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Catchment Area Treatment Plan
for
Setting up of Saheed Laxman Nayak Small Hydro Electric
Project (25 MW)
by
M/s Meenakshi Power Odisha Private limited.
(Formerly -Sileru Power Generation Private Limited,
Hyderabad)

Village - Tentuligumma
Tahasil - Boipariguda
District - Koraput.



Prepared by
Divisional Forest Officer
Malkangiri Forest Division,
Malkangiri.

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**CATCHMENT AREA TREATMENT PLAN FOR SAHEED LAXMAN NAYAK SMALL HYDRO
ELECTRIC PROJECT IN VILLAGE TENTULIGUMMA BY M/S SILERU POWER
GENERATION PVT LIMITED, HYDERABAD.**

INTRODUCTION

M/s Meenakshi Odisha Power Private Limited (Formerly M/s Sileru Power Generation Private Limited, Hyderabad) has entered into M.O.U. with the Govt. of Odisha in 27th August, 2004 for setting up a Small Hydro Electric Project named Saheed Laxman Nayak SHEP (25 MW) near village Tentuligumma on River Kolab which has its potentiality to support to generate the said power without providing any pondage or reservoir. The Project will facilitate augmenting the power availability without submergence of forest land as the catchment area is much above the stream flow except rainy season

The said project will operate on Run-off of the River Scheme. 70% of the Run off (flowing water) will be directly diverted to the reservoir for generation of power leaving a 30 % to flow throughout the year in main River bed. The diverted water will pass through the channel. Mainly in rainy season the over flow of water from channel and used water before discharge to Jamjhorri River will pass through the catchment area will cause silting problem and soil erosion in downstream. Hence there is every possibility of further siltation of River which may hasten the duration of the project. Hence, a treatment Plan is required to restock the area with vegetation in gap areas.

As per the special condition on which the project submitted in Para 4 and 11 adequate measures will be taken up to prevent the entry of any wash out of soil or mud slurry into river system and prevention measures shall be taken for control of Soil erosion.

For the better working and longevity of the project, conservation of invaluable soil and vegetation, and increase in ground water level etc the closest area around the project site directly draining into the River system have been taken into account as the CATCHMENT AREA FOR TREATMENT spreading over 145.50 Ha on priority to check soil erosion to improve soil mixture regime and augmentation of ground water reserve and to reduce instant surface run-off to give sustain surface flow in Nallahs and tributaries.



Methodology for Identification of Land	A left side tributary on Kolab river about 8 km upstream of the project site is selected. The area with watershed boundary has been identified through satellite imagery.																					
Location of the treatment area	The above tributary is named as Sukna Jodi and the land categories of the watershed are shown in the satellite imagery map. Land Category/Land use <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Land Cover/Land use Category</th> <th>Area in Ha.</th> <th>% age</th> </tr> </thead> <tbody> <tr> <td>Crop Land(Khariff)</td> <td>73.99</td> <td>8.15</td> </tr> <tr> <td>Dense Forest</td> <td>61.30</td> <td>6.75</td> </tr> <tr> <td>Open Forest</td> <td>392.11</td> <td>43.17</td> </tr> <tr> <td>Scrub Forest</td> <td>235.22</td> <td>25.91</td> </tr> <tr> <td>Land with Scrub</td> <td>145.50</td> <td>16.02</td> </tr> <tr> <td>Total</td> <td>908.22</td> <td>100%</td> </tr> </tbody> </table>	Land Cover/Land use Category	Area in Ha.	% age	Crop Land(Khariff)	73.99	8.15	Dense Forest	61.30	6.75	Open Forest	392.11	43.17	Scrub Forest	235.22	25.91	Land with Scrub	145.50	16.02	Total	908.22	100%
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Prioritisation of treatment area	The area near project site is covered with good forest category. However the area categorised as "land with scrub" in the "Sukna Jodi " Watershed is prone to certain degree of erosion. Hence the area having "Land with Scrub" measuring 145.50 ha. is selected for treatment.																					
Treatment Period	4 Years(3 Years for Treatment + 1 year extended for maintenance)																					


Physical Target for areas

Captioned Area	Year	Treatment Area(ha)
A (Near the River Kolab)	1st	54.27
A (Near the River Kolab)	2nd	51.37
B (Near Water shed periphery)	3rd	39.86
Total		145.50 ha.

