

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे

South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in



STD :07815 275430(O)

: 7815 275032(R)

Fax :07815 275434

email :gevraenvt@gmail.com

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**

P.O. : GEVRA PROJECT

Distt.: Korba (C.G.)

Pin: 495452

S.No	Submission Details	Page No.
1.	3 points Query Raised by Nodal Officer on 07.02.2020, Reply made on 10.02.2019 by User Agency.	2 to 32
2.	14 points Query Raised by Nodal Officer on 07.09.2019, Reply made on 05.10.2019 along with updated Stage I condition compliance By User Agency	33 to 363
3.	Stage I condition compliance submission 18.07.2018. Uploaded on site 25.08.2018	364 to 448

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पिन:495452

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2020 / 428

दिनांक 10/02/2020

To

वन मंडलाधिकारी,
कटघोरा वन मंडल,
कटघोरा, छत्तीसगढ़।

SUB, Diversion of 112.385 Ha. of Revenue Forest Land for Gevra Opencast Mine (OCM) in Katghora Forest Range, District -Korba Chhattisgarh in favour of SECL Chhattisgarh. Registration no. FP/CG/MIN/13199/2015

REF. संदर्भ :- क./भू-प्रबंध/खनिज/331-215/295 रायपुर दिनांक 07/02/2020

Dear Sir

Please find below the point wise reply.

1. क्षतिपूर्ति वृक्षारोपण का विवरण निम्नानुसार है:-

वृक्षारोपण क्षेत्र	वनमण्डल	परिक्षेत्र	वनखण्ड	वनक्षेत्र Ha.	वृक्षारोपण योग्य रकबा Ha.	कितना पौधा लगायेंगे (नग में)	अनुमानित व्यय (लाख में)
Lodibahra	Katghora	Jatga	P 273 P274	587.24	*226	565000 nos.	1233.18482
Jinpuri	Katghora	Kendai	P318	225.925	83	55802 nos.	602.80244
				Total	309	112302 nos.	1835.98726

I. The above data is as per the Project Report of CA, provided by Forest Department. Copy Enclosed as Annex I.

*Out of 226 Ha. CA land provided by DFO Katghora/ Forest Department it was found that 83 Ha. Land was not suitable to be considered for CA. This was communicated through condition no. III

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of 112.385 Ha. Stage I FC, which states "On examination of Compensatory Afforestation land on Google Satellite Imagery and DSS tools, it is found that 30 ha area is having dense vegetation and 53 ha land seems to be under encroachment. State Government shall exclude the land under encroachment and very dense vegetation from the proposed CA area and additional degraded forest land which is free from encumbrances/encroachment and degraded shall be selected prior to stage II approval. The land shall be analysed through DSS at state level prior to submission to MoEF&CC for consideration. State Government shall submit DSS analysis report along with the compliance of this condition".

Accordingly DFO Katghora allotted 83 ha. degraded Forest Land for CA at Kendai.

2. Plantation Scheme & Site Suitability Certificate is incorporated in the Project Report of CA Enclosed as Annex 1. The Project report of CA, KML File & shape File of Jatga (226 Ha.) was uploaded by DFO Katghora /Forest Department in Part II & is available in the website. The Project report of CA, KML File & shape File of Kendai (83 Ha.) has to be uploaded by DFO Katghora /Forest Department in Part II. (KML file & Shape file for 83 Ha. CA land at Kendai provided in CD for necessary action).
3. Vachan Patra for condition no. V is enclosed as Annex 2

This is for your kind information.

Thanking You

Yours Sincerely

General Manager

SECL Gevra Area

प्रतिलिपि :

1. अपर प्रधान मुख्य वनसंरक्षक, (भू - प्रबंध), रायपुर छत्तीसगढ़
2. मुख्य वन संरक्षक बिलासपुर वृत्त, बिलासपुर छत्तीसगढ़।



छत्तीसगढ़ शासन वन विभाग

परियोजना प्रतिवेदन
कटघोरा वनमण्डल कटघोरा
सिंचित साल वृक्षारोपण

वर्ष : 2016-17 से 2025-26 तक = 10 वर्ष

1	बजट मद	-	
2	कार्य का नाम	-	सिंचित साल वृक्षारोपण
3	स्थल का नाम	-	लोडीबहरा
5	कक्ष क्रमांक	-	P 273, P 274
6	कुल रकबा (हे.में.)	-	587.240
8	प्रस्तावित क्षेत्र (हे.में.)	-	226.000
9	परिसर का नाम	-	बासीन
10	परिक्षेत्र सहायक वृत्त का नाम	-	जटगा पश्चिम
11	वन परिक्षेत्र	-	जटगा
12	ग्राम पंचायत	-	मातिन
13	विकास खण्ड	-	पोड़ी उपरोड़ा
14	विधान सभा	-	पाली-तानाखार
15	वृत्त	-	बिलासपुर
16	जिला	-	कोरवा
17	रोपित पौधा की संख्या	-	565000
18	अनुमानित कुल व्यय	-	123318482.00
19	प्रति हेक्टेयर कुल व्यय	-	545657.00

20 घनत्व

झाड़ी एवं बेलों प्रजाति के पौधे, कोरिया, भिरहा, एवं वन तुलसा, घास उगे हुए हैं इस वजह से वैजिटेसन मैप में अधिक घनत्व पेज दिखाई देते हैं। वास्तव में केवल 04 घनत्व के जंगल हैं।

जी.पी.एस.को-आर्डिनेट

P273

N 22 44'57.63 E082 23'12.29
N 22 44'48.90 E082 24'02.39
N 22 44'29.66 E082 23'12.55
N 22 44'27.32 E082 23'52.18

P274

N 22 45'25.10 E082 24'30.83
N 22 44'47.48 E082 24'58.68
N 22 44'36.70 E082 24'44.73

परिक्षेत्र अधिकारी का प्रमाण पत्र

मैं एम.एस.मरकाम वन परिक्षेत्र अधिकारी, जटगा परिक्षेत्र कटघोरा वनमंडल प्रमाणित करता हूँ कि परियोजना के लिए आवेदित वन भूमि के बदले क्षतिपूर्ति रोपण के रूप में प्रस्तावित सिंचित साल रोपण नवापारा, पी 273 एवं पी 274 के कुल र. 226.000 हे. के परियोजना प्रतिवेदन में दर्शित समस्त तथ्यों का परीक्षण मेरे द्वारा किया गया है तथा परियोजना प्रतिवेदन में दर्शाये गये उपचार कार्यों के विवरण एवं मात्रा स्थल की आवश्यकता के अनुरूप पाया गया तथा इससे मैं तकनीकी/वानिकी के दृष्टिकोण से सहमत हूँ।

हस्ताक्षर

नाम : एम.एस.मरकाम
परिक्षेत्र अधिकारी जटगा

उप वनमंडलाधिकारी का प्रमाण पत्र

मैं प्रेमलता यादव उप वनमंडलाधिकारी कटघोरा 'कटघोरा' वनमंडल प्रमाणित करती हूँ कि गोवरा ओपन काष्ठ माइनिंग हेतु प्रस्तावित वन भूमि 112.385 हे. के बदले क्षतिपूर्ति रोपण के रूप में प्रस्तावित सिंचित साल रोपण नवापारा पी 273 एवं पी 274 के कुल रकबा 226.000 हे. के परियोजना प्रतिवेदन में दर्शित समस्त तथ्यों का परीक्षण मेरे द्वारा किया गया है तथा परियोजना प्रतिवेदन में दर्शाए गए उपचार कार्यों का विवरण एवं मात्रा स्थल की आवश्यकता के अनुरूप होना पाया। मैं इस परियोजना प्रतिवेदन से सहमत हूँ तथा कार्य कराए जाने की अनुशंसा करती हूँ।

हस्ताक्षर

नाम : प्रेमलता यादव
उप वनमंडलाधिकारी, कटघोरा

प्राक्कलन

सिंचित साल वृक्षारोपण का परियोजना प्रतिवेदन

कार्य स्थल - जोशीबहरा

कक्ष क्रमांक : P 273 & P 274

कार्य योग्य रकबा : 226.00 हे.

मजदूरी दर : 235.00 प्रति मादि

वनमंडल :- कटघोरा

वन परिक्षेत्र - जटगा

प्रथम वर्ष (तैयारी) 2016 - 17

अ.क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मादि.	राशि(रु.)
1	2	3	4	5	6	7
1	रोपण स्थल का सर्वेक्षण एवं सीमांकन कार्य, उपचार मानचित्र एवं प्रोजेक्ट रिपोर्ट क्षेत्र तैयार	226.000	हे	प्र.हे.	470.00	106220.00
2	क्षेत्र की सफाई एवं सी.बी.ओ. कार्य (विरल जड़ भण्डार)	85.000	र.मी	मा.दि./र.मी.	5.00	425.00
3	स्टेकिंग कार्य 2X2 मी. अंतराल में (2.75 मा.दि. प्रति हजार)	565000.000	नग	मा.दि./ह	2.75	1553.75
4	फेंसिंग कार्य -					
	1. आयरन एंगल फेंसिंग पोस्ट कट कराना 2.00 मी. लम्बाई 3X3 मी. के अन्तराल पर प्रत्येक 10 पर 1 स्ट्रेनर पोस्ट	7910.000	नग	प्रतिनग	900.00	7119000.00
	2. चैनलिक फेंसिंग तार कट कराना	110172.260	किग्रा	प्रति किग्रा.	77.70	8560385.00
	3. फेंसिंग हेतु गड्ढा खुदाई कार्य	7910.000	नग	मा.दि./सै.	3.00	237.30
	4. फेंसिंग पोस्ट गड़ाने एवं फिक्स करने के उद्देश्य से 20 मिमी. गिट्टी की सहायता से 1:3:6 अनुपात में सीमेंट कांकीट तैयार करना (प्रति पोस्ट $M^3 0.032$) = 253.12 घ.मी.	7910.000	नग	प्रति नग	2616.70	662339.00
	5. बिन्दु क्र. (4) में निर्मित कांकीट की सहायता से फिक्सिंग, बाइंडिंग वायर खींचकर लगाना एवं प्रतले कंटीली झाड़ियों से नीचे की दो कतारों में जाली बनाना	14690.000	र.मी	प्रति र.मी	0.25	3672.50
5	गड्ढों की खुदाई कार्य 30x30x30 से.मी साइज काडी गिट्टी में (क्षेत्र में 60 प्रतिशत काडी गिट्टी)	565000.000	नग	प्र.सै	3.00	16950.00

6	कम्पोस्ट/गोबर खाद का परिवहन सहित (1/4 भाग) 0.30x0.30x0.30 0.0270 m ³ x(1/4)= 0.00675 = 2500 = 16.88 cum	3814.880	घ.मी.	प्रति घ.मी.	1000.00		3814880.00
7	गड्डो में मिट्टी खाद का मिश्रण भरना	565000.000	नग	प्र.नग	1.54		870100.00
8	रोपणी व्यय - 10 प्रतिशत अतिरिक्त तैयारी सहित	621500.000	नग	प्रति नग	15.00		9322500.00
9	रोपण स्थल तक पौधा दुलाई वाहन से 20 कि.मी. दूरी	621500.000	पौधा	प्रति सैकड़ा	156.00		969540.00
10	रोपण स्थल तक पौधा दुलाई सिस्त्रोडॉ 500 मी. से	565000.000	पौधा	मा.दि./सै.	0.25	1412.50	331937.00
11	पौधा रोपण कार्य (न्यूनतम 2 फिट ऊँचाई का पौधा)	565000.000	पौधा	मा.दि./सै.	1.65	9322.50	2190787.00
12	जैविक रसायनिक खाद काय -						
	1. फोरेट 10 ग्राम प्रति पौधा रोपण के समय	5650.000	किग्रा.	प्र किग्रा.	152.00		858800.00
	2.सुपर फास्फेट 50 ग्राम प्रति पौधा रोपण के समय	28250.000	किग्रा.	प्र किग्रा.	13.00		367250.00
	3.यूरिया 50 ग्राम प्रति पौधा निदाई के समय	28250.000	किग्रा.	प्र किग्रा.	11.00		310750.00
	4 कीटनाशक - Monochrotophos / Malathion काय (आवश्यकतानुसार)	226.000	हे.	प्र हे.	853.00		192778.00
13	1. निदाई कार्य - प्रथम निदाई रोपण की 15 दिन पश्चात 1 मी. व्यास में (1.20 मा.दि. प्रति सैकड़ा)	565000.000	पौधा	मा.दि./सै.	1.10	6215.00	1460525.00
14	सुरक्षा 2 माह (10 हे. में 01 चौकीदार) दो माह के लिए = 22 चौकीदार	226.000				L.S.	53110.00
15	सिंचाई 2 माह तक	226.000	पौधा	प्रति पौधा	1298.00		293348.00
16	बाढ़ सिंचाई (Flood irrigation) (GI/VC pipe) दसूबयेल सहित इरिगेशन दसूब बेल विद्युत कनेक्शन सहित (4 नग)	226.000	हे			L.S.	20715000.00
17	अन्य आकस्मिक व्यय - बोर्ड एवं गेट लगाना इत्यादि	226.000	हे			L.S.	1267512.00
	योग						64833819.00

अ.क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	इकाई	दर	कुल मादि.	राशि(रु.)	
1	2	3	4	5		7	
1	1 निदाई कार्य - प्रथम निदाई रोपण की 15 दिन पश्चात 1 मीटर व्यास में (1.10 मा.दि.प्रति सैकड़ा)	565000	पौधा	मा.दि.प्र.सै.	1.10	6215.00	1460525.00
	1 द्वितीय निदाई - 1 मीटर चौड़ी पट्टी में एक माह बाद (1.20 मा.दि. प्रति सैकड़ा)	565000	पौधा	मा.दि.प्र.सै.	1.20	6780.00	1593300.00
	1 तृतीय निदाई - निदाई गुड़ाई धाला निर्माण (माह सितम्बर में)	565000	पौधा	मा.दि.प्र.सै.	1.10	6215.00	1460525.00
2	जैविक/रासायनिक खाद एवं कीटनाशक क्रय	226.000	हे	प्रति हे.		LS	3107393.00
3	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20		1880854.00
4	सिंचाई 6 माह तक (बिजली बिल सहित)	226.000	हे	प्रति हे.	9680.00		2187680.00
5	अन्य अकारिमिक व्यय - अग्नि सुरक्षा, फेसिंग मरम्मत गोबर खाद क्रय आदि	226.000					1218501.00
	योग						12908778.00

तृतीय वर्ष 2018 - 2019

अ.क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	इकाई	दर	कुल मादि.	राशि(रु.)	
1	2	3	4	5		7	
1	1 निदाई कार्य - एक मीटर व्यास में निदाई गुड़ाई (1.10 मा.दि.प्रति सैकड़ा)	565000	पौधा	मा.दि.प्र.सै.	1.10	6215.00	1460525.00
2	जैविक/रासायनिक खाद एवं कीटनाशक क्रय	565000	पौधा	प्रति पौधा	1.80		1017000.00
3	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20		1880854.00
4	सिंचाई 6 माह तक (बिजली बिल सहित)	226.000	हे	प्रति हे.		LS	1923950.00
5	अन्य अकारिमिक व्यय - अग्नि सुरक्षा, फेसिंग मरम्मत गोबर खाद क्रय आदि	226.000				LS	449067.00
	योग						6731396.00

चतुर्थ वर्ष 2019 - 2020

अ.क.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि(रु.)
1	2	3	4	5		7
1	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
2	सिंचाई 6 माह तक (विजली बिल सहित)	226.000	हे.	प्रति हे.	9000.00	2034000.00
3	अन्य अकारिमिक व्यय - अग्नि सुरक्षा, फेसिंग मरम्मत आदि	226.000	हे.	प्रति हे.		475592.00
4	यांत्रिक विरलन कार्य	226.000	हे	प्रति हे.		293351.00
योग						4683797.00

पंचम वर्ष 2020 - 2021

अ.क.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि(रु.)
1	2	3	4	5		7
1	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
	अन्य अकारिमिक व्यय - अग्नि सुरक्षा, फेसिंग मरम्मत आदि	226.000	हे.	प्रति हे.		213772.00
योग						2094626.00

षष्ठम वर्ष 2021 - 2022

अ.क.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि(रु.)
1	2	3	4	5		7
1	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
	अन्य अकारिमिक व्यय - अग्नि सुरक्षा, फेसिंग मरम्मत आदि	226.000	हे	प्रति हे.		213772.00
योग						2094626.00

साप्तम वर्ष 2022 - 2023

अ.क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि(रु.)
1	2	3	4	5		7
1	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
	अन्य अकारिमक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत आदि	226.000	हे.	प्रति हे.		106886.00
	योग				L.S	1987740.00

अष्टम वर्ष 2023 - 2024

अ.क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि(रु.)
1	2	3	4	5		7
1	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
	अन्य अकारिमक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत आदि	226.000	हे.	प्रति हे.		106886.00
	योग				L.S	1987740.00

नवम वर्ष 2024 - 2025

अ.क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि(रु.)
1	2	3	4	5		7
1	सुरक्षा 12 माह - (10 हे. में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
2	अन्य अकारिमक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत आदि	226.000	हे.	प्रति हे.		106886.00
	योग				L.S	1987740.00

दशम वर्ष 2025 - 2026

क्र.सं.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा. दि.	राशि(रु.)
1	2	3	4	5		7
1	सुस्ता 12 माह - (10 हे में एक चौकीदार) वन प्रबंधन समिति के माध्यम से)= 22 चौकीदार 12 माह	226.000	हे	प्रति हे.	32.20	1880854.00
	अन्य अकारिमिक व्यय - अग्नि सुरक्षा, फंसिंग मरम्मत आदि	226.000	हे	प्रति हे.		106886.00
	योग					1987740.00

गोशवारा

क्र.सं.	वर्ष	रकबा	कुल व्यय	दर वृद्धि प्रति वर्ष 10 %	दर वृद्धि के बाद कुल व्यय
1	प्रथम वर्ष (तैयारी) 2016-17	226.000	64833819.000	10%	71317200.000
2	द्वितीय वर्ष 2017-18	226.000	12908778.000	20%	15490534.000
3	तृतीय वर्ष 2018-19	226.000	6731396.000	30%	8750815.000
4	चतुर्थ वर्ष 2019-20	226.000	4683797.000	40%	6557316.000
5	पंचम वर्ष 2020-21	226.000	2094626.000	50%	3141939.000
6	षष्ठम वर्ष 2021-22	226.000	2094626.000	60%	3351402.000
7	सप्तम वर्ष 2022-23	226.000	1987740.000	70%	3379158.000
8	अष्टम वर्ष 2023-24	226.000	1987740.000	80%	3577932.000
9	नवम वर्ष 2024-25	226.000	1987740.000	90%	3776706.000
10	दशम वर्ष 2025-26	226.000	1987740.000	100%	3975480.000
		226.000	101298002.000		123318482.000

प्रति हे. व्यय - 546657

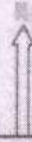
वनमंडलाधिकारी
कटघोरा

वनमंडलाधिकारी
कटघोरा वनमंडल कटघोरा

वन परिपालक अधिकारी
जटगा

संनिधि मानचित्र

कूप क्र. _____ वृक्षारोपण कार्य
कक्ष क्र. - पी ...273..... कार्य योग्य र. ...226 हैं.



Scale - 1:15000



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परिक्षेत्र सहायक
जटणा परिक्षेत्र

[Signature]

परिक्षेत्र सहायक
जटणा परिक्षेत्र

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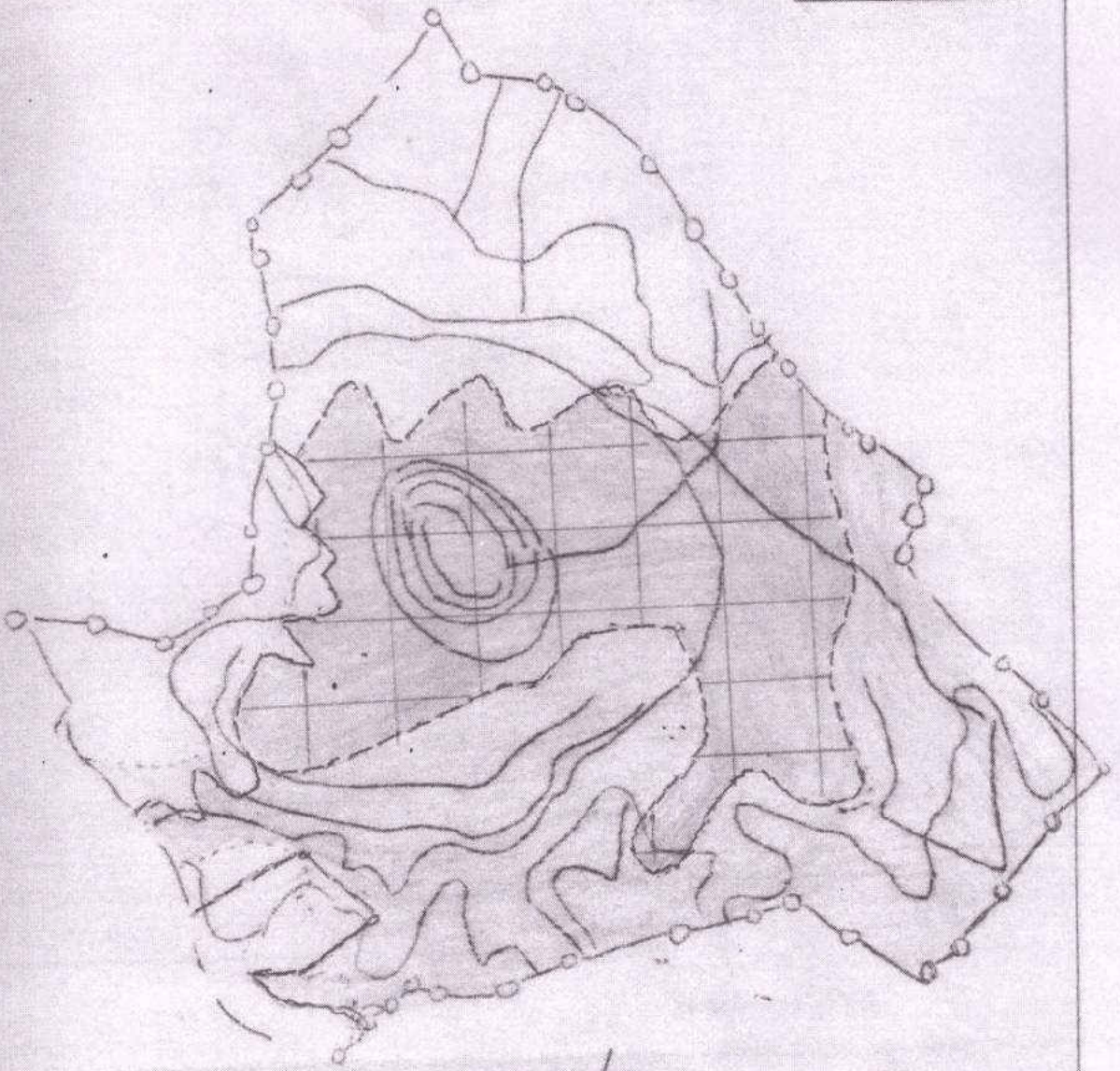
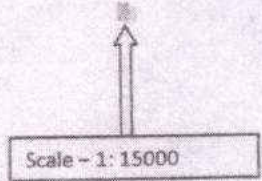
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जटणा परिक्षेत्र

संकेत

- | | | |
|----|----------------------------|----------------------|
| 1. | कक्ष की सीमा : | -o-o-o- |
| 2. | कूप की सीमा : | - - - - - |
| 3. | नदी-नाले : | |
| 4. | मार्ग : | : : : : : : |
| 5. | संनिधि की गुणवत्ता श्रेणी: | IV |
| 6. | संनिधि की आयु | <input type="text"/> |

संनिधि मानचित्र

कूप क्र. ————— पुनर्स्थापना कार्य
 कक्ष क्र. - पी ...274..... कार्य योग्य र. ...226 हैं.



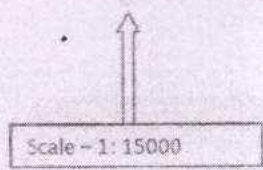
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 जल विभाग

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 जल विभाग

(Signature)
 जल परिक्षेत्र अधिकारी
 जल विभाग

संकेत	
1. कक्ष की सीमा :	-o-o-o-
2. कूप की सीमा :	- - - - -
3. नदी-नाले :	
4. मार्ग :	: : : : :
5. संनिधि की गुणवत्ता श्रेणी:	IV
6. संनिधि की आयु	

वर्तमान सन्धि मानचित्र
 कूप क्र. ————— वृक्षारोपण कार्य
 कक्ष क्र. — पी 273..... कार्य योग्य र. 226 हे.



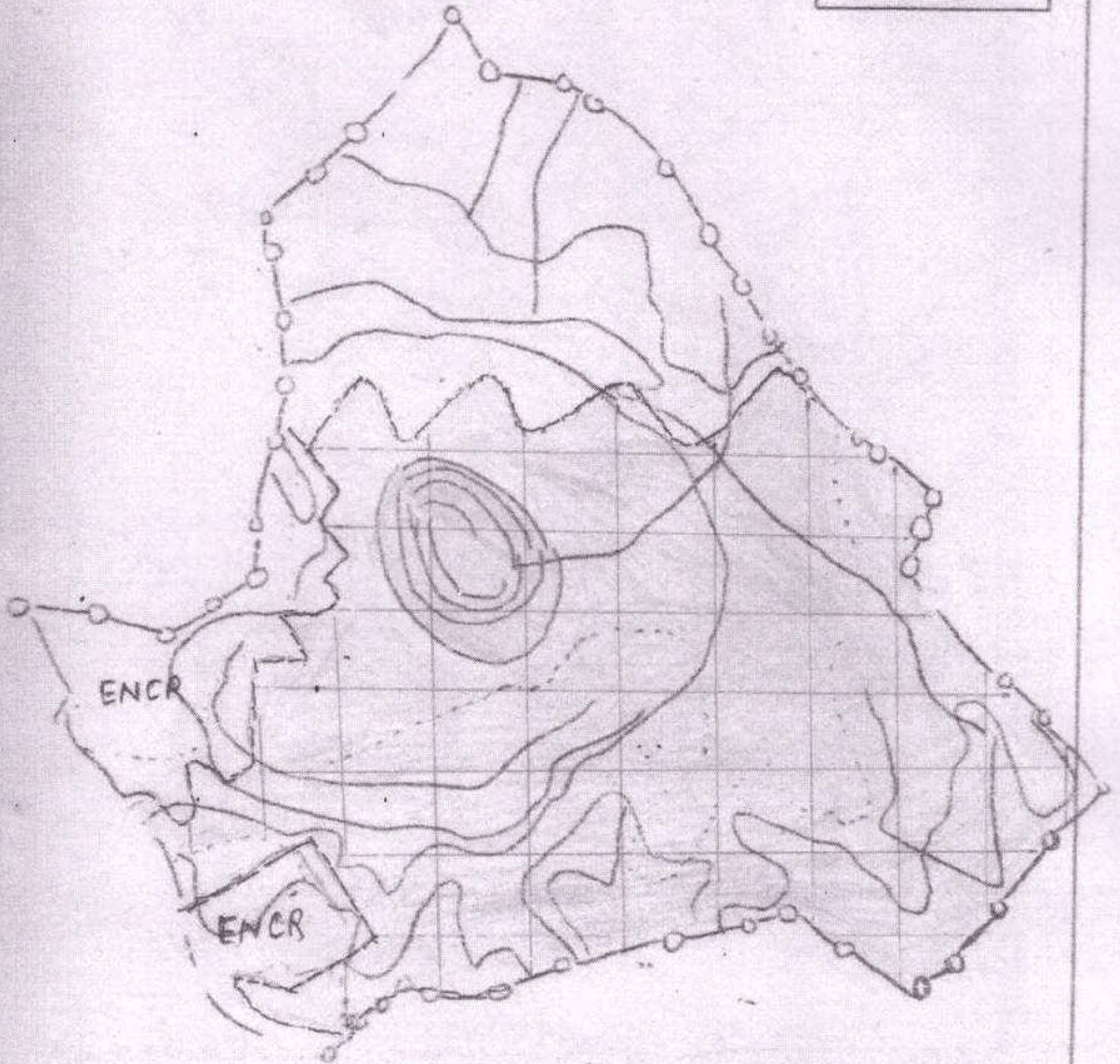
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 जटणा पश्चिम

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 वन परिक्षेत्र अधिकारी
 जटणा पश्चिम

संकेत	
1. कक्ष की सीमा :	-0-0-0-
2. कूप की सीमा :	-----
3. नदी-नाले :	
4. मार्ग :	:: :: :: :: ::
5. सन्धि की गुणवत्ता श्रेणी:	IV
6. सन्धि की आयु	

पलेभान-सनिधि मानचित्र
 कूप क्र. _____ पुनर्स्थापना कार्य
 कक्ष क्र. - पी 274 कार्य योग्य र. 226 हैं.

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 Scale - 1: 15000



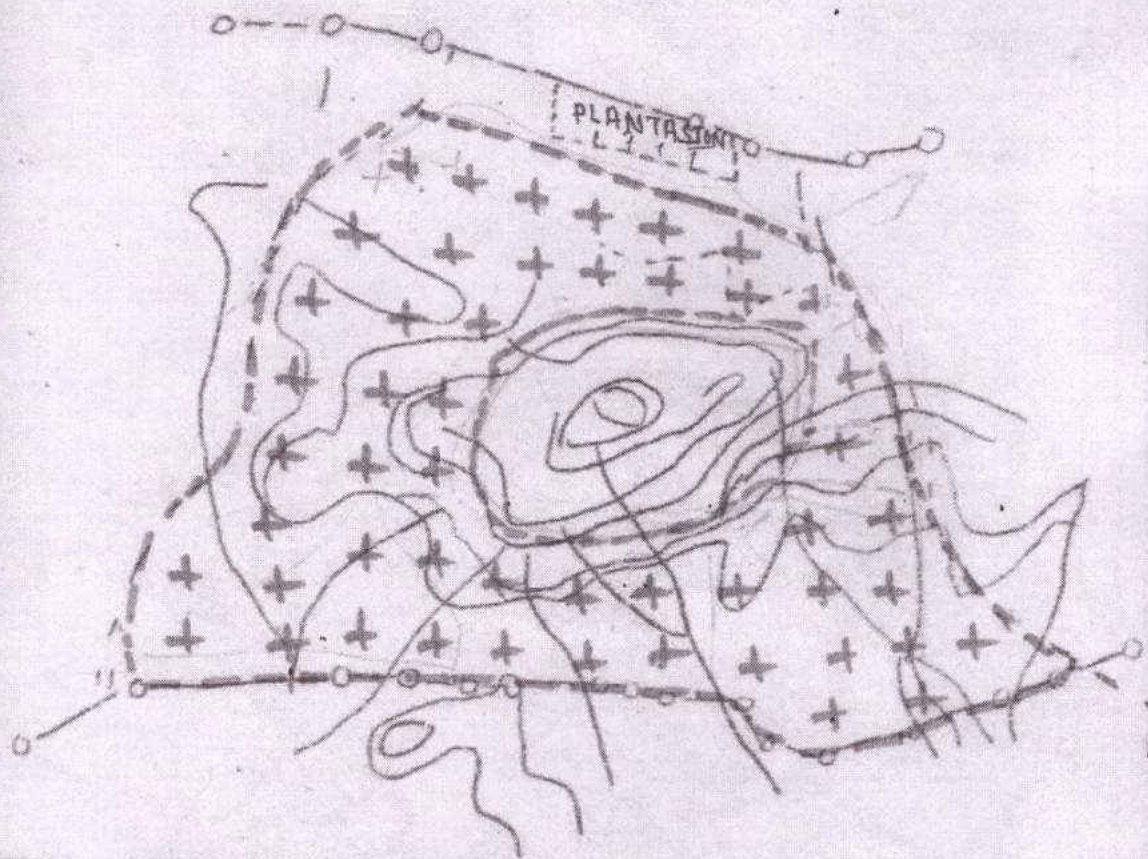
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 धरिक्षेत्र सहायक
 जटगा पश्चिम

[Signature]
 वन धरिक्षेत्र अधिकारी
 जटगा धरिक्षेत्र

संकेत		
1. कक्ष की सीमा :	-o-o-o-	
2. कूप की सीमा :	- - - - -	
3. नदी-नाले :		
4. मार्ग :	: : : : : :	
5. सनिधि की गुणवत्ता श्रेणी:	<table border="1"><tr><td>IV</td></tr></table>	IV
IV		
6. सनिधि की आयु	<table border="1"><tr><td> </td></tr></table>	

उपचार मानचित्र
 कूप क्र. वृक्षारोपण कार्यवृत्त
 कक्ष क्र. - पी 273 कार्य योग्य र. 226 हे.

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 Scale - 1: 15000



[Signature]
 परिक्षेत्र सहायक
 जटणा परिक्षेत्र

[Signature]
 वन परिक्षेत्र अधिकारी
 जटणा परिक्षेत्र

संकेत

1. कक्ष की सीमा :	-o-o-o-
2. कूप की सीमा :	-----
3. नदी-नाले में :	
प्रस्तावित क्षेत्र :	
4. मार्ग :	::: ::: :::
5. कार्य योग्य क्षेत्र :	
6. कार्य अयोग्य क्षेत्र :	

22 45 24.12 N 82 41 41.60 E

P 274

22°44'57.63"N 82°23'12.29"E p

22°44'48.90"N 82°24'2.39"E

22°44'47.48"N 82°24'58.68"E

P 273

22°44'36.70"N 82°24'44.73"E

Betalo

29.66°N 82°23'12.55"E p

22°44'27.32"N 82°23'52.18"E p

© 2016 Google

Imag © 2016 CNES/Airbus

22°44'48.58"N 82°24'08.25"E elev 480 m

Dec 31, 2013

का परिशिष्ट अधिकारी

काठमाडौं

GO



छत्तीसगढ़ शासन वन विभाग

परियोजना प्रतिवेदन

गेवरा ओपन कास्ट परियोजना 112.385 हे. हेतु व्यपवर्तन प्रस्ताव में क्षतिपूर्ति वृक्षारोपण कार्य

क्षतिपूर्ति वनीकरण योजनाअंतर्गत उच्च तकनीकी (सिंचित) वृक्षारोपण

कक्ष क्रमांक	:-	P 318	झिनपुरी
कूप का कुल रकबा	:-	225.925	हे.
प्रस्तावित रकबा	:-	83.000	हे.
लागत	:-	60280244.00	
परियोजना अवधि	:-	वर्ष 2018-19 से 2027-28 तक	
वन परिक्षेत्र	:-	केन्दई	

वन परिक्षेत्र : केन्दई


वनमंडल : कटघोरा


उपयुक्तता प्रमाण पत्र


क्षतिपूर्ति वनीकरण योजनाअंतर्गत उच्च तकनीकी (सिंचित) वृक्षारोपण कार्य

गेवरा ओपन कास्ट परियोजना 112.385 हे. हेतु व्यपवर्तन प्रस्ताव क्षतिपूर्ति वृक्षारोपण कार्य

प्रमाणित किया जाता है कि प्रभावित वनभूमि के बदले क्षतिपूर्ति वनीकरण हेतु वन परिक्षेत्र केन्दई के कक्ष क्रमांक पी. 318 में रकबा 83.000 हे. वनक्षेत्र का चयन किया गया है। उक्त क्षेत्र में भूमि स्थिति, जलवायु एवं विभिन्न प्रजातियों के जड़ भण्डार की स्थिति से रोपण हेतु उपयुक्त है एवं अतिक्रमण से मुक्त है।


उप वनमंडलाधिकारी,
कटघोरा


वन परिक्षेत्राधिकारी
केन्दई


वनमण्डलाधिकारी
कटघोरा वनमण्डल, कटघोरा

परियोजना प्रतिवेदन

शक्तिपूर्ति बनीकरण अंतर्गत उच्च तकनीकी (सिंचित) वृक्षारोपण

क्र. सं. पी. 318

नं. परिक्षेत्र :- केन्द्रीय

कक्षा का कुल रकबा - 225.925 हे.

कार्य योग्य रकबा - 83.00 हे.

प्रचलित मजदूरी की दर :-

83.000

312.00 MD

वनमंडल :- कटघोरा

उपखण्ड :- कटघोरा

प्रथम वर्ष 2018-19

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि
1.	2	3	4	5	6	7
1	क्षेत्र का सर्वेक्षण, सीमांकन, उपचार मानचित्र तथा प्रोजेक्ट तैयार करना	83.000 हे.	मा.दि.प्र.हे.	2.00	166.00	51792.00
2	क्षेत्र सफाई कार्य एवं सी.बी.ओ. कार्य	83.000 हे.	मा.दि.प्र.हे.	10.00	830.00	258960.00
3	स्टेकिंग कार्य (3x3) mtr. अंतराल में खुटी बनाई डुलाई, गुड़ाई सहित	55802 खूटा	मा.दि.प्र.ह.	3.50	195	60936.00
4	क्षेत्र की सुरक्षा हेतु:- कटीले तार से फेंसिंग					
	1- सीमेंट फेंसिंग पोस्ट कय करना 2 मी. लम्बाई 2.50 मी. अंतराल पर 65/2.50=26 Pole +6 Supporting Pole = Pole	1992 नग	प्र.नग	206.35	0.00	411049.00
	2- बारबेड वायर कय करना	2305 कि.ग्रा.	प्र. कि.ग्रा.	67.00	0.00	154435.00
	3-तार-फेंसिंग-सीमेंट पोल फिक्सींग स्क्रैपर पोस्ट सहित (मय सामग्री) एवं तार खिचाई 5 पंक्ति+2 विकिंग लाईन -7 पंक्तियों में।	24383	मा.दि.प्र.मी.	0.25	6095.75	1901874.00
5	पौधा रोपण में गड्डा खूदाई कार्य 3x3 मीटर अंतराल पर 45x45x45 सें मी साईज का	55802 गड्डा	मा.दि.प्र.से.	6.00	3348.12	1044613.00
6.	कम्पोस्ट/ गोबर खाद्य परिवहन सहित (1/4 भाग करना) = 25 घनमीटर/प्रति हेक्टे.	2075.00 घ.मी.	प्र. घ.मी.	880.00	0.00	1826000.00
7	जैविक रासायनिक खाद्य कय					
	बोनमिल कय 50 ग्राम प्रति पौधा रोपण के समय	4150.00 कि.ग्रा.	प्र. कि.ग्रा.	20.00	0.00	83000.00
	नीमखली कय 50 ग्राम पौधा रोपण के समय	4150.00 कि.ग्रा.	प्र. कि.ग्रा.	20.00	0.00	83000.00
	फोरेट कय 10 ग्राम प्रति पौधा रोपण के समय	830.00 कि.ग्रा.	प्र. कि.ग्रा.	126.48	0.00	104978.00
	सूपर फास्फेट कय 50 ग्राम प्रति पौधा रोपण के समय	4150.00 कि.ग्रा.	प्र. कि.ग्रा.	10.20	0.00	42330.00
	यूरिया 50 ग्राम प्रति पौधा निंदाई के समय रोपण के समय	4150.00 कि.ग्रा.	प्र. कि.ग्रा.	8.00	0.00	33200.00
	वर्मी कम्पोस्ट 200 ग्राम प्रति पौधा	16600 कि.ग्रा.	प्र. कि.ग्रा.	10.20	0.00	169320.00
8	कीटनाशक Monocrotophose/ Malathion कय	83.000 हे.	मा.दि.प्र.हे.	853.00	0.00	70799.00
9	गड्डों में मिट्टी एवं खाद्य का मिश्रण	55802 गड्डा	प्र.गड्डा	2.75	0.00	153456.00
10	रोपड़ी व्यय- 10 प्रतिशत कैजुअल्टी सहित	55802 पौधा	प्र. पौधा	15.00	0.00	837030.00
11	आगामी वर्ष के कैजुअल्टी हेतु पौधा तैयारी	6016.00 पौधा	प्र. पौधा	10.50	0.00	63168.00
12	पॉलिथिन बैग की किमत 15x15 सें मी साईज	364.000 कि.ग्रा.	प्र. पौधा	175.00	0.00	63700.00
13	पौधा परिवहन कार्य	55802 पौधा	प्र. पौधा	5.00	0.00	279010.00
14	पौधा रोपण कार्य (खाद्य एवं कीटनाशक डलाई सहित फरवरी माह में	55802 पौधा	प्र. पौधा	2.25	1255.55	391730.00
15	निंदाई कार्य :- प्रथम निंदाई रोपण के 15 दिन पश्चात 1 मीटर व्यास में गुड़ाई सहित	55802 पौधा	प्र. पौधा	1.20	669.62	208923.00
16	सुरक्षा एवं रखरखाव कार्य 12 माह 2 अमिक	12x2 =24 माह	प्र.माह	8100.00	0.00	194400.00
17	रोपित पौधों का सिंचाई 10 माह	83.000 हे.	प्र. हे.	5000.00	0.00	4150000.00
18	ड्रिप इरिगेशन सिस्टम (ट्यूबवेल, ड्रिप सिस्टम सहित	83.000 हे.	प्र. हे.	200000	0.00	16600000.00
19	अन्य आकस्मिक व्यय (बोर्ड लगाना, रस्सी, घूना अग्नि सुरक्षा आदि।	83.000 हे.	L.S.		0.00	250000.00
20	आस्थामूलक कार्य	83.000 हे.	L.S.		0.00	5944001.00
	प्रति हेक्टेयर व्यय :-	426888.00		योग		35431784.00

Plan.

द्वितीय वर्ष 2019-20

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि
1	2	3	4	5	6	7
1	लाईव हेज का निमाण अगेव, अरण्डी, जट्रोफा, नागफनी, बबूल आदी का फेसिंग के किनारे दो लाईनों में रोपण.	83.000 हे. 7642.50 र.मी.	मा.दि.प्र.हे. प्र.र.मी.	1050	0.00	87150.00
2	रोपणी में पौधों का रखरखाव	606 पौधा	प्र.पौधा	5.00	0.00	3030.00
3	जैविक एवं रासायनिक खाद, किटनाशक कय	83.000 हे.	प्र.हे.	5000	0.00	415000.00
4	प्रथम सिंचाई कार्य 01 मी व्यास में	55802 पौधा	प्र.मा.दि. सै.	1.20	669.62	208923.00
5	द्वितीय निंदाई कार्य 01 मी. चौड़ी पट्टी में	55802 पौधा	प्र.मा.दि. सै.	2.00	1116.04	348204.00
6	तृतीय निंदाई कार्य 01 मी व्यास में	55802 पौधा	प्र.मा.दि. सै.	1.20	669.62	208923.00
7	सुरक्षा कार्य 12 माह 1 श्रमिक	83.000 हे.	प्र.माह	31.20	0.00	97200.00
8	सिंचाई कार्य बिजली बिल सहित	83.000 हे.	प्र.हे. माह	3000	0.00	249000.00
9	अन्य आकस्मिक व्यय फेसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000 हे.	L.S.		0.00	3906220.00
प्रति हेक्टेयर व्यय :-		66550.00		योग :-		5523650.00

तृतीय वर्ष 2020-21

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल	राशि
1	2	3	4	5	6	7
1	प्रथम निंदाई कार्य 01 मी व्यास में	55802 पौधा	प्र.मा.दि. सै.	1.20	669.62	208923.00
2	द्वितीय निंदाई कार्य 01 मी. चौड़ी पट्टी में	55802 पौधा	प्र.मा.दि. सै.	2.00	1116.04	348204.00
3	जैविक एवं रासायनिक खाद, किटनाशक कय	83.000 हे.	प्र. हे.	5000	0.00	415000.00
4	सुरक्षा कार्य 12 माह 1 श्रमिक	83.000 हे.	प्र. मा.दि.हे.	31.20	0.00	66603.00
5	रोपित पौधों की सिंचाई 6 माह	83.000 हे.	प्र.हे. माह	2500	0.00	102630.00
6	अन्य आकस्मिक व्यय फेसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000 हे.	L.S.		0.00	2946224.00
प्रति हेक्टेयर व्यय :-		49248		योग :-		4087584.00

चतुर्थ वर्ष 2021-22

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि
1	2	3	4	5	6	7
1	निंदाई गुड़ाई/किटनाशक, खाद डलाई	55802 पौधा	मा.दि.सै.	1.20	669.62	208923.00
2	रासायनिक खाद कय					
	फोरेट कय 10 ग्राम प्रति पौधा	830.00 कि.ग्रा.	प्र.किग्रा.	126.48		104978.00
	डी.ए.पी. कय 50 ग्राम प्रति पौधा	4150.00 कि.ग्रा.	प्र.किग्रा.	20.00		83000.00
3	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा	83.000 हे.	प्र.हे.	31.20	2589.60	807955.00
4	रोपित पौधों की सिंचाई 6 माह	83.000 हे.	प्र. हे.	2500		102630.00
6	अन्य आकस्मिक व्यय, फेसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000 हे.	प्र. हे.	LS.		2006704.00
प्रति हेक्टेयर व्यय :-		39930.00		योग :-		3314190.00

पंचम वर्ष 2022-23

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि	
1	2	3	4	5	6	7	
1	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा 12 माह	83.000	हे.	मा.दि. हे.	31.20	2589.60	807955.00
2	रोपित पौधों की सिंचाई 6 माह	83.000	हे.	प्र.हे. माह	2500.00		1245000.00
3	अन्य आकस्मिक व्यय फेंसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000	हे.	LS.	LS.		708953.00
प्रति हेक्टेयर व्यय :-		33276			योग :-		2761908.00

षष्ठम वर्ष 2023-24

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि	
1	2	3	4	5	6	7	
1	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा 12 माह	83.000	हे.	मा.दि. हे.	31.20	2589.60	807955.00
2	रोपित पौधों की सिंचाई 6 माह	83.000	हे.	प्र.हे. माह	2500.00		1245000.00
3	अन्य आकस्मिक व्यय फेंसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000	हे.	LS.	LS.		457795.00
प्रति हेक्टेयर व्यय :-		30250			योग :-		2510750.00

सप्तम वर्ष 2024-25

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि	
1	2	3	4	5	6	7	
1	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा 12 माह	83.000	हे.	मा.दि. हे.	31.20	2589.60	807955.00
2	अन्य आकस्मिक व्यय फेंसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000	हे.	LS.	LS.		854701.00
प्रति हेक्टेयर व्यय :-		20032			योग :-		1662656.00

अष्टम वर्ष 2025-26

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि	
1	2	3	4	5	6	7	
1	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा 12 माह	83.000	हे.	मा.दि. हे.	31.20	2589.60	807955.00
2	अन्य आकस्मिक व्यय फेंसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000	हे.	LS.	LS.		854701.00
प्रति हेक्टेयर व्यय :-		20032			योग :-		1662656.00

नवम वर्ष 2026-27

क्र.	कार्य का विवरण	कार्य की मात्रा/संख्या	ईकाई	दर	कुल मा.दि.	राशि	
1	2	3	4	5	6	7	
1	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा 12 माह	83.000	हे.	मा.दि. हे.	31.20	2589.60	807955.00
2	अन्य आकस्मिक व्यय फेंसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000	हे.	LS.	LS.		854701.00
प्रति हेक्टेयर व्यय :-		20032			योग :-		1662656.00

दशम वर्ष 2027-28

1	कार्य का विवरण	कार्य की मात्रा / संख्या	ईकाई	दर	कुल मा.दि.	राशि	
1	2	3	4	5	6	7	
1	रखरखाव, अग्नि सुरक्षा, चराई से सुरक्षा 12 माह	83.000	हे.	मा.दि. हे.	31.20	2589.60	807955.00
2	अन्य आकस्मिक व्यय फेंसिंग मरम्मत, अग्नि सुरक्षा एवं मजदूरी दर में वृद्धि आदि।	83.000	हे.	LS.	LS.		854535.00
प्रति हेक्टेयर व्यय :-		20030			योग :-		1662490.00

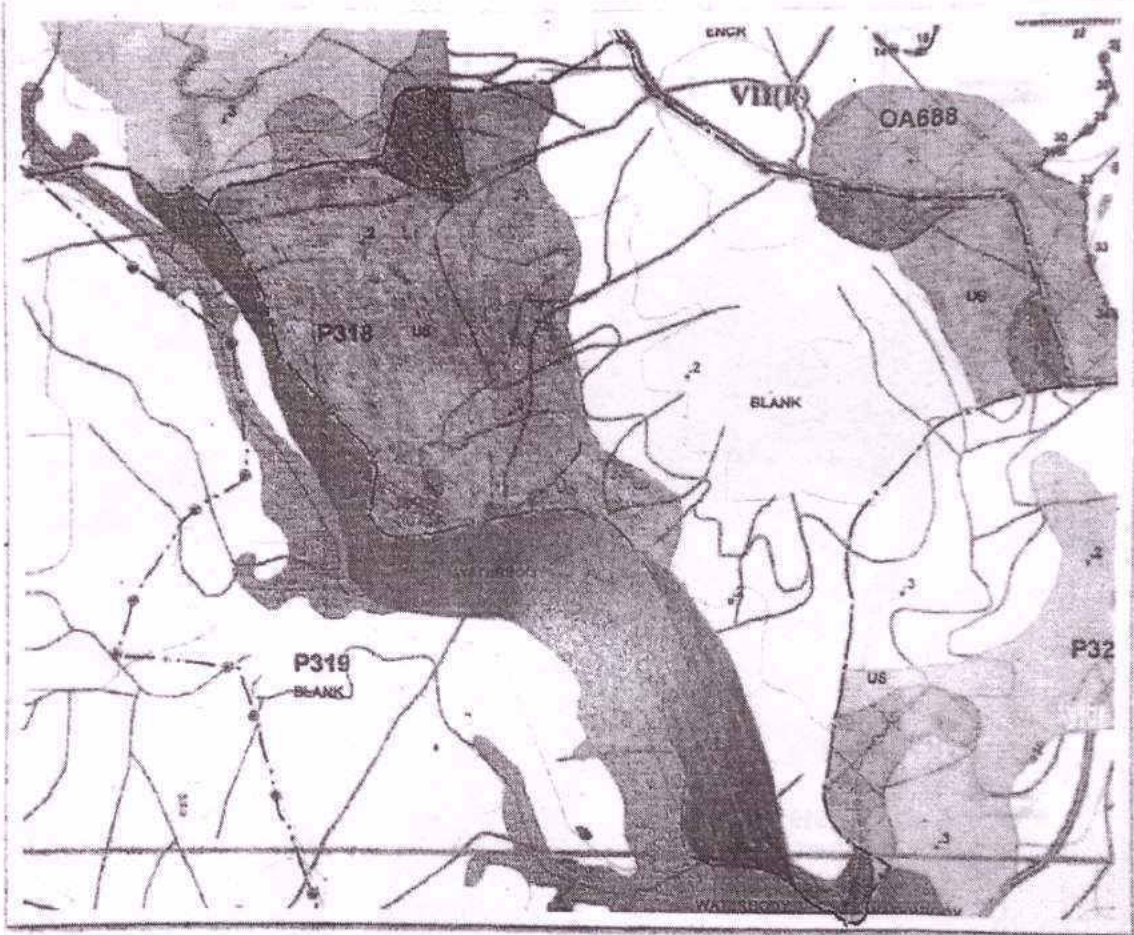
गोशवारा

क्र.	वर्ष	रकबा	कुल व्यय	प्रति हे. व्यय
1	2	3	4	5
1	प्रथम वर्ष 2018-19	83.000	35431704.00	426888.00
2	द्वितीय वर्ष 2019-20	83.000	5523650.00	66550.00
3	तृतीय वर्ष 2020-21	83.000	4087584.00	49248.00
4	चतुर्थ वर्ष 2021-22	83.000	3314190.00	39930.00
5	पंचम वर्ष 2022-23	83.000	2761908.00	33276.00
6	षष्ठम वर्ष 2023-24	83.000	2510750.00	30250.00
7	सप्तम वर्ष 2024-25	83.000	1662656.00	20032.00
8	अष्टम वर्ष 2025-26	83.000	1662656.00	20032.00
9	नवम वर्ष 2026-27	83.000	1662656.00	20032.00
10	दशम वर्ष 2027-28	83.000	1662490.00	20030.00
योग :-		83.000	60280244.00	726268.00

उप वनमंडलाधिकारी
कटघोरा

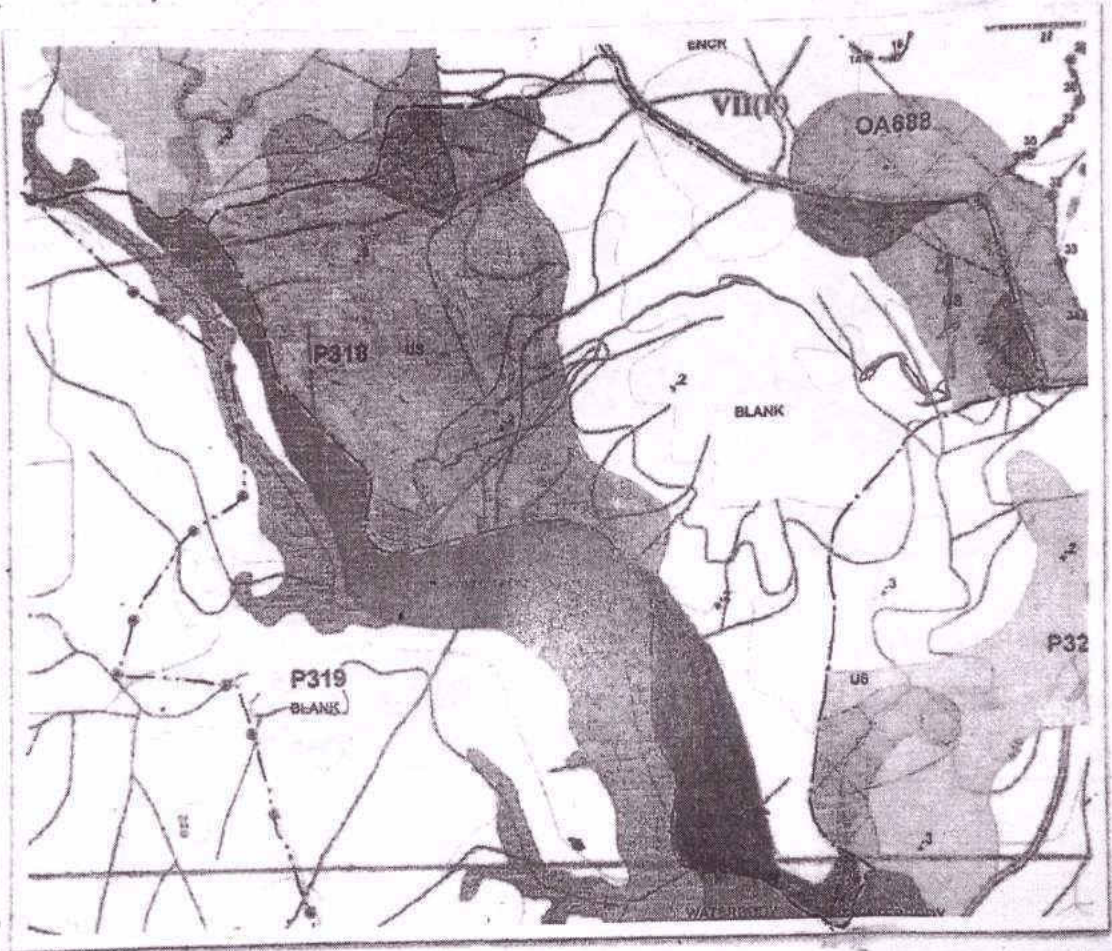
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कटघोरा वनमंडल कटघोरा

वन परिक्षेत्र अधिकारी
परिक्षेत्र केन्द्रई



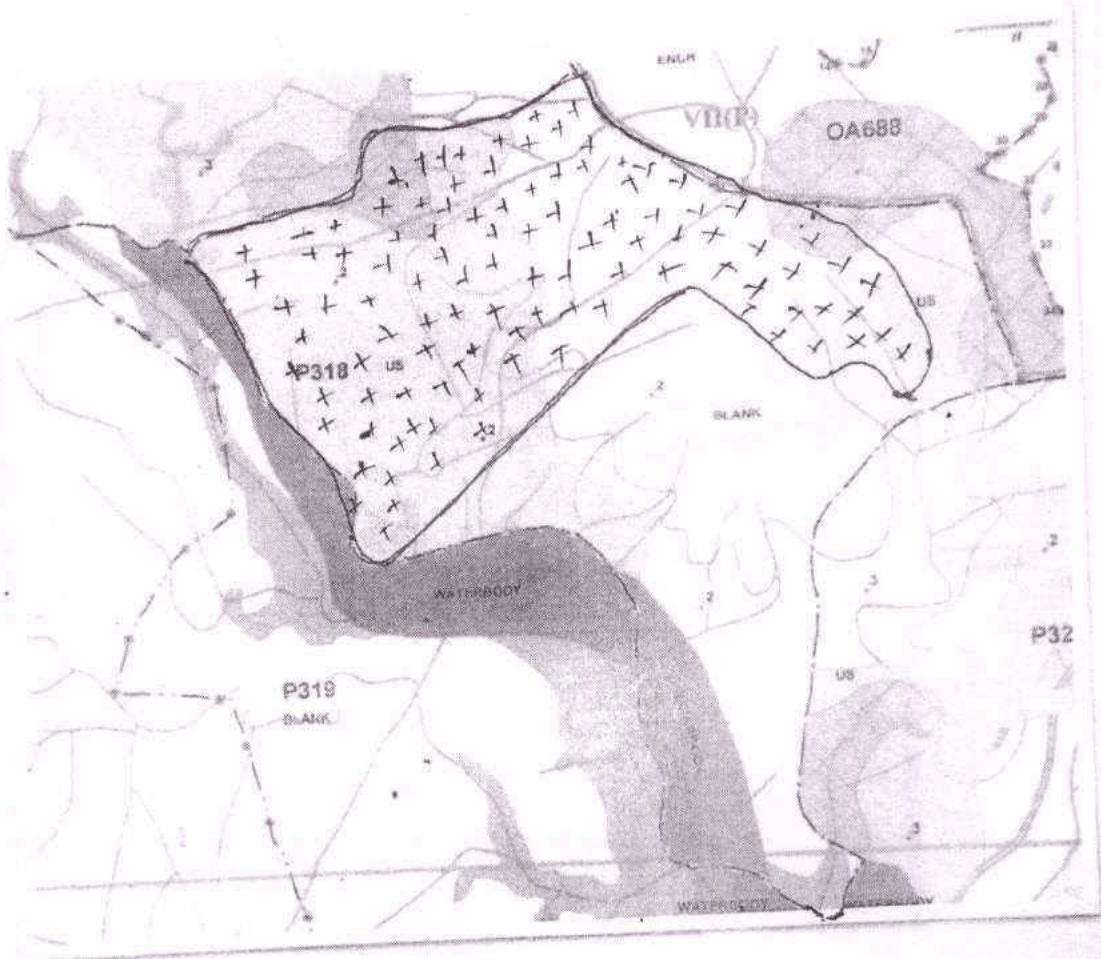
उपवनमंडलाधिकारी
कटघास

[Handwritten signature]
कल घासनी मंडलाधिकारी
कटघास





उप वनमंडलाधिकारी
कटावा


वन पारलत्र आधकार्य


 उप वनमंडलाधिकारी
 कटघरा

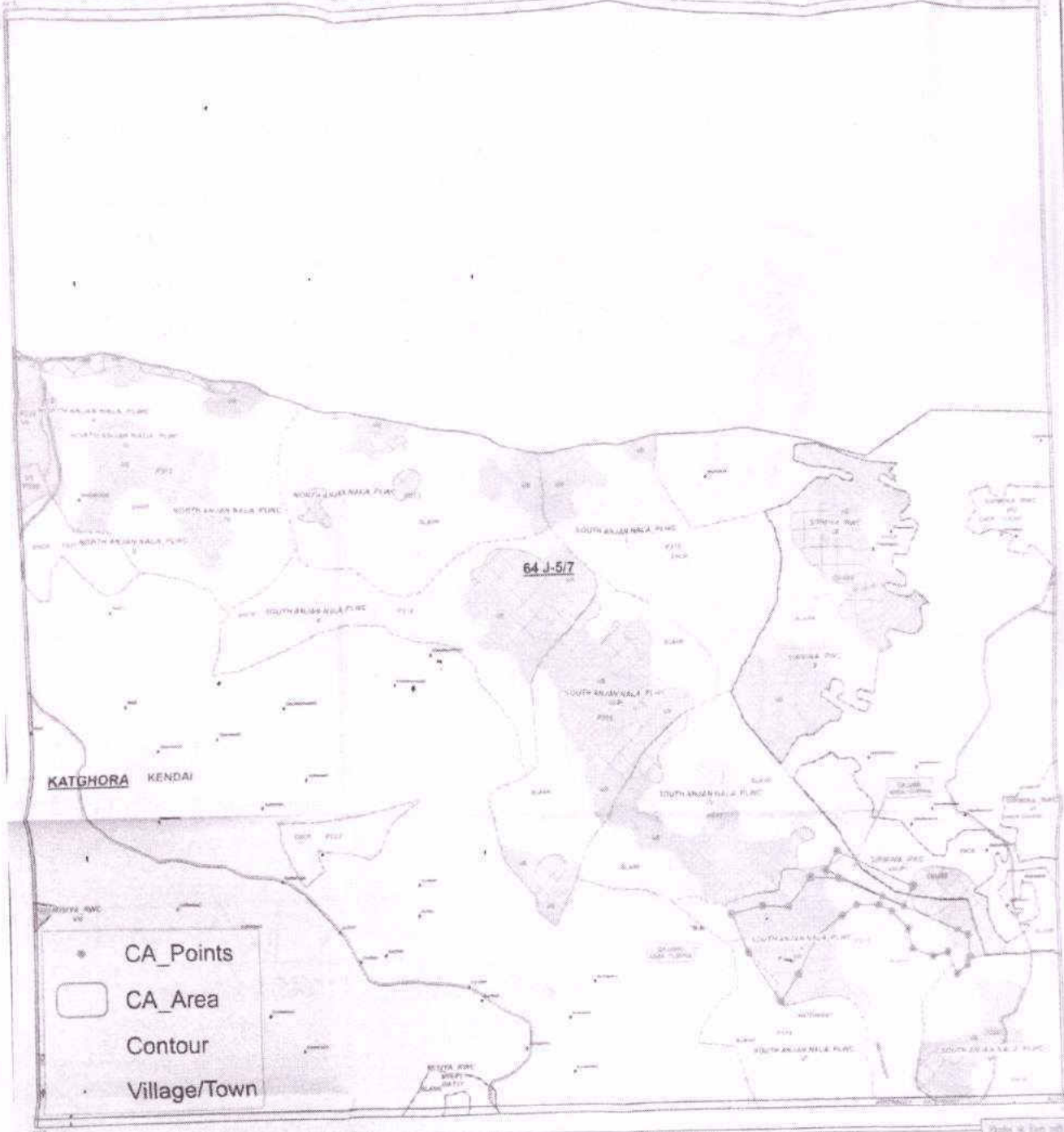

 वन परिक्षेत्र अधिकारी
 कटघरा

STOCK MAP

(OF PROPOSED LAND FOR COMPENSATORY AFFORESTATION FOR GEVRA OPEN CAST PROJECT)

TOPOSHEET NO. 64-J 5/7

SCALE 1:15,000



- * CA_Points
- CA_Area
- Contour
- Village/Town

MAP PREPARED FOR SECL GEVRA

TOPOSHEET INDEX

LEGEND

Forest Class				
Under Stocked	Blank	Encroachment	Forest Village	Preservation Plot
US	Blank	Ent		PP
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30
31	32	33	34	35
36	37	38	39	40
41	42	43	44	45
46	47	48	49	50
51	52	53	54	55
56	57	58	59	60
61	62	63	64	65
66	67	68	69	70
71	72	73	74	75
76	77	78	79	80
81	82	83	84	85
86	87	88	89	90
91	92	93	94	95
96	97	98	99	100



- Govt. Forest Boundary
- Compartment Boundary
- Division Boundary
- Range Boundary
- Forest Road
- PWD Road

MAP SUBJECT
STOCK MAP FOR PROPOSED CA LAND AREA OF SECL AGAINST OVERIED REVENUE FOREST LAND OF TIL RESH. IN FAVOR OF SECL OPEN CAST PROJECT GEVRA, KATGHOLA DIVISION

SHAPEFILE PROVIDED BY USER AGENCY

SCALE 1:15,000

Prepared by: [Signature]

Stock Mapping by: [Signature]

Date of Issue: [Date]

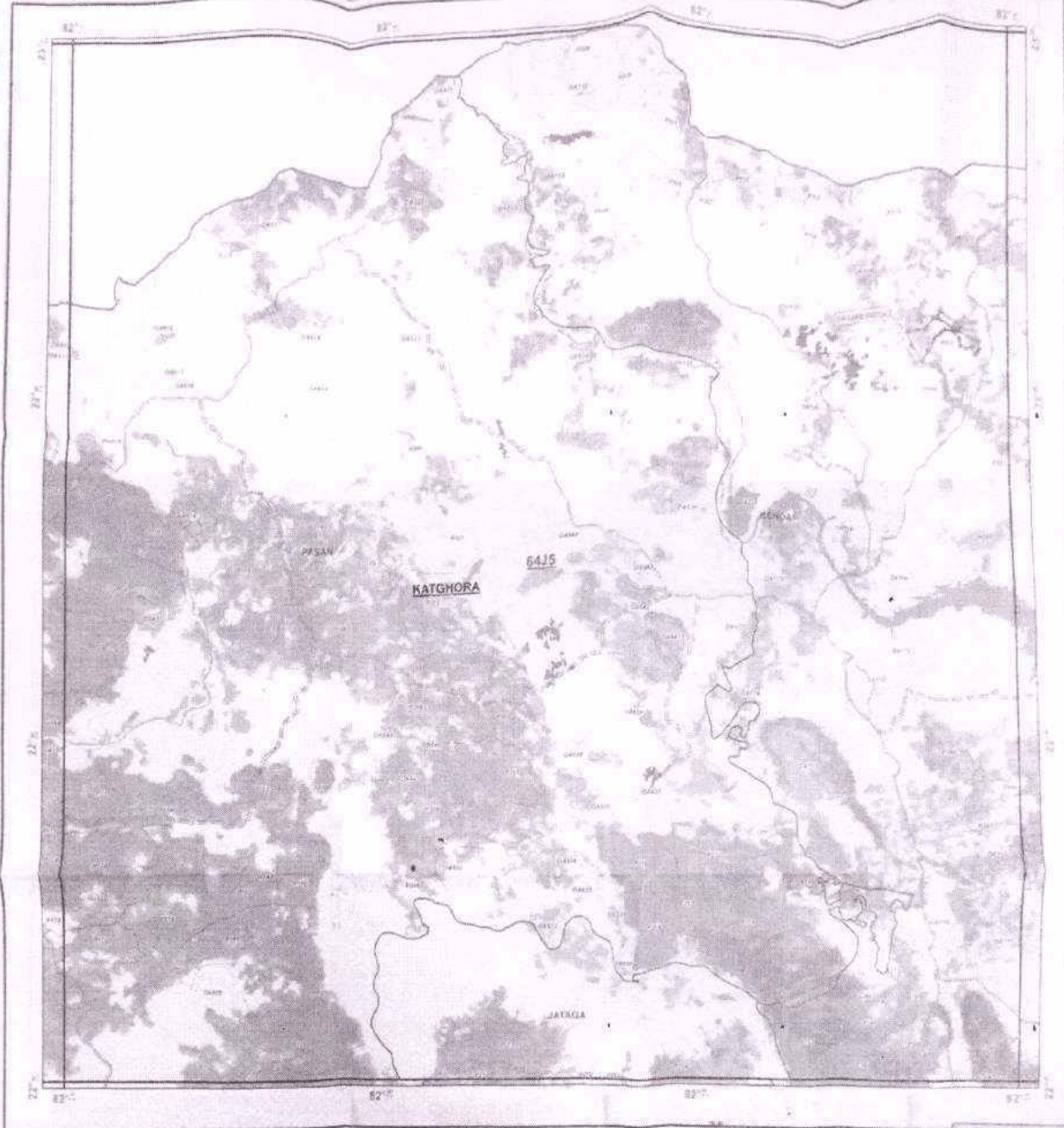
Notes:
1. Forest boundaries are based on Stock Map (Scale 1:15,000).
2. Natural features are based on Digital DGM Data (Scale 1:50,000).
Digitally Compiled and Printed at REGIONAL GEOMATIC CENTER, BILASPUR.

