.500	157500
82	19		River Bed	Malhanwada 2	10.500	157500
83			River Bed	Malhanwada 3	4.000	67200
84			River Bed	Dhadiyakishore 1	1.000	12000
85	20	Anjan	River Bed	Dhadiyakishore 2	8.522	76698
86			River Bed	Dethi	0.309	9708
87	21	Ganjal Moran	River Bed	Dethi 2	6.433	96495
88			River Bed	Shahpur	1.315	18147
89	22	Korni	River Bed	Jamara	19.938	23926
90			River Bed	Surelakala	8.377	10052

DISTRICT SURVEY REPORT OF NARMADAPURAM

• TRANSPORT ROUTE FOR INDIVIDUAL & CLUSTER SAND MINE -

Sr No.	Name of Mine & Details	Transpo rtation Route No.	Number of Tippers /Day	Number of tippers/ day of all the lease on route	Length of Route in KM	Type of road (Black Topped/ unpaved)	Recomm endation for road (Black Topped/ unpave)	The road will be Constructed by Govt/ Lease Owner
1	Sangakhedakhurd	1	15	15	0.45	unpaved	unpaved	Lease Owner
2	Rewamuhari	1	10	10	0.47	unpaved	unpaved	Lease Owner
3	Guranjghat	1	12	12	1.10	unpaved	unpaved	Lease Owner
4	Singhodi	1	10	10	0.62	unpaved	unpaved	Lease Owner
5	Barandua	1	15	15	0.30	unpaved	unpaved	Lease Owner
6	Jawli	1	10	10	0.50	unpaved	unpaved	Lease Owner
7	Kesla	1	15	15	0.20	unpaved	unpaved	Lease Owner
8	Sarrakishore	1	10	10	1.20	unpaved	unpaved	Lease Owner
9	Markadhana	1	15	15	0.20	unpaved	unpaved	Lease Owner
10	Murgidhana	1	15	15	0.25	unpaved	unpaved	Lease Owner
11	Kamti	1	13	13	0.40	unpaved	unpaved	Lease Owner
12	Khapakhurd	1	15	15	1.30	unpaved	unpaved	Lease Owner
13	Junheta	1	15	15	1.30	unpaved	unpaved	Lease Owner
14	Surajpur	1	08	08	0.30	unpaved	unpaved	Lease Owner
15	Kothra	1	10	10	0.80	unpaved	unpaved	Lease Owner
16	Dolariya	1	05	05	0.35	unpaved	unpaved	Lease Owner
17	Aamkhedi	1	10	10	0.90	unpaved	unpaved	Lease Owner
18	Rampur	1	12	12	0.42	unpaved	unpaved	Lease Owner
19	Buchal	1	15	15	0.25	unpaved	unpaved	Lease Owner
20	Navalgaon	1	10	10	0.80	unpaved	unpaved	Lease Owner
21	Revavankhedi	1	10	10	0.65	unpaved	unpaved	Lease Owner
22	Madanpur	1	12	12	0.70	unpaved	unpaved	Lease Owner
23	Khaperkheda	1	15	15	0.15	unpaved	unpaved	Lease Owner
24	Umardha	1	15	15	0.60	unpaved	unpaved	Lease Owner
25	Kasdarytwadi	1	14	14	0.30	unpaved	unpaved	Lease Owner
26	Kasdakhurd	1	15	15	0.30	unpaved	unpaved	Lease Owner
27	Choukipura	1	10	10	0.20	unpaved	unpaved	Lease Owner
28	Anhai	1	15	15	1.13	unpaved	unpaved	Lease Owner

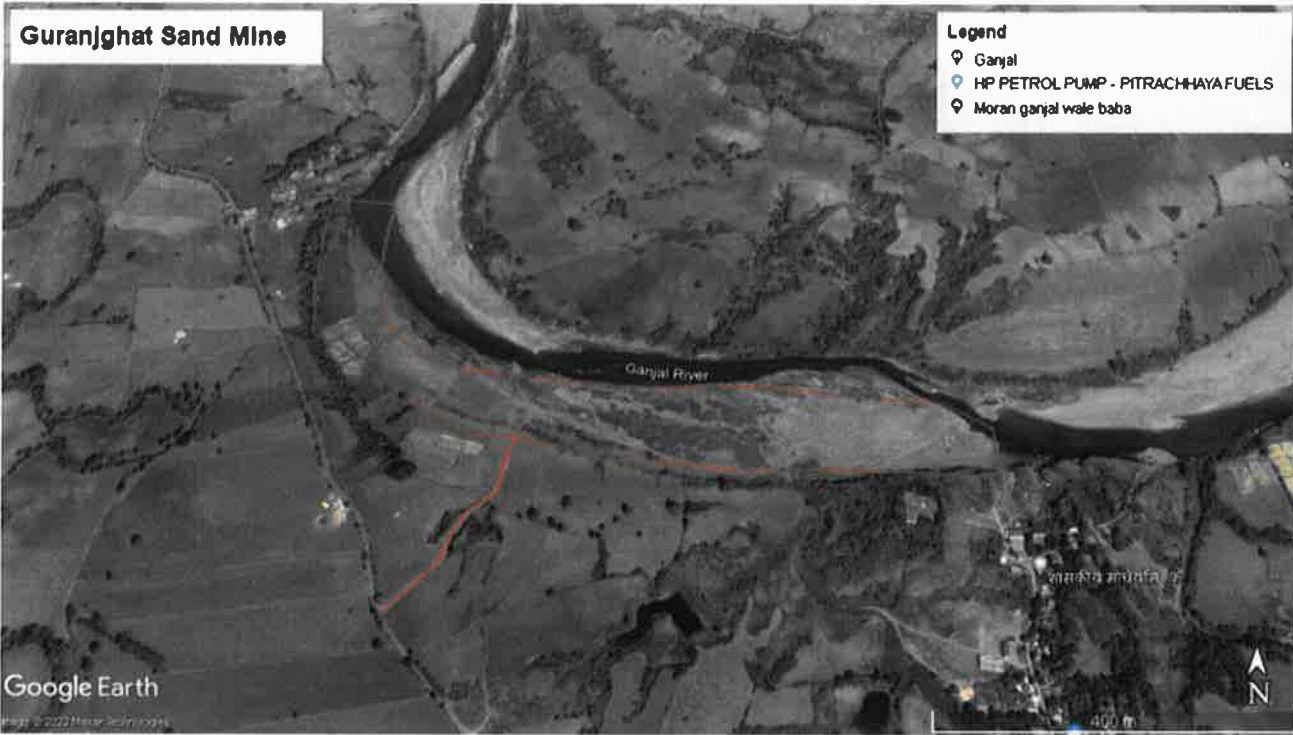
1. Transportation route for Mine No. 1 Sangakhedakhurd



2. Transportation route for Mine No. 2 Rewamuhari



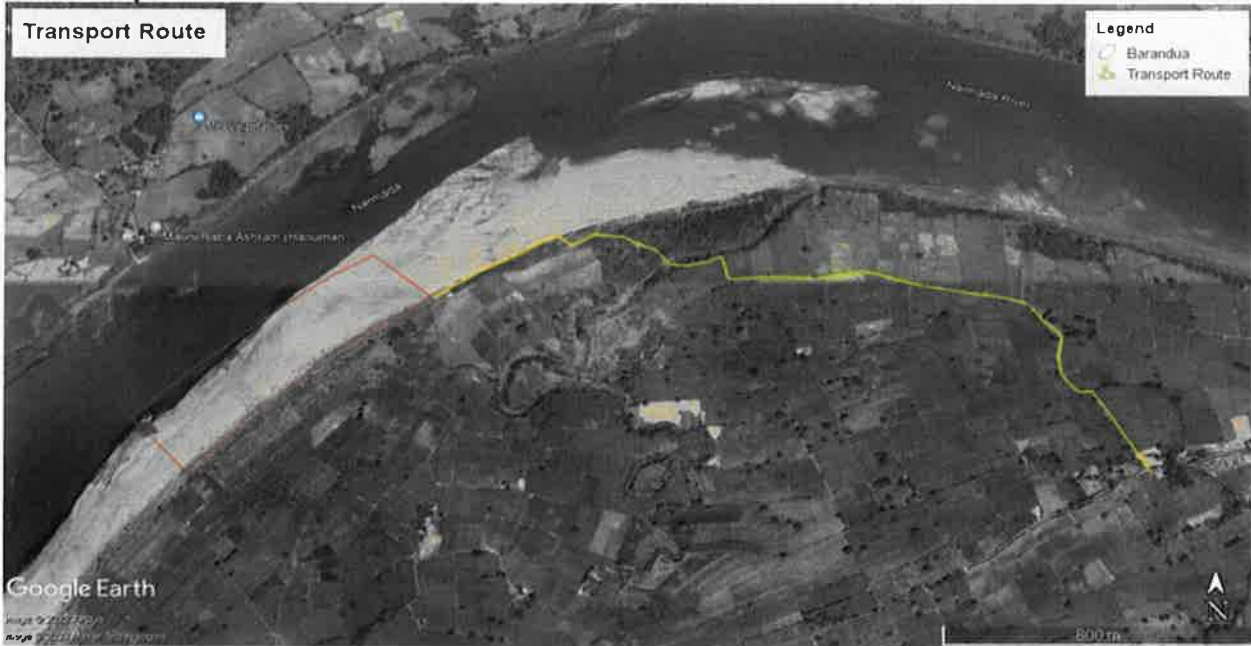
3. Transportation route for Mine No. 3 Guranjghat



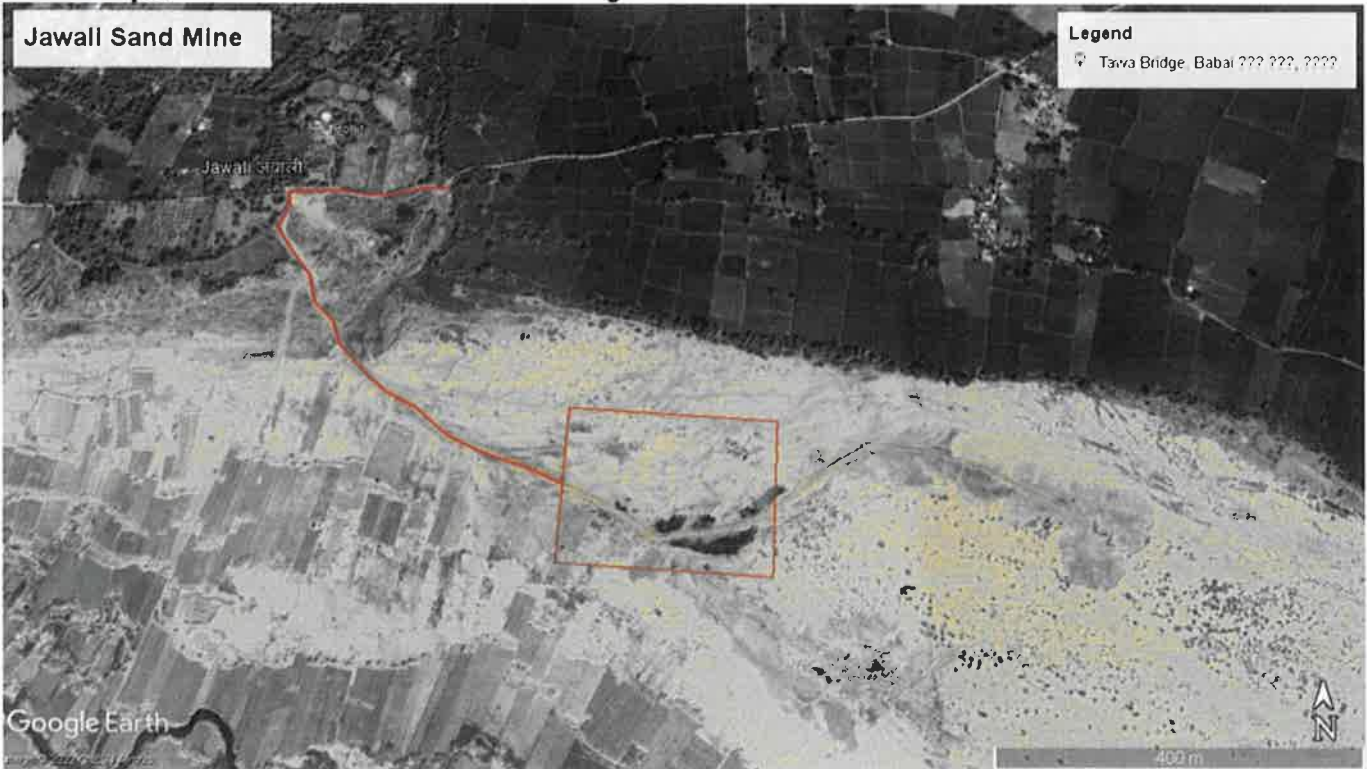
4. Transportation route for Mine No. 4 Singhodi



5. Transportation route for Mine No. 5 Barandua



6. Transportation route for Mine No. 6 Jawli



7. Transportation route for Mine No. 7 Kesla



8. Transport Route for Mine NO. 8 Sarrakishore





9. Transport Route for Mine NO. 9 Markadhana



10. Transport Route for Mine NO. 10 Murgidhana



State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)

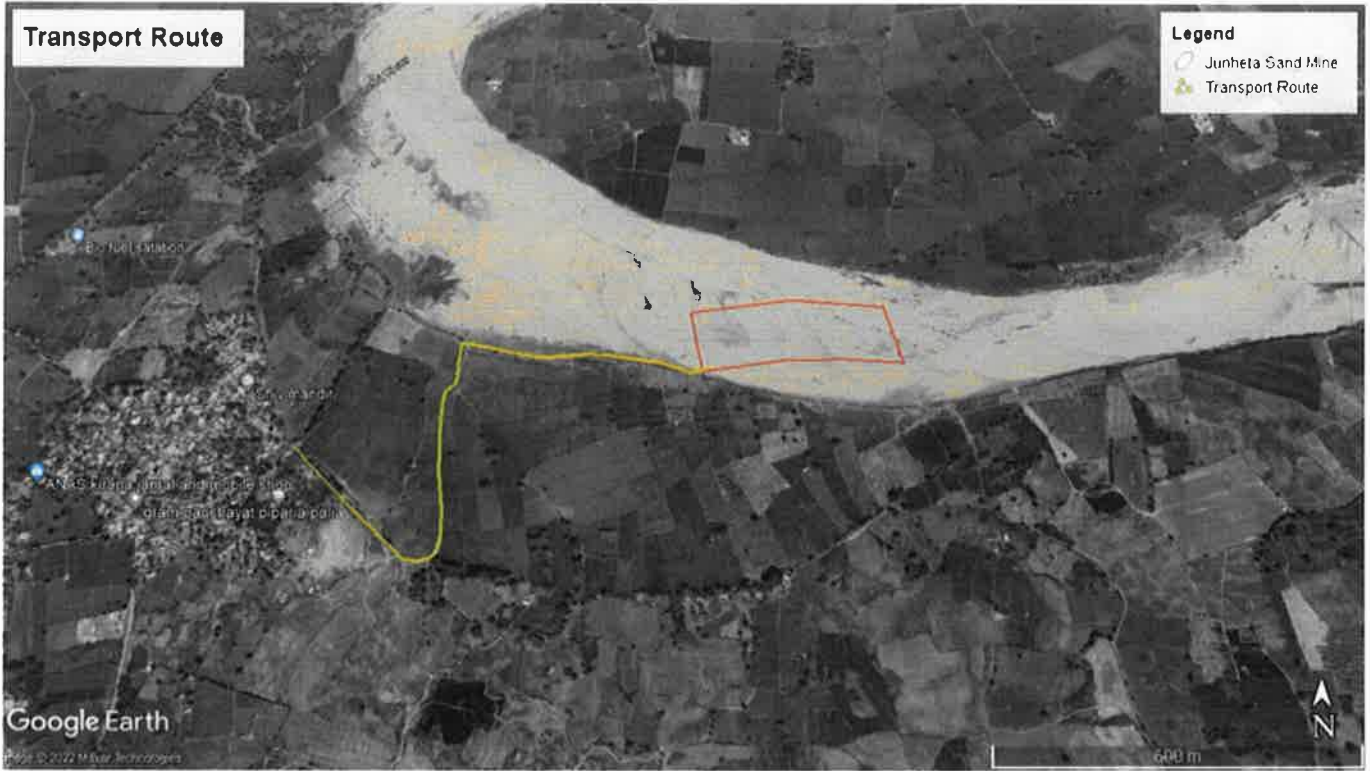
11. Transport Route for Mine NO. 11 Kamti



12. Transport Route for Mine No. 12 Khapakhurd



13. Transport Route for Mine No. 13 Junheta



14. Transport Route for Mine No. 14 Surajpur



State Level Environment  
Assessment Authority, M.P.  
(EPCO)  
Pradhan Mantri Parisar  
E-5, Gandhinagar Colony, Bhopal (M.P.)

15. Transport Route for Mine No. 15 Kothra



16. Transport Route for Mine No. 16 Dolariya



State Level Environment Impact  
Assessment Authority, M.P.  
(EPEO)  
Paryavaran Parivar  
E-8, Arera Colony, Bhopal (M.P.)

17. Transport Route for Mine No. 17 Aamkhedi



18. Transport Route for Mine No. 18 Rampur



19. Transport Route for Mine No. 19 Buchal



20. Transport Route for Mine No. 20 Navalgaon



State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)

21. Transport Route for Mine No. 21 Revavankhedi



22. Transport Route for Mine No. 22 Madanpur



23. Transport Route for Mine No. 23 Khaperkheda



24. Transport Route for Mine No. 24 Umardha



State Environment Protection  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)



25. Transport Route for Mine No. 25 Kasdaraiyatwadi



26. Transport Route for Mine No. 26 Kasdakhurd



27. Transport Route for Mine No. 27 Choukipura



28. Transport Route for Mine No. 28 Anhai



DISTRICT SURVEY REPORT OF NARMADAPURAM

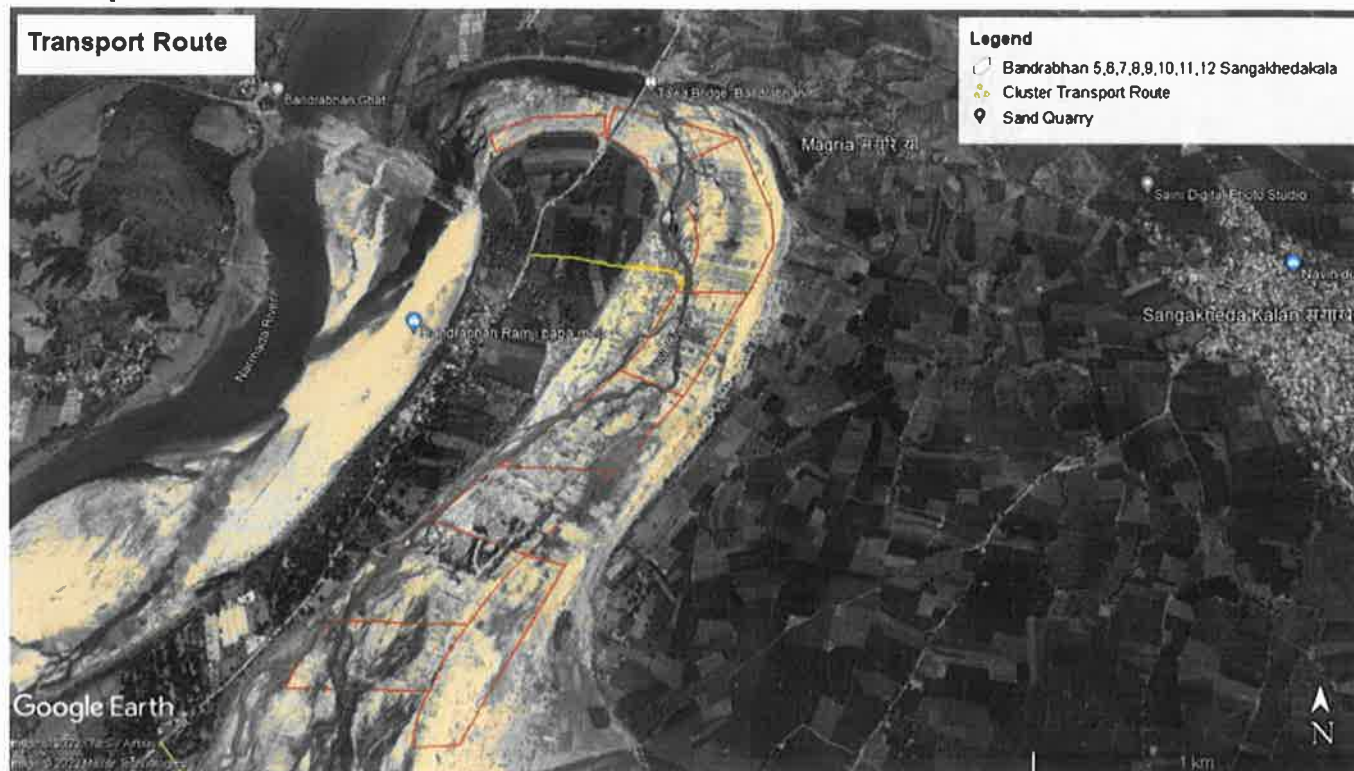
• Transportation Routes for Sand Quarry in Cluster -

Cluster No.	Transportation Route	Number of Tippers /Day	Number of tippers/day of all the lease on route	Length of Route in KM	Type of road (Black Topped/unpaved)	Recommendation for road (Black Topped/unpaved)	The road will be Constructed by Govt/ Lease Owner
1	2	50	50	0.80	unpaved	unpaved	Lease Owner
2	1	40	40	0.65	unpaved	unpaved	Lease Owner
3	1	25	25	1.30	unpaved	unpaved	Lease Owner
4	1	20	20	1.70	unpaved	unpaved	Lease Owner
5	1	45	45	1.60	unpaved	unpaved	Lease Owner
6	1	40	40	1.40	unpaved	unpaved	Lease Owner
7	1	20	20	0.80	unpaved	unpaved	Lease Owner
8	1	20	20	2.30	unpaved	unpaved	Lease Owner
9	1	25	25	0.50	unpaved	unpaved	Lease Owner
10	1	30	30	0.80	unpaved	unpaved	Lease Owner
11	2	40	40	0.56	unpaved	unpaved	Lease Owner
12	1	45	45	0.60	unpaved	unpaved	Lease Owner
13	1	20	20	0.75	unpaved	unpaved	Lease Owner
14	1	20	20	1.0	unpaved	unpaved	Lease Owner
15	1	20	20	0.80	unpaved	unpaved	Lease Owner
16	1	25	25	0.35	unpaved	unpaved	Lease Owner
17	2	50	50	0.80	unpaved	unpaved	Lease Owner

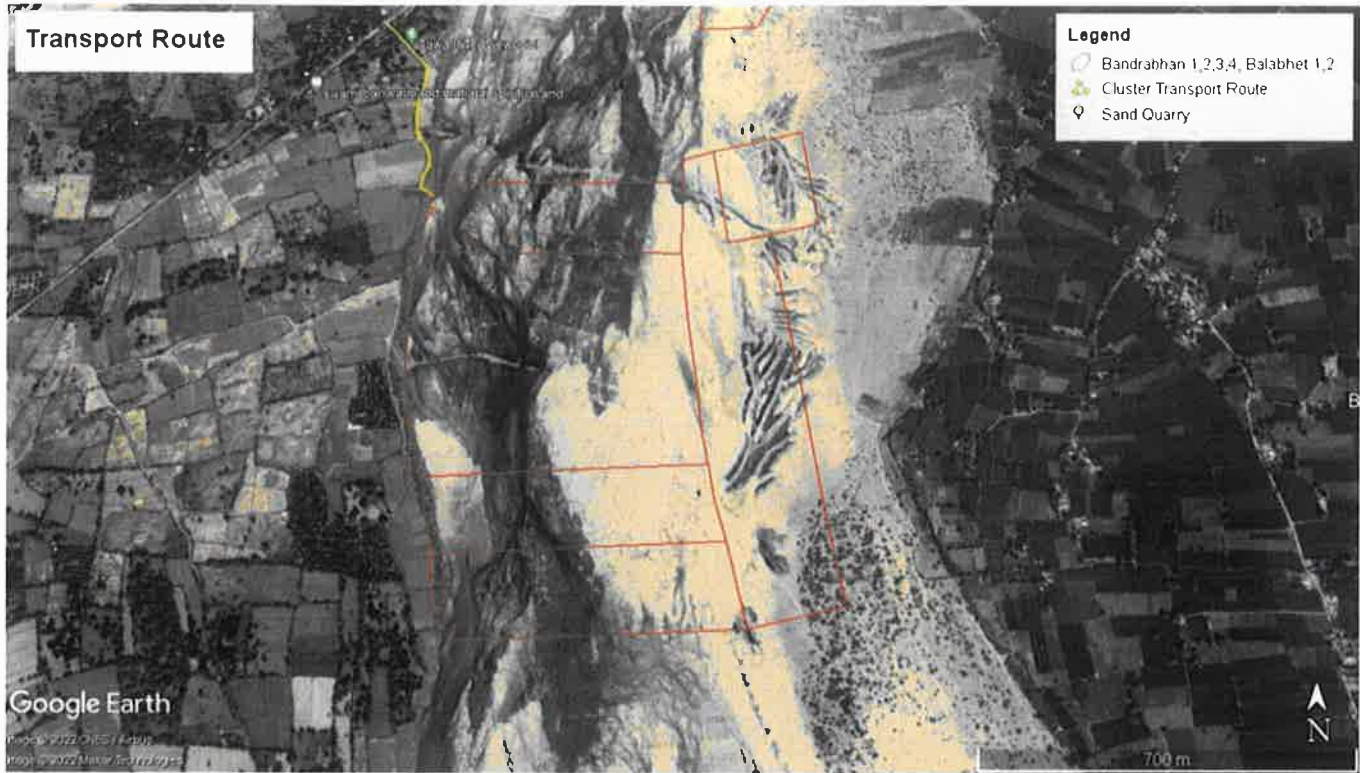
## DISTRICT SURVEY REPORT OF NARMADAPURAM

18	1	25	25	0.70	unpaved	unpaved	Lease Owner
19	1	25	25	0.60	unpaved	unpaved	Lease Owner
20	1	20	20	0.95	unpaved	unpaved	Lease Owner
21	1	20	20	0.50	unpaved	unpaved	Lease Owner
22	1	25	25	0.35	unpaved	unpaved	Lease Owner