OBJECTIVES OF TREATMENT

The main objectives of the CAT plan are to:

- To Check further soil erosion in the forest floor



- To ensure adequate surface run-off in the rainy season into the reservoir and to improve soil mixture regime and augmentation of ground level in and around the reservoir.
- To ensure continuous surface flow in the Nallahs and streams thought the year.
- To reduce siltation in reservoir and downstream of the River in order to increase the life of the dam.

To achieve the above referred target the Catchment area should be treated with vegetative (enrichment *Agave* plantation) along the periphery of River Kolab with *Agave* plantation and Soil Conservation Measures like construction of Check Dams along the catchment area to check the rush off water in rainy season and gully plugging with stone packing and grass pitching on both banks of Tributary Jamjhor. And other two Nallahs. Emphasis shall be given to construct percolation Bunds (Loose Boulder Structures) as a part of Soil Conservation Work.

LAYOUT PLAN

The scheme is envisaged Run off River scheme with diversion of River Water 70% for power generation. Catchment area of River Kolab is a part of Archean Terrain Kolab Plateau which is sedimentary in origin. The physiographic units include hill, ridge, slope, plan mixing which are in the erosional phase. The major catchment area comes as moderate dense forest category.

STATUS OF SOIL EROSION.

It is noticed that every possibility of Soil erosion on the both banks of Jamjhor and other two Nallahs Running into River Kolab through the Catchment Area which requires to be treated with Stone packing with grass pitching on the both banks of River Jamjhor and other two small Nallah emerging from the catchment area to avoid soil erosion adjacent to River Banks which will also help to deplete substantial erosion of existing forest growth in Catchment area.

To check heavy rush off which is noticed amidst the existing forest cover some Loose Boulder Structure Dam (LBCD) are recommended to be constructed which will reduce run off and augment ground water level.

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During Rainy season it is noticed heavy run-off in the river causing flow of water to the catchment land and it is prescribed to plant Agave Plants along the River Bank Kolab 0.5 Km both side of the project site in 3 rows which will help to check rush of water and also help to sustain soil.

PROPOSED MEASURES.

As indicated above it is proposed to apply Catchment Area Treatment Plan as below:

1. Dry Stone packing along the both banks of 3 Nos Tributaries and Nallahs.

100 Mtr x 2 Sides x 3 Nallahs = 600 Mtr x 0.3 Mtr x 2 Mtr = 360 Cum @ 740/per Cum

: Rs 2, 66,400.00 ✓

2. Grass Pitching over 500 Sqmt. on the top of the bank of Nallahs/Tributaries

@ 100/- per Sqmt x 100 Sqmt

: Rs 50,000.00 ✓

3. Agave (Sisal) Plantation on the bank of Kolab River (Catchment Area Project Side) 0.5mtr (1.5 Mtr inter spacing) for 3 Rows.

2000 Nos per Row x 3 Rows = 6000 Nos @ 40/- with 3 Years maintenance

: Rs 2, 40,000.00 ✓

4. ANR (Silvicultural Operation) of standby moderate dense forest range

50 Ha x 20, MD x 150/-.

: Rs 1, 50,000.00 ✓

5. LBCD 8Mtr X (3 Mtr+1Mtr) X 1-5Mtr

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= 24 Cum X 10 Nos

=240 Cum.

6. LBCD 8 Mtr X (4 Mtr+1 Mtr) X 2.0 Mtr

=50 Cum X 5 Nos

=250 Cum

490 cum @ 740/- :Rs 3,62,600.00 ✓

Grand Total

= Rs 10, 69,000.00 ✓ *checked*

CONCLUSION:

There would be a Joint Forest Management (JFM) by involving Villagers/VSS members for smooth execution of all JFM activities as per relevant resolution. This will ensure peoples' participation in economical, quick, qualitative endeavor and sustainable treatment of the Catchment Area.

Counter Sign.