FOREST COVER MAP

(OF PROPOSED LAND FOR COMPENSATORY AFFORESTATION FOR SEVRA OPEN CAST PROJECT)

SCALE - 1:50,000

TOPOSHEET NO. 64-J 5



- Legend**
- CA Points
 - CA Area
 - Contour
 - Division Boundary
 - Range Boundary
 - Compartment Boundary
- RD_TYPE**
- Mettled Road
 - Unmetalled Road
- Vegetation**
- Moderately Dense Forest
 - Non Forest
 - Open Forest
 - Scrub
 - Very Dense Forest
 - Water

MAP PREPARED FOR SECL, GEVRA

TOPOSHEET INDEX

64H	64I	64J2
64J1	64J5	64J9
64J2	64J6	64J10



NOTE:-
 * Forest Cover based on Digital Interpretation of Data Period 2017-18
 IRS P6-LISS-III 23.5 m, IRS-Resourcesat 2 FSI Report 2015.

निर्माण से त्रुटि नहीं
NOT FOR ERROR?

MAP SUBJECT
 FOREST COVER MAP FOR PROPOSED CA LAND AREA OF 83ha. AGAINST DIVERTED REVENUE FOREST LAND OF 112.35ha. IN FAVOR OF SECL OPEN CAST PROJECT GEVRA, KATGHORA DIVISION

SHAPEFILE PROVIDED BY USER AGENCY

SCALE 1:50000	Coordinate Projection System used
Prepared by	COORDINATE SYSTEM OF SHAPEFILE
Stock Mapping by	Geographic Coordinate System: UTM, WGS 1984 Datum: D. WGS 1984 Prime Meridian: Greenwich Angular Unit: Degree
Data Source (if any) 1. Forest Boundaries are based on Stock Map (Scale 1:10000) 2. Natural Features are based on Digital SSI Data (Scale 1:50000)	
Digitally Compiled and Printed at : REGIONAL GEOMATIC CENTER, BILASPUR	



SEEPAT ROAD

P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्ड्सलिमिटे
South Eastern Coalfields Limited
 (कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)
 CIN U10102CT1985GO1003161
 Website : www.secl.gov.in



STD :07815 275430(O)
 : 7815 275032(R)
 Fax :07815 275434
 email :noenvgevra@gmail.com

पो(आ0):गेवराप्रोजेक्ट
 जिला: कोरबा(छत्तीसगढ़)
 पिन:495452

**OFFICE OF THE GENERAL MANAGER
 GEVRA AREA**

P.O. : GEVRA PROJECT
 Distt.: Korba (C.G.)
 Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./पर्यावरण/2018/ 69 B

दिनांक 10/7/2018
 18

VACHAN- PATRA 2
(112.385 HA. FOREST LAND)
(CONDITION NO. V & XIV)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "No activity other than mining will be undertaken in the diverted forest land".


(S. K. Patil)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL

BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे

South Eastern Coalfields Limited

(कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)

CIN U10102CT1985GO1003161

Website :www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER

GEVRA AREA



STD :07815 275430(O)

: 7815 275032(R)

Fax :07815 275434

email :noenvgevra@gmail.com

पो0आ0:गेवराप्रोजेक्ट

जिला: कोरबा(छत्तीसगढ़)

पिन:495452

P.O. : GEVRA PROJECT

Distt.: Korba (C.G.)

Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2020 /


दिनांक /02/2020

VACHAN- PATRA 22

(112.385 HA. FOREST LAND)

(CONDITION NO. V)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "The construction of residential accommodation for workers will be undertaken separately on non – forest land to avoid pressure on forest land for temporary construction."


(S. K. Pal)
General Manager
Gevra Area.



कार्यालय प्रधान मुख्य वन संरक्षक, छत्तीसगढ़

अरण्य मवन, सेक्टर-19, नार्थ ब्लॉक, कैपिटल काम्पलेक्स, नवा रायपुर, अटल नगर- 492002

(अपर प्रधान मुख्य वन संरक्षक - भू-प्रबंध)

दूरभाष: 0771 - 2512840

ई - मेल: apccf-lm.cg@gov.in

क्र./भू-प्रबंध/खनिज/331-215/295

रायपुर, दिनांक 07/02/2020

प्रति,

मुख्य वन संरक्षक
बिलासपुर वृत्त, बिलासपुर
छत्तीसगढ़

विषय: - Diversion of 112.385 ha of Revenue forest land for Gevra open Cast Mine (OCM) in Katghora Forest range, District - Korba Chhattisgarh in favour of SECL, Chhattisgarh.

Registration No.FP/CG/MIN/13199/2015

संदर्भ :- मुख्य वन संरक्षक, बिलासपुर वृत्त का पत्र क्रमांक/ तक/ 3077 दिनांक 03.11.2019

-0-

1. विषयांकित प्रकरण में क्षतिपूर्ति वृक्षारोपण अंतिम रूप से समस्त जिन साइटों में किया जाना है उनका विवरण निम्नानुसार सारिणी में दिया जावे -

वृक्षारोपण क्षेत्र	वनमण्डल	परिक्षेत्र	वनखण्ड	वनक्षेत्र	वृक्षारोपण योग्य रकबा	कितना पौधा लगायेंगे (नग में)	अनुमानित व्यय (लाख में)
				योग :-			शेष फाइन

2. उपरोक्त सभी साइट का क्षतिपूर्ति वृक्षारोपण के लिये वृक्षारोपण योजना, केएमएल फाईल तथा स्थल उपयुक्तता प्रमाण पत्र वेब पर अपलोड किया जावे तथा उसकी छाया प्रति इस कार्यालय को प्रेषित करें।

3. प्रथम चरण स्वीकृति की शर्त क्रमांक (v) को लेखबद्ध करते हुए उसके बारे में आवेदक संस्थान का कथन / वचन पत्र उपलब्ध करावें।

अ.प्र.मु.व.स (भू-प्रबंध / व.सं.अ)
छत्तीसगढ़

पृ. क्र0/भू-प्रबंध/खनिज/331-215/296
प्रतिलिपि सूचनार्थ एवं आवश्यक कार्यवाही हेतु:

- वन मंडलाधिकारी, कटघोरा वन मंडल, कटघोरा, छत्तीसगढ़।
- मुख्य महा प्रबंधक, एस.ई.सी.एल, कोरबा क्षेत्र कोरबा, छत्तीसगढ़।

रायपुर, दिनांक 07/02/2020

अ.प्र.मु.व.स (भू-प्रबंध / व.सं.अ)
छत्तीसगढ़



कार्यालय मुख्य वनसंरक्षक बिलासपुर वृत्त, बिलासपुर (छ.ग.)

सिंधी कॉलोनी, जरहाभाठा, बिलासपुर (छ.ग.) पिन कोड-495001

फोन : 07752-227624, फैक्स : 07752-221385 E-mail : ccf.bilaspur-cg@gov.in

क्रमांक/तक./ 3077

बिलासपुर, दिनांक 03/12/19

प्रति,

अपर प्रधान मुख्य वनसंरक्षक,

(भू-प्रबंध)

रायपुर छ.ग.

विषय : Diversion of 112.385 ha of Revenue forest land for Gevra open Cast Mine (OCM) in Katghora Forest range, District - Korba Chhattisgarh in favour of SECL, Chhattisgarh. RegistrationNo.FP/CG/MIN/13199/2015

संदर्भ: 1. आपका पत्र क्र./भू-प्रबंध/खनिज/331-215 /2222 दि. 07.09.19
2. वनमण्डलाधिकारी कटघोरा का पत्र क्र./2970 दिनांक 26.11.2019

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विषयातर्गत लेख है कि गेवरा ओपन कास्ट परियोजना हेतु संदर्भित पत्र द्वारा चाही गई बिन्दुवार जानकारी निम्नानुसार है -

क्र.	प्रश्न	जानकारी
1	विषयांकित प्रकरण में प्रथम चरण की स्वीकृति भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा दिनांक 27.09.17 को जारी की गई।	प्रथम चरण की स्वीकृति भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा दिनांक 27.09.17 को छायाप्रति संलग्न है।
2	संदर्भ पत्र 01 के माध्यम से उक्त स्वीकृति में अधिरोपित समस्त शर्तों का बिन्दुवार पालन प्रतिवेदन बिना किसी अभिमत के आपने इस कार्यालय को प्रेषित किया है। कुछ संलग्नक भी संलग्न होने का उल्लेख है परन्तु वह संलग्न भी नहीं किये गये हैं। उदाहरण के तौर पर शर्त क्रमांक (V) का अनुलग्नक -4 या तो नहीं लगाया गया है और लगाया गया है उससे यही कही पुष्टि नहीं हो रही है कि आवेदक संस्थान गैर वनभूमि पर आवासीय निर्माण करने के लिये वचनबद्ध है। अर्थात् संलग्नक भी बिना किसी अवलोकन के जोड़े गये हैं।	आवेदक संस्थान द्वारा पूर्व में प्रस्तुत समस्त वचन पत्र के साथ विस्तृत पालन प्रतिवेदन कार्यालयीन पत्र क्र./तक./1151 दि. 21.05.2019 के द्वारा विस्तृत विवरण सहित प्रेषित किया गया था जिसमें समस्त संलग्नकों का समावेश किया गया था जिसकी छायाप्रति पुनः संलग्न है। संलग्न - अनुलग्नक-1
3	एन.पी.व्ही. का गणना पत्रक भी शर्त क्रमांक (xviii) के पालन में जोड़ा जाना चाहिए था जिसका कोई उल्लेख नहीं है।	एन.पी.व्ही. गणना पत्रक संलग्न है। अनुलग्नक-2
4	संदर्भ पत्र -2 द्वारा इस प्रस्ताव में आपका अभिमत /अनुशंसा चाही गया था जो अप्राप्त है। अतः	प्रथम चरण के पालन प्रतिवेदन के समस्त बिन्दुओं का प्रतिवेदन प्रस्तुत किया गया था अतः

	संपूर्ण प्रस्ताव पुनः परीक्षण करे एवं बिन्दुवार पालन प्रतिवेदन सही संलग्न के साथ इस कार्यालय को सात दिवस के अंदर मानचित्रकार के हस्ते उपलब्ध करावें।	अंतिम चरण स्वीकृति हेतु प्रतिवेदन पुनः अनुसंशा सहित प्रेषित है। प्रकरण में बिन्दुवार पालन प्रतिवेदन का परीक्षण हेतु आवेदक संस्थान एस. ई.सी.एल. के संबंधित अधिकारी/वनमण्डल कटघोरा के मानचित्रकार को उपस्थित होने हेतु निर्देशित किया जा रहा है।
5	शर्त क्रमांक (viii), (ix), (xi), (xii), (xxi), (xxiii), (xxviii) पालन पर विशेष ध्यान दिया जावे। शर्त क्र. (xxxix) के पालन में वचन पत्र प्राप्त किया जावे।	आवेदक विभाग द्वारा शर्त क्रमांक (viii), (ix), (xi), (xii), (xxi), (xxiii), (xxviii), (xxix) के पालन हेतु वचन पत्र संलग्न है। अनुलग्नक-03
6	शर्त क्र. (viii) के पालन में अलग से विभागीय टीप दी जावे।	शर्त क्र. (viii) के पालन के संबंध में पुनर्वास योजना छ.ग. शासन एवं राष्ट्रीय पुनर्स्थापन के निर्देशों के अनुरूप व्यवस्थापन की कार्यवाही करने हेतु एस.ई.सी.एल. के द्वारा वचन पत्र प्रस्तुत किया गया है।
7	शर्त क्र. (ix) के पालन में गांव की सूची आवेदक संस्थान दे। आप अपना अभिमत दे।	व.म.अ. के प्रतिवेदन अनुसार आवेदक संस्थान द्वारा लीज क्षेत्र के नजदीकी गांव में 4000 हजार पौधों का वितरण वर्ष 2018-19 में किया जा चुका है। अनुलग्नक-05
8	शर्त क्र. (xi) के पालन में आवेदक संस्थान लैण्ड सेरेन्डर सेड्यूल उपलब्ध करावे। यदि माईनिंग प्लान के अनुसार रहेगा तो संबंधित पृष्ठों की छायाप्रति सत्यापन सहित एक संक्षिप्त नोट बनाकर आवेदक संस्थान से प्राप्त करें।	आवेदक विभाग द्वारा लैण्ड सेरेन्डर सेड्यूल से संबंधित पृष्ठों की छायाप्रति टीप सहित संलग्न है। अनुलग्नक-06
9	शर्त क्र. (xii) के पालन में वर्तमान में कैंट प्लान की प्रति अनुसंशा/अभिमत सहित उपलब्ध करावे।	आवेदक विभाग द्वारा प्रस्तुत कैंचमेंट एरिया ट्रीटमेंट प्लान संलग्न है। अनुलग्नक-07
10	शर्त क्र. (xxi) के पालन में जिस रिपोर्ट के संलग्न होने का उल्लेख किया गया है। उस रिपोर्ट के बारे में आपका क्या अभिमत है। अवगत करावें यदि रिपोर्ट संतोषजनक है तो कैम्पा में राशि क्यों नहीं जमा करायी गई है। इससे अवगत करावे।	व.म.अ. के प्रतिवेदन अनुसार शर्त क्र. (xxi) के पालन में आवेदक विभाग द्वारा सूचना दी गई कि वर्ष 2018-19 में प्रोग्रेसिव माईन्स क्लोजर के अनुसार उक्त कार्य किया जा चुका है। अतः कैम्पा में राशि जमा करने की आवश्यकता नहीं है। आवेदक विभाग द्वारा राशि जमा करने के संबंध में प्रतिउत्तर संलग्न है। अनुलग्नक-08
11	शर्त क्र. (xxiii) के पालन में SFRTI के द्वारा तैयार की गयी एवीफौना रिपोर्ट अंतरिम प्रकृति की है। जिसमें कराये जाने वाले कार्य एवं व्यय होने वाले राशि का उल्लेख नहीं है। आवेदक संस्थान से अंतिम एवीफौना रिपोर्ट प्राप्त की जावे एवं प्रधान मुख्य वन संरक्षक (वन्यप्राणी) से अनुमोदन के उपरांत कैम्पा मद से राशि जमा करायी जावे।	व.म.अ. के प्रतिवेदन अनुसार कार्या पत्र क्र. 2055 दि. 26.08.19 के माध्यम से मुख्य वन संरक्षक (वन्यप्राणी) एवं परियोजना संचालक अचानकमार टाइगर रिजर्व बिलासपुर को एवीफौना योजना अनुमोदन हेतु संप्रेषित किया जा चुका है। अनुमोदन उपरांत राशि कैम्पा में जमा की जावेगी। एवीफौना योजना में कराये जाने वाले कार्य एवं व्यय होने वाले राशि का उल्लेख Chapter -9 में किया गया है। छायाप्रति संलग्न है। अनुलग्नक-09

12	शर्त क्र. (xxviii) के पालन में जिन 41 तालाबों की योजना प्रस्तुत की गयी है। उस पर अपना अभिमत देवें कि स्वीकार करने योग्य है या नहीं ?	आवेदक संस्थान एस.ई.सी.एल. द्वारा 41 तालाबों का योजना संलग्न कर प्रस्तुत किया गया है जिसे वन विभाग के मानिट्रिंग में पूर्ण किया जायेगा इस संबंध में आवेदक का वचन पत्र संलग्न है। अनुलग्नक-10
13	शर्त क्र. (iii) के पालन उपरांत अंतिम रूप से क्षतिपूर्ति वृक्षारोपण जिन क्षेत्रों में प्रस्तावित किये जा रहे हैं उनका लोकेशन एवं रकबा बताते हुये विवरण देवे।	कटघोरा वनमण्डल अंतर्गत परिक्षेत्र केंदई के ग्राम झिनपुरी में कक्ष क्र. P318 रकबा 83.00 हे. क्षतिपूर्ति वृक्षारोपण किया गया है CA योजना की छायाप्रति संलग्न है। अनुलग्नक-11

संलग्न : पालन प्रतिवेदन 03 प्रतियों में।

मुख्य वनसंरक्षक
बिलासपुर वृत्त, बिलासपुर

पृ. क्र./तक. 2019/
प्रतिलिपि,

3078

बिलासपुर, दिनांक 03/12/19

1. वनमण्डलाधिकारी, कटघोरा वनमण्डल की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित कृपया प्रकरण की नस्ती सहित मानचित्रकार/तक.अधिकारी को 03 दिवस के अंदर अ.प्र.मु.व.सं. (भू-प्रबंध) के कार्यालय में बिन्दुवार पालन प्रतिवेदन के परीक्षण हेतु एस.ई.सी.एल. के संबंधित अधिकारी के साथ उपस्थित होने के लिए निर्देशित करे।
2. महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु अग्रेषित। कृपया प्रकरण में समस्त शर्तों के पालन प्रतिवेदन के परीक्षण हेतु वनमण्डलाधिकारी कटघोरा के मानचित्रकार/तक.अधिकारी के साथ 03 दिनों के अंदर अ.प्र.मु.व.सं. कार्यालय रायपुर में उपस्थित होने के लिए निर्देशित करें।

मुख्य वनसंरक्षक
बिलासपुर वृत्त, बिलासपुर



कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)
Phone/Fax No.: 07815-250157, mail : dfo-katghora.cg@gov.in

क्रमांक/तक.अधि./2019/
प्रति,

2970

कटघोरा, दिनांक 26.11.19

मुख्य वन संरक्षक
बिलासपुर वृत्त,
बिलासपुर (छ.ग.)

विषय : Diversion of 112.385 ha of Revenue forest land for Gevra open Cast Mine (OCM) in Katghora Forest range, District - Korba Chhattisgarh in favour of SECL, Chhattisgarh. RegistrationNo.FP/CG/MIN/13199/2015

- संदर्भ:
1. अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध) रायपुर का पृ. क्र. /भू-प्रबंध/खनिज/331-215 /2222 दि. 07.09.19
 2. मुख्य वन संरक्षक बिलासपुर वृत्त बिलासपुर का पत्र क्र./6415 दि. 16.9.19
 3. आपका पत्र क्र. 273 दि. 05.10.19

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उपरोक्त संदर्भित विषयांतर्गत लेख है कि गेवरा ओपन कास्ट परियोजना हेतु वरिष्ठ कार्यालय द्वारा चाही गई 14 बिंदुओं की जानकारी तैयार कर आवश्यक कार्यवाही हेतु सादर संप्रेषित है।

क्र.	प्रश्न	जानकारी
1	विषयांकित प्रकरण में प्रथम चरण की स्वीकृति भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा दिनांक 27.09.17 को जारी की गई।	प्रथम चरण की स्वीकृति भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली द्वारा दिनांक 27.09.17 की छायाप्रति संलग्न है।
2	संदर्भ पत्र 01 के माध्यम से उक्त स्वीकृति में अधिरोपित समस्त शर्तों का बिंदुवार पालन प्रतिवेदन बिना किसी अभिमत के आपने इस कार्यालय को प्रेषित किया है। कुछ संलग्नक भी संलग्न होने का उल्लेख है परन्तु वह संलग्न भी नहीं किये गये हैं। उदाहरण के तौर पर शर्त क्रमांक (V) का अनुलग्नक -4 या तो नहीं लगाया गया है और लगाया गया है उससे यही कहीं पुष्टि नहीं हो रही है कि आवेदक संस्थान गैर वनभूमि पर आवासीय निर्माण करने के लिये वचनबद्ध है। अर्थात् संलग्नक भी बिना किसी अवलोकन के जोड़े गये हैं।	आवेदक संस्थान द्वारा गैर वनभूमि पर आवासीय निर्माण करने के लिये वचनबद्ध है। वचन पत्र संलग्न है। Annex-1
3	एन.पी.व्ही. का गणना पत्रक भी शर्त क्रमांक (xviii) के पालन में जोड़ा जाना चाहिए था जिसका कोई उल्लेख नहीं है।	एन.पी.व्ही. गणना पत्रक संलग्न है।
4	संदर्भ पत्र -2 द्वारा इस प्रस्ताव में आपका अभिमत /अनुशंसा चाही गया था जो अप्राप्त है। अतः संपूर्ण प्रस्ताव पुनः परीक्षण करे एवं बिंदुवार पालन प्रतिवेदन सही संलग्न के साथ इस कार्यालय को सात दिवस के अंदर मानिचत्रकार	मुख्य वन संरक्षक बिलासपुर वृत्त बिलासपुर द्वारा अनुशंसा किया जावेगा।

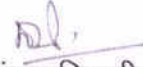
	के हस्ते उपलब्ध करावें।	
5	शर्त क्रमांक (viii), (ix), (xi), (xii), (xxi), (xxiii), (xxviii) पालन पर विशेष ध्यान दिया जावे। शर्त क्र. (xxxii) के पालन में वचन पत्र प्राप्त किया जावे।	आवेदक विभाग द्वारा शर्त क्रमांक (viii), (ix), (xi), (xii), (xxi), (xxiii), (xxviii), (xxxii) के पालन हेतु वचन पत्र संलग्न है। Annex-3
6	शर्त क्र. (viii) के पालन में अलग से विभागीय टीप दी जावे।	आवेदक संस्था द्वारा वचन पत्र प्रस्तुत किया है जिसमें यह उल्लेख किया गया है कि पुर्नवास योजना छ.ग. शासन एवं राष्ट्रीय पुर्नस्थापन के निर्देशो का पालन करने हेतु वचन बद्ध है। वचन पत्र संलग्न है।
7	शर्त क्र. (ix) के पालन में गांव की सूची ओवदक संस्थान दे। आप अपना अभिमत दे।	आवेदक संस्थान द्वारा लीज क्षेत्र के नजदीकी गांव में 4000 हजार पौधो का वितरण वर्ष 2018-19 में किया जा चुका है गांव की सूची संलग्न है। Annex-5
8	शर्त क्र. (xi) के पालन में आवेदक संस्थान लैण्ड सेरेन्डर सेड्यूल उपलब्ध करावे। यदि माईनिंग प्लान के अनुसार रहेगा तो संबंधित पृष्ठो की छायाप्रति सत्यापन सहित एक संक्षिप्त नोट बनाकर आवेदक संस्थान से प्राप्त करें।	आवेदक विभाग द्वारा लैण्ड सेरेन्डर सेड्यूल से संबंधित पृष्ठो की छायाप्रति संलग्न है। Annex-6
9	शर्त क्र. (xii) के पालन में वर्तमान में कैट प्लान की प्रति अनुशंसा/अभिमत सहित अपलब्ध करावे।	आवेदक विभाग द्वारा प्रस्तुत कैचमेंट एरिया ट्रीटमेंट प्लान संलग्न है। Annex-7
10	शर्त क्र. (xxi) के पालन में जिस रिपोर्ट के संलग्न होने का उल्लेख किया गया है। उस रिपोर्ट के बारे में आपका क्या अभिमत है। अवगत करावें यदि रिपोर्ट संतोषजनक है तो कैम्पा में राशि क्यों नहीं जमा करायी गई है। इससे अवगत करावे।	शर्त क्र. (xxi) के पालन में आवेदक विभाग द्वारा सूचना दी गई कि वर्ष 2018-19 में प्रोग्रेसिव माईन्स क्लोजर के अनुसार उक्त कार्य किया जा चुका है। अतः कैम्पा में राशि जमा करने की आवश्यकता नहीं है। आवेदक विभाग द्वारा राशि जमा करने के संबंध में प्रतिउत्तर संलग्न है। Annex-8
11	शर्त क्र. (xxiii) के पालन में SFRTI के द्वारा तैयार की गयी एवीफौना रिपोर्ट अंतरिम प्रकृति की है। जिसमें कराये जाने वाले कार्य एवं व्यय होने वाले राशि का उल्लेख नहीं है। आवेदक संस्थान से अंतिम एवीफौना रिपोर्ट प्राप्त की जावे एवं प्रधान मुख्य वन संरक्षक (वन्यप्राणी) से अनुमोदन के उपरांत कैम्पा मद से राशि जमा करायी जावे।	कार्या पत्र क्र. 2055 दि. 26.08.19 के माध्यम से मुख्य वन संरक्षक (वन्यप्राणी) एवं परियोजना संचालक अचानकमार टाडगर रिजर्व बिलासपुर को एवीफौना योजना अनुमोदन हेतु संप्रेषित किया जा चुका है। अनुमोदन उपरांत राशि कैम्पा में जमा की जावेगी। एवीफौना योजना में कराये जाने वाले कार्य एवं व्यय होने वाले राशि का उल्लेख Chapter -9 में किया गया है। छायाप्रति संलग्न है। Annex-9
12	शर्त क्र. (xxviii) के पालन में जिन 41 तालाबो की योजना प्रस्तुत की गयी है। उस पर अपना अभिमत देवें कि स्वीकार करने योग्य है या नहीं ?	मुख्य वन संरक्षक बिलासपुर वृत्त बिलासपुर द्वारा किया जावेगा। आवेदक विभाग द्वारा प्रस्तुत रिपोर्ट एवं वचन पत्र संलग्न है। Annex-10
13	शर्त क्र. (iii) के पालन उपरांत अंतिम रूप से क्षतिपूर्ति वृक्षारोपण जिन क्षेत्रो में प्रस्तावित किये	कटघोरा वनमंडल अंतर्गत परिक्षेत्र केंदई के ग्राम झिनपुरी में कक्ष क्र. P318 रकबा 83.00 हे.

	जा रहे हैं उनका लोकेशन एवं रकबा बताते हुये विवरण देवे।	क्षतिपूर्ति वृक्षारोपण किया गया है CA योजना की छायाप्रति संलग्न है। Annex-11
14	पुनः सुधारकर सभी अधिरोपित 37 शर्तो का पालन प्रतिवेदन प्रेषित करें।	अधिरोपित 37 शर्तो का संशोधित पालन प्रतिवेदन संलग्न है।

संलग्न : पालन प्रतिवेदन 03 प्रतियों में।

पृ. क्रमांक/तक.अधि./2019/ 2571
प्रतिलिपि,

1. अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध) अरण्य भवन, सेक्टर -19 अटल नगर, नवा रायपुर की ओर सूचनार्थ संप्रेषित।
2. महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा की ओर सूचनार्थ प्रेषित।


वनमंडलाधिकारी
कटघोरा वनमंडल कटघोरा
कटघोरा, दिनांक 26.11.19


वनमंडलाधिकारी
कटघोरा वनमंडल कटघोरा

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in



STD :07815 275430(O)
: 7815 275032(R)
Fax :07815 275434
email :gevraenvt@gmail.com

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2019 / 273

दिनांक 05/10/2019

To
The DFO
Katghora Division
Korba.

SUB. Diversion of 112.385 ha. of Revenue Forest land for Gevra Open Cast Mine (OCM) in Katghora Forest range, District Korba Chhattisgarh in favour of SECL, Chhattisgarh.

REF.

1. क्र. भू-प्रबंध / खनिज / 331-215/ 2221 रायपुर, दिनांक 07.09.2019
2. क्रमांक /तक.आधि./6295 कटघोरा, दिनांक 23.09.19

Dear Sir

Kindly refer to letter vide no. क्र. भू-प्रबंध / खनिज / 331-215/ 2221 रायपुर, दिनांक 07.09.2019 and क्रमांक /तक.आधि./6295 कटघोरा, दिनांक 23.09.19.

In connection to the above letters please find below point wise comments

POINT NO.	COMMENTS
1	Stage I/In principle Approval granted for 112.385 Ha. vide .F.No.8-41/2017-FC by MoEF&CC on 27/09/2017.
2	Condition no. 5 compliance. No activity other than mining will be undertaken in the diverted forest land. (Vachan Patra enclosed as Annex 1).
3	Tree counting Report enclosed as Annex 2
4	NA
5	Vachan Patra for Condition no. 31 enclosed as Annex 3
6	Condition no. 8 compliance As per the guidelines of State Govt. CG, necessary compliance shall be made. Vachan Patra enclosed as Annex 4
7	Condition no. 9 compliance. 4000 saplings distributed in the villages located

4 Copies received



SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

South Eastern Coalfields Limited

(कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.)

CIN U10102CT1985GOI003161

Website : www.secl-cil.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER
GEVRA AREA

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

STD :07815 275430(O)

: 7815 275032(R)

Fax :07815 275434

email :gevraenvt@gmail.com



P.O. : GEVRA PROJECT

Distt.: Korba (C.G.)

Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2019 / २७३

दिनांक ०९/१०/२०१९

	in the surrounding of the lease area under comprehensive greening of villages. List enclosed as Annex 5
8	Copy of Land Surrender Schedule enclosed as Annex 6
9	Interim Report on Catchment area treatment plan enclosed as Annex 7
10	Justification on condition no.21 enclosed as Annex 8
11	Final Report on Wild life Conservation Plan (Avifauna Report) Enclosed as Annex 9
12	List of existing village tanks and other water bodies with GPS co-ordinates located within five km from the mine lease boundary is enclosed as Annex 10
13	83 Ha. CA land was identified at Kendai. Vegetation Map & Stock Map submitted.
14	Compliance of all 37 conditions enclosed as Annex 12

Thanking you.

Yours Sincerely

General Manager
SECL Gevra Area

Copy to ,

1. अ.प्र.मु.व.सं (भू - प्रबंध/ व.स.अ.), रायपुर , छत्तीसगढ़
2. मुख्या वन संरक्षक, बिलासपुर वृत्त, छत्तीसगढ़
3. General Manager (Mining/Forest),SECL Bilaspur HQ

F. No. 8-41/2017-FC
Government of India
Ministry of Environment, Forests & Climate Change
(Forest Conservation Division)

Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj,
New Delhi: 110003,
Dated: 27th September, 2017

To,
The Principal Secretary (Forests),
Government of Chhattisgarh,
Raipur.


Sub: Diversion of 112.385 ha of Revenue forest land for Gevra Open Cast Mine (OCM) in Katghora Forest range, District –Korba Chhattisgarh in favour of SECL, Chhattisgarh.

Sir,

I am directed to refer to the Government of Chhattisgarh's letter No. F-5-12/2017/10-2 dated 01.05.2017 on the subject mentioned above seeking prior approval of the Central Government under Section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal has been examined by the Forest Advisory Committee constituted by the Central Government under Section-3 of the aforesaid Act.

After careful examination of the proposal of the State Government and on the basis of the recommendations of the Forest Advisory Committee, *In-principle approval /Stage-I Clearance* of the Central Government is hereby granted for diversion of 112.385 ha of Revenue forest land for Gevra Open Cast Mine (OCM) in Katghora Forest range, District –Korba Chhattisgarh in favour of SECL, Chhattisgarh subject to the following conditions:

- (i) Legal status of the diverted forest land shall remain unchanged;
- (ii) Compensatory Afforestation shall be done over degraded forest land twice in extent to the forest area proposed to be diverted within a period of three years with effect from the date of issue of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department at the cost of the user agency. At least 1000 saplings per hectares shall be planted over 224.77 ha (224770 plants). If this is not possible to plant these many seedlings in the identified DFL, the balance seedlings will be planted in other suitable degraded forest land as per the prescriptions of the Working Plan at the cost of the User agency. In such case CA cost will be revised and duly approved by competent authority and deposited online in the CAF managed by CAMPA. 25% of the CA cost additionally will be spent towards Soil and Moisture Conservation activities in the proposed CA area as per site requirement and deposited in CAF.
- (iii) On examination of Compensatory afforestation land on Google Satellite Imagery and DSS tools, it is found that 30 ha area is having dense vegetation and 53 ha land seems to be under encroachment. State Government shall exclude the land under encroachment and under very dense vegetation from the proposed CA area and additional degraded forest land which is free from encumbrances/encroachment and degraded shall be selected prior to stage II approval. The land shall be analysed through DSS at state level prior to submission to MoEF&CC for consideration. State Government shall submit DSS analysis report along with the compliance of this condition.
- (iv) State Government shall reconfirm the enumeration list of trees prior to stage II approval.



27.9.17

- (v) The User Agency shall ensure that construction of residential accommodation for workers will be undertaken separately on non-forest land to avoid pressure on forest land for temporary construction.
- (vi) Safety zone shall be fenced with coiled barbed wire fencing of 6 feet high for the protection of forests;
- (vii) Safety zone along the lease boundary, shall be implemented by the User Agency in accordance with the guidelines issued by the MoEF&CC in this regard;
- (viii) Encroachment from the lease area of the User Agency should be evicted and in case eligible claimants are found in the area proposed for diversion, they should be rehabilitated as per the R&R policy of the State Government of Chhattisgarh in consonance with the National R&R policy.
- (ix) The user agency should undertake comprehensive greening in the villages located in the surrounding of their lease area.
- (x) Mined out forest area already reclaimed by the User Agency, should be handed over back to the State Forest Department with a view to bring it under the ambit of core forestry management.
- (xi) The UA should prepare a land surrender schedule for surrender of the mined out and biologically reclaimed forest land in accordance with the existing mine plan irrespective of progressive mine closure plan and submit an surrender schedule and an undertaking that mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per this schedule. No further change in the schedule for surrendering of forest land should be allowed.
- (xii) With a view to enrich the water regime in the area, a comprehensive Catchment Area Treatment Plan in the area to arrest flow of silt in the Hasdeo River and to improve water regime should be implemented at the project cost;
- (xiii) A study should be undertaken at the project cost to assess the impact of intervention undertaken by the SECL, in consultation with the State Forest Department, for the protection, conservation and development of wildlife in the area. Based on the outcome of such study, the measures for protection, conservation and development of the wildlife, if needed may further be strengthened at the project cost.
- (xiv) No forest land should be used for undertaking the diversion of district road, bifurcating the Revenue forest land proposed to divert by the User Agency. While undertaking diversion of the said road, the User Agency should select such alignment ensuring that accessibility/connectivity is maintained at the ease of the local residents.
- (xv) It is reported that the user agency had biologically reclaimed 404.8 ha of land. A subcommittee of FAC under the chairmanship of Sh. Deepak Sinha IG(FC) , Sh. R.K. Dey APPCF regional office Bhuvneshwar and Sh. Sandeep Sharma AIG(FC) shall visit the site and submit report on the status of biologically reclaimed area to MoEF and CC .
- (xvi) The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale;
- (xvii) The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in the account of Ad-hoc CAMPA of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.
- (xviii) The User Agency shall transfer the funds for the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of Ad-hoc CAMPA account of the State Concerned;
- (xix) At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India;

Sd/-

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- (xx) Any fund received from the user agency under the project, except the funds realized for regeneration/ demarcation of safety zone, shall be transferred to Ad-hoc CAMPA through online portal of Ad-hoc CAMPA account of the State Concerned;
- (xxi) Following activities shall be undertaken by the user agency at the project cost and **appropriate cost of the plan/scheme shall be deposited in Ad-hoc CAMPA Account:**
- (a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared and implemented;
 - (b) Planting of adequate drought hardy plant species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion;
 - (c) Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour;
 - (d) Stabilize the overburden dumps by appropriate grading/benching so as to ensure that that angles of repose at any given place is less than 28°; and
 - (e) Strict adherence to the prescribed top soil management.
- (xxii) User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986;
- (xxiii) User agency in consultation with the State Forest Department shall create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest area and human settlements, adjoining the forest area being diverted for the project;
- (xxiv) Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety zone shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done at the project cost within three years and maintained thereafter as per approved working plan of the State Govt. Besides this afforestation on degraded forest land to be selected elsewhere measuring one & a half times the area under safety zone shall also be done at the project cost;
- (xxv) User agency either himself or through the State Forest Department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone;
- (xxvi) Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of the mining lease proposed to be granted under the Mines and Minerals (Development and Regulation) Act, 1957, and the Rules framed there-under as amended;
- (xxvii) User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.4), if any, located in the area within 100 meters from outer perimeter of the mining lease;
- (xxviii) The User Agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. from the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User Agency shall regularly undertake desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval;
- (xxix) User agency shall undertake mining in a phased manner and take due care for reclamation of the mined over area. The concurrent reclamation plan shall be executed by the User Agency as per the approved mining plan/scheme and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, Government of Odisha and the Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation


27.9.17

- plan are not being executed by the user agency, the Nodal Officer or the Addl. Principal Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed;
- (xxx) No labour camp shall be established on the forest land;
- (xxxii) User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas;
- (xxxiii) Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillar to pillar and GPS co-ordinates;
- (xxxiiii) Forest land shall not be used for any purpose other than that specified in the proposal;
- (xxxv) State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry vide their letter No. 11-9/1998-FC (pt.) dated 3rd August 2009 read with 05.07.2013, in support thereof;
- (xxxvi) The user agency shall submit the annual self compliance report in respect of the above conditions to the State Government, concerned Regional Office and this Ministry by the end of March every year regularly.
- (xxxvii) Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife; and
- (xxxviii) The State Government and user agency shall comply the provisions of the all Acts, Rules, Regulations, Guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.

After receipt of compliance report on fulfilment of the conditions mentioned above, the proposal shall be considered for final approval under Section-2 of the Forest (Conservation) Act, 1980. Transfer of forest land shall not be affected till final approval is granted by the Central Government in this regard.

Yours faithfully,




(Sandeep Sharma) 27.9.17

Assistant Inspector General of Forests (FC)

Copy to:-

1. The Principal Chief Conservator of Forests, Government of Chhattisgarh, Raipur.
2. The Addl. PCCF (Central), Regional Office, Nagpur
3. The Nodal Officer, the Forest (Conservation) Act, 1980, of Chhattisgarh, Raipur.
4. User Agency.
5. Forest Conservation Monitoring Cell, FC Division, MoEF&CC, New Delhi.
6. Guard File.

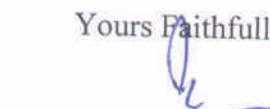


(Sandeep Sharma) 27.9.17

Assistant Inspector General of Forests (FC)

	be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillar to pillar and GPS co-ordinates.	demarcated on ground by User Agency.
33	Forest land shall not be used for any purpose other than that specified in the proposal.	No activity other than mining will be undertaken in the diverted forest land. (Vachan Patra 2)
34	State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry vide their letter No. 11-9/1998-FC(pt.) dated 3 rd August 2009 read with 05.07.2013, in support thereof,.	FRA copy Enclosed. ANNEX 11
35	The user agency shall submit the annual self compliance report of the above conditions to the state Government, concerned Regional Office and this Ministry by the end of March every year regularly.	Agreed. (Vachan Patra 12)
36	Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife, and	Agreed. (Vachan Patra 13)
37	The State Government and user agency shall comply the provisions of the all Act, Rules, Regulations, guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	Agreed. (Vachan Patra 14)

Yours Faithfully


General Manager
SECL Gevra Area

Copy to

- (1) Chief Conservator of Forests, (L&M) Raipur
- (2) Chief Conservator of Forest, Bilaspur Circle
- (3) General Manager (Forest), SECL Bilaspur

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
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(कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)

CIN U10102CT1985GO1003161

Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER
GEVRA AREA

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

STD :07815 275430(O)

: 7815 275032(R)

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email :noenvgevra@gmail.com



P.O. : GEVRA PROJECT

Distt.: Korba (C.G.)


Pin: 495452

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दिनांक 07/2018
18.

VACHAN- PATRA 1
(112.385HA. FOREST LAND)
(CONDITION NO. I)

SECL Gevra Area Distt.Korba (C.G.) declares and agrees that "Legal status of the diverted forest land will remain unchanged".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



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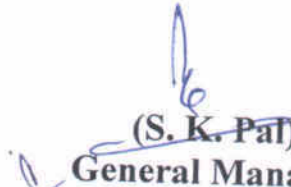
Pin: 495452

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दिनांक /07/2018
18

VACHAN- PATRA 2
(112.385 HA. FOREST LAND)
(CONDITION NO. V& XIV)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "No activity other than mining will be undertaken in the diverted forest land".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

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दिनांक /07/2018

18

VACHAN- PATRA 3
(112.385 HA. FOREST LAND)
(CONDITION NO. VIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Rehabilitation as per R & R policy of the State Government of Chhattisgarh in consonance with the National R & R policy shall be made".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
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साउथईस्टर्नकोलफिल्डस्लिमिटे

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दिनांक /07/2018

18

VACHAN- PATRA 4
(112.385 HA. FOREST LAND)
(CONDITION NO. IX)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees to "Undertake comprehensive greening in the villages located in the surrounding of their lease area".

(S.K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



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दिनांक /07/2018

18

VACHAN- PATRA 5
(112.385 HA. FOREST LAND)
(CONDITION NO. XI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “ mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per the schedule mentioned in the compliance of Condition no. XI”.

(S. K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
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साउथईस्टर्नकोलफिल्डस्लिमिटे
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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69 P

दिनांक /07/2018
18.

VACHAN- PATRA 6
(112.385 HA. FOREST LAND)
(CONDITION NO. XII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "With a view to enrich the water regime in the area, a comprehensive Catchment area Treatment Plan in the area to arrest flow of silt in the Hasdeo River and to improve water regime will be implemented at the project cost."


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

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साउथईस्टर्नकोलफिल्ड्सलिमिटे
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दिनांक /07/2018
18

VACHAN- PATRA 7
(112.385 HA. FOREST LAND)
(CONDITION NO. XIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “.Based on the outcome of the Impact of intervention study, the measures for protection, conservation and development of the wildlife, if needed may further be strengthened at the project cost.”


(S. K. Patil)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे

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दिनांक 10/07/2018

18

VACHAN- PATRA 8
(112.385 HA. FOREST LAND)
(CONDITION NO. XIX)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To pay additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India."

(S.K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



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18.

VACHAN- PATRA 9
(112.385 HA. FOREST LAND)
(CONDITION NO. XXIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest areas and human settlements, adjoining the forest area being diverted for the project."

(S. K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे
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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

**OFFICE OF THE GENERAL MANAGER
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दिनांक /07/2018
18.

VACHAN- PATRA 10
(112.385 HA. FOREST LAND)
(CONDITION NO. XXVI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “ The Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of mining lease proposed to be granted under the Mines and Minerals (Development and regulation) Act, 1957, and the Rules framed there-under as amended”.


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

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Distt.: Korba (C.G.)

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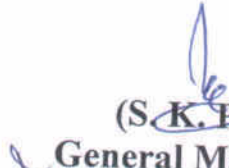
क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69K

दिनांक /07/2018

18.

VACHAN- PATRA 11
(112.385 HA. FOREST LAND)
(CONDITION NO. XXVII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100 meters from outer perimeter of the mining lease."


(S.K. Pat)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)
CIN U10102CT1985GO1003161
Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**

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P.O. : GEVRA PROJECT
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दिनांक /07/2018
18.

VACHAN- PATRA 12
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXV)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To submit the annual self compliance report of the above conditions to the state Government, concerned Regional Office and this Ministry by the end of March every year regularly".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

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18.

VACHAN- PATRA 13
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXVI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife".


(S. K. Pal)
General Manager
Gevra Area.

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दिनांक /07/2018

18

VACHAN- PATRA 14
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXVII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees to "comply the provisions of the all Act, Rules, Regulations, guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project".

(S. K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD
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पो0आ0:गेवरा प्रोजेक्ट
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दिनांक /07/2018

VACHAN- PATRA 15

(112.385 HA. FOREST LAND)
(CONDITION NO. XXX)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "No labour camp shall be established on the forest land."


(S. K. Pal)
General Manager
Gevra Area.

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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 /

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VACHAN- PATRA 16

(112.385 HA. FOREST LAND)
(CONDITION NO. XXXII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillar to pillar and GPS co-ordinates."


(S. K. Pal)
General Manager
Gevra Area.

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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./पर्यावरण/2018 /

दिनांक /07/2018

VACHAN- PATRA 17

(112.385 HA. FOREST LAND)
(CONDITION NO. XXXIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Forest land will not be used for any purpose other than that specified in the proposal."


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD
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दिनांक /07/2018

VACHAN- PATRA 18

(112.385 HA. FOREST LAND)
(CONDITION NO. VI & VII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Safety zone will be fenced with coiled barbed wire fencing of a 6 feet high for the protection of forests."


(S. K. Pal)
General Manager
Gevra Area.

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VACHAN- PATRA 19

(112.385 HA. FOREST LAND)
(CONDITION NO. X)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Mined out forest area reclaimed by the User Agency, will be handed over back (as per the guidelines issued by MoC applicable for land acquired under CBA Act) to the State Forest Department by 2038-39 after Final Mine closure activities (As per the Calender programme for excavation of coal in approved 49 MTY PR of Gevra OCP)."


(S. K. Pal)
General Manager
Gevra Area.

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OFFICE OF THE GENERAL MANAGER

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VACHAN- PATRA 20

(112.385 HA. FOREST LAND)

(CONDITION NO. XXI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams will be prepared and implemented. Planting of adequate drought hardy plan species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion. Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour. Stabilize the overburden dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28, and Strict adherence to the prescribed top soil management..”


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

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साउथईस्टर्नकोलफिल्डस्लिमिटे STD

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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER**GEVRA AREA**

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P.O. : GEVRA PROJECT

Distt.: Korba (C.G.)

VACHAN- PATRA 21
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “ User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas. .”


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL

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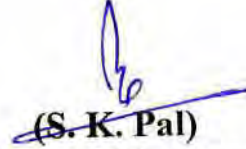
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Pin: 495452

VACHAN- PATRA 20
(112.385 HA. FOREST LAND)
(CONDITION NO. XXViii)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "The User agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. From the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User agency shall regularly undertaking desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/water bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval".


(S. K. Pal)
General Manager
Gevra Area.

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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2020 /

दिनांक /02/2020

VACHAN- PATRA 22

(112.385 HA. FOREST LAND)
(CONDITION NO. V)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “The construction of residential accommodation for workers will be undertaken separately on non – forest land to avoid pressure on forest land for temporary construction.”


(S. K. Pal)
General Manager
Gevra Area.



क्रमांक	दिनांक	भाषा	पत्ता	परीक्षेची संख्या	कक्षा/लगाव ही	फोटो	अस्तावध
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16	06/09/19	गणकरीय रा. सं. क. वि. का. म. का.	गणकरीय रा. सं. क. वि. का. म. का. वि. का. म. का.	10	गणकरीय रा. सं. क. वि. का. म. का. के. म. का. म. का.		11/11/19 गणकरीय रा. सं. क. वि. का. म. का. गणकरीय रा. सं. क. वि. का. म. का.
17	06/09/19	गणकरीय रा. सं. क. वि. का. म. का.	गणकरीय रा. सं. क. वि. का. म. का. वि. का. म. का.	15	गणकरीय रा. सं. क. वि. का. म. का. के. म. का. म. का.		11/11/19 गणकरीय रा. सं. क. वि. का. म. का. गणकरीय रा. सं. क. वि. का. म. का.