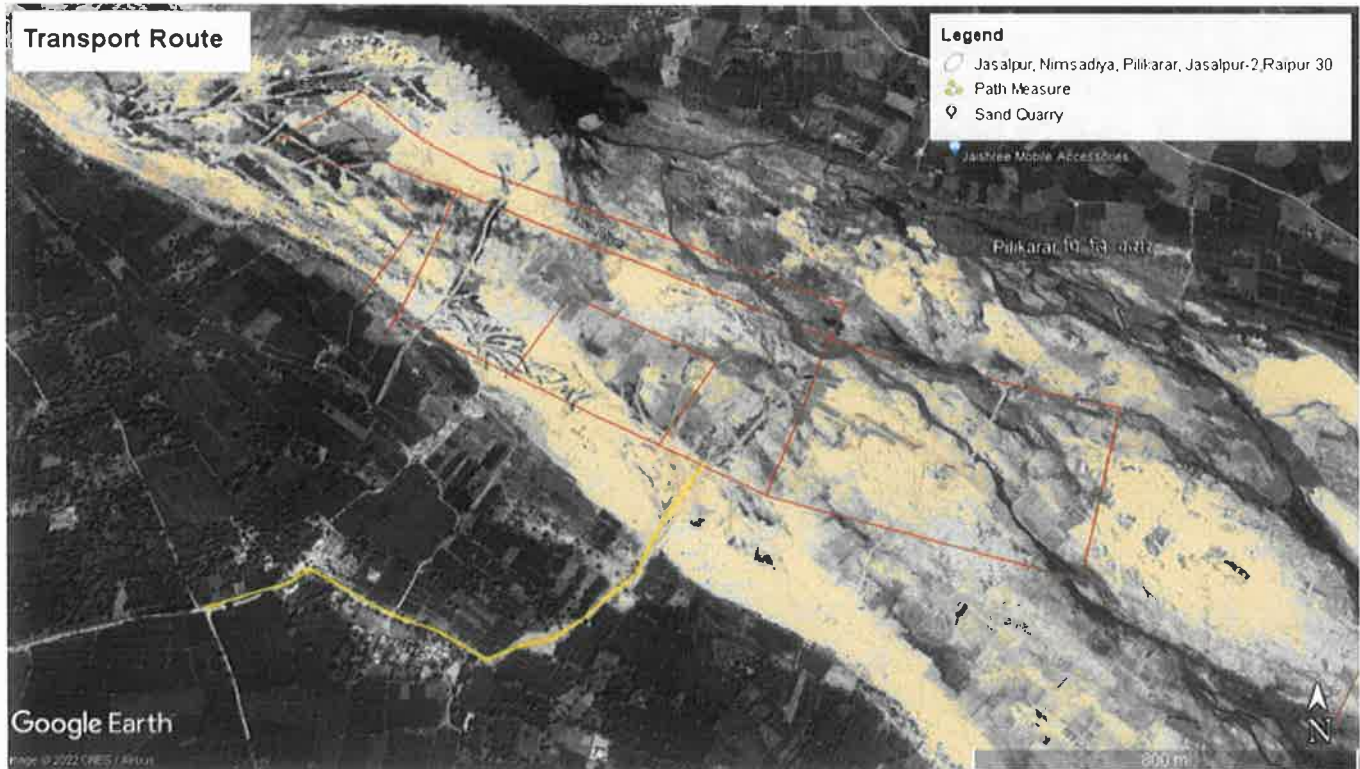
### Transport Route for Cluster No. 1



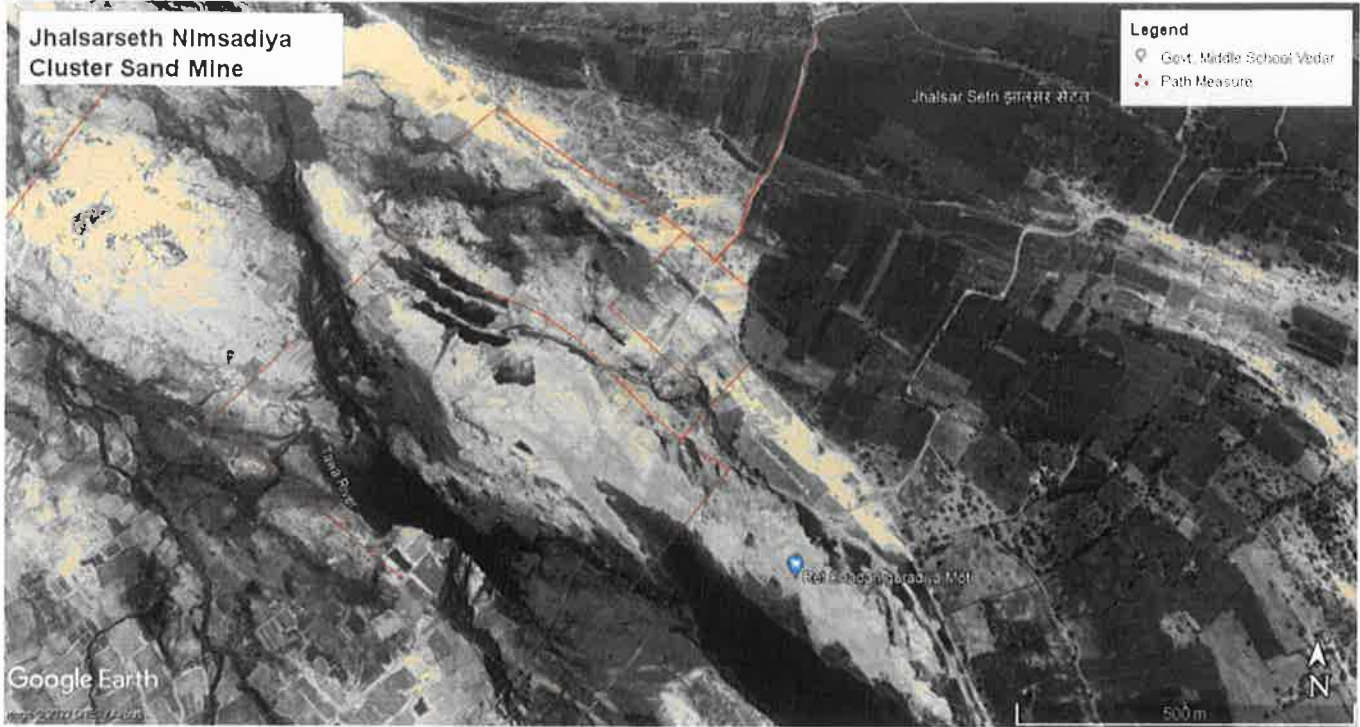
Transport Route for Cluster No. 2



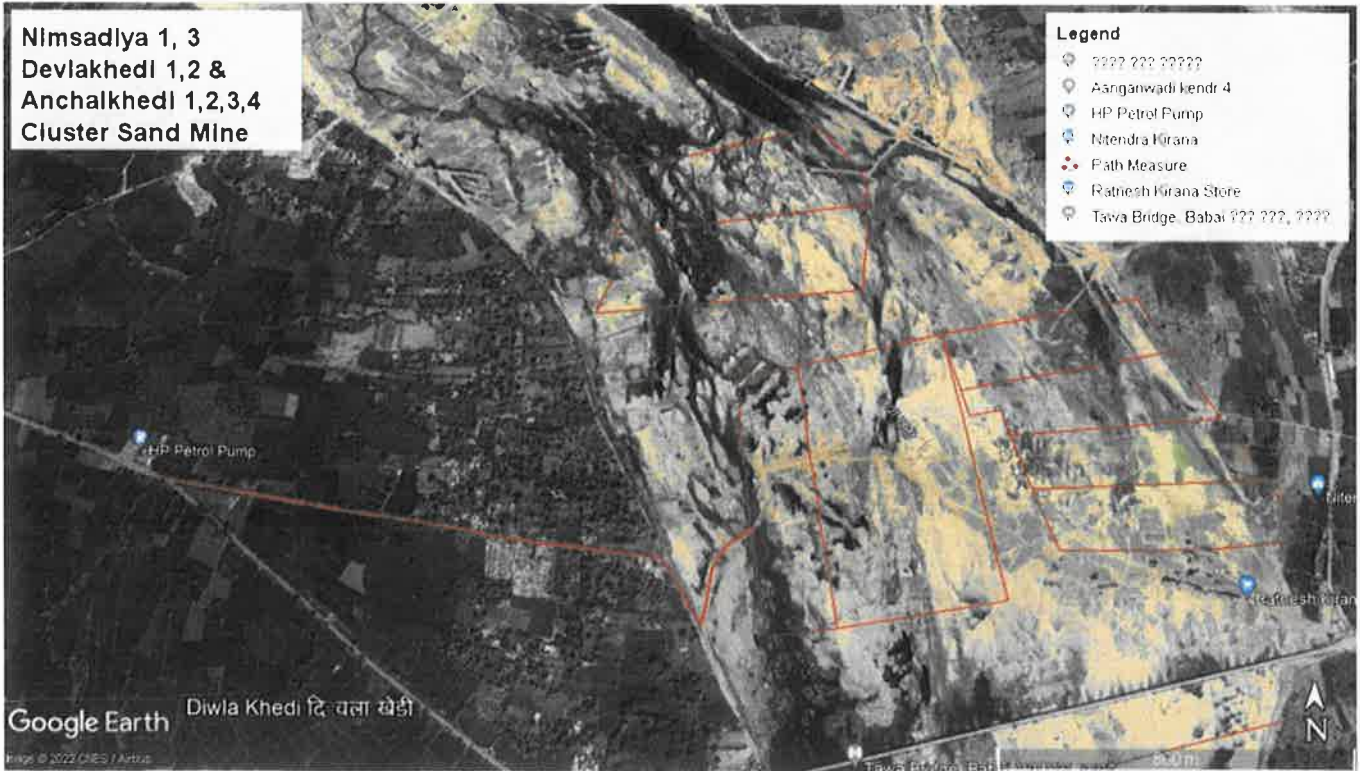
Transport Route for Cluster No. 3



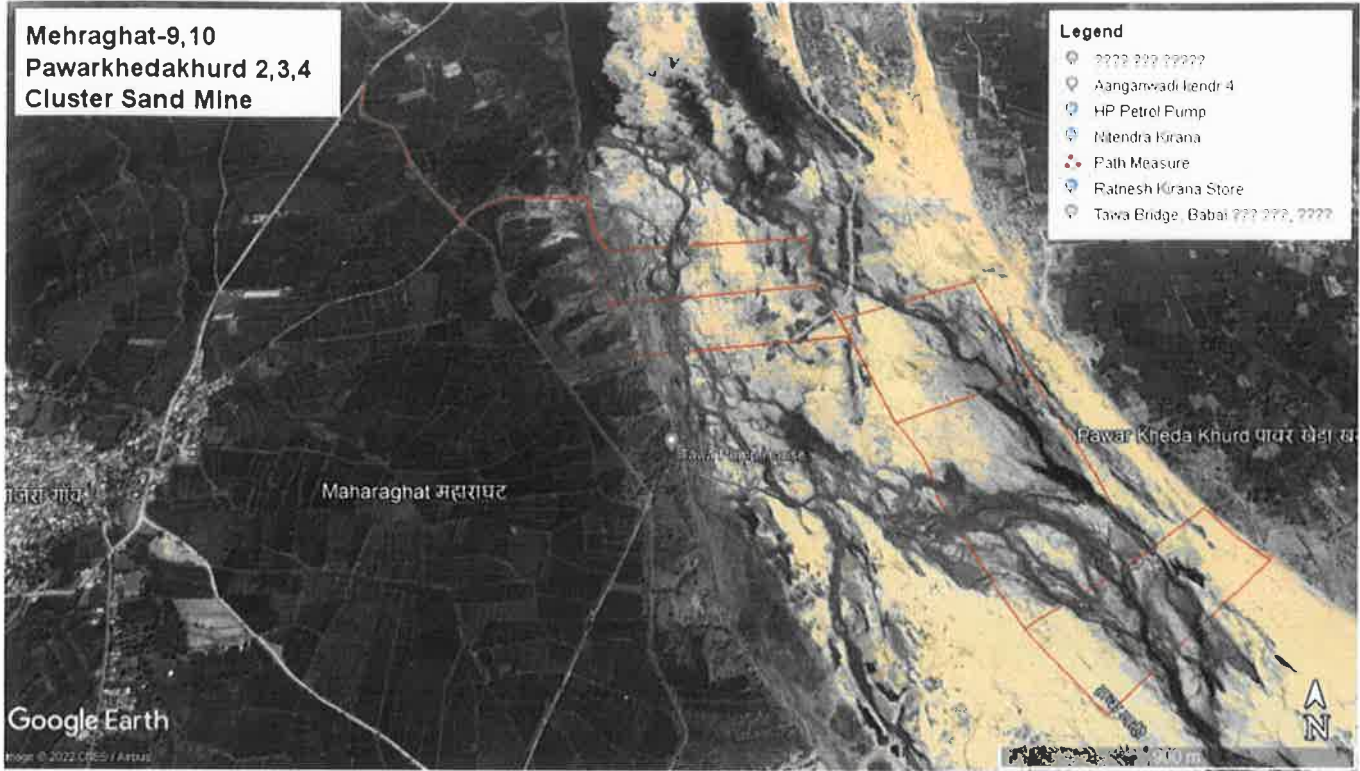
Transport Route for Cluster No. 4



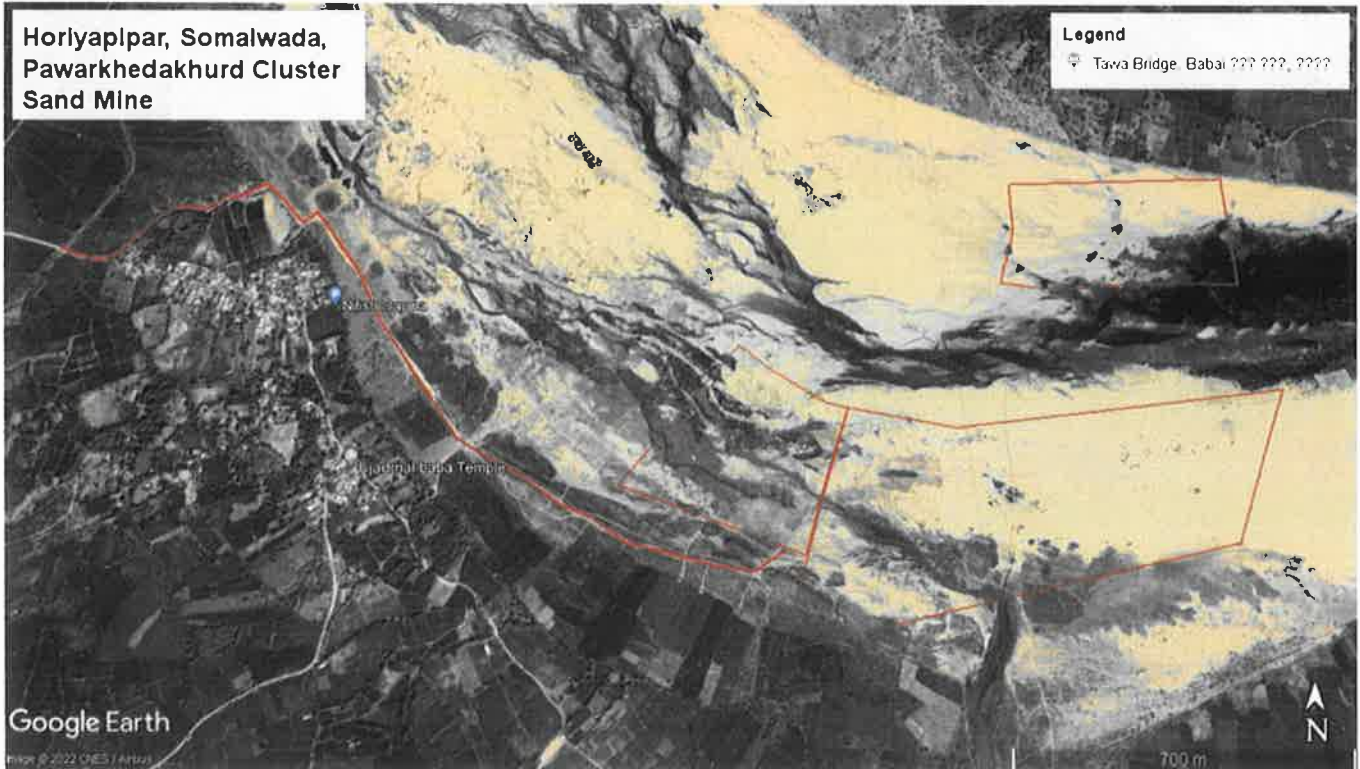
Transport Route for Cluster No. 5



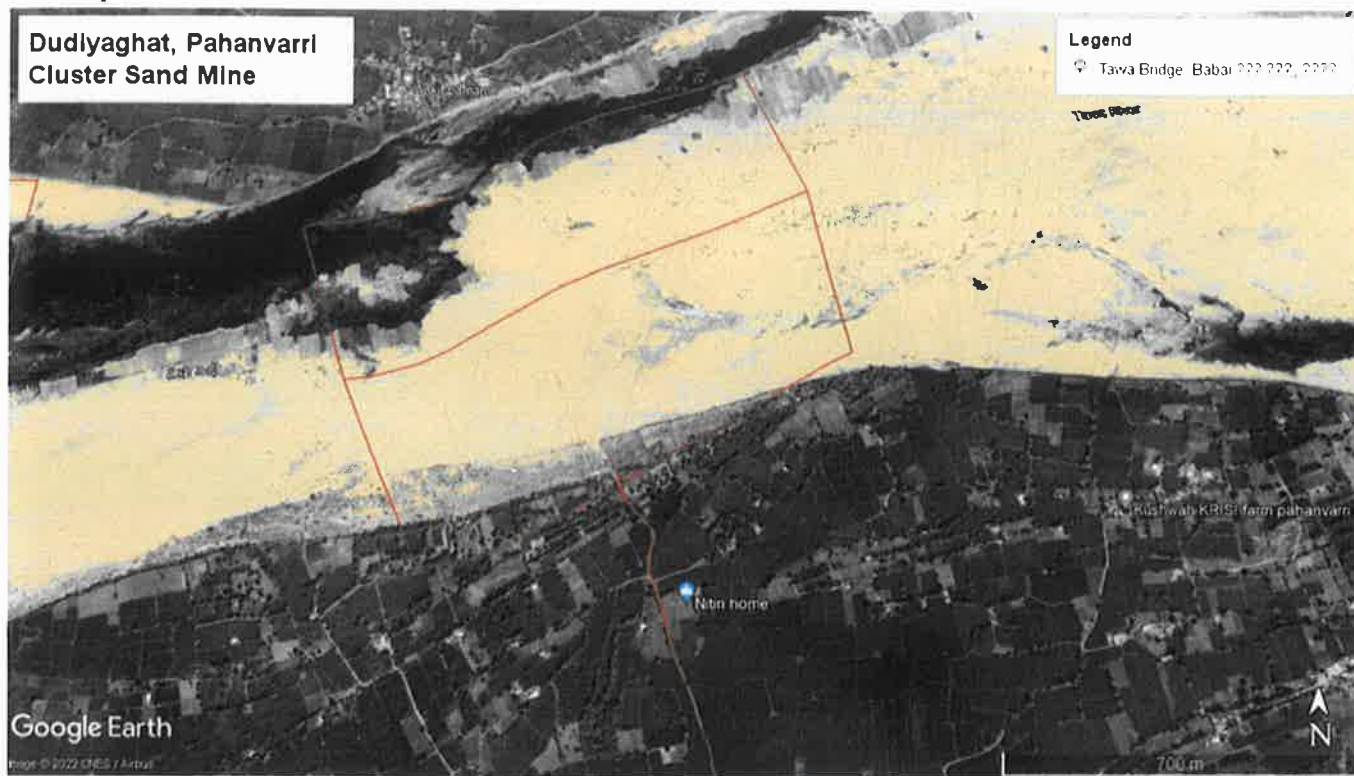
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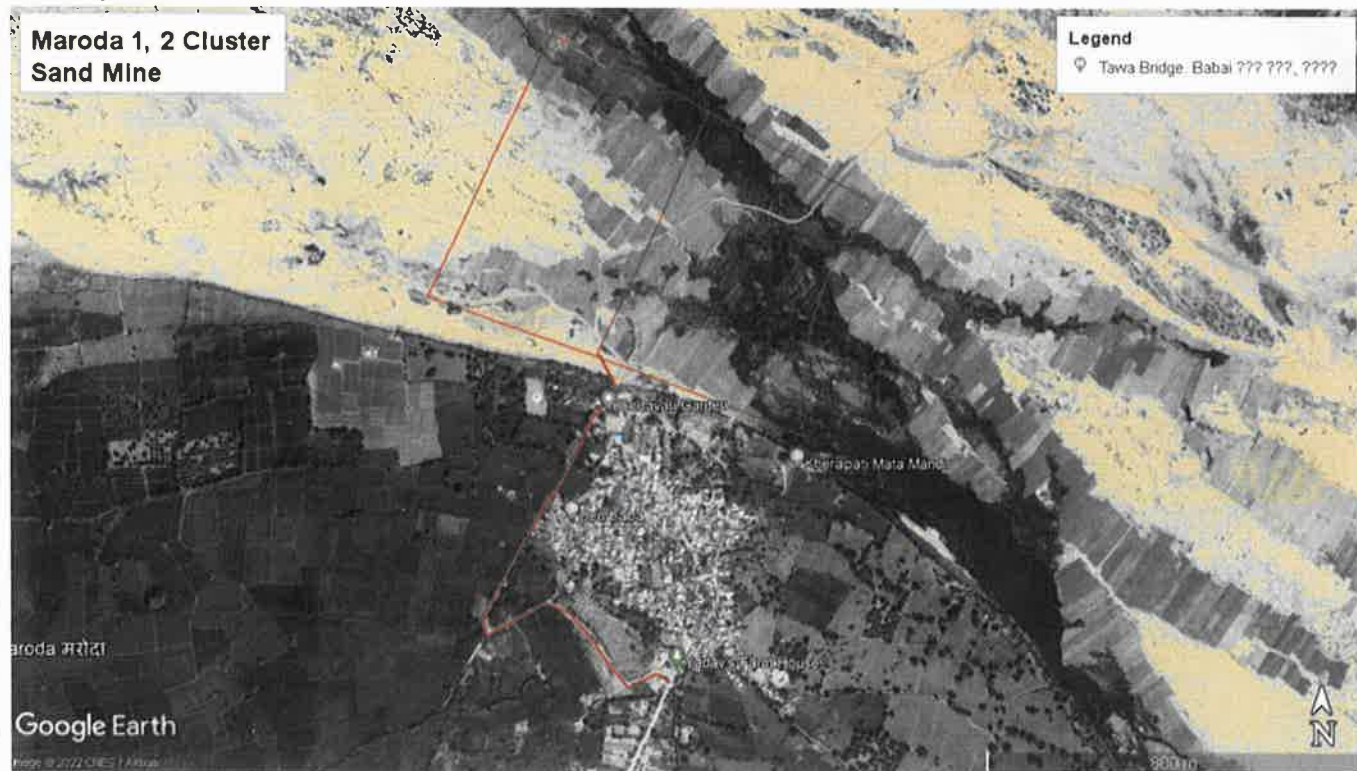
Transport Route for Cluster No. 7



Transport Route for Cluster No. 8

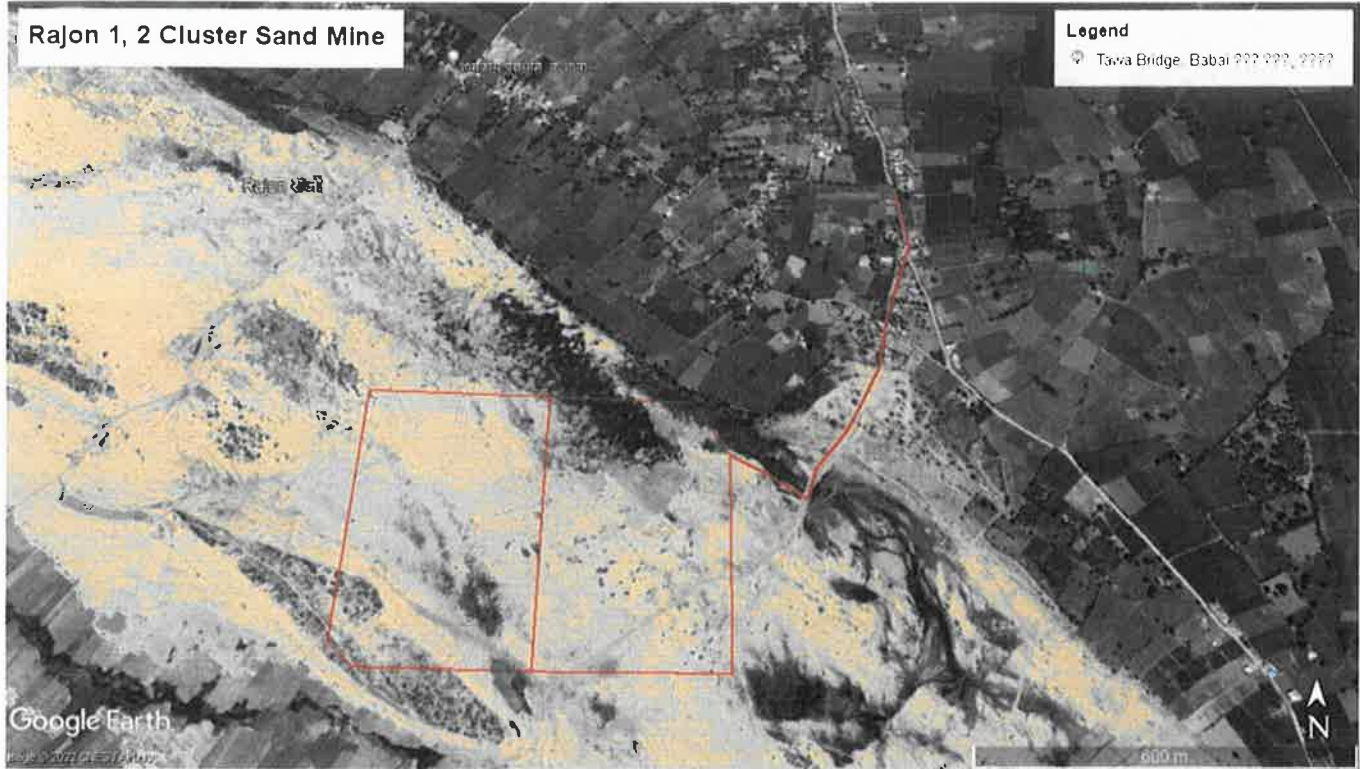


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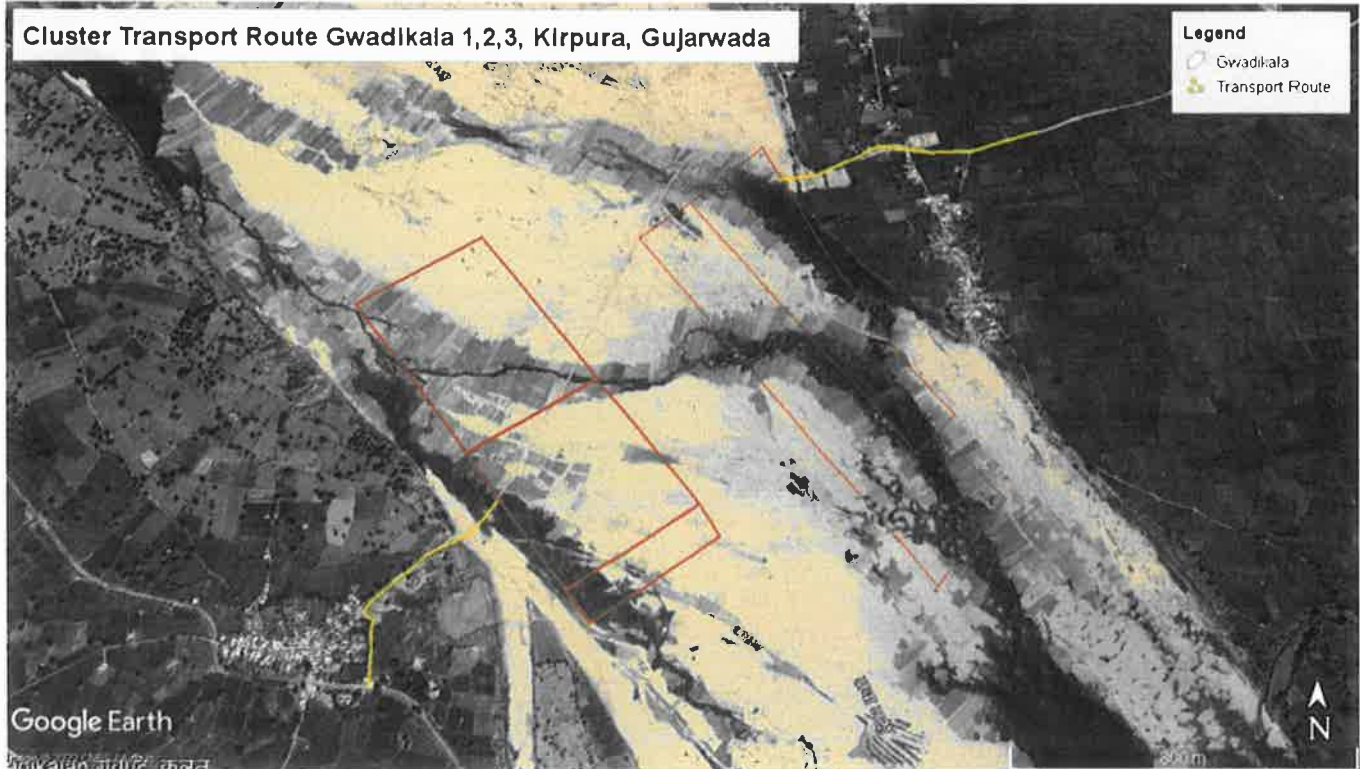




Transport Route for Cluster No. 10



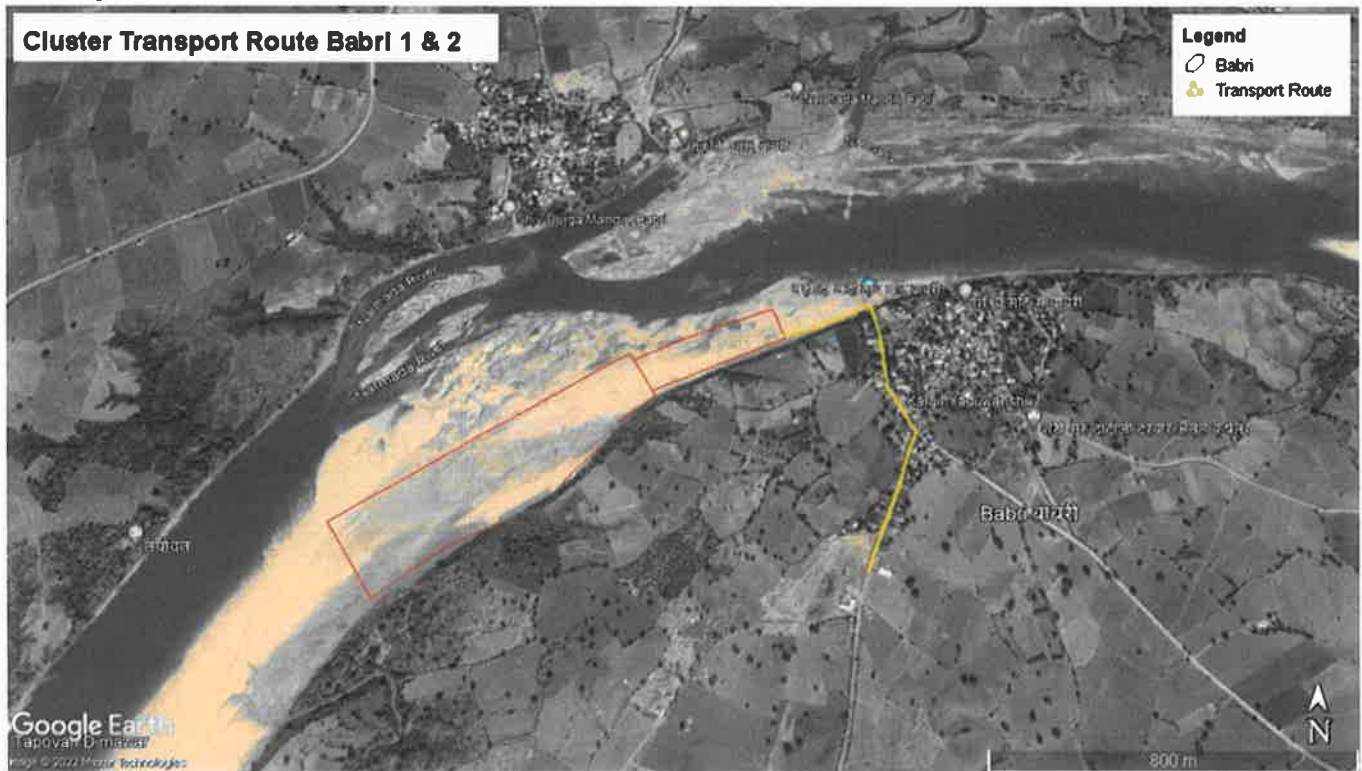
Transport Route for Cluster No. 11



Transport Route for Cluster No. 12



Transport Route for Cluster No. 13



Transport Route for Cluster No. 14



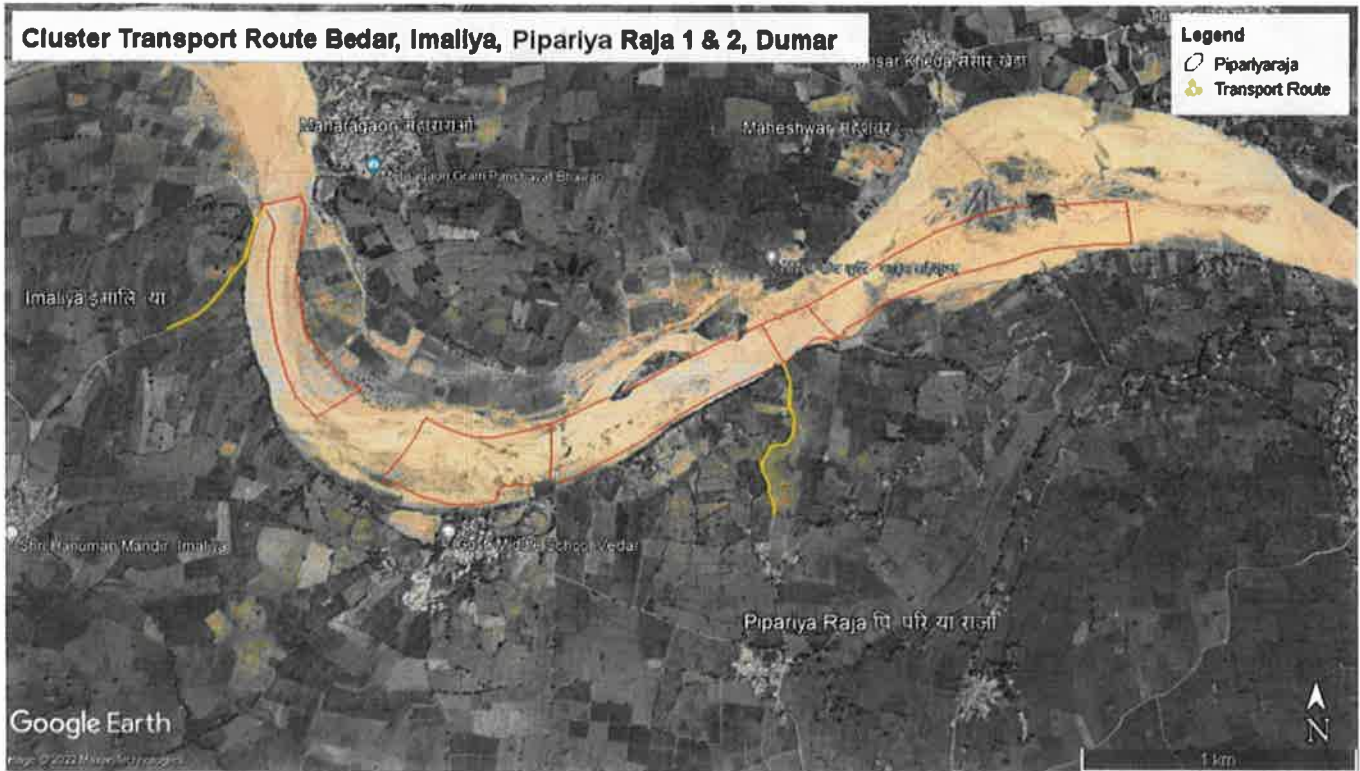
Transport Route for Cluster No. 15



Transport Route for Cluster No. 16



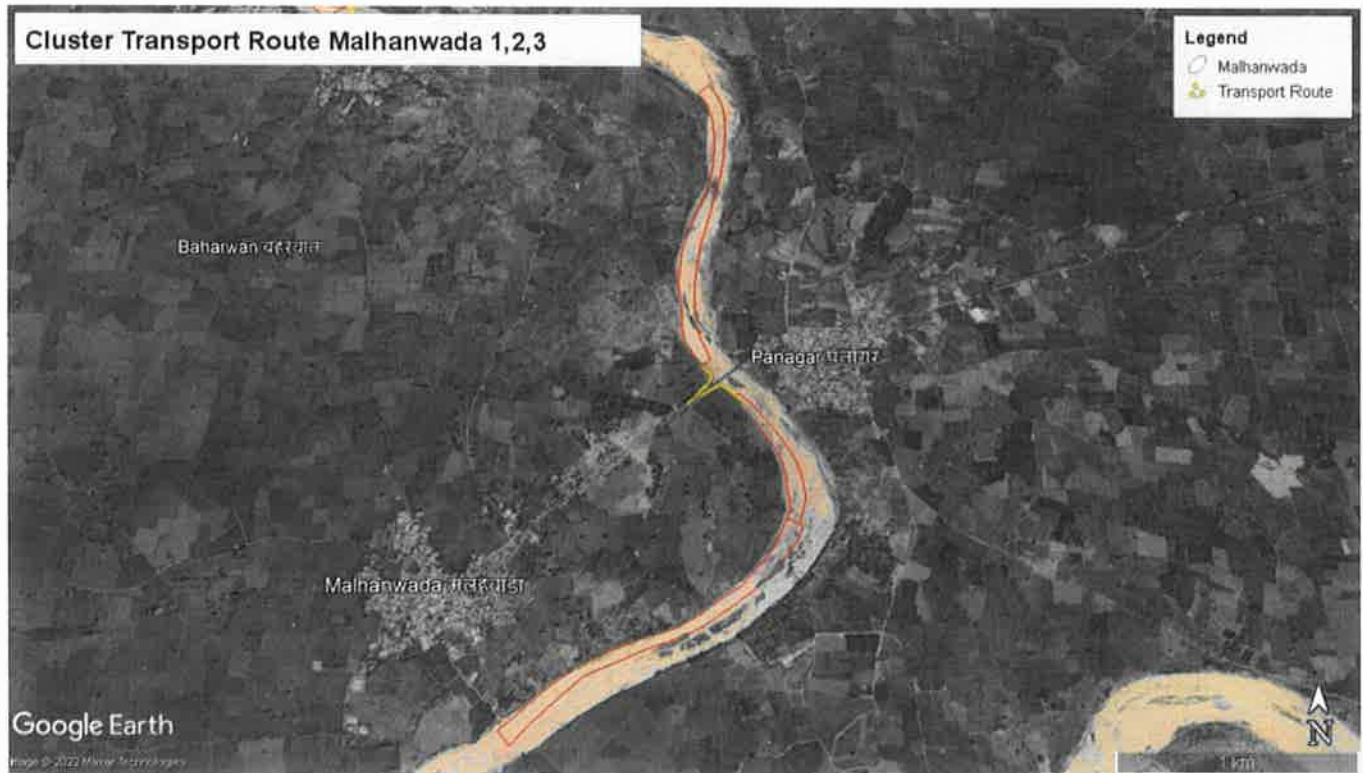
Transport Route for Cluster No. 17



Transport Route for Cluster No. 18



Transport Route for Cluster No. 19



Transport Route for Cluster No. 20



Transport Route for Cluster No. 21



Transport Route for Cluster No. 22



**CONCLUSION:**

After doing all exercise it can be say that Narmadapuram district have good mineral potential as well as variety of minerals. Geological studies of the area indicate that many mineral like sand, soil, clay, and murrum. Geologically The rocks occurring in the district range in age from Palaeoproterozoic to Quaternary. The Mahakoshal Group of rocks mainly comprise quartzite, slate and phyllites. The rocks of Vindhyan Supergroup comprise Bhandar Group. Bhandar group consists of Lower Bhandar sandstone which is fine to coarse grained and at places, pebbly and quartzitic.