[Signature]
Divisional Forest Officer,

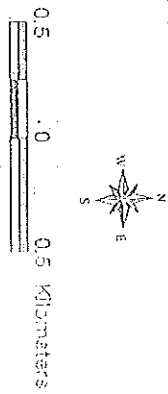
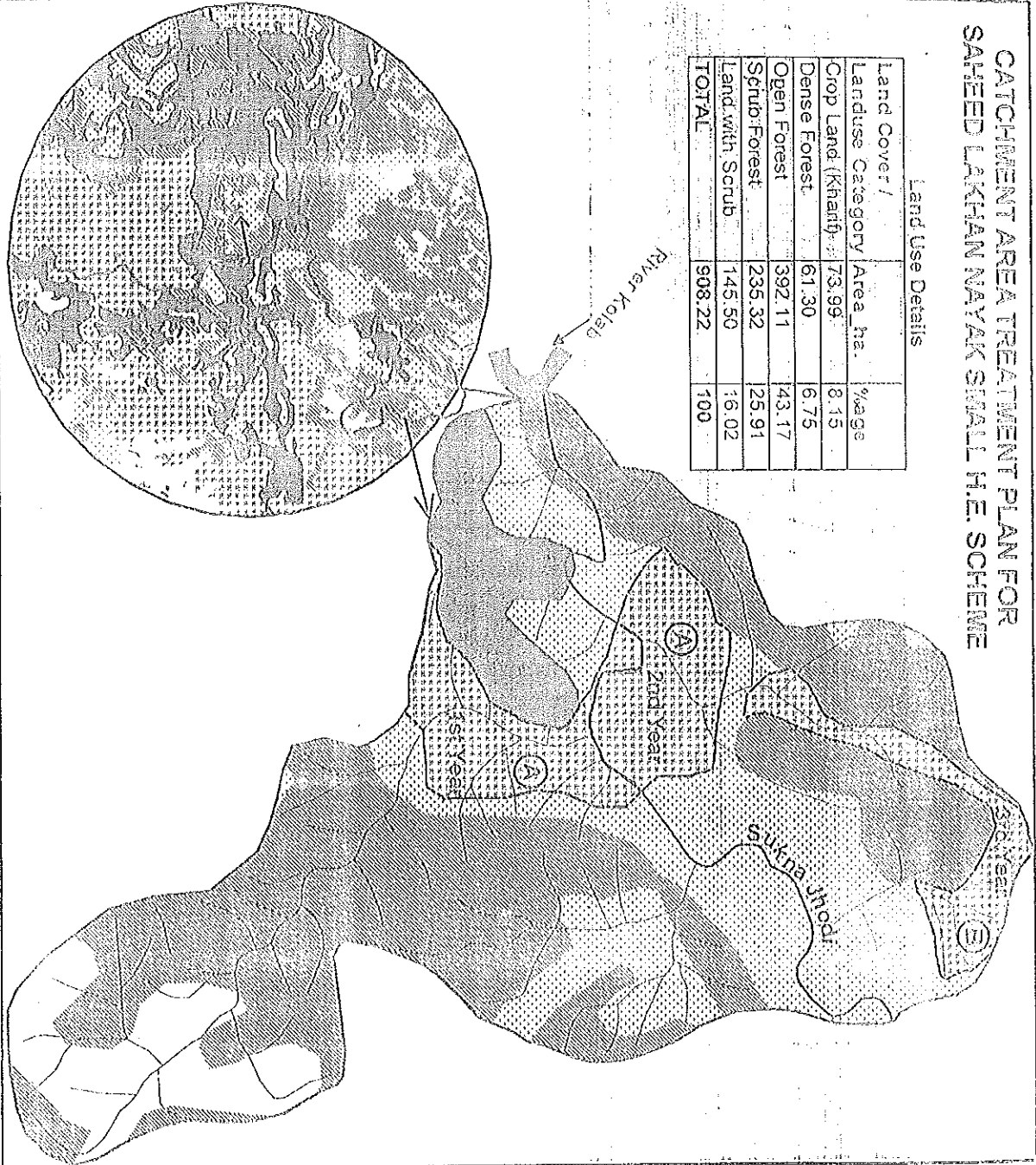
Malkangiri Forest Division.
Malkangiri Forest Division
Malkangiri