क्र.सं.	नाम	पते	पिन	दिनांक	विवरण	दिनांक	विवरण	दिनांक	विवरण	दिनांक	विवरण
18.	General Manager	Dabra	MD 206 Dabra Colony	02	56/09/19	मार्ग प्र. 1	मार्ग प्र. 1	02	56/09/19	मार्ग प्र. 1	मार्ग प्र. 1
19.	श्रीवांगी गोर	श्रीवांगी मंडळ		10	06/09/19	श्रीवांगी	श्रीवांगी				
20.	महेश्वरी शर्मा	महेश्वरी (श्रीवांगी)		02	06/09/19	महेश्वरी (श्रीवांगी)	महेश्वरी (श्रीवांगी)				
21.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
22.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
23.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
24.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
25.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
26.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
27.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
28.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
29.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
30.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				
31.	श्रीवांगी गोर	श्रीवांगी मंडळ		02	06/09/19	श्रीवांगी मंडळ	श्रीवांगी मंडळ				

क्र.सं.	दिनांक	नाम	वर्ग	श्रेणी	दिनांक	वर्ग	श्रेणी	वर्ग	व्यक्ति
38	06/09/10	अमलीया कुमार	दुपका	दुपका	03	दुपका	दुपका		विश्वनाथ
39	10 -	सोनी कुमार	दुपका	दुपका	06	दुपका	दुपका		सौरभ
34	10 -	तंजु	दुपका	दुपका	10	दुपका	दुपका		श्री
37	10 -	अनसुवार	दुपका	दुपका	14	दुपका	दुपका		- राधा
36	10 -	पारुषी कुमार	ग्राम निवासी	ग्राम निवासी	20	ग्राम निवासी	ग्राम निवासी		प्रियंका
37	10 -	अमली	41 दुपका	दुपका	17	दुपका	दुपका		अरुण
38	10 -	हनुमंत राव	ग्राम निवासी	ग्राम निवासी	13	ग्राम निवासी	ग्राम निवासी		श्री
39	10 -	अश्विनी कुमार	41 दुपका	दुपका	15	दुपका	दुपका		श्री
40	10 -	रुपिका कुमार	दुपका	दुपका	20	दुपका	दुपका		श्री
41	10 -	अनसुवार	दुपका	दुपका	05	दुपका	दुपका		श्री
42	10 -	श्री. शालिनी	ग्राम निवासी	ग्राम निवासी	07	ग्राम निवासी	ग्राम निवासी		श्री
41	10 -	गो. सुंदर	दुपका	दुपका	14	दुपका	दुपका		श्री
42	10 -	श्री. विजयलक्ष्मी	दुपका	दुपका	05	दुपका	दुपका		श्री
43	10 -	अश्विनी राव	दुपका	दुपका	10	दुपका	दुपका		श्री
44	10 -	सोनी सुंदर	दुपका	दुपका	14	दुपका	दुपका		श्री
45	10 -	प. र. पांडे	ग्राम निवासी	ग्राम निवासी	15	ग्राम निवासी	ग्राम निवासी		श्री



क्रमांक	दिनांक	नाम	पेशा	पता	विकास क्षेत्र	जिला	संस्था
46	06/09/19	खान्ते पतेल	खाल्हावा रान Deoga	खाल्हावा रान Deoga	56	खाल्हावा रान Deoga	खाल्हावा रान Deoga
47	10	Rajesh Kumar	Deoga	खाल्हावा रान Deoga	12	खाल्हावा रान Deoga	खाल्हावा रान Deoga
48	10	Anshu Purbay	Deoga	खाल्हावा रान Deoga	05	खाल्हावा रान Deoga	खाल्हावा रान Deoga
49	10	M.D. Ahmed	Deoga	खाल्हावा रान Deoga	07	खाल्हावा रान Deoga	खाल्हावा रान Deoga
50	10	Bhanu Prasad	Deoga	खाल्हावा रान Deoga	09	खाल्हावा रान Deoga	खाल्हावा रान Deoga
51	10	Neesha Kumar	Deoga	खाल्हावा रान Deoga	05	खाल्हावा रान Deoga	खाल्हावा रान Deoga
52	10	Satish Kumar	Deoga	खाल्हावा रान Deoga	07	खाल्हावा रान Deoga	खाल्हावा रान Deoga
53	10	G. Shree Kumar	Deoga	खाल्हावा रान Deoga	09	खाल्हावा रान Deoga	खाल्हावा रान Deoga
54	10	Shiv Narayan	Deoga	खाल्हावा रान Deoga	05	खाल्हावा रान Deoga	खाल्हावा रान Deoga
60	10	Shalu Tewari	Deoga	खाल्हावा रान Deoga	10	खाल्हावा रान Deoga	खाल्हावा रान Deoga
61	10	Pooja Singh	Deoga	खाल्हावा रान Deoga	08	खाल्हावा रान Deoga	खाल्हावा रान Deoga
62	10	Yashraj Agrawal	Deoga	खाल्हावा रान Deoga	08	खाल्हावा रान Deoga	खाल्हावा रान Deoga
64	10	Bhumi	Deoga	खाल्हावा रान Deoga	05	खाल्हावा रान Deoga	खाल्हावा रान Deoga
65	10	Anshu Agrawal	Deoga	खाल्हावा रान Deoga	07	खाल्हावा रान Deoga	खाल्हावा रान Deoga
66	10	Shreya	Deoga	खाल्हावा रान Deoga	09	खाल्हावा रान Deoga	खाल्हावा रान Deoga

क्र.सं.	पेशवा	नाम	पत्ता	मालिकता	मालिकता	पत्ता	धर्म
67	06/09/19	मनदीप सिंह	पलि रोड डेपका	07	पलि रोड डेपका		अनाथ
68	-	शिव नारायण सक्	मालगम	14	मालगम		अनाथ
69	-	शिव चामर	छात्रपुर	16	समूह छात्रपुर		अनाथ
70	-	अमरुत राम सोनार	डेपका	20	डेपका		अनाथ
71	-	वजय काल	मालगम पुर पलि	17	मालगम पुर पलि		अनाथ
72	-	खुमकुंदरि राठोर	डेपका	09	डेपका		अनाथ
73	-	सोई प्रिंसेस	मालगम रोड डेपका	15	मालगम रोड डेपका		अनाथ
72	-	सोबस	तारुली	13	तारुली		अनाथ
73	-	म. डी. शंकरा	मालगम	20	मालगम		अनाथ
74	-	सुसा खुरदर	बोम बाच्छा	19	बोम बाच्छा		अनाथ
75	-	कमला लाल	डेपका	13	डेपका		अनाथ
76	-	फिलन दास	तारुली	21	तारुली		अनाथ
77	-	मन बोले पाते	शिवपुर	13	पलि रोड शिवपुर		अनाथ
78	-	शालु सोनार	डेपका	13	डेपका		अनाथ

79.	06/09/19	Niswari Suwari Yaday	Duraga	27	Duraga	MSP/101
80.	06/09/19	Satya Prakash Yaday	Dakshin	30	Dakshin Buda	KITOS
81.	06/09/19	Harish Ram Nishad.	Dakshin	30	Dakshin Buda	Agud
82.	06/09/19	X.P. Rathor	Duraga	15	Duraga	Agud
83.	06/09/19	Kamal Patel	Bhilai	05	Bhilai Buda	ATD
84.	08/09/19	Subhasi Das	Bagdara	07	Bagdara (Subana)	GSUNV
85.	06/09/19	Union (Jafar)	SECL/Am.	25	Union office (Gover)	Agud
86.	06/09/19	A.X. Mishra	Calang	07	A. Calang	R.P. Agud
87.	06/09/19	R. Raktane	Dhinda	03	Dhinda pur (Bhilai)	Agud
88.	06/09/19	Prakash Yadav	Sarai Sing	03	Sarai Singar (Bhilai)	Agud

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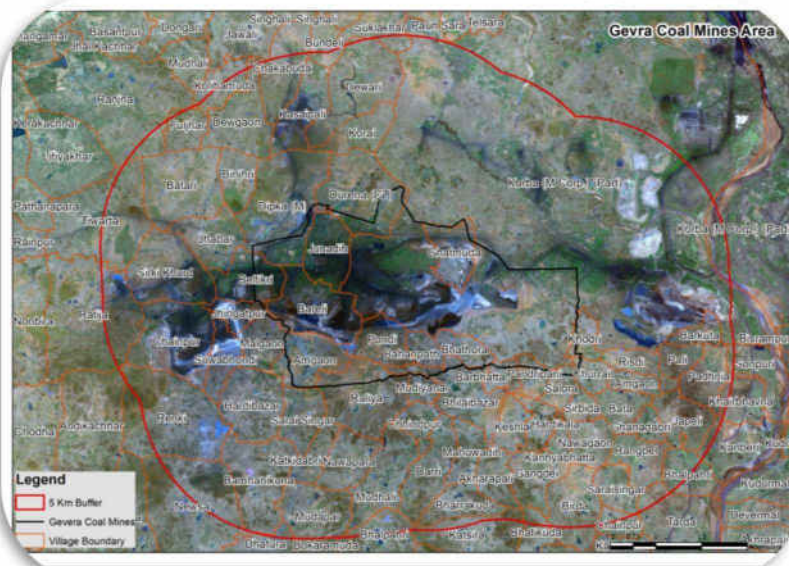
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क्रमांक	दिनांक	नाम	पता	पौधों की संख्या	कहाँ लगाना है	छोटो	हस्ताक्षर
1.	13/08/19	अनुर चन्द हारस राठौर	शा.भा. विद्यालय रैबड़ी वि.अप.पाली जिला - डेरना	150	विद्यालय में		02/SP/19
2.	16/8/19	प्रेम दास महेत	ऊर्जा नगर MR02	15	स्टेशन वॉरहाउस वादी में		मुरा
3	16/03/19	Mrs. Narela Netam	U.N. B-350	25	ग्राम में लगाने हेतु		कौर
4	12/08/19	शुभम जयसवाल	भिरडी बाजार	06+02	ग्राम में लगाने हेतु		सर्व
5.	20/08/19	सुखराज सिंह खेर सरपंच	हडकी बाजार गा.क. उच्च. महेत जिला. डेरना	500	विद्यालय में स गा.वा.वा.वा.वा.वा. बाजार में।		सुखराज
6.	20/08/19	लवलेखा कुमर	हडकी बाजार	03	ग्राम में लगाने हेतु		लवलेखा
7.	20/08/19	राजू कुमर	हडकी बाजार	03	ग्राम में लगाने हेतु		राजू कुमर

A REPORT ON CATCHMENT AREA TREATMENT PLAN USING REMOTE SENSING AND GIS

GEVRA AREA OF SOUTH EASTERN COALFIELDS Ltd, DISTRICT KORBA CHHATTISGARH STATE

DRAFT ACTION PLAN REPORT



Submitted by:
CHHATTISGARH COUNCIL OF SCIENCE &
TECHNOLOGY, CHHATTISGARH SPACE
APPLICATIONS CENTRE,
VIGYAN BHAVAN, VIDHANSABHA ROAD,
RAIPUR (CG) 492 014

Draft report

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Draft report

Preamble

Effective utilization of natural resources and their management is essential for the growth and development of any economy. This requires systematic planning so that development issues do not come in the way of environmental considerations. Keeping the environmental issues in mind while planning is the most crucial ingredient for any development planning. Reliable and timely information on resources is pre-requisite for the mining development of a plan.

Various central and state departments are involved in the process of monitoring the Environmental impact of anthropogenic activities. Information on natural resources when viewed on a Satellite Data gives a synoptic view of the area of interest and thematic interpretation is possible to identify areas that need specific attention for initiating conservation measures.

GIS and Remote Sensing over the years have served a useful tool for decision support. Most of the information is not available in the form that they can be directly depicted spatially over various other layers. This information is mostly available in tabular format and spread over many departments. GIS and Remote Sensing allows us to transform information from various sources to one platform and enables decisions or planning exercises in a scientific and timely manner for the benefit of the target group.

The Council has established Chhattisgarh Space Applications Centre to monitor the States natural resources. The CGSAC has been established:

- a. To carry out all work related to Remote Sensing Applications and GIS for the State of Chhattisgarh.
- b. To carry out work related to Satellite Communications for Training, Education and Health, etc. for the State of Chhattisgarh.
- c. To take up the National projects within the State as well as outside the State.

The CGSAC also promotes training in Remote Sensing/GIS technology for the various line departments and students & faculty members of various Universities and colleges to popularize the techniques.

Chhattisgarh Space Applications Centre of Chhattisgarh Council of Science and Technology over the years has built in-house capacity to take-up tasks that are information intensive and require scientific data interpretation skills for natural resource mapping and GIS database creation. CGSAC of the council has well trained team of Senior Scientists to undertake this task.

1. Technical Proposal

South Eastern Coalfields Ltd (SECL) approached the Council to provide technical support and provide relevant inputs for the preparation of forest clearance and environment clearance proposals. Remote Sensing and GIS based inputs are required for the preparation of a comprehensive catchment area treatment plan in the area to arrest flow of silt in the Hasdo River and to improve water regime.

1.1. Study area

The proposed study area of SECL lies in the Korba District of the State. As per the information (digitized boundary of Gevra project area) provided to the Council on 28th of Nov'17 by Shri. Rajesh Kumar, Sr. Manager, SECL, Gevra Area; the GIS area of the Gevra project area is estimated to be 4,731 Ha. It was also informed that the study is to be carried out for the 5Km buffer of the Gevra project boundary; the area within 5 km buffer is estimated to be 27,927 Ha.

Based on the area information provided SECL with the 5 Km. Buffer is plotted on the State boundary and is shown in Figure 1-1.

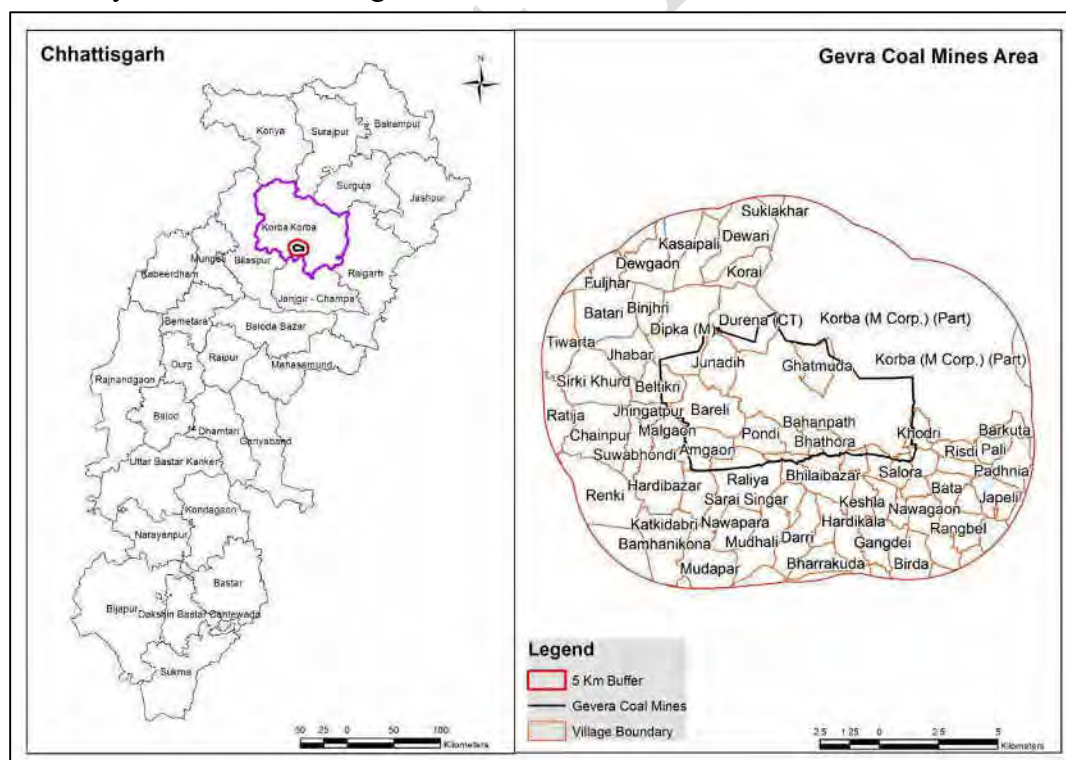


Figure 1-1 Regional Location of SECL Project Area

1.2. Scope of the work

The Scope of the work indicated by the SECL vide letter no. एस.ई.सी.एल/म.प्र/गे.क्षे/. पर्यावरण/ 2017/163 dated 30/11/17 is as under:

The study to be carried out by the council should enable the South Eastern Coalfields Ltd. to address the issues:

1. The problem of silt and debris load to river from the susceptible areas of the catchment.
2. Checking the sediment load from the tributaries directly discharging into the river.
3. Protecting the directly draining catchment from scouring / sloughing
4. Mitigative measures for the erosion and other hazards resulting from the project activities

In a meeting held at Council office on 25th and 28th of Nov'17 with the Director General and technical team of council and APCCF, SECL and Sr. Manager, SECL specific needs for 5 km buffer area of 27,927 Ha. were discussed and Council technical help was sought. After going through the requirements, Council has shown its willingness to help the officials of SECL. Details of the requirement were sent by the SECL on 30/11/17 in the form of a letter of intent.

After carefully going through the requirements, Council proposes to process and generate the following maps to meet the requirements of SECL:

1. Rectification & Geo Coding of High Resolution
2. Satellite data based interpretation of Geology.
3. Overlay of Geological Structures on the Geology map.
4. Landuse/landcover of the area
5. Geomorphological setup
6. Slope
7. Drainage network
8. Surface waterbody
9. Infrastructure facilities including details of existing features:
 - a. Road
 - b. Rail
 - c. Settlement locations
10. Village boundary with 2011 census based socio-economic profile
11. Forest & Cadastral information.
12. Action plan for soil and water conservation

1.3. Work Elements

Council's proposal against each of the work element indicated by SECL are enumerated below for getting technical consent from SECL:

Sl	As indicated by SECL Ltd.	Council's Proposal	Remarks
1	Estimation of soil erosion	Council proposes to use Universal Soil Loss Equation to identify and delineate areas that are prone to erosion	Widely used in erosion related research studies.
a	Study of drainage pattern of the catchment area	Council shall create drainage network map from Survey of India toposheets and High Resolution satellite images created under SIS-DP project	Standard procedure adopted in GIS studies
b	Delineation of watersheds and sub-watersheds of free draining catchment	Council shall use the National Atlas of Watersheds published by National Bureau of Soil Survey and Landuse Survey as standard base and subdivide the published watershed boundaries into smaller manageable Micro, Mini, Milli -watersheds	Standard procedure adopted in GIS studies
c	Assessment of slope of the catchment area	Council shall generate slope from the DEM generated from the CARTOSAT – 1 Stereo images	Slope based on DEM at 10 mts. Posting is available.
d	Land use and land cover mapping using remote sensing and GIS	Council shall create landuse/landcover map of the entire study area. Using existing satellite images and 10 mts pixel images available in free domain. (SECL provided boundary) As per initial estimated the GIS areas of the mine is = 4,731 Ha. And the 5 km buffer of the boundary amounts to = 27,927 Ha.	The boundary provided by SECL on 28th of Nov'17 shall be used and a buffer of 5 kms shall be created.
e	Study of soil parameters under directly draining area	Council has soil physiographic class maps of the study area, which would be provided as deliverables.	Not fresh mapping required.
f	Study of soil details, silt yield and its delivery potential	Council proposes to use Universal Soil Loss Equation to identify and delineate areas that are prone to erosion	Widely used in erosion related research studies.

Sl	As indicated by SECL Ltd.	Council's Proposal	Remarks
2	Prioritization of Sub-watersheds	Based on the intensity in erosion the watersheds shall be prioritized	-
a	Preparation of a framework of sub-watersheds	The framework shall be based on the enumeration at point no. 1b	No separate effort is required
b	Generation of a map indicating erosion-intensity	Council shall generate erosion-intensity map based on the results of the processing enumerated at 1f	Output maps shall be presented on A3 paper with the final report.
c	Assignment of weightage values to various mapping units	Council shall use the landuse/ landcover, soil and erosion intensity maps as input to derive Prioritization of watersheds	As adopted in multi criteria analysis in GIS.
d	Assignment of maximum delivery ratios to various erosion intensity mapping units and assessment of adjusted delivery ratios for different sub-watersheds	As universal soil loss equation shall be used, the outputs should suffice the present need	Not fresh analysis will be carried out.
e	Computing Silt-Yield Index for individual sub-watersheds	As universal soil loss equation shall be used, the outputs should suffice the present need	Not fresh analysis will be carried out.
f	Grading of sub-watersheds for prioritization	As indicated in 2c	-
3	Identification of area for Comprehensive Area Treatment	As indicated in 2c	-
4	Preparation of Schedule of Implementation	Council shall generate a suggestive action plan map of the 27,927 Ha study area.	-

Sl	As indicated by SECL Ltd.	Council's Proposal	Remarks
5	Preparation of treatment measures and their cost estimate	Actual engineering design of each structure and their costing shall be prepared by SECL/officers of irrigation departments	Beyond the Council's purview

For the above, South Eastern Coalfields Ltd. may provide its consent to assign the work to the council along with the proposed financial outlay which is placed in section **Error! Reference source not found..**

2. Proposed Methodology

As per the needs identified in Section 1, Council proposes following methodology:

2.1. Satellite data Processing

Council shall process the CARTOSAT and suitable LISS-IV satellite data so as to enable 1:10,000 scale mapping of the feature in the 5 Km. Buffer of SECL area. The total area to be mapped is estimated to be about 27,927 Sq.Km (46894 Ha.). The area of interest (27,927 Ha.) falls in one RESOURCESAT-1, LISS-IV Mx scenes and three CARTOSAT-1 scenes. Figure 2-1 shows the SECL area with 5 Km. buffer and satellite data foot prints.



Figure 2-1 SECL Area location with Satellite Data Footprints

2.2. Outputs

Deliverables of this project will be:

1. Soft copy of Rectified & Geo-referenced Fused multi spectral (FCC) with 2.5 mt. resolution satellite data of the study area in **geotiff format** on CD/DVD.

2. Hard copy colour prints of Map compositions of satellite data and Thematic mapping (as per sections 1.2 and 0 above) of features on A3 Size paper (on best fit scale) with proper annotations, legend and scale information.
 - Geology & Geological Structures, Landuse/landcover, Geomorphological setup, Slope, Drainage network, Surface waterbody, Infrastructure facilities including details of existing features (**a.** Road, **b.** Rail, **c.** Settlement locations), Village boundary with 2011 census based socio-economic profile and action plan (containing soil and water conservation measures).
3. Soft copies of maps compositions on A3 Size paper in **.jpeg format** in CD/DVD.
4. Soft copies of GIS data created in the project in **.shp format** in CD/DVD. (for further used by SECL)
5. Report in **.pdf format** containing interpretation of the thematic data generated with area statistics.

2.3. Snapshots of the SECL Area

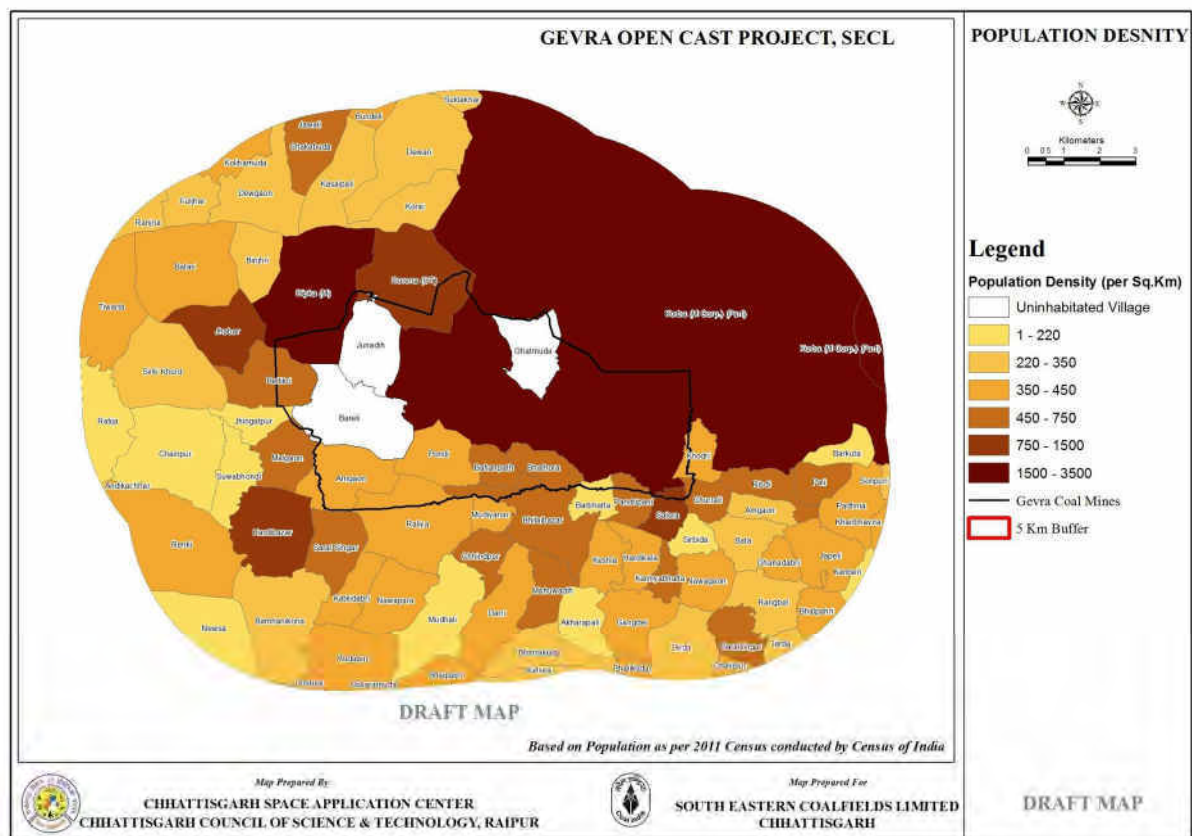


Figure 2-2 Location of villages around SECL project area

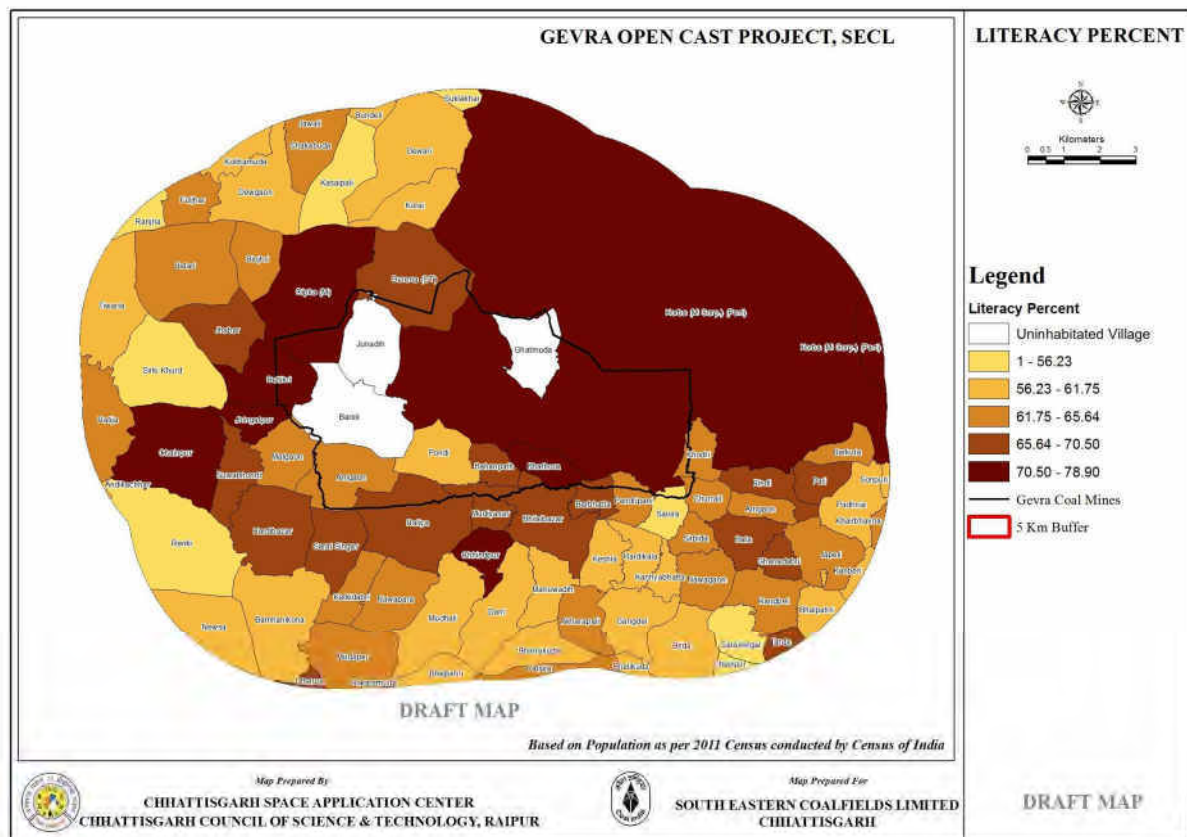


Figure 2-3 Literacy of villages around SECL project area

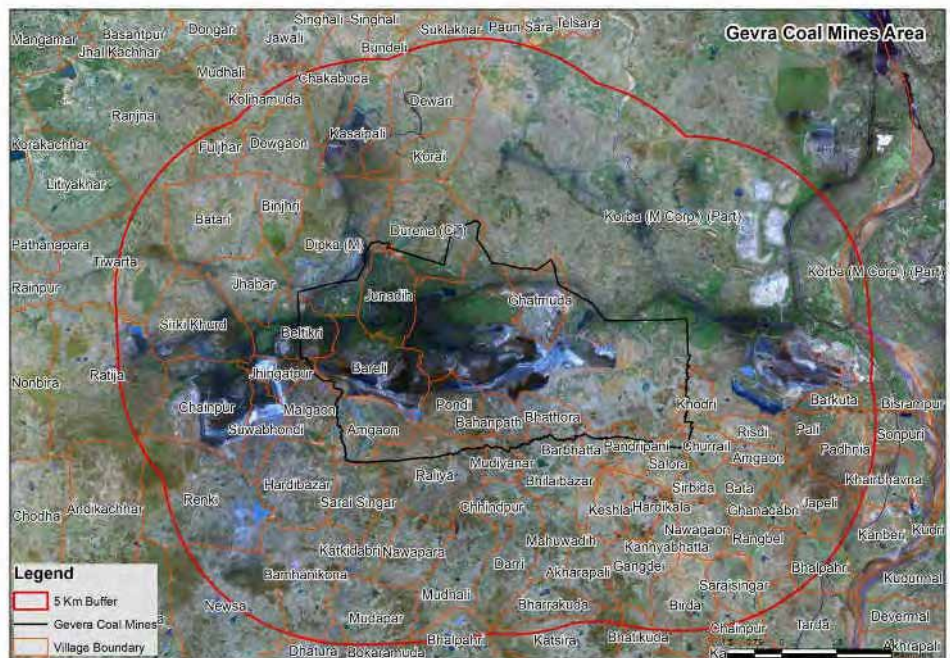


Figure 2-4 Gevra Project Area as viewed on CARTOSAT+ LISS-IV merged Satellite data Product

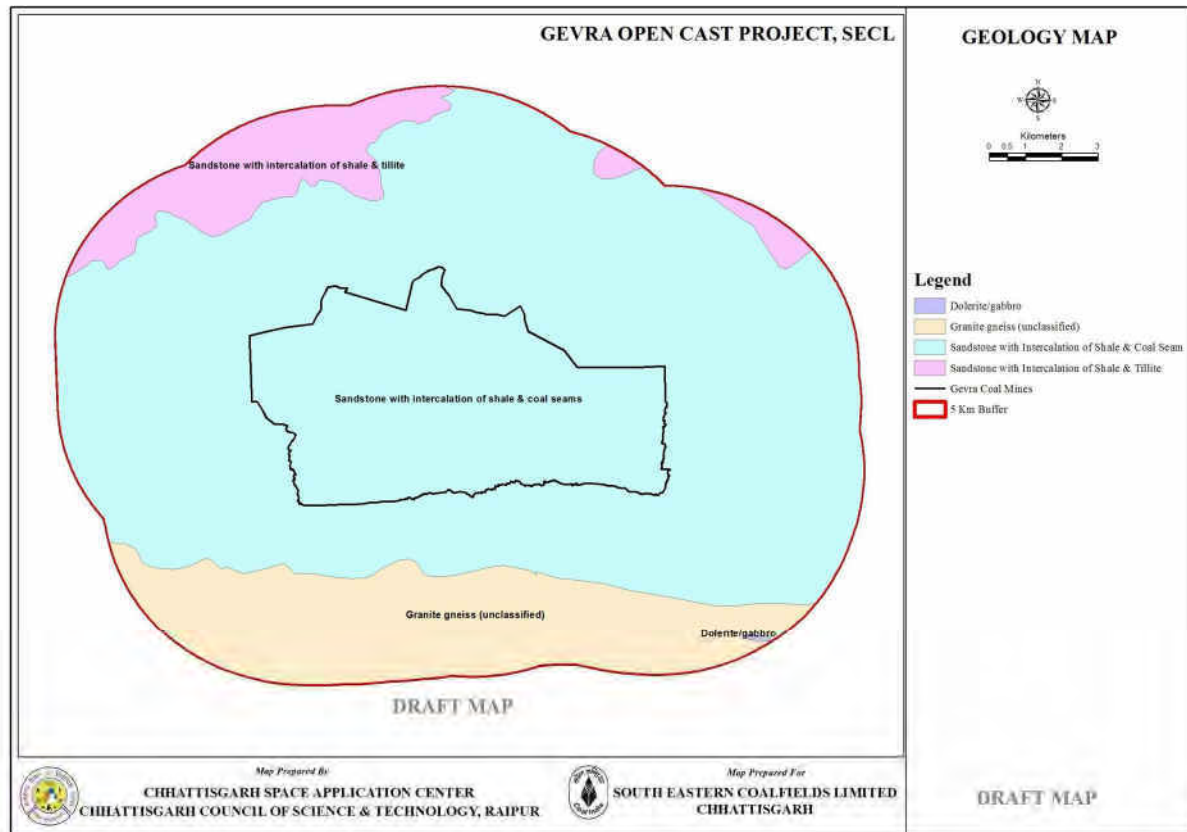


Figure 2-5 Geology of Gevra Project Area

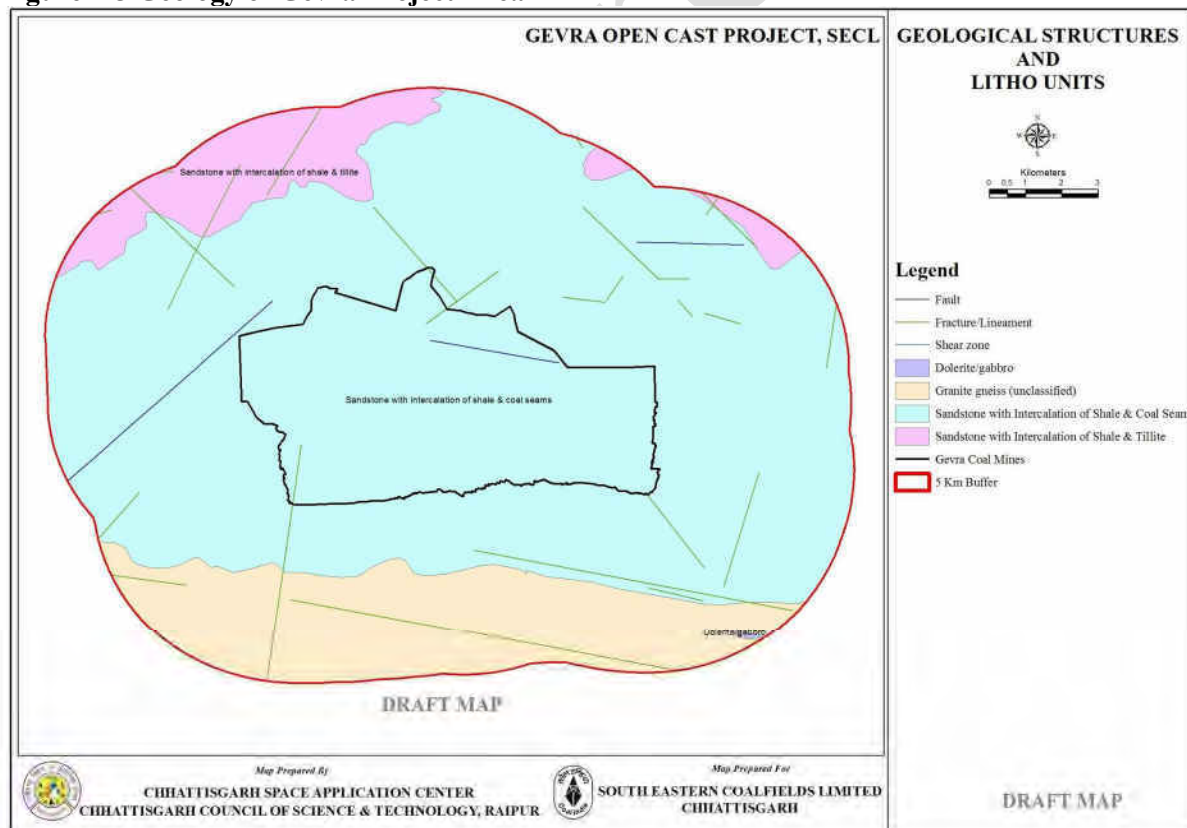


Figure 2-6 Geological Structures of Gevra Project Area

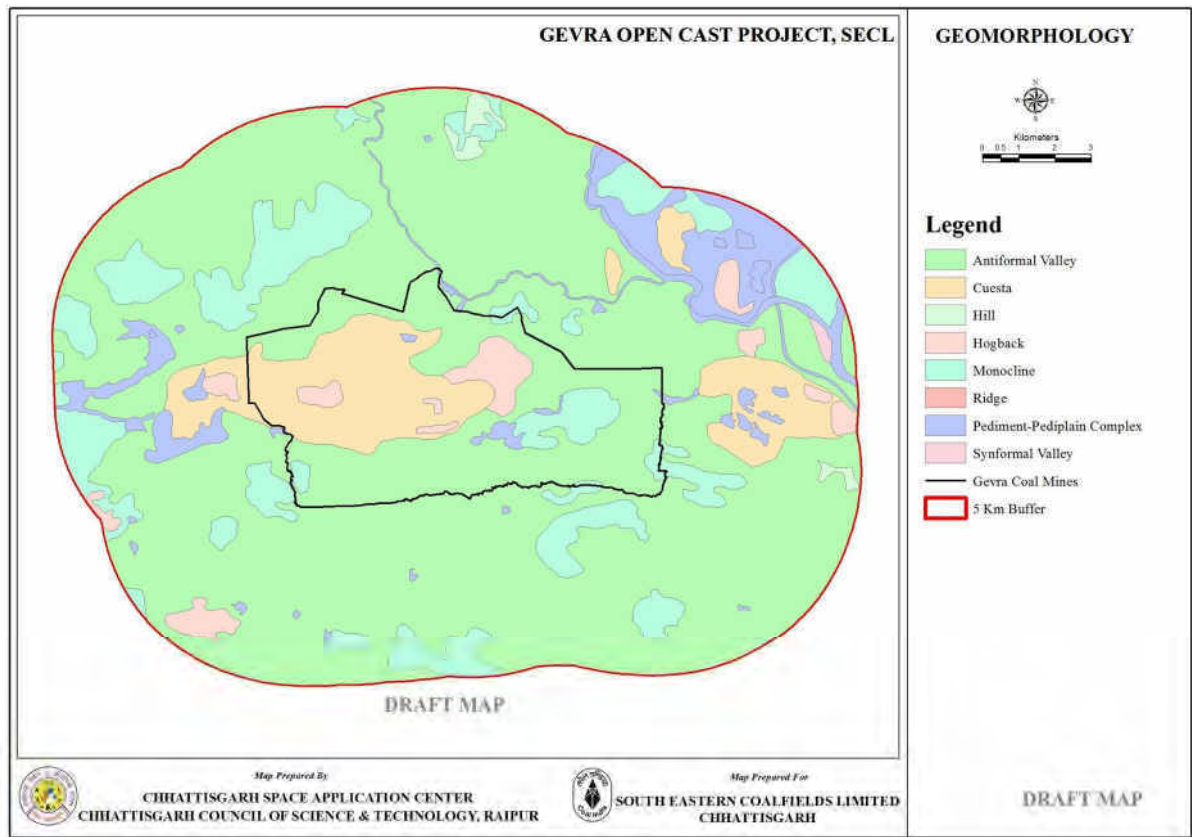


Figure 2-7 Geomorphology of Gevra Project Area (Based on Satellite data interpretation)

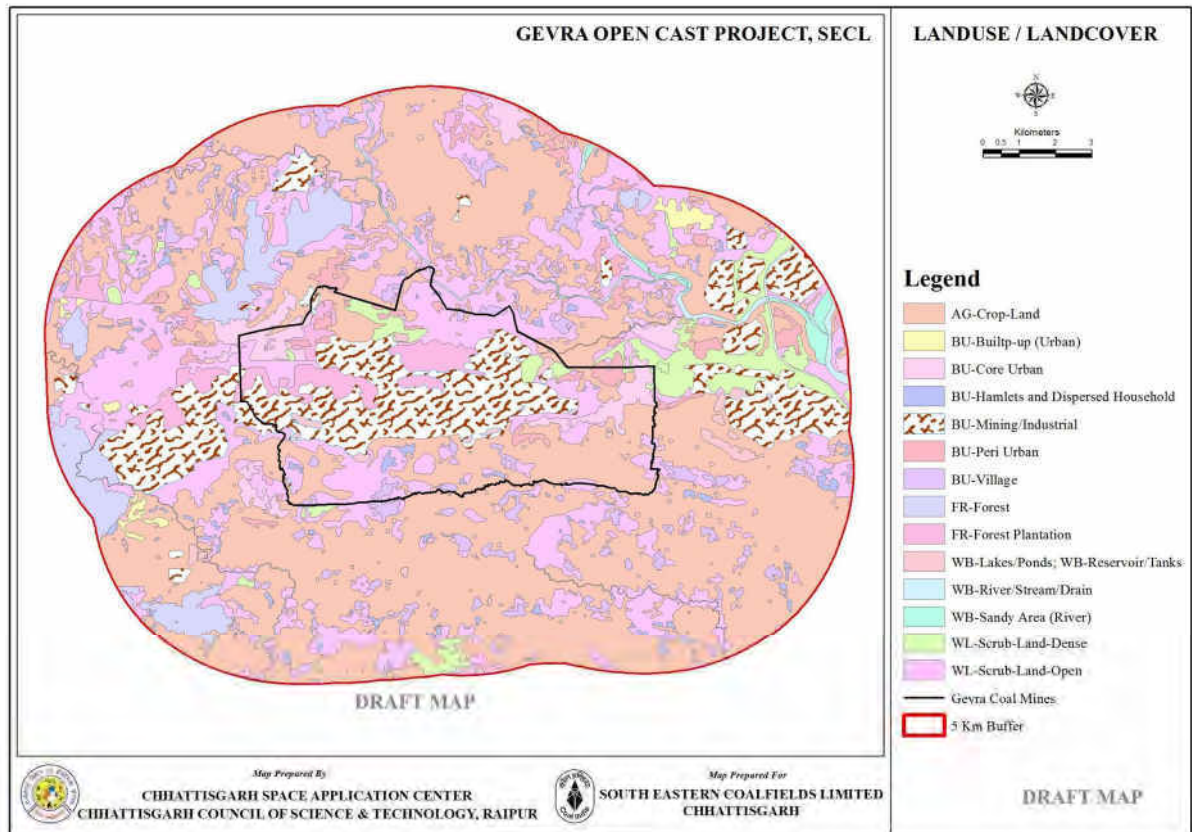


Figure 2-8 Existing Landuse of Gevra Project Area (Based on Satellite data interpretation)

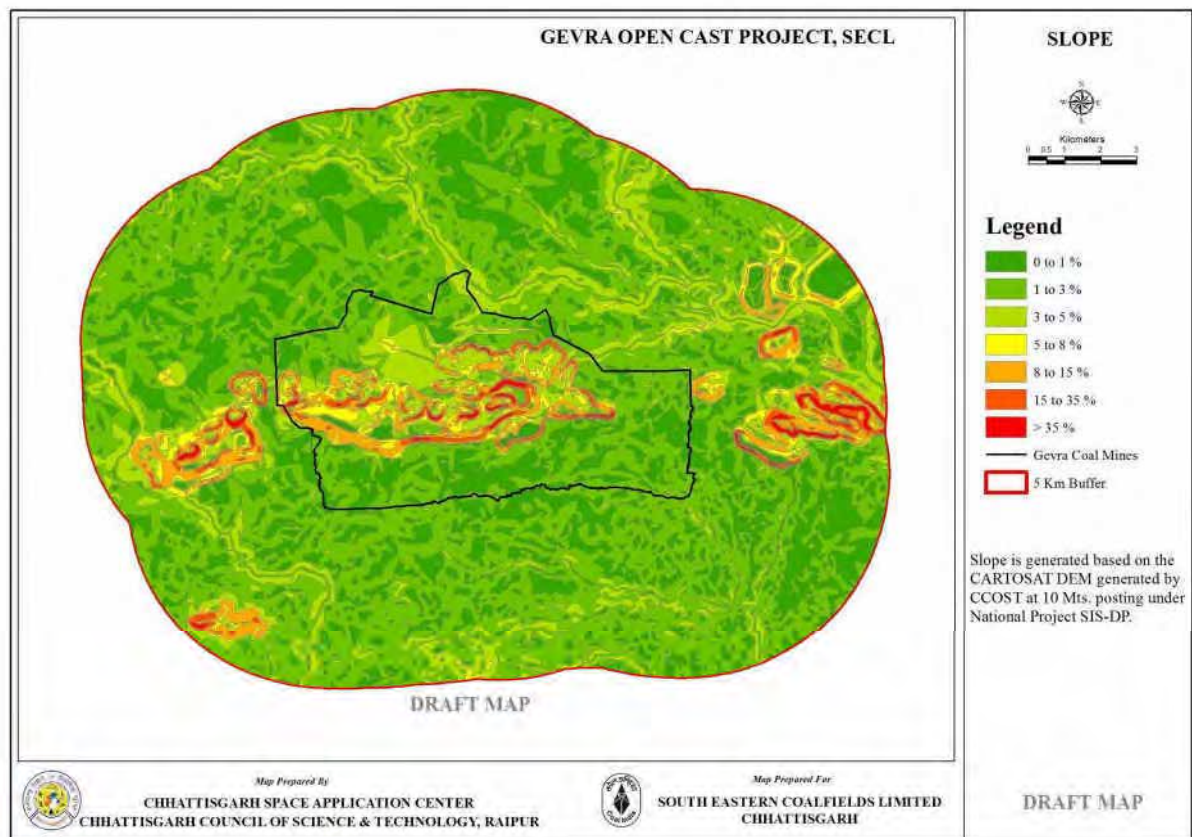


Figure 2-9 Slope of Gevra Project Area

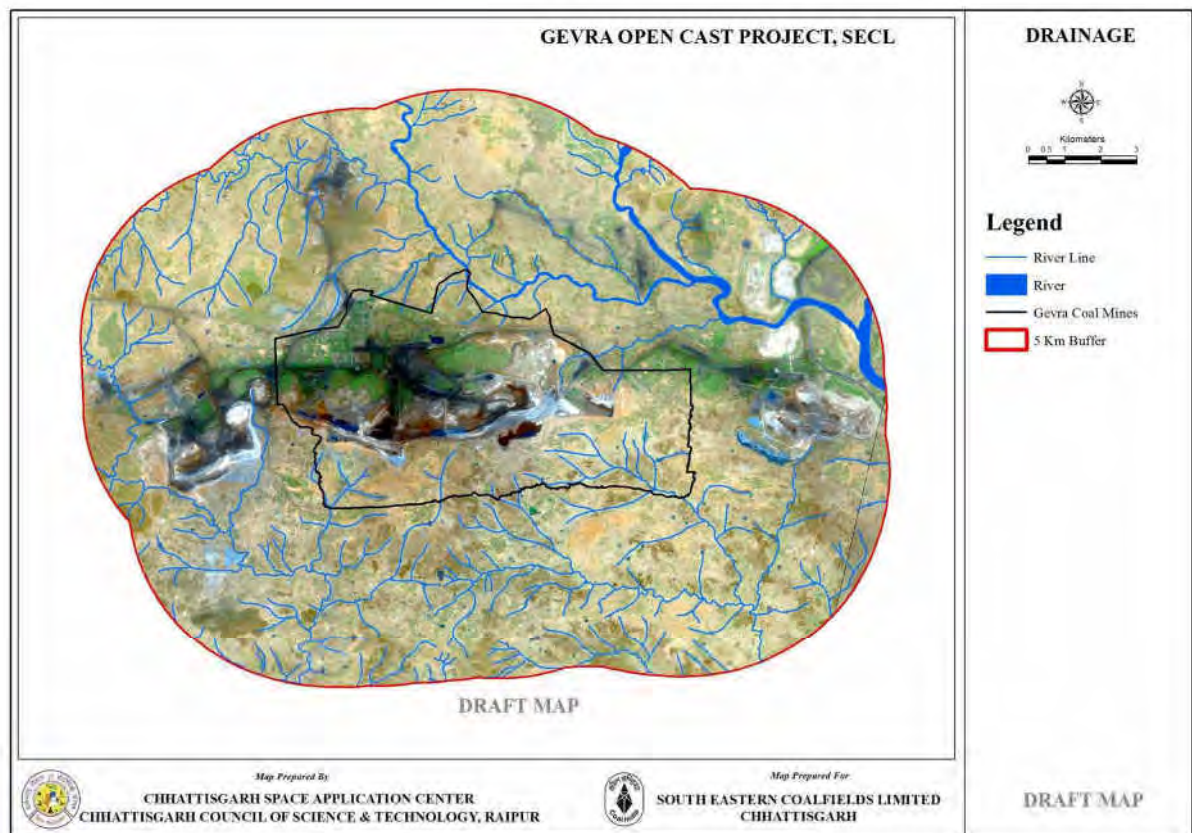


Figure 2-10 Drainage of Gevra Project Area

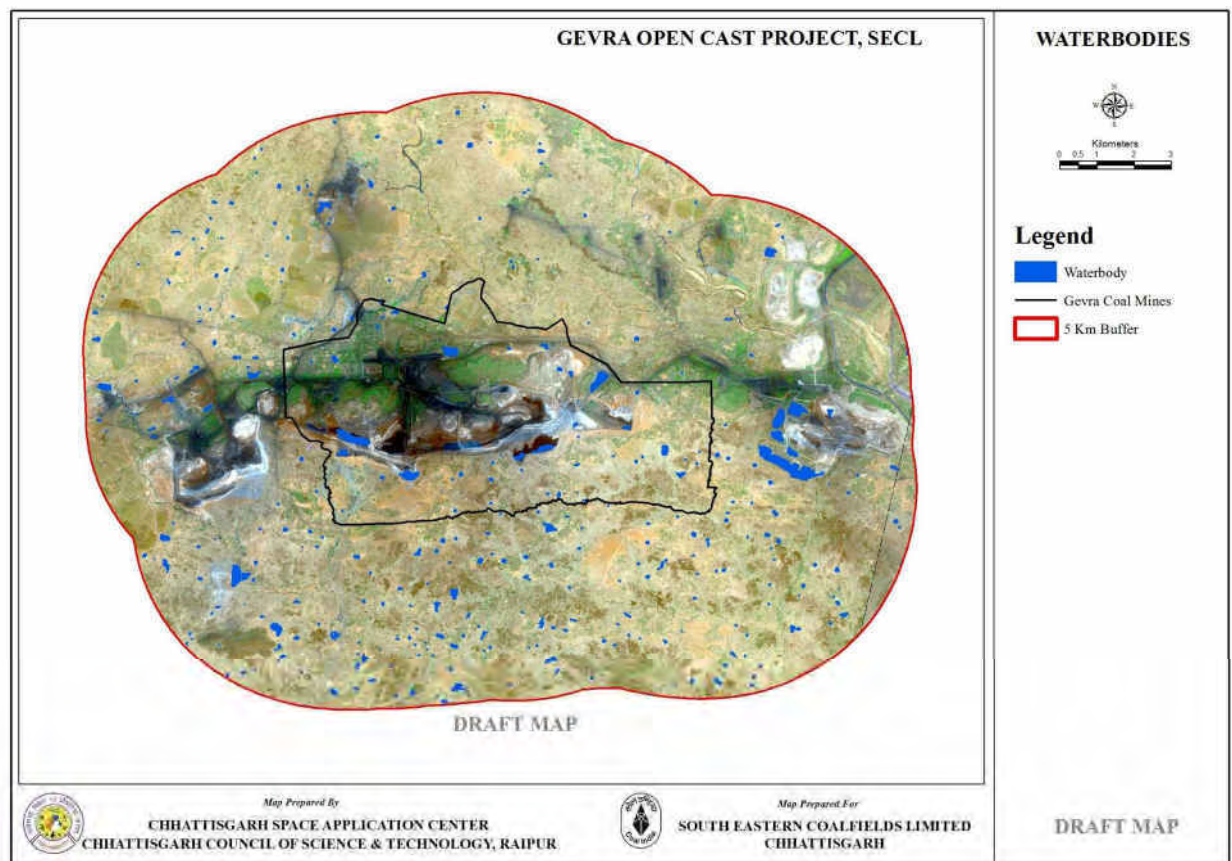


Figure 2-11 Waterbodies of Gevra Project Area

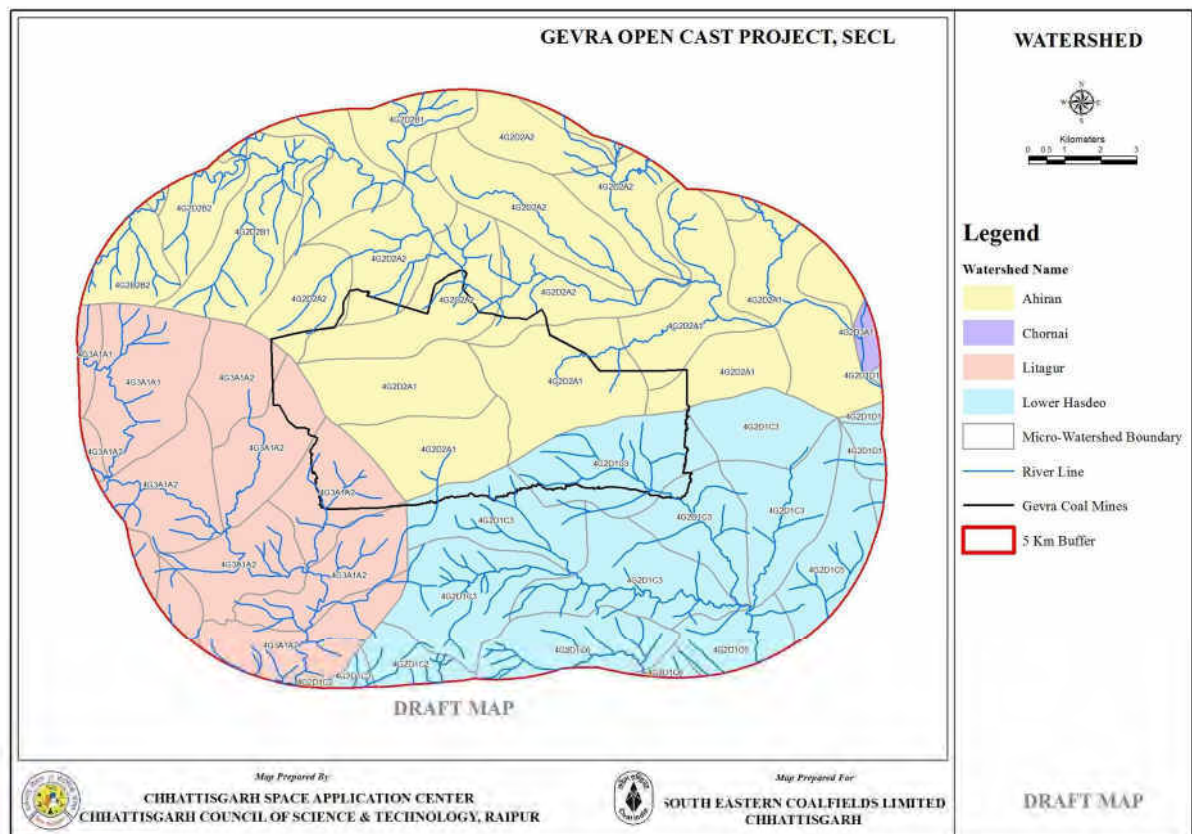


Figure 2-12 Watersheds of Gevra Project Area (Based on NBSSLUP Atlas)

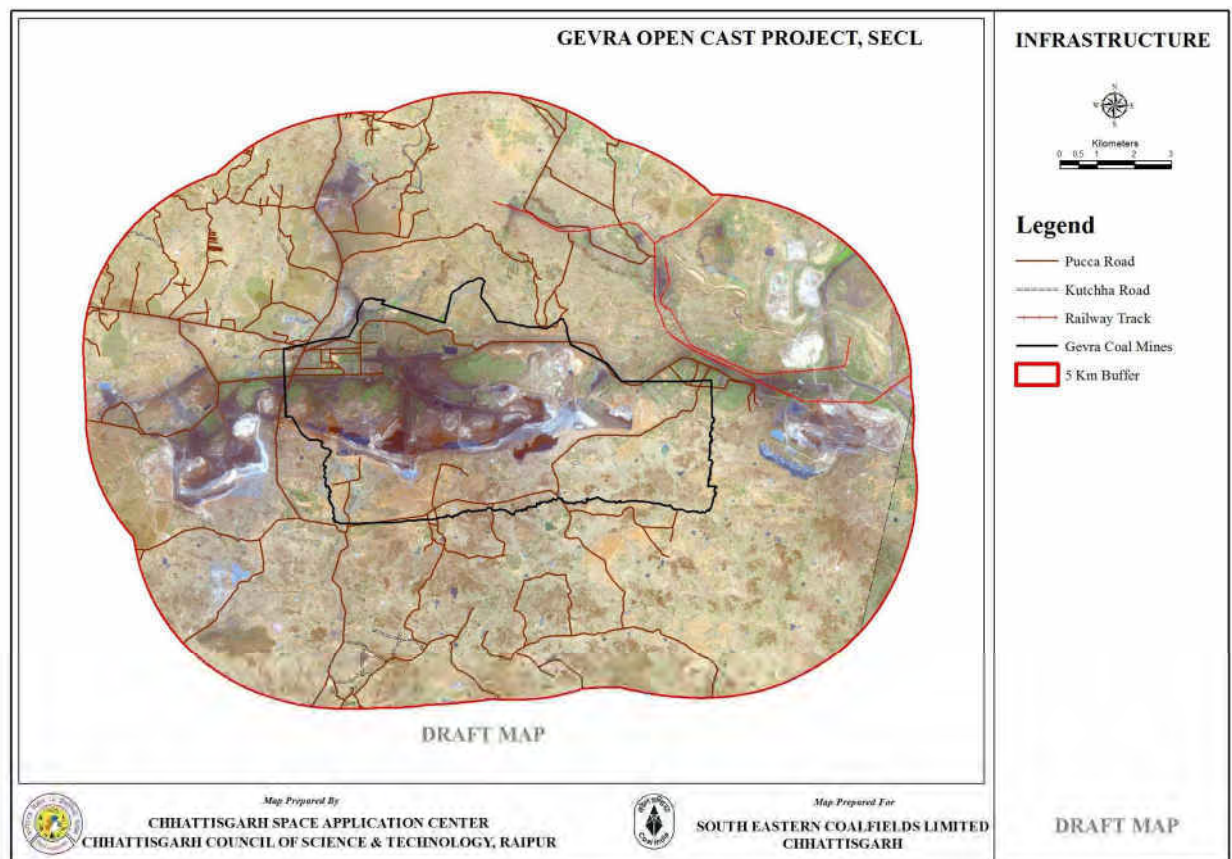


Figure 2-13 Transport Infrastructure of Gevra Project Area

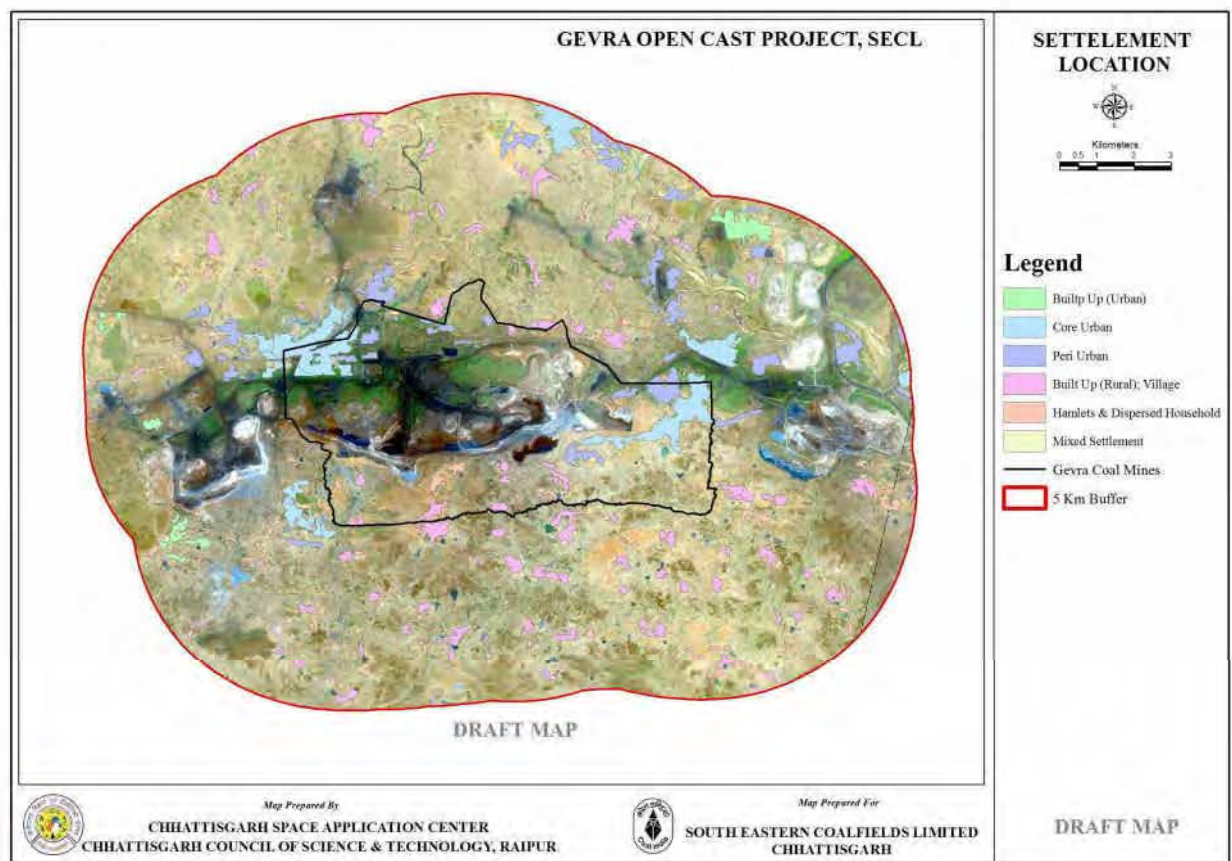


Figure 2-14 Settlement Locations around Gevra Project Area

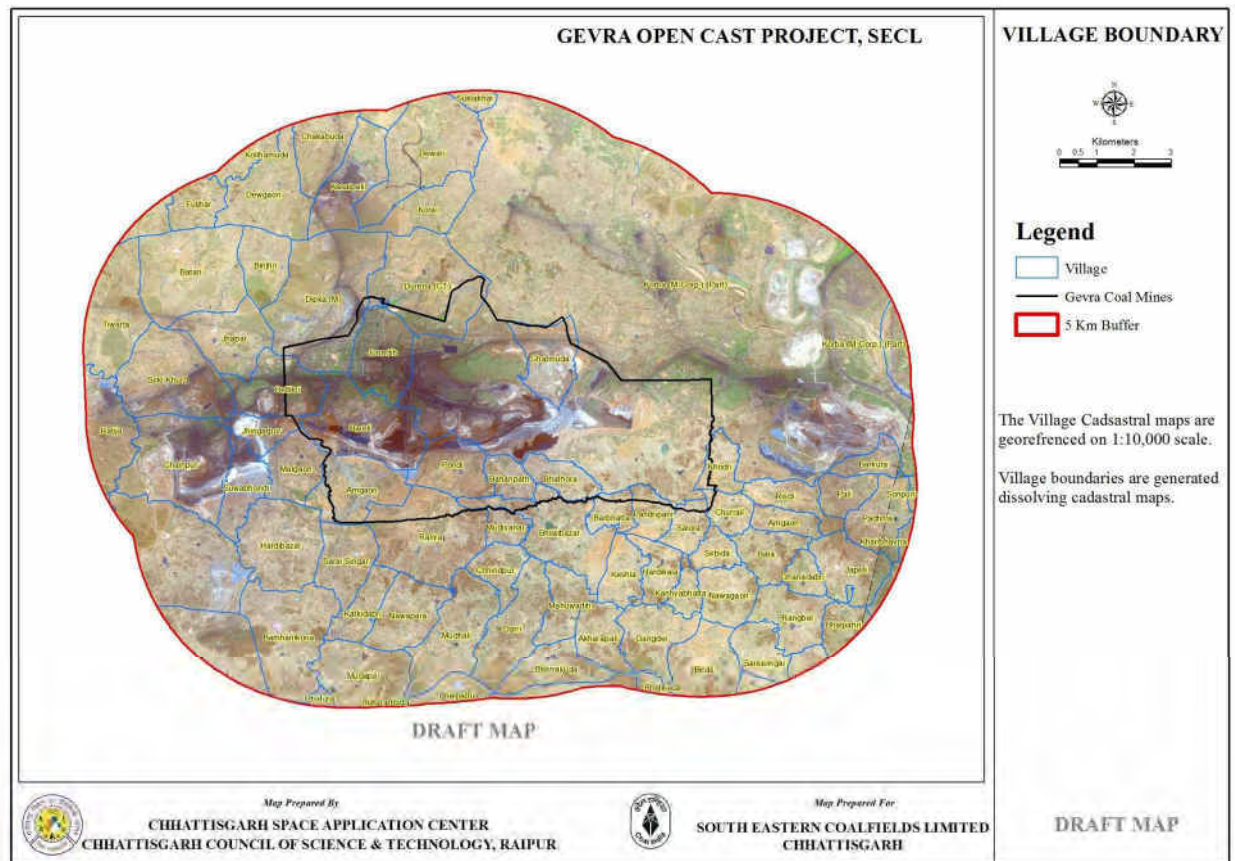


Figure 2-15 Village Boundaries within Gevra Project Area

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3. Proposed Recommendations

3.1. Field Observation of Erosion and Sediment Sources

There are numerous potential sources of erosion and sediment transport. The four key areas of concern at the Gevra-SECL Mine include:

- Steep slopes present throughout the Mine site, and various other areas with high potential for water and wind induced erosion;
- Areas where mining has exposed fresh rock and loose material of fresh dump the vegetative cover is removed which exposes erosion prone material. The weathering agents and process can create runoff and fluidized movement of soils and overburden;

The field observations were further seen expressed on the satellite images and have been mapped for deriving erosion control measures in the Gevra-SECL Mine area.