The Gondwana sequence belonging to the Gondwana basin of Central India, comprises of Talchir, Barakar, Motur, Bijori, Panchmari, Denwa, Bagra and Jabalpur Formations. The Talchir formation comprises tillite, diamictite, fine to medium grained sandstone and grey to olive green shales. The Barakar Formation is dominantly made up of coarse-grained feldspathic sandstone, grey shales and carbonaceous shale. Motur Formation overlies Barakar Formation with a gradational contact. It comprises coarse grained sandstone with pebbly interbands, variegated shales and clay. The Bijori Formation is exposed as a broad band of olive and buff coloured clays and shales, alternating with massive sandstone. The Pachmarhi Formation consists of thick beds of coarse to granular, white arenite or quartzwacke, separated by lenses or thin layers of conglomerate and thin red clay bands. The Denwa Formation consists mainly of alternating bands of sandstone and red to variegated calcareous clay. The Bagra formation comprises of conglomerate, variegated shales and subordinate limestone bands. The youngest Gondwana sequence is represented by Jabalpur Formation. It consists mainly of massive sandstone alternating with white clays. Lenses of conglomerate are common. Discontinuous patchy exposures of Lameta Group are seen east of Barapura, Gotabari and Tangna. The basaltic lava flows of Deccan trap are well exposed in the southern and southwestern part of the district. These flows, grouped under Satpura Group are mainly of Aa type and non-porphyrific to porphyritic to mega-porphyrific in nature. The thickness of individual flows varies from 15m to 47m. The Satpura Group comprises of 18 to 21 basaltic flows which are further classified in 5 Formations. Numerous dykes and sills, mostly of doleritic composition intrude the Gondwana rocks and basaltic flows.

The dykes range in the length from few hundred meters to few kilometres, with width ranging from few meters to few hundred meters. Most of the dykes trend in NE-SW direction. Quaternary Narmada alluvial deposits occupy a major part of the district have been sub divided into seven litho-stratigraphic formations viz. Surajkund Formation, Beneta Formation, Hirdepur Formation, Bauras Formation and Ramgarh Formation, on the basis of lithological characters, degree of oxidation, calcification of the sediments, erosional unconformities, soil stratigraphy, morpho-stratigraphy and presence of volcanic ash.

So with preventive measure, skilled, systematic and scientific mining, district has rich mineral resources of sand, clay, murrum, soil and crusher stone to contribute for growth of state as well as nation.




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5. [www.Hoshangabad.mp.gov.in/general-information](http://www.Hoshangabad.mp.gov.in/general-information)
6. Census of India 2011 series 24 part XII-A
7. Official Website of District Administration Hoshangabad
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Parvataran Pantar  
E-5, Arera Colony, Bhopal (M.P.)




**DISTRICT SURVEY REPORT**  
**FOR**  
**MINOR MINERALS (OTHER THAN SAND) MINING**  
**OF**  
**DISTRICT NARMADAPURAM**



**IN COMPLIANCE OF MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE,  
NOTIFICATION DATED 25.07.2018 (THE GAZETTE OF INDIA)  
FOR MINOR MINERAL**

**PREPARED BY**  
**ARCHANA TAMRAKAR**  
**MINING INSPECTOR (M.Sc. Geology)**  
**DISTRICT NARMADAPURAM (MP)**

**YEAR-2022**

  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)

कार्यालय कलेक्टर (खनिज शाखा) जिला-नर्मदापुरम (म0प्र0)

ई-मेल :- [modgmhos@mp.gov.in](mailto:modgmhos@mp.gov.in)

क्रमांक / ..641... / खनिज / 2022-23  
प्रति,

नर्मदापुरम, दिनांक / ..14 / ..9... / 2022

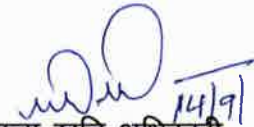
कार्यपालक संचालक,  
राज्य स्तरीय पर्यावरणीय समाघात समिति (SEIAA/SEAC)  
पर्यावरण परिसर, ई-5, अरेरा कॉलोनी,  
भोपाल (म0प्र0)

विषय:- जिला-नर्मदापुरम की संशोधित जिला सर्वेक्षण रिपोर्ट (DSR) (रेत को छोड़कर अन्य गौण खनिज) के संबंध में।

—000—

उपरोक्त विषयान्तर्गत राज्य स्तरीय मूल्यांकन समिति की 588 वीं बैठक दिनांक 16/08/2022 में दिये गये निर्देशानुसार जिला-नर्मदापुरम की संशोधित जिला सर्वेक्षण रिपोर्ट (DSR) (रेत को छोड़कर अन्य गौण खनिज) अग्रिम कार्यवाही हेतु मूलतः अग्रेषित है।

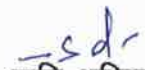
संलग्न:- उपरोक्तानुसार।

  
जिला खनि अधिकारी  
जिला-नर्मदापुरम(म0प्र0)

पृ0क्रमांक / ..642... / खनिज / 2022-23  
प्रतिलिपि :-

नर्मदापुरम, दिनांक / ..14 / ..9... / 2022


- 1- प्रमुख सचिव, मध्यप्रदेश शासन, खनिज साधन विभाग, मंत्रालय भोपाल की ओर सादर सूचनार्थ संप्रेषित।
- 2- संचालक, प्रशासन एवं खनिकर्म म.प्र. भोपाल की ओर सादर सूचनार्थ संप्रेषित।
- 3- कार्यवाहक संचालक दि म.प्र. स्टेट माईनिंग कार्पोरेशन लि. भोपाल की ओर सूचनार्थ।

  
जिला खनि अधिकारी  
जिला-नर्मदापुरम(म0प्र0)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

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## DISTRICT SURVEY REPORT OF NARMADAPURAM

### PREFACE

The district survey report for minor mineral has been prepared with Reference to amended Notification on 25<sup>th</sup> July 2020 of Ministry of Environment, Forest and Climate Change, & Enforcement & Monitoring and direction given by Directorate of Geology & Mining (DGM) Bhopal for the preparation of District survey report applicable for minor mineral.

  
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# DISTRICT SURVEY REPORT OF NARMADAPURAM

## 1.0 INTRODUCTION

Narmadapuram formerly known as Hoshangabad district has predominantly an agricultural based economy. It is situated in the eastern part of Madhya Pradesh. Prior to 1998-99 District Harda was a part of Narmadapuram District. After the division of the district, the present area of the district is 5408 Sq. Km. It is surrounded by Sehore and Raisen districts in the North, Narsinghpur district in the east, Chhindwara district in the south west, Betul district in the south and Harda district in the west. Narmadapuram district lies between north latitudes 22° 15' and 23° 00' and east longitudes 77° 15' and 78° 42' in part of survey of India toposheet Nos, 55F & 55J. Narmadapuram is the district headquarter and Itarsi, Sohagpur, Piparia, Pachmarhi and Bankheri are some of the major towns. Itarsi is a very important railway Junction lying on Delhi-Chennai, Delhi-Bangalore and Patna- Mumbai railway routes. National Highway No. 69 and State Highway No. 21 and 22 pass through the district. The villages in the district are approachable by fair weather motorable tract.

The district is divided into eight Tehsils namely Babai, Bankhedi, Narmadapuram, Itarsi, Piparia, Seonimalwa, Sohagpur and Dolaria and seven development Blocks, namely Bankhedi Block, Pipariya Block, Sohagpur Block, Babai Block, Narmadapuram Block, Kesla Block (Itarsi Tehsil) and Seoni Malwa Block. The total population of the district is 1,240,975 as per Census 2011.

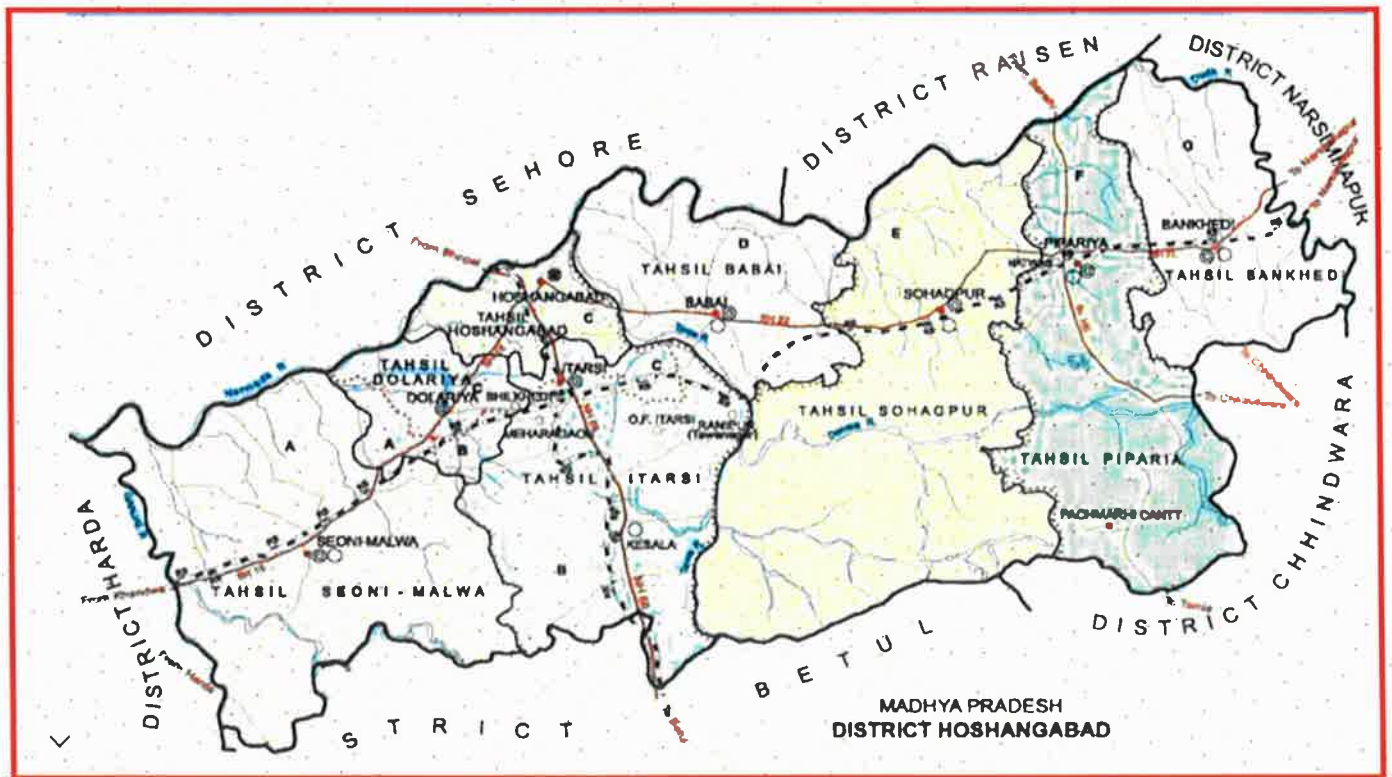


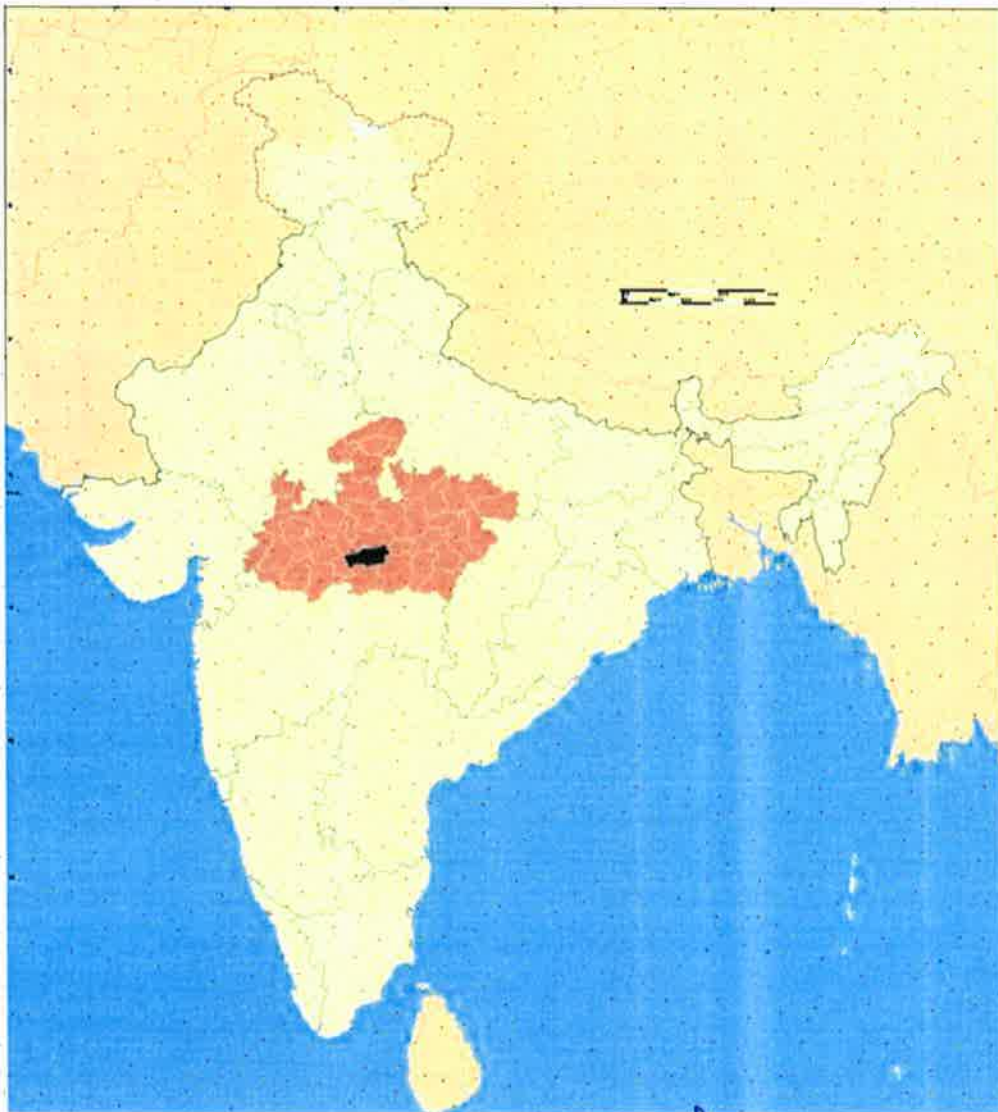
Image showing tehsil map of Narmadapuram district

*Prind*  
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E-5, Ar...

## DISTRICT SURVEY REPORT OF NARMADAPURAM

### LOCATION:

District Narmadapuram lies in the central Narmada valley and on the northern fringe of Satpura plateau. It lies between 21° 53' and 22° 59' North latitude and 76° 47' and 78° 44' East longitudes. In shape, it is an irregular strip elongated along the southern banks of Narmada river. Its greatest length from south-east to north-east is 160 kms. Northern boundary of the district is river Narmada. Across this, the district of Raisen and Sehore lies. The district of Betul lies in the south, whereas the Harda district faces with the western and south-western boundaries and Narsimhapur and Chhindwara districts lies to the north-eastern and southeastern sides of the district respectively. As per the 2011 Census, its geographical area is 6,703 Sq.kms. It is the 18th largest district of the state in respect of area which is 2.17% of the total area 308,244 Sq.km. of Madhya Pradesh. Physiographically the district may be divided under two natural divisions, viz., Satpura plateau and the Narmada valley.state boundary.



*[Signature]*  
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E-5, Aravali Colony, Jabalpur (M.P.)

**2.0 OVERVIEW OF MINING ACTIVITY IN THE DISTRICT:**

Narmadapuram district holds a distinct place in the state with respect to ideal geographical position in the state and the availability of sand mineral resources. In the district mainly lime-stone (for minor extent), clay, gitti, murum and sand are found. Out of this limestone is considered as major mineral and rest clay, and sand is considered as minor mineral. Majority of sand has been extracted from Narmada and Tawa rivers. In the district bricks kiln based on chimney is major industry.



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**3.0 GENERAL PROFILE OF THE DISTRICT:****Historical Background:****How District Got Its Name:**


The district takes its own name from the headquarters town Hoshangabad which was founded by "SULTAN HUSHANG SHAH GORI", the second king of Mandu (Malwa) in early 15<sup>th</sup> century. But now this district has been known as NARMADAPURAM.

**Location:**

Narmadapuram district lies in the central Narmada Valley and on the northern fringe of the Satpura Plateau. It lies between the parallels of 22 degree 15 minute and 22 degree 44 minute east. In shape, it is an irregular strip elongated along the southern banks of Narmda river. Its greatest length from south-east to north-east is 160 kms.

**Geographical Information:**

<b>Geography &amp; Climate</b>	
Latitude	21° 53" to 22° 59"
Longitude	76° 47" to 78° 44"
Height from Sea Level	331 mts.
Average Rainfall	1343.6 mm.
Temperature (Avg Min)	32° C to 19° C
<b>Area &amp; Population</b>	
Geographical Area	5408.23 sq.km.
Forest Area	2229.74 sq.km.
Total Populated Villages	923 Nos.
Tehsils	8 Nos.
Blocks	7 Nos.
Total Gram Panchayats	428 Nos.
Total Zanjpad Panchayats	7 Nos.
No. of Urban Areas	11 Nos.
Total Municipals	4 Nos.
Total Populations	12,40,975 Nos.
Total Rural Population	8,51,126 Nos.
Total Urban Population	3,89,849 Nos.
Total Males	6,48,970 Nos.
Total Females	5,92,005 Nos.
<b>Commercial Banks</b>	
Total Nationalized Banks	94 Nos.
Total Co-operative Banks	13 Nos.
Land Development Banks	8 Nos.
Post/Sub-Post Offices	175 Nos.
Telephone Connections	12561 Nos.
<b>Agriculture</b>	
Net Sown Area	291785 hect.
Double Cropped Area	179557 hect.
Net Irrigated Area	227795 hect.
<b>Education</b>	
Primary Schools	960 Nos.

  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

Middle Schools	207 Nos.
Senior Secondary Schools	69 Nos.
Colleges	11 Nos.
Enrolled Studenets in Colleges	10221 Nos.
Technical College (Polytechnic)	01 No.
I.T.I.	02 Nos.
<b>Public Health &amp; Family Welfare</b>	
Health Centres	17 Nos.
Sub-Health Centres	150 Nos.
Ayurvedic Hospitals	39 Nos.
Homeopathic Dispensaries	6 Nos.
Community Health Centres	3 Nos.
<b>Literacy(as per Census-2001)</b>	
Total (Literates :6,35,839)	76.5 %
Male (Literates :3,88,376)	85.2 %
Female(Literates:2,47,463)	67.0 %

**River/Lake:** In Narmadapuram district, there are two main rivers namely the Narmada and the Tawa., which join each other at the village Bandra Bhan. In the spot, a holy mela also organise on the occassion of Kartik purnima. Other small rivers are the Dudhi and the Denwa.A very big lake is also at Pachmarhi, which is one of the main tourist place of the district and it is open for boating for all tourists.

### Boundaries:

Northern boundary of the district is river Narmada. Across this the district of Raisen and Sehore lies. The district of Betul lies in the south, where as the Harda district faces with the western and south-western boundaries and Narsingpur and Chhindwara districts, close to the north-eastern and south-eastern sides of the district respectively.

### Climate:

The climate of Narmadapuram district is normal. All the seasons come in the district. An average height from the sea level is 331 mts.and avearge rain fall is 134 cms. The average maximum and minimum temperatures are 32 deg.C and 19 deg.C respectively. Overall, the climate of the district is neither hotter nor more cool except the winter season of the Pachmarhi.

### Approach Road/Rail:

Narmadapuram is freely connected by road and rail from the state capital, Bhopal and it is about 70 kms. away from it. It is connected by rail with all major cities of the state. One of its tehsil namely Itarsi is linked with all major cities of the country due to main railway junction of the central railway, which is 18 kms. far away from the district head- quarter. From Itarsi, you can also move to Pachmarhi by road, which is one of the most popular tourist spot of the district.

### Narmadapuram Dist. Profile

S.N.	Land	Area
1	Total geographical area	668690
2	Cultivated area	325500
3	Forests	256100
4	Pasture	26300
5	Land reform able for cultivation	7610
6	Fellow Land	5390

  
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 (EPCO)  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

7	Waste Land	2620
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### General Information

S.N.	Particular	No.
1	Tehsil	8
2	Block	7
3	Gram Panchayat	424
4	Village	926

Official website of krishi vigyan Kendra bankhedi hoshangabad

### Physiography:

District Narmadapuram lies in the central Narmada valley and on the northern fringe of Satpura plateau. It lies between 21°53' and 22°59' North latitude and 76°47' and 78°44' East longitudes. In shape, it is an irregular strip elongated along the southern banks of Narmada river. Its greatest length from south-east to north-east is 160 kms. Northern boundary of the district is river Narmada. Across this, the district of Raisen and Sehore lies. The district of Betul lies in the south, whereas the Harda district faces with the western and south-western boundaries and Narsimhapur and Chhindwara districts lies to the north-eastern and southeastern sides of the district respectively. As per the 2011 Census, its geographical area is 6,703 Sq.kms. It is the 18th largest district of the state in respect of area which is 2.17% of the total area 308,244 Sq.km. of Madhya Pradesh.

Physiographically the district may be divided under two natural divisions, viz., A. Satpura plateau and

B. The Narmada valley.

#### A. THE SATPURA RANGE

The range of hills running from east to west between the Narmada and the Tapti was originally styled, either satpura (the seven sons) of the Vindhya mountain or satpuda (the seven folds), referring to the numerous parallel ridges in Nimar, thousand kilometres, with homogenous nature, led to the term applied for the whole range commencing from Amarkantak in the east to the proximity of the western coast. Many of the hill chains were mapped and recognized later even in Europe and other continents. Customarily the term is applied to the whole range, The major sections of which are known as the Raj Pipla, Kalibhit, Asirgarh, Satpura proper, Mahadeo, Maikal and Saletkri. The ranges between the Mahadeo and the Maikal are generally referred by the names of local features of importance.

#### THE MAHADEO

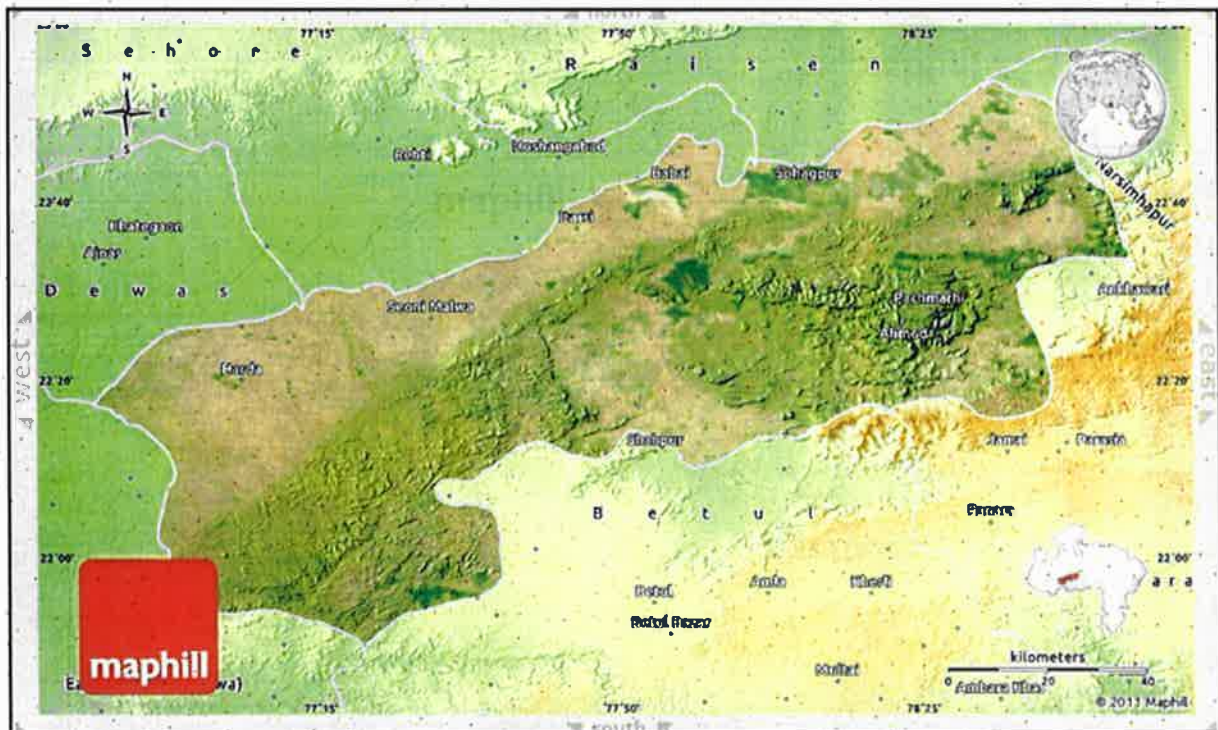
Originally applied to include the wider mass of sandstone hills encircled by the Denwa and the Sonbhadra rivers, the name 'Mahadeo' especially denotes a single peak, 1,336 metres high at the southern edge of the small but raised land of Pachmarhi, at the bottom of which are the sacred cave and the shrine of Mahadeo. The main range of the Satpura Mountains or Mahadeo hills extends from east to west in part of the district. The upstream of the Sonbhadra and the Denwa mark its southern limits. Further in the east the range reappears as Nandkot and Chauragarh across the Dudhi in Gadawara and Amarwara tahsils. The hills to the west of the Sonbhadra extending along the Malni river are known as Malni hills. These are washed by the Denwa in the north which separates the low outer (northern most) range of hills of Satpura. The Mahadeo massif contains the Pachmarhi plateau and a complex of hills around including Dhupgarh 1,352 metres, the highest point between the Nilgiris and the Himalayas except Mount Abu. Other important peaks are Chauragarh 1,316 metres and Belkandhar 1,152 metres which are the finest hills in the entire Satpura range. At places the superficial stratum on the top of the hills is trappean but at Pachmarhi hills sandstones are uncovered. The plateau is most dissected, traversed in all directions by narrow deep ravines, hollowed out by the action of streams and rivers, and

## DISTRICT SURVEY REPORT OF NARMADAPURAM

covered throughout their extent with forest. The northern face of the plateau is also distinct from the plain by the sudden up lift. The outer range is the northern most line of low hills. It extends from the Dudhi in the east to the Morand in the west. This range is separated from the main range by the narrow valley along the east-west courses of the tributary streams, viz the Denwa, the Suk Tawa and the Morand. The outer range distinctly falls away from the main range in the centre, where it is crossed by the Tawa river which has carved a flat basin behind on the plateau itself. The outer range gradually rises in the east and merges with the main range beyond the Dudhi. Dorla Pahar (885 metres) is the highest peak on south-eastern boundary.

### B. THE NARMADA VALLEY

The northern half of the district is almost a long narrow plain covered under the black cotton soil and old sandy alluvium. It is the first in sequence among the three valleys along the course of the Narmada. Below the foot hills of the Satpura the country is flat with even surface in its centre. The country is monotonous to the horizon, except where the Vindhyan hills outcrop as knolls in the valley to the south of the river. The undulation increases towards Sohagpur in the east and the Charwa tract in the west. The Charwa tract is stony and forested but Bairi is nothing but a hilly country. The Vindhyan rocks across the Narmada are represented in low narrow ranges and denuded hillocks. The resultant soil is also light in addition to its gravelly nature and shallow depth. The Sohagpur tahsil is more undulating due to a multitude of streams flowing down the Satpuras, creating ravines and washing away the finer constituents of the soil. However, these undulations break the view of the wider plains and relieve the monotony of the scenery. The grand Mahadeo hills are in full sight. The plain is narrowest at the section of Semri in Sohagpur tahsil.



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**4.0 GEOLOGY OF THE DISTRICT:**

Narmadapuram district is situated in the southern part of Madhya Pradesh and covers an area of about 6704sq. kms. It falls in Survey of India degree sheet nos. 55B&C, 55F, 55J and 55G between latitudes 21°54' and 23°00'N and longitudes 76°46' and 78°43'E. The district is bounded by Dewas district in the northwest, Sehore and Raisen districts in the north, Narsinghpur district in the east, Chindwara district in the southeast, Betul district in the south and East Nimar district in the west. The district lies south of Narmada River and has a rectangular shape. Narmadapuram is the district headquarters and Itarsi, Harda, Sohagpur, Piparia and Matkuli are other important towns. The district is well connected by roads with the state capital, Bhopal and the adjacent district headquarters, Khandwa and Narsinghpur. Itarsi is one of the biggest railway junctions in the country, located on the Howrah-Mumbai and Chennai-New Delhi railway lines. Pachmarhi is an important hill station and center of tourist attraction. Physiographically, the district can be divided in two major divisions : 1. The central and northern plains and, 2. the southern Satpura hill ranges. The area is mainly drained by Narmada, Tawa and Ganjal rivers and their tributaries. The lowest elevation in the district is 280m above m.s.l. lies in the Narmada valley while the highest elevation is 1330m in the southwest of Pachmarhi.

The rocks occurring in the district range in age from Palaeoproterozoic to Quaternary. The Mahakoshal Group of rocks mainly comprise quartzite and chert breccia. The rocks of Vindhyan Supergroup comprise the Kaimur Group and Bhandar Group. The Kaimur Group is represented by Upper Kaimur sandstone comprising mainly sandstone, which is purplish red in colour, fine to medium grained and flaggy in nature. Bhandar Group consists of Lower Bhandar sandstone which is fine to coarse grained and at places, pebbly and quartzitic. The Gondwana sequence belonging to the Gondwana basin of Central India, comprises of Talchir, Barakar, Motur, Bijori, Pachmarhi, Denwa, Bagra and Jabalpur Formations. The Talchir Formation comprises tillite, diamictite, fine to medium grained sandstone and grey to olive green shales. The Barakar Formation is dominantly made up of coarse grained feldspathic sandstone, grey shales and carbonaceous shale. Motur Formation overlies Barakar's Formation with a gradational contact. It comprises coarse-grained sandstone with pebbly interbands, variegated shales and clay. The Bijori Formation is exposed as a broad band. It comprises olive and buff coloured clays and shales, alternating with massive sandstone. The Pachmarhi Formation consists of thick beds of coarse to granular, white, arenite or quartzwacke, separated by lenses or thin layers of clast supported conglomerate and thin red clays bands. The Denwa Formation consists mainly of alternating bands of sandstone and red to variegated calcareous clay. The Bagra Formation comprises of conglomerate, variegated shales and subordinate limestone bands.