[Signature]
Regional Chief Conservator of Forests
KORAPUT CIRCLE

**CATCHMENT AREA TREATMENT PLAN FOR
SAHEED LAKHAN NAYAK SMALL H.E. SCHEME**

Land Use Details

Land Cover / Landuse Category	Area, ha.	%age
Crop Land (Kharif)	73.99	8.15
Dense Forest	61.30	6.75
Open Forest	392.11	43.17
Scrub Forest	235.32	25.91
Land with Scrub	145.50	16.02
TOTAL	908.22	100



LEGEND

[Pattern]	Crop Land (Kharif)
[Pattern]	Dense Forest
[Pattern]	Open Forest
[Pattern]	Scrub Forest
[Pattern]	Land with Scrub
[Symbol]	Watershed Boundary

**Treatment Schedule for CAT PLAN
of Saheed Lakhan Nayak
Small H.E. Scheme**

Physical Target For
Land with Scrub - Caption A & B

Captioned Area	Year	Treatment Area
A	1st	34.27 ha.
A	2nd	51.37 ha.
B	3rd	39.36 ha.
Total Area		145.50 ha.

MKT ENGINEERING CONSULTANCY PVT. LTD.
SAMANTA VIHAR
CHANDRASEKHARPUR
BHUBANESHWAR

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OFFICE OF THE DIVISIONAL FOREST OFFICER, MALKANGIRI FOREST DIVISION, MALKANGIRI

Memo N- 1768/ 1F-2014

Dated, Malkangiri, the 2nd July, 2014.

To

The Addl.Principal Chief Conservator of Forests,
Forest Diversion & Nodal Officer, (F.C.Act)
O/o the Principal Chief Conservator of Forests,
Odisha, Bhubaneswar.

Sub:

Submission of Catchment Area Treatment Plan for Saheed Laxman Nayak SHEP (25 MW) by M/s Meenakshi Odisha Power Private limited (Formerly M/s Sileru Power Generation Private Limited) in village Tentuligumma, Tahsil-Boipariguda, Dist-Koraput.

(State Serial Number 75/2004)

In inviting a kind reference to the above cited subject the required "Catchment Area Treatment Plan" to treat the Catchment area of the for the Forest Diversion Proposal for Saheed Laxman Nayak SHEP by M/s Meenakshi Odisha Power Private Limited, Hyderabad (Formerly M/s Sileru Power Generation Private Limited) in village Tentuligumma, Tahsil-Boipariguda in Dist-Koraput, is submitted herewith for your kind perusal and for approval.

This is for favour of kind information and necessary action.

Divisional Forest Officer,
Malkangiri Forest Division. 2/7/14.

Encl:

Catchment Area Treatment Plan
In duplicate.

Memo No- 1769/ 1F- 2014

Dated- 02 /7/2014.

Copy along with a copy of above Catchment Area Treatment Plan forwarded to the Regional Chief Conservator of Forests, Koraput Circle, Koraput for favour of kind information and necessary action with reference to his memo no 2121 dated 19/6/2014.

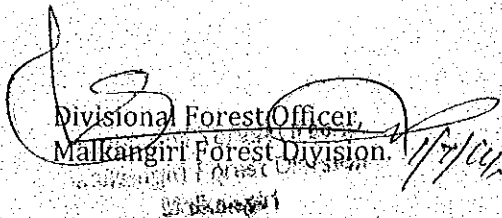
Divisional Forest Officer,
Malkangiri Forest Division. 2/7/14.

UNDERTAKING

I B.Srinivas S/o B.Krishna Murthy aged 40 years Director of M/S. Sileru Power Generation Private Limited having it's registered office at 109, Royal Courts, Road no 11, Banjara hills Hyderabad-500034 herby give this undertaking on behalf of the company that we will bear the cost of Catchment Area Treatment Plan as per the scheme prepared by the State Government. We will be depositing the required amount as and when demanded by the government.

I do her by undertake to pay cost of CATP as would be assessed by the State Government.

Signed on this the 24th of June 2014.


Divisional Forest Officer,
Malkangiri Forest Division.
Malkangiri

Meeenakshi

Meenakshi Odisha Power Private. Limited.

(Formerly: Sileru Power Generation Pvt. Ltd.)

Register Office : # 119, Road No. 10, Jubilee Hills, Hyderabad - 500 033, A.P, India.

Tel : +91 40 2335 8111, 6733 1234, Fax : +91 40 2335 1133

e-mail : info@meenakshigroup.com

Url : www.meenakshigroup.com