Also the outputs of Universal Soil Loss Equation (ULSE) bring out the areas of erosion. Both the modeled output and the field observation were put together to derive the recommendations for change in existing landuse and built erosion control measures within the existing drainage (small nalas, streams and rivers)

As field observation it is strongly recommended that the Garland Drainage constructed by SECL needs to be strengthened and maintained regularly. The Garland Drainage being not mapable it could not be reflected on the Action Plan Map submitted here.

Table 3-1 Landuse Recommendations

EROSION CONTROL MEASURES (PROPOSED LANDUSE)	AREA (Sq.Mts)	AREA (Ha.)
Area Proposed for Phase Wise Plantation	6704971.64	670.4972
Gap Plantation	561195.97	56.1196
Intensive Plantation	94679.82	9.467982
Steep Slope Stability Measures/Carpeting	624245.04	62.4245

Table 3-2 Erosion Control Recommendations

EROSION CONTROL MEASURES (PROPOSED STRUCTURES)	NUMBER OF STRUCTURES
Check Dam	7
Nala Bunds/Boulder Checks	11
Vegetative Bunds	13

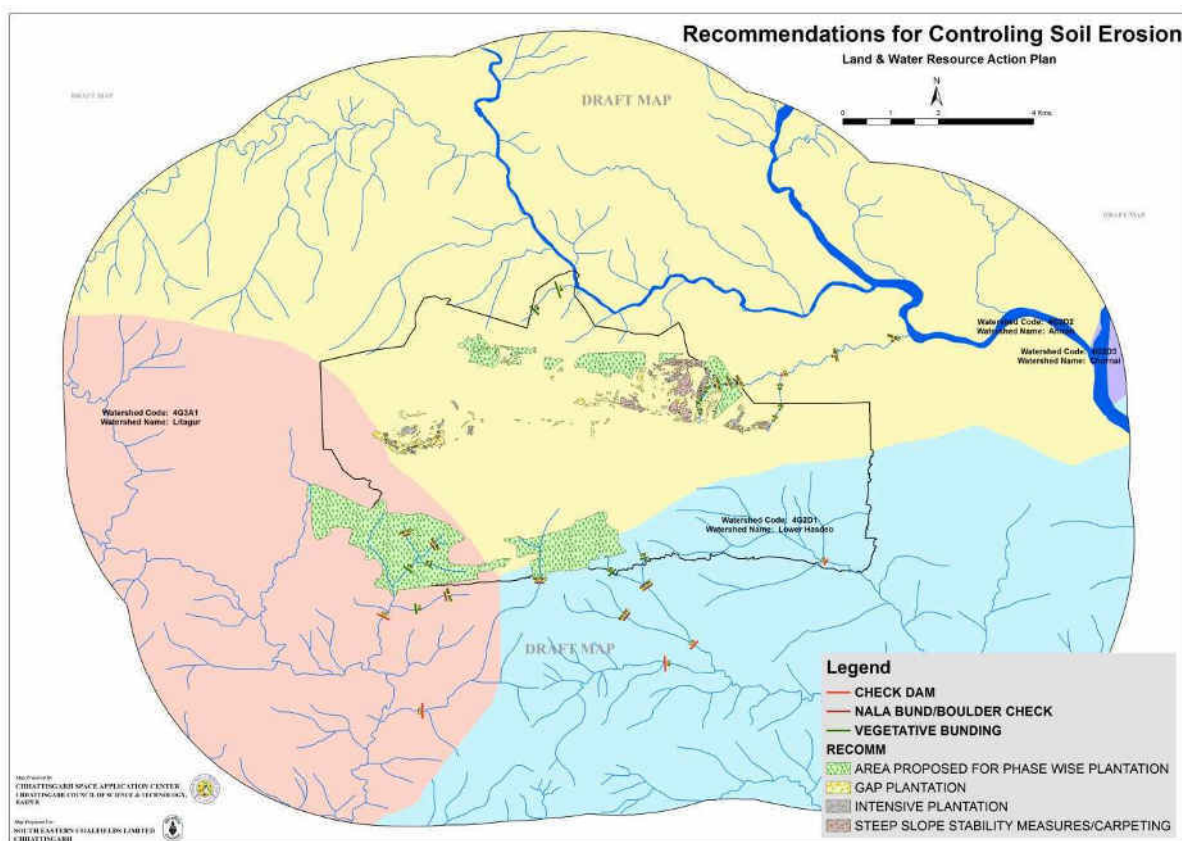


Figure 3-1 Action Plan for Erosion Control Measures within Gevra Project Area

3.1.1. Objectives of Erosion Control Measures

- Intercepting raindrops, reducing their velocity and lessening the erosive effect of rainfall;
- Reducing the velocity of surface runoff, thereby reducing the rate of erosion;
- Sustaining plant roots, and their associated microorganisms, helping to bind soil together, increasing infiltration and reducing runoff; and
- Promoting deeply rooted plants, thus providing tensile strength to slopes and decreasing the incidence of erosion, slumping, and slope failure

3.2. Other Erosion and Sediment Control Measures

Multiple control methods outline in this section provide Gevra Mine options that can be tailored to the type of erosion and sedimentation to be prevented or reduced. On site application of mitigation measures will be determined based on a variety of factors, and the most appropriate should be implemented.

3.2.1. Settling tanks/Ditching

During heavy rainfall and thawing events, water movement on site can be significant. Strategically placed ditches and runoff collection structures can help direct water movement by reducing the total amount of water and reducing its interaction with erosion prone sites. Creating an intercepting ditch above the cut slope will catch water and direct it to less erosion prone areas, thereby reducing runoff over sensitive regions. Intercepting ditches around the

mine site convey water to the Main Pit which can be subsequently pumped to water treatment plant.

3.2.2. Revegetation

Establishing a vegetative layer is critical to sites where there are exposed slopes and no further construction is planned. Once established, a vegetative layer eliminates the need for continual monitoring and maintenance by protecting the lighter, organic soil fractions from being displaced, retaining moisture, and preventing slope destabilization. Establishing permanent areas of vegetation, or the temporary seeding of hardy, fast growing species, can offer short or long term erosion control. The choice of vegetation species will depend on many factors, such as availability, hardiness and emergence.

Two important factors in choosing vegetation well suited specifically for erosion control are; those that provide roughness on the site surface, and have extensive rooting systems that will break up the top layer of soil. Both of these factors will improve water infiltration into the soil. Seedbed preparations for vegetation establishment on steep slopes will have to be considered for those sites where it is determined to be a concern, and could include slope stabilization, stream course protection through the use of mats and mulch or organic matter application. Soil properties including organic matter content and nutrient level must also be addressed to promote successful re-vegetation. Revegetation must be done with appropriate engineering consultation to ensure that the roots of seeded species will not adversely affect the structural properties of the surface to be revegetated. Following construction of mine infrastructure, revegetation can be immediately implemented on areas disturbed during construction, but which are no longer required for operations (e.g., overburden stockpiles, disturbed pits, along road routes and road ditches).

3.2.3. Silt Fencing

Installing silt fence as a sediment control method is a common method employed for level areas with diffuse erosion potential from sheeting on light soils. Silt fences are used to protect downslope areas and prevent further movement of the sediment as it is being transported. Settling of coarser material occurs as the runoff ponds upstream of the fence. Silt fencing is not appropriate for heavy flow areas and requires continuous maintenance.

3.2.4. Sheeting/Matting

Impermeable polyethylene sheets can offer immediate and temporary erosion control. Their use is suited for emergency responses or for short term protection in an area where the sheets will not be disturbed, because they are susceptible to tearing or movement by wind and heavy rainfall events. Also, they require inspection and maintenance until more permanent erosion measures can be implemented. However, properly installed and anchored, they can provide complete isolation of the erodible surfaces from the effects of wind and water erosion.

Blanco et al, (2008) mentioned the importance of coir matting in dump stability. The coir matting is widely used in the dump slope stabilization and prevention of dump failures. It is a

biodegradable coir geo-textile made of coconut fiber or husk. It facilitates new vegetation by absorbing water and preventing topsoil from drying out. Seeding or plantation is done after blanketing the coir matting on the dump slope. They provide dump soil good support allowing natural vegetation to become established. The process of coir matt blanketing on the dump slopes is strongly recommended. First the dump soil slopes are maintained properly. The seeding is done next. After that the coir matt are placed on the dump with proper anchor. Then the seedling will soon cover the dump with vegetation which stabilizes the dump.

Paithankar A. G. et al, (2001) described the plantation system in the dump slope. Vegetation in dump slope protects dump failures through root systems and plant cover, which improve soil particle aggregation in a low cohesion situation, preventing the dump failures. The roots of the fast growing plants and bushes penetrate through the failure zones to the stable and the compact soil beneath. So it holds the moving dump soil mass and prevents the dump failures.

3.2.5. Proposed Species for Plantation

It is very important to evolve a vegetation at multiple levels - plant trees, shrubs, and groundcovers. A multi-level canopy will do the best job of intercepting and slowing precipitation before it hits the ground, thus reducing surface erosion.

Planting a relatively large area, especially on steep slopes of old dumps where fresh erosion is seen, hydroseeding can be carried out in a very short period of time. It can be very effective for hillsides and sloping lawns to help with erosion control and quick planting. Hydro seeding will typically cost effective than planting with sod, but more than broadcast seeding. Results are often quick with high germination rates producing grass growth in about a week and mowing maintenance beginning around 3 to 4 weeks from the date of application. Fiber mulch accelerates the growing process by maintaining moisture around the seeds thereby increasing the rate of germination.

3.2.5.1. For Steep Slopes

Vetiver grass (*Chrysopogon zizanioides*), Moonj grass (*Saccharum munja*), Stylish Hemata grass (*Stylosanthes Sp.*) and shrubs like Dhodhy, Dhawai.

3.2.5.2. For Flat Areas

Tree species like _____

Also, for waterlogged areas in flat terrain and along banks of drainages - Bermuda grass, (*Cynodon dactylon*) also known as Vilfa stellate is recommended.



**WILDLIFE CONSERVATION PLAN INCLUDING
ALTERNATIVE HABITAT DEVELOPMENT PLAN FOR
AFFECTED AVI-FAUNA OF CORE MINING
AREA OF OCP GEVRA, UNDER KATGHORA FOREST
DIVISION, CHHATTISGARH**

**For
SECL GEVRA**



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RAIPUR, CHHATTISGARH**

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Golden Oriole and Laughing Dove and Core Mining Area of OCP Gevra, C.G.

Back Cover:

Common Hoopoe and natural nest in Core Mining Area of OCP Gevra, C.G.

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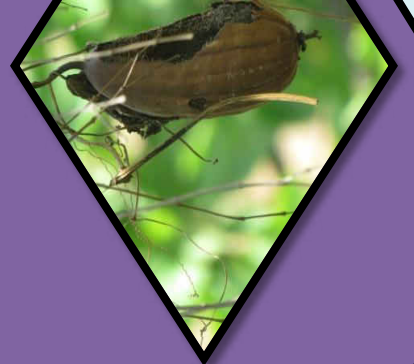
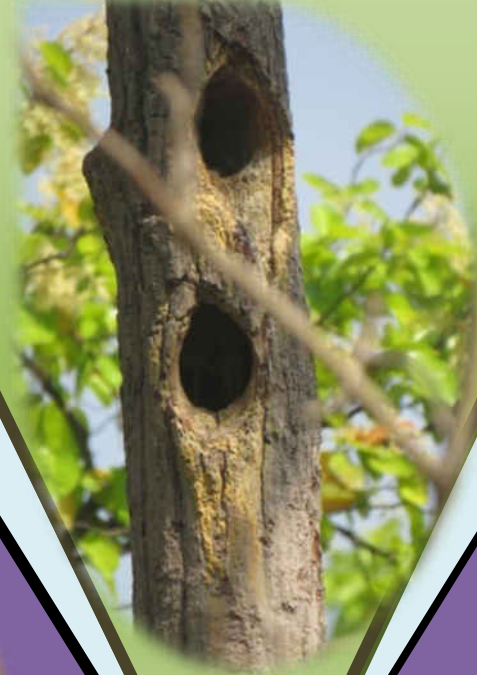
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जब सुरक्षित होंगे पक्षी सारे,
तब सुरक्षित होगा भविष्य हमारा॥



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PREFACE

This project is a systematic and scientific study of real, site-specific issues related to the conservation of wildlife and avifauna with the application of management concepts and expertise. The project “Alternative Habitat Development Plan for Affected Avifauna and Wildlife Conservation Plan for affected wildlife species of OCP Gevra, Katghora, Chhattisgarh” was proposed by the South Eastern Coalfield Limited (Coal India Limited), Open Cast Project Gevra, Katghora, for stage II clearance for the diversion of 112.385 hectare of revenue forest land for Gevra Open Cast Mine (OCM) in Katghora Forest Range, Korba District, Chhattisgarh in favour of SECL and the project was undertaken by State Forest Research and Training Institute, Raipur (C.G).

The research team of State Forest Research and Training Institute Raipur (C.G) has conducted extensive scientific surveys and conceptualized the Alternative Plan for the avian species and the Conservation Plan for the affected wildlife species in the study area.

As results of two seasonal studies, 480 individuals from 56 different species of avifauna were recorded in the affected area, which indicates the rich diversity of avian species in the study area. The alternative habitat as per the developed action plan is to be provided for the wildlife and avifauna. The primary data analysis was based on “**Line Transects Methodology**” in which the avian biodiversity as well as their habitats were studied and analyzed.

The project report attempts to bring under one cover the entire hard work and dedication put in by the research team for the completion of this work.

The key findings and recommendations have been provided in the document, which we trust, will be useful for all the stakeholders and decision makers associated with the OCP Gevra area. The final conclusion and the recommendations, along with the conservation plan and budget proposal have also been prepared for the implementation of the project.

I hope this report will help, not only the management of OCP Gevra but also the Forest Department to conserve and protect the wildlife avifauna and their habitat.



(S.S Bajaj IFS)

APCCF

**State Forest Research and Training
Institute Raipur, Chhattisgarh**

Acknowledgement

The preparation of Wildlife Conservation Plan including Alternative Habitat Development Plan for Avifauna within the OCP Gevra lease area and its surroundings would not have taken shape but, for the valuable inputs, suggestions, guidance, support and efforts of a number of resource persons.

I would like to thank Shri Mudit Kumar Singh IFS, PCCF & HoFF, Director, State Forest Research and Training Institute for his continuous support, valuable suggestions and guidance.

I would also like to thank Shri A.B Minz IFS, Ex- Additional Director, SFRTI, and Smt. Nirmala Xess A.C.F, SFRTI for their help and support.

I would like to appreciate the efforts of Shri M.M Ujjaini, Technical Assistant and Project in-charge, Shri Jeevan Shirin Toppo S.R.F, Shri Kamlesh Kumar Dadsena J.R.F, Shri Amit Kumar Baghel J.R.F, Shri Vijay Kumar Bhagat J.R.F, Shri Rajesh Kumar Toppo F.A. and Shri Ashutosh Pandey Ex-S.R.F. in field survey, data collection, analysis and report writing.

My special thanks to Chief Conservator of Forest, Bilaspur Forest Circle Divisional Forest Officer, Katghora Forest Division, and his field staffs, General Manager SECL Gevra, Sub-area Manager OCP Gevra and Nodal Officer Env't. & Forest SECL Gevra and the officers involved with the project for sparing their valuable time and providing facilities for the research team.

The Conservation Management Plan remains open to alteration so as to offer protection to the local birds, wildlife species and their habitat. It should be interpreted as a static design remaining flexible to inputs from the concerned authorities, of whom I am appreciative in advance.

I hope this report will be helpful to develop alternative habitat for avifauna. Wildlife Conservation Plan will also ensure efficient protection, conservation & management for avifauna and wildlife species of the OCP Gevra mining area.



(S.S Bajaj IFS)

APCCF

**State Forest Research and Training
Institute Raipur, Chhattisgarh**



**TEAM MEMBERS
FOR
Preparation of wildlife conservation plan including
alternative habitat development plan for affected avifauna of
core mining area of OCP Gevra, Gevra area, Under
Katghora Forest division, C.G**

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**STATE FOREST RESEARCH AND TRAINING INSTITUTE (SFRTI)
RAIPUR, CHHATTISGARH**

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Abbreviations

OCP	Open Cast Project
SFRTI	State Forest Research And Training Institute, Raipur, C.G.
ESMP	Environmental and Social mitigation Project
MoEF	Ministry of Environment And Forest
CC	Climate Change
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
CIL	Coal India Limited
SECL	South Eastern Coal Field Limited
SC	Scheduled Caste
ST	Scheduled Tribe
FRA	Forest Reclamation Approach
SEIAA	State Environment Impact Assessment Authority
SPM	Suspended Particulate Matter
OB	Overburden
GLC	Ground Level Concentrations
NTFP	Non Timber Forest Produce
GPS	Global Positioning System
PPE	Personal Protective Equipment
LC	Least Concern
CBSAP	Chhattisgarh Biodiversity Strategy and Action Plan
Land Cover Related Abbreviations Used in Datasheets	
R	Resident
B	Barren Land
A	Agriculture Land
G	Grassland
W	Woodland
S	Scrubland
Human Settlement Related Abbreviations Used in Datasheets	
S	Settlement
R	Metal Road
E	Electricity
P	Pond
W	Well/Tube well
Observations related Abbreviations Used in Datasheets	
1	Illicit Felling
2	Girdling
3	Dead Tree
4	Living / Healthy Tree
5	Diseased Tree

EXECUTIVE SUMMARY

Chhattisgarh state is identified as having one of the richest biodiversity habitats in the country; it has one of the densest forests in India, rich flora and fauna, several species of exotic flora and fauna and abundant non-timber forest products (NTFP's), with tremendous potential for value addition.

The variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part, includes diversity within species, between species, and of ecosystems. Diversity within species (genetic diversity) refers to variability in the functional units of heredity present in any material of plant, animal, microbial or another origin. Species diversity is used to describe the variety of species - whether wild or domesticated within a geographical area.

Similarly, Chhattisgarh is one of the richest Indian states in terms of mineral wealth, with 28 varieties of major minerals, including diamonds and ranks second in the country in mineral production. The state holds a major share of coal deposits in India, which has led to the State also being a major power producer and being power surplus.

The environmental impact of the coal industry involves issues like land degradation, waste disposal, water air and noise pollution etc. caused by mining, processing and the use of its products. In addition to atmospheric pollution, coal burning produces hundreds of millions of tons of solid waste products annually, including fly ash, bottom ash, and flue-gas desulfurization sludge, that contain Mercury, Uranium, Thorium, Arsenic, and other heavy metals.

The removal of vegetative cover and activities associated with the construction of haul roads, stockpiling of topsoil, displacement of overburden and hauling of soil and coal increase the quantity of dust around mining operations. Dust degrades air quality in the immediate area, has an adverse impact on vegetative life, and constitutes health and safety hazards for mine workers and nearby residents.

Surface mining may affect groundwater in numerous ways like draining of usable water from shallow aquifers, lowering of water levels in adjacent areas

and changes in flow direction within aquifers contamination of usable aquifers below mining operations due to infiltration of poor-quality mine water; and increased infiltration of precipitation on spoil piles.

Surface mining of coal causes direct and indirect damage to wildlife. The impact on wildlife stems primarily from disturbing, removing and redistributing the land surface. The most direct effect on wildlife is destruction or displacement of species in areas of excavation and spoils piling. Pit and spoil areas are not capable of providing food and cover for most species of wildlife. More sedentary animals like invertebrates, reptiles, burrowing rodents and small mammals may also disappear or destroyed due to mining activities.

Displacement of wildlife populations from the mine site is another direct impact of mining. As mining proceeds on a site, wildlife moves to adjacent areas and establishes territories and home ranges.

In some species, reproduction is likely interrupted during the breeding season in which the displacement occurs. Wildlife response to post-mining reclamation is based on the wildlife species in question, their habitat requirements, and presence of a source population to colonize the mine site and the structure and composition of the vegetation on the mine site post-reclamation and in the surrounding landscape. The majority of studies on wildlife response were focused simply on documenting the numerical response of species in question on the mine site during some time period of post-reclamation.

Therefore, the Ministry of Environment, Forest and Climate Change has notified the Environmental Impact Assessment (EIA) Notification, 2006 under the provisions of the Environment (Protection) Act, 1986, which regulates development and their expansion/modernization of 39 sectors/activities listed in the Schedule to the EIA Notification, 2006. The Government of Chhattisgarh has identified the State Forest Department as a nodal agency to prepare the Chhattisgarh Biodiversity Strategy and Action Plan i.e. CSBSAP.

The study includes detailed systematic and scientific processes of identifying, predicting, evaluating and analyzing the potential impacts of Open Cast Mining (OCP) on avian bird species, wildlife and its habitat within the OCP

Gevra lease area and surrounding area of Katghora Forest Division. Extensive field studies were undertaken within the whole mining boundary of OCP Gevra and observations were made during the course seasonal field visits that formed the foundation of a conservation management plan for the betterment of affected species.

The major **objectives** of study are:

1. To survey and documentation of the existing wildlife (mammals and reptiles) of OCP Gevra.
2. To estimate the species diversity and population dynamics of avifauna in the OCP Gevra.
3. To study the habit, habitat and nesting pattern of different species of the avifauna of core and buffer zone.
4. GPS survey of the densities, water bodies, nesting areas, migratory birds' areas, and wildlife corridors in the proposed study area.
5. To study the presence and movement of animals and birds by seasonal survey.
6. To study the impact assessment of proposed mining activities along with the existing biotic pressure on habit and habitat of the existing wildlife species including avifauna of the core zone.
7. Pilot testing, evaluation and monitoring of appropriate measures for the desired site.
8. Preparation of habitat enrichment/development plan for the wildlife species and avifauna of the core zone for preferential adoption of the surrounding area as alternative habitat.
9. Initial monitoring and guidance to the executing agency (Forest Department) for the implementation of the plan.

The proposed mining area is located in the South-Central part of Korba Coalfield in Korba District of Chhattisgarh. The Gevra Mining Block having an area of about 19.03 sq. km is located in the Central part of Korba Coalfield. For the core mining zone of OCP about 1016.412 hectare area of land needed from the forest for 45 MTY unit of Gevra OCP Project, out of which 112.385 hectare

forest lands has to be required from the forest and rest 904.027 hectare land has already been diverted earlier from the forest for Gevra OCP Project. Out of 112.385 ha land 62.819 hectare land comes under Naraibodh Revenue forest area and rest 49.566 hectare area land will be proposed from Raliya revenue forest area. Two villages in the core zone namely Naraibodh and Raliya village were located inside the boundary of OCP Gevra.

Line transect method has been applied for the bird count and their habitat survey. Line-transect distance sampling methods were also used to estimate the abundance of many biological populations such as animals, birds and plant species including nonliving things. A total of 12 transects have been taken during the first seasonal field survey in the study area. A circular sample plot of 10 m radius had been taken in each transect at an interval of 300 m i.e. total 5 sample plots made in one transect namely 0m, 300m, 600m, 900m, 1200m in which vegetation composition (Tree, grass, herb, shrub and regeneration).

On the basis of seasonal survey the core area of proposed mining area for excavation are mainly surrounded by 17 different types of Species i.e. Sal (*Shorea robusta*), Sheesham (*Dalbergia sissoo*), Saja (*Terminalia tomentosa*), Khamhar (*Gmelina arborea*), Mahua (*Madhuca indica*), Char (*Buchanania lanzan*), Neem (*Azadirachta indica*), and Kala Serus (*Albezzia lebbeck*), Karanj (*Pongamia pinnata*), Senha (*Lagerstroemia parviflora*), Tendu (*Diospyros melanoxylon*) etc.

whereas the buffer zone mainly surrounded by 13 different types of species surrounded by Koriya (*Pinus koraiensi*), Senha (*Lagerstroemia parviflora*), Sal (*Shorea robusta*), Palash (*Butea monosperma*), Char (*Buchanania lanzan*), Saja (*Terminalia tomentosa*), Mahua (*Madhuca indica*), Teak (*Tectona grandis*), Tendu (*Diospyros melanoxylon*), Neem (*Azadirachta indica*), Kekat (*Garuga pinnata*), and Pipal (*Ficus bengalensis*) etc. overall no. of vegetation habitat of individual tree species are 374 where as 196 tree species have been reported in Winter season and there are 178 tree species has been reported in Summer season within the core and buffer area of OCP Gevra.

The faunal diversity also observed and separately analysis among the core and buffer area respectively. On the basis of the seasonal survey there are 180 individual birds belongs to 35 different species have been recorded in the core area, where as 300 individual birds belongs to 44 different species have been reported within the buffer zone. During time period of the survey 480 individual birds belongs to 56 different species, the dominate families among the study sites were Columbidae, Leiothrichidae, Pycnonotidae and Sturnidae.

In the present study, 6 bird species found new comparison to ZSI report which is our findings namely Indian Spotted Eagle, Indian Silver Bill, Greenish Warbler, Steppe Eagle, Sulfur Bellied Warbler and Variable Wheatear. During the field survey, it was observed that most of the bird nests were found in Sal species followed by Char, Mahua, Baheda, Senha and Saja. This study will be helpful for the preparation of alternative habitat development for the affected avifauna present in the study site. In each interval, observation of birds and its counting, vegetation study, dominating tree species, birds nest & its pattern were documented in this report.

The overall ecological value of an area, where mining is carried out, must also be considered. This should include the interconnections between habitats in the vicinity of the mining project which may be affected by fragmentation of the habitat. Many species, particularly avifauna, mammals and fish have large, dynamic territories that extend beyond site boundaries, making them vulnerable to changes in external or local environmental conditions.

The proposed coal mine would create an impact on the environment in two distinct phases during the development phase, which may be regarded or term during the operation which would have long term effects. These impacts will have a negative effect on the Avifauna of the area.

To minimize the impacts of mining on different environmental factors with reference to avifauna and wildlife species, short term and long term recommendations are given as follows:

Recommended Action Plan:

- Green belts should be developed around the mining boundary.

- The wastage coal dust particles in the dumping site of coal mines should be managed properly to reduce air pollution and will have lose irruption avifauna.
- Biological reclamation for increasing soil fertility.
- Top soil management through the establishment of artificial avifauna paradise. (Pakshi Vihar)
- Development of Oxyzone cum Bird shelter in the urban areas.
- Big tree plantation and maintenance of fruit bearing and feeder trees species on buffer zone.
- Development of multiple water storage facilities.
- River bank restoration Leelagar River (Nala) and improving the existing ponds.
- Social awareness programs to be conducted to provide education about birds, wildlife and their conservation.
- Artificial nests madeup of local, light and fine wood materials to be placed in the buffer zone.
- Rehabilitation of existing ecosystem.
- Best practices for the prevention of forest fire are to be adopted by the Forest Department.
- Regular monitoring and evaluation of plantation sites.

CHAPTER 1**INTRODUCTION**

1.1 WILDLIFE CONSERVATION

Wildlife Conservation is the practice of protecting animal species and their habitats. In order to survive, a species requires adequate food, water, shelter, space, and opportunities to reproduce. Wildlife conservation refers to the considered practice of ensuring protection for wild faunal species, their habitats, and plants. It has sustainable Effort to maintain and use natural resources including wildlife in ways they ensure that those resources will be available in the future.

“Wildlife Conservation is the application of ecological knowledge to populations of vertebrate animals and their plant and animal associates in a manner that strikes a balance between the needs of those populations and the needs of people” (Robinson *and Bolen*, 1999).

Wildlife Conservation aims to stop the progress of the loss in the ecological biodiversity by taking into consideration ecological principles such as carrying capacity, disturbance and succession and environmental conditions such as food, water, shelter, space, and opportunities to reproduce with the aim of balancing the needs of wildlife with the needs of people. Wildlife is best preserved in their natural habitat. Wildlife wing of the forest department has adopted two-pronged strategies for the Wildlife Conservation protection and awareness generation.

1.2 BIO DIVERSITY

“The variability among living organisms from all sources including inter alia, Terrestrial, Marine, and other Aquatic Ecosystems and the Ecological Complexes of which they are part, includes diversity within species, between species, and of Ecosystems”. Diversity within species refers to variability in the functional units of heredity present in any material of plant, animal, microbial or other origins. Species diversity is used to describe the variety of species - whether wild or domesticated within a geographical area. Estimates of the total number of

SFRTI 2019

species (defined as a population of organisms which are able to interbreed freely under natural conditions) range from 2 to 100 million, though less than 1.5 million have actually been described. Ecosystem diversity refers to the enormous variety of plant, animal and micro-organism communities and ecological processes that make them function. In short, biodiversity refers to the variety of life on earth. This variety provides the building blocks to adapt to changing environmental conditions in the future.

Biodiversity of Chhattisgarh

The Government of Chhattisgarh has identified the State Forest Department as nodal agency to prepare the Chhattisgarh Biodiversity Strategy and Action Plan (CSBSAP). Chhattisgarh state is identified as having one of the richest biodiversity habitats in the country, it has one of the densest forests in India, rich flora and fauna, several species of exotic flora and fauna and abundant Non-Timber Forest Products (NTFP's) with tremendous potential for value addition. Chhattisgarh state falls under the Deccan biodiversity zone. The forests of the state fall under two major forest types i.e. Tropical Moist Deciduous forest and the Tropical Dry Deciduous forest.

Chhattisgarh has 55,674 sq km of forests, which is 41.18 percent of its geographical area. It has the third largest area under forest cover after Madhya Pradesh and Arunachal Pradesh. Of this, three percent is under very dense forest, 25.82 percent is moderately dense, 12.28 percent is open forest and 0.09 percent is scrubbed. The forest ecosystem of the state has very rich biodiversity comprises primarily with Sal dominated forests, followed by Teak forests and mixed forest ecosystem. As per the latest status of Chhattisgarh Forest policy report 2011, there has been a net decrease of 192 sq.km in the forest cover from 2009 (*Forest Survey Report, 2013*).

The Mineral wealth of Chhattisgarh

Chhattisgarh is among the richest Indian states in terms of mineral wealth, With 28 varieties of major minerals, including diamonds and ranks second in the country in mineral production. The state holds a major share of coal deposits

in India, which has led to the State also being a major power producer and being power surplus. It is the only state in India to have tin ore reserves. About one-fifth of the iron-ore in the country is mined in the state and one of the best-quality, iron-ore deposits in the world is found at the Bailadila mines in the South of Chhattisgarh from where it is exported to Japan and other countries (table 1.1). Rich deposits of Bauxite, Limestone, Dolomite, and Corundum are also found in the state, making it the ideal location for low-cost of production of end products such as Cement and Aluminum. During 2009-10, the State had contributed 14.09 per cent in the national revenue from minerals (*State Action Plan, 2011*).

Table No 1.1: Production of key minerals

Mineral	Production – 2008-09 (Million Tons)
Coal	97.0
Iron Ore	32.9
Limestone	15.6
Dolomite	1.2
Bauxite	1.6
Tin ore (Concentrate)	57,500 (In Kilogram)

Coal mine

Chhattisgarh state has plenty of energy resources such as Coal, this state is the second largest coal producing region after Jharkhand in India. The environmental impact of the coal industry includes issues such as land use, waste management, water, and air pollution, caused by coal mining, processing and the use of its products. In addition to atmospheric pollution, coal burning produces hundreds of millions of tons of solid waste products annually including flyash, bottom ash, and flue gas desulfurization sludge, that contain Mercury, Uranium, Thorium, Arsenic, and other heavy metals. Coal is the only natural energy resource and fossil fuel available in abundance in India. The major environmental challenges encountering the coal industry are impacts of mine fires, dust suppression and control particularly haul road dust consolidation, treatment of mine waters containing heavy metals/acid mine drainage, restoration of water table and quality of ground and surface water, augmentation of pumped out mine water for drinking purpose, reclamation of mined out areas with pre-

determined land use patterns conducive to the local populations etc. The biggest environmental challenge facing the coal industry is the issue of greenhouse gases and acid rain. Overall environmental management improvement has been taking place with the implementation of state of art environmental management schemes particularly under Environmental and Social Mitigation Project (ESMP) of CIL (*Dr.Gurdeep Singh, 2008*).

Chhattisgarh state is rich in energy resources. The main energy resource is coal. The state produces 15% of total coal of the country; the main coal producing areas are: Korba - Produces 75% coal of the state and 11% of the country, the main coal producing area are Hasdo-Rampur Colliery, Mand-Raigarh Colliery, Vishrampur Colliery, Lakhanpur Colliery, Tatapani-Ramkola Colliery, Jhilmili Colliery, Sonhat Colliery, Jharkhand Colliery, Chirmiri-Kurasiya Colliery (*Chattisgarh Biodiversity Plan*).

Coal and their environment impact

The environmental impact of the coal industry includes issues such as land use, waste management, water, and air pollution, caused by coal mining, processing and the use of its products. In addition to atmospheric pollution, coal burning produces hundreds of millions of tons of solid waste products annually, including fly-ash, bottom-ash, and flue-gas de-sulfurization sludge that contain Mercury, Uranium, Thorium, Arsenic and other heavy metals.

The removal of vegetative cover and activities associated with the construction of haul roads, stockpiling of topsoil, displacement of overburden and hauling of soil and coal increase the quantity of dust around mining operations. Dust degrades air quality in the immediate area, has an adverse impact on vegetative life, and constitutes health and safety hazards for mine workers and nearby residents.

Surface mining may impair groundwater in numerous ways: by drainage of usable water from shallow aquifers; lowering of water levels in adjacent areas and changes in flow direction within aquifers; contamination of usable aquifers below mining operations due to infiltration of poor-quality mine water; and increased

infiltration of precipitation on spoil piles. Where coal or carbonaceous shale is present, increased infiltration may result, increased runoff of poor-quality water and erosion from spoil piles, recharge of poor-quality water to shallow groundwater aquifers and poor-quality water flow to nearby streams.

Surface mining of coal causes direct and indirect damage to wildlife. The impact on wildlife stems primarily from disturbing, removing and redistributing the land surface. Some impacts are short-term, and confined to the mine site; others have far-reaching, long-term effects. The most direct effect on wildlife is destruction or displacement of species in areas of excavation and spoils piling. Pit and spoil areas are not capable of providing food and cover for most species of wildlife. Mobile wildlife species like game animals, birds, and predators leave these areas. Birds are highly influenced by the habitat disturbance and their population depends on their favorable habitat, which is free from any kind of disturbance (*Aunrag et.al, 2018*).

Mitigation management

As per MoEF clearance regarding a condition (Clause 9) “The user agency consultation with the state government shall create and maintain alternate habitat/ home for avifauna, their nesting trees are to be cleared under this project. Birds’ nests will be artificially made out of eco-friendly material, placed in the area including the forest area and human settlements; adjoining the forest area being diverted for the project.”

To overcome the impact of mining activities on avifauna and Wildlife found in Gevra range; Katghora division, Chhattisgarh, SECL Gevra had proposed the project to SFRTI, Raipur to prepare a wildlife conservation plan including alternative habitat development plan for affected Avifauna.

1.3 PROJECT BACKGROUND

Gevra Opencast Project operates mine under Gevra area of South Eastern Coalfields Limited. Project report for an annual capacity of 6.0 MT of coal was prepared by CMPDI in March 1979. However, the Government approved the Project Report in December 1979 for an annual capacity of 5 MT at an estimated

capital of Rs.50.08 crores. Later, PR for Gevra Opencast Project (Expansion) was prepared in March 1982 for an annual production of 10.0 MT. Government of India approved the report on 18th September 1985 for a capital investment of Rs. 224.39 crores.

In the year 1992-93, a scheme for Gevra OCM was prepared for augmentation of production by another 2.0 MTPA with a proposed capital investment of Rs.39.62 crores. This scheme was sanctioned on 19th September 1992 by CIL Board and was declared completed on 31st March 1995. A capacity augmentation scheme for Gevra CHP (from 10 MTPA to 12 MTPA) was also prepared and sanctioned on 31st July 1992 for a capital investment of Rs.13.63 crores. Thus, the total sanctioned capital for Gevra OC (12 MTPA) became Rs.277.64 crores.

To enhance the production further, project report for Gevra O/C Expansion (25 MTPA) was prepared by CMPDI and approved by GOI on 12th July 2005. Mining Plan of the project for 35 MTPA was approved by the Ministry of Coal on 20.12.2006. Further, EC was granted vide letter no. J-11015/484/2007-IA.II (M) dated 3rd June 2009 for capacity expansion from 25 MTPA to 35 MTPA in an area of 4184.486 Ha.

Gevra OCP had the potential to produce coal 35% higher than 35 MTPA. In view of this, it was proposed to increase coal production from 35 MTPA to 47.25 MTPA. However, EC was issued vide letter no. J-11015/85/2010-IA-II (M) dated 31st January 2014 to enhance the production to 40 MTPA in 2 phases: phase 1 and phase 2. In phase 1, mining would be done in the already obtain land of 4058.146 hectare and in phase 2, mining would be done in the then calculated forest land of 126.341 hectare after obtaining stage-1 forestry clearance for the same. Further, the production was increased to 41 MTPA and Environmental Clearance (EC) was issued vide letter no. J-11015/85/2010-IA-II (M) dated 6th February 2015.

1.4 PROJECT SITE INFORMATION & LOCATION

The project under consideration, i.e. Gevra OCP is administratively under Gevra Area of SECL headed by General Manager, Gevra Area. Geologically, Gevra Opencast Block is located in the south-central part of Korba Coalfield in Korba District of Chhattisgarh.

Gevra Opencast Block is located in the South-Central part of Korba Coalfield in Korba District of Chhattisgarh. The Gevra Mining Block having an area of about 19.03 sq.km located in the Central part of Korba Coalfield. It is included in the Survey of India Topo-sheet No. 64 J/11 and is bounded by latitudes 22°18'00" and 22°21'42" and longitudes 82°32'00" to 82°39'30".

Communication

The block is well connected by rail and road. Gevra Road and Korba Railway Stations on Champa-Gevra Road branch line of S.E. Railway are at a distance of 10 km and 16 km respectively.

Important distance by Railway to Gevra Road Station -

From Bilaspur (Company HQ) - 93 KM: From Howrah (CIL HQ) - 708 KM

Climate

The meteorological data with respect Temperature for 1984 to 2014 are available so far from the nearest Bilaspur Meteorological Observatory, which is situated approximately 90 km. from the project area.

The temperature varies from 50 °C to 44.7 °C. The average rainfall as per rain gauge station at Katghora for 1954 to 2014 is 1490.4 mm.

Physiography

Table No 1.2: Physiographic conditions of Gevra

Particulars	Details	Values if any
General topography	Gently undulating	288-328 m above mean sea level
General slope	Towards East	
Drainage	Hasdeo River, a major tributary of Mahanadi River flowing along the eastern side in a north south direction, controls the drainage of the area. The mine block is drained by Laxman nalla flowing in a west-east direction and joins Aharan nadi, a tributary of Hasdeo River, at about 4.5km in NE from the mine. The other stream Kholar nala also a tributary of Hasdeo River, controls the drainage in the northern part and whereas, Lilagar Nadi and Gangdel nala controls the south-west and south-east respectively. These streams, mostly perennial, behave as constant recharge sources. The pattern of drainage in the area is mostly dendritic in	

nature.

1.5 LAND USE PLAN

The project envisages 1342.86 Ha of land for quarry, industrial and residential complex, safety zone and external dumps etc. This includes 516.59 Ha of land already acquired/under process and, 826.07Ha of land to be acquired. The break-up of the land is as follows:-

Table No 1.3: Requirement of Land in Hectare

S N.	Particulars	Tenancy land (Ha.)	Forest land (Ha.)	Government Land (Ha.)					Grand Total (Ha.)
				Grazi ng land	Waste land	Water body	Others	Total	
1	Quarry area	1285.888	441.410	0.000	0.000	7.000	297.952	304.952	2032.250
2	Area for Top Soil in quarry	0.000	0.000	0.000	0.000	0.000	5.000	5.000	5.000
3	External dump	291.310	0.000	0.000	0.000	0.000	188.690	188.690	480.000
4	Infrastructure , etc	504.509	509.434	0.000	0.000	0.000	88.839	88.839	1102.782
5	Roads	6.000	0.000	0.000	0.000	0.000	0.000	0.000	6.000
6	Residential Colony	65.000	0.000	0.000	0.000	0.000	0.000	0.000	65.000
7	R & R site	69.280	0.000	0.000	0.000	0.000	0.000	0.000	69.280
8	Explosive magazine	0.000	6.000	0.000	0.000	0.000	0.000	0.000	6.000
9	Nala Diversion, if any	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	Safety Zone	298.584	59.568	0.000	0.000	0.000	60.022	60.022	418.174
Total Land (in Ha)		2520.571	1016.412	0.000	0.000	7.000	640.503	647.503	4184.486

***NOTE:**

- Total Forest Land involved is 1016.412 Ha. Out of 1016.412(Ha), 904.027 hectare of FL has obtained **STAGE II clearance** from **MOEF&CC**. Details of Stage II Clearance (**904.027Ha**) is as follows:

Area (in ha)	Stage II /Final FC issued vide letter no. & date
100.898	vide MoEF Clearance L no.8-33/2005-FC Dtd.: 05.05.2008
46.198	vide MoEF Clearance L no.8-81/ 2006-FC ,Dtd : 20-04-2015
192.046	vide MoEF Clearance L no.8-77/2006 – FC,Dtd :20-04-2015
564.885	vide MoEF Clearance L no.8-79/2006 – FC, Dtd : 20-04-2015

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

- Remaining **112.385 Ha** has received **Stage I clearance** from MOEF&CC on **27.09.2017**



Fig 1.1: Google map of Mining area of OCP Gevra

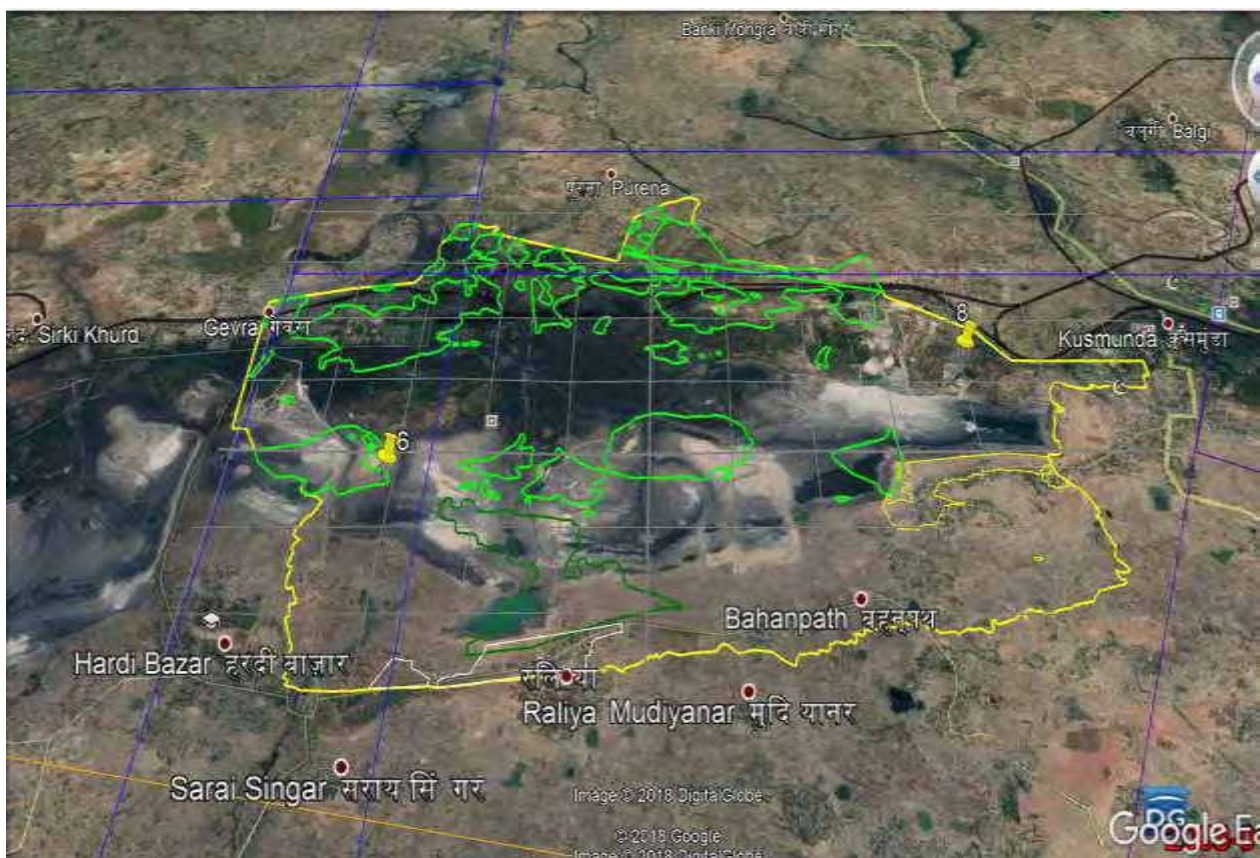


Fig 1.2: Google map of Showing Mine boundary and surrounding area of OCP Gevra

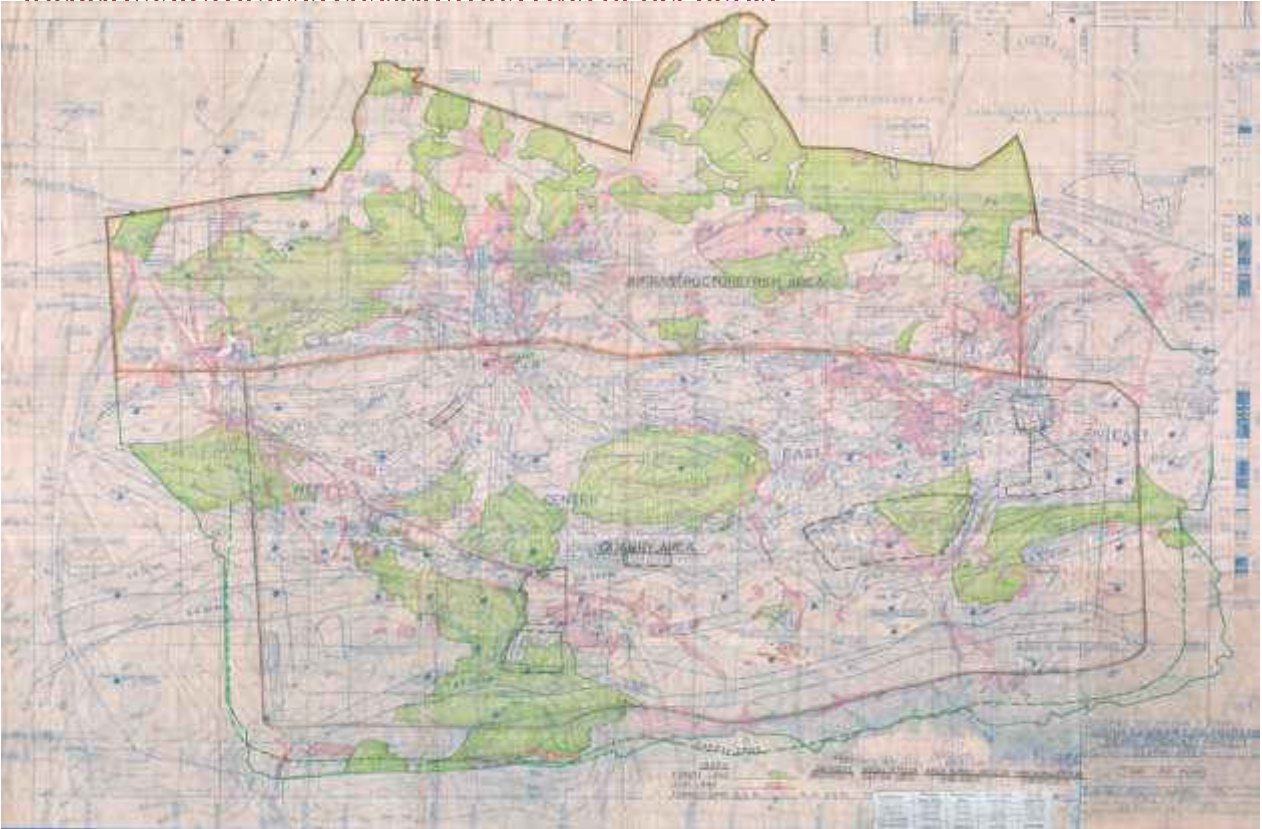


Fig 1.3: Map Showing Mine boundary and Land Use Plan of OCP Gevra



Fig 1.4 : Map Showing Dark Green Patches of Forest Land to be acquired and light green Forest Patches already acquired in OCP Gevra

1.6 IMPACT ON LAND USE

- **Forest land**

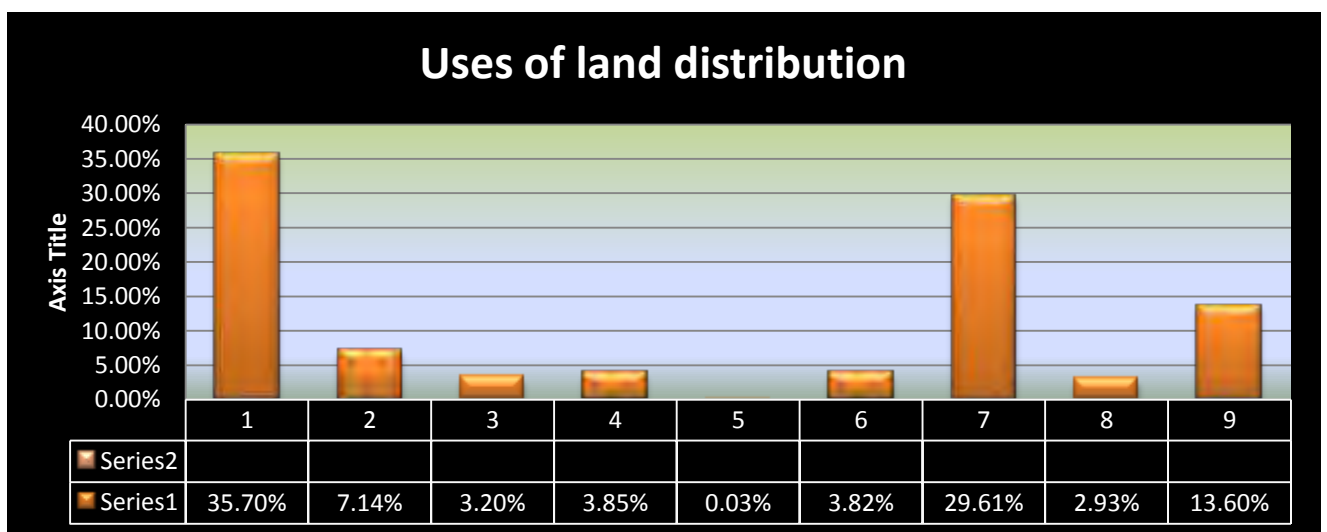
There are about **1016.412** hectare area of land needed from forest for the 45 MTY unit of Gevra OCP Project, out of which 112.385 hectare forest land has to be required from the forest and rest 904.027 hectare land has already been diverted earlier from Forest for Gevra OCP Project. Out of 112.385 hectare land 62.819 hectare land comes under Naraibodh Revenue forest area and rest 49.566 hectare area land will be proposed from Ralia revenue forest area.

The inventory of forest resource is based on the guidelines of the forest department. The Pilot survey is pre-requisite to finalized the most efficient survey design about 40 to 50 sample plot is lead out to cover up entire range variation existing within the forest population of the working plan area.

The earlier survey of flora & fauna in the proposed mining area was done by CMPDI and they adopted a similar methodology as applied in working plan therefore the shape of the sampling unit is square. Sizes of the sampling selected are 0.1 hectare or 0.16 hectare.

Table No 1.4: Summary Land – use distribution

Forest Land	Area under Non-Agricultural Uses	Barren & Uncultivable Land	Area Permanent Pastures And Other Grazing Land Area	Land Under Miscellaneous Tree Forest Area	Cultivable Waste Land	Area Total Unirrigated Land Area	Area Irrigated by Source	Fallow Land
1	2	3	4	5	6	7	8	9
35.7%	7.14%	3.20%	3.85%	0.03%	3.82%	29.61%	2.93%	13.6%



Graph No. 1.1: Land Use Distribution

CHAPTER 2

REVIEW OF LITERATURE

The mining of coal in India has significant effects on wildlife populations and their habitats. The extraction of coal by various means (deep mining, long wall mining, contour mining, area mining or mountain top removal mining with valley fill) has a significant impact on terrestrial and aquatic ecosystems which can be felt for decades. Given the difficulty in extracting coal from geologic strata that are generally not readily accessible from the surface, it is inevitable that there will be some significant changes in the flora and fauna of the area within and surrounding the mine site.

The impacts of coal mining on wildlife populations occur at two primary levels:

- 1) Immediate, direct effects of mining in terms of direct mortality, disturbance and displacement of wildlife populations during mining activities, and
- 2) Changes in wildlife populations associated with long-term changes in land cover associated with mine sites and their reclamation.

The goals of this literature review are to

- 1) Review the extant literature on the effects of coal mining on aquatic and terrestrial avifauna populations and habitat;
- 2) Review the literature relative to the effectiveness of reclamation practices in restoring conditions conducive for avifauna habitat; and
- 3) Identify areas where research is needed to further the science needed to better mitigate the impacts of mining on avian resources.

2.1 DIRECT EFFECTS OF MINING ON WILDLIFE

Very little literature exists on the direct effects of coal mining on wildlife. Mining certainly has direct effects as individuals and populations of species that occurred on the site pre-mining may sometimes be killed or displaced. Direct mortality will occur when the species in question is not mobile enough to avoid mining equipment, especially young ones. We did not find any literature that

estimates the rate of direct mortality for any potentially affected species. Displacement of wildlife populations from the mine site is another direct effect of mining. As mining proceeds on a site, wildlife moves to adjacent areas and establishes territories and home ranges. We were unable to locate any studies that documented the extent of this displacement and the implications in terms of survival and reproduction for coal mining in the Jampali. Some studies have been conducted on this topic in the Korba (C.G). In some species, reproduction is likely interrupted during the breeding season in which the displacement occurs. Survival of displaced individuals may be lower than survival would have been during the pre-mining period because displaced individuals may experience greater competition for resources in unfamiliar areas and may experience greater predation rates initially as they learn how to adjust to new surroundings.

2.2 WILDLIFE RESPONSE TO POST-MINING RECLAMATION

Wildlife response to post-mining reclamation is based on the wildlife species in question, their habitat requirements, and presence of a source population to colonize the mine site, and the structure and composition of the vegetation on the mine site post-reclamation and in the surrounding landscape. Wildlife response can be characterized in a variety of ways, including relative abundance on the site, survival, reproduction, movements, foraging behaviour, and other behavioural traits. The majority of studies on wildlife response focused simply on documenting the numerical response of species in question on the mine site during some time period post-reclamation. To understand the full implications of wildlife response and effects on habitat quality, more in-depth research is needed to document the demography (reproduction, survival, immigration, emigration) of the species that colonize mine sites post-reclamation.

2.3 AVIFAUNA

Birds construct different types of nests and utilize them for different purposes. Cavity nests found in tree stems or cacti are used by owls, woodpeckers and some waterfowl. The primary nesters build their own cavities or nests

whereas secondary nesters occupy previously abandoned nests and cavities which are sometimes formed by natural processes (*Clayton and Moore, 1997*).

Birds provide several ecological functions such as pest control, pollination, seed dispersal and plant reproduction in thousands of economically and culturally important plant species through its consumption of various terrestrial, aquatic and aerial resources (*Whelan et al., 2015*). Foraging ecology of birds contributes regulating services such as scavenging carcasses and nutrient cycling (*Whelan et al., 2008*). Bird communities also provide a reliable ecological indicator of forest condition (*Canterbury et al., 2000*) due to their sensitivity to environmental perturbations, relevance to ecosystem functioning (e.g., in pollination and seed dispersal), and relative ease in sampling (*Brown, 1991*). Moreover, birds are associated with singular habitats, they are short-lived species so any change in the composition may manifest shortly after a disturbance. Hence, they can be used to develop habitat associations which are predictors of relative human disturbance levels and may be affected by some tourist activities (*Higginbottom et al., 2003; Newsome et al., 2004*). The bird population is an indication of environmental changes as they respond fast to threats and changing environment conditions (*Barov, 2011*).

As significant as being one of the mega diverse countries, Mining and mineral processing have the potential to be important sources of income and driving forces behind broader economic development (*Eggert, 2001*). With this, the country is faced with a great challenge in utilizing the rich available mineral resources for economic growth and development without compromising its ecological integrity and species diversity.