The youngest Gondwana sequence is represented by Jabalpur Formation. It consists mainly of massive sandstone alternating with white clays. Lenses of conglomerate are common. Discontinuous patchy exposures of Lameta Group are seen east of Barapura, Gotabari and Tangna. The basaltic lava flows of Deccan Trap are well exposed in the southern and southwestern part of the district. These flows, grouped under Satpura Group are mainly of Aa type and non-porphyrific to porphyritic to mega-porphyrific in nature. The thickness of individual flows varies from 15m to 47m. The Satpura Group comprises of 18 to 21 basaltic flows which are further classified in 5 Formations. Numerous dykes and sills, mostly of doleritic composition intrude the Gondwana rocks and basaltic flows. The dykes range in the length from few hundred meters to few kilometers, with width ranging from few metres to few hundred metres. Most of the dykes trend in E-W to NE-SW direction. Quaternary Narmada alluvial deposits occupy a major part of the district have been sub-divided into seven litho-stratigraphic formations viz. Surajkund Formation, Baneta Formation, Hirdepur Formation, Bauras Formation and Ramgarh Formation, on the basis of lithological characters, degree of oxidation, calcification of the sediments, erosional unconformities, soil stratigraphy, morpho-stratigraphy and presence of volcanic ash. The Quaternary sediments contain the richest vertebrate fossil assemblage including *Bos sp.*, *Gazelle sp.*, *Stegodon namadicus*, *SUS namadicus*. The successive faunal zones belonging to early to middle Pleistocene and Upper Pleistocene respectively

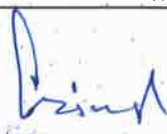
## DISTRICT SURVEY REPORT OF NARMADAPURAM

have been recognized. Palynological studies of carbonaceous clays of the Baneta Formation have shown presence of angiosperms, pollens, pteridophytes and fungal spores.

A fossil of human skull, *Narmada Homoerectus* (Middle Pleistocene) has been discovered from Hathnora village, northeast of Narmadapuram. The hand axes, cleavers, scrappers etc. indicate the Paleolithic culture prevalent in the area. The Vindhyan sandstone serves as a good building stone while Basalt is useful as road metal. Occurrences of lead and manganese, ores are reported from the district. A hot spring is located at Anhoni village discharging hot water.

**The regional succession is as follows:**

Lithology	Stratigraphic Status	Group	Age	Nature and Characteristic
non-calcareous silt, sand and clay	Ramagarh Formation	QUATERNARY	Holocene	Pebbly sand, fine to medium sand and clays
Gravel, silt, sand and conglomerate	Bauras Formation		Holocene	Unconsolidated gravel, light grey to dark grey inter layered silt, medium to coarse sand and conglomerate
Silt and Silty sand/29a-sand, gravel and conglomerate	Hirdepur Formation		Late Pleistocene	Light grey silt and silty sand of flood plain deposits/coarse sand, gravels and conglomerate of fan facies
Calcareous sand, silt, clay, gravel and conglomerate	Baneta Formation		Late Pleistocene	Flood plain deposit comprising calcareous brown silt, fine sand with lenses of volcanic ash bed and charcoal bearing red silt sand, gravel and conglomerate
Sandy silt, silt, clay, gravel and conglomerate	Surajkund Formation		Middle Pleistocene	Flood plain deposit comprising yellow and steel grey silty clay, brown fine sand, silt, gravel and conglomerate
Sand and silty sand	Dhansi Formation		Lower Pleistocene	Flood plain deposits comprising red and brown silty sand, medium to coarse, yellow and orange and fine to medium grained grey sand.
Gravel and sand	Palikavar Formation			Flood plain deposits comprising gravels and large scale cross bedded very coarse sand
Dykes and sills	Intrusive		DECCAN TRAP	
3 simple and Aa basaltic lava flows				Dark grey, fine to medium grained, hard and compact rock, non-porphyritic in nature

  
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3-4 simple and Aabasaltic lava flows		(SATPURA GROUP)		Dark grey, fine to medium grained dense and hard rock, non-porphyritic to moderately porphyritic
3-5 simple, Aa and compound basaltic lava flows			Cretaceous to Palaeogene	Dark grey, fine to medium grained, dense and hard rock, mostly non-porphyritic in nature shale
Upper Kaimur sandstone	KAIMUR GROUP		Meso-proterozoic	Bright purple, pink, buff, fine to coarse grained hard sandstone with gritty and pebbly horizon at base
Granite				Whitish to grey, medium to coarse grained, massive hard and compact rock
Phyllite		MAHAKOSHAL GROUP	Palaeo-proterozoic	Whitish to greenish black, fine grained, soft rock
Quartzite				Dull white to red coloured, fine grained, hard and compact rock
Chert breccia and ferruginous breccia				Dull white to reddish yellow, fine grained, hard and compact rock
Dolomite				Bluish grey, white, crystalline, fine grained, massive and hard rock
Metabasalt				Dark green, greenish grey in colour, fine to medium grained, hard and compact rock.

  
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**(5) DRAINAGE OF IRRIGATION PATTERN:****DRAINAGE**

The entire district is drained by Narmada River and its tributaries. Thus the area falls in the Narmada Basin. The river Narmada flows along the northern boundary of the district. The river Narmada originates from the Amarkantak plateau and after flowing through Narmadapuram, Mandla, Jabalpur from the north-eastern part. The Tawa river is the major tributary of the Narmada river and flows from south to north west before merging into the Narmada river. Denwa river originates from south-eastern part of the Narmadapuram district and flows from east to west direction before joining the Tawa river (south of Rainpur) where Tawa dam has been constructed. The important nalas are Keolari, Hather and Indra Nadi. The rivers draining the area in the western part are Morand, Banjal and Ajnal. The Morand river joins the Ganjal river near Chhidgaon and flows towards Narmada river.

**IRRIGATION**

Tawa dam is a major irrigation system in the district. About 60% of the total area of Narmadapuram district is irrigated by Tawa canal system. The Tawa dam is constructed about 823 m. down stream of the confluence of Tawa and Denwa rivers at east longitude 77° 58'30" and north latitude 22° 33' 40". It has a Catchment area of 5982.90 Sq. Km. with 20055 ha area under submergence. The left Bank Canal starts from Ranipur and runs parallel to Narmada river course along the limits of the foot hill pediments of Satpura. This canal takes off directly from the reservoir with a head discharge of 103.06 cumecs. The first 6.44 km length is lined with thick concrete. The Handia branch canal with a head discharge of 29.9 cumecs takes off from the main canal at 92 km point. The right bank canal is taken through a tunnel from Kamthi and runs parallel more or less to the course of Narmada river. The distributary system has been planned along the drainage divide. Due to topographic difference between the right and left bank canal has been taken through 6 km long tunnel. Bagra branch canal and Piparia branch canals take off on either side of the pickup weir. The Bagra canal is 60 km long. The total length of distributaries and minors on the right bank is 450 km. Many minor irrigation Schemes are also operating in the district, amongst which Dokrikhera Tank Project in Bankheri block is prominent. Dokrikhera Tank Project has a gross command area 9104 ha and culturable command area 7625 ha. The area irrigated by canals, tubewells, dugwells and tanks are tabulated below in Table

**Irrigation by Different sources**

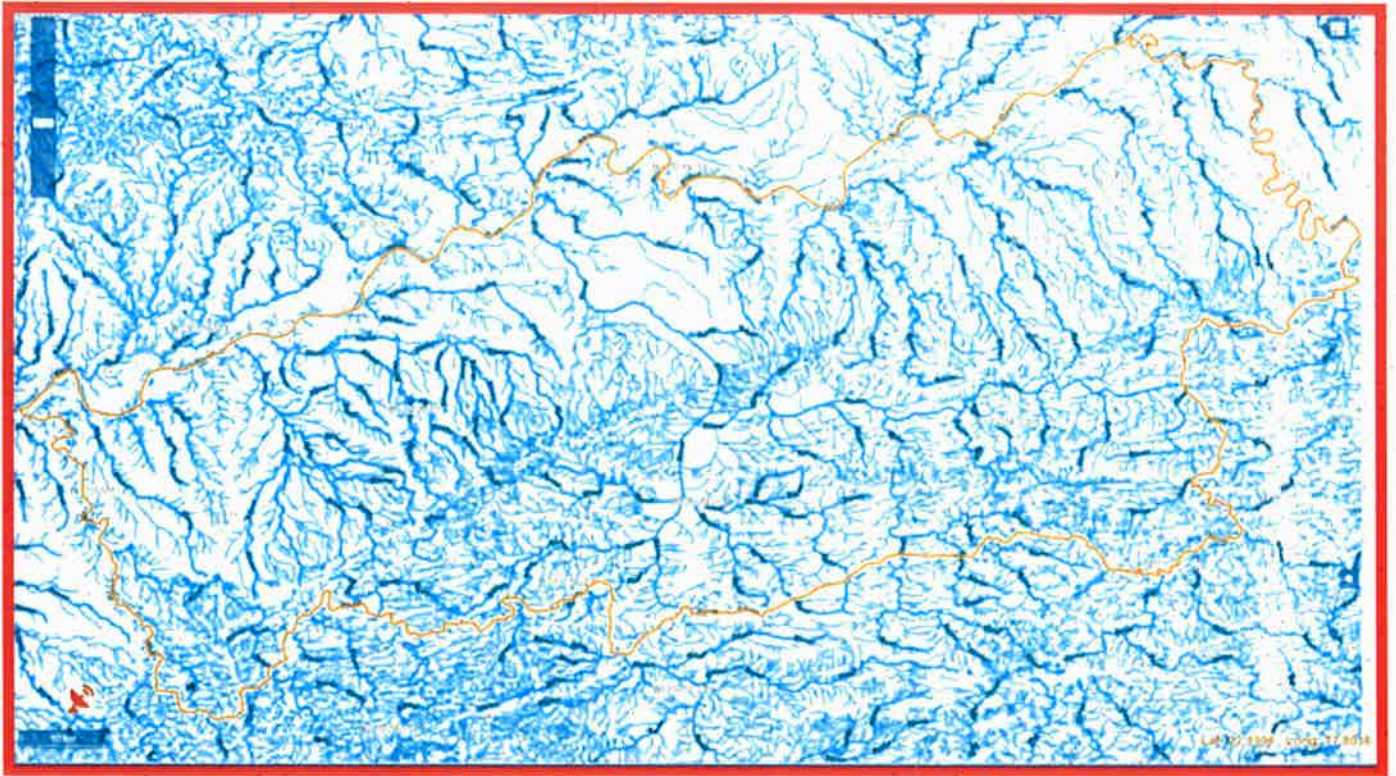
S. No.	Source	Narmadapuram District Total	
		Number	Area (In sq.km)
1	Canals	5	1474
2	Tubewells	4853	523
3	Dugwells	23495	535
4	Tanks	9	11
5	Other sources	-	163
6	Net area irrigated	-	2703

As per District ground water information booklet (Hoshangabad district) 2013

  
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DISTRICT SURVEY REPORT OF NARMADAPURAM



Map showing drainages of Narmadapuram district.

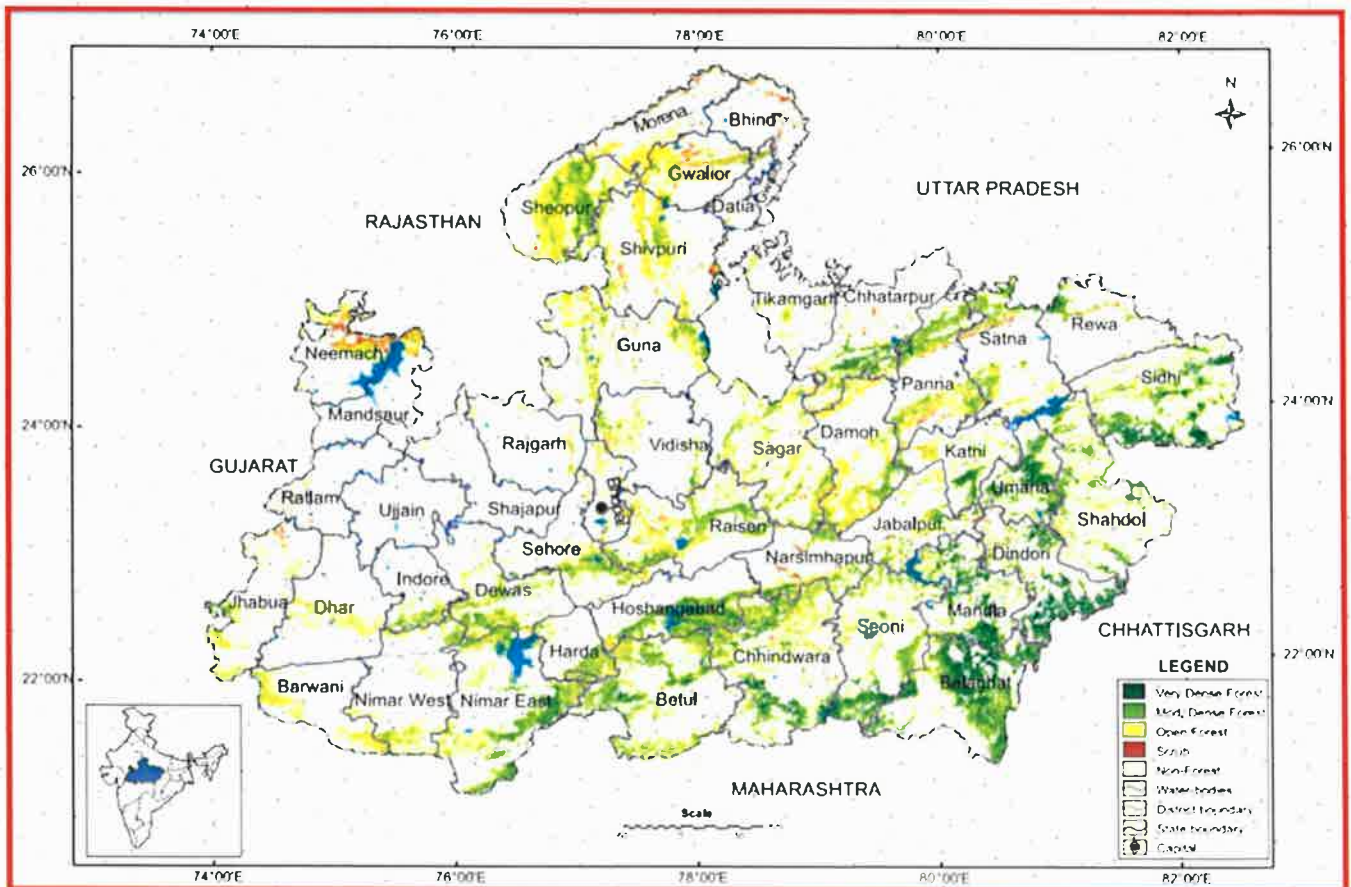
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Pervaaran, Faridkot  
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**(6) LAND UTILISATION PATTERN IN THE DISTRICT: FOREST, AGRICULTURAL, ORTICULTURAL, MINING ETC.**

Famed for its fertility, the prevailing soil of the Narmada valley is black alluvial loam, commonly known as "black-cotton" is highly argillaceous and remarkable for its great porosity and consequent retentiveness of moisture. The total geographical area of the district is 670,400 hectares, out of which, forest area was 257,593 hectares i.e 38.41 % of total area. The non-agricultural land was 19,124 hectares, uncultivable and barren land was 25,256 hectares, cultivable land was 24,954 hectares and waste land was 6,354 hectares. In the hilly tracts the soil is sandy and generally unsuited for the cultivation of spring crops.

**FOREST:**

Narmadapuram is a forest dominant district with 23 % forest area and 30. 49 % SC & ST population. 38 % of the population is below poverty line. Narmadapuram Distt. is blessed with rich forests and lifelines of the state the NARMADA, TAWA & DENWA rivers. Narmadapuram is an Agriculturally rich district but the population failing within fringe forest area is Agriculturally poor. Life style of the people living in the villages, with in 5 km. of the forestarea revolves around the Forest



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**AGRICULTURE:**

Traversed by the sacred Narmada river and its tributaries, Narmadapuram district represents rich agricultural land and has been a predominantly rabi producing area. Locally rabi crops are known as "Unhari". Rabi crops dominate the rural economy to such an extent that the the Kharif crops known as "Sihari" were despised in the past. Rabi cultivation is almost synonymous with agriculture. Among rabi crops wheat is the main crop followed by gram, masoor, pea and linseed.



**HORTICULTURE:**

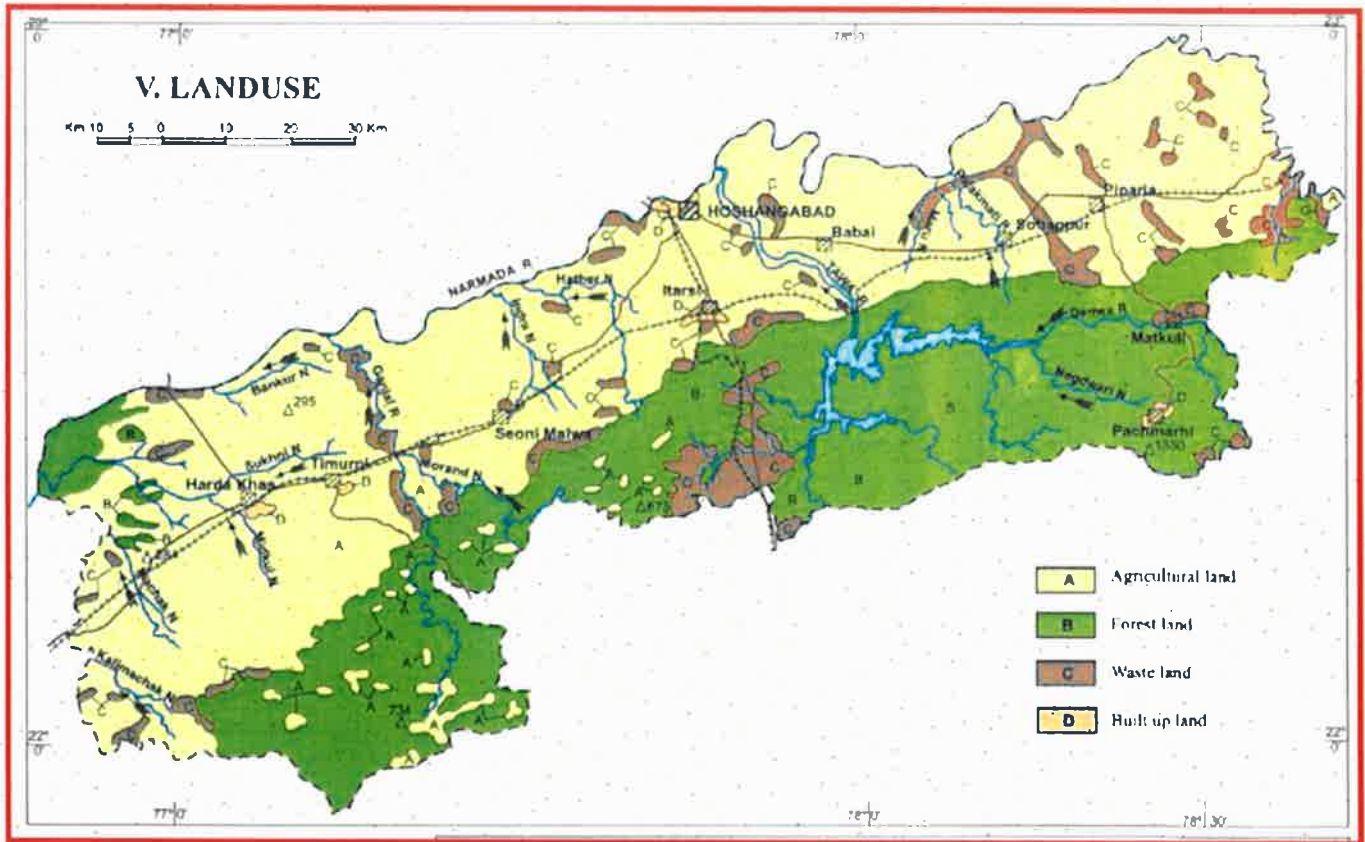
Livelihood promotion by Horticulture activities in the district has grater possibility because district has better atmosphere, good environmental condition and soil type. From the point of view of horticulture in Narmadapuram district mainly mango, amla, lemon, guava, banana, jackfruits, papaya and in vegetables mainly tomato, brinjal, Gourd ,lady finger, cauliflower etc is produced

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## DISTRICT SURVEY REPORT OF NARMADAPURAM

### MINING:

Narmadapuram district holds a distinct place in the state with respect to sand mining in different rivers and the availability of clay mineral resources. In the district mainly lime-stone, clay, gitti, murum and sand are found. Out of this limestone is considered as major mineral and rest clay, and sand is considered as minor mineral. Majority of sand has been extracted from Narmada and Tawa rivers.

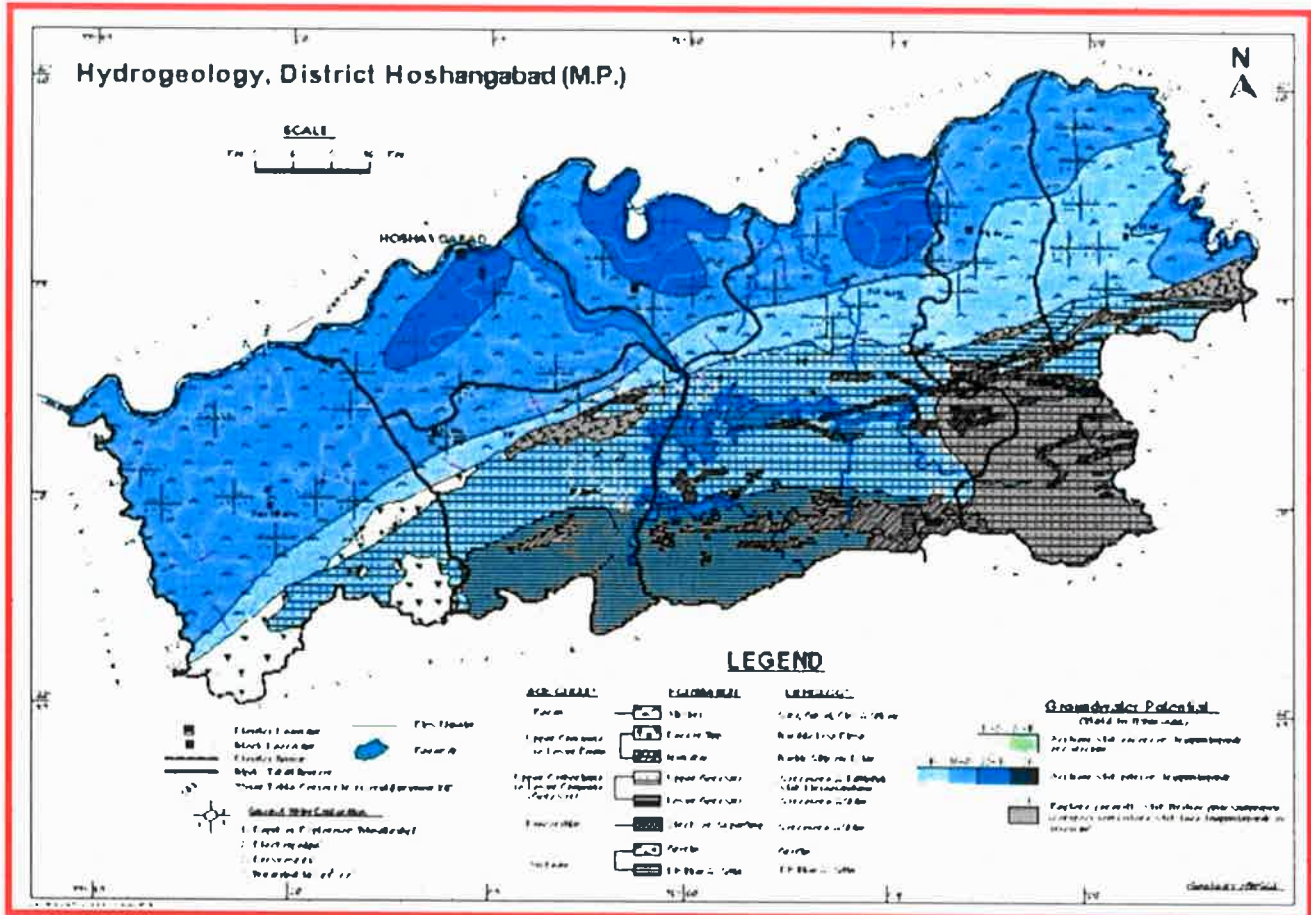


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**(7) SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT:**

**HYDROGEOLOGY**

Aquifer System and Aquifer Parameters The water bearing properties of different hydrogeological units occurring in Narmadapuram District are described below



Northern part of Narmadapuram district, adjoining the Narmada River is covered with alluvium, which makes for more than 50% of the entire district. Deccan traps occur as lava flows in the west central part of the district. The southern part of the district is hilly and occupied by rocks belonging to Gondwanas. The Archaeans are exposed south of Itarsi around Kesla railway station between the rocks of Gondwana in the form of inliers in very small patches and no ground water structure exist in them for hydrogeological studies. In general ground water occurs in phreatic condition.

**Vindhyan**

Upper Vindhyan represented by lower Bhandar sandstone are exposed south of Narmadapuram in Adamgarh quarry and at the confluence of Hather nala and river Narmada, north of Misrod and Dhamasa village near Chautalai village. These sandstones are medium grained, hard, compact, red light pink in colour and dip 12° due N. top of sandstone is buff coloured and fine grained and traversed by two sets of joints, one parallel to the strike and another at right angles to it. The rocks have poor groundwater potential as they form hills in the district. The Vindhyan sandstone serves as a good building stone.

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 District Collector, Prayagraj

### Gondwanas

Lower Gondwanas are well exposed in the Satpura region of the district on the sides of upper Denwa valley in the southern base of Pachmarhi hills, and at the confluence of the Anjan river and at Pathapani due north of Fatehpur (55J/10). The lower Gondwana are divided into the Talchirs (pebbles and boulders and green clays shales and sandstones) and the Damuda series (white to fawn coloured coarse grained sandstones, micaceous flagstones, grits, conglomerates, shales and carbonaceous shales). Damuda series of the lower Gondwana is overlain by the rocks of the Mahadeva (coarse grained red to buff coloured Pachmarhi sandstones with thin intercalations of pebbles, red Denwa clays containing calcitic nodules, with a few bands of white to yellow sandstones and Bagra conglomerates and pebble beds with occasional bands of calcareous sandstones variegated clays, limestones and dolomites) and Jabalpur series (soft, fine grained, occasionally pebbly sandstones with thin subordinate beds of conglomerate, earthy hematite, coal, carbonaceous red clays, shales and chert) of Upper Gondwana system. Gondwana rocks are criss-crossed by dykes/sills in the southern part of the district. In the Gondwana occupying the southern part of the district, the aquifers are formed by fractured/weathered occurring below alluvium from confined/semi confined aquifer which are not very productive. In the exploratory tubewells, drilled by central ground water board during Narmada Project, water bearing zones in the Gondwana were encountered at Pathrai (Nibhora), Taron, Mahuakhera, Sohagpur Manegaon, Pathrota, Guraria and Kalkuhi. The Pachmarhi sandstone especially in Pachmarhi, though hard and massive, form potential zones wherever fractured and jointed. The transmissivity of Gondwana aquifer in general varies from 249 to 449 m<sup>2</sup>/day.

### Deccan Trap

Deccan Trap basaltic lava flows, are exposed in the southern part of the district and also criss-cross the Gondwana formations as dykes and are also encountered as basement rock below alluvium around Powarkhera and Itarsi. The phreatic aquifer in weathered/vesicular basalt are tapped by dugwells, which in general does not yield a good discharge.

### Alluvium

The alluvial aquifer system in the district is the most extensive. Two to three granular zones and at places more number of potential granular zones comprising of fine to medium to coarse grained sand, gravel and pebbles and laterite are encountered in alluvium. The top phreatic aquifer range in thickness from 2 to 10m and is encountered in the depth range of 4 to 20 mbgl. The phreatic aquifer intercalations of clay and silt, and at places also of coarse sand or gravel. It appears that all the alluvial aquifer zones constitute a single aquifer system. The unconfined aquifer along the southern fringe adjacent to Gondwana, passes laterally to the north into a number of aquifer zones separated by thick clay zones. The deeper aquifers are of semi-confined to confined nature with varying potentiometric heads. The yield of alluvial aquifers ranges from 180 to 3000 litres per minute. All the aquifers are principally recharged by a lateral flow from the south and also by direct vertical percolation rain/irrigation water/seepage from tanks/canals.

### Hot Spring

A hot water spring occurs in the area at Anthoni (55J/5) (west of road from Pipariya to Pachmarhi). The temperature of Anthoni spring water is 41°C. A borehole has been drilled by Geological Survey of India, Geothermal Division,, Nagpur down to a depth of 250 mbgl near the spring. The lithology encountered in the borehole is Gondwana sandstone intruded the borehole is 54°C and free flow discharge is about 30 lpm from top of casing pipe 0.6 mbgl.

The water smells of sulphur and occurrence of methane gas during drilling is reported by G.S.I. staff.

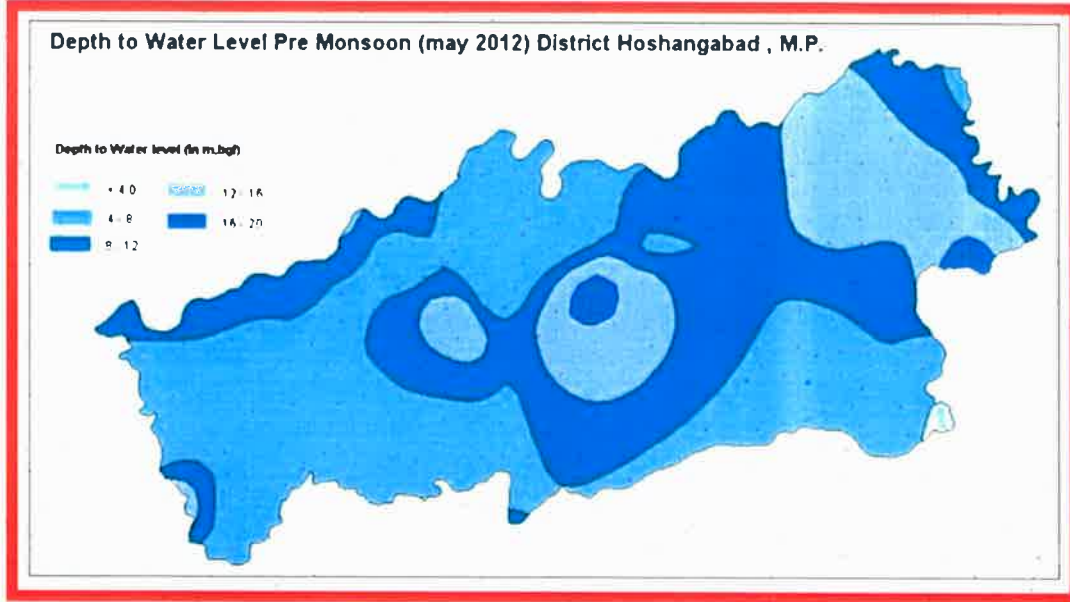
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Narmada Project  
Gandhinagar, Gandhinagar  
Gandhinagar, Gandhinagar

## DISTRICT SURVEY REPORT OF NARMADAPURAM

### WATER LEVELS

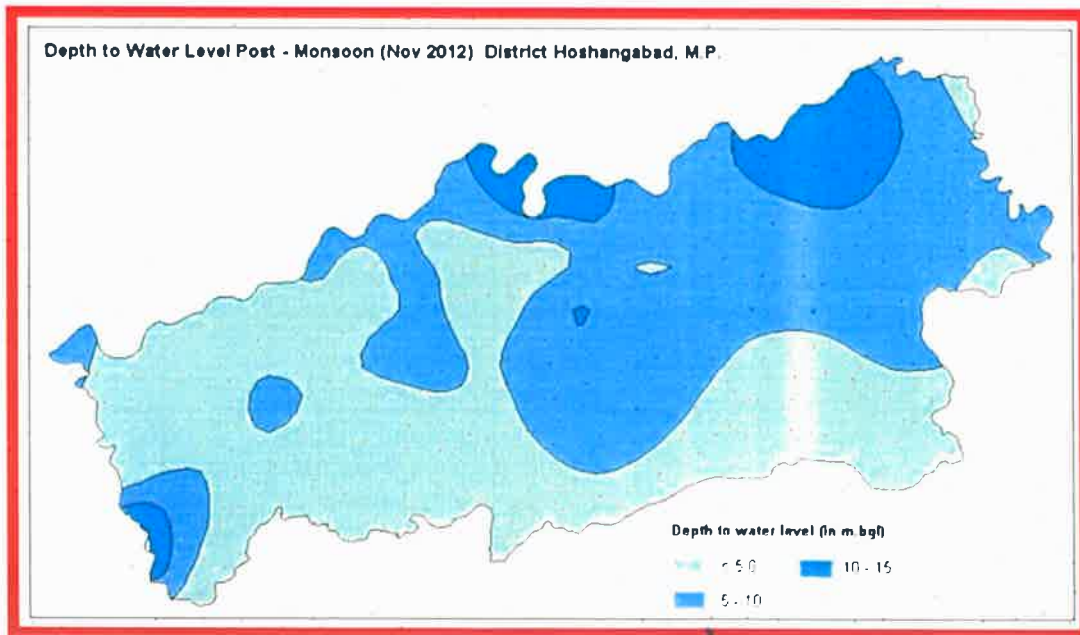
Ground water levels form a very important parameter of the ground water system. The groundwater balance expresses itself in the change in water levels; hence a continuous record is important and useful. CGWB has 18 National Hydrograph Monitoring wells and 1 Peizometers in Narmadapuram district.