2.4 AVIFAUNA RESPONSE TO POST-MINING RECLAMATION

The vast majority of studies conducted on wildlife response have focused on birds in part because birds are easily monitored using various count-based surveys. The effects of mining on avian communities occur initially by the removal of vegetation in preparation for mining. If the site is forested, vegetation removal occurs through timber harvest or clearing. Although few studies have

been done to specifically evaluate the changes associated with mine sites from pre-mining to post-mining land uses, there is substantial literature of the effects of timber harvest on avian communities and populations- see review in (*Sallabanks et al.* 2000). There are substantial differences in avian response to timber harvest for forest regeneration and avian response to timber harvest or clearing in preparation for mining because of the nature and timing of the re-vegetation that occurs. In timber harvest for forest management, tree regeneration begins within the first growing season post-harvest on the site and birds respond relatively quickly to the vigorous flush of woody re-growth. On mine sites, the reclamation process takes more time, and the vegetation responds more slowly, especially if the site is being reclaimed with shrubs and trees for reforestation.

On reclaimed mine lands which were originally forested, avian communities shift from forest bird communities to communities associated with early successional habitats, grassland birds and scrub-shrub birds. These changes in bird communities have conservation implications because in some cases there are forest bird species present that have declining populations and are of high conservation concern, such as the Cerulean Warbler (*Setophaga cerulea*) in the Appalachian Mountains (*Buehler et al.* 2006). Negative impacts on forest bird populations have to be weighed against positive gains in early successional bird populations. Many species associated with early successional habitats, such as the Henslow's Sparrow (*Ammodramus henslowii*) and the Golden-winged Warbler (*Vermivora chrysoptera*) are also of high conservation priority (*Hunter et al.* 2001, *Buehler et al.* 2007).

Coal mining in the eastern United States seldom encounters bird species that are federally listed as threatened or endangered but most of the bird studies associated with mining have focused on characterizing songbird communities post-reclamation. Post-mining songbird studies have documented grassland bird response to reclamation when the reclamation has resulted in grassland cover. In general, grassland mine reclamation has been successful in creating habitat suitable for grassland birds' use. The grassland species attracted to reclaim mine

lands include a diversity of songbirds and grassland raptors such as Northern Harriers (*Circus cyaneus*) and Short-Eared Owls (*Asio flammeus*) (Rohrbaugh and Yahner 1996, Vukovich 2004, Vukovich et al. 2006).

Reclaimed mine sites in Pennsylvania, Kentucky, Illinois, Indiana, West Virginia, and Ohio are supporting breeding populations of Houses Sparrows (Bajema et al. 2001, Bajema and Lima 2001, DeVault et al. 2002, Scott et al. 2002, Mattice et al. 2005, Monroe and Ritchison 2005, Stauffer 2008, Stauffer et al. 2011) and/or Grasshopper Sparrows (*Ammodramus savannarum*) (Whitmore 1979, Whitmore 1981, Wray et al. 1982, DeVault et al. 2002, Scott et al. 2002, Ammer 2003, Mattice et al. 2005, Galligan et al. 2006, Stauffer 2008, Stauffer et al. 2011), two grassland species of conservation concern. Reproductive rates by these species were comparable to reproduction in other settings (Ammer 2003, Monroe and Ritchison 2005, Galligan et al. 2006, Stauffer et al. 2011). No published survival data are available for grassland songbirds breeding on reclaimed mine lands. Adult and juvenile survival data are generally unavailable for most grassland songbirds (Perlut et al. 2008) because adult dispersal, depending on the species, may be high and return rates in ephemeral grassland habitats is often very poor (Jones et al. 2007). Without survival data, it is impossible to accurately determine whether reclaimed mine lands are providing conditions conducive for supporting source populations for priority species (Anders and Marshall 2005). Several authors have noted that reclaimed coal mine lands in the region were providing important grassland habitat contributing significantly to grassland bird conservation range wide (Rohrbaugh and Yahner 1996, Bajema et al. 2001, Mattice et al. 2005, Monroe and Ritchison 2005, Stauffer et al. 2011).

Golden-Winged Warbler populations have been declining precipitously in the Appalachian region (Buehler et al. 2007), and the species has been petitioned for listing under the Endangered Species Act in 2010 (USFWS 2011). Golden-winged populations occupy shrubby, early successional habitats often associated with reclamation of contour and area mines (Bulluck and Buehler 2008). Plant

succession on mine lands is often slow, which provides for a prolonged period in which habitat conditions are conducive for Golden-winged Warblers.

Succession on mine lands post-reclamation can be successfully set back by prescribed burning to further prolong the period of suitability for golden-winged (*D. Buehler and K. Percy, unpubl. data*). In some cases, however, recent coal mining may compromise golden-winged habitat where remaining is occurring on old contour and area mine sites that are currently occupied by Golden-winged (*D. Buehler, unpubl. data*). A mine land reclamation prescription is being developed for Golden-winged Warbler habitat restoration to address this issue (*D. Buehler and K. Percy, unpubl. data*).

Although grassland and scrub-shrub birds benefit from the early successional habitat developed from post-mining reclamation, forest-dwelling birds are adversely affected by land use change from forest to grassland, regardless of the origin of the change. Concern has been expressed related to habitat loss for Cerulean Warblers in the Appalachian Mountains associated with deforestation from coal mining (*Buehler et al. 2006, Wood et al. 2006, Bulluck 2007*).

Mining also affects forest songbirds in adjacent forested areas because of the creation of edge effects and because of forest fragmentation. Cerulean Warbler abundance, for example, was lower in forests adjacent to mountaintop removal mining with valley fill (*Wood et al. 2006*), although edges associated with contour mines in Tennessee were not associated with lower cerulean abundance (*Beachy 2008*). Cerulean Warbler reproduction was lowering adjacent to forest disturbances from timber harvest than in undisturbed forest stands (*Boves 2011*). Similar relationships with cerulean reproduction and edges created by mining might be expected, although these relationships need to be documented.

Reclaimed coal mine lands can also provide habitat that supports upland game bird populations, including Northern Bobwhite (*Colinus virginiana*) (*Beckerle 2004*), American Woodcock (*Scolopax minor*) (*Gregg 1997*), Eastern

Wild Turkey (*Meleagris gallopavo*) (Rice 1986), and Ruffed Grouse (*Bonasa umbellus*) (Kimmel and Samuel 1984). Although the potential for mine lands to contribute to Northern Bobwhite population recovery is cited in the National Bobwhite Conservation Initiative revised plan (Palmer et al. 2011), we were unable to locate any literature that demonstrated how this might be accomplished. Kentucky Department of Fish and Wildlife Resources (KDFWR), in cooperation with the University of Tennessee, is conducting a northern bobwhite population ecology and habitat management project on Peabody Wildlife Management Area, a reclaimed coal mining area, which will generate information on how bobwhites are doing on reclaimed mine grasslands and how to enhance their habitat (J. Morgan, KDFWR, pers. comm.). Reclamation of mine lands in grasses and legumes provided poor quality grouse brood habitat, although later successional stages provided better brood habitat quality (Kimmel and Samuel 1984). Wild Turkeys used reclaimed mine lands extensively and densities on mine lands exceeded densities on nearby control areas (Rice 1986).

2.5 ECOLOGICAL EFFECTS OF PAVED ROADS INSIDE THE FOREST ON BIRDS

While the most obvious threat of paved roads to individual birds is injury or mortality due to vehicle collisions, this is often considered less compelling when compared to the more insidious effects of roads, such as behaviour modification or decreased population density, diversity, and/or breeding success (Reijnen and Foppen 1994, Forman and Alexander 1998, Jacobson 2005, Ramp et al. 2006, Reijnen and Foppen 2006). However, in some cases, direct road mortality is the major threat to a population (Mumme et al. 2000, Ramsden 2003, Reijnen and Foppen 2006). Given the vast network of roads in combination with other persistent anthropogenic factors at work (e.g., habitat loss, fragmentation, non-native species invasions, climate change), the potential impact of road mortality on specific wildlife populations should not be dismissed (Erritzoe et al. 2003, Glista et al. 2008).

Many studies report that certain species of birds avoid roads, paved or otherwise, when selecting habitat during some part of their life cycle (*Ferrer and Harte 1997, Parrish et al. 2001, Sara and DiVittorio 2003, Bollinger and Gavin 2004, Arcos and Salvadores 2005, Balbontin 2005, Carrascal et al. 2006, Gavashelishvili and McGrady 2006*). The risk of nest abandonment can also increase near roads (*Gorog et al. 2005*). In an extreme case, Great Bustard populations in Portugal appear to be concentrating themselves geographically, with new road building responsible for three of the local population declines (*Pinto et al. 2005*). Long-term trends suggest the Portuguese population may ultimately become confined to a single high-quality site, thereby increasing the probability of extinction (*Pinto et al. 2005*). For those species which use roadways as habitat, maintenance activities to roads and ditches can inadvertently destroy nests, a particular concern for declining species such as the Burrowing Owl (*Catlin and Rosenberg 2006*).

Road-related threats to bird populations deserve more attention, however, conservation or mitigation action is often considered to be warranted only after a population-level decline can be demonstrated (*Reijnen and Foppen 2006*). Many road-related bird studies are conducted in or adjacent to protected areas, illustrating there may be no panacea that escapes road-related impacts (*Reijnen and Foppen 1994, Bard et al. 2002, Gutzwiller and Barrow 2003, Clevenger et al. 2003, Frey and Conover 2006, Ramp et al. 2006*).

2.6 RECLAMATION PRACTICES

Coal mining results in large landscape changes as soils and vegetation are removed. Changes to forested areas can shift habitat availability and bird communities (*James and Wamer, 1982; Hardt and Forman, 1989; Bolger et al., 1991; Winter et al., 2000; Herzog et al., 2001; Galligan et al., 2006; Wickham et al., 2007; and Loss et al., 2009*). Several bird species have benefited in recent decades from the reclamation of surface coal mines (*Bajema et al. 2001, DeVault et al. 2002, Ingold 2002*). Burger (2011) defined four periods of reclamation: tree-planting by hand, grassland, shrub/scrub, and the Forest Reclamation Approach (FRA) (*Angel et al., 2005*).

Managing and reclaiming land to establish vegetation patches (e.g., grasslands, forest, wetlands, early succession) of different stages can provide habitat for diverse wildlife and aquatic species. Restoring a diverse community of native and site-adapted vegetation that includes a variety of structural features is the first step to attract wildlife species (*Brenner and Kelly 1981; Camenzind 1984; Parmenter and MacMahon 1990*).

Birds are generally one of the first types of wildlife to visit a mine site following reclamation due to their mobility and active search for suitable habitat (*Brändle et al. 2003*). Many bird species are not restricted to a single vegetation type, but rather depend on some combination of early successional habitat, open areas, and young and mature forests to find food and shelter and raise young (*Hunter et al. 2001*).

Although mining activities can have several negative impacts on wildlife populations, animals can return to reclaimed areas after mining if reclamation produces suitable habitat and individuals that can serve as colonists persist in the surrounding area. Site characteristics created by reclamation and the development of post-mining vegetation and habitat features influence the types of wildlife that use mined sites. The reclamation process provides habitat management opportunities for some species; through various reclamation techniques and procedures, mine lands can be manipulated to attract and support desired wildlife species (*Scott and Zimmerman 1984*).

A large amount of information has been generated about the nature of plant – pollution interactions very little authentic information Indian context has been generated about the role of the plants in absorption of air pollutants. Most of the information available is from “Forest Vegetation as a Sink for Gaseous Contaminants” (*Smith, 1981*). The following recommended actions may improve the condition of wildlife habitat on reclaimed mine sites.

CHAPTER 3

OBJECTIVE

The Alternative Habitat Development Plan for Affected Avifauna and Wildlife Conservation Plan for affected wildlife species of OCP Gevra, Katghora, and Chhattisgarh for that the objectives of this Project based on scientific and systematic study related to conservation of wildlife and avifauna with the application of management concept and skills. The task was initiated by State Forest Research and Training Institute, Raipur (C.G) to develop Wildlife Conservation plan including alternative habitat development plan for affected avifauna species to be affected by the felling of trees due to mining in the project area.

The major objectives were:

1. To survey and documentation of the existing wildlife (mammals and reptiles) of OCP Gevra.
2. To estimate the species diversity and population dynamics of avifauna in the OCP Gevra.
3. To study the habit, habitat and nesting pattern of different species of the avifauna of core and buffer zone.
4. GPS survey of the densities, water bodies, nesting areas, migratory birds' areas, and wildlife corridors in the proposed study area.
5. To study the presence and movement of animals and birds by seasonal survey.
6. To study the impact assessment of proposed mining activities along with the existing biotic pressure on habit and habitat of the existing wildlife species including avifauna of the core zone.
7. Pilot testing, evaluation and monitoring of appropriate measures for the desired site.
8. Preparation of habitat enrichment/development plan for the wildlife species and avifauna of the core zone for preferential adoption of the surrounding area as alternative habitat.

9. Initial monitoring and guidance to the executing agency (Forest Department) for the implementation of the plan.

The research team of State Forest Research and Training Institute Raipur (C.G) had conducted extensive scientific surveys and conceptualized the Alternative Plan for the avian species and conservation plan for affected wildlife species in the study area.

CHAPTER 4

FIELD METHODOLOGY AND IMPACT ASSESSMENT

4.1 LINE TRANSECTS METHODOLOGY

Line transects method had been applied for the bird count and their habitat survey. Line-transect distance sampling methods were also used to estimate the abundance of many biological populations such as animals, birds and plant species including nonliving things. In a line-transect survey method, an observer moves along a transect line and note the location of all birds detected to the line (*Bird census and survey techniques, Richard D. Gregory, David W. Gibbons, and Paul F. Donald, 2004*).

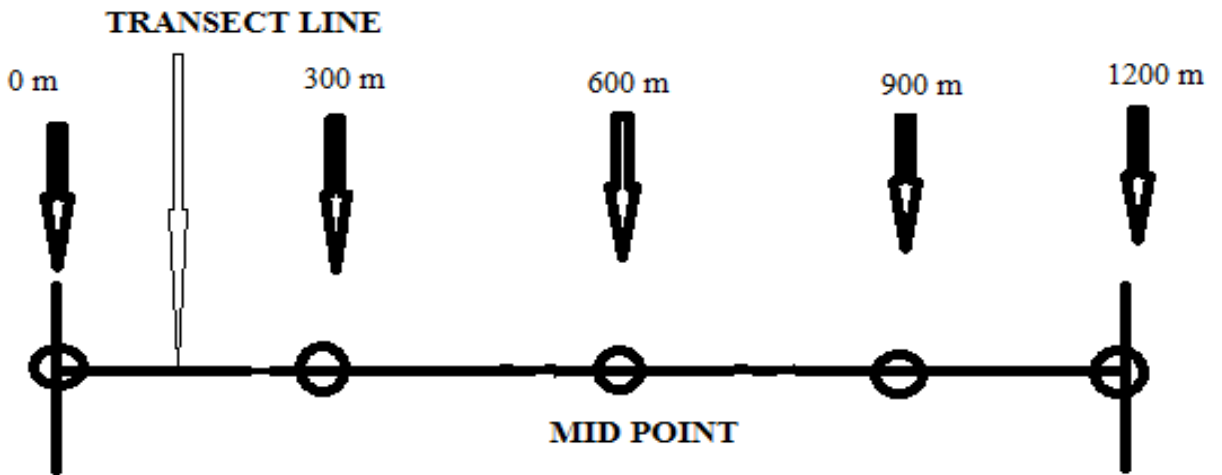


Fig 4.1: Line Transect Methodology

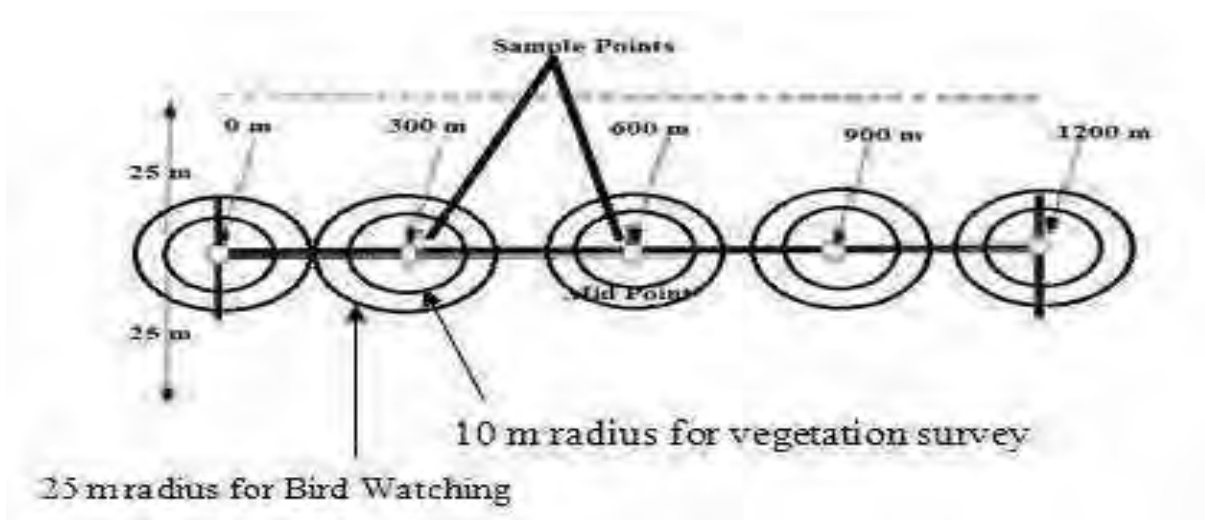


Fig 4.2: Detail survey methodology of Line Transect Methodology

Basic Procedures in Line Transect Sampling

Two types of data are recorded in line transect sampling, as shown in data collection point page no. 24. These are either (1) the perpendicular distances from the transect line x or (2) the sighting distances r and angles θ . However, studies based on sighting distances and angles have been found to be subject to biases and are only discussed briefly here.

The usual assumptions made with line transect sampling are the following:

1. All objects on the transect line are detected.
2. Objects do not move in response to the observer before the detection is recorded.
3. Objects are only counted once.
4. Objects are recorded at the point of initial detection.
5. Distances are measured without errors.
6. Transect lines are randomly located in the study area.

A further assumption sometimes made for the estimation of standard errors is that Sightings are independent events, and the number of objects detected follows a Poisson distribution.

4.2 FIELD SURVEY

The field survey technique to observe the abundance of wildlife, avifauna, habitat, nesting pattern & surrounding vegetation in core zone applied seasonally; to estimate the current status of species diversity of avifauna and wildlife in the mining area. On the basis of species of wildlife & avifaunal diversity survey, it should be easy to determine the ecological behavior of each individual species and resulting to develop alternate habitat of affected avifauna and wildlife conservation plan at the 5-10 km lease boundary or buffer zone of the mining area.

Total 12 line transect was taken within the core and buffer area on proposed study sites. During the field surveys, we made a line transect of 1200 m (mostly used a path / trail followed by the villagers to enter in the forest) in which distance sampling were taken in every 300 m in the transect to estimate the

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population of avifauna, its habit, habitat and nesting pattern including the floral diversity of the proposed mining area. A circular sample plot of 10 m radius had been taken in each transect at an interval of 300 m i.e. total 5 sample plots made in one transect namely 0m, 300m, 600m, 900m, 1200m in which vegetation composition (grass, herb, shrub and regeneration) and all tree species data had been taken including height and girth along with the counting of avifauna and wildlife. The data sheets used during the field survey are as follows:

Table NO. 4.1: Datasheet for Bird status survey

Date: ----- Cell-ID: ----- Team: -----Trail-length: -----

GPS at every 300 m			Sighting information					Remark	
S.N.	Latitude	Longitude	Species	Number	Perp. Dist.	Bearing			Observation
						A	T		

Table No 4.2: Datasheet for habitat study at every 300 m on the transect line

Date: ----- Cell-ID: ----- Team: -----Trail-length: -----

S . N .	GPS Location		Ti me (hr s.)	Lan d- cove r (100 m radi us)	Vegetation (3 dominant species)			Vegetation composition				Huma n structu re (500m radius)	
	Lat.	Long.			B / A / G / W / S	Tre e spp .	Param eters	Observa tion 1 / 2 / 3/ 4/ 5	Gra ss	Her b	Shr ub		Regen eratio n

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* Land cover – **B** (barren) / **A** (Agriculture) / **G** (Grassland) / **W** (Woodland) / **S** (Scrubland)

** **Human structure** – **S** (Settlement) / **R** (Metal road) / **E** (Electricity) / **P** (Pond) / **W** (Well / tube well)

*** **Observation** – 1. Illicit felling 2. Girdling 3. Dead tree 4. Living / Healthy 5. Diseased

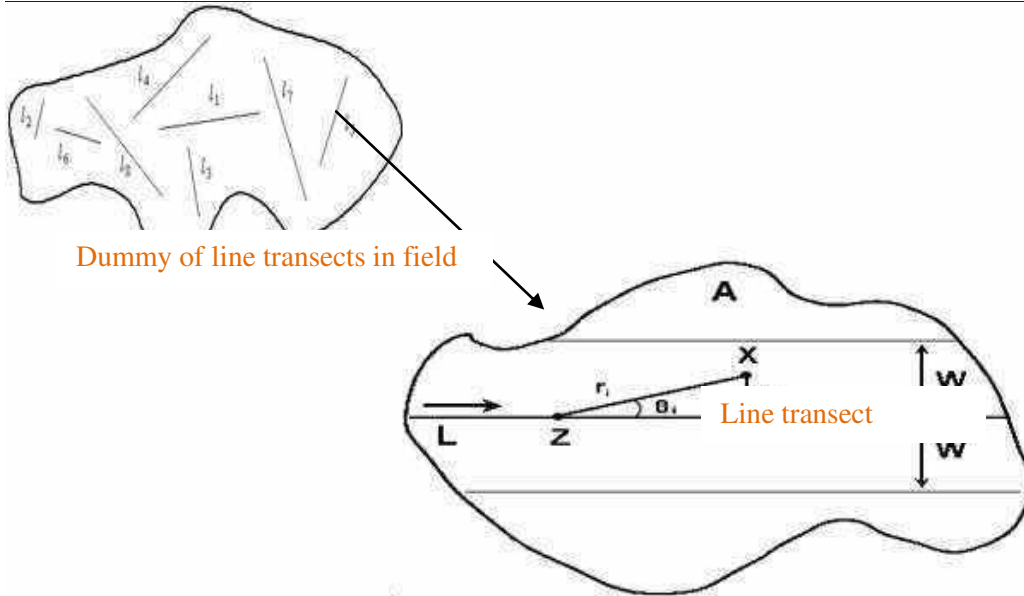
Table No 4.3: Datasheet for wildlife study on transect line

Date: _____ Cell-ID: _____ Team: _____ Trail-length:-----

GPS at every 300 m			Sighting information							
S. N.	Latitude	Longitude	Wildlife Species			Perp. Dist.	Bearing		Type of Species	Observation
			Direct Sighting	Indirect Sighting	Number		A	T		

Basic Concepts of Line-Transect Sampling

a) **Data collection (overview)**



L = transect line, Z = position of observer, X = position of object, W = strip width ($1/2$), r_i = sighting distance (flushing distance), θ_i (theta) = sighting angle, y_i = perpendicular distance (note: $y_i = r_i \sin \theta_i$)

b) Underlying theory

- Not all individuals will be detected
- The probability of detecting an object decreases as its distance from the line increases

c) Detection function

- Detection function: $g(x) = \text{Pr} \{ \text{object observed} \mid x \}$.
- = probability of observing an object given that it is "x" distance from the line.

4.3 Work completion

In January 2018, a pilot survey was start to design a project with clear objectives i.e. Preparation of wildlife conservation plan including alternative habitat development plan for affected avifauna of OCP Gevra, which was Sanctioned in May 2018 and amount transferred in June 2018. The project work completed within the June 2019. Seasonal survey was conducted between the December 2018 to March 2019 and during the two seasonal survey winters and summer. On the basis of field survey/visits, 480 individuals of 56 different

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avifauna species belong to 32 different families were found including 19 floral species in the core area. Till now the data of 365 individuals belonging to 44 species are categorized.

Chapter – 5

OBSERVATION & DATA ANALYSIS

5.1 STUDY AREA

The Gevra Mining Block having an area on about 19.03 sq.km located in the central part of Korba Coalfield for the core mining zone of OCP about 1016.412 Ha. Area of land needed from the forest for 45 MTY unit of Gevra OCP Project, out of which 112.385 ha. Forest lands have been diverted from forest department and rest of the 904.027 hectare lands have been already diverted earlier from the department for OCP Gevra Project. Two villages in the core zone namely Naraibodh and Raliya village were located inside the boundary of OCP Gevra. A total of 12 transects had been taken during seasonal survey in core area and buffer area of OCP Gevra.

5.2 BIODIVERSITY MONITORING

Seasonal variation have been observed, recorded and analyze on the basis of baseline study have been carried out on core and buffer area of OCP Gevra. Seasonal survey has been conducted among the winter and summer season survey work have been conducted between the Novembers to March 2019. The findings have entered as floral and faunal biodiversity as well as their habitat were studied on the basis of Species diversity i.e. The numbers of different species have been represented in faunal and floral population has been completely analyzed.

Vegetation of grass, herbs, shrubs and trees density was comparatively analyzed On the basis of the field survey on study sites i.e. core and buffer zone the data had been observed and analyzed in the core and buffer zone of proposed mining area.

5.3 WINTER SEASONAL SURVEY

5.4 STUDY OF FLORAL DIVERSITY

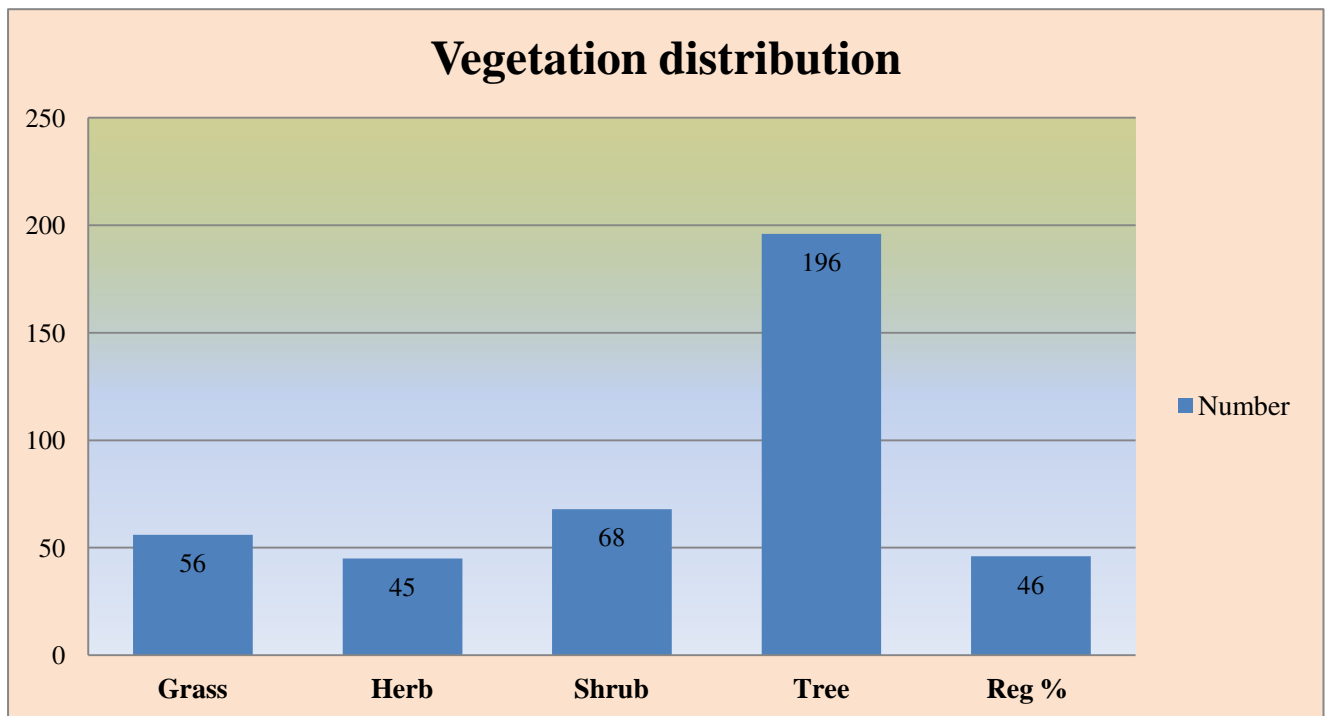
On the basis of the field survey as discussed on previous chapters the data had been observed and analyzed. 6 transect separated with 5 plots transects sample plots were drawn in the core and buffer zone respectively as; on the basis of Whereas vegetation diversity in the winter season other than tree species are *SFRTI 2019*

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recorded in terms of average percent i.e. grassland 9.33 %, herbs 7.50 %, shrubs 11.33%, Tree 33.66% and the regeneration percentage is 7.66% based on ocular observation. (Refer to table / Graph no 5.1).

Table No. 5.1
Average vegetation percentage in winter season

Study Area	Grass	Herb	Shrub	Tree	Reg %
Transect 1	4	7	7	26	15
Transect 2	7	0	0	14	0
Transect 3	4	8	20	26	4
Transect 4	5	4	4	18	5
Transect 5	33	22	33	50	17
Transect 6	3	4	4	62	5
Total	56	45	68	196	46
Average %	9.33%	7.50%	11.33%	32.66%	7.66%



Graph No. 5.1: Vegetation cover during winter season

Girth Class structure of available tree species

The core zone of mining area proposed for excavation are mainly surrounded by the Sal, Teak, Neem, Baheda, Jamun, Mahua, Plash, Tendu etc. whereas buffer zone surrounded with Koriya, Palsh, Senha, Mahua, Char, Tendu, Sal, Neem, Kusum, Pipal etc. Girth class structure available tree species

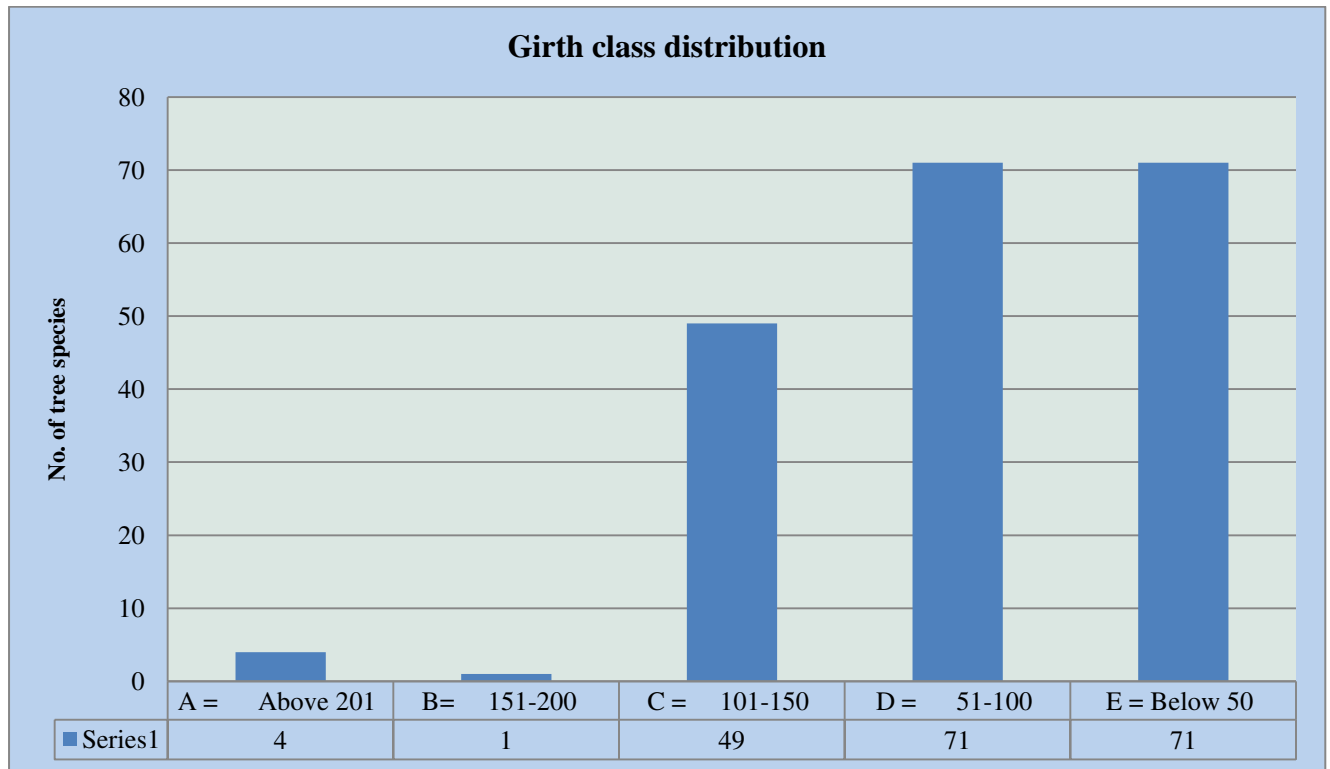
categorized under five classes i.e. A,B,C,D, and E respectively observed and analyzed, the diversity of tree species there are 66 individual tree belongs to 11 species in core area, where as 130 individual tree belongs to 11 species in the buffer area have been recorded. (Refer to table / Graph no 5.2)

Table No. 5.2
Girth class structure of available tree species in core zone

Girth class structure of available tree species in Core zone							
S.No.	Tree	A = Above 201	B= 151-200	C = 101-150	D = 51-100	E = Below 50	Total no. of tree
1.	Sal			18	4		22
2.	Teak				1	15	16
3.	Khamhar			10		1	11
4.	Neem				1	3	4
5.	Kala Serus				3		3
6.	Karanj				1	2	3
7.	Baheda	1		1			2
8.	Jamun				2		2
9.	Bamboo					1	1
10.	Ber				1		1
11.	Sheesham				1	1	2
Total No. of tree species							66

Table No.5.3
Girth class structure of available tree species in Buffer zone

Girth class structure of amiable tree species in Buffer zone							
S.No.	Tree	A = Above 201	B= 151-200	C = 101-150	D = 51 - 100	E = Below 50	Total No. of tree
1	Koriya				30	2	32
2	Senha			13	11	7	31
3	Palash	2			4	23	29
4	Mahua			3	2	8	13
5	Char				6	3	9
6	Tendu			1		3	4
7	Sal		1	3			4
8	Neem				2		2
9	Kusum	1					1
10	Peepal					1	1
11	Teak				2		6
Total no. of tree species							130



Graph 5.2:
Girth class structure of available tree species on core and buffer zone

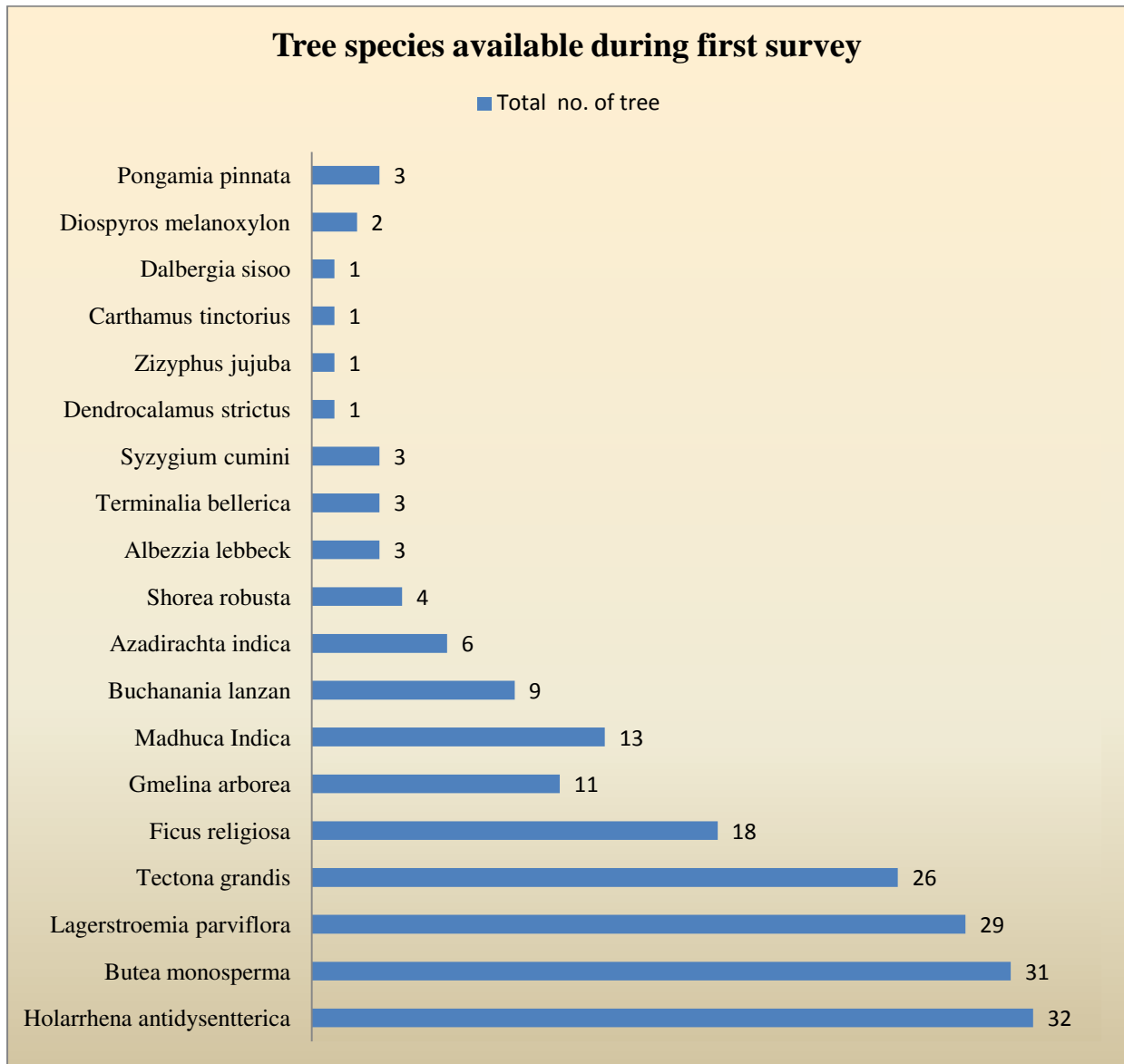
Table 5.4
Girth classes structure No. of Available tree species in core and buffer zone

S.No.	Local Name	Botanical Name	A = Above 201	B= 151-200	C = 101-150	D = 51-100	E = Below 50	Total no. of tree
1	Koriya	<i>Holarrhena antidysenterica</i>				30	2	32
2	Senha	<i>Butea monosperma</i>			13	11	7	31
3	Palash	<i>Lagerstroemia parviflora</i>	2			4	23	29
4	Sal	<i>Tectona grandis</i>		1	21	4		26
5	Teak	<i>Ficus religiosa</i>				3	15	18
6	Khamhar	<i>Gmelina arborea</i>			10		1	11
7	Mahua	<i>Madhuca indica</i>			3	2	8	13
8	Char	<i>Buchanania lanzan</i>				6	3	9
9	Neem	<i>Azadirachta indica</i>				3	3	6
10	Tendu	<i>Shorea robusta</i>			1		3	4
11	Kala serus	<i>Albezzia lebbeck</i>				3		3
12	Baheda	<i>Terminalia bellerica</i>	1		1			2
13	Jamun	<i>Syzygium cumini</i>				2		2
14	Bamboo	<i>Dendrocalamus strictus</i>					1	1

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15	Ber	<i>Zizyphus jujuba</i>				1		1
16	Kusum	<i>Carthamus tinctorius</i>	1					1
17	Peepal	<i>Ficus religiosa</i>					1	1
18	Sheesham	<i>Dalbergia sissoo</i>				1	1	2
19	Karanj	<i>Pongamia pinnata</i>				1	2	3

Note - Area Details : Total Number of transect = 06 ; Total number of plots = 06 x 5 = 30 ; Area of one Sample Plot = 314.16 m Square



Graph 5.3:
Numbers of available tree species during winter season

5.5 STUDY OF FAUNAL DIVERSITY

Earlier 25 species of avifauna were reported in EIA and EMP report of OCP Gevra, whereas according to State Forest Research and Training Institute

(SFRTI) Raipur as per survey datasheet. On the basis of the field survey as discussed on previous chapters the data had been observed and analyzed. 6 transect separated with 5 plots transects sample plots were drawn in the core and buffer zone respectively as; As per recorded data, In the **core area** there was **64 individual birds belongs to 31 species** have been observed and recorded where as among the **buffer zone** there was **149 individual birds belongs to 35 different species** have been recorded. The population of avifauna flora dominated by Little Swift, Sulphur Billed Warbler, Black Drongo, Green bee-eater, Indian Roller, Red Vented Bulbul, Common Myna within the core zone, where as the avian population dominated by House sparrow, Green bee-Eater, Cattle Egret, Black Drongo, Jungle Babbler, Eurasian Collared Dove, Red Vented Bulbul, Barn swallow, Common Myna, Great Egret, Greenish Warbler, House Crow, Little Egret, Pied Starlin, Plum Headed Parakeet, Ashy Prinia, Purple Sunbird, and Spotted Dove. Mostly the birds found during the survey are endemic and resident. The avifaunal diversity of mining area are tabulated in table no 5.5.

Table No. 5.5
List of reported Bird species in the core area

S.No.	Birds Species	Number
1	Little Swift	5
2	Sulfur Billed Warbler	5
3	Black Drongo	4
4	Green Bee-eater	4
5	Indian Roller	4
6	Red Vented Bulbul	4
7	Common Myna	3
8	Eurasian Collared Dove	3
9	House Crow	3
10	Ashy Prinia	2
11	Bramhiny Starling	2
12	Common Hoopoe	2
13	Common Tailor bird	2
14	House Sparrow	2
15	Laughing Dove	2
16	Scaly Breasted Munia	2
17	Common kingfisher	1
18	Variable Wheatear	1

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19	Eurasian Golden Oriole	1
20	Greenish Warbler	1
21	Hawk Eagle	1
22	Indian Robin	1
23	Indian Silver Bill	1
24	Lesser Pied Kingfisher	1
25	Little Cormorant	1
26	Paddy Field Pipit	1
27	Paid Starling	1
28	Plain Prinia	1
29	Rose Ringed Parakeet	1
30	Spotted Dove	1
31	White Rumped Munia	1

Table No. 5.6
List of reported Bird species in the Buffer area

S.No.	Birds species	Number
1	House Sparrow	20
2	Green Bee-Eater	17
3	Cattle Egret	15
4	Black Drongo	8
5	Jungle Babbler	7
6	Eurasian Collared Dove	6
7	Red Vented Bulbul	6
8	Barn Sallow	5
9	Common Myna	5
10	Great Egret	4
11	Greenish Warbler	4
12	House Crow	4
13	Little Egret	4
14	Pied Starling	4
15	Plum Headed Parakeet	4
16	Ashy Prinia	3
17	Purple Sunbird	3
18	Spotted Dove	3
19	Sulphur Bellied Warbler	3
20	Asian Open Bill Stork	2
21	Bank Myna	2
22	Barn Owl	2
23	Eurasian Golden Oriole	2
24	Indian Roller	2
25	Indian Silver Bill	2
26	Jungle Prinia	2

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27	Little Cormorant	2
28	Common Hoopoe	1
29	Indian Robin	1
30	Jungle Owlet	1
31	Laughing Dove	1
32	Little Swift	1
33	Paddy Field Pipit	1
34	Rose Ringed Parakeet	1
35	White Throated Kingfisher	1

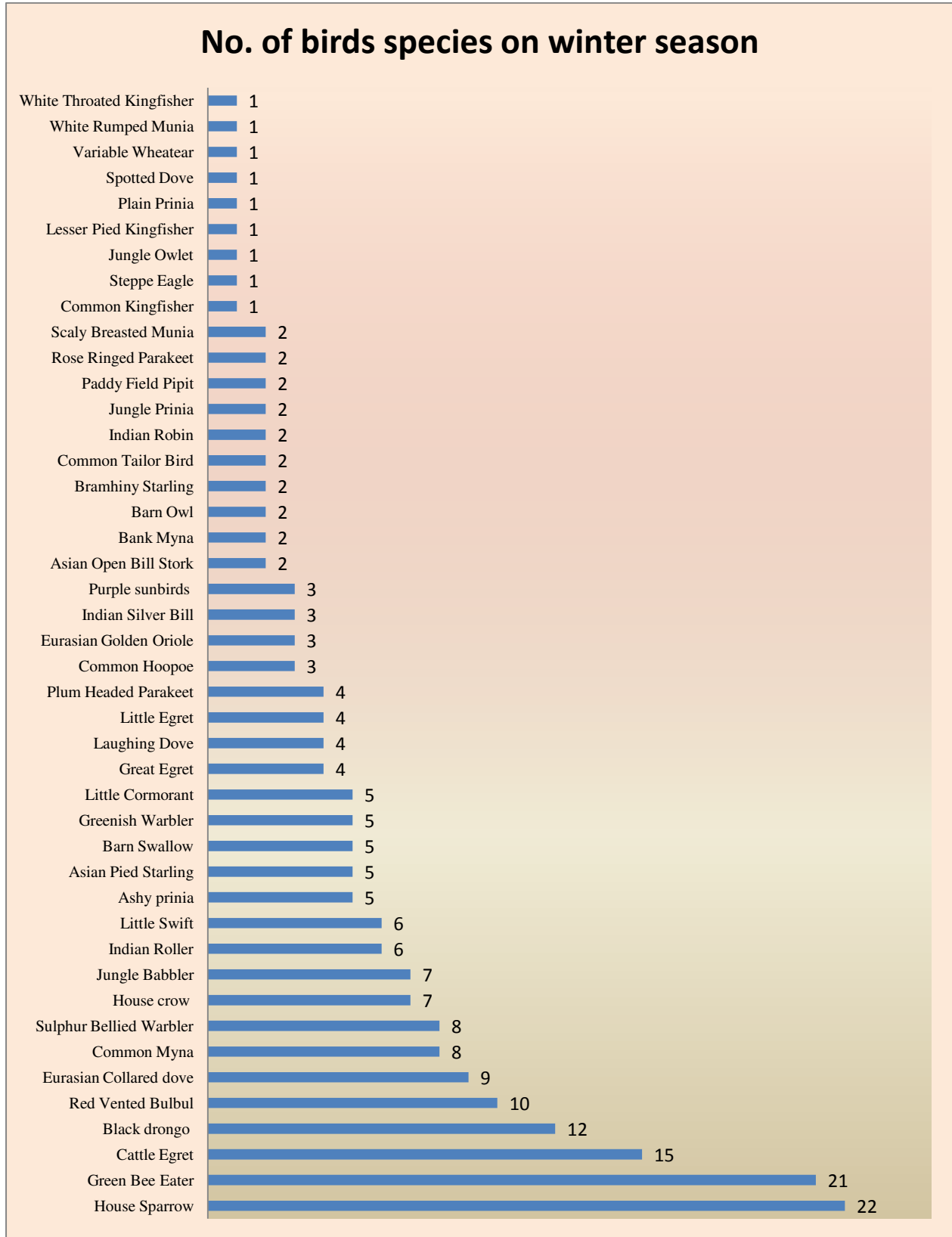
The Population Over all study of core and buffer of OCP Gevra area actual number of avifauna 213 individual and, 44 different species belongs to 28 family have been recorded. As per recorded data, the population of avifauna dominated by, Green Bee Eater, House sparrow, Red vented bulbul, Sulfur Bellied Warbler, Indian Roller and Common Myna and Black Drongo etc. Mostly the birds found during the survey are endemic and resident. The avifaunal diversity of mining area has shown in table no 5.7. , 5.4.

Table 5.7
Listing of Birds species during winter seasons

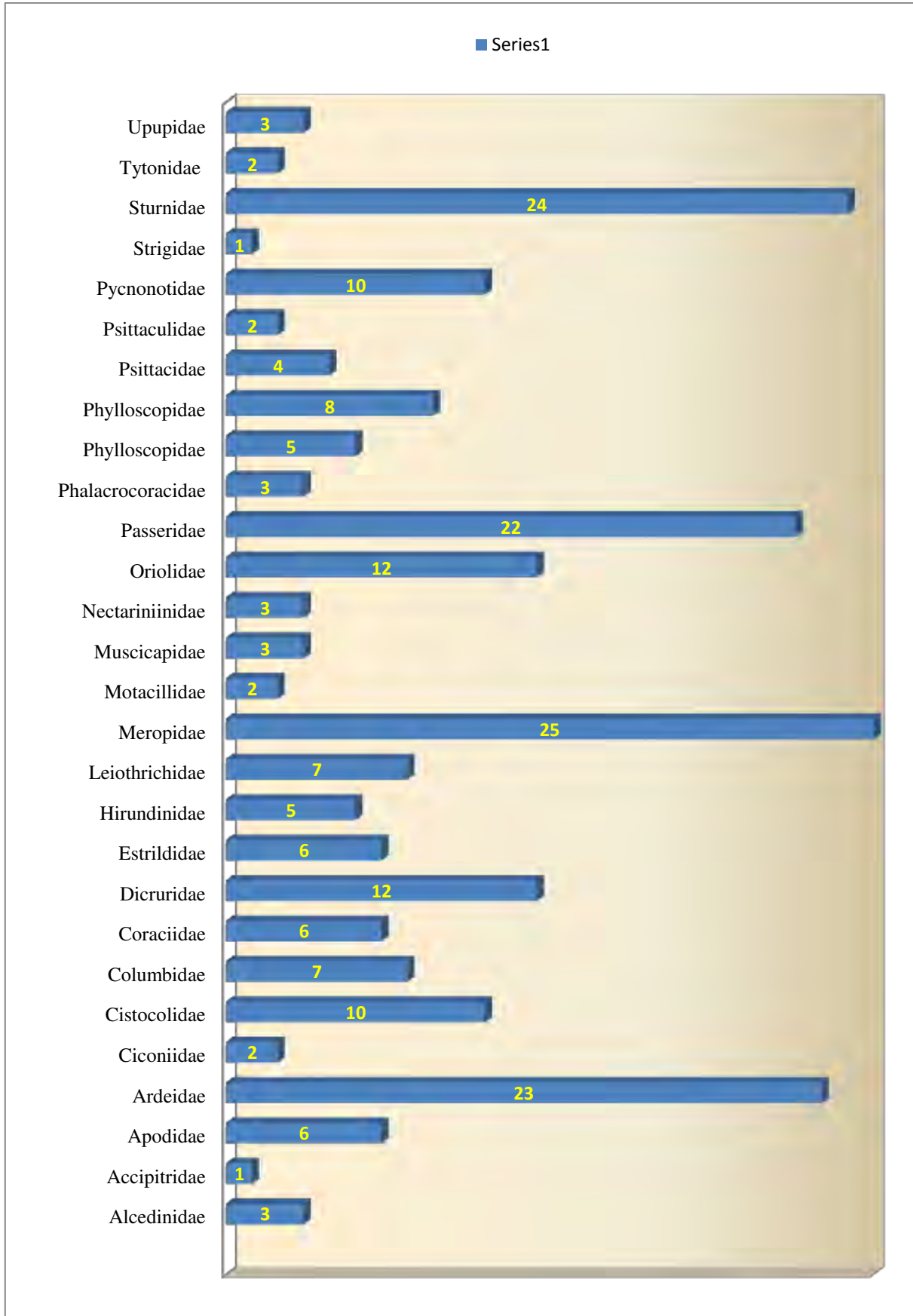
S.No.	Local Name	Scientific Name	Family	No. of birds species
1	House Sparrow	<i>Passer domesticus</i>	Passeridae	22
2	Green Bee Eater	<i>Merops orientalis</i>	Meropidae	21
3	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	15
4	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	12
5	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	10
6	Eurasian Collared Dove	<i>Streptopelia decaocto decaocto</i>	Columbidae	9
7	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	8
8	Sulphur Bellied Warbler	<i>Phylloscopus griseolus</i>	Phylloscopidae	8
9	House Crow	<i>Corvus splendens splendens Viellot</i>	Sturnidae	7
10	Jungle Babbler	<i>Turdoides striata</i>	Leiothrichidae	7
11	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	6
12	Little Swift	<i>Apus affinis</i>	Apodidae	6
13	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	5
14	Asian Pied Starling	<i>Gracupica contra</i>	Sturnidae	5

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15	Barn Swallow	<i>Hirundo rustica</i>	Hirundinidae	5
16	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	5
17	Little Cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	5
18	Great Egret	<i>Ardea alba</i>	Ardeidae	4
19	Laughing Dove	<i>Streptopelia senegalensis</i>	Columbidae	4
20	Little Egret	<i>Egretta garzetta</i>	Ardeidae	4
21	Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	Psittacidae	4
22	Common Hoopoe	<i>Upupa epops</i>	Upupidae	3
23	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Oriolidae	3
24	Indian Silver Bill	<i>Lonchura malabarica</i>	Estrildidae	3
25	Purple Sunbirds	<i>Cinnyris asiaticus</i>	Nectariniidae	3
26	Asian Open Bill Stork	<i>Anastomus oscitans</i>	Ciconiidae	2
27	Bank Myna	<i>Acridotheres ginginianus</i>	Sturnidae	2
28	Barn Owl	<i>Tyto alba</i>	Tytonidae	2
29	Bramhiny Starling	<i>Sturnia pagodarum</i>	Sturnidae	2
30	Common Tailor Bird	<i>Orthotomus sutorius</i>	Cisticolidae	2
31	Indian Robin	<i>Copsychus fulicatus</i>	Muscicapidae	2
32	Jungle Prinia	<i>Prinia sylvatica</i>	Cisticolidae	2
33	Paddy Field Pipit	<i>Anthus rufulus</i>	Motacillidae	2
34	Rose Ringed Parakeet	<i>Psittacula krameri</i>	Psittaculidae	2
35	Scaly Breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	2
36	Common Kingfisher	<i>Alcedo atthisp</i>	Alcedinidae	1
37	Steppe Eagle	<i>Aquila nipalensis</i>	Accipitridae	1
38	Jungle Owlet	<i>Glaucidium radiatum</i>	Strigidae	1
39	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	1
40	Plain Prinia	<i>Prinia inornata</i>	Cisticolidae	1
41	Spotted Dove	<i>Streptopelia chinensis</i>	Columbidae	1
42	Variable Wheatear	<i>Oenanthe picata</i>	Muscicapidae	1
43	White Rumped Munia	<i>Lonchura striata</i>	Estrildidae	1
44	White Throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	1



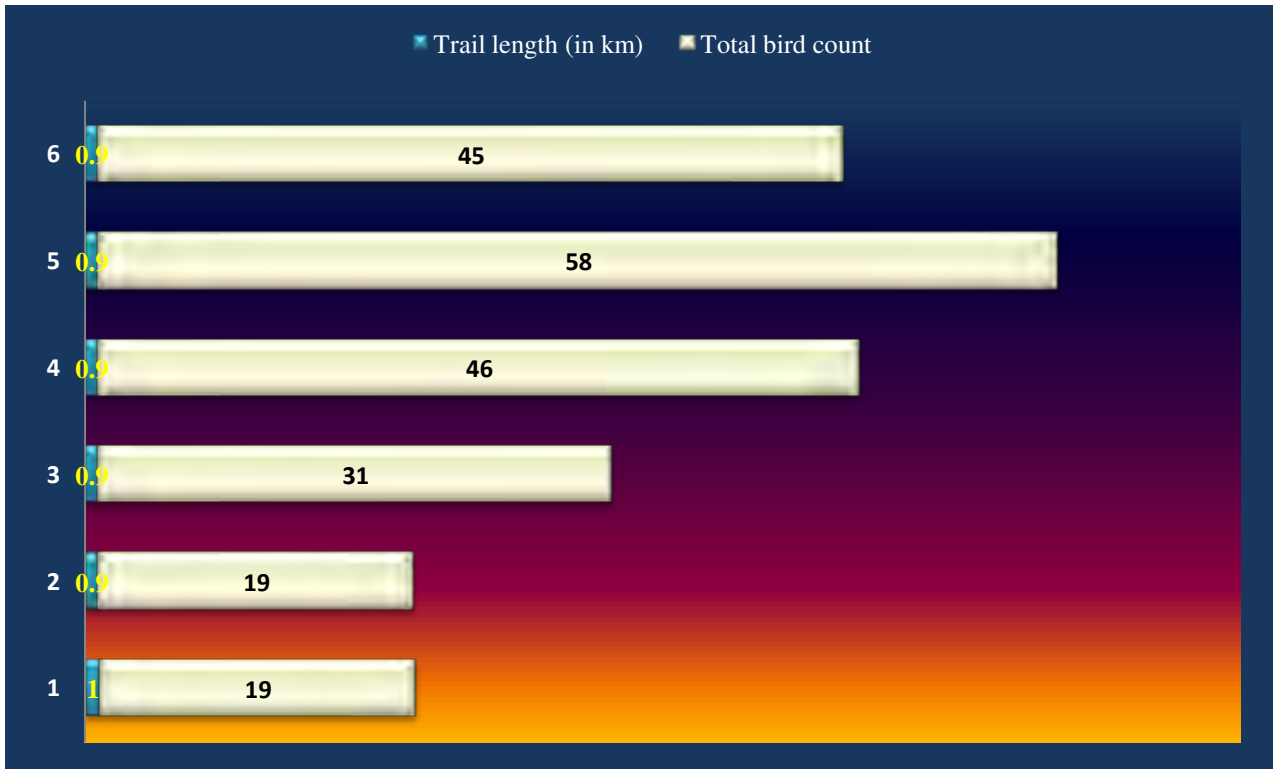
Graph No. 5.4: No. of birds' species shown on winter season



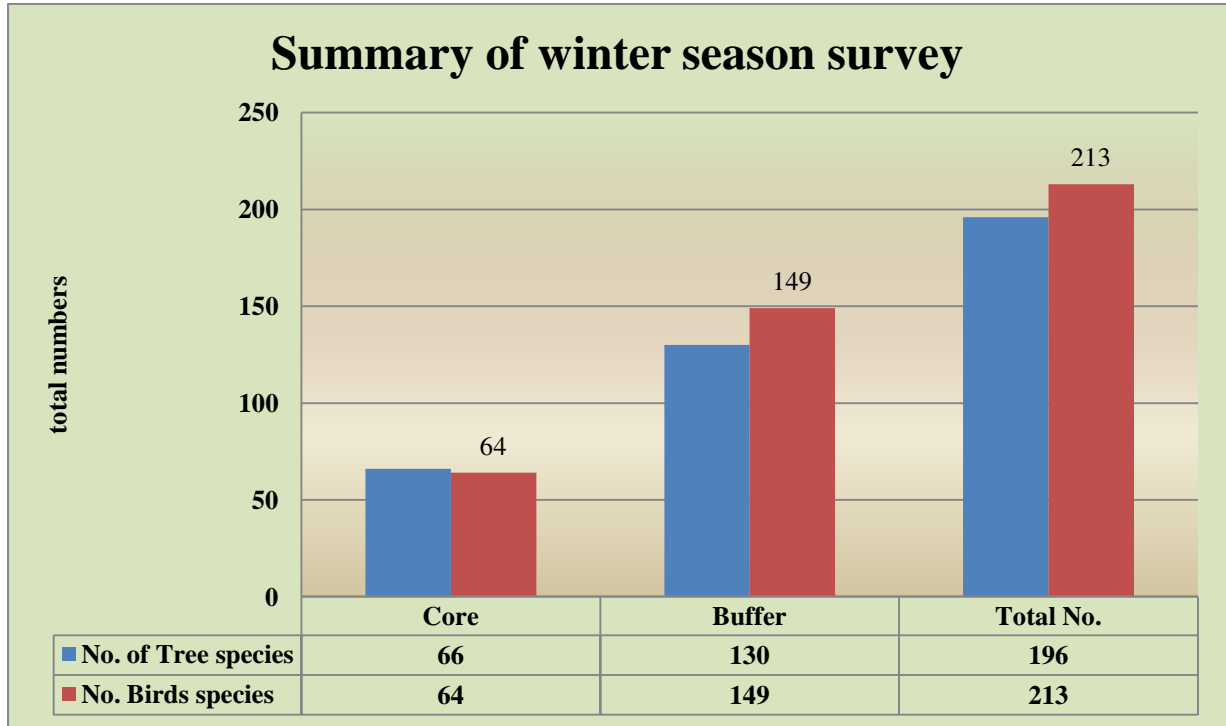
Graph 5.5:
Family wise distribution of avifauna species

Table 5.8
Individual bird sighted in the transect lines

S. No.	Trail length (in km)	Total bird count
1	1	19
2	0.9	19
3	0.9	31
4	0.9	46
5	0.9	58
6	0.9	45
Total	5.5 km	217



Graph 5.6:
Individual bird sighted in the transect lines



Graph No. 5.7: Summary of winter survey

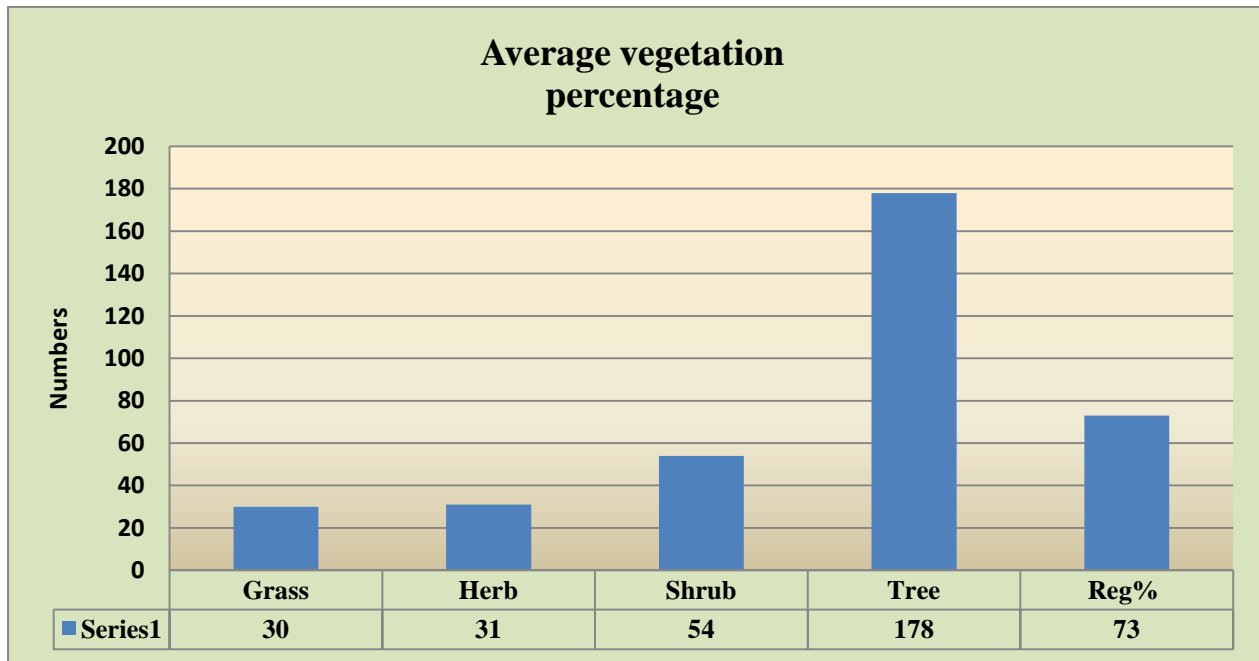
5.6 SUMMER SEASONAL SURVEY

• STUDY OF FLORAL DIVERSITY

On the basis of the field methodology the data had been observed and analyzed. 6 transect separated with 5 plots transects sample plots were drawn in the core and buffer zone respectively as; whereas the overall vegetation relationship of floral diversity other than tree species are recorded in average percent i.e. grassland 5.00 %, herbs 5.10 %, shrubs 9.00%, Tree 29.66% and the regeneration percentage is 12.16% based on ocular observation. (Refer to table/graph no.5.9/5.8)

Table No. 5.9
Average vegetation percentage

Study sites	Grass	Herb	Shrub	Tree	Reg%
Transect 1	3	5	6	27	12
Transect 2	4	6	18	36	19
Transect 3	7	8	13	47	17
Transect 4	4	2	3	11	5
Transect 5	6	5	7	10	11
Transect 6	6	5	7	47	9
Total No.	30	31	54	178	73
Average %	5.00%	5.10 %	9.00 %	29.66 %	12.16 %



Graph No. 5.8: Average vegetation percentage of OCP Gevra

Girth Class structure of available tree species

The core zone of mining area proposed for excavation are mainly surrounded by the Sal, Saja, Mahua, Char, Senha, Tendu, Palash, Koriya and Kusum etc. whereas buffer zone surrounded with Sal, Char, Koriya, Senha, Kekat, Mahuwa, Palsh, Tendu etc. Girth class structure of available tree species categorized under five classes i.e. A,B,C,D and E respectively observed and analyzed, the diversity of tree species there are 81 individual tree belongs to 10 species in core area, where as 97 individual tree belongs to 9 species in the buffer area have been recorded.

Table No. 5.10
Available Tree species in the core area

S.No.	Tree	A = Above 201	B 151-200	C = 101-150	D = 51 - 100	E = Below 50	Total No
1	Sal			16	18	3	37
2	Saja			4	10		14
3	Mahua				4	4	8
4	Char					6	6
5	Senha					3	3
6	Teak					2	3
7	Tendu					3	3
8	Palash				3		3

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9	Koriya					2	2
10	Kusum		2				2
Total No. of Tree species							81

Table No. 5.11
Available Tree species in the Buffer area

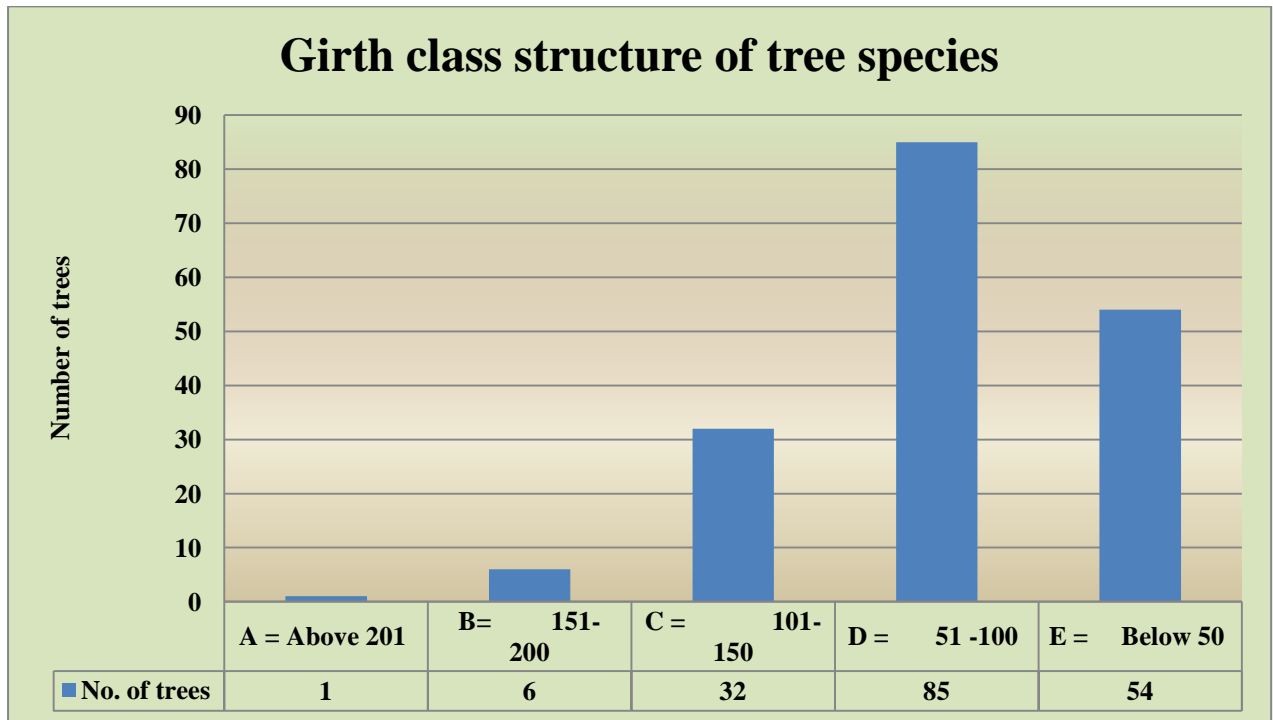
S.NO.	Local Name	A = Above 201	B= 151-200	C = 101-150	D = 51 -100	E = Below 50	Total No. of species
1.	Sal			12	22		34
2.	Saja				14		14
3.	Char				3	10	13
4.	Koriya					10	10
5.	Senha					8	8
6.	Kekat				5		5
7.	Mahua		2		3		5
8.	Palash		2			3	5
9.	Tendu				3		3
Total No. of Tree Species							97

Table 5.12
Girth class structure & no. of available tree species core and buffer zone during summer season

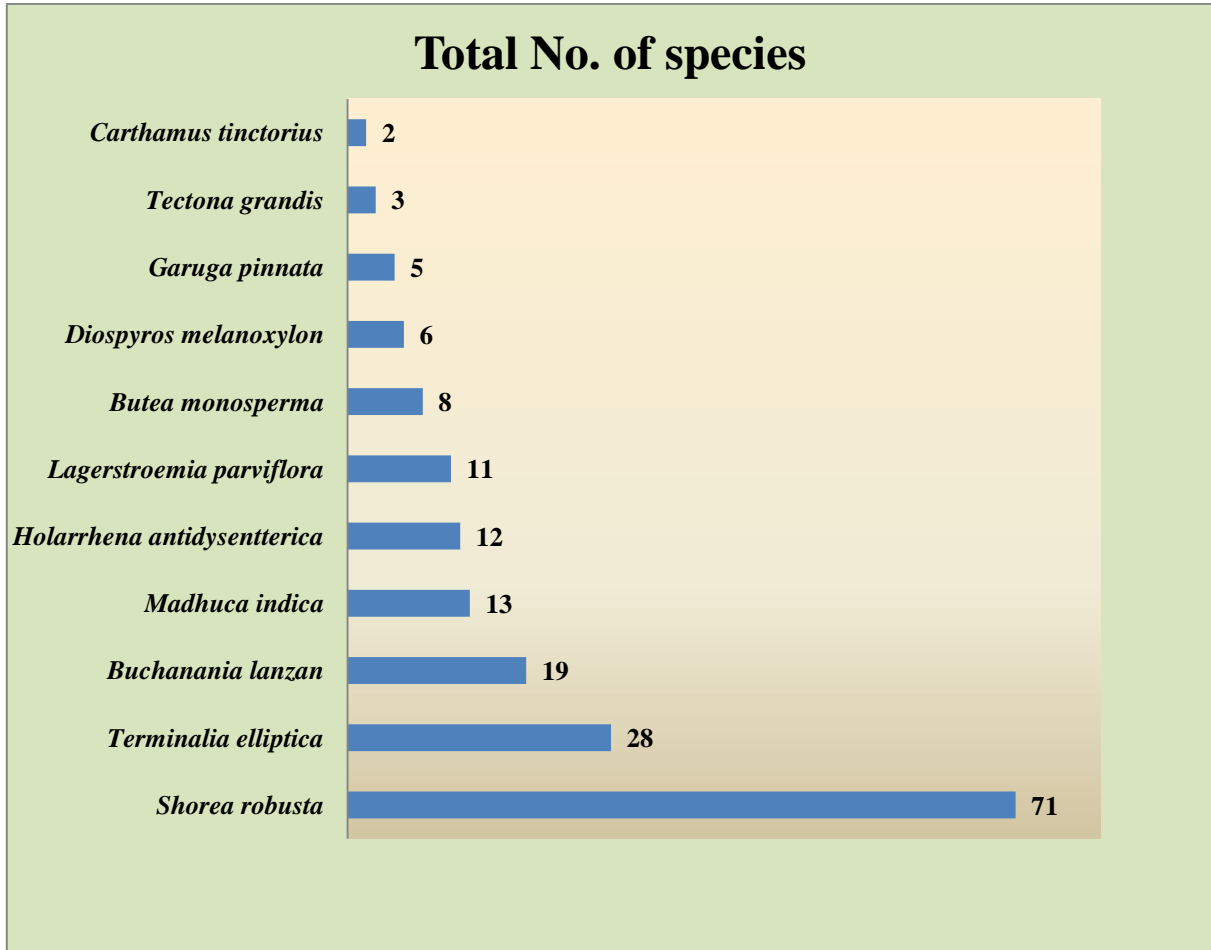
S.NO.	Local Name	Botanical name	A = Above 201	B= 151-200	C = 101-150	D = 51 -100	E = Below 50	Total No. of species
1	Char	<i>Buchanania lanzan</i>				3	16	19
2	Kekat	<i>Garuga pinnata</i>				5		5
3	Koriya	<i>Holarrhena antidysenterica</i>					12	12
4	Kusum	<i>Carthamus tinctorius</i>		2				2
5	Mahua	<i>Madhuca indica</i>		2		7	4	13
6	Palash	<i>Butea monosperma</i>		2		3	3	8
7	Saja	<i>Terminalia elliptica</i>			4	24		28
8	Sal	<i>Shorea robusta</i>			28	40	3	71
9	Senha	<i>Lagerstroemia parviflora</i>					11	11
10	Teak	<i>Tectona grandis</i>					2	3

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11	Tendu	<i>Diospyros melanoxylon</i>				3	3	6
Total no. of tree species								178
Note - Area Details: Total number of transect = 06; Total number of plots = 06 x 5 = 30; Area of one sample plot = 314.16 m Square								



**Graph No 5.9:
Girth classes distribution of available tree species**



Graph No 5.10:
Summary on No. of available Tree species

5.7 STUDY OF FAUNAL DIVERSITY

Earlier 25 species of avifauna were reported in EIA and EMP report of OCP Gevra, whereas according to State Forest Research and Training Institute (SFRTI) Raipur as per survey datasheets. On the basis of the field survey as discussed on previous chapters the data had been observed and analyzed. 6 transect separated with 5 plots transects sample plots were drawn in the core and buffer zone respectively as; As per recorded data, In the **core area** there was **116 individual birds belongs to 15 species** have been observed and recorded where as among the **buffer zone** there was **151 individual birds belongs to 29 different species** have been recorded. The population of avifauna flora dominated by Laughing Dove, Black Drongo, Indian Silver Bill, Spotted Dove, Red Vented Bulbul, Indian Robin, Purple Sunbird, Common Myna, and Sulfur Bellied Warbler etc, within the core area, where as the avian population dominated by Jungle Babbler, Red Vented Bulbul, Purple Sunbird, Laughing

SFRTI 2019

Dove, Black Drongo, Singing Bush-lark, Yellow Vented Lapwing, Green Bee-eater etc, Mostly the birds species found during the survey are endemic and resident. The avifaunal diversity of core and buffer area are tabulated in table no 5.13 and graph 5.14 respectively.

Table No. 5.13
Listing of Birds species core area during summer season

S.No.	Birds Species	Number
1	Laughing Dove	17
2	Black Drongo	16
3	Indian Silver Bill	10
4	Spotted Dove	10
5	Red Vented Bulbul	9
6	Indian Robin	8
7	Purple Sunbird	8
8	Collar Dove	7
9	Cattle Egret	5
10	Common Myna	5
11	House Crow	5
12	Jungle Babbler	5
13	Indian Roller	4
14	Sulphur Bellied Warbler	4
15	Common Hoopoe	3

Table No. 5.14
Listing of Birds species Buffer area during summer season

Sr. No.	Species	Number
1	Jungle Babbler	35
2	Red Vented Bulbul	17
3	Purple Sunbird	12
4	Laughing Dove	10
5	Indian Roller	8
6	Black Drongo	6
7	Singing Bush lark	6
8	Yellow Vented Lapwing	6
9	Green Bee-eater	5
10	Indian Silver Bill	5
11	Small Parakeet	5
12	Spotted Dove	4
13	Ashy Prinia	3
14	Eurasian Collared Dove	3
15	Little Swift	3
16	Indian Nightjar	3
17	Cattle Egret	2

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18	Common Myna	2
19	Greater Coucal	2
20	Indian Magpie Robin	2
21	Indian Robin	2
22	Paddy Field Pipit	2
23	Rose Ringed Parakeet	2
24	Black Kite	1
25	Common Hoopoe	1
26	Eagle	1
27	House Crow	1
28	Scaly Breasted Munia	1
29	Small Parakeet	1

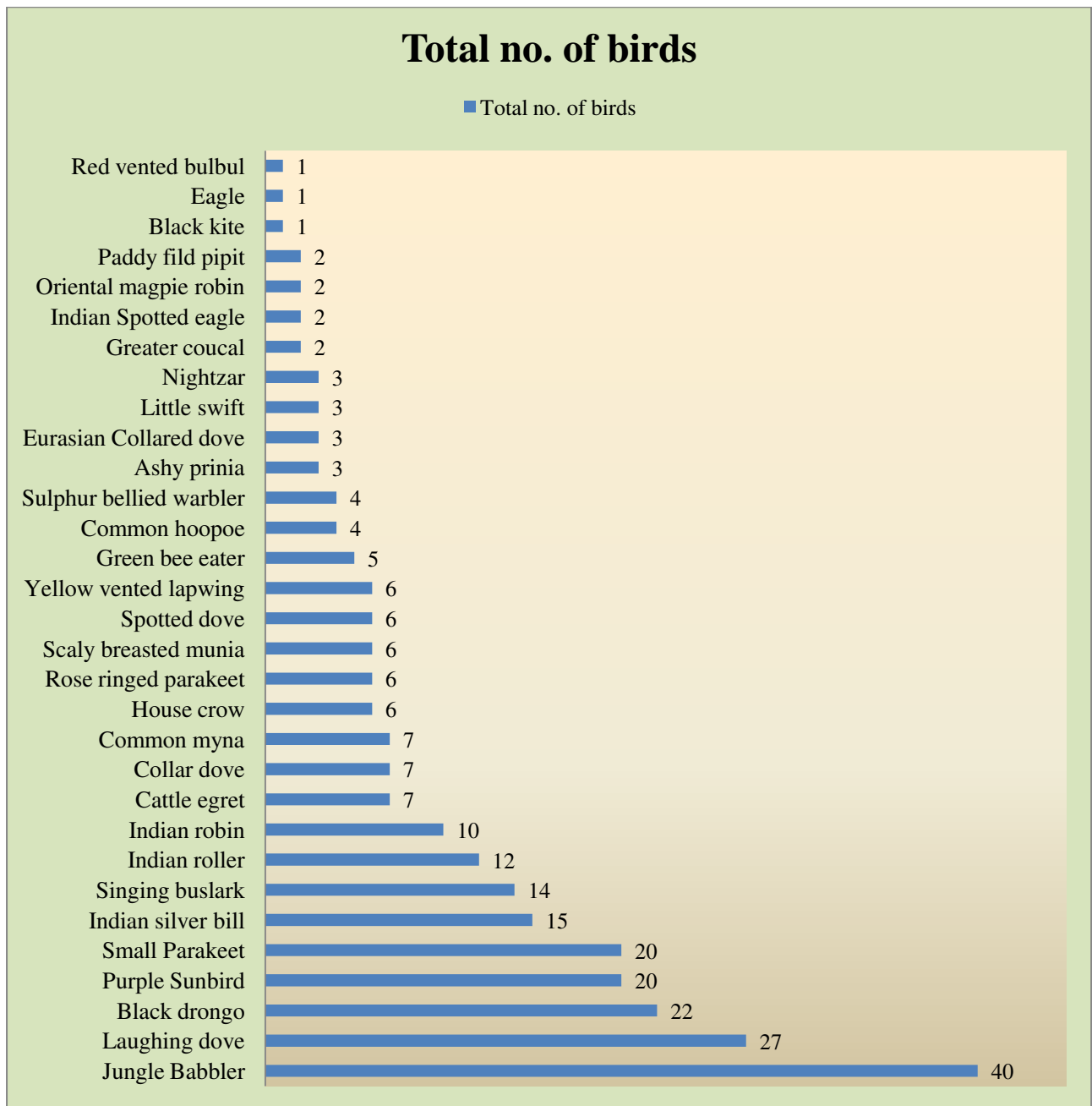
Table No. 5.15

list of overall bird species observed during summer seasons

S.no.	Local name	Scientific Name	Family	Total no. of birds
1	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	3
2	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	22
3	Black Kite	<i>Milvus migrans</i>	Accipitridae	1
4	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	7
5	Collar Dove	<i>Streptopelia decacto</i>	Columbidae	7
6	Common Hoopoe	<i>Upupa epops</i>	Upupidae	4
7	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	7
8	Eagle	<i>Aquila nipalensis</i>	Accipitridae	1
9	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	3
10	Greater Coucal	<i>Centropus sinensis</i>	Cuculidae	2
11	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	5
12	House Crow	<i>Corvus splendens splendens</i> <i>Viellot</i>	Sturnidae	6
13	Indian Robin	<i>Copsychus fulicatus</i>	Muscicapidae	10
14	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	12
15	Indian Silver Bill	<i>Lonchura malabarica</i>	Estrildidae	15
16	Indian Spotted Eagle	<i>Clanga hastata</i>	Accipitridae	2
17	Jungle Babbler	<i>Turdoides striata</i>	Lieothrichidae	40
18	Laughing Dove	<i>Streptopelia senegalensis</i>	Columbidae	27
19	Little Swift	<i>Apus affinis</i>	Apodidae	3
20	Nightjar	<i>Caprimulgus europaeus</i>	Caprimulgidae	3
21	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	2
22	Paddy Field Pipit	<i>Anthus rufulus</i>	Motacillidae	2
23	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	20
24	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	1

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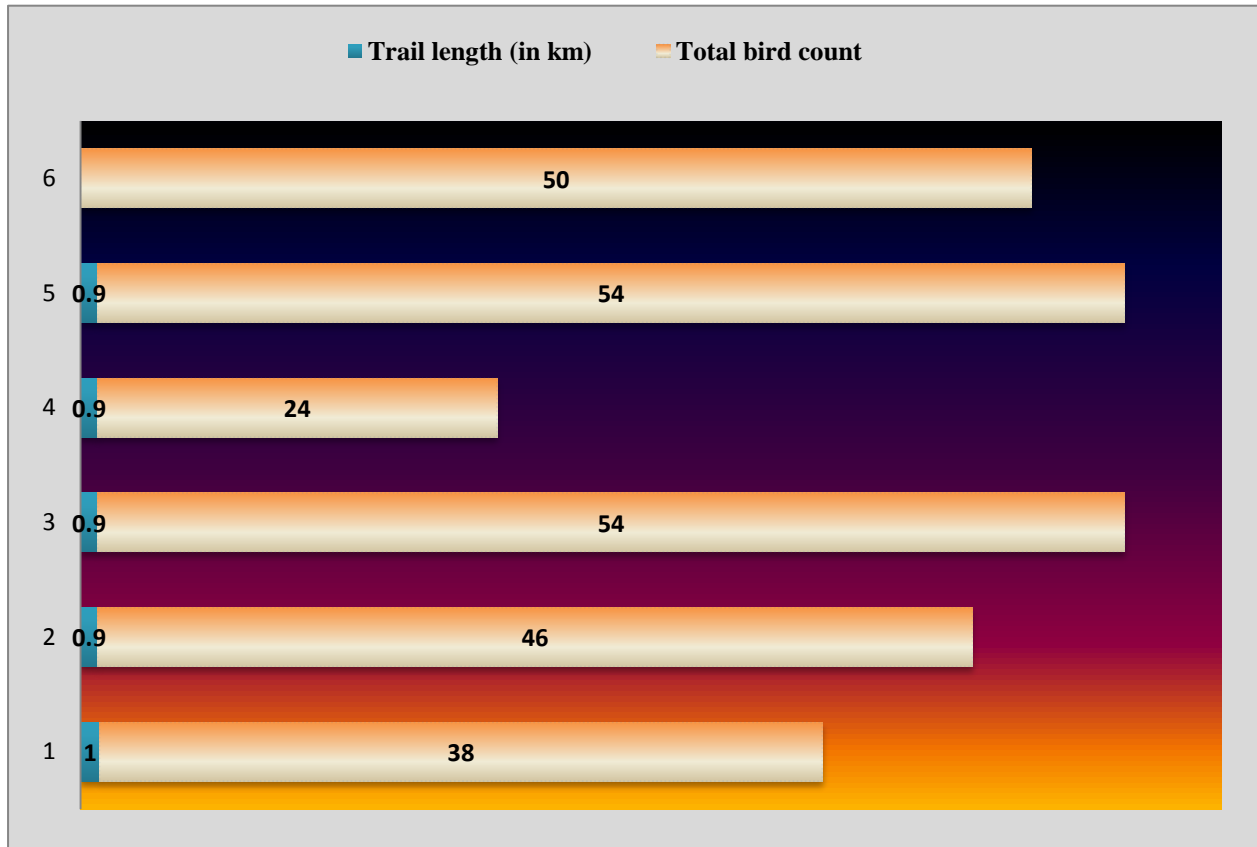
25	Rose Ringed Parakeet	<i>Psittacula krameri</i>	Psittaculidae	6
26	Scaly Breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	6
27	Singing Bus-lark	<i>Mirafra cantillans</i>	Alaudidae	14
28	Small Parakeet			20
29	Spotted Dove	<i>Streptopelia chinensis</i>	Columbidae	6
30	Sulphur Bellied Warbler	<i>Phylloscopus griseolus</i>	Phylloscopidae	4
31	Yellow Vented Lapwing	<i>Vanellus indicus</i>	Charadriidae	6



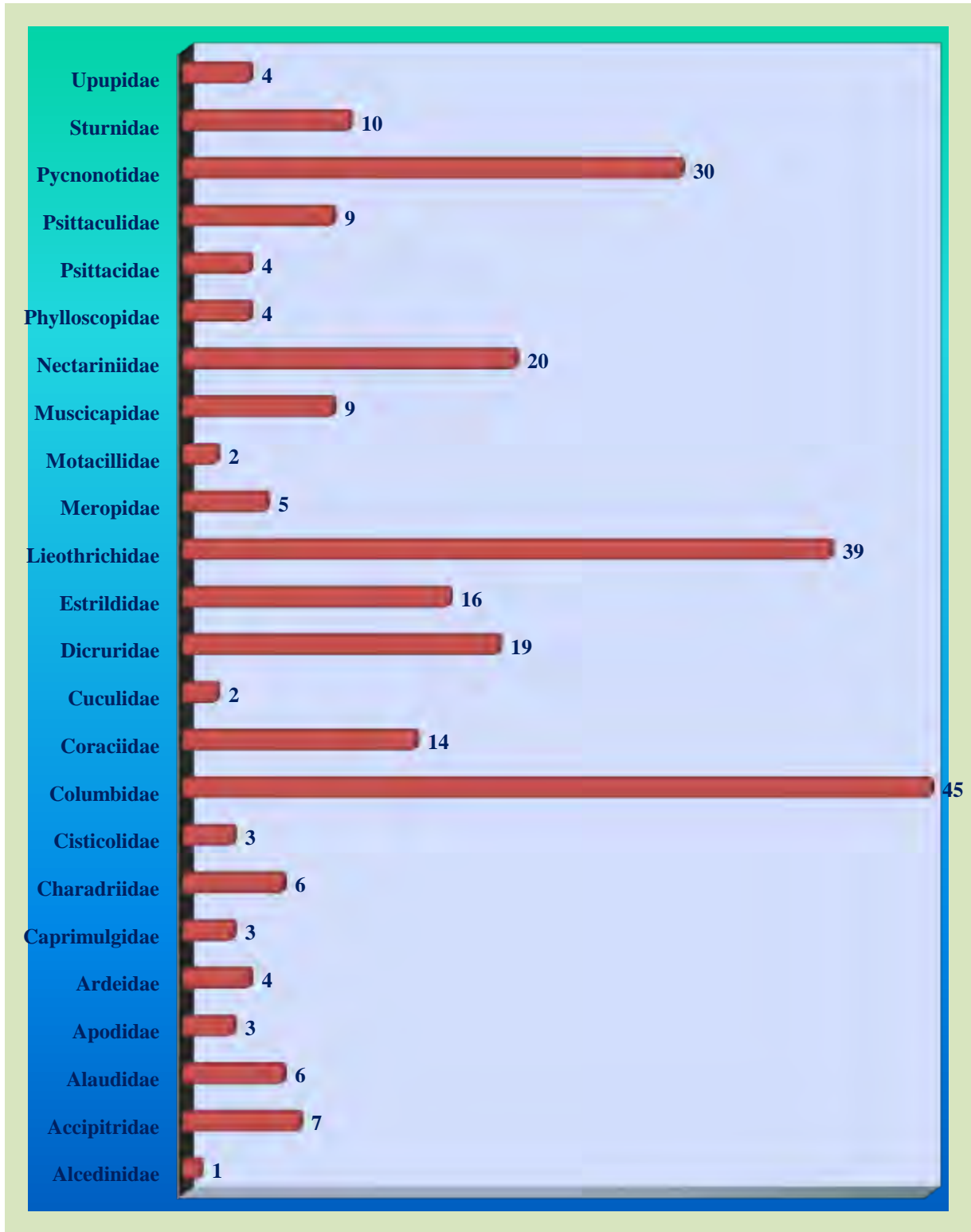
Graph No. 5.11: Summary of bird species during summer season

Table No. 5.16:
Individual bird sighted in the transect lines

S. No.	Trail length (in km)	Total bird count
1	1	38
2	0.9	46
3	0.9	54
4	0.9	24
5	0.9	54
6	0.7	50
Total	5.3 km	267



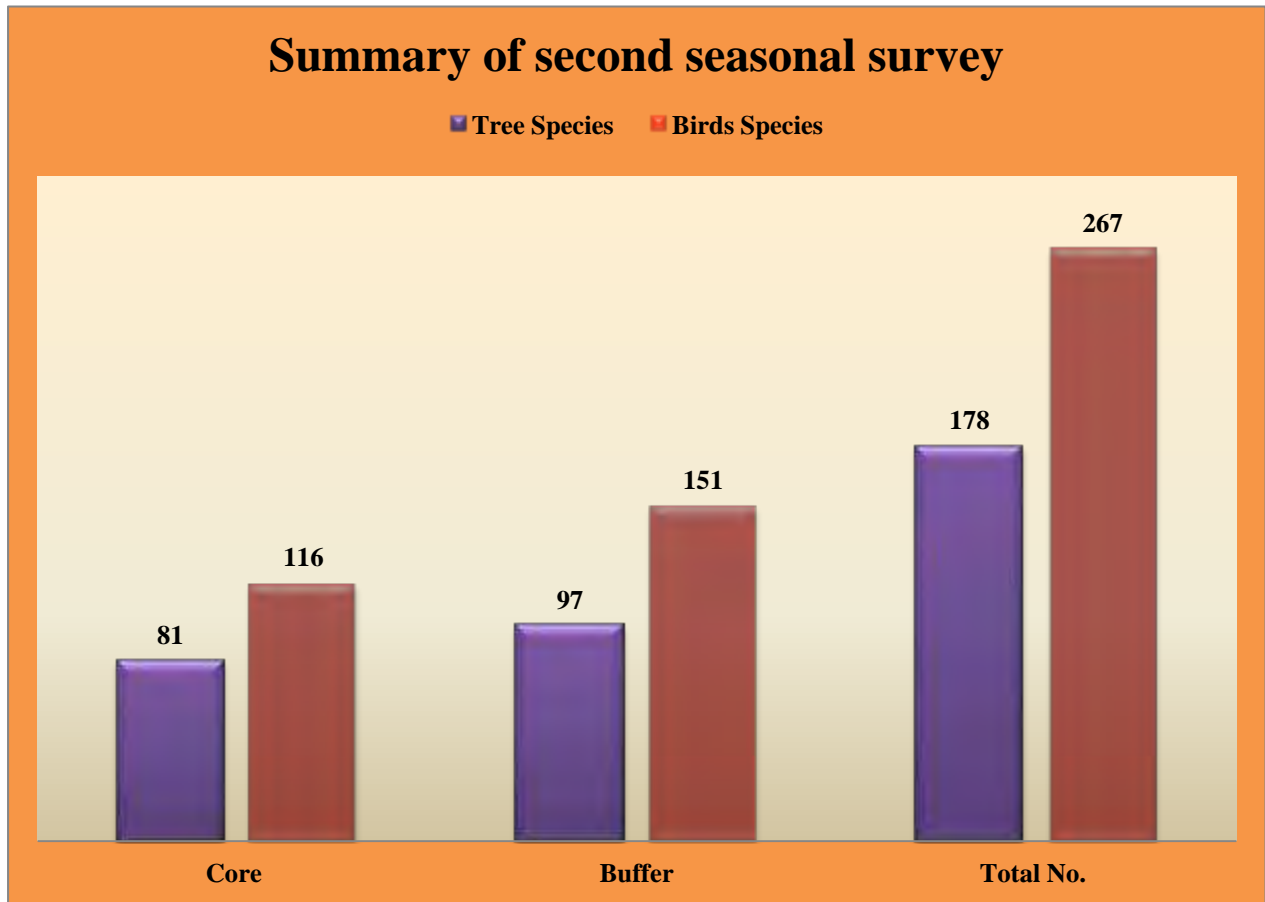
Graph No. 5.12: Individual bird sighted in the transect lines



Graph No 5.13: Bird species distribution according to their family

Table No. 5.17 Summary of summer season

Study area	Core	Buffer	Total No.
Tree	81	97	178
Birds	116	151	267



Graph No. 5.14: Correlation between tree and birds species among the core and buffer area

5.9 REPTILES & MAMMALS

Biodiversity of OCP Gevra supports variety of flora, fauna and wild animals included with reptiles and mammals found exclusively in core and buffer area has been directly sighted / Recorded during the seasonal survey of OCP Gevra.

Table No. 5.18: List of reptiles

S.No	Common Name	Zoological Name	Family	IUCN Red List Status
1	Garden Lizard	<i>Calotes versicolor</i>	Agamidae	LC
2	Smooth Water Snake	<i>Enhydryis enhydryis</i>	Homalopsidae	LC
3	Olive Keel Back Snake	<i>Natrix piscator</i>	Natricidae	LC
4	Common Krait	<i>Bungarus caeruleus</i>	<i>Elapidae</i>	LC

MAMMALS

The class Mammalian is worldwide in distribution. It has been said that mammals have a wider distribution and are more adaptable than any other single class of animals. Mammals which have sighted, Recorded during the seasonal survey of OCP.

Table No. 5.19: List of mammals

S.No	Common Name	Zoological Name	Wildlife (Protection) Act	IUCN Status
1.	5 Strip Palm squirrel	<i>Funambulus pennanti</i>	Sciuridae	LC
2.	Indian Fulvous - Bat	<i>Rousettus leschenaulti</i>	Pteropodidae	LC
3.	Indian Langur / Gray Langur	<i>Presbytis entellus</i>	Cercopithecidae	LC
4.	Jackal	<i>Canis aureus</i>	Canidae	LC
5.	Indian Fox	<i>Vulpes bengalensis</i>	Canidae	LC
6.	Wild Pig	<i>Sus scrofa</i>	Suidae	LC

CHAPTER 6

RESULT & DISCUSSION

6.1 STUDY OF FLORAL DIVERSITY:-

The data collected in the field survey and its analysis reveals the core zone of the proposed mining area to be surrounded by a large floral and faunal diversity. The line transect method was used to study the habitat of the area. For this 12 Transects were laid in total, 6 in the core area and another six transects within the buffer area. These transects were able to cover most of the study sites. On the basis of the analysis of the vegetation habitat, the overall number of individual tree species within the core and buffer area of OCP Gevra, is 374, where 196 tree species have been reported in the winter season and 178 tree species have been reported in the summer season.

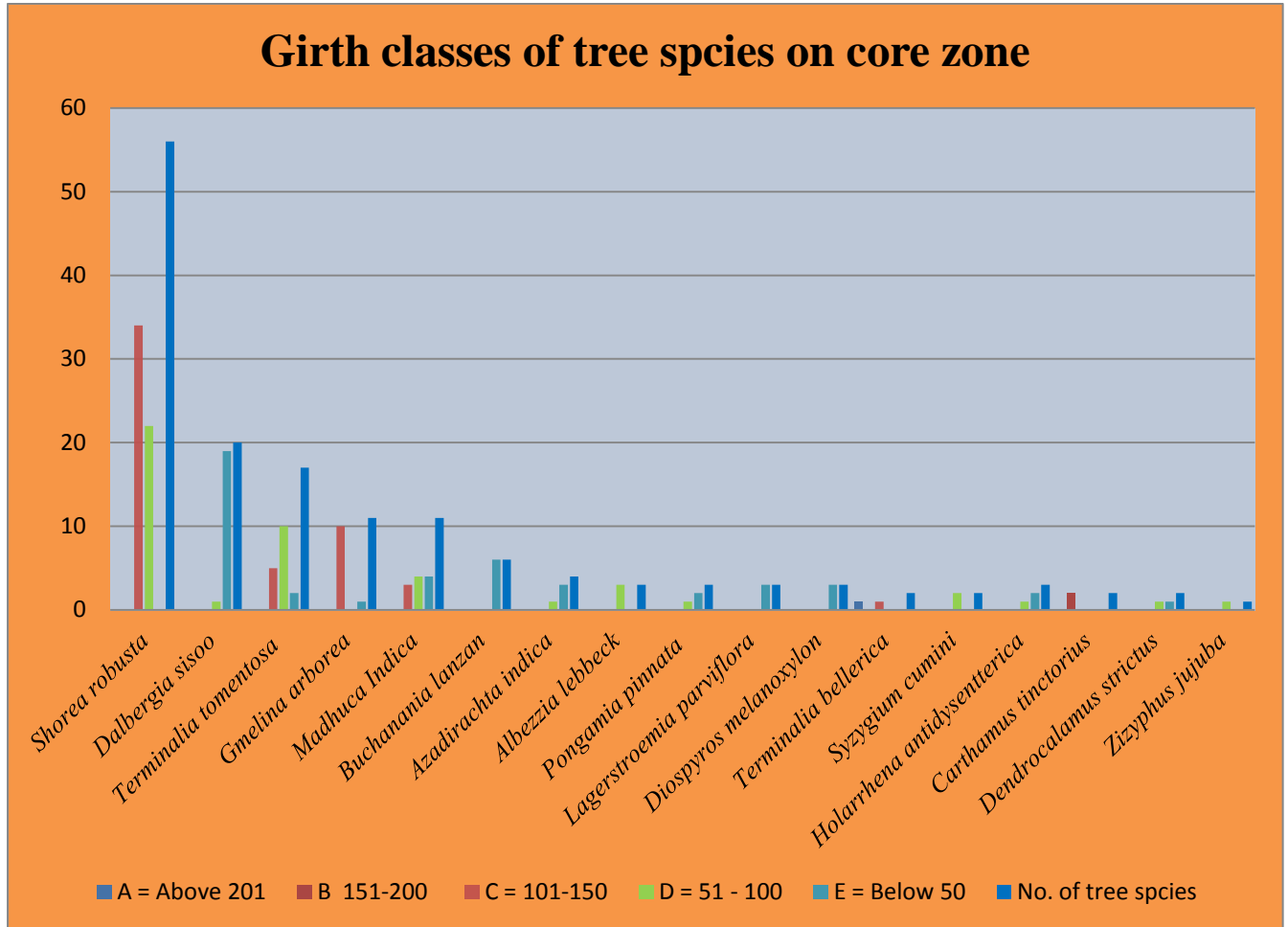
The core zone of the proposed mining area for excavation is mainly populated by 17 different types of Species i.e. Sal (*Shorea robusta*), Sheesham (*Dalbergia sissoo*), Saja (*Terminalia tomentosa*), Khamhar (*Gmelina arborea*), Mahua (*Madhuca indica*), Char (*Buchanania lanzan*), Neem (*Azadirachta indica*), Kala Serus (*Albezzia lebeck*), Karanj (*Pongamia pinnata*), Senha (*Lagerstroemia parviflora*), Tendu (*Diospyros melanoxylon*) etc. whereas the buffer zone mainly surrounded with 13 different types of species surrounded with Koriya, Senha, Sal, Palash, Char, Saja, Mahua, Teak, Tendu, Neem, Kekat, Kusum and Pipal etc. Girth class structure of available tree species categorized under five classes i.e. A, B, C, D and E respectively.

Table No. 6.1:
List of tree species surrounding Core zone

Girth class structure of available tree species in cm. (Core zone)								
S. No.	Tree	Botanical name	A = Above 201	B = 151-200	C = 101-150	D = 51 - 100	E = Below 50	No. of tree spices
1	Sal	<i>Shorea robusta</i>			34	22		56
2	Sheesham	<i>Dalbergia sissoo</i>				1	19	20
3	Saja	<i>Terminalia tomentosa</i>			4	10	1	15

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4	Khamhar	<i>Gmelina arborea</i>			10		1	11
5	Mahua	<i>Madhuca indica</i>			3	4	5	12
6	Char	<i>Buchanania lanzan</i>					6	6
7	Neem	<i>Azadirachta indica</i>				1	3	4
8	Kala serus	<i>Albezzia lebeck</i>				3		3
9	Karanj	<i>Pongamia pinnata</i>				1	2	3
10	Senha	<i>Lagerstroemia parviflora</i>					3	3
11	Tendu	<i>Diospyros melanoxylon</i>					3	3
12	Baheda	<i>Terminalia bellerica</i>	1		1			2
13	Jamun	<i>Syzygium cumini</i>				2		2
14	Koriya	<i>Holarrhena antidysentterica</i>				1	2	3
15	Kusum	<i>Carthamus tinctorius</i>		2				2
16	Bamboo	<i>Dendrocalamus strictus</i>				1	1	2
17	Ber	<i>Zizyphus jujuba</i>				1		1

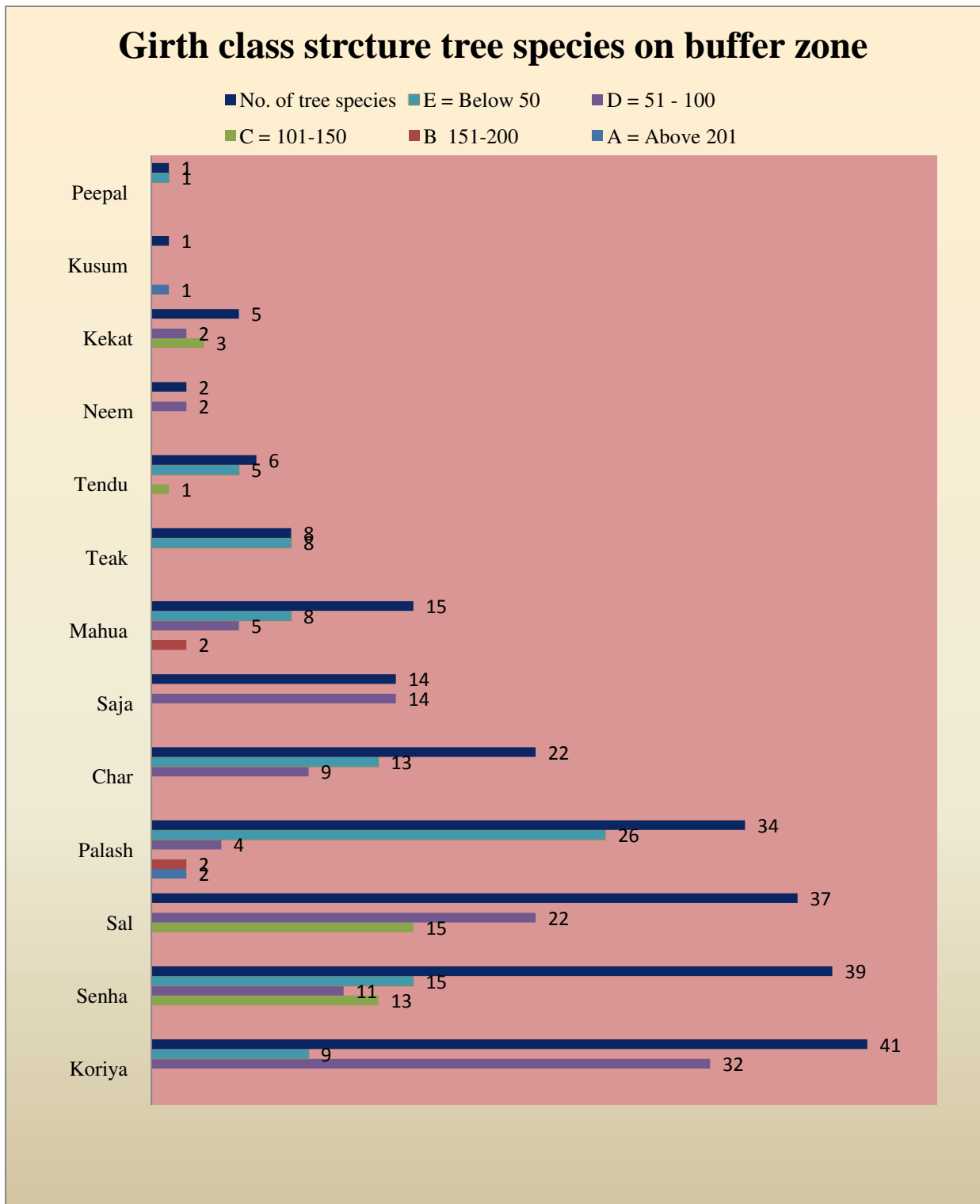


Graph No.6.1 Bird species in the core zone

Table No. 6.2:
List of tree species in buffer zone

Girth class structure of available tree species in cm. (Buffer zone)								
S.No.	Tree	Botanical name	A = Above 201	B = 151-200	C = 101-150	D = 51 - 100	E = Below 50	No. of tree species
1	Koriya	<i>Holarrhena antidysenterica</i>				32	9	41
2	Senha	<i>Lagerstroemia parviflora</i>			13	11	15	39
3	Sal	<i>Shorea robusta</i>			15	22		37
4	Palash	<i>Butea monosperma</i>	2	2		4	26	34
5	Char	<i>Buchanania lanzan</i>				9	13	22
6	Saja	<i>Terminalia elliptica</i>				14		14
7	Mahua	<i>Madhuca indica</i>		2		5	8	15
8	Teak	<i>Tectona grandis</i>					8	8
9	Tendu	<i>Diospyros melanoxylon</i>			1		5	6
10	Neem	<i>Azadirachta indica</i>				2		2
11	Kekat	<i>Garuga pinnata</i>			3	2		5
12	Kusum	<i>Carthamus</i>	1					1

		<i>tinctorius</i>						
13	Peepal	<i>Ficus religiosa</i>					1	1



Graph No. 6.2: Girth Class structure of available tree species on buffer zone

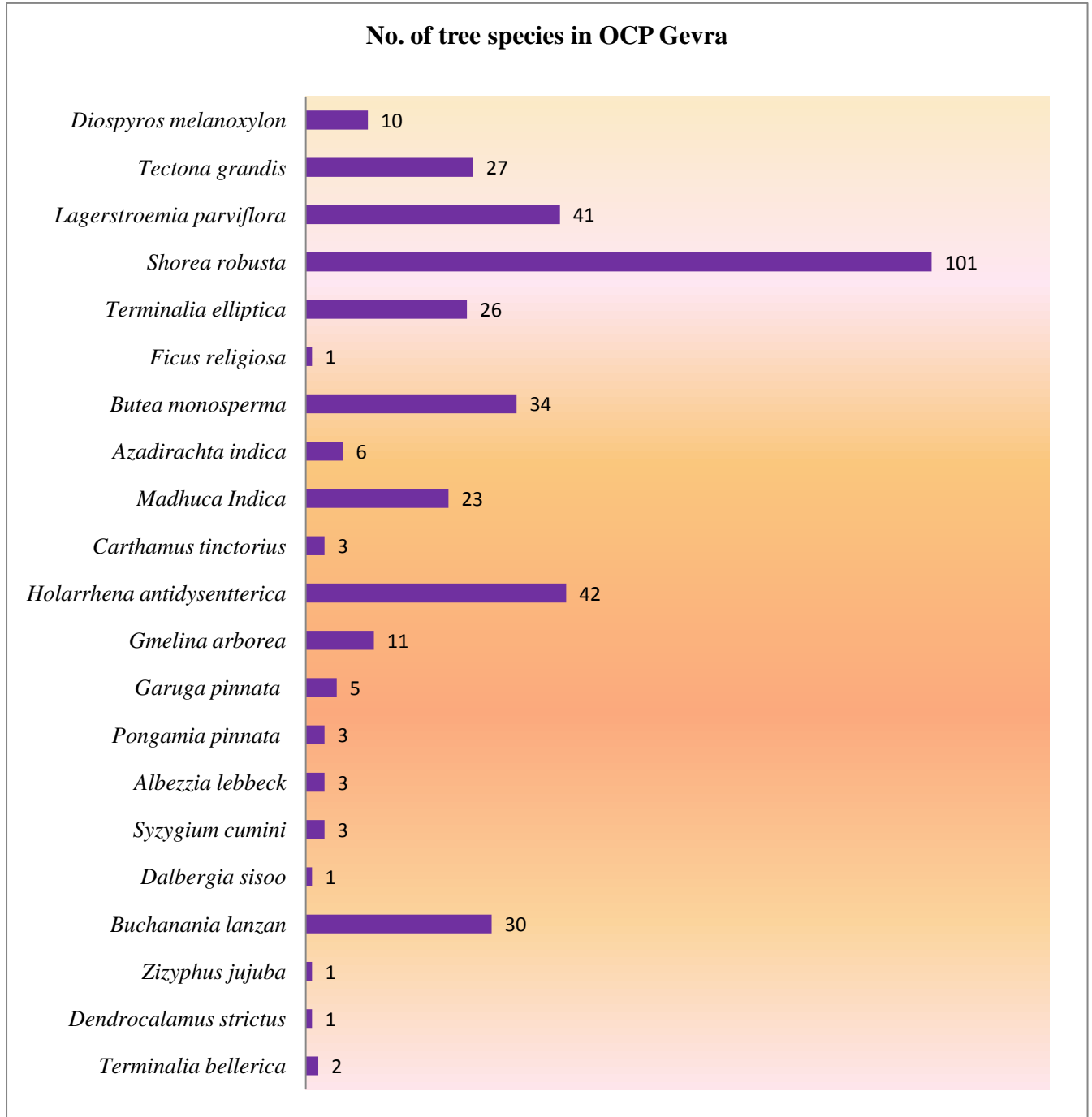
Floral diversity of study site:

Floral diversity of study sites is comprised of Sal (*Shorea robusta*), Char (*Buchanania lanzan*), Mahua (*Madhuca indica*), Saja (*Terminalia tomentosa*),

Dhawda (*Anogeissus latifolia*), Rohina (*Mallotus philippensis*), Dumar (*Ficus glomerata*) Peepal, (*ficus religiosa*) Senha (*Lagerstoemia parviflora*), Mango (*Mangifera indica*), Tendu (*Diospyros melanoxylon*), Kekat (*Garuga pinnata*), Kaju (*Anacrdium occidentale*) Kachnar (*Bauhinia variegata*) Khair (*Senegalia catechu*) Baheda (*Terminalia bellerica*) Jamun (*Syzygium cumini*) Amaltas (*Cassia fistula*) Teak (*Tectona grandis*) and Bhelwa (*Semecarpus anacardiam*) etc. in core area. Sal (*Shorea robusta*), Senha (*Lagerstoemia parviflora*), Mango (*Mangifera indica*), Koriya (*Pinus koraiensi*), Plash (*Butea monosperma*), Baheda (*Terminalia bellerica*), Harra (*Terminalia chebula*) and Teak (*Tectona grandis*) etc. in the buffer area, the complete floral diversity data recorded during the seasonal field survey of core and buffer zone of proposed mining site are tabulated / illustrated in table no.6.3.

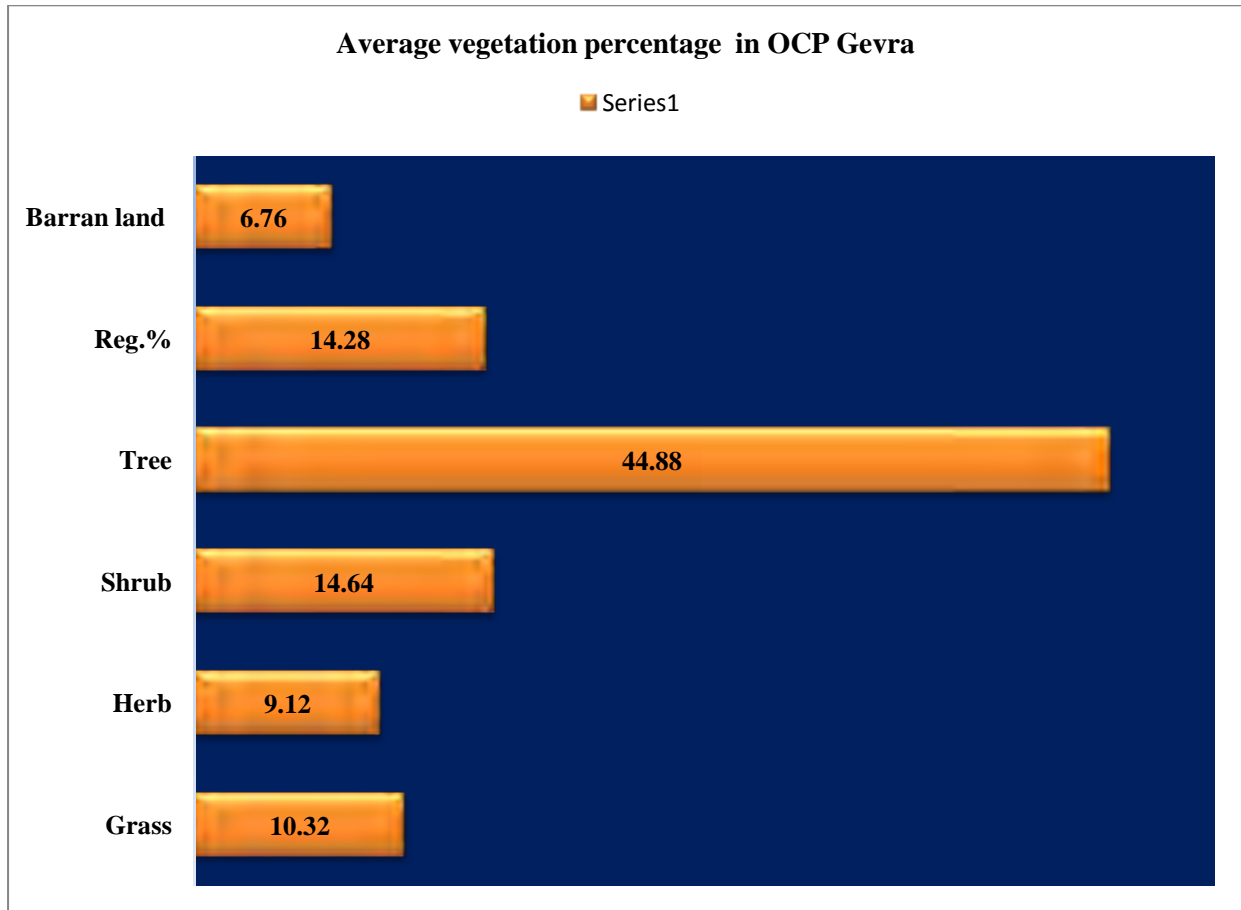
Table No. 6.3:
Overall study of available tree species in OCP Gevra

S.no.	Local name	Botanical name	Winter	Summer	No. of tree species
1	Baheda	<i>Terminalia bellerica</i>	2	0	2
2	Bamboo	<i>Dendrocalamus strictus</i>	1	0	1
3	Ber	<i>Zizyphus jujuba</i>	1	0	1
4	Char	<i>Buchanania lanzan</i>	9	21	30
5	Cisso	<i>Dalbergia sissoo</i>	1	0	1
6	Jamun	<i>Syzygium cumini</i>	3	0	3
7	Kala serus	<i>Albezzia lebbeck</i>	3	0	3
8	Karanj	<i>Pongamia pinnata</i>	3	0	3
9	Kekat	<i>Garuga pinnata</i>	0	5	5
10	Khamhar	<i>Gmelina arborea</i>	11	0	11
11	Koriya	<i>Holarrhena antidysentterica</i>	31	11	42
12	Kusum	<i>Carthamus tinctorius</i>	1	2	3
13	Mahua	<i>Madhuca indica</i>	10	13	23
14	Neem	<i>Azadirachta indica</i>	6	0	6
15	Palash	<i>Butea monosperma</i>	29	5	34
16	Peepal	<i>Ficus religiosa</i>	1	0	1
17	Saja	<i>Terminalia elliptica</i>	0	26	26
18	Sal	<i>Shorea robusta</i>	25	76	101
19	Senha	<i>Lagerstroemia parviflora</i>	31	10	41
20	Teak	<i>Tectona grandis</i>	24	3	27
21	Tendu	<i>Diospyros melanoxylon</i>	4	6	10



Graph No. 6.3:
Available tree species of OCP Gevra
Table No 6.4: Overall vegetation covers area in OCP Gevra

Seasonal Average Vegetation percentage in OCP Gevra								
Vegetation cover	Winter Season			Summer Season			Total	Average %
Grass	7	11	11	9	39	9	86	10.32
Herb	12	6	16	6	27	9	76	9.12
Shrub	13	18	33	7	40	11	122	14.64
Tree	53	50	73	20	60	109	374	44.88
Reg.%	27	19	21	20	28	12	119	14.28



Graph No. 6.4: Vegetation status of Core zone

6.2 STUDY OF FAUNAL DIVERSITY ON OCP GEVRA

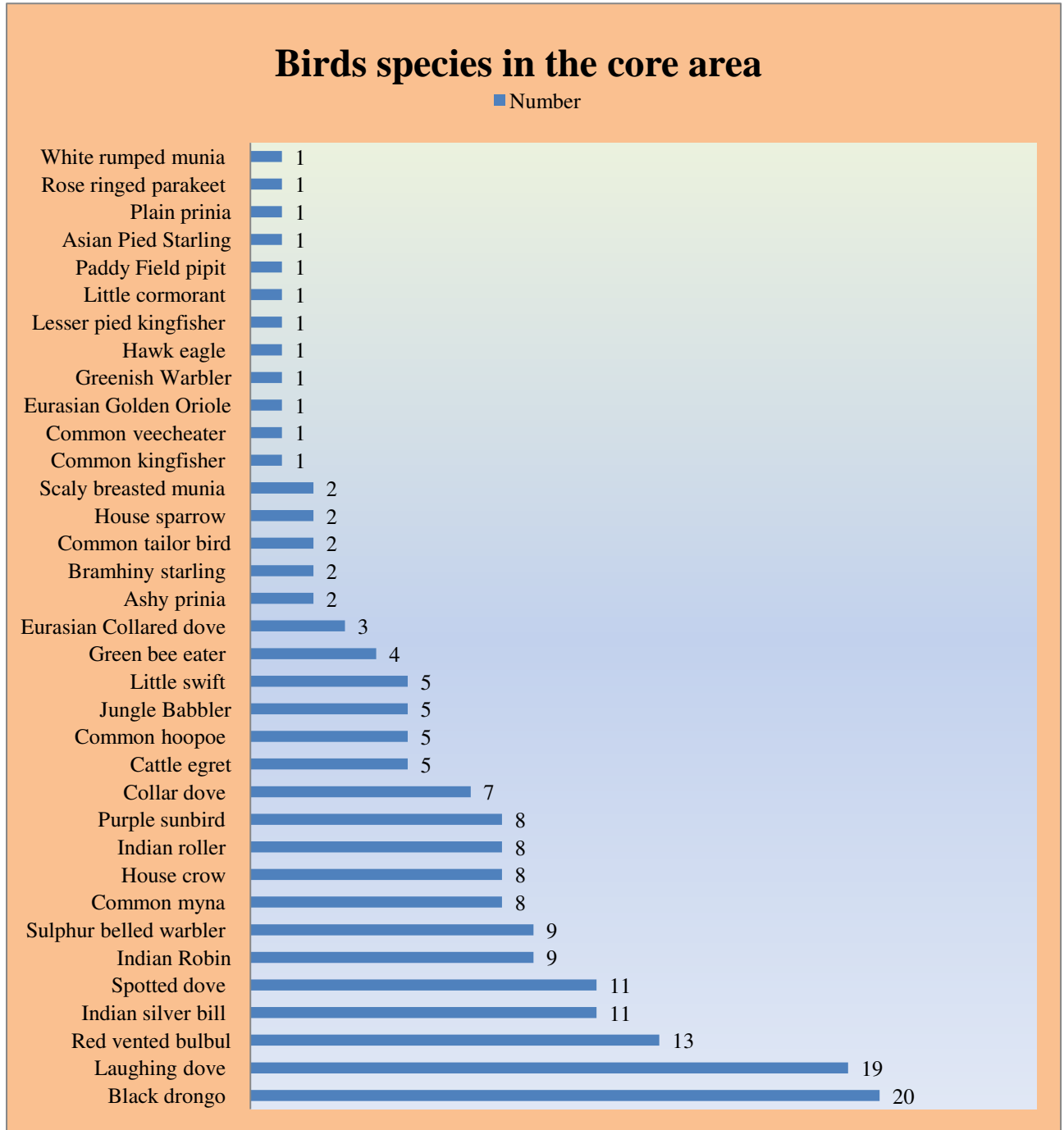
The line transect method was used for the study of habitat. Twelve transects were laid in total, 6 in the core area and another 6 within the buffer area, covering most of the study sites. Separate seasonal surveys were conducted and analyzed for the core and buffer zones. 180 individual birds belonging to 35 species, and 300 individual birds belonging to 44 different species, were observed within the core area and the buffer zone respectively. The core and buffer zone of OCP Gevra combined, have a total of 480 individual birds belonging to 56 different species from 32 families. The dominant families in the study area were Columbidae, Leiothrichidae, Pycnonotidae, and Sturnidae.