#### Pre-monsoon Depth to Water Level (May-2012)



#### Post-monsoon Depth to water level (November-2012)

In general, during post-monsoon period, depth of water levels in the district ranges between 1.24 and 13.47 m below ground level. It is observed that the major part of the district was covered by the water levels varying between 5 to 10 m bgl during the period.



## DISTRICT SURVEY REPORT OF NARMADAPURAM

### **SURFACE WATER SCENARIO**

The entire district is drained by Narmada River and its tributaries. Thus the area falls in the Narmada Basin. The river Narmada flows along the northern boundary of the district. The river Narmada originates from the Amarkantak plateau and after flowing through Narmadapuram, Mandla, Jabalpur from the north-eastern part. The Tawa river is the major tributary of the Narmada river and flows from south to north west before merging into the Narmada river. Denwa river originates from south-eastern part of the Narmadapuram district and flows from east to west direction before joining the Tawa river (south of Rainpur) where Tawa dam has been constructed. The important nalas are Keolari, Hather and Indra Nadi. The rivers draining the area in the western part are Morand, Banjal and Ajnal. The Morand river joins the Ganjal river near Chhidgaon and flows towards Narmada river. The presence of narmada river and its tributaries provided good surface water potential to district and state. Tawa dam is a major irrigation system in the district. About 60% of the total area of Narmadapuram district is irrigated by Tawa canal system. This provides artificial wet land which is very useful for the district and surroundings in account of irrigation and other water requirement.

### **GROUND WATER SCENARIO**

#### **Ground Water Resources**

##### **NARMADAPURAM**

Narmadapuram district is characterized by alluvial formations, Gondwana, Achaeon and Deccan trap basaltic lava flow. Dynamic ground water resources of the district have been estimated for base year - 2008/09 on block-wise basis. Out of 6,70,400 ha of geographical area, 5,58,352 ha ( 84 %) is ground water recharge worthy area and 1,12,048 ha (16 %) is hilly area. There are six number of assessment units (block) in the district which fall under command (43 %) and noncommand (57 %- Bankhedi, Pipariya and Kesla ) sub units. All blocks of the district are categorized as safe blocks, Bankhedi block is with highest stage of ground water development of 61 %. The net ground water availability in the district 2,01,888 ham and ground water draft for all uses is 35,617ham, making stage of ground water development 18 % (14 % in 2003/04) as a whole for district. After making allocation for future domestic and industrial supply for next 25 years, balance available ground water for future irrigation would be 1,64,889 ham at 50 % stage of ground water development's safe limits in the district.

#### **Ground Water quality**

Quality of ground water is fresh to saline with EC ranging from 440 to 2710 mmhos/cm at 25° C, nitrate from 1.3 to 122 mg/l and fluoride from 0.11 to 1 mg/l.

#### **HEALTH AND SAFETY**

The Health and Safety of the employees shall be given first priority during the plant Extensive publicity and propaganda related to safety operation. Periodical medical check Training programme organize for First aid. First aid facility shall be provided at project site. Provision of rest shelters for workers.

State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parishad  
E-5, Arora Colony, Bhopal (M.P.)



## DISTRICT SURVEY REPORT OF NARMADAPURAM

### 8. RAINFALL OF THE DISTRICT AND CLIMATIC CONDITION:

The climate of Narmadapuram district is characterized by a hot summer and general dryness except during the south west monsoon season. The year may be divided into four seasons. The cold season, December to February is followed by the hot season from March to about the middle of June. The period from the middle of June to September is the southwest monsoon season. October and November form the post monsoon or transition period. The normal rainfall of Narmadapuram district is 1225.9 mm. It receives maximum rainfall during southwest monsoon period. About 92.8% of the annual rainfall received during monsoon seasons and only 7.2 % of the annual rainfalls take place during October to May period. Rainfall forms the sole source of natural recharge to ground water regime and the rain water is available mainly during the southwest monsoon period only. The maximum rainfall received in district at Pachmarhi i.e. 2122 mm and minimum at Narmadapuram i.e. 1302.3 mm. The normal maximum temperature received during the month of May is 42.1oC and minimum during the month of January is 11.7oC. The normal annual means maximum and minimum temperature of Narmadapuram district is 32.8oC and 19.8oC respectively. During the southwest monsoon season the relative humidity generally exceeds 91% (August month). In rest of the year is drier. The driest part of the year is the summer season, when relative humidity is less than 33%. April is the driest month of the year. The wind velocity is higher during the pre-monsoon period as compared to post monsoon period. The maximum wind velocity 7.7 km/hr observed during the month of June and is minimum 2.9 km/hr during the month of December. The average normal annual wind velocity of Narmadapuram district is 5.0 km/hr.

NARMADAPURAM	JAN	FEB	MAR	APR	MAY	JUN
Mean Monthly Rainfall (mm)	9.28	11.76	1.72	2.24	20.26	138.72

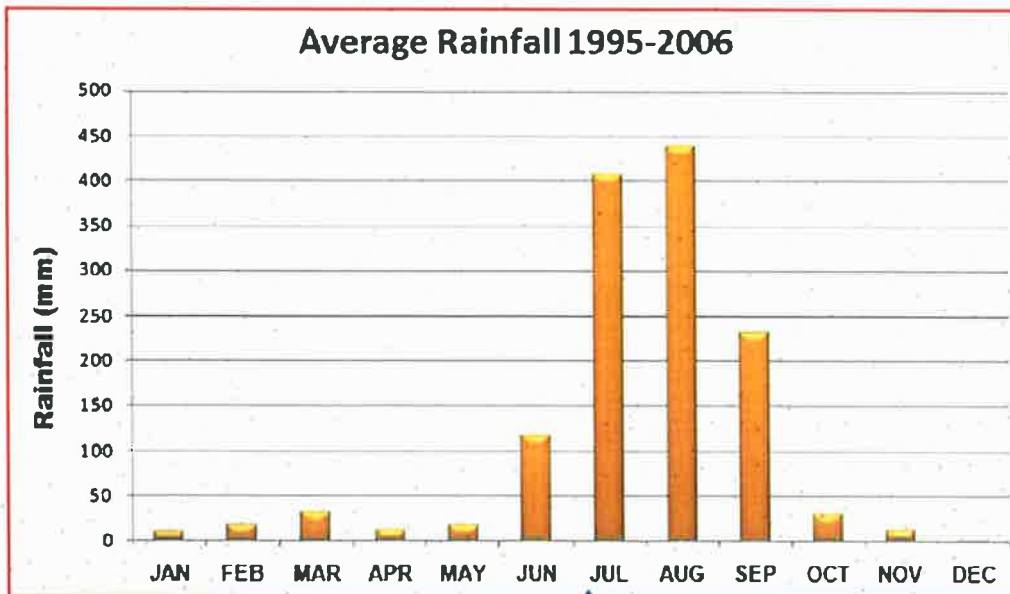
JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
331.92	489.22	141.92	23.76	3.08	1.04	1174.92

*P. S. Rao*

State Level Environment Impact  
Assessment Authority, MP  
(SEAA)  
Prayagraj, U.P.  
E-5, Area C, Lucknow - 226001

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

Average Rainfall (mm)													
Months	Years												Avg.
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
JAN	29.8	11.8	6.4	0	5.3	0	0	0	6.4	40	17.8	0	9.791667
FEB	5	46	0	0	97	0	0	12.4	46.4	0	5	0	17.65
MAR	34.1	0		253.2	0	0	4.8	3.2	0	0	9.2	54.4	32.62727
APR	31.8	0		101.1	0	0	5.8	0.4	4.4	0.6	0.6	0	13.15455
MAY	0.6				20.6	19.6	32.6	11.8	4.6	32.7	0.2	42	18.3
JUN	138.2	14		55.2	200.2	68.8	250.6	167.3	148.6	58.3	155.8	26.6	116.6909
JUL	581.7	411.5		363.6	485.2	358.6	384.6	55.4	537.7	323.3	518.3	449.4	406.3455
AUG	489.4	248.8		205.8	399	284.5	244.2	957.4	274.2	685.8	128.9	896.8	437.7091
SEP	169.6	124.8	300.4	323.4	577.1	28.8	20.6	285.8	351.6	22.8	192.4	382.6	231.6583
OCT	13.6		53.4	30	97.4	0	84.8	13	2.8	18.2	3.8	13.2	30.01818
NOV	0		110.4	13.4	0	0	0	6.2	8.4	0.8	0	0.2	12.67273
DEC	4.6	0		0	0	0	0	0	6.2	0	0	32	1.181818



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State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

**9. DETAILS OF THE MINING LEASES IN THE DISTRICT AS PER THE FOLLOWING FORMAT:**

Sr No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Grant Order No. & date	Area of Mining lease (ha)	Period of Mining lease (Initial)		Period of Mining lease (1st/2nd ...renewal)		Date of commencement of Mining Operation	Status (Working/Non-Working/Temp. Working/for)	Captive/Non-Captive	Obtained Environmental Clearance (Yes/No), if Yes Letter No with date	Location of the Mining lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
						from	to	from	to						
1	Soil for Bricks Formation	M/s A K Industries Pro Shri Anjeev Agrawal S/o Shri R L Agrawal	4 Shrikunj Plant MIG 8 Nyas Colony, Itarsi, Dist Narmadapura m (MP)	5 Renewal Order No.1017 Date 04.09.2017	6 1.973	7 29-11-2017	8 28-11-2027	9 10 11	12 17-09-2018	13 Non-Captive	14 Yes Letter No. 626 Date 19.09.2016	15 N22° 34' 12.93 E77° 49' 33.13 N22° 34' 10.21 E77° 49' 39.91	16 Open Cast		
2	Soil for Bricks Formation	M/s MP Bricks Manufacture Company Partner Shri Bhajanlal S/o Shri Tahalram	Krishnapuri, Sindhi Colony Tehsil & District Narmadapura m (MP) 9425041012	5 Order No.1205 Date 05.10.2013	2.528	7 12-07-2013	8 13-07-2023			Non-Captive		N23° 43' 03.31 E77° 49' 18.32 N23° 43' 02.66 E77° 49' 30.60 N23° 43' 05.46 E77° 49' 28.35 N23° 43' 04.46 E77° 49' 18.14	Open Cast		

State Level Environment Impact  
 Assessment Authority, M.P.  
 (EPCO)  
 Prayvaran Parisar  
 E-5, Arera Colony, Bhopal (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

3	Soil for Bricks Formation	Shri Nitin Interprises Pro Smt Asha Mulchandani W/o Shri Ramchandra Mulchandani	P & T Colony ke Samne Anand Nagar, Narmadapura m tehsil & District Narmadapura m (MP) 9993309888	Renewal Order No.430 9 Date 26.02.2014	2.350	05-07-2013	04-07-2023	1st	04-04-2015	working	Non-Captive	Yes Letter No.3055 Date 13.01.2015	N22°42'9.74 E77°49'40.82 N22°42'8.20 E77°49'43.26 N22°42'10.09 E77°49'45.44 N22°42'9.73 E77°49'46.15 N22°42'13.13 E77°49'48.45 N22°42'16.30 E77°49'48.65 N22°42'16.51 E77°49'47.92 N22°42'14.94 E77°49'46.61 N22°42'14.29 E77°49'47.68 N22°42'10.95 E77°49'45.11 N22°42'11.75 E77°49'43.85 N22°42'14.85 E77°49'46.40 N22°42'15.65 E77°49'44.93	Open Cast
4	Soil for Bricks Formation	Shri Ajit Navlani S/o Shri Mangatram	Sindhi Colony, Itarsi Tehsil Itarsi Dist Narmadapura m (MP) Mob. 9300278383	Renewal Order No.588 Date 13.02.2014	1.710	30-10-2014	29-10-2024		03-12-14	working	Non-Captive	Yes Letter No.1719 Date 07.11.2014	N22°37'10.53 E77°37'49.28 N22°37'13.77 E77°37'43.65 N22°37'15.30 E77°37'48.51 N22°37'13.40 E77°37'51.71	Open Cast

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 State Level Environment Impact  
 Assessment Authority, M.P.  
 (EEOO)  
 Praveen Kumar  
 E-5, Area Colony, Sector (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

5	Stone	Shri Ganesh Prasad Choudhary S/o Shri Kanjilal	Gram Dharamkundi tehsil Sivni Malwa Dist Naramadapur am (MP) Mob. 7987064269	Renewal Order No.328 Date 26.03.2012	0.910	06-08-2012	Non-working	Non-Captive		N22° 20' 57.31 E77° 28' 40.18 N22° 20' 55.75 E77° 28' 41.87 N22° 20' 58.72 E77° 28' 43.81 N22° 20' 56.96 E77° 28' 45.35	Open Cast
6	Stone	Shri Praveen Kumar Jain S/o Shri Gokalchand Jain	Ward No. 02 Station Banapura tehsil Sivni Malwa Dist Narmadapuram (MP) Mob. 9039720801	Renewal Order No.792 Date 08.01.2014	0.710	08-08-2022	09-08-2012	working	Non-Captive	Letter No.2244 Date 24.11.2014 N22° 25' 18.05 E77° 35' 34.04 N22° 25' 18.60 E77° 35' 35.60 N22° 25' 17.65 E77° 35' 36.40 N22° 25' 16.59 E77° 35' 37.29 N22° 25' 15.82 E77° 35' 38.01 N22° 25' 15.05 E77° 35' 38.80 N22° 25' 14.57 E77° 35' 37.95 N22° 25' 14.16 E77° 35' 36.46 N22° 25' 15.03 E77° 35' 36.33 N22° 25' 16.12 E77° 35' 35.67 N22° 25' 17.44 E77° 35' 34.75	Open Cast

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State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Parvavaran Parisar  
E-5, Area of State Capital (M.P.)


**DISTRICT SURVEY REPORT OF NARMADAPURAM**

7	Stone	Shri M N Pandey S/o Shri C B pandey	Gandhinagar, Itarsi tehsil Itarsi Dist Narmadapura m (MP) 9827098666	Order No.115 2 Date 23.09.2013	1.020	10-10-2013	09-10-2023	NA	04-12-15	Non- working	Non-Captive	Yes Letter No.3200 Date 07.07.2015	Open Cast (1) N22°25'18.10 E77°48'43.30(2) N22°25'18.10 E77°48'50.50(3) N22°25'20.50 E77°48'51.40(4) N22°25'20.80
8	Stone	Shri Fajian Ulhaque S/o Shri Mohammad Masood	Sadar Bazar, Narmadapura m Dist Narmadapura m (MP) 9827210876	Order No.136 8 Date 17.09.2014	1.214	12-04-2016	11-04-2026	NA	10-01-17	Non- working	Non-Captive	Yes Letter No.708 Date 18.04.2016	Open Cast (1) N22°27'21.84 E77°37'33.59(2) N22°27'20.72 E77°37'34.60(3) N22°27'20.97 E77°37'36.12(4) N22°27'22.01
9	Stone	M/s Jyoti Construction Company pro Shri Deepak Agrawal S/o Shri Gourishankar	Chandak Chouraha, Harda Tehsil & Dist Harda (MP) 9425042037	Order No.84 2 Date 12.11.2016	1.437	29.11.2016	28.11.2026	NA	19.02.2018	working	Non-Captive	Yes Letter No.605 Date 07.09.2016	Open Cast N22°21'58.16 E77°37'50.15 N22°21'00.52 E77°37'53.06 N22°21'01.36 E77°37'52.20 N22°21'02.77 E77°37'51.97 N22°21'00.75

State Level Environment Impact Assessment Authority, M.P. (SECC) Parvathan Parisar E-5, Area ... (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

10	Stone	Shri Pranay Kumar Jain S/o Shri Harakchand Jain	Khirkhya, Tehsil Khirkhya Dist Harda (MP) 9826436321	Order No.35 7 Date 21.05.2018	4.000	05-07-2018	04-07-2028	N/A	09-10-18	Non- working	Non-Captive	Yes Letter No.2145 Date 20.03.2018	N22° 21'43.01 E77° 37'38.43 N22° 21'43.73 E77° 37'38.64 N22° 21'44.59 E77° 37'37.97 N22° 21'43.53 E77° 37'43.56 N22° 21'51.31 E77° 37'39.63 N22° 21'47.20 E77° 37'47.78 N22° 21'44.22 E77° 37'45.77	Open Cast
11	Stone	M/s Jain Stone Crusher Partner Shri Rounak Jain S/o Shri Rajendra Kumar	Ward No. 03 Station Banapura tehsil Sivni Malwa Dist Narmadapuram (MP) Mob.7694855555	Renewal Order No.168 1 Date 29.11.2019	1.680	16-12-2015	15-12-2025	1st	24-11-20	working	Non- Captive	Yes Letter No.1000 Date 03.06.2019	N22° 25'16.18 E77° 35'34.53 N22° 25'17.44 E77° 35'37.02 N22° 25'12.59 E77° 35'36.36 N22° 25'14.40 E77° 35'39.89	Open Cast

  
 State Level Environment Impact  
 Assessment Authority, M.P.  
 (SECAA)  
 Parvatham Ganjar  
 E-5, Apsara, Bhojpur, Sehgal (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

12	Stone	M/s Jain Stone Crusher Partner Shri Ronak Jain S/o Shri Rajendra Kumar	Ward No. 3 Station Banapura tehsil Sivni Malwa Dist Narmadapura m (MP) Mob.7694855 555	Order No.167 7 Date 29.11.2019	1.619	05-12-2019	04-12-2029	NA	29-01-21	Working	Non- Captive	Letter No.998 Date 03.06.2019	N22°25'29.13 E77°35'12.69 N22°25'29.11 E77°35'14.20 N22°25'30.23 E77°35'14.47 N22°25'31.89 E77°35'15.09 N22°25'32.89 E77°35'16.23 N22°25'33.58 E77°35'17.44 N22°25'35.17 E77°35'17.62 N22°25'35.01 E77°35'12.58	Open Cast
13	Stone	M/s Mahaveer Associates Partner Shri Rounak Jain S/o Shri Rajendra Jain	Ward No. 3 Station Banapura tehsil Sivni Malwa Dist Narmadapura m (MP) Mob.7694855 555	Order No.167 9 Date 29.11.2019	1.800	05-12-2019	04-12-2029	NA	28-12-21	working	Nn- Captive	Yes Letter No.996 Date 03.06.2019	N22°19'55.15 E77°26'49.16 N22°19'55.46 E77°26'50.17 N22°19'54.15 E77°26'51.53 N22°19'53.96 E77°26'52.21 N22°19'54.52 E77°26'52.88 N22°19'55.29 E77°26'52.41 N22°19'55.66 E77°26'51.99 N22°19'56.89 E77°26'52.27 N22°19'57.88 E77°26'51.19 N22°19'59.54 E77°26'48.91 N22°19'57.00 E77°26'46.81	Open Cast



**DISTRICT SURVEY REPORT OF NARMADAPURAM**

14	Murrum	Shri Rajeev Jaiswal S/o Shri Harishankar	Pachmarhi Road, Pipariya Tehsil Pipariya Dist Narmadapuram M.942504471 2	Order No.184 4 Date 28.02.2015	2-299	07-06-2016	06-06-2026	NA	13-07-16	Working	Non- Captive	Yes Letter No.1353 Date 07.05.2016	N22°40'33.1 E78°22'54.5 N22°40'34.0 E78°22'59.1 N22°40'36.2 E78°22'59.1 N22°40'38.3 E78°22'57.2 N22°40'37.2 E78°22'53.3	Open Cast
15	Murrum	Shri Rajkumar Mehto S/o Shri Ramkishore	Village- Teekhad Tehsil Itarsi Dist Narmadapuram (MP) M.975214149 2	Order No.33 6 Date 24.06.2016	2-740	29-06-2016	28-06-2026	NA	07-10-16	Non- working	Non- Captive	Yes Letter No.349 Date- 09.06.2016	N22°31'14.00 E77°41'20.00 N22°31'11.00 E77°41'20.10 N22°31'11.10 E77°41'27.10 N22°31'15.10 E77°41'28.10	Open Cast
16	Murrum	Shri Anirudh Kishore Upadhyay S/o Shri Rajveer Upadhyay	Gandhi nagar, Itarsi tehsil Itarsi Dist Narmadapuram (MP) M. 9425643386	Order No.33 8 Date 24.06.2016	1-104	29-06-2016	28-06-2026	NA	07-10-16	Non- working	Non- Captive	Yes Letter No.350 Date 09.06.2016	N22°35'53.98 E77°54'22.84 N22°35'55.15 E77°54'26.16 N22°35'56.87 E77°54'25.26 N22°35'55.74 E77°54'21.92	Open Cast
17	Murrum	Shri Mahesh S/o Shri Thondu	Village Nazarpur Tehsil Itarsi Dist Narmadapuram M.942568259 9	Order No.63 4 Date 24.06.2016	1-000	05-07-2016	04-07-2026	NA	28-07-16	Working	Non- Captive	Yes Letter No.566 Date 13.06.2016	N22°32'02.93 E77°46'07.31 N22°32'03.57 E77°46'10.52 N22°32'06.25 E77°46'10.28 N22°32'05.82 E77°46'05.50 N22°32'04.81 E77°46'05.69	Open Cast

State Level Environment Impact Assessment Authority, M.P. (ESCO)

Parvatanandan Parisar  
E-5, Arera Colony, Bhopal (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

18	Murum	Shri Arjun Singh Thakur S/o Shri Shankar Singh	Village panari Tehsil Pipariya Dist Narmadapura m (MP) 6260024211	Order No.1921 Date 12.02.2018	1.619	26-02-2018	25-02-2028	NA	28-03-18	working	Non- Captive	Yes Letter No.1660 Date 18.12.2017	N22° 40'47.16 E78° 23'6.69 N22° 40'52.17 E78° 23'6.29 N22° 40'51.74 E78° 23'2.10 N22° 40'47.18 E78° 23'3.86	Open Cast
19	Murum	Shri Rajendra Singh Rajput S/o Late Shri Kamal Singh	Pink Avenue Colony, Malakhedi Road Tehsil & Dist Narmadapura m (MP) 9893901801	Order No.753 Date 25.10.2016	2.000	09-11-2016	08-11-2026	NA	04-02-17	working	Non- Captive	Yes Letter No.602 Date 06.09.2016	N22° 36'15.01 E77° 32'43.05 N22° 36'18.30 E77° 32'42.58 N22° 36'18.48 E77° 32'49.67 N22° 36'15.57 E77° 32'50.01	Open Cast
20	Murum	Shri Manoj Kushwaha S/o Shri Narayan Prasad Kushwaha	Village Thamasas tehsil Dolariya Dist Narmadapura m (MP) 9340603377	Order No.626 Date 27.08.2021	1.500	29-09-2021	28-09-2031	NA.	28-10-21	working	Non- Captive	Yes Letter No.3355 Date 30.11.2019	N22° 35'24.47 E77° 32'41.53 N22° 35'25.05 E77° 32'45.87 N22° 35'19.82 E77° 32'46.2 N22° 35'19.18 E77° 32'41.37	Open Cast

*Leah*  
 State Level Environmental Impact Assessment Authority, U.P. (S.E.A.A.)  
 Narvatarang Nagar  
 E. S. Area Colony, Bhopal (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

**(10) DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS:**

**DISTRICT-NARMADAPURAM**

**DETAILS OF MINOR MINERAL**


<b>YEAR</b>		<b>AMOUNT (IN. RS.)</b>
<b>2019-20</b>	<b>Gitti</b>	2180486
	<b>Muram</b>	4710575
	<b>Soil</b>	1023897
	<b>Bolder</b>	1272000
<b>2020-21</b>	<b>Gitti</b>	2661804
	<b>Muram</b>	3378991
	<b>Soil</b>	2984700
	<b>Bolder</b>	475500
<b>2021-22</b>	<b>Gitti</b>	2038780
	<b>Muram</b>	2059544
	<b>Soil</b>	1708250
	<b>Bolder</b>	0

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State Level Environment Impact  
Assessment Authority  
(SEIAA)  
Parvathipuram  
K.S. State College, Parvathipuram

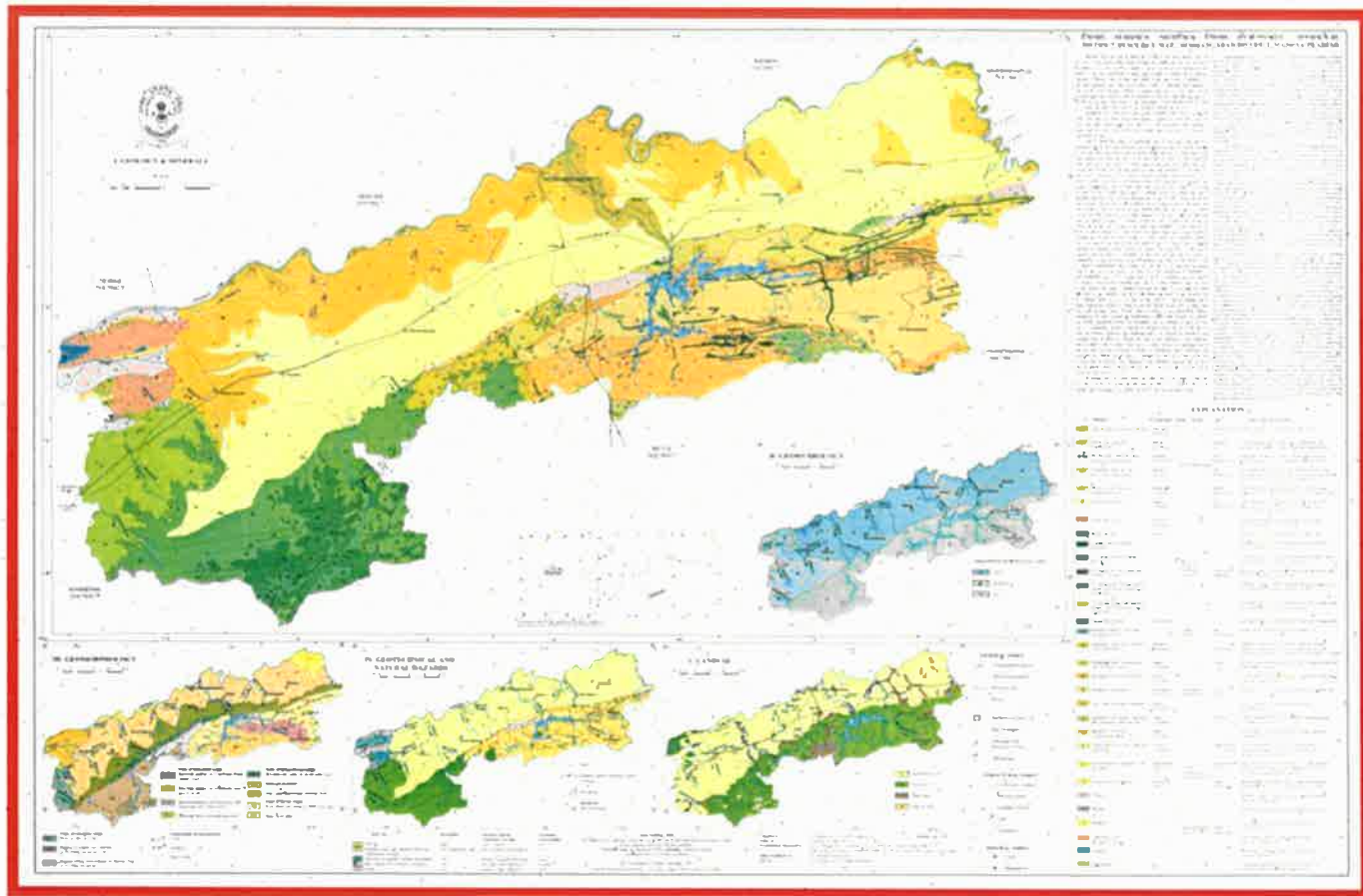
**DISTRICT SURVEY REPORT OF NARMADAPURAM**

**(11) DETAILS OF PRODUCTION OF MINOR MINERAL IN LAST THREE YEARS:**

YEAR		PRODUCTION (IN CU.MT.)
2019-20	Gitti	20441.7933
	Muram	94211.5
	Soil	17292.72
	Bolder	12720
2020-21	Gitti	22181.7
	Muram	67579.82
	Soil	59694
	Bolder	4755
2021-22	Gitti	16989.83
	Muram	41190.88
	Soil	34165
	Bolder	0

  
State Level Environment Impact  
Assessment Authority, M.P.  
(SEPCO)  
Paryavaran Parisar  
F-5, Arora Colony, Bhopal (M.P.)

**(12) MINERAL MAP OF THE DISTRICT:**




*Push*  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryevaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

**(13) LIST OF LETTER OF INTENT (LOI) HOLDERS IN THE DISTRICT ALONG WITH ITS VALIDITY AS PER THE FOLLOWING FORMAT :-**

S. No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Letter of Intent Holder	Letter of Intent Grant Order No. & date	Area of Mining lease to be allotted	Validity of LOI	Use (Captive / Non-Captive)	Location of the Mining lease (Latitude & Longitude)
1	Stone	M/s Jain Stone Crusher Partner Shri Rounak Jain S/o Shri Rajendra Kumar	Banapura, Tehsil-Sivni Malwa Dist Narmadapuram (MP)	648 /Khanij/2018 23/07/2018	1.821	06 Months	Non Captive	N22°25'34.99 E77°35'08.60 N22°25'35.19 E77°35'18.26 N22°25'37.10 E77°35'18.41 N22°25'37.18 E77°35'08.27
2	Murram	Satish Gaur S/o Shri Harishankar Gaur	Village Choutlay Tehsil Sivni Malwa Dist Narmadapuram (MP)	11637 29/08/2022	1.90	06 Months	Non Captive	

  
**State Level Environment Impact  
 Assessment Authority, M.P.  
 (EPCO)  
 Parvatanagar Road  
 E-5, Arera Colony, Bhopal (M.P.)**

## DISTRICT SURVEY REPORT OF NARMADAPURAM

### (14) TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT:

SR NO	MINERAL	RESERVE IN M <sup>3</sup>
1	Gitti	1406513
2	Muram	805814
3	Soil	506819

*As per quantity shown in mining plan*

### (15) QUALITY /GRADE OF MINERAL AVAILABLE IN THE DISTRICT:

Major part of Narmadapuram district fall under narmada alluvium which constitute sand Bajri, murrum and soil derived by narmada river and its tributaries.


Other than this the presence of The Vindhyan sandstone serves as a good building stone and deccan trap of upper cretaceous age provides enough basalt which is used for metal stone/crusher stone. Finally, in Narmadapuram district contains enough deposit of metal stone/ crusher stone and in comparison, to minor minerals and major minerals. which can be utilized as building stone.