Table No. 6.5:
List of bird species in Core zone

S.No.	Species	Scientific Name	Family	Number
1	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	20
2	Laughing Dove	<i>Streptopelia senegalensis</i>	Columbidae	19
3	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	13
4	Indian Silver bill	<i>Lonchura malabarica</i>	Estrildidae	11
5	Spotted dove	<i>Streptopelia chinensis</i>	Columbidae	11
6	Indian Robin	<i>Copsychus fulicatus</i>	Muscicapidae	9
7	Sulphur Billed Warbler	<i>Phylloscopus griseolus</i>	Phylloscopidae	9
8	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	8
9	House Crow	<i>Corvus splendens splendens</i> <i>Viellot</i>	Sturnidae	8
10	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	8
11	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	8
12	Collar Dove	<i>Streptopelia decacto</i>	Columbidae	7
13	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	5
14	Common Hoopoe	<i>Upupa epops</i>	Upupidae	5
15	Jungle Babbler	<i>Turdoides striata</i>	Lieothrichidae	5
16	Little Swift	<i>Apus affinis</i>	Apodidae	5
17	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	4
18	Eurasian Collared Dove	<i>Streptopelia decaecto</i>	Columbidae	3
19	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	2
20	Bramhiny Starling	<i>Sturnia pagodarum</i>	Sturnidae	2
21	Common Tailor bird	<i>Orthotomus sutorius</i>	Cisticolidae	2
22	House Sparrow	<i>Passer domesticus</i>	Passeridae	2
23	Scaly Breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	2
24	Common Kingfisher	<i>Alcedo atthisp</i>	Alcedinidae	1
25	Variable Wheatear	<i>Oenanthe picata</i>	Saxicolini	1
26	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Oriolidae	1
27	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	1
28	Hawk Eagle	<i>Nisaetus cirrhatus</i>	Accipitridae	1
29	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	Alcedinidae	1
30	Little Cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	1

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31	Paddy Field Pipit	<i>Anthus rufulus</i>	Motacillidae	1
32	Asian Pied Starling	<i>Gracupica contra</i>	Sturnidae	1
33	Plain Prinia	<i>Prinia inornata</i>	Cisticolidae	1
34	Rose Ringed parakeet	<i>Psittacula krameri</i>	Psittaculidae	1
35	White Rumped Munia	<i>Lonchura striata</i>	Estrildidae	1



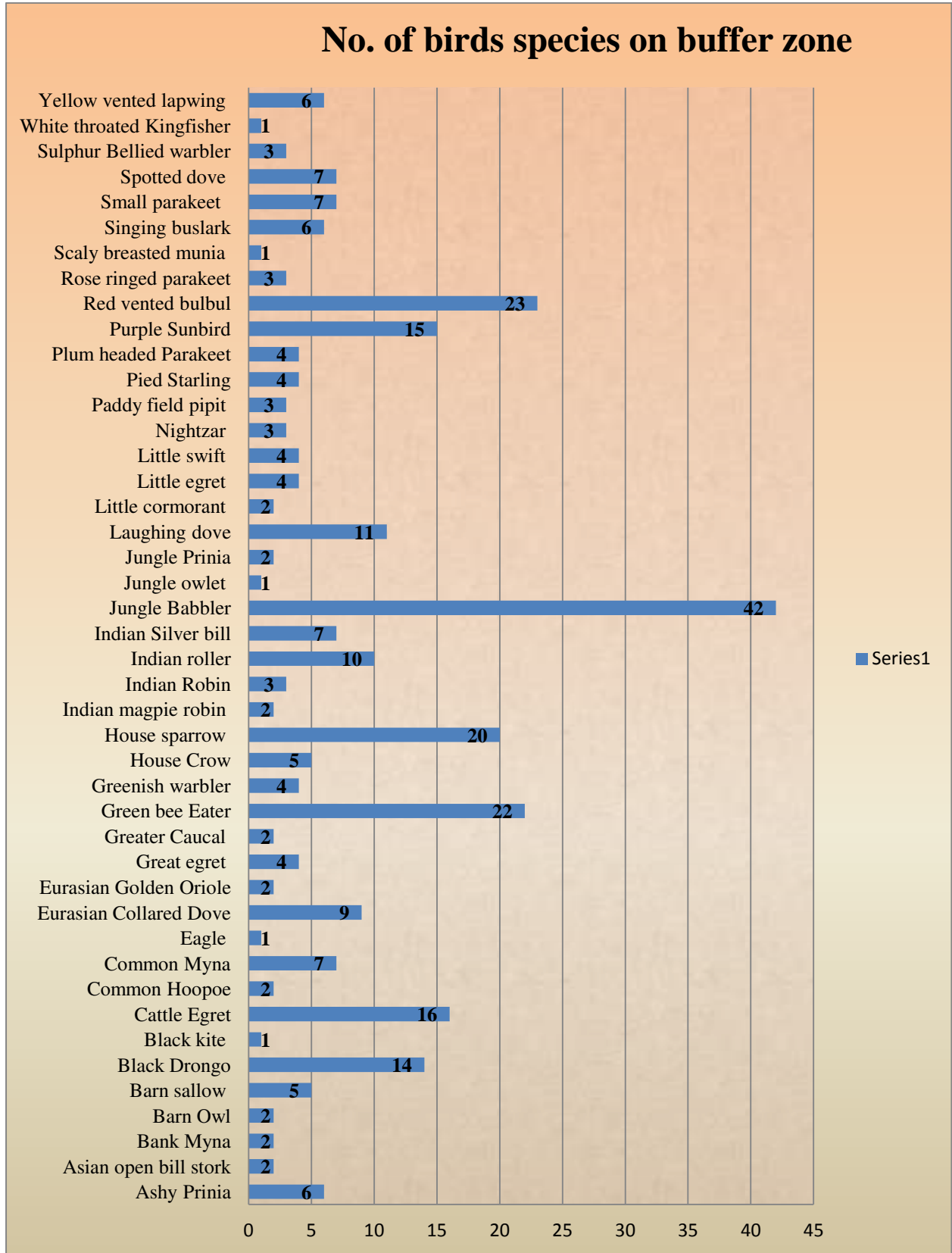
Graph No. 6.5 Number of birds in core zone

Table No. 6.6:
List of birds species in buffer zone

S.No.	Species	Scientific Name	Family	Number
1	Ashy Prinia	<i>Prinia socialis</i>	Cisticolidae	6
2	Asian Open Bill Stork	<i>Anastomus oscitans</i>	Ciconiidae	2
3	Bank Myna	<i>Acridotheres ginginianus</i>	Sturnidae	2
4	Barn Owl	<i>Tyto alba</i>	Tytonidae	2
5	Barn Sallow	<i>Hirundo rustica</i>	Hirundinidae	5
6	Black Drongo	<i>Dicrurus macrocercus</i>	Dicruridae	14
7	Black Kite	<i>Milvus migrans</i>	Accipitridae	1
8	Cattle Egret	<i>Bubulcus ibis</i>	Ardeidae	16
9	Common Hoopoe	<i>Upupa epops</i>	Upupidae	2
10	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	7
11	Eagle	<i>Aquila nipalensis</i>	Accipitridae	1
12	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	Columbidae	9
13	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	Oriolidae	2
14	Great Egret	<i>Ardea alba</i>	Ardeidae	4
15	Greater Cauca	<i>Centropus sinensis</i>	Cuculidae	2
16	Green Bee-eater	<i>Merops orientalis</i>	Meropidae	22
17	Greenish Warbler	<i>Phylloscopus trochiloides</i>	Phylloscopidae	4
18	House Crow	<i>Corvus splendens splendens</i> Viellot	Sturnidae	5
19	House Sparrow	<i>Passer domesticus</i>	Passeridae	20
20	Oriental Magpie Robin	<i>Copsychus saularis</i>	Muscicapidae	2
21	Indian Robin	<i>Copsychus fulicatus</i>	Muscicapidae	3
22	Indian Roller	<i>Coracias benghalensis</i>	Coraciidae	10
23	Indian Silver bill	<i>Lonchura malabarica</i>	Estrildidae	7
24	Jungle Babbler	<i>Turdoides striata</i>	Lieoethrichidae	42
25	Jungle Owlet	<i>Glaucidium radiatum</i>	Strigidae	1
26	Jungle Prinia	<i>Prinia sylvatica</i>	Cisticolidae	2
27	Laughing Dove	<i>Streptopelia senegalensis</i>	Columbidae	11
28	Little Cormorant	<i>Microcarbo niger</i>	Phalacrocoracidae	2
29	Little Egret	<i>Egretta garzetta</i>	Ardeidae	4
30	Little Swift	<i>Apus affinis</i>	Apodidae	4
31	Nightjar	<i>Caprimulgus europaeus</i>	Caprimulgidae	3
32	Paddy Field Pipit	<i>Anthus rufulus</i>	Motacillidae	3

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33	Pied Starling	<i>Gracupica contra</i>	Sturnidae	4
34	Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	Psittacidae	4
35	Purple Sunbird	<i>Cinnyris asiaticus</i>	Nectariniidae	15
36	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	23
37	Rose Ringed Parakeet	<i>Psittacula krameri</i>	Psittaculidae	3
38	Scaly Breasted Munia	<i>Lonchura punctulata</i>	Estrildidae	1
39	Singing Bus-lark	<i>Miraфра cantillans</i>	Alaudidae	6
40	Small Parakeet	<i>Loriculus vernalis</i>	Psittaculidae	7
41	Spotted Dove	<i>Streptopelia chinensis</i>	Columbidae	7
42	Sulfur Bellied Warbler	<i>Phylloscopus griseolus</i>	Phylloscopidae	3
43	White Throated Kingfisher	<i>Halcyon smyrnensis</i>	Alcedinidae	1
44	Yellow Vented Lapwing	<i>Vanellus indicus</i>	Charadriidae	6



Graph No. 6.6 Birds species on buffer zone of OCP Gevra

Table No. 6.7:
List of (IUCN) status to compare the OCP Gevra with global status

S. No.	Name of the birds	Scientific Name	In Winter	In Summer	Total No species	IUCN status	ZSI status
1	Ashy Prinia	<i>Prinia socialis</i>	5	3	8	LC	Presence
2	Asian Open Bill Stork	<i>Anastomus oscitans</i>	2	0	2	LC	Presence
3	Asian Pied Starling	<i>Sturnus contra</i>	1	4	5	LC	Presence
4	Bank Myna	<i>Acridotheres ginginianus</i>	2	0	2	LC	Presence
5	Barn Owl	<i>Tyto alba</i>	2	0	2	LC	Presence
6	Common Swallow	<i>Hirundo rustica</i>	5	0	5	LC	Presence
7	Black Drongo	<i>Dicrurus macrocercus</i>	12	19	31	LC	Presence
8	Black Kite	<i>Milvus migrans</i>	0	1	1	LC	Presence
9	Bramhiny Starling	<i>Sturnia pagodarum</i>	2	0	2	LC	Presence
10	Cattle Egret	<i>Bubulcus ibis</i>	15	4	19	LC	Presence
11	Red Collored Dove	<i>Streptopelia tranquebarica</i>	0	7	7	LC	Presence
12	Common Hoopoe	<i>Upupa epops</i>	3	4	7	LC	Presence
13	Common Kingfisher	<i>Alcedo atthisp</i>	1	0	1	LC	Presence
14	Common Myna	<i>Acridotheres tristis</i>	8	4	12	LC	Presence
15	Common Tailor Bird	<i>Orthotomus sutorius</i>	2	0	2	LC	Presence
16	Crested Serpent-eagle	<i>Spilornis cheela</i>	0	1	1	LC	Presence
17	Eurasian Collared dove	<i>Streptopelia decaocto</i>	0	3	3	LC	Presence
18	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	12	0	12	LC	Presence
19	Large Egret	<i>Ardea alba</i>	4	0	4	LC	Presence
20	Greater Coucal	<i>Centropus sinensis</i>	0	2	2	LC	Presence
21	Green Bee- eater	<i>Merops orientalis</i>	25	5	30	LC	Presence
22	Greenish Warbler	<i>Phylloscopus trochiloides</i>	5	0	5	LC	Absence
23	House Crow	<i>Corvus splendens</i>	7	6	13	LC	Presence
24	House Sparrow	<i>Passer domesticus</i>	22	0	22	LC	Presence
25	Hawk Eagle	<i>Nisaetus cirrhatus</i>	0	2	2	LC	Presence

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26	Indian Robin	<i>Saxicoloides fulicata</i>	2	7	9	LC	Presence
27	Indian Roller	<i>Coracias benghalensis</i>	6	14	20	LC	Presence
28	Indian Silver Bill	<i>Euodice malabarica</i>	3	15	18	LC	Absence
29	Indian Spotted Dove	<i>Spilopelia chinensis</i>	3	0	3	LC	Presence
30	Indian Spotted Eagle	<i>Clanga hastata</i>	7	39	46	VU	Absence
31	Jungle Babbler	<i>Turdoides striata</i>	1	0	1	LC	Presence
32	Jungle Owlet	<i>Glaucidium radiatum</i>	2	0	2	LC	Presence
33	Jungle Prinia	<i>Prinia sylvatica</i>	3	26	29	LC	Presence
34	Laughing Dove	<i>Streptopelia senegalensis</i>	1	0	1	LC	Presence
35	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	3	0	3	LC	Presence
36	Little Cormorant	<i>Microcarbo niger</i>	4	0	4	LC	Presence
37	Little Egret	<i>Egretta garzetta</i>	6	3	9	LC	Presence
38	Little Swift	<i>Apus affinis affinis</i>	0	3	3	LC	Presence
39	Common Indain Nightjar	<i>Caprimulgus asiaticus</i>	2	2	4	LC	Presence
40	Oriental Magpie Robin	<i>Copsychus saularis</i>	0	6	6	LC	Presence
41	Paddy Field Pipit	<i>Anthus rufulus</i>	1	0	1	LC	Presence
42	Plain Prinia	<i>Prinia inornata</i>	3	1	4	LC	Presence
43	Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	4	20	24	LC	Presence
44	Purple Sunbird	<i>Certhia asiaticus</i>	10	30	40	LC	Presence
45	Red Vented Bulbul	<i>Pycnonotus cafer</i>	2	2	4	LC	Presence
46	Rose Ringed Parakeet	<i>Psittacula krameri</i>	2	1	3	LC	Presence
47	Scaly Breasted Munia	<i>Lonchura punctulata</i>	0	6	6	LC	Presence
48	Singing Bush-lark	<i>Mirafra cantillans</i>	0	1	1	LC	Presence
49	Alexandrine Parakeet	<i>Psittacula eupatria</i>	1	9	10	NT	Presence

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50	Spotted Dove	<i>Streptopelia chinensis</i>	0	5	5	LC	Presence
51	Steppe Eagle	<i>Aquila nipalensis</i>	1	0	1	EN	Absence
52	Sulfur Bellied Warbler	<i>Phylloscopus griseolus</i>	8	4	12	LC	Absence
53	Variable Wheatear	<i>Oenanthe picata</i>	1	0	1	LC	Absence
54	White Rumped Munia	<i>Lonchura striata</i>	1	0	1	LC	Presence
55	White Breasted Kingfisher	<i>Halcyon smyrnensis</i>	1	2	3	LC	Presence
56	Yellow Wattled Lapwing	<i>Vanellus malabaricus</i>	0	6	6	LC	Presence

IUCN status Where as

EW= Extinct in the wild

VU= Vulnerable

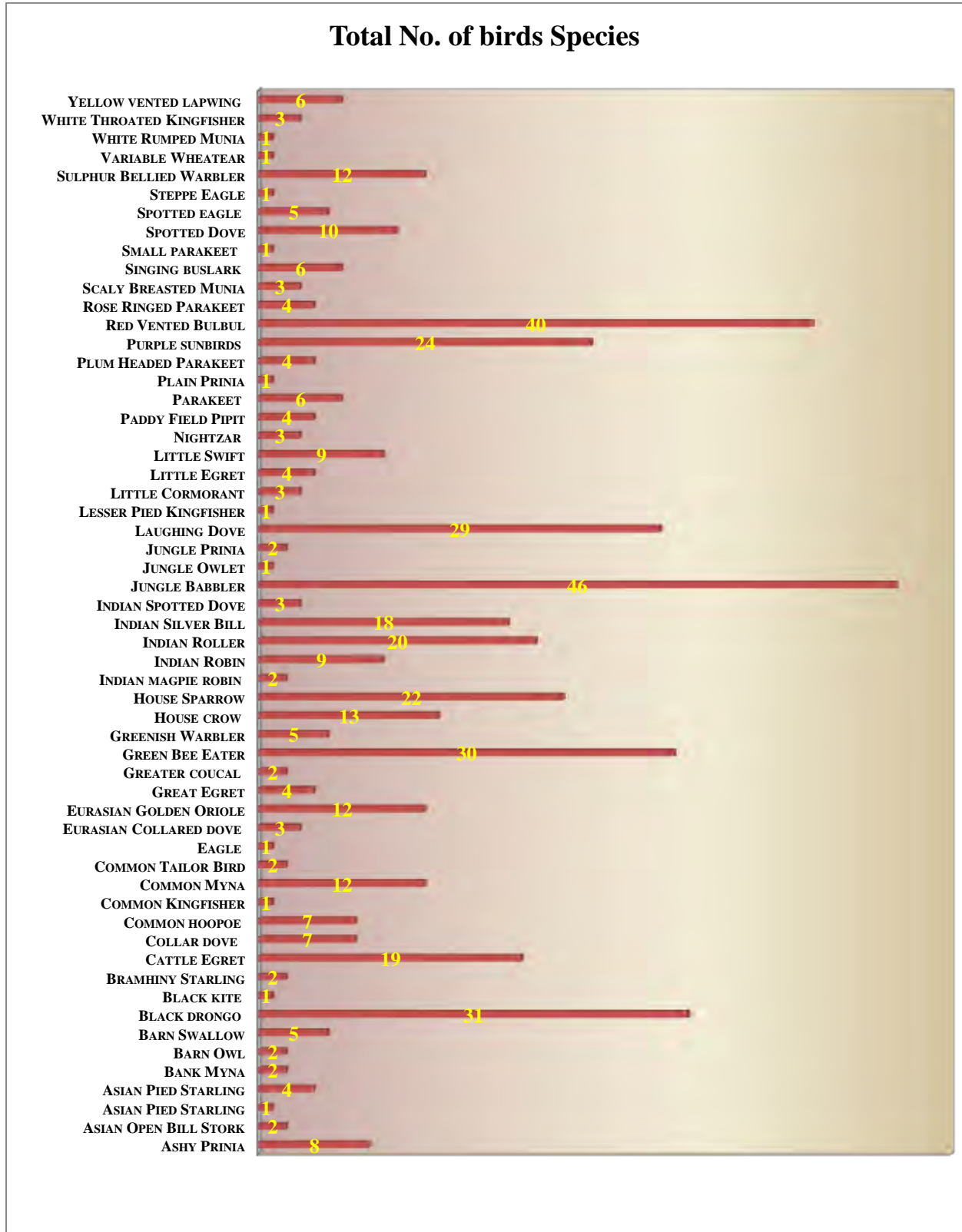
DD= Data deficient

EN= Endangered

NT = Near Threatened

CR= Critical endangered

LC= Least concern



Graph 6.7: Overall bird species observed in OCP Gevra

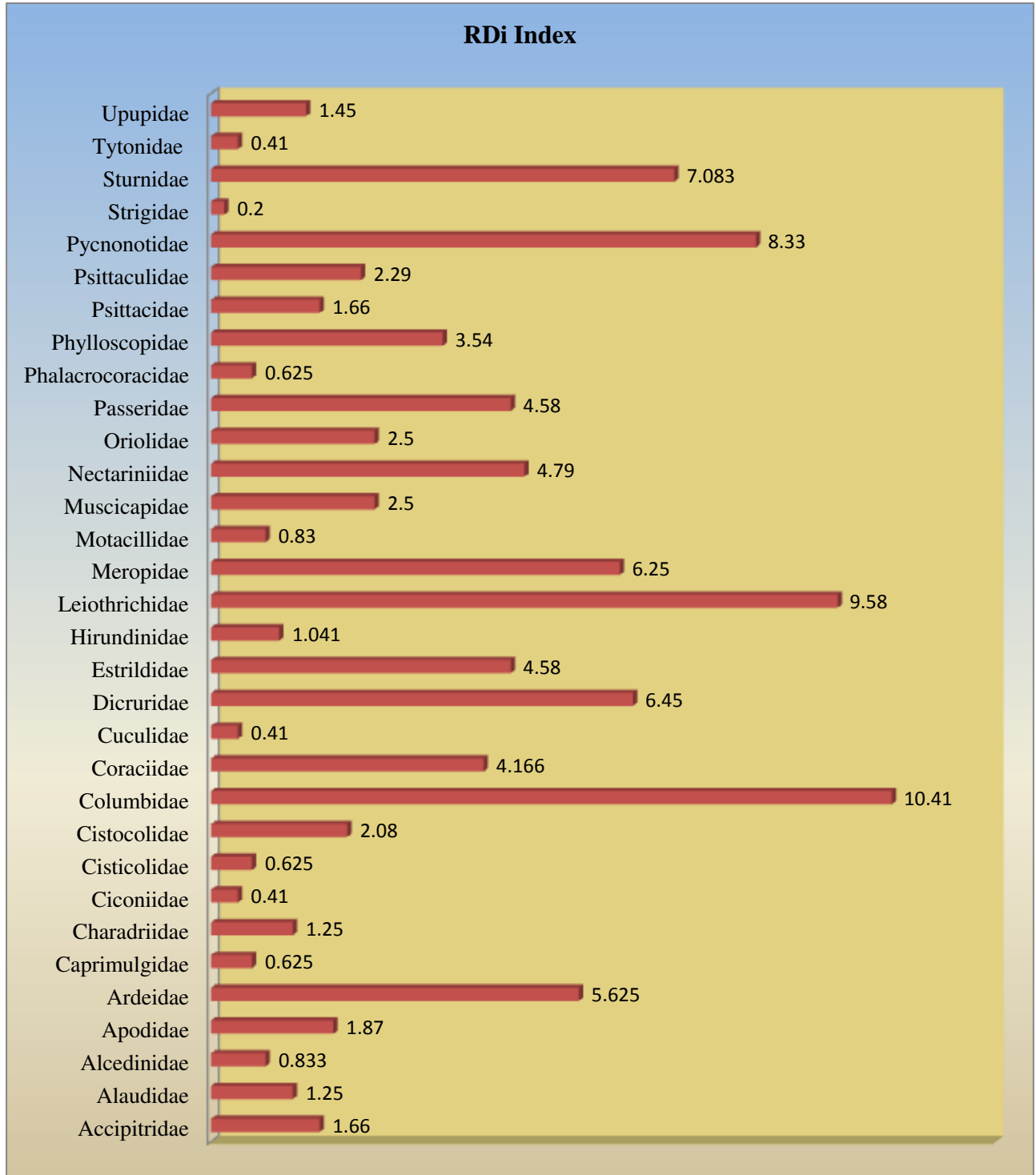
The International Union for Conservation of Nature (IUCN) status was also used to compare the local status with global status. The relative diversity (RD_i) families was calculated using the formula (Torre-cuadros et al., 2007)

$$RD_i = \frac{\text{Number of bird species in a family}}{\text{Total number of species}} \times 100$$

The Relative diversity index on listed bird species is shown in table no. 6.11.

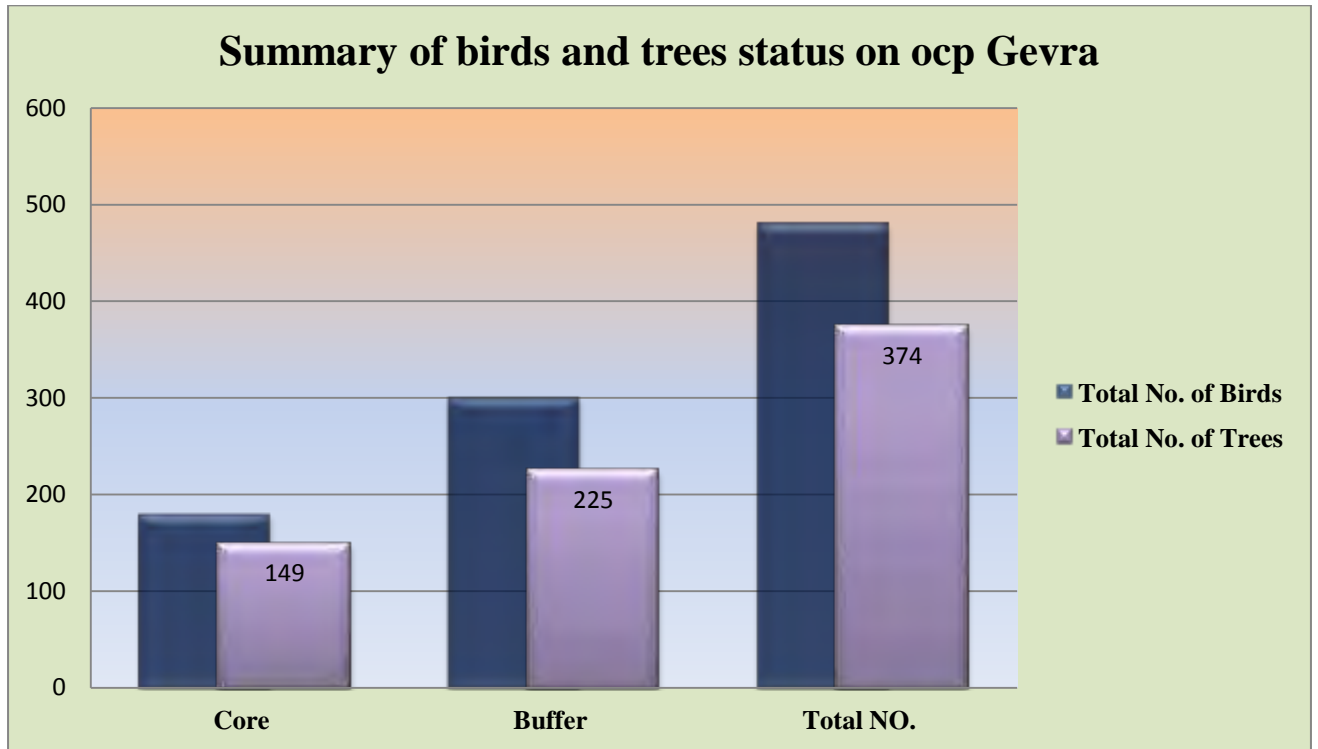
Table No 6.8:
List of Relative diversity index on family of OCP Gevra

The relative diversity index of families of OCP Gevra			
S. No.	Name of family	No of the Birds species	RD _i Index
1	Accipitridae	8	1.66
2	Alaudidae	6	1.25
3	Alcedinidae	4	0.833
4	Apodidae	9	1.87
5	Ardeidae	27	5.625
6	Caprimulgidae	3	0.625
7	Charadriidae	6	1.25
8	Ciconiidae	2	0.41
9	Cisticolidae	3	0.625
10	Cistocolidae	10	2.08
11	Columbidae	50	10.41
12	Coraciidae	20	4.166
13	Cuculidae	2	0.41
14	Dicruridae	31	6.45
15	Estrildidae	22	4.58
16	Hirundinidae	5	1.041
17	Leiothrichidae	46	9.58
18	Meropidae	30	6.25
19	Motacillidae	4	0.83
20	Muscicapidae	12	2.5
21	Nectariniidae	23	4.79
22	Oriolidae	12	2.5
23	Passeridae	22	4.58
24	Phalacrocoracidae	3	0.625
25	Phylloscopidae	17	3.54
26	Psittacidae	8	1.66
27	Psittaculidae	11	2.29
28	Pycnonotidae	40	8.33
29	Strigidae	1	0.2
30	Sturnidae	34	7.083
31	Tytonidae	2	0.41
32	Upupidae	7	1.45



Graph 6.8:
Relative diversity index of individual families
Table No. 6.9: Summary of overall study

Study Zone	First season survey		Second Season survey	
	No. of Bird	No. of Trees	No. of Bird	No. of Trees
Core zone	64	66	116	78
Buffer Zone	149	130	151	95
Total no.	213	196	267	173



Graph No. 6.9: Summary of overall study

6.3 DISCUSSION

This chapter draws upon MoEF Environmental clearance, National Rehabilitation and Resettlement Policy 2007, impacts of mining on environmental factors such as air, water, noise, land, vegetation, wildlife and birds and mitigation measures. It also entails discussions on bird species diversity and population dynamics, habit, habitat and nesting pattern, existing biotic pressure on habit and habitat in the core zone, habitat loss for wildlife species that live in communities dependent upon each other etc. Survival of such species can depend on soil conditions, local climate, altitude, and other features of the local habitat. Mining causes direct as well as indirect damage to this wildlife.

The discussion also includes the field survey methodology, collected data observation and analysis, status of avifauna in core and buffer zone, alternative habitat and artificial nesting pattern of avifauna. The biggest environmental challenge faced by the coal industry is the issue of greenhouse gases and acid rain. The major environmental challenges encountered by the coal industry are impacts of mine fires, dust suppression and control particularly haul road dust

consolidation, treatment of mine waters containing heavy metals/acid mine drainage, restoration of water table and quality of ground and surface water, augmentation of pumped out mine water for drinking purpose, reclamation of mined out areas with pre-determined land use patterns conducive to the local populations etc.

Proposed Forest land of OCP Gevra includes Core area: 112.385 ha: including core area of Naraibodh 62.819 hectare revenue forest and core area of Raliya 49.566 hectare (Compartment no. 774). Forest land is surrounded by agriculture land and tenancy land. On one side of the forest is a state highway, which is also under the proposed mining zone for diversion,

During field visit of OCP Gevra area, the Core area of Raliya (Compartment No. 774) , and Buffer area of Renki (Compartment No. 601) Forest have been surveyed in which total 12 transects were made to study the existing avifauna of the area and their habitat including wildlife and existing flora and encroachments if any.

After seasonal surveys, total 480 individual species of avifauna were recorded from 56 different species belonging to 32 families. It has been found that two species of birds in the study area i.e. the *Clanga hastate* and *Aquila nipalensis* have been classified as Vulnerable (VU) and Endangered (EN) by IUCN. Only 01 species *Psittacula eupatria* is placed in the Near Threatened category. The other remaining species (n= 53) are placed in the least concern category. (Refers to table no 6.7)

The report by Zoological survey of India (ZSI) on “*Faunal diversity of Korba district*” has been draw upon. The present study, when compared to ZSI report, has found 6 more bird species in the area. These are *Indian Spotted eagle*, *Indian silver bill*, *Greenish Warbler*, *Steppe Eagle*, *Sulphur bellied warbler* and *Variable Wheatear*. During the field survey, most of the birds’ nests were found in Sal species followed by Char, Mahua, Baheda, Senha and Saja. This study should be helpful for preparation of alternative habitat development for the affected avifauna present in the study site. In each interval, observation of birds

and their counting, vegetation study, dominating tree species, birds nest & its pattern were documented in this report.

The impact of noise, air and land disturbance on the study site, affecting the diversity of bird population can be understood as follows. It was observed that the bird diversity of the core area is lesser than that of the buffer area. It was also observed that major disturbances produced by sound and noise pollution in the core area, which affect bird diversity, are caused due to blasting, vehicle movement and anthropogenic pressure. Other disturbances observed are caused due to air pollution by mining dust, and habitat degradation due to tree felling and ground digging. The above problems of noise and air pollution are directly related to mining activities and decreasing of forests, which destroy the habitat of avifauna. Buffer area is rich with agriculture land and forestland, which may provide suitable habitat for birds, and they may settle down there (*Vishwakarma, et. al 2018*).

It was also observed that vegetation cover and avifauna population were mainly occupying the buffer areas. This observation shows that the avifaunal population presence in thicker vegetatively covered areas is more than the lesser ones. The direct impacts on the living organisms of the mining area include death of plants and animals due to mining activity or contact with toxic wastes and mine drainages, disturbance of wildlife habitat due to blasting and heavy machines. Indirect impacts may include changes in nutrient cycling, disruption of food chain and instability of ecosystem (*Gayatri et al 2010*). Therefore, it is accepted that biodiversity of flora and fauna needs essential amount of fresh atmosphere which is necessary for life.

Several grassland bird species, including Sparrows, Nightjar and Robin etc considered to be area sensitive were common in the wild. Although grassland and scrub-species birds benefit from the early successive habitat development from post mining reclamation, forest-dwelling birds are adversely affected by land use change from forest to grassland, regardless of the origin of the changes. Concern has been expressed related to habitat loss for the species of *Cerulean Warblers* in

the Appalachian Mountains associated with deforestation from coal mining. (*Buechler et al.2006, wood et al.2006, Bulluck 2007*).

Habitat is a combination of food, water, shelter, and space arranged to meet the needs of wildlife. Even a small yard can be landscaped to attract birds, butterflies, beneficial insects, and small animals. Trees, shrubs, and other plants provide shelter and food for wildlife. Birds construct different types of nests and utilize them for different purposes. Cavity nests found in tree stems or cacti are used by owls, woodpeckers and some waterfowl. The primary nesters build their own cavities or nests whereas secondary nesters occupy previously abandoned nests and cavities which are sometimes formed by natural processes (*Clayton and Moore, 1997*).

It is also observed that the vast majority of this studies conducted on wildlife response have focused on birds and wildlife in part because birds are easily monitored using various count based survey. The effects of mining on avian communities occur initially by the removal of vegetation in preparation for mining. If the site is forested, vegetation removal occurs through timber harvest or clearing. Although few studies have been done specifically evaluate the changes associated with mine sites from pre-mining to post-mining land uses (*Sallabanks et al. 2000*). Protection of environmental quality with respect of pure air, water and soil is important for environmental sustainability. A reduced carbon foot print initiative with plants could help reducing the impacts of mining to environmental components. (*Tripathi et al. 2011, 2014*) studied the role of re-vegetated mine spoils as a sink of carbon dioxide which improves the aesthetic environment and ecology.

As per the field survey methodology i.e. 6 X 5 transect line surveys adopted during seasonal visit in OCP Gevra, a total number of 480 individuals belongs to 56 species were recorded in primary phase. The data shows that as the mining activity progress the number of avifauna declined due to the change in environmental conditions.

Accordingly, the alternative habitat development is proposed in the buffer zone for the conservation of avifauna. For better conservation measures artificial nesting trail is proposed for avifauna as per their habit, habitat, and behaviour and nesting pattern. The artificial nesting pattern and their designs are explained in the chapter 8.

The current status of avifauna as per their nesting pattern are categorized in eight parts which are Scrape Nesting Birds, Burrow Nesting Birds, Cavity Nesting Birds, Cup Shaped Nesting Birds, Saucer/Plate form Nesting Birds, Platform Nesting Birds, Pendent Nesting Birds, Sphere Shaped Nesting Birds found in the core zone of OCP Gevra. The data shows that the rich avifaunal diversity of OCP Gevra is good and alternative habitat is needed.

This study also signifies that the seasonal variations in bird population were mostly found in winter season compared the summer season. The bird diversity is impacted by climate condition, temperature (*Waterhouse and Trapani, 2002*), according to (*parsesan 2005*, weather conditions determine bird diversity by the spatial temporal shift of the species from one habitat to the other, seeking favourable condition. The highest diversity is in the forest due to the availability of food, water, breeding sites, breeding material and cover from predators. (*Hobson et al.2003*).

Similar observations have been made in the study area, the diversity of birds, and in particular the native species, is positively correlated with increasing structural complexity of the vegetation. Also a seasonal change in species diversity of birds occurs in forests due to their foraging behaviour.

Forests attract a large number of avifauna because they provide suitable habitat for most birds, especially those birds that are associated with vegetation, and for most, the existence of tree is a vital component of their life cycle. The bird's level of interest on various forests depends on the age of the stands. The composition of bird species is highly related to the vegetation structure of forests (*Robertson and Hackwell 1995*).

Therefore, the above discussion part shows the problems occurred in bird diversity and their habitat which were directly or indirectly affected from air, noise and land disturbance from mining activities. The whole reasonable parts should be solved from proper conservational practices attempted regarding biodiversity conservation of flora and fauna.

CHAPTER 7

ENVIRONMENT MITIGATION AND MEASURES

7.1 MITIGATION MEASURES

- Mitigation measures are means to prevent, reduce or control adverse environmental effects of a study area and include restitution for any damage to the environment caused by those effects through replacement, restoration, compensation or any other means. The proposed mitigation measures for the identified effects for the various disciplines of the physical, biological and human environment are discussed below -

7.2 ENVIRONMENTAL MITIGATION MEASURES**A) Mitigation measures of Air Pollution:**

- Dust cannot be avoided completely due to the nature of the activities during mining operation. However it can be managed by regularly spraying water (particularly during the dry season) on haul roads, transfer points of conveyors and crushers.
- A fleet of sprinkler vehicles with adequate water spray systems will be made available and would be operational at all times.
- The novel enclosures method for control of fugitive particulate emission involves the application of porous wind fences (also referred to as wind screens).
- OB dumps areas will be isolated and re-vegetated.
- Plantation along coal transportation roads, infrastructures etc.
- Stabilization of unpaved surfaces.
- Idling of delivery trucks/equipment should not be permitted.
- Tarpaulin covers shall be used over the beds of the trucks employed for transportation of overburden and coal, which are prone to fugitive dust emission.

B) Mitigation measures of Water Pollution

- The impact on water quality will be due to mine discharge. There will not be any impact on nearby water body as there is no surface water body in

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the vicinity of the mines. The change in the ground and surface water quality will be more pronounced mainly due to population increase by setting of new townships and influx of population from other areas.

- The surface water from the mining area will be regulated in such a manner so as to cause minimum contamination and alteration to the natural drainage system.
- The storm water will be diverted from the mining areas through a series of diversion banks intercept drains to either the natural drainage channels or to water storage reservoirs.
- All drain channels will provide with small stone/rock barriers across drain to water current and to arrest solid particles. This will also be cleaned periodically.
- Sewage treatment plan is proposed for sewage from office and colony.
- The mine water will be collected in setting tanks after sedimentation clear water will be discharged in natural stream.
- A network of drains, sedimentation control dams and sumps will be provided in the in-pit drainage so that maximum quantity of water will be reused to store in the water reservoirs.
- These water bodies act as a sink for air dust particles

C. Mitigation measures of noise pollution

- Acoustic treatment of rotating equipments.
- Compulsory use of personnel protective equipment (PPE) such as ear plugs for water workers.
- All machine mountings will have in their foundations anti vibration pads / sheets for reducing the vibration and nearby noise.
- Installation of noise generating machinery, strictly in-compliance with the recommendation of the manufactures. This would ensure an installation free from vibration and exhaust leaks which are also measure contributors to increased noise levels.

- Use of dumping materials such as thin rubber sheet for wrapping the worn places of compressors, generators etc.
- Shock absorbing techniques to reduce impact.
- Use of physical barriers and green belt development around the mine to restrict the noise from going outside the proposed mine boundary during operation.

D. Mitigation measures of land use

- Design the mining and associated activities for the minimum possible forest land requirement.
- Design the mining activities in such a manner that the changes in the surface drainage pattern are minimum.
- In case of opencast mines plan the mine with decommissioning, closure, reclamation and rehabilitation so that the land after mining can be brought in economic uses.

E. Mitigation measures for soil profile

- Provisions should be made in opencast mining for separate removal and handling of top and sub-soils so that these can be re-laid at the time of reclamation for developing the land uses of the reclaimed surface.
- River bank and their stability plan for soil conservation.

F. Mitigation measures for vegetation

- The vegetation cover will be improved by scientific green belt development as per MoEF guidelines 2006.
- The plantation should be made 4 times the number of existing plants before the mine is started.
- The plantation will be done as per the approved mining plan and Environmental Management Plan.
- Using advanced technologies such as remote sensing and Geographic Information Systems for planning, monitoring and evaluating forest cover.

G. Mitigation Measures for Wildlife

- Development of alternate habitat for affected avifauna of core zone to buffer zone.
- Artificial nesting placement, trails and their regular monitoring by coordination with the forest department.
- Development of migratory corridors for wild animals.
- Check the natural streams to restore the water banks.

CHAPTER 8

RECOMMENDATION & WILDLIFE CONSERVATION PLAN

8.1 RECOMMENDATIONS

1. Green belts should be developed around the mining boundary, along the roads, lease periphery, benches and backfilled areas. The impact on the biological environment due to amount of dust generation is minimized by well-developed green belt in and around mining lease area.
2. The wastage coal dust particles in the dumping site of coal mines should be managed properly to reduce air pollution and will have loss avifauna diversity and habitat.
3. **Biological reclamation** should be done to transform the degraded land and waste dump into a self - sustaining ecologically stable land form. Re-vegetation of waste dump is recommended to the slop stability, enhances through systematic means, increases the slope stability and enhances the infiltration of rain water to increase the soil fertility.
4. **Top soil management** is needed to maintain the top soil stockpile to retain fertility, Excavated top soil could be dumped for future use such as meadow development and plantation purpose in order to further mitigation habitat for conservation of avifauna.
5. **Habitat improvement** fruit bearing and Feeder trees species that are preferred by the birds available in the area, to be needed to planted in the buffer area for plantation of avifauna conservation. Some of the tree species to be planted are: Sal (*Shorea robusta*), Char (*Buchanania lanzan*), Mahua (*Madhuca latifolia*), Tendu (*Diospyros melanoxylon*), Aonla (*Phyllanthus emblica*), Arjun (*Terminalia arjuna*), Saja (*Terminalia tomentosa*), Baheda (*Terminalia bellerica*), Bija (*Pterocarpus masupium*), Bargad (*Ficus benghalensis*), Peepal (*Ficus religiosa*), Dhawda (*Anogeissus latifolia*) and Khair (*Acacia catechu*) etc.

6. Multiple water storage facilities are to be developed in the buffer boundaries to assure the water availability throughout the year. The existing ponds, river, dam and canals water resources recharge should be maintained.
7. The mining in the buffer area along with river with Leelagar (Nala) must be avoided to insure of the river flows without changing the path.
8. The social awareness program conducted among the local communities and villagers to provide information & awareness about birds and wildlife and their contribution in the ecosystem.
9. Artificial nest made up of local, light and fine wood materials: Nests will be prepared with the help of active JFM Committee and local forest staff and placed in the buffer area for the affected avifauna of core zone.
10. Preparation of artificial birds' paradise (Pakshi – Vihar) on dumping sites.
11. Plantation of ecosystem improvement in revenue forest through the Rehabilitation of degraded forest (**RDF**) Rehabilitation of degraded forest area is essential for environmental stability and increases productivity under the scheme of RDF will be proposed in buffer areas of Mudapar revenue forest.
12. **Fire protection and Maintenance:** Best practices for the prevention of forest fires should be adopted by the Forest Department. Awareness program against forest fire should also be run in adjoining villages.
13. **Monitoring and Evaluation:** Plantation and conservation efforts should be monitored regularly during various growth stages of plantation site.

8.2 HABITATE IMPROVEMENT FOR WILDLIFE AND AVIFUNAL CONSERVATION

The best method for the conservation of wildlife is related directly to the maintenance of ecosystems in their natural condition, allowing their natural development and degree of protection afforded to the wildlife and their

habitat. Both these phenomena (ecosystem development and habitat protection) are related to anthropogenic factors. The plan for wildlife conservation, with respect to above situations, is detailed as under:

- Habitat fragmentation and destruction
- Man-animal conflict
- Forest fire
- Poaching
- Stake holders dependence on forest resources
- Creating awareness amongst forest stake holders
- Water scarcity

Tree Plantation

Criteria for the selection of plants:

Plant species selected for plantation in the safety zone and buffer area (surrounding 5-10 K.M. from mining boundary) should possess any or more of the following properties.

- Have soil binding property.
- Be a nitrogen fixer.
- Be able to tolerate, at least to some extent, the crack formation in the soil.
- Have drought tolerance ability.
- Be able to grow in a slope.
- Be able to grow in nutrient and organic matter poor soil.
- Be a local species.

Plantation activity in the buffer zone (Renki forest area and Mudapar revenue forest area):

Trees will be planted in the buffer zone as well. This plantation will be done at selected places only and only local species will be used in the plantation.

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Some of the tree species included will be: Aonla (*Phyllanthus emblica*), Arjun (*Terminalia Arjuna*), Baheda (*Terminalia bellerica*), Bija (*Pterocarpus marsupium*), Bargad (*Ficus benghalensis*), Peepal (*Ficus religiosa*), Mahua (*Madhuca latifolia*), Tendu (*Diospyros melanoxylon*), Char (*Buchanania lanzan*), Khair (*Acacia catechu*), Lodh (*Symplococus racemosa*) etc.

- Care will be taken to include some fruit bearing trees like Gular (*Ficus glomerata*), Char (*Buchanania lanzan*), Aonla (*Phyllanthus emblica*) Aam (*Mangifera indica*) and such trees to provide food to the herbivores which in turn will be the food source of the carnivores.
- Water, particularly during drier seasons, becomes the most important factor to all types of wild animals including the mammals, birds and reptiles. If water is available safely, then all other factors become secondary for the presence and survival of the wildlife in any forested area.
- Places suitable for mini watersheds will be identified in the core as well as in the buffer zone to store rainwater. Further, to make water available at all the times, throughout the year, some of these water holes will be recharged through artificial means. Proper slope will be given to approach these water sources so that the wild animals will be able to drink water without any difficulty.
- Proper cover through vegetation or any other type of even artificial cover will be developed near to these water sources so that the prey species will be able to hide themselves from the predators, at the time of approaching the water sources.
- To attract the birds, plants yielding food to the birds will be planted on priority basis. If water and food are available to the birds without any anthropogenic disturbances the area can become an ideal place for bird watching.
- Execution of the above works is proposed to be taken by the forest department of Chhattisgarh financed by the company.

The different species that have specific survival and growth rate under similar site conditions shall be planted.

Some of the common trees to be planted for habitat improvement will include: *Terminalia tomentosa*, *Anogeissus latifolia*, *Madhuca latifolia*, *Buchanania lanzan*. Together with these some fruit yielding species should also be planted such as Mango, Tendu and Gular etc. *Ficus benghalensis* is also encountered in the forests but with a very low frequency, but is a flagship species and should be planted with similar frequency. To this it is important to add the plantation of Aonla, which has almost disappeared from the area. The area vegetated with the local species will provide natural environment, food and shelter to the wildlife attracting them more to the area. Some hideouts, suitable to different wildlife species, should also be created at suitable places.

8.3 SPECIES SELECTION FOR RECLAMATION OF THE AREA

Successful bio-reclamation would largely depend on the selection of appropriate species for re-vegetation. While selecting plant species following parameters will be considered.

- Local and native to the soil.
- Nitrogen fixing leguminous species will form at least 30% of the total plantation.
- Shrubs, herbs and grasses to check soil erosion and development of fertile soil.

Apart from above top Soil management will be done to ensure the inoculation of Microorganism, seed, organic matter etc.

Table No. 8.1 List of Recommended fruit bearing Species for Plantation

S.No.	Fruit bearing trees	Medicinal trees	Timber value trees	Ornamental trees
1	Jamun	Neem	Teak	Amaltas
2	Mango	Karanj	Ghamar	Gulmohar
3	Imli	Harra	Sisham	Kapok
4	Sitaphal	Behara	Safed Sirus	Memecelon edule
5	Bel	Aonla	Bamboo	Palash
6	Ganga Imli	Arjun	Sal	Kachnaar
7	Char	Shikakai	Bija	Champa
8	Tendu	Mahua		
9	Gular			
10	Bargad			

11.	Kathal			
12.	Banyan			
13.	Pipal			

Table No. 8.2:

Selected shrubs and herbs species for grassland development

S.No	Common Name	Shrubs (Sh)/Herbs (H)	Botanical Name
1.	Dudhi	Sh.	<i>Wrightia tinctoria</i>
2.	Lantana	Sh.	<i>Lantana camara</i>
3.	Kaner	Sh.	<i>Nerium odoratum</i>
4.	Bhatkateya	H	<i>Solanum trilobatum</i>
5.	Chhind	Sh	<i>Phoenix acaulis</i>
6.	Kathjamun	Sh.	<i>Eugenia heyneana</i>
7.	Chhoti Lajwanti	H	<i>Hemigraphis indica</i>
8.	Katma, Amti	Sh.	<i>Antidesma ghaesembilla</i>
9.	Khirni	Sh.	<i>Mimusops hexandra</i>
10.	Charota	H	<i>Cassia tora</i>
11.	Phetoa	Sh.	<i>Gardenia turgida</i>
12.	Marodphal	Sh.	<i>Helicteres isora</i>
13.	Gokhuru (bada)	H	<i>Acanthospermum hirsutum</i>

Table No. 8.3:

Bamboo and grasses

S.No	Common Name	Botanical Name
1	Bans Bamboo	<i>Dendrocalamus strictus</i>
2	Bhurbhusi Grass	<i>Eragostis tenella</i>
3	Doob ghas Dag grass	<i>Cynodon dactylon</i>
4	Kans Dag grass	<i>Saccharum spontaneum</i>
5	Phulbahari Dag grass	<i>Arundinella setosa</i>
6	Sukla	<i>Heteropogon contortus</i>
7	Kanta bahari Dag grass	<i>Aristida setacea</i>
8	Kanta bahiri	<i>Aristida adscensionis</i>
9	Ghas	<i>Eleusine indica</i>
10	Ghas	<i>Eragrostiell sp.</i>
11	Ghas	<i>Bothriochloa pertusa</i>
12	Ghas	<i>Themeda quadrivalvis</i>
13	Ghas	<i>Iselema laxum</i>

8.4 MANAGEMENT ON OVER BURDEN DUMPING SITES

- The overburden soil will be first be dumped, temporarily and then later on it will be used for filling the void. The overburden consists of two type of soil.
- The top lower soil about 0.5 meter average thickness. It is rich in nutrient and suitable for plant growth, and the lower soil, which in true sense is not a soil but is earth, because in this soil organic matter is totally absent and is generally poor in nutrients required for plant growth.
- These two types of soil will be dumped separately. After dumping the soil for 2-3 years the top soil, dumped separately, will then be used as the top layer over the lower soil.

Backfill dump

Backfill dump will start from 3rd year. Backfill will continue till this quarry is completely worked out. For backfilling and reclamation, part of the waste will be available. Part of the OB waste will have to be dumped in outside dump.

Top soil dump

The total top soil generated during the life of mine will be stacked separately in a soil stock pile. It will be used for growing plant along the fingers of the site roads and reclamation of external dump and back filled area. The top soil stockpile will be of low height not exceeding 6m and will be grassed to retain fertility.

Reclamation of backfill area

The soil used for backfilling will be a better soil than the original soil because during dumping some leaf litter will be added to it and some grasses will be promoted to grow on it through seed sowing.

Bio-Reclamation

Biological reclamation will be done to transform the degraded land and waste dump into a self - sustaining ecologically stable land form. This will prevent soil erosion, dust pollution and will create aesthetic beauty. Re-vegetation of waste dump through systematic means, increases the slope stability, enhances the

infiltration of rain water and its availability, increases the soil fertility and promotes natural regeneration of native plant species.

Elimination of Man-animal conflict

Man-animal conflict is a difficult problem to be eliminated. The conflict is both deliberate as well as inadvertent. However, conflict can be minimized through employing local persons to form anti-depredation team. The conflict can be minimized also through protecting the area, preventing the entry of human beings or the cattle in the area. First aid facilities should be provided in the villages to meet exigencies in case of any conflict.

Prevention of forest fire

Forest fire is caused both naturally as well as by the human beings. Anthropogenic causes will be minimized through forming a fire line around the forest area. To add to the prevention of fire local persons will be employed as fire guards, during the fire prone season. The team will be instructed to fight the fire as soon as it is detected. Watch towers will also be constructed to detect forest fire. Awareness program against forest fire will also be run in adjoining villages.

Prevention of poaching

Poaching is undoubtedly a serious problem in the conservation of wildlife. Several methods are employed by the poachers, to kill or trap the wildlife, of which poisoning and traps of different types are more common. A proper vigilance will be maintained to check such menace. Poaching menace will be eliminated seriously neither all the efforts to promote wildlife survival in the area will go in to waste.

8.5 CREATING AWARENESS AMONGST FOREST STAKE HOLDERS

Awareness about the environment and wildlife will be created amongst the adjoining villages. They will be informed about the importance of a good environment, a healthy ecosystem and more importantly about the wildlife. Through slide and film shows they will be convinced about the sustenance of natural ecosystems. They will be convinced that their own survival depends

upon the survival of a healthy ecosystem, to which a wide variety of wildlife is an essential component. To develop affection of the people towards the wildlife some of them will be taken to some zoos and wildlife sanctuaries. Awareness programmes will be run with the help of Forest Officers and more importantly some national experts will be invited to deliver talk's awareness, related to wildlife conservation.

8.6 ARTIFICIAL HABITAT IMPROVEMENT

- For the Conservation of avifauna green belts should be developed around the mining boundary, along the roads, lease periphery, benches and backfilled areas.
- Establishment of artificial avifauna paradise similar to Aamra Kanan, and vatika, to be proposed on dumping sites for effected avifaunal population.
- **Establishment of artificial nesting:** Artificial nesting trail had been surveyed for the avifauna species of mining site and categorized according to their habit, habitat and nesting pattern through which artificial nesting is being proposed.

Artificial nesting structures can be used to increase avifauna reproductive success in buffer areas where natural nest site are unavailable or unsuitable. While artificial nesting structure cannot replace natural nesting habitats, they can increase the number of nesting site available in an area.

Many types of avifauna use artificial nesting structures including song birds, woodpecker, waterfowl, and raptors. While structures are generally designed to meet the nesting requirements of certain species, they may also be used by none target animals and provide roosting and winter cover for variety of birds. Nest boxes, nesting platform or shelves, and nesting baskets, culverts, and cylinders are some of the common types of artificial nesting structures. The most effective artificial nesting structures are those installed enclose proximity to brood-rearing habitat, adequate escape/concealment cover, a reliable source of food and water and other element of the habitat of target species. Predators, competitors and territory sizes for individual species also influence the usefulness

of nesting structures. Nest monitoring and maintenance actions can be taken to limit competing or undesirable species access reproduction success, and provide an opportunity for landowners and managers to observe avifauna. Cavity nesting birds which mainly nests in tree cavities are likely to use nest box. Primary cavity nesting species, such as members of the woodpecker family, excavate nesting cavity in live / standing dead tree (snags); Secondary cavity nesters (e.g. some passerine or perching birds, owls, and waterfowl) use cavities abandoned by primary excavators and those formed by fungus, knots and tree subject to decay. The presence of snags in forested areas is directly related to the quality and quantity of nesting habitat for many cavities nesting species.

Construction Material:

Nests having the most complicated structure in terms of construction and shape are passerine woven nests of orpendolas (Genus-*Psarocolius*) and Baya Weaver (Genus-*Ploceus*). They build a complex woven nest that is chambered from inside. In the initial stage the nest has two openings with overall elliptical shape. Later on, when bird fills the chamber walls with mud, the second opening is closed that becomes a pouch where eggs are laid. The remaining opening is further constructed downwards giving a narrow tube like shape that serves as both entry and exit point for the bird (*Kartesz and Meacham, 1999*).

Structures made of wood are relatively inexpensive and easy to build. Wood seems to be the most weather resistant, insulating material, and most avifauna species prefer wood to metal or plastic structures. For most nest boxes, ¾ inch rough-cut borders are best used for construction. Since cavity nesting waterfowl do not carry nesting material to the nest, 3-4 inches of coarse sawdust or woodchips should be placed inside the nest box. Nest boxes intended for use by woodpeckers can be tightly packed with sawdust to resemble decaying woody material. Old nesting material should be removed at the start of each nesting season and replaced with fresh material. While many artificial nesting structures are designed for cavity nesters, some provide nesting sites for other avifauna. Nesting platforms, baskets and cylinders are used by waterfowl, raptors and other

species. If wire mesh is used as nest support material, the weave must be tight enough to prevent eggs and young form falling.

Designs range from simple platforms to complex, multi-compartment structures some of these design are more successful than others, and most can built or acquired from a variety of suppliers. Basic nest box designs can be modified to accommodate various species by altering dimensions or entrance whole sizes. The size of the entrance hole also influences the internal temperature of the box, predator accessibility, and use by competing none target species.

Basic Nest Box Characteristic:

1. Should be made of wood Sal (*Shorea robusta*), Sisoo (*Dalbergia sissoo*), Babool (*Acacia nilotica*), Teak (*Tectona grandis*) etc (preferred, most weather resistant).
2. Box should open from the side or top for maintenance and cleaning.
3. Sides of nest box should enclose the floorboard (recessed ¼ inch) to prevent rain seepage.
4. Nails, woodscrews, and hinges should be rust proof.
5. Entrance hole dimensions should accommodate the desired bird species; hole should not large enough to allow competitors and predators access.
6. A double thick entrance and extended roof to deter predators like squirrels and raccoons.
7. Ventilation holes or slits at the top of both sides, just beneath the roof of the box.
8. Drainage holes (four or five) drilled into the bottom of the nest box to allow for drainage.
9. Song bird nest box should not have a perch, which increase predator access; native song birds do not use perches.
10. Nest box should not be treated with green preservative, it is poisonous to birds.

11. Nest box should not be painted on the inside or painted bright, unnatural colors on the outside (may attract predators or exotic species) (Avifauna survey 2013).