### (16) USE OF MINERAL:

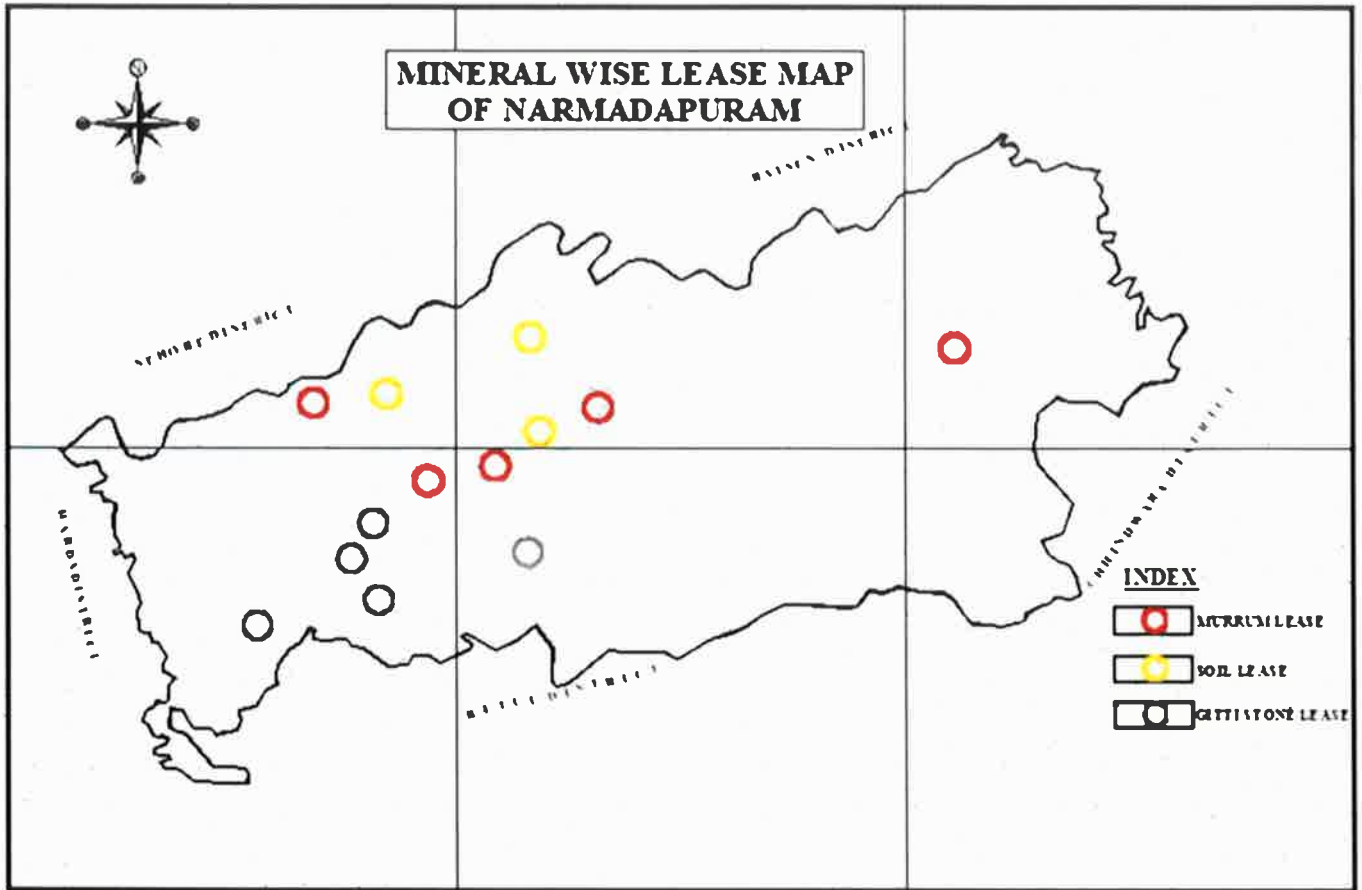
The minerals which area available in the Narmadapuram district are utilized for building/construction purpose.

### (17) DEMAND AND SUPPLY OF THE MINERAL IN THE LAST THREE YEARS:

Mainly sand, murrum , metal stone/crusher stone minerals are available in the district are always in demand in surrounding as these are utilized for building/construction purpose.

  
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**(18) MINING LEASES MARKED ON THE MAP OF THE DISTRICT:**



**(19) DETAILS OF THE AREA OF WHERE THERE IS A CLUSTER OF MINING LEASES VIZ. NUMBER OF MINING LEASES, LOCATION (LATITUDE AND LONGITUDE):**

There is no cluster of mining leases.

*[Signature]*  
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Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)



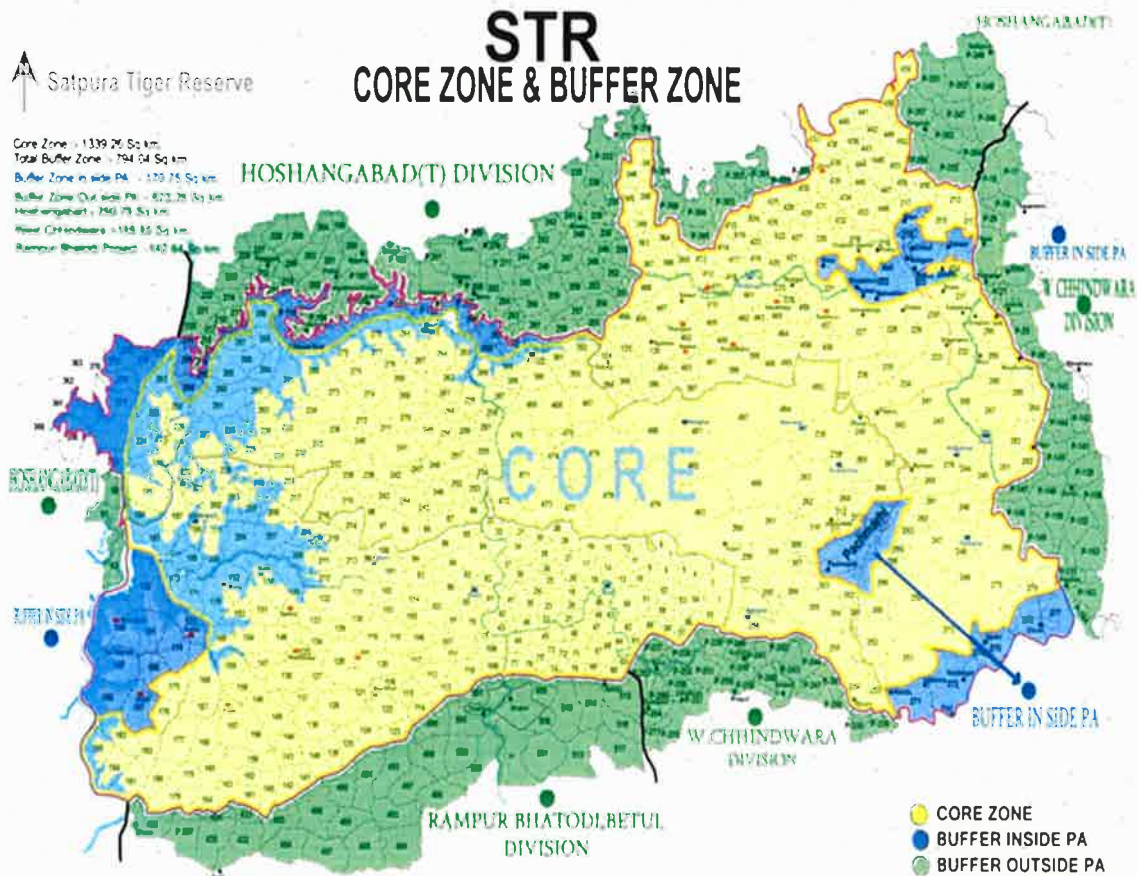
**(20) DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT:**

Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs) are areas in India notified by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India around Protected Areas, National Parks and Wildlife Sanctuaries. The purpose of declaring ESZs is to create some kind of "shock absorbers" to the protected areas by regulating and managing the activities around such areas. They also act as a transition zone from areas of high protection to areas involving lesser protection.

The eco-sensitive area in Narmadapuram are Satpura National Park, Pachmarhi Wildlife Sanctuary and Bori Wildlife Sanctuary which cumulatively comprises Pachmarhi Biosphere Reserve.

**PACHMARHI BIOSPHERE RESERVE**

The Pachmarhi Biosphere Reserve is located in the biogeographical region of the Deccan Peninsula and the Biotic Province of Central India. The Satpura mountain ranges cross India from west to east and Pachmarhi lies directly in its centre. The highest peak is the Dhoopgarh, which reaches 1,352 metres above sea level, while the Pachmarhi hills are characterized by steep slopes in the northern regions. The eastern boundary of the biosphere reserve lies along a road with cultivation farms, close to the Dudhi River, while the southern boundary borders the Tawa plateau.



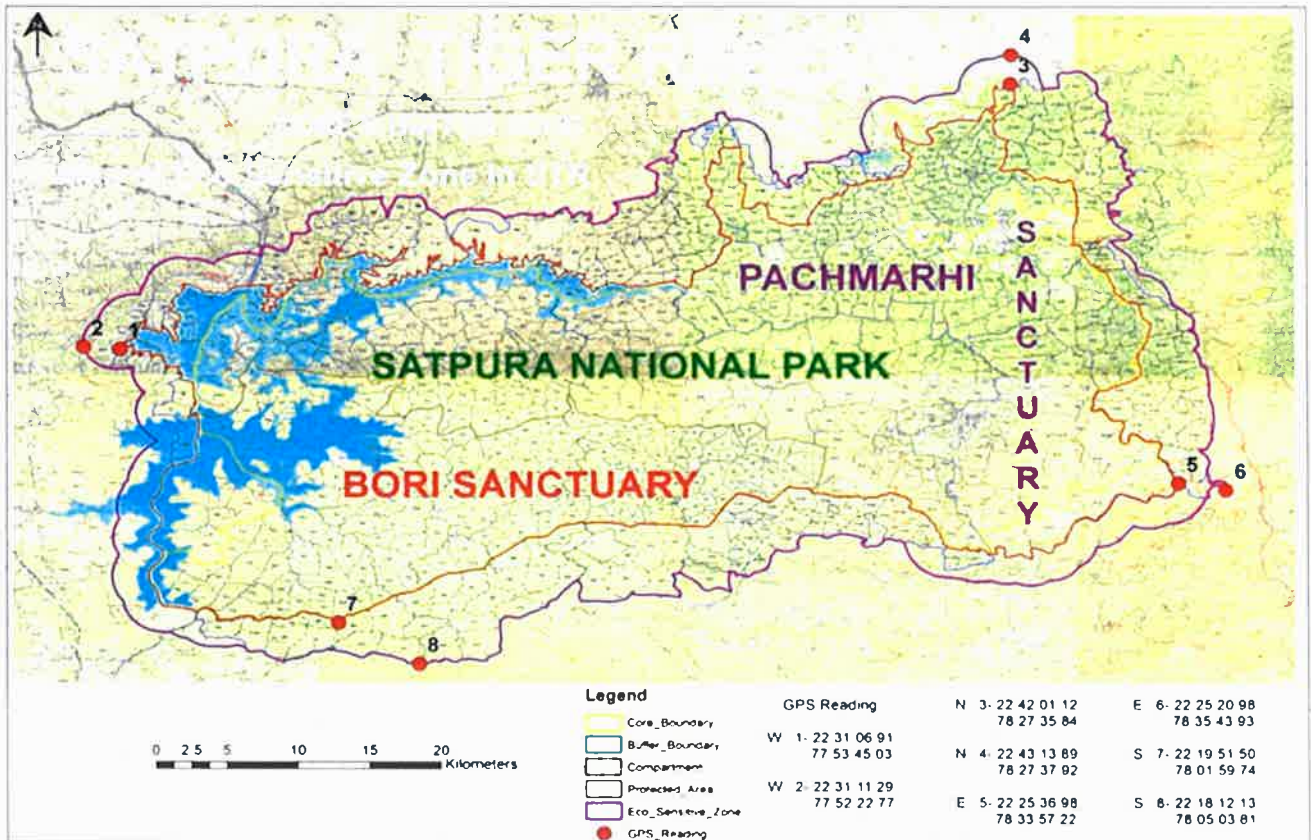
Map showing Core & Buffer zone of Satpura Tiger Reserve Narmadapuram district.

*[Signature]*  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

### A. SATPURA TIGER RESERVE

The Satpura Tiger reserve is a prime example of central Indian highlands eco-system. It is a unique area of diverse land resources and is endowed with a rich bio-diversity including rare and endemic bryophytes and pteridophytes like Psilotum, Cythea, Osmunda, Lycopodium. The habitat is also an important testimony to human evolution as it houses more than 50 rock shelters which are almost 1500 to 10,000 years old. Geological formations include Deccan trap series, Gondwanas and Meta morphic rocks. Based on its rich floral and faunal diversity, it was declared as the first Bio-sphere reserve of India in 1999. STR is a part of one of the largest Tiger habitats in the world extending over 10,000 sq.km. along with forest areas of Betul, Harda, Khandwa and Melghat forest divisions. Faunal diversity includes Tigers, Gaur, Sambhar, Flying squirrel, Indian giant squirrel and Leaf nosed bats to name a few. Avian fauna includes more than 280 species of birds.



Satpura National Park & Tiger Reserve Madhya Pradesh, India

#### Area of the Tiger Reserve

Core/critical tiger habitat : 1339.26 sq.km. Buffer/ peripheral area : 794.04 sq.km.

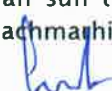
Total : 133.30 sq.km.

Location

Latitude : 22°19' to 22°45' Longitude : 77°53' to 78°34' Habitat Attributes

#### Flora

Southern tropical moist deciduous forest, Southern tropical dry deciduous forest, Tropical riparian fringing forest, southern tropical thorn forest, central Indian sun tropical hill forest, Dry and moist grassland. In general, the forest ranges from Sal Forest on Pachmarhi plateau and mixed forest in most of the areas, with some patches of teak forest.

  
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 (SAC)  
 District Level Environment  
 Impact Assessment Authority (M.P.)

## DISTRICT SURVEY REPORT OF NARMADAPURAM

### Fauna

Faunal diversity is tremendous and includes threatened and critically endangered species. Tiger is 1 the charismatic species along with other mammals like Gaur, Sambhar, Chital, besides co predators, birds, reptiles and fishes.

### Tiger status

As per the 2010 country level assessment using the refined methodology, the tiger estimate for the Satpura landscape is 42 with an increasing trend. Areas of west Chindwara division, Narmadapuram division and Rampur Bhatodi project division have been included as buffer in 2013, as per the advice of NTCA.

### Core

STR has successfully relocated 13 villages from the core areas as per the guidelines of Project Tiger. Weed eradication and Grassland development measures are being implemented in these vacated areas. Considerable progress in the number and distribution of herbivores has been noticed in these sites.

### Buffer

The buffer area has been brought under the administrative control of the tiger reserve management in the recent past and comprises of forests subjected to past working for timber exploitation, besides plantations. At present coupes are being worked under selection cum improvement working circle, However, the periphery of the buffer has many villages and human wildlife interface issues and conflicts are numerous and frequent. Such areas have heavily used public infrastructure in the form of roads, markets, electrical transmission lines and related development.

Tourism is confined to view points in Pachmarhi and vehicle rides in Madhai and Churna.

## B. PACHMARHI SANCTUARY,

### Ecological Characteristics

Pachmarhi comprises three protection sites: the Bori Sanctuary, Satpura National Park and Pachmarhi Sanctuary - otherwise known as the Satpura Tiger Reserve. The Pachmarhi Plateau is also known as the 'Queen of Satpura', because it contains valleys, marshes, streams and waterfalls, all of which have led to the development of a unique and varied biodiversity.

Forests represent approximately 63% of the biosphere reserve's area, while agricultural lands (30%), waste lands (2.18%), water bodies (5%) and human settlement areas (0.54%) account for the remainder. *Tectona grandis* (Teak) and *Shorea robusta* (Sal) are the most common and unique flora species found in the forests, with the latter found nowhere else in India. Tropical moist deciduous forests, tropical dry deciduous and central Indian sub-tropical hill forests are the major ecosystem types within Pachmarhi. The climate differs at all mountain levels and is characterized by strong monsoons.

There exist more than 150 species of flora used for medicinal purposes. In addition, 60 species of pteridophytes have been recorded, 48 of which are types of fern. Important species include *Psilotum triquetra* (whisk fern) and *Ophioglossum nudicaule* (Adder's-tongue ferns). The largest wild herbivores found in the reserve are Gaur, which together with bears, tigers and leopards, *Ratufa indica* (Giant Squirrel) and *Spilornis cheela* (Crested serpent eagle) are rare and endangered. Lastly, over 50 mammal species, 254 bird species, 30 reptile species and 50 butterfly species live in the Pachmarhi Biosphere Reserve.

### Socio-Economic Characteristics

The Pachmarhi Biosphere Reserve is characterized by high population growth, with Gond tribes accounting for 50% to 90% of the tribal population. They live in the forests and therefore have a special connection to the reserve. Korkus tribes introduced the cultivation of potatoes and made use of

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Assessment Authority  
(SEIAA)

## DISTRICT SURVEY REPORT OF NARMADAPURAM

honeycombs to produce honey in significant quantities for commercial use. The area used to be notorious for hosting evil spirits, diseases and dangerous beasts.

Captain J. Forsyth discovered the area in 1862 and remarked upon the extensive cave network. These caves are of great archaeological interest, containing rock paintings up to 2,500 years old. Today, many Hindus festivals are celebrated near the reserve. 'Nagpanchmi' is celebrated in summer and the 'Maha Shivratri' fair occurs in March.

Conservation tactics were first introduced in 1865 with the banning of slash-and-burn agriculture. A number of Reserve Forests were introduced, the most notable of which is the Bori Reserve Forest. Large sites also exist for grazing purposes, but with advent of severe overgrazing, particular grazing areas were created that permit only limited grazing activities.

### C. BORI WILDLIFE SANCTUARY

The Bori Wildlife Sanctuary is a wildlife sanctuary in Narmadapuram District of Madhya Pradesh state in central India. The sanctuary covers an area of 646 km<sup>2</sup> (249 sq mi), located in the northern foothills of the Satpura Range. It is bounded by the Satpura National Park to the north and east, and by the Tawa River to the west. The sanctuary, together with Satpura National Park and the Pachmarhi Sanctuary, forms the Pachmarhi Biosphere Reserve.

#### Flora and Fauna

##### Flora

The sanctuary is mostly covered in mixed deciduous and bamboo forests, part of the Eastern Highlands moist deciduous forests ecoregion. It is an important transition zone between the forests of western and eastern India. Dominant trees include teak (*Tectona grandis*), dhaora (*Anogeissus latifolia*), tendu (*Diospyros melanoxylon*), among others.

##### Fauna

Large mammal species include tiger, leopard, wild boar, muntjac deer, gaur (*Bos gaurus*), chital deer (*Axis axis*), sambar (*Cervus unicolor*), and rhesus macaques. Small mammals include the flying squirrel, tree shrew, common mongoose, small Indian civet and Indian porcupine.

#### 1. Extent and boundaries of Eco-sensitive Zone.-

(1) The extent of Eco-sensitive Zone is up to 100 m on the notified urban and 'Abadi' area side from the boundary of Core Critical Tiger Habitat of the Satpura Tiger Reserve in the State of Madhya Pradesh, which includes Satpura National Park, Pachmarhi Wildlife Sanctuary and Bori Wildlife Sanctuary and up to 2 kilometers on other sides from the boundary of Core Critical Tiger Habitat of the Satpura Tiger Reserve;


(2) The Eco-sensitive Zone is spread over an area of 1079.43 square kilometres which includes 794.04 square kilometre buffer area of Satpura Tiger Reserve and forest areas of other adjoining divisions (Within two km. periphery) of 285.39 square kilometres;

(3) The map of the Eco-sensitive Zone along with co-ordinates of prominent points is appended;

(4) The Eco-sensitive Zone includes 81 villages. The list of the villages falling within the Eco-sensitive Zone is appended as **Annexure I**.

(5) The legal status of area is appended.

The co-ordinates of the eco sensitive zone and the core zone are as follows,

  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

Direction	Latitude (Core)	Longitude (core)
North	22°42'01.12"	78°27'35.84"
East	22°25'36.98"	78°33'57.22"
South	22°19'51.50"	78°01'59.74"
West	22°31'06.91"	77°53'45.03"

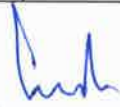
Direction	Latitude (ESZ)	Longitude (ESZ)
North	22°43'13.89"	78°27'37.92"
East	22°25'20.98"	78°35'43.93"
South	22°18'12.13"	78°05'03.81"
West	22°31'11.29"	77°52'22.77"

### Villages with Geographical Coordinates within the Satpura Eco-sensitive Zone -

Sl. No.	Name of Division	Name of Village	District	Longitude	Latitude
1	Buffer Zone	Maharajgang	Hoshangabad	78 ° 27' 51.43" E	22 ° 42' 39.72" N
2	Buffer Zone	Nayagaon	Hoshangabad	78 ° 26' 19.46" E	22 ° 42' 56.86" N
3	Buffer Zone	Ghogri matha	Hoshangabad	78 ° 26' 32.99" E	22 ° 42' 15.31" N
4	Buffer Zone	Amadeh	Hoshangabad	78 ° 26' 10.88" E	22 ° 40'38.36" N
5	Buffer Zone	Raitwadi	Hoshangabad	78 ° 25' 18.74" E	22 ° 40' 55.95" N
6	Buffer Zone	Madho	Hoshangabad	78 ° 24' 16.70" E	22 ° 40' 36.68" N
7	Buffer Zone	Bori	Hoshangabad	78 ° 24' 7.65" E	22 ° 41' 18.70" N
8	Buffer Zone	Devi	Hoshangabad	78 ° 24' 15.43" E	22 ° 39' 48.19" N
9	Buffer Zone	Dokrikheda	Hoshangabad	78 ° 22' 34.78" E	22 ° 39' 28.29" N
10	Buffer Zone	Jhiria	Hoshangabad	78 ° 23' 36.87" E	22 ° 38' 43.06" N
11	Buffer Zone	Choka	Hoshangabad	78 ° 22' 18.02" E	22 ° 38' 40.05" N
12	Buffer Zone	Aanhoani	Hoshangabad	78 ° 21' 6.53" E	22 ° 38' 5.77" N
13	Buffer Zone	Muharikhurd	Hoshangabad	78 ° 20' 18.91" E	22 ° 38' 42.45" N
14	Buffer Zone	Muharikala	Hoshangabad	78 ° 18' 8.14" E	22 ° 39' 48.36" N
15	Buffer Zone	Sanghii	Hoshangabad	78 ° 17' 5.42" E	22 ° 40' 11.76" N
16	Buffer Zone	Sehra	Hoshangabad	78 ° 10' 10.65" E	22 ° 34' 59.16" N
17	Buffer Zone	Kamti	Hoshangabad	78 ° 09' 31.75" E	22 ° 36' 26.80" N
18	Buffer Zone	Tekapar	Hoshangabad	78 ° 09' 01.32" E	22 ° 35' 0.88" N
19	Buffer Zone	Sarangpur	Hoshangabad	78 ° 8' 43.99" E	22 ° 34' 39.91" N
20	Buffer Zone	Ghogri	Hoshangabad	78 ° 7' 13.66" E	22 ° 35' 8.41" N
21	Buffer Zone	Mangaria	Hoshangabad	78 ° 6'10 .05" E	22 ° 35' 40.34" N
22	Buffer Zone	Urdaon	Hoshangabad	78 ° 5' 46.46" E	22 ° 34' 46.40" N
23	Buffer Zone	Kharpawad	Hoshangabad	78° 4' 21.44" E	22 ° 34' 31.02" N

**DISTRICT SURVEY REPORT OF NARMADAPURAM**

24	Buffer Zone	Pathai	Hoshangabad	78 ° 1' 59.12" E	22 ° 36' 10.25" N
25	Buffer Zone	Tawanagar	Hoshangabad	77 ° 58' 34.99" E	22 ° 34' 00.89" N
26	Buffer Zone	Ranipur	Hoshangabad	77 ° 57' 17.42" E	22 ° 34' 03.78" N
27	Buffer Zone	Chicha	Hoshangabad	77 ° 54' 50.28" E	22 ° 32' 40.41" N
28	Buffer Zone	Daudi	Hoshangabad	77 ° 53' 28.44" E	22 ° 31' 19.24" N
29	Buffer Zone	Chatua	Hoshangabad	77 ° 54' 21.35" E	22 ° 28' 09.74" N
30	Buffer Zone	Jhunkar	Hoshangabad	77 ° 54' 24.20" E	22 ° 25' 46.51" N
31	Buffer zone	Mallupura	Hoshangabad	77 ° 56' 04.94" E	22 ° 25' 29.32" N
32	Buffer zone	Suplai	Hoshangabad	77 ° 58' 54.23" E	22 ° 25' 04.84" N
33	Buffer zone	Khamda	Hoshangabad	77 ° 55' 58.56" E	22 ° 24' 30.49" N
34	Buffer zone	Jhalai	Hoshangabad	77 ° 56' 54.36" E	22 ° 23' 26.61" N
35	Buffer Zone	Kotmi	Hoshangabad	77 ° 54' 16.44" E	22 ° 24' 4.56" N
36	Buffer Zone	Maruapura	Hoshangabad	77 ° 53' 36.53" E	22 ° 22' 46.25" N
37	Buffer Zone	Chichadhana	Hoshangabad	77 ° 53' 59.08" E	22 ° 22' 17.42" N
38	Buffer Zone	Ladema	Hoshangabad	77 ° 53' 39.13" E	22 ° 22' 14.64" N
39	Buffer Zone	Bardha	Hoshangabad	77 ° 54' 53.41" E	22 ° 20' 7.92" N
40	Buffer zone	Nandia	Hoshangabad	78 ° 26' 35.60" E	22 ° 23' 26.88" N
41	Buffer zone	Gutkheda	Hoshangabad	78 ° 27' 49.56" E	22 ° 23' 36.96" N
42	Buffer zone	Supdongar	Hoshangabad	78 ° 29' 01.50" E	22 ° 23' 40.94" N
43	Buffer zone	Sakri	Hoshangabad	78 ° 30' 04.45" E	22 ° 24' 25.54" N
44	Buffer zone	Churni	Hoshangabad	78 ° 32' 32.46" E	22 ° 25' 27.01" N
45	Buffer zone	Neksa	Hoshangabad	78 ° 30' 47.57" E	22 ° 34' 21.95" N
46	Buffer zone	Matkuli	Hoshangabad	78 ° 27' 17.49" E	22 ° 35' 34.22" N
47	Buffer zone	Chhirrai	Hoshangabad	78 ° 28' 41.30" E	22 ° 35' 34.29" N
48	Buffer zone	Tekapar	Hoshangabad	78 ° 28' 58.93" E	22 ° 36' 22.28" N
49	Buffer zone	Chillod	Hoshangabad	78 ° 27' 32.74" E	22 ° 36' 27.86" N
50	Buffer zone	Khari	Hoshangabad	78 ° 26' 59.33" E	22 ° 36' 43.29" N
51	Buffer zone	Mohagaun	Hoshangabad	78 ° 26' 56.03" E	22 ° 36' 27.13" N
52	Buffer zone	Malli	Hoshangabad	78 ° 26' 10.41" E	22 ° 35' 51.52" N
53	Buffer zone	Pisua	Hoshangabad	78 ° 24' 12.68" E	22 ° 35' 46.56" N
54	Buffer zone	Bindakheda	Hoshangabad	78 ° 25' 09.89" E	22 ° 35' 18.03" N
55	Buffer zone	Mehandikheda	Hoshangabad	78 ° 26' 20.12" E	22 ° 34' 57.21" N
56	Buffer zone	Pachmarhi	Hoshangabad	78 ° 25' 15.10" E	22 ° 27' 19.62" N
57	Buffer zone	Fiferi	Hoshangabad	78 ° 32' 11.18" E	22 ° 30' 37.18" N
58	Buffer zone	Manakachar	Hoshangabad	78 ° 31' 46.19" E	22 ° 33' 10.52" N

  
 State Level Environment Impact  
 Assessment Authority (M.P.)  
 (EPCO)  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

### (21) IMPACT ON THE ENVIRONMENT (AIR, WATER, NOISE, SOIL, FLORA & FAUNA, LAND USE, AGRICULTURE, FOREST ETC.) DUE TO MINING ACTIVITY:


#### IMPACT ASSESSMENT METHOD

In the present study, matrix method has been used. This method is best suited to single project assessments, and is not recommended for large regional actions. The mining and allied activities as proposed in the project area which influence the environmental attributes include: 1. Excavation 2. Construction of approach and haulage road 3.

Drilling & blasting 4. Loading & transportation of stones and wastes 5. Processing & sizing of stones 6. Disposal of overburden/waste etc. 7. Stockpiling of low-grade stones. 8. Site preparation the pollution potential of a mining project in general and in specific to the proposed stone mining project is outlined as per Table-4.1 for general reference. In this specific case blasting and drilling operation is involved in the process. Screening process is also involved for extraction of stone from the waste dump. The environmental impact due to the mining activities is expected to be quite marginal in nature because all possible measures will be taken to minimize the impact. This will be analyzed in details in subsequent table

#### Overview of Environmental Impacts due to different phases of mining

Mining Phase	Activity	Potential Environmental Impact
Mine Development, Sourcing and Stockpiling	Mining activity, Land cleaning, Excavation, Construction of internal road and site services	Habitat loss and disturbance of habitation of flora and fauna. Reduction in biodiversity of the locality. Altered landforms due to construction. Altered drainage and runoff flows Increased erosion of site area Increased situation of surface water
Removal and storage of stones and waste materials	Stripping /sorting of soil overburden. Waste rock stockpiling, extracted stone piling.	Land alienation from waste rock stock piles. Disturbance form vehicle and machinery noise and site illumination.
Blasting and Mining	Blasting of rock for extraction collection and sizing of stone	Ground surface disturbance. Disturbance due to noise and vibrations. Dust and fumes from explosion, mine vehicles and transport systems Contamination from explosive residues.
Transport of final product to markets	Packaging /loading of final product for transportation Transportation of final product	Disturbance due to noise, vibrations and site illumination. Dust & fumes from exposed product & stockpiles

  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

Mine closure and postoperational waste	Decommissioning of roads Dismantling of buildings Plantation in disturbed areas Recounting waste dumps Water Quality treatment Fencing dangerous areas	Noise & dust during dismantling. Subsidence, slumping and flooding of previously mined areas. Continuous discharge of contaminants to ground and surface water via seepage.
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### IMPACT ON AIR QUALITY

The impact on air environment due to the mining and allied activities arises during land development phase and during mining process. The excavation/removal of topsoil and dumping of overburden (top soil and host rock) generates fugitive dust in that area. Mining operation are carried out by opencast semi mechanized methods generating dust particles due to various activities likes, excavation, loading, handling of mineral and transportation. The air quality in the mining areas depends upon the nature and concentration of emissions and meteorological conditions. The major air pollutants due to mining activities include:-

Particulate matter (dust) of various sizes. Gases, such as sulphur dioxide, oxides of nitrogen, carbon monoxide etc from machine & vehicular emission. Dust is the single air pollutant observed in the open cast mines. Diesel operating drilling machines, blasting and movement of machineries/ vehicles produce NO<sub>x</sub>, SO<sub>2</sub> and CO, usually at low levels. Dust can be of significant nuance surrounding land user and potential health risk in some circumstances. The generation of fugitive dust during the mining activity will have some impact on the existing vegetation of the Core as well as nearby area. The dust may settle on the leaf surface decreasing the evapo-transpiration of the plant. This may also decrease the process of photosynthesis due to plugging of the chlorophyll on the leaf surface by the dust. The most significant air pollutant from mining is particulate matter, which may be dispersing in the ambient air and thereby negatively affect the ambient air quality in the vicinity of the mine. Non-Point Sources are the major contributors to air pollution during mining operations (which cause fugitive emissions). This section describes the potential air quality impacts associated with the proposed mining activities. Transportation of final products, activities such as loading and unloading of products by the dumpers and transport of stone from mining site to the final point will involve movement of heavy vehicles. The dust may be generated during transportation, which may affect the localities adjacent to the transport route.

The source of pollution is being given in table below.

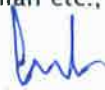
#### Sources of Air Pollution

Activities	Air Pollutants
Drilling	PM10, PM 2.5
Loading & Unloading	PM10, PM 2.5
Blasting	PM10, PM 2.5, SO <sub>2</sub> , Nox
Haul Road	PM10, PM 2.5
Transportation	PM10, PM 2.5,
SO <sub>2</sub> , NO <sub>x</sub> , CO Waste / Top soil handling	PM10, PM 2.5

### Impact on Water Quality

The mining operation leads to intersection of the water table which causes ground water Depletion and contamination by adding much mineral into it.

Due to the interruption surface water sources like River, Nallah etc., surface water system, Drainage pattern of the area could be altered.

  
 Assessment Authority  
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## DISTRICT SURVEY REPORT OF NARMADAPURAM

### Impacts On Water Regime

The stream/nallah/river which is located surrounding to the boundary of lease area mining and associated activities can designated impact on the water regime of the area. All the aquifers, including the water-table aquifer, above the mineral deposit can be extracted are damaged because of excavation of stone from the lease area.

### Impact on Noise Quality:

Different activities in mining such as Blasting, drilling, loading, hauling, stone handling, mining etc. lead to generation of noise. The various sources of noise mentioned above shall only be periodical and are limited to a fixed period of operation only. In addition to this, the transportation of stones might cause a little effect on the noise level. The noise generated by different machinery used in mining operation is given in table 4.7. Noise generated by machinery used in mining.

Machinery	Noise generated in dB (A)
Shovel	90-100
Dozer	90-106
Dumper	80-100
Drill	105
Sprinkler	80
Blasting	120

Work zone noise levels in the mining area expected to increase marginally due to Drilling, blasting, excavation, transportation and stone handling. It is expected that the generated noise will be contained within the mine lease cluster and there will be no profound effect of noise on buffer zone. It is further expected that, the ambient noise levels within the mine lease cluster will confirm to National Ambient noise standard prescribed under Environmental Protection Act, 1986.

### Blasting Effects

The loosening of rock mass will be done by drilling and blasting. Drilling will be done either by wagon drill or jack hammer taking in to consideration the bench height varying from 3 meter to 6m. Assuming 11,00,000 m<sup>3</sup> (max) productions per annum of Cluster-7, the monthly production target will be around 91667m<sup>3</sup>. To produce 91667m<sup>3</sup> of rock mass, tentatively 45833 kg/month of explosive will be required assuming powder factor 2m<sup>3</sup> /kg. Noise due to blasting is site specific and depends on type, quantity of explosives, dimension of drill holes, degree of compaction of explosive in the hole and rock. Blasting will be performed during the day time. Shot hole drilling & blasting will be in practice so that the effect of blasting in terms of fly rock and maximum ground vibration will be negligible. The noise produced by blasting would be for extremely short duration of around 0.5 seconds, though with a high intensity. The blasting will be conducted in the day time only and once in a week by the licensed contractor. Time of blasting will be 12 noon to 12.30 PM in day time with prior intimation to the villagers for taking shelter. The practice of regularly wetting the blasting ground and spraying water over the blasted material will be adopted to control air pollution. Proposal is to adopt wet drilling on the benches.

### Ground Vibration

Ground vibrations are generated by travelling of shock wave into the rock mass and attenuate very quickly. There are four parameters used to define the ground vibration namely: Particle displacement - the distance that a particle moves before returning to its original positions (mm) Particle velocity - the rate of change of particle displacement (mm/s) Particle acceleration - the rate at which particle velocity changes (mm/s) or acceleration due to the earth's gravity (g). Frequency - the number of oscillations per second of a particle, Hertz (Hz) However, in all standards the most measured parameter is peak particle velocity (Vmax) Vibrations and air over pressure are monitstoned in trial blasts to generated sufficient statistical data that could not be used for ascertaining site constants. The site

## DISTRICT SURVEY REPORT OF NARMADAPURAM

characterization or attenuation relation is obtained by regression analysis of scaled distance ( distance of blast from monitoring site divided by the square root maximum charge per delay) and peak particle velocity. In this manner a predictor equation is obtained which can be used for fixing of maximum charge per delay, to some degree of reliability according to existing regulations.

$$V_{max} = K (D/Q^{-1/2})^{\alpha}$$

Where,  $V_{max}$  = Peak particle velocity  
 $K$  &  $\alpha$  = Site constants

$D$  = Distance of the structure from the blast

$Q$  = maximum charge per delay After the regression analysis of the blast hole records, values for field constants  $K$  &  $\alpha$  were derived from the following empirical equation

$$: V_{max} = 219.6 (D/Q^{-1/2})^{-1.281}$$

Using the above equation maximum peak particle velocity has been calculated for Cluster 7 mines of Dharmasala. Maximum charge per delay has been considered as 1.5 Kg. Predicted  $V_{max}$  values at different distance are given in the table below:

**Peak particle velocity at different distances**

Sl. No	Distance/Village	PPV(mm/s)
1	100m	0.79
2	900m	0.049
3	1000m	0.043
4	1500m	0.025

### IMPACT OF MINING ACTIVITY ON THE FERTILITY STATUS OF THE SOIL

The fertility status of the soil near by the lease area may affect due to extra dust deposition on the soil. This dust will be settled on the top soil resulting in decrease in the fertility of the soil as well as decrease in crop production.

### IMPACT ON FLORA & FAUNA, AGRICULTURE, FOREST

The impact of the mining activity on the biological environment is as follows:

There can be cutting of trees during the mining activity so deforestation activity can be under taken.

The existing vegetation within the ML area can includes trees and scrub vegetation can be disturbed due to themining activity.

The transportation of stone and waste may create dust pollution which may create loss of biodiversity of the area.

Dust in atmosphere, contributed by mining and associated activities, when deposited on the leaves of the plants in the surrounding areas may retard their growth.

The growth of vegetation and agriculture in and around the complexes. Noise and vibrations due to blasting andoperation of the machines drive away the wild animals and birds from the nearby habitants.

### IMPACT OF MINING ON LAND ENVIRONMENT AND LAND USE

#### Impact on Topography

The impact on the topography is in the form of changed landscape due to the mining activities in the form of digging, leveling of lands & dumping of waste etc. There will be topographical change due to mining activity within the lease clusters.

Impact on topography can be categorized as follows;

i. Impacts due to Development of Mine & Excavation of stone Ultimate extent of the quarry will be confined to thearea under mining.

As discussed, based upon the existing quarries as well as surface exposures total resource of the area under miningwill be mined out during conceptual period up to ultimate pit bottom.

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ii. Other Impacts The land-use pattern undergoes a change due to the use of the land for mining, dumping, and other mining and associated activities. The drainage pattern on the surface undergoes a change due to the alterations in the surface topography due to mining and associated activities.

### Impact on drainage:

There is possibilities for effects on surface/ground water quality due to mining like effects due to leaching, water contamination due to discharge of polluted mine water in water bodies, wash off from settling tank etc. in the area of mining nala and other source could be affected during mining activity. toxic element present in the pollutants can affect local water bodies due to run off from mining related area like dumps/stacks.

### Impact on agriculture and plants:

Mining operations involve development of benches, approach roads, haul roads, drilling, blasting, excavation and transport and handling of product and waste materials. These activities have significant impact on the land use pattern of the lease area. The land use pattern of the buffer zone will be changed due to the mining activities. The mining lease area is under waste land category and this will change to mine reclaimed land and water reservoir during the conceptual period. The surrounding lease area may be agricultural land the impact of mining on the surrounding agricultural land could be envisaged. Deforestation activity could be done within and outside the lease area.

In Narmadapuram district mining activity is mainly concentrated towards sand/murram and stone mining. AS The magnitude of the mining activity in Narmadapuram district is small hence it does not create any serious impacts on the existing environmental set up of the area.

  
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**(22) REMEDIAL MEASURES TO MITIGATE THE IMPACT OF MINING ON THE ENVIRONMENT:**

**Mitigation measures for impact on water quality**

Garland drains (1X1m), settling tank (3m x3 x3m) and check dam should be constructed along individual mining lease area. The garland drains of the individual lease should be connected to settling tank and after settling the water will be discharged out to the natural drainage.

The abandoned pit should be converted to rain water storage tank and the rain water stored in the pit will be utilized for plantation as well as dust suppression.

**Mitigation measures for impact on Water Regime**

Mining activities should be restricted to the layer above the ground water table. Runoff water during rains should be desilted and discharged.

Reclaimed pits should be stabilized with plantation where ever possible and other areas should be converted to water reservoir.

**Mitigation measures for impact on Noise Quality**

Development of green belt in the lease boundary which acts as a barrier for noise abatement. The noise generating machineries will be properly maintained.

The workers will be provided with proper PPEs to minimize the occupational exposures of noise.

**Mitigation measures for impact on soil**

Measures Garland drain and retaining wall will be constructed in the slope of the dump and mineral stack. So the surface runoff from the dump will be passed through the garland drain and settled in a settling pit before discharging outside. This decreases the soil erosion or deposition of the contaminants on the agricultural land. The top soil generated during the mining activity should be used for plantation.

**Mitigation measures for impact on flora & fauna, agriculture, forest**

Green belt will be developed along the individual lease boundary which will act as a pollution barrier for the biological environment.


There should be the proposal for plantation along the haul road of individual lease and also along the connecting road. The blasting, drilling and transportation will be carried out during the day time only minimizing the impact on the wild fauna movement.

All the necessary pollution control measures will be undertaken by the lessee to minimize the impact on the surrounding environment.

**Mitigation measures for impact of mining on land environment and land use**

The quarry within the lease should be utilized as water reservoir.

1. There should be construction of retaining wall along the quarry boundary and plantation will be carried out along the boundary of the quarry. Development of green belt and top soil and cow dung will be utilized for growth & nourishment of trees.
2. The water reservoir should be utilized for irrigation and pisciculture purpose.
3. quarry floor of hillock/patch should be a plane land after conceptual period which along with the exhausted benches are proposed to be rehabilitated by plantation.
4. Water sprinkling by water tankers should be taken up by individual lessees of the cluster on haul roads and around potential dusting areas.

  
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**(23) RECLAMATION OF MINED OUT AREA (BEST PRACTICE ALREADY IMPLEMENTED IN THE DISTRICT, REQUIREMENT AS PER RULES AND REGULATION, PROPOSED)**

**Why reclaim & rehabilitate mined out areas?**

Open cast mining- land is excavated to win ores/minerals.

Considerable overlap of forest cover and mineral reserves, indicates requirement of abundant caution while mining the minerals. While these mines are worked, over burden and waste produced is dumped in & around the lease. Land is key element in all-mining operations, thus systematic and scientific reclamation and rehabilitation of mined out areas and dumps is the key issue of 'Sustainable Development' in mining industry. Mining is a process of segregation thus there is rejection of wastes that have impact on environment. The strategy for rehabilitation has to be guided by the end use, namely, restoring sink potential by raising plantation, development of recreation and water sport facilities, development of settlements or agricultural farms.

**Reclamation & Rehabilitation: Statutory Provisions, as per MCDR, 1988**

As per Section 23 - Abandonment of mines:

1. The owner, agent, mining engineer, or manager of every mine shall not abandon a mine or a part of mine during the subsistence of the lease except with prior permission in writing of the Controller general or the authorized officer.
2. The owner, agent mining engineer, or manager, of every mine shall send to the Controller General, Controller of Mines, and the Regional Controller under registered cover, a notice in the Form -D of his intention to abandon a mine or a part of a mine so as to reach them at least ninety days before the intended date of such abandonment.
3. Such a notice shall be accompanied by plans and sections on a scale not less than, 1 cm - 10 meters setting forth accurately the work done in the mine up to the time of submission of the notice including the measures envisaged for the protection of the abandoned mine or part thereof, the approaches thereto and the environment: Provided that, the Controller General may require the plans and sections to be prepared on any other suitable scale.
4. The Controller General or the authorized officer may by an order in writing made before the proposed date of abandonment, prohibit abandonment or allow it to be done with such conditions as he may specify in the order.
5. The leaseholder shall not abandon a mine or part thereof unless a final mine closure plan duly approved by the Regional Controller of Mines or the officer authorized by the State Government in this behalf, as the case may be is implemented. For this purpose, the lessee shall be required to obtain a certificate from the Regional Controller of Mines, or the officer authorized by the State Govt. in this behalf to the effect that protective, reclamation and rehabilitation work in accordance with the final mine closure plan or with such modifications as approved by the competent authority, have been carried out before abandonment of mine.


As per Section 34 - reclamation and rehabilitation of lands:

Every holder of prospecting license or mining lease shall undertake the phased restoration, reclamation and rehabilitation of lands affected by prospecting or mining operations and shall complete this work before the conclusion of such operations and the abandonment of prospectormine.

**Reclamation & Rehabilitation challenges?**

Erosion control.


- Stabilization of dump slopes.
- Developing alternative use of abandoned mine pits.
- Ecological restoration.
- Developing alternative livelihood opportunities for surrounding community.
- Top soil conservation.

  
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### Reclamation & rehabilitation how?

Waste/OB materials can be used to fill up the abandoned pits. The filled area then can be leveled and covered with soil/mud. Finally, it is covered with freshly removed soil mixed with organic manure and fertilizers. The land then can be biologically reclaimed. Shallow pits, where material is not available for back filling can be reclaimed by plantation, provided slopes are suitably graded. Waste dump stabilization using laterite cover, garland drain, etc. Planting hardy plants species like Eucalyptus, acacia with the sole aim to green the area and create a biomass without consideration to Biodiversity or community use.

  
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**(24) RISK ASSESSMENT & DISASTER MANAGEMENT PLAN:**

Risk is the probability of the harm or likelihood of harmful occurrence being released and its severity. Environmental risk is a measure of the potential threats to the environment, life and property and which is more likely to happen in the mining activities. All the type of developmental activities like mining, industries, developmental projects may face certain type of hazards which can disrupt the normal activities abruptly and lead to disaster like fires, inundation, failure of machinery, explosion etc. On account of the possible risk, a risk assessment has been carried out and the Disaster Management Plan formulated with an aim of taking precautionary measures to control the hazard propagation, avert disaster and also to take such action after the disaster, which limits the damage to the minimum.

**Objectives**

The objectives of environmental risk assessment are governed by the following, which excludes natural calamities: To identify the potential hazardous areas so that necessary design safety measures can be adopted to minimise the probability of accidental events. To identify the potential areas of environmental disaster which can be prevented by proper designing of the installations and its controlled operation. To manage the emergency situation or a disastrous event, if any.

The major risk associated with the project activities are as follows:

**Open Cast Bench Slope Failure**

Conventional method of mining will be adopted in the mining leases within cluster 7 area (Rahadpur Hillock). In the present plan period it is proposed to shape the quarry with bench heights of 3 m to 6m (max). The width of the benches will be kept either equal or more than the height. The slope of the individual bench will be maintained at around 80° to 85° with ultimate pit slope of less than 45°. Mine road will be maintained between benches for easy movement of workers and vehicles. Suitable gradient of haul road will be maintained in between 1 in 16 to 1 in 20. Well-developed drainage systems over the lease hold area are to ensure & check the water flows out of the lease area.

**Disaster due to Failure of Waste Dump**

The overall waste dump slope, considering the angle of repose, has been fixed to be not more than 35°-37°. The waste dump will be stabilized by planting grasses and other arrangements as detailed below:-

Individual dump slope angle will be 35° to the horizontal.

A series of stone toe wall will be made all around the waste dump to prevent waste dump material being carried out to the general drainage system of the area. A garland drain will be constructed all around the waste dump area for smooth flow of water. The waste generated from the mines will utilized for internal road construction and there will be no waste dump within the mines during conceptual period.

**Disaster due to Surface Fire**

Sufficient fire extinguishers will be installed at selected location like Electrical Substations, Garage, Diesel Depot, Stores etc. Besides, sufficient number of water hydrants with sufficient hosepipes will be made available. Adequate fire trenches shall be dug around the fuel depot so as to preclude chances of fires from adjacent forest areas.

**Possible Dangers due to Storage of Explosives**

The explosives to be used for blasting purpose will be procured by hired licensed blasting contractors by individual lessees from authorized dealers and blasting will be performed by the contractor also. Daily requisition of explosives will be as per the same day requirement. At the end of the blasting surplus explosives will be refunded to the dealer. A daily register will be maintained for total use and refund of explosives. A zone around the mine periphery for safe blasting is proposed and the area shall be suitably fenced. Further, for the protection of the mine infrastructure facilities, controlled blasting has been suggested when mining operations approach to the vicinity of such structures.

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In case of any fire, whosoever notices the fire will sound the alarm and inform the shift-in-charge. The shift-in-charge will inform security personnel & arrange to evacuate all personnel, except those who are required for firefighting, from the area. The fire brigade shall be summoned to deal with the emergency. Concerned district official will be informed. Nearby hospitals will be informed to standby to handle casualties.

### Accidents due to Machinery (Transport as well as non-transport machinery)

Machineries engaged in both transport and non-transport activities can be a cause of accident if awareness is not created among the employees. Following are some likely causes and preventive measure; Unauthorized driving of vehicles, mostly by helpers should be prohibited. Overloading a vehicle can be a cause of mishaps. Driving vehicles in an intoxicated stage should be prohibited. Use of substandard equipments or machinery parts can result in accidents or break down. Standard machinery with authorized spare parts must be used. Managerial, supervisory and competent persons of the mine would be engaged for supervising machinery, maintenance & housekeeping of the mine areas, as per needs.

### DISASTER MANAGEMENT PLAN

Mining operation shall be carried out under the control and direction of a vastly experienced and well qualified mine manager holding a First-Class Manager's certificate of competency. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be complied by the mine management in case of disaster, if any.


The following precautionary measures shall be taken to prevent any kind of disaster in the mining operations: Blasting and removal of stone shall be done from top to downwards. No overhand will be allowed. Special attention and requisite precautions shall be taken while working in areas of geological weakness like existence of slip, fault etc. Provision of safety belt or rope while persons are at work at the hill sides from where there are chances of falling down for more than 1.8m. Providing the safety appliances such as safety boot, helmets, goggles etc. to the employees and ensuring their use by them by conducting surprise checking Spoil banks not to be retained by artificial means at an angle of repose in excess of its natural angle. Drafting and implementation of preventive maintenance schedule for various kinds of machinery deployed in blasting, crushing and transportation. Suppression of dust on the haulage roads; provision of maintenance of properly laid haul roads with guards and road signs at strategic points. Precautions against danger while traversing dumpers, excavators etc. by installing audio-visual alarms and appointment of spotters. Transportation of ore within mine workings by vehicles under the direction, supervision and control of Mine Management only. Proper maintenance of vehicles i.e. weekly examination by an engineer and daily examination by a competent person.

Training and retraining (at specified interval) of the machinery operators. Use of controlled blasting techniques; danger zone in 500m radius to be followed strictly. Provision of blasting shelters - properly constructed and maintained. Adequate maintenance of electrical equipments. Prohibiting entry of unauthorized persons in the mine lease area. Firefighting & first-aid provisions in the mines office and mining & crushing area Working of mine, as per approved plans and regularly updating the mine plans;

Regular maintenance and testing of all mining equipment as per manufacturer's guidelines.

### SYSTEM OF COMMUNICATION

An internal fool proof communication system for the department head and to their line of command should be maintained. A list of the important and relevant telephone no. and addresses of responsible person, adjoining mines, rescue station, police station, Fire service station, local hospital electricity supply agency and standing consultative committee members shall be made conspicuous at all venerable places or locations.

  
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### FIRST AID & MEDICAL FACILITIES

The mine management shall provide for adequate first aid/medical center for use in emergency situation. All casualties would be registered and injured will be given first aid. The center will have facilities for first aid & minor treatment, resuscitation, ambulance and transport. It will have proper telephone/wireless set for quick communication with hospitals where the complicated cases are to be referred.

### STORES AND EQUIPMENT

A detailed list of equipment available, its type & capacity and items reserved for emergency shall be prepared and reserve maintained accordingly.

### TRANSPORT SERVICES

A well-defined transport control system will be provided to deal with the situation. Provision of one ambulance shall be earmarked for the purpose.

### EMERGENCY PLAN


On realizing anything serious happened anywhere in the mine, the foreman or his deputy will immediately inform the nearest mining official & the manager of mines.

On being informed about the emergency the mines manager will verify for the correctness of information and telephone in particular to the mining officials of other part of the mine and managers of adjoining mine so that persons may be withdrawn.

On receiving information of emergency intimation will be sent to the emergency coordinating committee. Shift In-charge will ensure that all the materials and transport system to deal with emergency situation is kept in fine fettle. First aid facilities shall be made readily available.

### SOCIAL IMPACT ASSESSMENT / R & R ACTION PLAN

There is no human settlement in the lease area. It is a private land without any forest area is involved. Thus, no R & R plan is required.

  
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**(25) DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT. (LAST FIVE-YEAR DATA OF NUMBER OF PATIENTS OF SILICOSIS & TUBERCULOSIS IS ALSO NEEDS TO BE**

### Impact on Occupational Health

The process of excavation / quarrying leads to some health hazards.

The most significant occupational health impacts are Noise Induced Hearing Loss (NIHL) and Occupational Lung Disease (OLD) due to inhalation of dust.

As the mining involve excavation of building stone, there may be possibility of silicosis, tuberculosis, pulmonary and lungs disease.

### Mitigation Measure


As per Mines Rules, 1955, medical examination of employees at the initial stage and periodically, shall be done by a team of qualified medical officers provided by the project proponent.

Regular medical checkup camps shall also be arranged for detection of occupational diseases and minor disease in the nearby rural population.

Free checkup and medicine for treatment for their acute and chronic illness shall be provided.

All the mines workers will be provided with personal protective equipments like nose mask, ear muff, helmet, goggles etc.

Education and training arrangement for the mine's workers about the safety and various occupational health risks related to mining operation.

  
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**(26) PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT:**

**Green Belt Development**

Development of a greenbelt around the proposed facility mitigates to a certain extent the potential negative impact on the environment due to dust, air emissions, fugitive emission and noise. A green cover itself acts as containment for dust. Presence of a green belt, will lead to micro-climate and soil quality balancing, by retaining of soil moisture, recharge of ground water as well as self-control of microclimate of that area. It also improves the aesthetic value of the area, later on it becomes the natural habitat of various bird species.

There are two types of approaches recognized for development of green belts one is Source Oriented approach and the other is Receptor oriented approach. Both source and receptor-oriented approaches are the similar i.e it requires development of green belt.


The only difference is the manner in which the plantation is being done. In source-oriented approach green belt is located around the pollution source whereas in receptor-oriented approach the receptor is protected against pollution by development of green belt nearer to the receptor.

In any project the plantation should be source oriented, i.e., the plant site should be covered at the boundary with green belt. The general considerations involved while developing the green belt are: Generally local/native fast-growing trees should be planted.

Planting of trees should be undertaken in appropriate encircling rows around the project site. The trees should be protected by plantation of non-palatable shrub species to avoid browsing by animals. The planting should be at a spacing of 2.5 x 2.5 m and about 500 trees should be planted in next three years. A list of indigenous tree species suitable for green belt development is given in Table, Based on the survey and environmental conditions suitable plant species for the green belt development was suggested.


**List of Plant Species for Green Belt Development**

Sl. No.	Scientific name of Species	Common Name
1	Ficus religiosa	Peepal
2	Acacia catechu	Khair
3	Acacia nilotica	Babul
4	Butea monosperma	Palash
5	Dalbergia sisoo	Shisham
6	Lantana camara	Raimuniya
7	Mangifera indica	Mango
8	Millettia pinnata	Karanj
9	Azadirachta indica	Neem

  
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Sr No	Name of the Mineral	Name of the Lessee	Address & Contact No. of Lessee	Area of Mining lease (ha)	Obtained Environmental Clearance (Yes/No), If Yes Letter No with date of	Plantation target	Plantation Done By PP	Plantation Species
1	Soil for Bricks Formation	M/s A K Industries Pro Shri Anjeev Agrawal S/o Shri R L Agrawal	Shrikunj Plant MIG 8 Nyas Colony, Itarsi, Dist Narmadapuram (MP)	1.973	Letter No. 626 Date 19.09.2016	200	45	Neem, Parsa, Mango
2	Soil for Bricks Formation	M/s MP Bricks Manufacture Company Partner Shri Bhajanlal S/o Shri Tahalram	Krishnapuri, Sindhi Colony Tehsil & Dist Narmadapuram (MP) 9425041012	2.528		200	50	Neem, Mango, Sagalun
3	Soil for Bricks Formation	Shri Nitin Interprises Pro Smt Asha Mulchandani W/o Shri Ramchandra Mulchandani	P & T Colony ke Samne Anand Nagar, Narmadapuram tehsil & Dist Narmadapuram (MP) 9993309888	2.350	Letter No. 3055 Date 13.01.2015	200	40	Mango, Sua Babul Parsa
4	Soil for Bricks Formation	Shri Ajit Navlani S/o Shri Mangatram	Sindhi Colony, Itarsi Tehsil Itarsi Dist Narmadapuram (MP) Mob. 9300278383	1.710	Letter No. 1719 Date 07.11.2014	200	50	Neem, Mango
5	Stone	Shri Ganesh Prasad Choudhary S/o Shri Kanjilal	Gram Dharamkundi tehsil Sivni Malwa Dist Narmadapuram (MP) Mob. 7987064269	0.910		100	40	Mango, Neem

  
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6	Stone	Shri Praveen Kumar Jain S/o Shri Gokalchand Jain	Ward No. 02 Station Banapura tehsil Sivni Malwa Dist Narmadapuram (MP) Mob. 9039720801	0.710	Letter No.2244 Date 24.11.2 014	60	Neem, Guavan
7	Stone	Shri M N Pandey S/o Shri C B pandey]	Gandhinagar, Itarsi tehsil Itarsi Dist Narmadapuram (MP) 9827098666	1.020	Letter No.3200 Date 07.07.2 015	95	95 Neem
8	Stone	Shri Fajjan Ulhaque S/o Shri Mohammad Masood	Sadar Bazar, Narmadapuram Dist Narmadapuram (MP) 9827210876	1.214	Letter No.708 Date 18.04.2 016	80	Karanj, Neem
9	Stone	M/s Jyoti Construction Company pro Shri Deepak Agrawal S/o Shri Gourishankar	Chandak Chouraha, Harda Tehsil & Dist Harda (MP) 9425042037	1.437	Letter No.605 Date 07.09.20 16	100	Neem, Babul
10	Stone	Shri Pranay Kumar Jain S/o Shri Harakchand Jain	Khirkiya, Tehsil Khirkiya Dist Harda (MP) 9826436321	4.000	Letter No.2145 Date 20.03.20 18	150	Neem Karanj Parsa
11	Stone	M/s Jain Stone Crusher Partner Shri Rounak Jain S/o Shri Rajendra Kumar	Ward No. 03 Station Banapura tehsil Sivni Malwa Dist Narmadapuram (MP) Mob.7694855555	1.680	Letter No.1000 Date 03.06.2019	100	Karanj, Mango
12	Stone	M/s Jain Stone Crusher Partner Shri Ronak Jain S/o Shri Rajendra Kumar	Ward No. 3 Station Banapura tehsil Sivni Malwa Dist Narmadapuram (MP) Mob.7694855555	1.619	Letter No.998 Date 03.06.2019	100	Karanj, Mango, Sua Babul

  
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13	Stone	M/s Mahaveer Associates Partner Shri Rounak Jain S/o Shri Rajendra Jain	Ward No. 3 Station Banapura tehsil Sivni Malwa Dist Narmadapuram (MP) Mob.7694855555	1.800	Yes Letter No.996 Date 03.06.2019	200	120	Neem, Karanj, Mango
14	Murrum	Shri Rajeev Jaiswal S/o Shri Harishankar	Pachmarhi Road, Pipariya Tehsil Pipariya Dist Narmadapuram M.9425044712	2.299	Yes Letter No.1353 Date 07.05.2016	200	50	Karanj, Babul
15	Murrum	Shri Rajkumar Mehto S/o Shri Ramkishore	Village-Teekhad Tehsil Itarsi Dist Narmadapuram (MP) M.9752141492	2.740	Yes Letter No.349 Date- 09.06.2016	250	60	Mango, Neem
16	Murrum	Shri Anirudh Kishore Upadhyay S/o Shri Rajveer Upadhyay	Gandhi nagar, Itarsi tehsil Itarsi Dist Narmadapuram (MP) M. 9425643386	1.104	Yes Letter No.350 Date 09.06.2016	100	50	Karanj, Mango
17	Murrum	Shri Mahesh S/o Shri Thondu	Village Nazarpur Tehsil Itarsi Dist Narmadapuram M.9425682599	1.000	Yes Letter No.566 Date 13.06.2016	100	40	Neem, Babul
18	Murrum	Shri Arjun Singh Thakur S/o Shri Shankar Singh	Village panari Tehsil Pipariya Dist Narmadapuram (MP) 6260024211	1.619	Yes Letter No.1660 Date 18.12.2017	150	60	Mango, Guava, Karanj
19	Murrum	Shri Rajendra Singh Rajput S/o Late Shri Kamal Singh	Pink Avenue Colony, Malakhedi Road Tehsil & Dist Narmadapuram (MP) 9893901801	2.000	Yes Letter No.602 Date 06.09.2016	200	50	Neem, Sua Babul
20	Murrum	Shri Manoj Kushwaha S/o Shri Narayan Prasad Kushwaha	Village Thamasa tehsil Dolariya Dist Narmadapuram (MP) 9340603377	1.500	Yes Letter No.3355 Date 30.11.2019	150	60	Karanj, Sua Babul

  
 State Level Environment Impact  
 Assessment Authority, M.P.  
 (EPCO)  
 Parvavaran Parisar  
 E-5, Arera Colony, Bhopal (M.P.)

DISTRICT SURVEY REPORT OF NARMADAPURAM

Plantation Photographs -



*[Handwritten signature]*

State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Parvavaran Pratishthan  
E-5, Arera Colony, Bhopal (M.P.)

DISTRICT SURVEY REPORT OF NARMADAPURAM




  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Bhawan  
E-5, Arora Colony, Bhopal

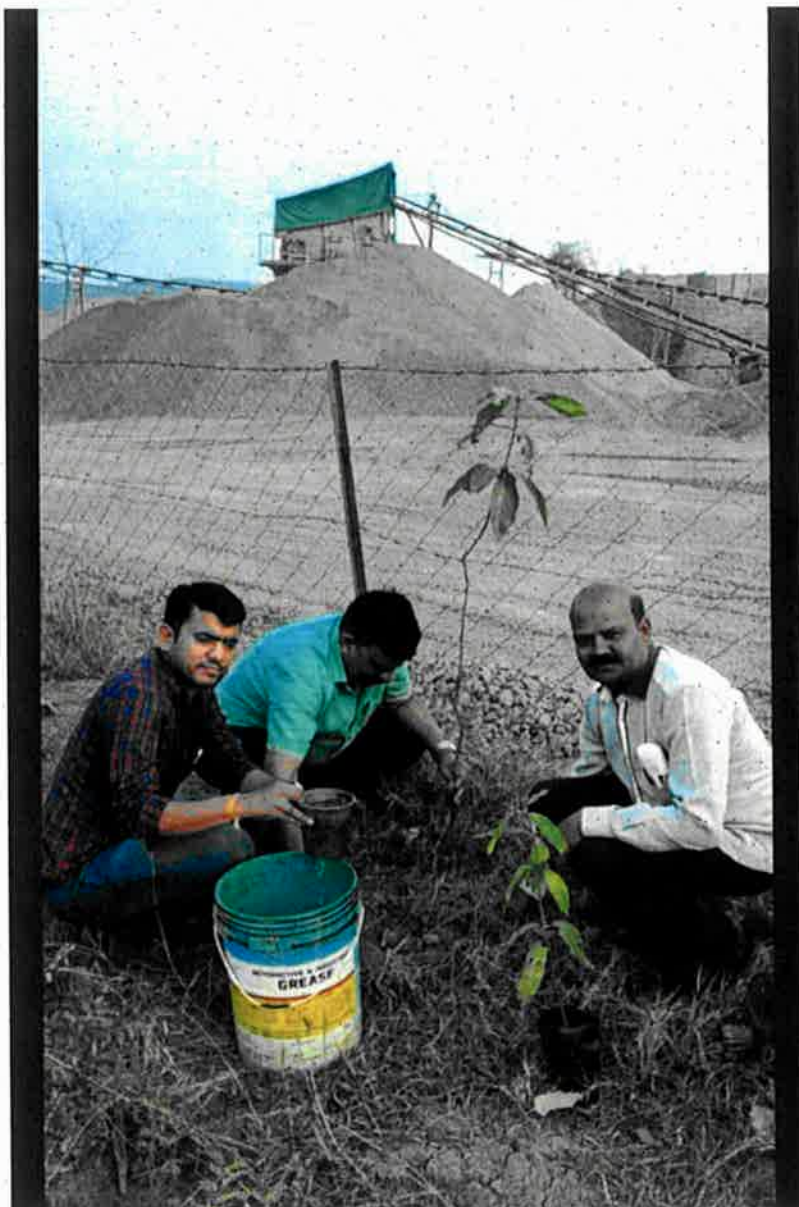





DISTRICT SURVEY REPORT OF NARMADAPURAM



  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)



  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
पर्यावरण परिषद  
E-5, Arera Colony, Bhopal (M.P.)

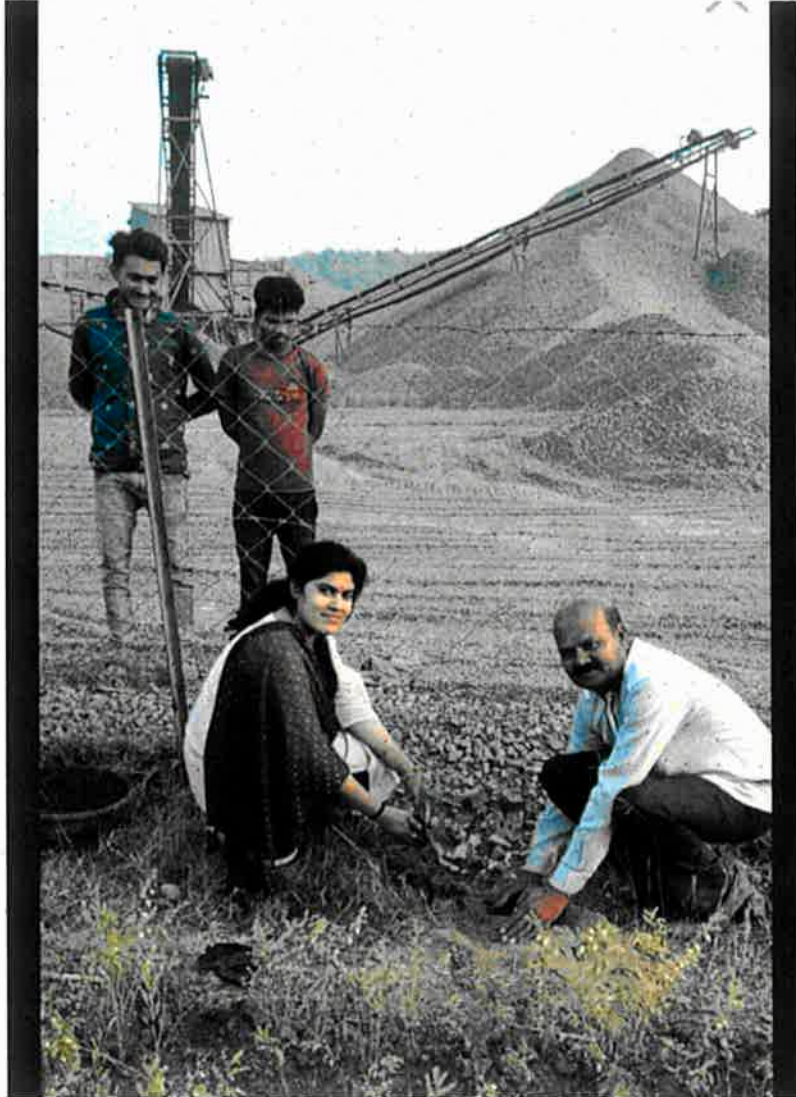
**DISTRICT SURVEY REPORT OF NARMADAPURAM**




*[Handwritten signature]*

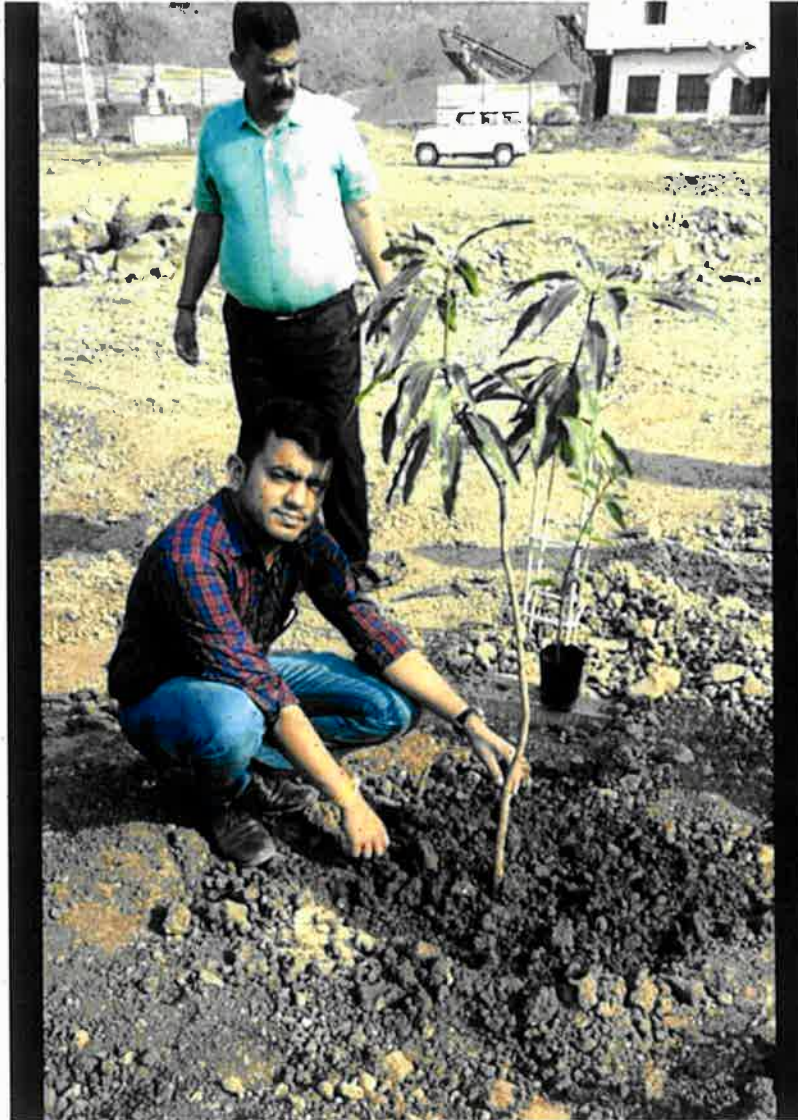
**State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Paryavaran Parisar  
E-5, Arera Colony, Bhopal (M.P.)**


DISTRICT SURVEY REPORT OF NARMADAPURAM



  
State Level Environment Impact  
Assessment Authority, M.P.  
(EPCO)  
Parvavaran Farisat  
E-5, Arera Colony, Bhopal (M.P.)

DISTRICT SURVEY REPORT OF NARMADAPURAM



  
State Level Environment Impact  
Assessment Authority, M.P.  
(SEPCO)  
Paryaveeran Hanisar  
E. S. Arera Colony, Bhopal (M.P.)


## DISTRICT SURVEY REPORT OF NARMADAPURAM

### (27) ANY OTHER INFORMATION

In Narmadapuram district mining activity is mainly concentrated towards sand/murram and stone mining. AS The magnitude of the mining activity in Narmadapuram district is small hence it does not create any serious impacts on the existing environmental set up of the area.

### REFERENCES

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2. Indian Bureau of Mines Mineral Year Book 2011
3. DGM M.P. Website.
4. District resource map Hoshangabad district MP
5. [www.Hoshangabad.mp.gov.in/general-information](http://www.Hoshangabad.mp.gov.in/general-information)
6. Census of India 2011 series 24 part XII-A
7. Official Website of District Administration Hoshangabad
8. District ground water information booklet (Hoshangabad district) 2013
9. Official website of krishi vigyan Kendra bankhedhi hoshangabad

  
District Survey Report  
As per the information  
received from the  
District Administration  
Hoshangabad, MP  
on 27/05/2013  
District Survey Report  
Hoshangabad, MP

**594वीं राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति की बैठक**  
**दिनांक 21 सितम्बर 2022**

	माइनेबल मिनरल पोटेंशियल (घनमीटर में) 60% टोटल मिनरल पोटेंशियल, लीजवार, लंबाई, चौड़ाई एवं गहराई के साथ दर्शाया है एवं विगत 03 वर्षों के उत्खनित रेत की मात्रा का लीजवार पोटेंशियल दिया गया है। जिससे ज्ञात हो सके कि उस स्थल पर खदान का मिनरल पोटेंशियल विगत 03 वर्षों में कितना रहा।
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आज दिनांक 21/09/22 को जिला सर्वेक्षण रिपोर्टों के प्रस्तुतीकरण के दौरान संचानालय, भौमिकी एवं खनिकर्म, विभाग भोपाल से श्री पी.पी. राय, एवं श्री दिवेश मरकाम, सहायक खनिज अधिकारी के साथ उपस्थित रहे।

चर्चा उपरांत समिति ने पाया कि खनि. अधिकारी, कार्यालय कलेक्टर, (खनिज शाखा) जिला- मण्डला के पत्र क्र0 1422, दिनांक 12/09/22 के माध्यम से मिनरल पोटेंशियल की गणना में आवश्यक संशोधन कर रेत की 60 प्रतिशत माइनेबल पोटेंशियल (रेत खनन हेतु) मीट्रिक टन यूनिट में प्रस्तुत कर दी गई है मिनरल पोटेंशियल की गणना दर्शाने वाली टेबल में आवश्यक संशोधन कर रेत की 60 प्रतिशत माइनेबल पोटेंशियल (रेत खनन हेतु) मीट्रिक टन यूनिट में प्रस्तुत कर दी गई है। अतः समिति की अनुशांसा है कि मण्डला जिले की जिला सर्वेक्षण रिपोर्ट (रेत खनिज) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित की जाये।

अतः समिति द्वारा सुझाई गई उपरोक्त अनुशांसाओं के साथ शाजापुर जिले की जिला सर्वेक्षण रिपोर्ट (रेत खनिज) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित किया जाये।

निम्नानुसार नवीन जिला सर्वेक्षण रिपोर्ट आज एजेण्डा में सूचीबद्ध नहीं था संबंधित खनिज अधिकारियों द्वारा बैठक के दौरान प्रस्तुत कर आज की बैठक में संबंधित खनिज अधिकारियों/निरीक्षकों के अनुरोध पर माननीय अध्यक्ष महोदय द्वारा प्रस्तुतीकरण की अनुमति प्रदान की गई :-

**11. जिला सर्वेक्षण रिपोर्ट, नर्मदापुरम –**

**अ. अन्य गौण खनिज – रेत को छोड़कर, जिला नर्मदापुरम**

Mineral	Other then Sand
Earlier DSR Discussed	SEAC 588 <sup>th</sup> Meeting dated 16.08.2022
Approved /or recommend for	Recommended for DSR Updation ( <b>Minor Minerals</b> )



**594वीं राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति की बैठक**  
**दिनांक 21 सितम्बर 2022**

<p>Updation (if Updation then elaborate issues)</p>	
<p>Deliberation in the SEAC 588<sup>th</sup> Meeting dated 16.08.2022</p>	<p><b>राज्य स्तरीय मूल्यांकन समिति की 591वीं बैठक दिनांक 27/08/22</b></p> <p>जिला सर्वेक्षण रिपोर्ट नर्मदापुरम (गौण खनिज)– श्री शशांक शुक्ला, खनिज अधिकारी एवं सुश्री अर्चना ताम्रकार, खनिज निरीक्षक –</p> <p>कार्यालय कलेक्टर (खनिज शाखा) जिला– नर्मदापुरम के पत्र क्रमांक 460 दिनांक 01/08/2022 के माध्यम से जिला सर्वेक्षण रिपोर्ट, जिला – नर्मदापुरम की हार्ड कापी सेक को प्राप्त हुई थी, जिसमें यह उल्लेखित है कि इस रिपोर्ट को जिला सूचना केन्द्र के वेब पोर्टल पर 21 दिन की अवधि हेतु अपलोड किया गया तथा जिला के सर्वेक्षण रिपोर्ट में कोई आपत्ति/सुझाव प्राप्त नहीं हुए। जिला स्तर पर गठित समिति द्वारा प्रारूप जिला सर्वेक्षण रिपोर्ट को किस दिनांक की बैठक में किया गया इसका उल्लेख नहीं किया गया। उक्त जिला सर्वेक्षण रिपोर्ट, राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति के सदस्यों को दिनांक 03/08/22 (सॉफ्टकापी) को प्रेषित की गई थी तथा उस पर चर्चा राज्य स्तरीय मूल्यांकन समिति की 588 वीं बैठक दिनांक 16/08/22 में प्रस्तावित की गई। चर्चा के दौरान खनिज विभाग, नर्मदापुरम की ओर से खनिज अधिकारी श्री शशांक शुक्ला एवं खनिज निरीक्षक सुश्री अर्चना ताम्रकार ऑनलाईन उपस्थित हुये जिसमें पाया गया कि:-</p> <ol style="list-style-type: none"> <li>(1) जिला सर्वेक्षण रिपोर्ट के पेज न0. 22 में अंतिम पैराग्राफ में किसी प्लॉट, क्षेत्र की रूफ वाटर हार्वेस्टिंग संबंधित जानकारी दी है, जो कि संबंधित नहीं है। इसी प्रकार पेज न0. 23 में ई.एम.पी. क्रियान्वयन संबंधित जानकारी भी डी.एस.आर से संबंधित नहीं है। अतएव कृपया सावधानीपूर्वक निरीक्षण करके ही जानकारी प्रस्तुत करें।</li> <li>(2) चैप्टर 20, पेज न0. 39 के अन्तर्गत जो इको सेंसिटिव जोन की जानकारी दी है जिसमें उल्लेखित है कि सतपुड़ा टाईगर रिजर्व, पचमढी वन्य प्राणी अभ्यारण एवं बोरी वन्य प्राणी अभ्यारण ई.एस.जेड के अन्तर्गत आते हैं। चूंकि ई.एस.जेड. अत्यधिक संवेदनशील क्षेत्र होते हैं, अतएव इसके साथ इसकी सीमायें एवं आने वाले गांवों की सूची भी प्रस्तुत करें, संबंधित इको सेंसिटिव जोन का नोटिफिकेशन प्रस्तुत किया जाये एवं यदि कोई स्वीकृत खदान इन संवेदनशील में आती हो तो इसका भी उल्लेख करें।</li> <li>(3) गौण खनिज के प्रकरणों में पूर्व से पर्यावरण स्वीकृति के प्रकरणों की निर्धारित लक्ष्यों के विरुद्ध कितना पौधारोपण किया गया है इसको भी सम्मिलित करें।</li> </ol> <p>चर्चा उपरांत समिति की यह अनुशंसा है कि नर्मदापुरम जिले की जिला सर्वेक्षण रिपोर्ट जिला सर्वेक्षण रिपोर्ट, रेत खनिज (संशोधित) को समिति द्वारा सुझाई गई उपरोक्त अनुशंसाओं के तारतम्य में अद्यतन (अपडेट) किया जाये तथा संशोधित जिला सर्वेक्षण रिपोर्ट पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 25/07/2018 के अनुसार पुनः प्रस्तुत की जाये। तत्संबंध में उपस्थित खनिज निरीक्षक सुश्री अर्चना ताम्रकार को भी उपरोक्त संदर्भ में समझाईश दी गई तथा पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 25/07/2018 के निर्धारित फार्मेट अनुसार जिला सर्वेक्षण रिपोर्ट को अद्यतन कर प्रस्तुत करें।</p>
<p>Revised DSR received from District Collectorate (Mining)</p>	<p>Vide District Collectorate (Mining) Office, Narmadapuram , No. 641 dated 14.09.2022</p>
<p>SEAC meeting dated 21/09/22</p>	<ul style="list-style-type: none"> <li>● जिले की जिला सर्वेक्षण रिपोर्ट के तलिका क्र0. – 9 पेज क्र0. 24–31 में खदान की जानकारी निर्धारित प्रपत्र में दे दी गई है।</li> <li>● जिले में हरित क्षेत्र के विकास हेतु पूर्व के वर्षों में लीज धारकों द्वारा किये गये वृक्षारोपण की जानकारी, संख्या एवं प्रजातियों की जानकारी तलिका</li> </ul>

**594वीं राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति की बैठक  
दिनांक 21 सितम्बर 2022**

क०. –निरंक (पेज क०. 57 से 59) में दी गई है ।

आज दिनांक 06/09/22 को जिला सर्वेक्षण रिपोर्ट के प्रस्तुतीकरण के दौरान संचानालय, भौमिकी एवं खनिकर्म, विभाग भोपाल से श्री पी.पी. राय एवं सुश्री अर्चना ताम्रकार, खनिज निरीक्षक के साथ उपस्थित रहे।

समिति ने पाया कि खनि. अधिकारी,कार्यालय कलेक्टर,(खनिज शाखा) जिला– नर्मदापुरम के पत्र क० 641, दिनांक 14/09/22 के माध्यम खदान की जानकारी निर्धारित प्रपत्र में दे दी गई है तथा लीज धारकों द्वारा किये गये वृक्षारोपण की जानकारी, संख्या, भी प्रस्तुत कर दी गई है। अतः समिति नर्मदापुरम जिले की जिला सर्वेक्षण रिपोर्ट (गौण खनिज) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित की जाये।

**ब. रेत खनिज जिला, नर्मदापुरम**

Mineral	<b>Sand</b>
Earlier DSR Discussed	SEAC 588 <sup>th</sup> Meeting dated 16.08.2022
Approved /or recommend for Updation (if Updation then elaborate issues)	Recommended for DSR Updation ( <b>Sand</b> )
Deliberation in the SEAC 588 <sup>th</sup> Meeting dated 16.08.2022	<p>राज्य स्तरीय मूल्यांकन समिति की 591 वीं बैठक दिनांक 27/08/22</p> <p><u>जिला सर्वेक्षण रिपोर्ट नर्मदापुरम (रेत खनिज)– श्री शशांक शुक्ला, खनिज अधिकारी एवं सुश्री अर्चना ताम्रकार, खनिज निरीक्षक –</u></p> <p>कार्यालय कलेक्टर (खनिज शाखा) जिला नर्मदापुरम के पत्र क्रमांक 460 दिनांक 01/08/2022 के माध्यम से जिला सर्वेक्षण रिपोर्ट, जिला – नर्मदापुरम की हार्ड कापी सेक को प्राप्त हुई थी, जिसमें यह उल्लेखित है कि इस रिपोर्ट को जिला सूचना केन्द्र के वेब पोर्टल पर 21 दिन की अवधि हेतु अपलोड किया गया तथा जिला के सर्वेक्षण रिपोर्ट में कोई आपत्ति/सुझाव प्राप्त नहीं हुए। जिला स्तर पर गठित समिति द्वारा प्रारूप जिला सर्वेक्षण रिपोर्ट को किस दिनांक की बैठक में किया गया इसका उल्लेख नहीं किया गया। उक्त जिला सर्वेक्षण रिपोर्ट, राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति के सदस्यों को दिनांक 03/08/22 (सॉफ्टकापी) को प्रेषित की गई थी तथा उस पर चर्चा राज्य स्तरीय मूल्यांकन समिति की 588 वीं बैठक दिनांक 16/08/22 में प्रस्तावित की गई। चर्चा के दौरान खनिज विभाग, नर्मदापुरम की ओर से खनिज अधिकारी श्री शशांक शुक्ला एवं खनिज निरीक्षक सुश्री अर्चना ताम्रकार ऑनलाईन उपस्थित हुये जिसमें पाया गया कि :-</p> <p><i>जिला सर्वेक्षण रिपोर्ट के मूलभूत तालिकाओं का समावेश नहीं किया गया है जिससे जिले की नदियों में उपलब्ध रेत की मात्रा का अनुमान लगता है जैसे तालिका</i></p> <ul style="list-style-type: none"> <li>• मुख्य नदियों के विवरण सहित निवासी प्रणाली को प्रदर्शित करने वाली तालिका।</li> <li>• महत्वपूर्ण नदियों और धाराओं की मुख्य विशेषता प्रदर्शित करने वाली तालिका।</li> <li>• खनिज छुट के लिये सिफारिश किया गया नदी की धारा का भाग।</li> <li>• खनिज क्षमता को प्रदर्शित करने वाली तालिका वार्षिक जमाव सहित।</li> <li>• नदीवार एवं लीजवार सभी खदानों को सम्मिलित करके प्रत्येक लीज की लंबाई, चौड़ाई एवं गहराई के</li> </ul>

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	<p>साथ लीजो में रेत की उपलब्ध मात्रा की गणना की जाना है तत्पश्चात् उपलब्ध रेत मात्रा की 60 प्रतिशत मिनरल पोर्टेंशियल भी दर्शाया जाना है। इस तालिका का रिपोर्ट में शामिल अन्य तालिकाओं में सुसंगत सामांजस्य रखते हुये तैयार करना है एवं इस बात का ध्यान रखा जाये कि ( प्री मानसून एवं पोस्ट मानसून में लीजो में उपलब्ध रेत की मात्रा का उल्लेख करें लंबाई, चौड़ाई एवं गहराई के साथ) यहां और अन्य तालिकाओं में जहां भी लीजो की लंबाई, चौड़ाई एवं गहराई का उल्लेख हो वहां समरूपता रहे।</p> <ul style="list-style-type: none"> <li>• विगत 03 वर्षों में उत्खनित रेत की खदानवार मात्रा भी दर्शाई जाये, जिससे यह ज्ञात हो सके कि उस स्थल पर खदान का मिनरल पोर्टेंशियल विगत 03 वर्षों में कितना रहा है।</li> <li>• मिनरल पोर्टेंशियल की गणना दर्शाने वाली टेबल में आवश्यक संशोधन कर रेत की 60 प्रतिशत माइनेबल पोर्टेंशियल (रेत खनन हेतु) मीट्रिक टन यूनिट में भी दर्शाये।</li> <li>• इसी प्रकार जिले में स्वीकृत/प्रस्तावित खदानों के को-आर्डिनेट के अनुसार डिजिटिज्ड मैप (आर्क व्यू / गूगल अर्थ कम्पेरेवल – सी.डी.में) भी संलग्न किया जाये ताकि पर्यावरण अभिस्वीकृति के समय खदानों की सही स्थिति ज्ञात करने में तथा 500 मीटर के अंदर स्थित अन्य स्वीकृत खदानों की जानकारी प्राप्त करने में सुविधा हो</li> </ul> <p>चर्चा उपरांत समिति की यह अनुशंसा है कि नर्मदापुरम जिले की जिला सर्वेक्षण रिपोर्ट जिला सर्वेक्षण रिपोर्ट, रेत खनिज (संशोधित) को समिति द्वारा सुझाई गई उपरोक्त अनुशंसाओं के तारतम्य में अद्यतन (अपडेट) किया जाये तथा संशोधित जिला सर्वेक्षण रिपोर्ट पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 25/07/2018 के अनुसार पुनः प्रस्तुत की जाये। ऑन लाईन उपस्थित श्री, खनिज अधिकारी को भी उपरोक्त संदर्भ में समझाईश दी गई तथा पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा जारी अधिसूचना दिनांक 25/07/2018 के निर्धारित फॉर्मेट अनुसार जिला सर्वेक्षण रिपोर्ट को अद्यतन कर प्रस्तुत करें।</p>
<p>Revised DSR received from District Collectorate ( Mining)</p>	<p>Vide District Collectorate (Mining) Office, Narmadapuram , No. 650 dated 16.09.2022</p>
<p>SEAC meeting dated 21/09/22</p>	<p>जिले की जिला सर्वेक्षण रिपोर्ट में तालिका क्र० निरंक पेज क्र०. 73 से 79 में माइनेबल मिनरल पोर्टेंशियल (घनमीटर में) 60% टोटल मिनरल पोर्टेंशियल, लीजवार, लंबाई, चौड़ाई एवं गहराई के साथ दर्शाया है एवं पेज क्र०. 58 से 66 में विगत 03 वर्षों के उत्खनित रेत की मात्रा का लीजवार पोर्टेंशियल दिया गया है। जिससे ज्ञात हो सके कि उस स्थल पर खदान का मिनरल पोर्टेंशियल विगत 03 वर्षों में कितना रहा।</p>

आज दिनांक 21/09/22 को जिला सर्वेक्षण रिपोर्टों के प्रस्तुतीकरण के दौरान संचानालय, भौमिकी एवं खनिकर्म, विभाग भोपाल से श्री पी.पी. राय एवं सुश्री अर्चना ताम्रकार, खनिज निरीक्षक के साथ उपस्थित रहे।

चर्चा उपरांत समिति ने पाया कि खनि. अधिकारी, कार्यालय कलेक्टर, (खनिज शाखा) जिला- नर्मदापुरम के पत्र क्र० 2289, दिनांक 12/09/22 के माध्यम से मिनरल पोर्टेंशियल की गणना में आवश्यक संशोधन कर रेत की 60 प्रतिशत माइनेबल पोर्टेंशियल (रेत खनन हेतु) मीट्रिक टन यूनिट में प्रस्तुत कर दी गई है मिनरल पोर्टेंशियल की गणना दर्शाने वाली टेबल में आवश्यक संशोधन कर रेत की 60 प्रतिशत माइनेबल पोर्टेंशियल (रेत खनन हेतु) मीट्रिक टन यूनिट में प्रस्तुत कर दी गई है।

समिति की अनुशंसा है कि जिला स्तर पर जिला सर्वेक्षण रिपोर्ट तैयार करने हेतु गठित जिला समिति की अनुशंसा तथा की गई रिप्लेनिशमेंट स्टडी की जानकारी (जिसके आधार पर जिला सर्वेक्षण रिपोर्ट

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तैयार की गई हैं) संबंधित जिला खनिज अधिकारी कार्यालय में सुरक्षित रखी जाये। अतः समिति द्वारा सुझाई गई उपरोक्त अनुशांसाओं के साथ नर्मदापुरम जिले की जिला सर्वेक्षण रिपोर्ट (रेत खनिज) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित किया जाये।

**12. जिला सर्वेक्षण रिपोर्ट, कटनी –**

**अ. अन्य गौण खनिज जिला, कटनी**

कार्यालय कलेक्टर के पत्र क्र०. 2103 दिनांक 13/09/2022 के माध्यम से जिला सर्वेक्षण रिपोर्ट—रतलाम (गौण खनिज—रेत) की जिला सर्वेक्षण रिपोर्ट उप समिती का अनुमोदन एवं जिला पोर्टल पर रखने के उपरांत प्रस्तुत की गई है।

आज दिनांक 21/09/22 को जिला सर्वेक्षण रिपोर्ट के प्रस्तुतीकरण के दौरान संचानालय, भौमिकी एवं खनिकर्म, विभाग भोपाल से श्री पी.पी. राय एवं श्री संतोष सिंह, खनिज अधिकारी उपस्थित रहे। कटनी जिले की नवीन जिला सर्वेक्षण रिपोर्ट गौण खनिज हेतु प्रस्तुत की गई, जिसमें पाया:—

- तलिका क्र०.— 9 पेज क्र०. 31—43 में दर्शित डेटा 16 बिन्दुओं की जानकारी अधिसूचना के अनुसार नहीं है जैसे —
- Latitude & Longitude of the leases.
  - Mining lease Sanction Order No. & date,
  - Date of commencement of mining operation,
  - Captive or Non-captive,
  - EC obtained Yes/No
  - Method of Mining (Open Cast/Under Ground) etc.
- जिला सर्वेक्षण रिपोर्ट में हरित क्षेत्र के विकास हेतु खदानों में वृक्षारोपण की जानकारी नहीं दी गई है। जानकारी के लीजवार शामिल कर अद्यतन किया जाना चाहिए। साथ ही निर्धारित लक्ष्य के विरुद्ध कितना वृक्षारोपण किस वर्ष किया है, उसको भी अंकित किया जाना चाहिए।

चर्चा उपरांत समिति की यह अनुशांसा है कि कटनी की जिला सर्वेक्षण रिपोर्ट गौण खनिज को समिति की सुझाई गयी उपरोक्त अनुशांसाओं के तारतम्य में अद्यतन (अपडेट) किया जाये तथा संशोधित जिला सर्वेक्षण रिपोर्ट पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय की अधिसूचना दिनांक 25/07/18 के अनुसार पुनः प्रस्तुत की जावे तत्संबंध में उपस्थित खनिज अधिकारी को भी उपरोक्त संदर्भ में समझाईश दी गयी।

**ब. कटनी (रेत खनिज)**

Mineral	Sand
Earlier DSR Discussed	SEAC 587 <sup>th</sup> & 592 <sup>th</sup> Meeting dated 17.06.2022 & 06.09.2022

".....समिति की अनुशंसा है कि मण्डला जिले की जिला सर्वेक्षण रिपोर्ट (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित की जाये।

राज्य स्तरीय समाघात निर्धारण प्राधिकरण (SEIAA) द्वारा विस्तृत चर्चा एवं विचार विमर्श उपरांत SEAC की 594वीं बैठक दिनांक 21/09/2022 की अनुशंसा को मान्य करते हुए मण्डला (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) की जिला सर्वेक्षण रिपोर्ट का अनुमोदन SEAC द्वारा सुझाई गई उपरोक्त अनुशंसाओं के साथ किया जाता है।

तदनुसार जिला कलेक्टर, मण्डला को जिला सर्वेक्षण रिपोर्ट जिला पोर्टल पर अपलोड करवाये जाने एवं संचालक भौमिकी तथा खनिकर्म को सूचित किया जाये।

24. जिला सर्वेक्षण रिपोर्ट - नर्मदापुरम (रेत एवं अन्य गौण खनिज - रेत को छोड़कर)

राज्य स्तरीय समाघात निर्धारण प्राधिकरण द्वारा 751वी बैठक दिनांक 14.10.2022 में निम्नानुसार निर्णय लिया गया :-

राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति (SEAC) की 594वीं बैठक दिनांक 21/09/2022 में नर्मदापुरम (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) की जिला सर्वेक्षण रिपोर्ट में निम्नानुसार सुझाव सहित अनुशंसा की गई है।

".....समिति की अनुशंसा है कि नर्मदापुरम जिले की जिला सर्वेक्षण रिपोर्ट (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित की जाये। "

राज्य स्तरीय समाघात निर्धारण प्राधिकरण (SEIAA) द्वारा विस्तृत चर्चा एवं विचार विमर्श उपरांत SEAC की 594वीं बैठक दिनांक 21/09/2022 की अनुशंसा को मान्य करते हुए नर्मदापुरम (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) की जिला सर्वेक्षण रिपोर्ट का अनुमोदन SEAC द्वारा सुझाई गई उपरोक्त अनुशंसाओं के साथ किया जाता है।


तदनुसार जिला कलेक्टर, नर्मदापुरम को जिला सर्वेक्षण रिपोर्ट जिला पोर्टल पर अपलोड करवाये जाने एवं संचालक भौमिकी तथा खनिकर्म को सूचित किया जाये।


25. जिला सर्वेक्षण रिपोर्ट - कटनी (रेत खनिज)


राज्य स्तरीय समाघात निर्धारण प्राधिकरण द्वारा 751वी बैठक दिनांक 14.10.2022 में निम्नानुसार निर्णय लिया गया :-

राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति (SEAC) की 594वीं बैठक दिनांक 21/09/2022 में कटनी (रेत खनिज) की जिला सर्वेक्षण रिपोर्ट में निम्नानुसार सुझाव सहित अनुशंसा की गई है।

".....समिति की अनुशंसा है कि कटनी जिले की जिला सर्वेक्षण रिपोर्ट (रेत खनिज) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित की जाये। "

  
(श्रीमन् शुक्ला)  
सदस्य सचिव

  
(अनिल कुमार शर्मा)  
सदस्य

  
(अरुण कुमार भट्ट)  
अध्यक्ष



# राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, म.प्र.

(पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार)

पर्यावरण नियोजन एवं समन्वय संगठन

पर्यावरण परिसर, ई-5, अरेरा कॉलोनी

भोपाल-462016 (म.प्र.)

वेबसाइट- <http://www.mpseiaa.nic.in>

दूरभाष नं. - 0755-2466970, 2466859

फैक्स नं. - 0755-2462136

No: 1888 / SEIAA/2022

Date: 20/10/22

प्रति,

कलेक्टर

जिला - नर्मदापुरम (म.प्र.)

विषय: नवीन जिला सर्वेक्षण रिपोर्ट - नर्मदापुरम (रेत एवं अन्य गौण खनिज - रेत को छोड़कर)

संदर्भ: आपका पत्र क्र. 641, दिनांक 14/09/22 एवं 2289, दिनांक 12/09/22

राज्य स्तरीय समाघात निर्धारण प्राधिकरण द्वारा 751वीं बैठक दिनांक 14.10.2022 में निम्नानुसार निर्णय लिया गया :-

राज्य स्तरीय विशेषज्ञ मूल्यांकन समिति (SEAC) की 594वीं बैठक दिनांक 21/09/2022 में नर्मदापुरम (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) की जिला सर्वेक्षण रिपोर्ट में निम्नानुसार सुझाव सहित अनुशंसा की गई है।

".....समिति की अनुशंसा है कि नर्मदापुरम जिले की जिला सर्वेक्षण रिपोर्ट (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) अनुमोदन हेतु विचारार्थ एवं आगामी कार्यवाही हेतु राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण की ओर प्रेषित की जाये।"

राज्य स्तरीय समाघात निर्धारण प्राधिकरण (SEIAA) द्वारा विस्तृत चर्चा एवं विचार विमर्श उपरांत SEAC की 594वीं बैठक दिनांक 21/09/2022 की अनुशंसा को मान्य करते हुए नर्मदापुरम (रेत एवं अन्य गौण खनिज - रेत को छोड़कर) की जिला सर्वेक्षण रिपोर्ट का अनुमोदन SEAC द्वारा सुझाई गई उपरोक्त अनुशंसाओं के साथ किया जाता है। तदनुसार जिला कलेक्टर, नर्मदापुरम को जिला सर्वेक्षण रिपोर्ट जिला पोर्टल पर अपलोड करवाये जाने एवं संचालक भौमिकी तथा खनिकर्म को सूचित किया जाये।

उपरोक्त निर्णयानुसार कृपया अनुमोदित नवीन जिला सर्वेक्षण रिपोर्ट जिला पोर्टल पर अपलोड करने का कष्ट करें। सुलभ संदर्भ हेतु अनुमोदित नवीन जिला सर्वेक्षण रिपोर्ट की साफ्टकॉपी ई-मेल के माध्यम से आपकी ओर प्रेषित है।

(श्रीमन् शुक्ला)

सदस्य सचिव

क्र..

/SEIAA/2022 भोपाल

दिनांक

प्रतिलिपि :-

1. प्रमुख सचिव, म.प्र. शासन, पर्यावरण विभाग, मंत्रालय, भोपाल की ओर कृपया सूचनार्थ ।
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सदस्य सचिव