Fig. 8.1 ARTIFICIAL NEST IMAGES



Design for Sparrow, Myna etc



Design for Indian Robin, Roller etc



Design for Doves, Parakeets etc



Design for cavity Nesters



Design for Owls & owlets



Design for Platform Nesters

Fig. 8.2 Artificial nest designs

Design I

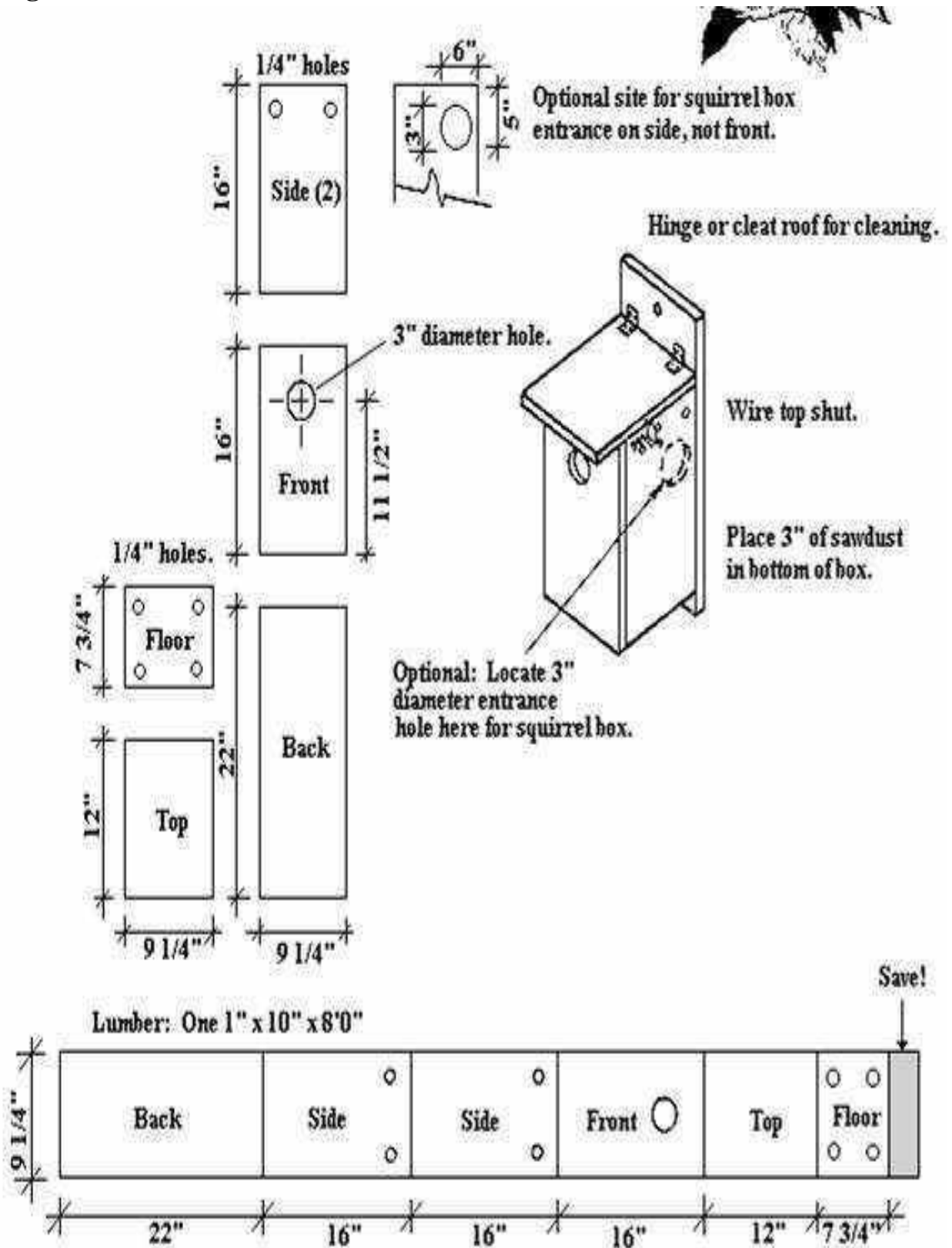


Fig 8.2.1 Ideal nest design for Doves, Parakeets, and Orioles

Design II

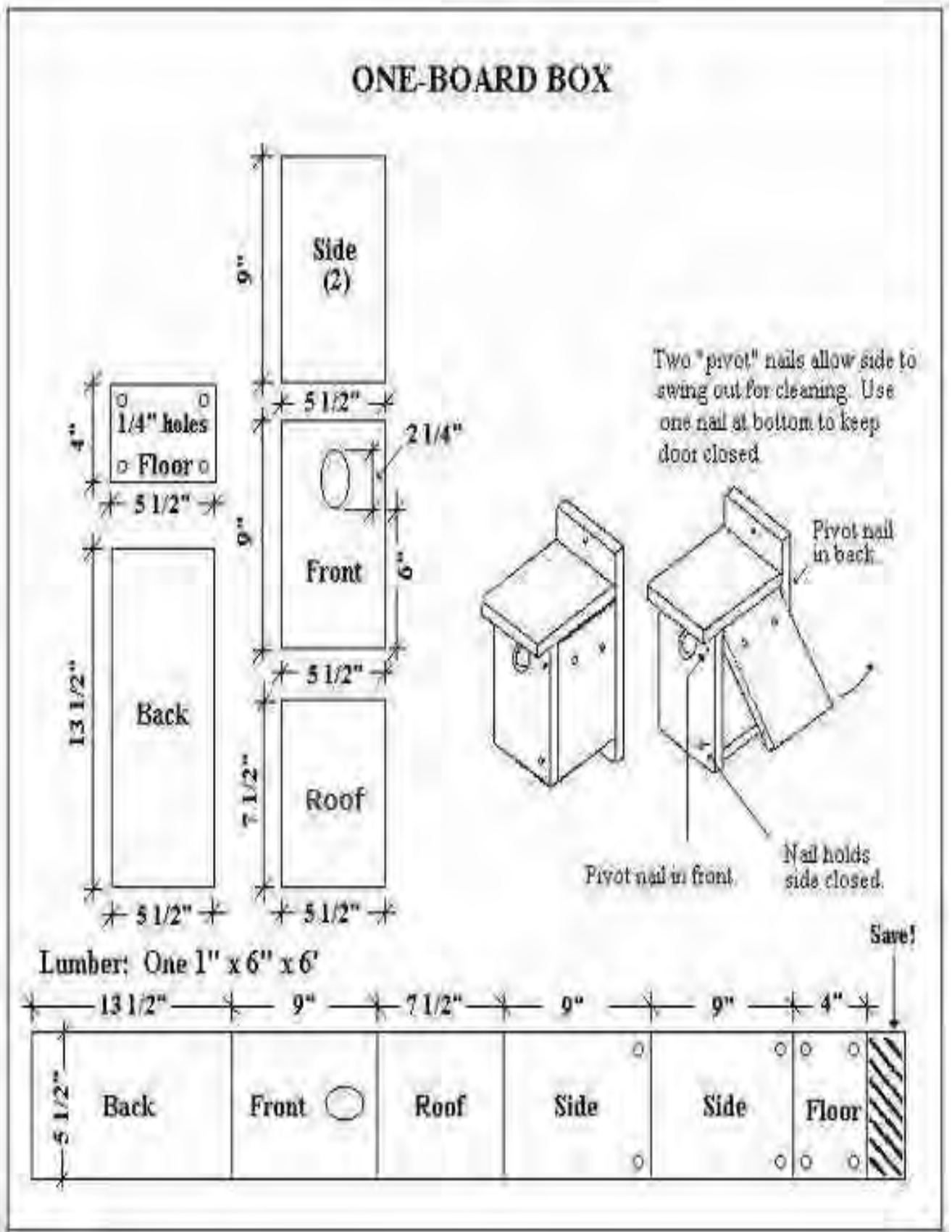


Fig 8.2.2 Ideal nest design for yellow throated sparrow, Mynas, Parakeets, Indian Rollers etc

Design III

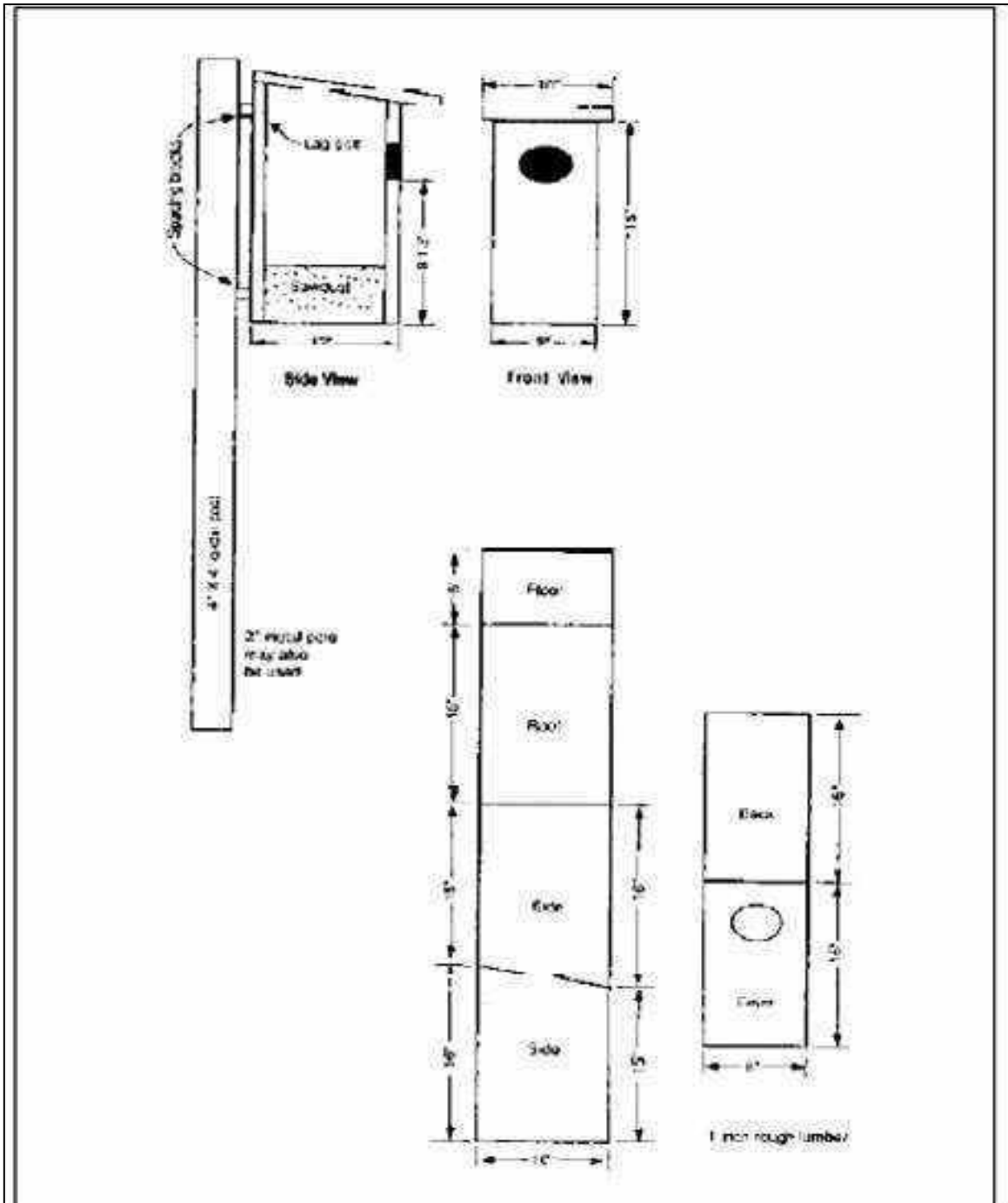


Fig. 8.2.3 Ideal nest design for Shrikes, Indian Robin, Magpie Robin etc.

Design IV

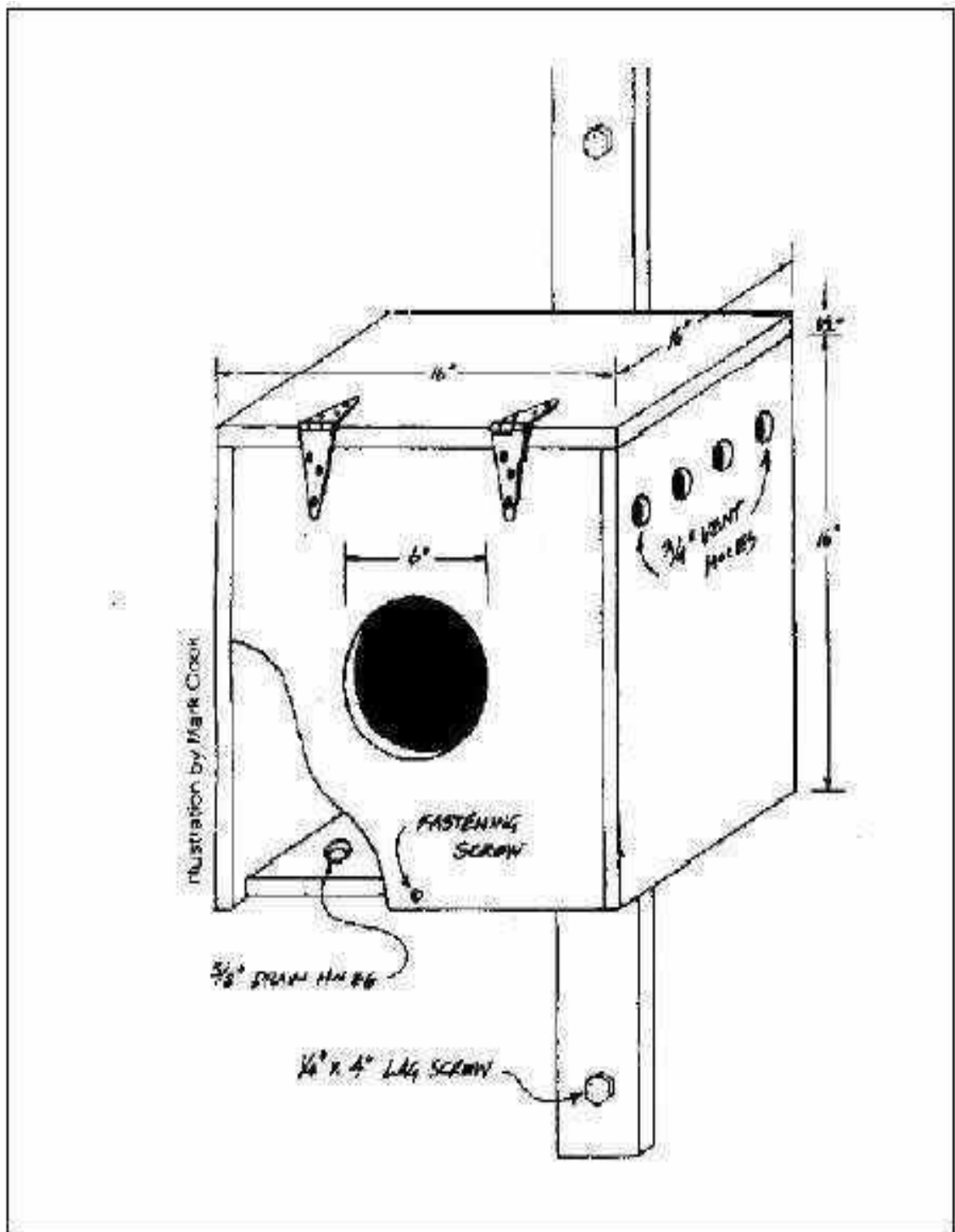


Fig 8.2.4 Ideal nest design for Owl and Owlets

Design V

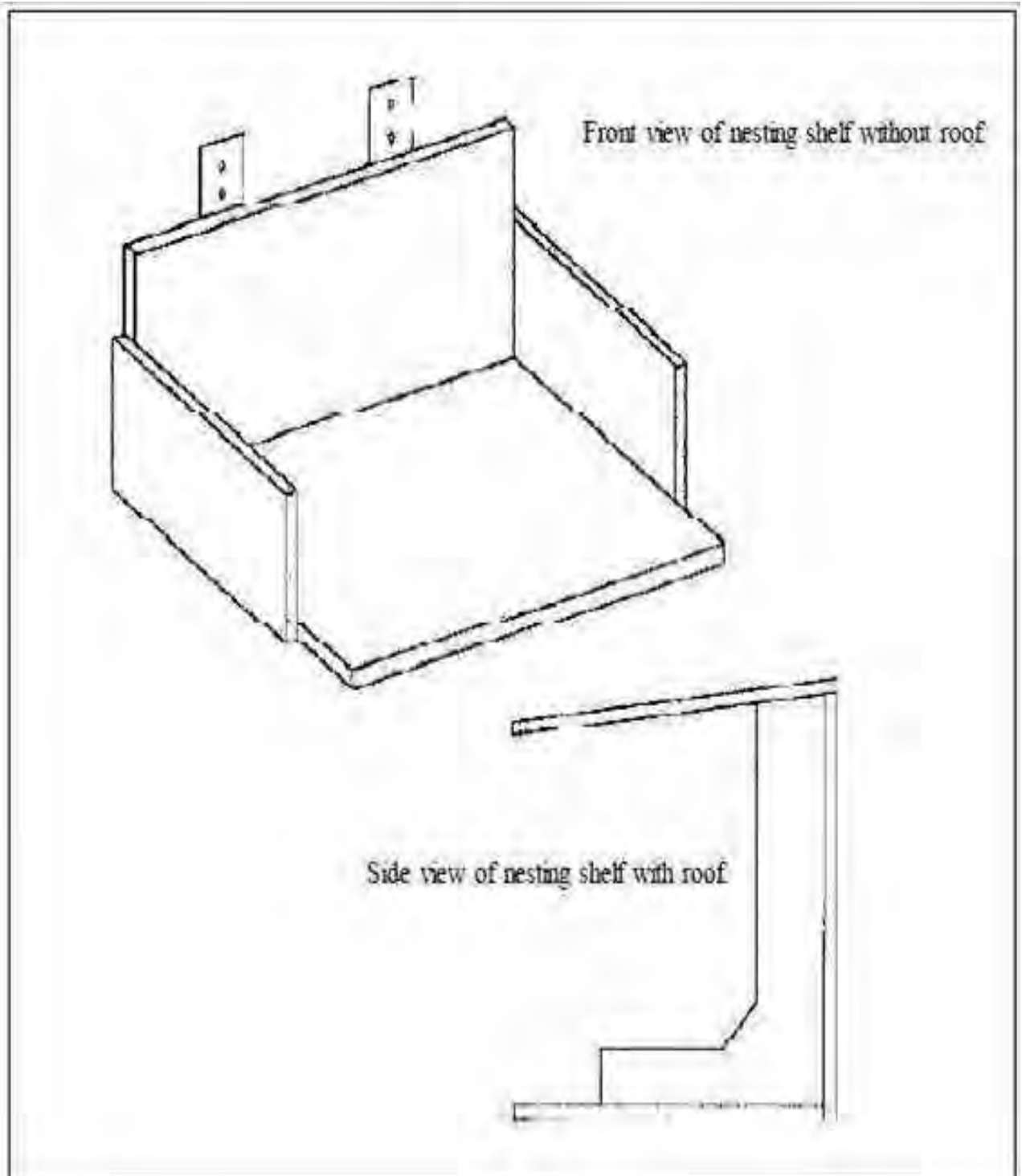


Fig 8.2.5 Ideal nest design for platform and Twig nesting birds

Design VI

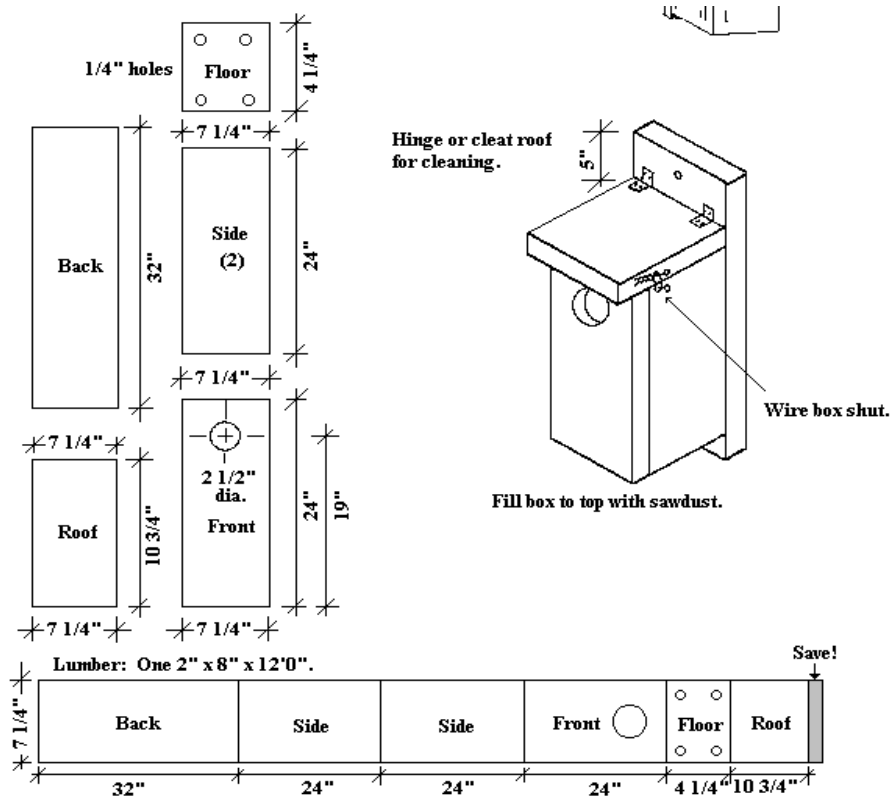


Fig 8.2.6 Ideal Nest design for Excavators having yellow tail and red patch on the back of head and neck

Design VII

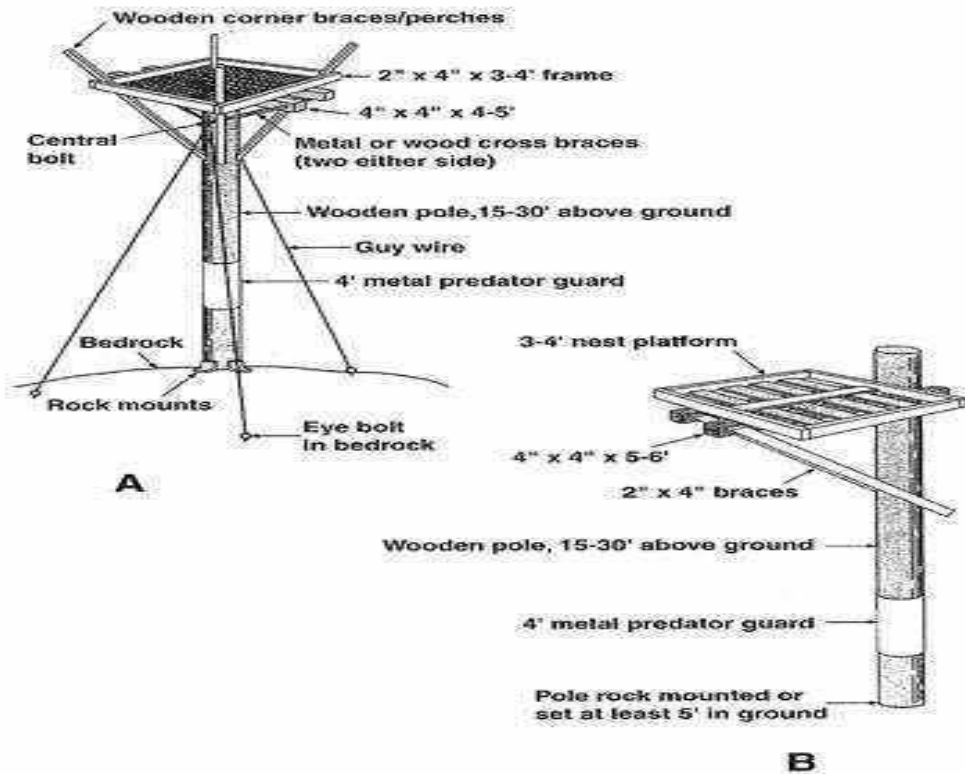


Fig 8.2.7 Ideal nest design for Raptors

Design VIII

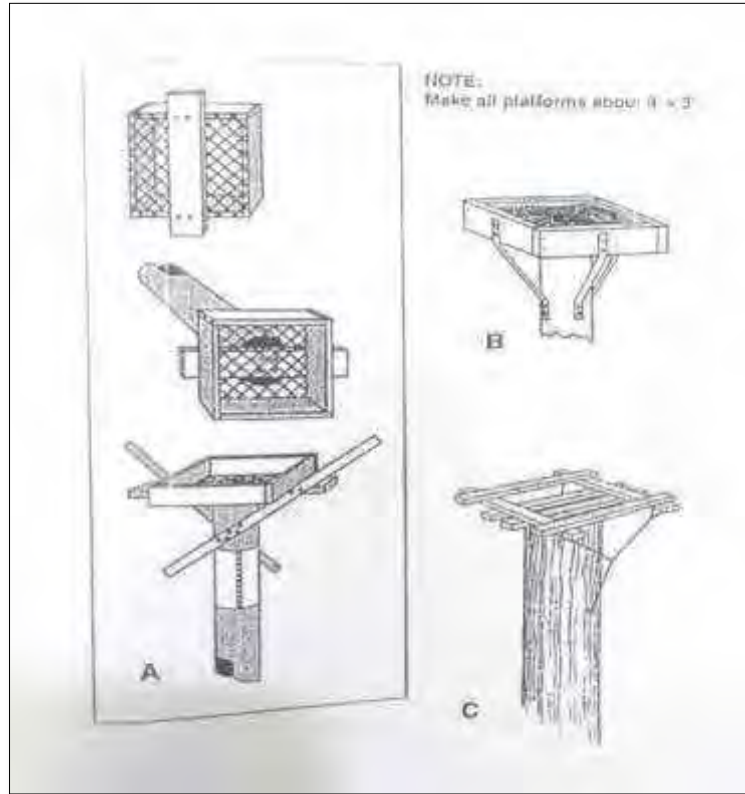


Fig 8.2.8 Ideal nest design for Raptors

Design IX



Fig 8.2.9 Ideal nest design for Grassland birds and Cup nesting birds

Fig. 8.3 BIRD FEEDER



Construction of Bamboo Based Bird feeder

CHAPTER 9

PROPOSED BUDGET FOR RECOMMENDED ACTION PLAN

9.1 Proposed budget for development of alternative habitat and management Plan for OCP Gevra

S.	Activities	Site specific activity	1 st Year		2 nd Year	3 rd year	Total	Remark	Nodal agency
			Area / No. of Plants	Amount in Rs.	Amount in Rs.	Amount in Rs.	Amount in Rs.		
1.	Habitat improvement	Rehabilitation of existing ecosystem improvement (refers to A)	20 Hectare	5,35,750	-	-	5,35,750	Plantation of ecosystem improvement activity on Buffer zone first year for plantation and next 5 years for maintenance.	Forest department
		Big tree Plantation in School /Aaganbadi and another govt. premises (refers to B)	1230 Plants	30,75,000	-	-	30,75,000	Big tree Plantation in The Schools and Aaganbadi first year for plantation and next 5 years for maintenance.	Forest department
		Road site plantation (refers to C)	7 Km	99,17,259			99,19,259	Habitat improvement by plantation between the Purena – Banki road, first year for plantation and next 4 years for maintenance.	Forest department
		Development of grasslands (refers to H)	5 Hectare	39,27,000	-	-	39,27,000	Establishment of grassland on Bhalpahri, Mudhali area of buffer zone	Forest department
		Placement of artificial nest, birds feeder and water pod (refers to G)	1000 Nest boxes	5,00,000	-	-	5,00,000	Placement and monitoring of three years Monitoring and Evaluation	Forest department
2.	Biodiversity Improvement	Establishment of artificial avifauna habitat (Pakshi vihar) on dumping sites	Minimum 3 sites				1,65,00,000	Creation of avifauna habitat on dumping sites of (Included with 10 % amount for monitoring and evaluation by SFRTI)	SECL and Forest department
		Oxy-zone cum birds shelter zone (refers to I)	20 hectare	76,24,348	-	-	76,24,348	Development of Birds shelter cum Oxyzone at the Naraibaoth - Mangaon road (Forest revenue land)	Forest department
		Plantation of Multipurpose tree species (MTS/Agroforestry Model) on agricultural land	L.S.	5,00,000	5,00,000	5,00,000	15,00,000	Plantation of multipurpose tree species on bund to develop agroforestry practices	Forest department
3.	River bank restoration activity on Catchment area and channel treatment	River /canal site plantation (refers to D)	6 Hectare	11,92,776	-	-	11,92,776	Plantation activity proposed nearby Leelagar and Kolar river first year for plantation and next 5 years for maintenance.	Forest department
		Canal site plantation (refers to D)	4 Hectare	7,95,184	-	-	7,95,184	Plantation activity nearby Durena, Bhalpahri and Mudhali canal first year for plantation and next 5 years for maintenance.	Forest department

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		Treatment for up gradation on degraded forest to normal forest through Soil and Moisture conservation (SMC) (refers to F)	30 Hectare	10,90,750	-	-	10,90,750	Treatment work on Soil and Moisture conservation (SMC) Renki revenue forest compartment no. 601, for 3years	Forest department
		Plantation and Pond Renovation (refers to E)	850	30,92,450	-	-	30,92,450	Plantation on local ponds bunds and needed renovation work (Deeping, Cleaning etc) activity has been proposed nearby local ponds first year for plantation and next six years for maintenance.	Forest department
		River bank restoration work at Leelaghar river	2 Hac.	10,00,000	-	-	10,00,000	Restoration work proposed on Lilagar River Approx 3 km (Both side)	Forest department
		Construction of stop dam at Leelaghar river	L.S.	10,00,000	-	-	10,00,000	-	Forest department
4	Training & workshop	Creation of social awareness program and Empowering Local villagers , JFMC for conservation of avifauna	L.S.	2,00,000	2,00,000	2,00,000	6,00,000	Training program conducted for local community on nearby villages for awareness for ecosystem improvement for avifauna and wildlife conservation	Forest department
5	Monitoring and Evaluation.	Forest protection and plantation monitoring through the satellite	L.S.	5,00,000	5,00,000	5,00,000	15,00,000	Monitoring through the satellite imagery on plantation, fire protection sites of buffer zone	Forest department, FMIS, FSI
		Monitoring and Evaluation	L.S.				15,00,000	Monitoring & evaluation of all proposed activity for next five year.	Technical and scientific work will be guided by SFRTI
Grand total								5,53,52,517	
Total: In Words- - FIVE CRORES FIFTY THREE LAKHS FIFTY TWO THOUSAND FIVE HUNDRED SEVENTEEN RUPEES ONLY									

Note:

- ❖ Budget for Plantation of Safety zone is imposed earlier under condition of EIA report by the SECL and this report only recommends the favourable plant species which provides food, shelter and alternate habitat for avifauna and wildlife.
- ❖ **CAMPA Norms:** - All the proposed activities as per CAMPA norms.
- ❖ Total cost for this Proposed conservation and management plan (Budget) is Rs. **5,53,52,517/-** Out of this 1,50,00,000/- will be utilized for the development of artificial bird Habitat (Pakshi Vihar) by

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OCP Gevra through its own agency in the dumping area and 10% of Rs. 1,50,00,000 i.e Rs.15,00,000 will be given to SFRTI Raipur for the execution of monitoring and evaluation activity.

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

9.2 Site Specific action Plan for Development of Conservation and Management Plan for OCP Gevra

A. RDF Activity @ 29,422 Rs. and RDBF @ 18884 RS./ Hectare										
Sr. No.	Name of Division	Name of Range	Name of Village	Compartment No / landmark	Name of Activity Area/ Location / Building	GPS Location	Available Area/ No of plants	Proposed Activity	Recommended tree Species	Required Amount
1.	Katghora	Pali	Dindolbhantha	Revenue Forest land	Near Leelagar river	N 22° 16'' 43.18' E 82° 34'' 26.26'	10 Hectare	RDF Activity	Mix Forest	2,94,220
2.	Katghora	Pali	Renki	Comp. No. 601	In front of renki pond area	N 22°18'' 15.16' E 82°30''11.74'	5 Hectare	RDBF activity	Bamboo plantation	94,420
3.	Katghora	Pali	Mudapar	Revenue forest land	Near the durga mandir Mudapar	N 22°16'' 31.71' E 82°33''47.19'	5 Hectare	RDF Activity	Ficus tree species & Fruit bearing Tree species	1,47,110
Total Amount (A)										5,35,750

B. Activity on Schools and another Premise @ 2500 RS. / Plants with tree guard										
Sr. No.	Name of Division	Name of Range	Name of Village	Compartment No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	Available Area/ No of plants	Proposed Activity	Recommended tree Species	Required Amount
1.	Katghora	Pali	Renki	Revenue land	Govt. Primary School, Bhadrapara, Renki	N 22° 18'' 41.41' E 82° 30'' 47.74'	50 plants	Plantation	Mango, Gauwa species	1,25,000
2.	Katghora	Pali	Renki	Revenue land	Govt. Boys Hostel, Renki	N 22° 18'' 18.45' E 82° 32'' 05.67'	50 plants	Plantation	Mango, Jamun, Harra, and etc.	1,25,000
3.	Katghora	Pali	Raliya	Revenue land	Govt. Primary School, Navapara, Mudhali	N 22° 17'' 20.62' E 82° 34'' 18.12'	50 plants	Plantation	Fruit bearing Tree species	1,25,000
4.	Katghora	Pali	Raliya	Revenue land	Govt. Middle School, Navapara, Mudhali	N 22° 17'' 20.62' E 82° 34'' 18.12'	50 plants	Plantation	Fruit bearing Tree species	1,25,000
5.	Katghora	Pali	Raliya	Revenue land	Govt. Higher Sec. School, Mudhali	N 22° 16'' 42.87' E 82° 34'' 51.98'	50 plants	Plantation	Ornamental tree species Amaltash, Gulmohar, Pentaform etc.	1,25,000
6.	Katghora	Pali	Durena, Behind Shakti Nagar Colony	Revenue land	Govt. Primary School, Durena	N 22° 18'' 17.06' E 82° 33'' 21.60'	50 plants	Plantation	Fruit bearing Tree species	1,25,000

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7.	Katghora	Pali	Raliya	Revenue land	Model AanganBadi , Mudhali	N 22° 16' 43.18" E 82° 34' 26.26'	40 plants	Plantation	Fruit bearing Tree species	1,00,000
8.	Katghora	Pali	Khursudih , Vijaynagar	Revenue land	Model Aanganbadi , Vijaynagar	N 22° 22' 15.21" E 82° 32' 00.00'	40 plants	Plantation	Fruit bearing Tree species	1,00,000
9.	Katghora	Pali	Durena, Behind Shakti Nagar Colony	Revenue land	Panchayat Bhawan, Durena	N 22° 18' 17.06" E 82° 33' 21.60'	50 plants	Plantation	Fruit bearing Tree species	1,25,000
10.	Katghora	Pali	Renki	Revenue land	Tehsil Office, Renki, Hardi Bazar,	N 22° 18' 15.63" E 82° 32' 05.08'	50 plants	Plantation	Shady & Fruit bearing Tree species	1,25,000
11.	Katghora	Pali	Renki	Revenue land	Dussehra ground, Renki	N 22° 18' 31.01" E 82° 30' 54.88'	250 plants	Plantation	Shady & Fruit bearing Tree species	6,25,000
12.	Katghora	Pali	Shakti Nagar	SECL Colony	Shakti Nagar Township, Gevra	N 22° 22' 45.18" E 82° 34' 47.71'	500 plants	Gap Plantation surrounding Township	Shady, Ornamental & Fruit bearing Tree species	12,50,000
Total Amount (B)										30,75,000

C. Activity on road site plantation @ 14,17,037/ km										
Sr. No.	Name of Division	Name of Range	Name of Village	Compartment. No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	Available Area/ No of plants	Proposed Activity	Recommended tree Species	Required Amount
1.	Katghora	Pali	Purena – Banki Road	Revenue land	Purena – kolar river bridge, Banki Road,	N 22° 22' 45.18" E 82° 34' 47.71'	3 km both (Approx)	Road side Plantation	Shady, Ornamental & Fruit bearing Tree species	42,51,111
2.	Katghora	Pali	Raliya – Mudahali	Revenue land	Raliya to Mudahali main road	N 22° 18' 26.53" E 82° 34' 44.23'	4 km (Approx)	Road side Plantation	Shady, Ornamental & Fruit bearing Tree species	56,68,148
Total Amount (C)										99,19,259

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D. Activity on river/ Canal site @ 1,98,796 / hectare										
Sr. No.	Name of Division	Name of Range	Name of Village	Compartment . No / Khasra	Name of Activity Area/ Location / Building	GPS Location	Available Area/ No of plants	Proposed Activity	Recommended tree Species	Required Amount
1.	Katghora	Pali	Renki	Revenue land	Lilagar River	N 22° 30'' 74.76' E 82° 52'' 50.17'	2 Hectare	River side Plantation	<i>Terminalia Arjuna & Neem</i> Fruit bearing Tree species	3,97,592
3.	Katghora	Pali	Dindolbhantha	Revenue land	Lilagar River	N 22° 17'' 38.76' E 82° 33'' 04.23'	2 Hectare	River side Plantation	<i>Terminalia Arjuna & bargad</i> Fruit bearing Tree species	3,97,592
3.	Katghora	Pali	Purena – Banki Road	Revenue land	Kolar River	N 22° 22'' 45.18' E 82° 34'' 47.71'	2 Hectare	River side Plantation	<i>Terminalia Arjuna, kahua, katha &</i> Fruit bearing Tree species	3,97,592
4.	Katghora	Pali	Renki (Near Dumanpara, Renki)	Comp. No. 601	Stop Dam, Renki	N 22° 18'' 53.08' E 82° 30'' 31.28'	2 Hectare	River side plantation	<i>Terminalia Arjuna &</i> Fruit bearing Tree species	3,97,592
5.	Katghora	Pali	Bhalpahri, Mudhali	Revenue land	Stop Dam	N 22° 16'' 13.95' E 82° 34'' 63.73'	1 Hectare	Dam Side Plantation	Ficus tree species & Fruit bearing Tree species	1,98,796
6.	Katghora	Pali	Durena, Near Sub Station.	Revenue land	Durena Nala	N 22° 22'' 17.01' E 82° 34'' 34.52'	1 Hectare	River side Plantation	<i>Terminalia Arjuna &</i> Fruit bearing Tree species	1,98,796
Total amount (D)										19,87,960

E. Activity on pond side plantation @ 697 RS. / Plants and Pond Renovation (Pond Renovation @ 2.50 lacs / Sites)										
Sr. No.	Name of Division	Name of the Range	Name of Village	Compartment. No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	Available Area/ No of plants	Proposed Activity	Recommended tree Species	Required Amount
1.	Katghora	Pali	Dhaurabhantha, Mudapar	Revenue land	Pond 7	N 22° 16'' 43.53' E 82° 34'' 42.63'	300 plants / pond periphery = 900 mtr(approx)	Bund Plantation	Ficus tree species & Fruit bearing Tree species	2,09,100
2.	Katghora	Pali	Mudhali	Revenue land	Pond 5	N 22° 16'' 52.59' E 82° 34'' 28.24'	165 plants / pond periphery = 500 mtr(approx)	Bund Plantation	Ficus tree species & Fruit bearing Tree species	1,15,005
3.	Katghora	Pali	Renki (Near Railway crossing)	Revenue land	Pond 3, Renki	N 22° 18'' 18.12' E 82°	30 plants / pond periphery = 300 mtr	Pond bund Plantation, pond Renovatio	Ficus tree species & Fruit bearing Tree species	2,70,910

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						30'' 40.18'	(approx)	n.		
4.	Katghora	Pali	Renki (Main Road Renki)	Revenue land	Pond 4, Renki	N 22° 18'' 23.46° E 82° 30'' 46.98'	45 plants / pond periphery = 700 mtr (approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,81,365
5.	Katghora	Pali	Renki (Near Dumanpara, Renki)	Revenue land	Pond 5, Renki	N 22° 18'' 38.06° E 82° 30'' 50.88'	30 plants / pond periphery = 300 mtr (approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,70,910
6.	Katghora	Pali	Dindolbhantha	Revenue land	Pond 1	N 22° 18'' 20.52° E 82° 34'' 46.56'	30 plants / pond periphery = 500 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,70,910
7.	Katghora	Pali	Dodkipara	Revenue land	Pond 2	N 22° 17'' 45.78° E 82° 34'' 29.79'	30 plants / pond periphery = 500 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,70,910
8.	Katghora	Pali	Dodkipara	Revenue land	Pond 3	N 22° 17'' 09.10° E 82° 34'' 17.37'	40 plants / pond periphery = 500 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,77,880
9.	Katghora	Pali	Dodkipara	Revenue land	Pond 4	N 22° 16'' 58.96° E 82° 34'' 18.34'	40 plants / pond periphery = 600 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,77,880
10.	Katghora	Pali	Mudhali	Revenue land	Pond 6	N 22° 16'' 57.15° E 82° 34'' 43.47'	50 plants / pond periphery = 800mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,84,850
11.	Katghora	Pali	Durena, Behind Shakti Nagar Colony	Revenue land	Pond 1, Durena	N 22° 21'' 47.47° E 82° 34'' 45.92'	50 plants / pond periphery = 800 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,84,850
12.	Katghora	Pali	Chakabuda, Chakadhamna	Revenue land	Pond 2, Chakadhamna	N 22° 22'' 38.57° E 82° 34'' 08.46'	40 plants / pond periphery = 600 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,77,880
Total Amount (E)										30,92,450

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F. Activity on Soil and moisture conservation work @ 3025 Rs/Hectare										
Sr. No.	Name of Division	Name of the Range	Name of Village	Compartment No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	Available Area/ No of plants	Proposed Activity	Recommended tree Species	Required Amount
1.	Katghora	Pali	Renki (Near Dumanpara, Renki)	Comp. No. 601	Stop Dam, Renki	N 22° 18'' 53.08' E 82° 30'' 31.28'	50 mtr length for stop dam,	Construction of Stop dam	-	10,00,000
2.	Katghora	Pali	Renki (Near Dumanpara, Renki)	Comp. No. 601	Treatment work on Plantation sites	N 22° 18'' 53.08' E 82° 30'' 31.28'	10 Hectare	Soil and Moisture conservation (SMC)	-	30,250
4.	Katghora	Pali	Dindolbhantha	Revenue Forest land	Near Leelagar river	N 22° 16'' 43.18' E 82° 34'' 26.26'	10 Hectare	Soil and Moisture conservation (SMC)	-	30,250
5.	Katghora	Pali	Renki	Comp. No. 601	In front of renki pond area	N 22° 18'' 15.16' E 82° 30'' 11.74'	5 Hectare	Soil and Moisture conservation (SMC)	-	15,125
6.	Katghora	Pali	Mudapar	Revenue forest land	Near the durga mandir Mudapar	N 22° 16'' 31.71' E 82° 33'' 47.19'	5 Hectare	Soil and Moisture conservation (SMC)	-	15,125
Total amount (F)										10,90,750

G. Site selection for placement of artificial nest /Birds feeder and water pod (Sapora)

Sr. No.	Name of Division	Name of Range	Name of Village	Compartment No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	No. of Nest	No. of birds feeder	No. of water pod	Proposed Activity	Required Amount
23.	Katghora	Pali	Renki	Comp. No. 601	Nearby Pond, Renki	N 22° 18'' 12.37' E 82° 30'' 24.58'	500	125	125	Placement for artificial Nesting	2,50,000
24.	Katghora	Pali	Jhabar	-	Near Jhabar basti	22° 22' 0.91" N 82° 32' 8.29" E	300	75	75	Placement for artificial Nesting	1,50,000
25.	Katghora	Pali	Bhalpahari, Mudhali	Revenue land	Near Stop Dam	22° 16' 2.62" N 82° 35' 31.08" E	200	50	50	Placement for artificial Nesting	1,00,000
							1000	250	250	Total No.	
Total amount (G)										5,00,000	

H. Sites selection for development Grassland @7,85,400 / Hectare

Sr. No.	Name of Division / Range	Name of Village	Compartment. No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	Area	Proposed Activity	Required Amount
1.	Katghora / Pali	Bhalpahri, Mudhali	Comp. No. 601	Near Bhalpahri, stop dam	22°16'18.56"N 82°35'34.10"E	5 hectare	Grassland development	39,27,000
							Total Amount (H)	39,27,000

I. Sites selection for development of Oxy-zone cum birds shelter @ 3,81,217 / Hectare

Sr. No.	Name of Division Range	Name of the Range	Name of Village	Compartment. No / Khasra	Name of Activity Area/ Location/ Building	GPS Location	Area	Proposed Activity	Required Amount
1.	Katghora	Pali	Naraibao dh - Mangan road	Revenue forest land	Development of Birds shelter cum Oxyzone at the Naraibao dh - Mangan road (Forest revenue land)	22°20'03.82"N 82°37'33.00"E	20 Hectare	Oxy-zone cum birds shelter	76,24,340



Fig.9.1 Site specific action plan for OCP Gevra

CHAPTER 10

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ANNEXURE – I
OCP GEVRA
BIRD SURVEY DATA SHEETS (Winter Season)

Datasheet for Bird status survey

Date: 25/11/2018 **Cell-ID:** G 01 **Trail-length:** 1000m **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat and Kamlesh

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22 ⁰ 18'36.52	82 ⁰ 33'57.34	5:55am	Nil	-	-	-	-	-
300m	22 ⁰ 18'33.53	82 ⁰ 33'47.13	6:09am	Red vented bulbul	1	-	-	-	Chirping
				House sparrow	2	-	-	-	Chirping
600m	22 ⁰ 18'29.52	82 ⁰ 33'38.01	6:17am	Greenish warbler	1	-	-	-	Chirping
				Red vented bulbul	1	-	-	-	Chirping
				Indian roller	1	-	-	-	Chirping
				Little swift	1	-	-	-	Flying
				Rose ringed parakeet	1	-	-	-	Flying
				Sulphur bellied warbler	2	18m	330 ^o	60 ^o	Parching
900m	22 ⁰ 18'25.69	82 ⁰ 33'29.70	6:29am	Red vented bulbul	1	-	-	-	Flying
				Spotted dove	1	19m	320 ^o	70 ^o	Perching
				Sulphur belled warbler	3	-	-	-	Flying
				House crow	3	-	-	-	Flying
				Eurasian golden oriole	1	17m	320 ^o	70 ^o	Perching

OCP GEVRA
BIRD SURVEY DATA SHEETS (November 2018)

Datasheet for Bird status survey

Date: 26/11/2018

Cell-ID: G 02 Trail-length: 900m

Team: Ashutosh Pandey, Amit Baghel, Vijay Bhagat, Kamlesh

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°18'35.56	82°33'05.89	6:40am	Red vented bulbul	1	-	-	-	Chirping
				Common hoopoe	1	7m	20°	300°	Perching
				Common myna	2	-	-	-	flying
300m	22°18'27.83	82°33'13.16	6:55am	Little swift	1	-	-	-	Flying
600m	22°18'20.01	82°33'17.38	7:10am	Eurasian Collared dove	3		240°	320°	Perching
				Common hoopoe	1		220°	320°	Perching
				Little swift	3		220°	320°	Perching
				Paddy Field pipit	1	-	-	-	flying
				Indian roller	1		290°	320°	Perching
				Black drongo	1	-	-	-	Chirping
900m	22°18'11.67	82°33'18.40	7:25 am	Little cormorant	1	-	-	-	Chirping
				Black drongo	1	-	-	-	flying
				Hawk eagle	1	-	-	-	Chirping
				Green bee eater	1	-	-	-	flying

OCP GEVRA
BIRD SURVEY DATA SHEETS (November 2018)

Datasheet for Bird status survey

Date: 27/11/2018 **Cell-ID:** G 03 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat, Kamlesh **Trail-length:** 900 m

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°20'16.05	82°33'50.76	8:10am	Scaly breasted munia	1	7y	210°	240°	Perching
				Green bee eater	1	-	-	-	Flying
				Common tailor bird	1	-	-	-	Flying
				Ashy prinia	2	-	-	-	Flying
300m	22°20'22.34	82°33'56.84	8:22am	Paid starling	1	-	-	-	Flying
				Lesser pied kingfisher	1	-	-	-	Flying
				Black drongo	1	-	-	-	Flying
				Green bee eater	2	-	-	-	Flying
				Plain prinia	1	-	-	-	Flying
600m	22°20'24.69	82°33'50.93	8:35am	Variable wheatear	1	24y	215°	245°	Perching
				Common tailor bird	1	-	-	-	Flying
				Common myna	1	-	-	-	Chirping
				Bramhiny starling	2	28Y	175°	210°	Perching
				Scaly breasted munia	1	-	-	-	Chirping
900m	22°20'28.57	82°33'51.24	8:43am	White rumped munia	1	18Y	170°	200°	Perching
				Black drongo	1	-	-	-	Flying
				Indian silver bill	1	-	-	-	Chirping
				Common kingfisher	1	24y	210°	200°	Perching
				Indian roller	2	-	-	-	Flying
				Indian robin	1	-	-	-	Flying
				Laughing dove	2	-	-	-	Chirping

OCP GEVRA
BIRD SURVEY DATA SHEETS (November 2018)

Datasheet for Bird status survey

Date: 27/11/2018

Cell-ID: G 04

Team: Ashutosh Pandey, Amit Baghel, Vijay Bhagat, Kamlesh Trail-length: 900 m

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°18'34.40	82°33'58.58	4:45 pm	Spotted dove	1	10y	340°	10°	Perching
				Green bee eater	1	10y	320°	10°	Perching
				Cattle egret	5	-	-	-	Flying
				Black drongo	1	-	-	-	Flying
300m	22°18'25.26	82°33'55.47	4:52 pm	Greenish warbler	2	-	-	-	Flying
				Barn swallow	5	-	-	-	Flying
				Black drongo	1	-	-	-	Flying
				Sulphur bellied warbler	2	-	-	-	Flying
				Jungle owlet	1		10°	10°	Perching
				Indian roller	1		350°	20°	Perching
600m	22°18'17.22	82°33'49.66	5:02 pm	Black drongo	1		0°	30°	Perching
				Green bee eater	2	-	-	-	Flying
				House sparrow	20	-	-	-	Flying
				Purple sunbird	1	-	-	-	Chirping
900m	22°18'09.49	82°33'50.24	5:20 pm	Black drongo	1		350°	20°	Perching
				Barn Owl	1	-	-	-	Flying

OCP GEVRA

BIRD SURVEY DATA SHEETS (November 2018)

Datasheet for Bird status survey

Date: 28/11/2018 Cell-ID: G 05 Team: Ashutosh Pandey, Amit Baghel, Vijay Bhagat Trail-length: 900m

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°20'00.63	82°37'29.59	7:15 am	Red vented bulbul	2	10 m	107 ⁰	10 ⁰	Chirping
				Green bee eater	5	-	-	-	flying
				Greenish warbler	2	-	-	-	Flying
				Black Drongo	1	-	-	-	Chirping
				Indian Silver bill	2	-	-	-	Flying
300m	22°20'05.21	82°37'31.78	7:35am	Rose ringed parakeet	1	20 m	107 ⁰	10 ⁰	Perching
				Pied Starling	2	24 m	108 ⁰	10 ⁰	Perching
				Green bee eater	3	-	-	-	Chirping
				Eurasian Golden Oriole	1	-	-	-	Chirping
				White throated Kingfisher	1	-	-	-	Flying
				Spotted dove	2	-	-	-	Chirping
600m	22°20'07.39	82°37'34.24	7:50am	Jungle Babbler	2	-	-	-	Chirping
				Paddy field pipit	1	-	-	-	Flying
				House Crow	2	-	-	-	Chirping
				Common Myna	5	-	-	-	Chirping
				Cattle Egret	6	-	-	-	Flying
900m	22°20'11.02	82°37'37.56	8:10am	Red vented bulbul	1	-	-	-	Chirping
				Eurasian Collared dove	5	-	-	-	Chirping
				Green bee Eater	3	-	-	-	Chirping
				Bank Myna	2	-	-	-	Flying
				Sulphur Bellied warbler	1	-	-	-	Flying
				Ashy Prinia	3	-	-	-	Flying
				Plum headed Parakeet	4	-	-	-	Chirping
				Indian roller	1	-	-	-	Chirping

OCP GEVRA

BIRD SURVEY DATASHEETS (November 2018)

Datasheet for Bird status survey

Date: 28/11/2018 Cell-ID: G 06 Team: Ashutosh Pandey, Amit Baghel, Vijay Bhagat Trail-length: 900 m

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°18'34.40	82°33'58.58	4:30 pm	Little cormorant	2	30m	240°	260°	Flying
				Red vented bulbul	2	-	-	-	Chirping
				Green bee eater	3	-	-	-	Flying
				Common Hoopoe	1	-	-	-	Flying
				Laughing dove	1	-	-	-	Flying
300m	22°18'25.26	82°33'55.47	4:50 pm	House crow	2	-	-	-	Flying
				Asian open bill stork	2	-	-	-	Chirping
				Little swift	1	-	-	-	Flying
				Great egret	4	-	-	-	Chirping
				Indian Robin	1	-	-	-	Flying
				Black drongo	3	-	-	-	Flying
600m	22°18'17.22	82°33'49.66	5:05 pm	Barn Owl	1	-	-	-	Flying
				Red vented bulbul	1	-	-	-	Flying
				Little egret	4	-	-	-	Flying
				Eurasian Golden oriole	1	-	-	-	Flying
				Jungle Prinia	2	-	-	-	Flying
900m	22°18'09.49	82°33'50.24	5:20 pm	Eurasian Collared Dove	1	18 m	102°	270°	perching
				Jungle Babbler	5	-	-	-	Chirping
				Purple Sunbird	2	26 m	165°	280°	Perching
				Pied Starling	2	-	-	-	Flying
				Cattle Egret	4	-	-	-	Flying

**OCP GEVRA
HABITAT SURVEY DATASHEETS**

Datasheet for habitat study at every 300 m on transect line

Date: 25/11/2018 **Cell-ID:** G 01 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat, Kamlesh **Trail-length:-** 900m

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)				Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Nu m.	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %		Shrub %	Regeneration %
								H (m)	G (cm)						
0m	22°18'36.52	82°33'57.34	5:55 am	B,A,G	Sal	2	9	95	1,4	1	1	1	1	S,H,R,E	
					Jamun	1	7	65							
300m	22°18'33.53	82°33'47.13	6:09 am	A,G,S	Sal	6	12	120	1,4	1	2	2	5	S,H,R,E	
					Teak	2	2	25							
600m	22°18'29.52	82°33'38.01	6:17 am	A,G,S	Sal	7	13	116	1,4	1	2	2	5	S,H,R,E	
					Baheda	1	7	108							
					Jamun	1	5	65							
900m	22°18'25.69	82°33'29.70	6:29 am	A,G,W	Sal	5	10	130	1,4	1	2	2	4	S,H,R,E	
					Teak	1	3	20							

**OCP GEVRA
HABITAT SURVEY DATASHEETS (winter season)**

Datasheet for habitat study at every 300 m on transect line

Date: 26/11/2018 **Cell-ID:** G 02 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat, Kamlesh **Trail-length:** 900 m

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)					Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %	Shrub %		Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°18'35.56	82°33'05.89	6:40a m	B,A,S	Teak	12	4	20		2	-	-	-	S,H,R,E		
					Sal	2	13	85								
300m	22°18'27.83	82°33'13.16	6:55a m	B	-	-	-	-	-	2	-	-	-	P,S,H		
600m	22°18'20.01	82°33'17.38	7:10a m	B,A	-	-	-	-	-	1	-	-	-	P,S,H		
900m	22°18'11.67	82°33'18.40	7:25a m	A,B	-	-	-	-	-	2	-	-	-	P,S		

**OCP GEVRA
HABITAT SURVEY DATASHEETS**

Datasheet for habitat study at every 300 m on transect line

Date: 27/11/2018 **Cell-ID:** G 03 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat, Kamlesh **Trail-length:** 900 m

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)				Vegetation composition				Human structure (500m radius)			
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3/ 4/ 5	Grass %	Herb %		Shrub %	Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°20'16.75	82°33'50.76	8:10am	W	Khamhar	10	12	130	4	1	2	5	1	E		
					Neem	3	10	45								
					Teak	1	6	25								
300m	22°20'22.34	82°33'50.84	8:22am	W	Kala serus	3	5	56	4	1	1	5	1	E		
					Karanj	2	4	35								
					Neem	1	8	60								
600m	22°20'24.69	82°33'50.93	8: 22am	W	Shisham	1	7	90	4	1	2	5	1	E		
					Ber	1	5	74								
					Bamboo	1	10	25								
900m	22°20'28.57	82°33'51.24	8: 22am	W	Khamhar	1	6	35	4	1	3	5	1	E		
					Baheda	1	13	200								
					Karanj	1	4	75								

OCP GEVRA
HABITAT SURVEY DATASHEETS

Datasheet for habitat study at every 300 m on transect line

Date: 27/11/2018 **Cell-ID:** G 04 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat **Trail-length:** 900 m

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)				Vegetation composition				Human structure (500m radius)			
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %		Shrub %	Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°18'34.40	82°33'58.58	4:45 pm	S,A	Sal	3	12	125	4	1	1	1	5	H,E,R,S		
					Teak	8	Regeneration									
300m	22°18'25.26	82°33'55.47	4:52 pm	A,B	Palash	2	8	225	4	2	1	1	0	E		
600m	22°18'17.22	82°33'49.66	5:02 pm	A	Kusum	1	6	230	4	1	1	1	0	E		
					Neem	1	5	75								
900m	22°18'09.49	82°33'50.24	5:20 pm	A	Tendu	1	4	105	4	1	1	1	0	E		
					Neem	1	7	95								
					Palash	1	4	92								

**OCP GEVRA
HABITAT SURVEY DATASHEETS**

Datasheet for habitat study at every 300 m on transect line

Date: 28/11/2018 **Cell-ID:** G 05 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat **Trail-length:** 900m

S.N	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)					Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number of Tree	Parameters		Observation 1 / 2 / 3/ 4/ 5	Grass (%)	Herb (%)	Shrub (%)		Regeneration (%)	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°20'00.63	82°37'29.59	7:15a m	W	Palash	10	5	25	4	6	5	5	2	E,R		
					Tendu	3	6	30								
					Mahua	2	3	20								
300m	22°20'05.21	82°37'31.78	7:35a m	W	Mahua	2	4	80	4	5	4	3	3	E		
					Palash	10	7	35								
					Char	3	4	80								
600m	22°20'07.39	82°37'34.24	7:50a m	W	Peepal	1	5	35	4	7	6	15	3	E		
					Mahua	6	6	40								
					Char	3	3	25								
900m	22°20'11.02	82°37'37.56	8:10a m	W	Senha	6	6	30	4	15	8	10	9	E,R		
					Char	3	5	75								
					Palash	1	4	50								

**OCP GEVRA
HABITAT SURVEY DATASHEETS**

Datasheet for habitat study at every 300 m on transect line

Date: 28/11/2018 **Cell-ID:** G 06 **Team:** Ashutosh Pandey, Amit Baghel, Vijay Bhagat **Trail-length:** 900 m

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)				Vegetation composition				Human structure (500m radius)			
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %		Shrub %	Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°18'34.40	82°33'58.58	4:30 pm	S,A	Koriya	2	7	55	4	1	1	1	5	H,E,R,S		
					Senha	1	5	40								
300m	22°18'25.26	82°33'55.47	4:50 pm	A,B	Senha	10	8	90	4	2	1	1	0	E		
					Koriya	20	6	65								
					Palash	2	4	50								
600m	22°18'17.22	82°33'49.66	5:05 pm	A	Senha	13	6	110	4	1	1	1	0	E		
					Koriya	2	5	45								
					Palash	1	6	55								
900m	22°18'09.49	82°33'50.24	5:20 pm	A	Koriya	8	4	85	4	1	1	1	0	E		
					Palash	2	7	95								
					Senha	1	4	92								

* Land cover – B (barren) / A (Agriculture) / G (Grassland) / W (Woodland) / S (Scrubland)

** Human structure – S (Settlement) / R (Metal road) / E (Electricity) / P (Pond) / W (Well / tube well)

*** Observation – 1. Illicit felling 2. Girdling 3. Dead tree 4. Living / Healthy 5. Diseased

ANEXXURE -II
(SUMMER SEASON SURVEY)
OCP Gevra
Datsheet for Bird status survey

Date: 27.03.2019**Cell-ID: G 01****Trail-length: 900m**

Team:- Manas Ujjaini(TA,/PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22 ⁰ 18'36.21	82 ⁰ 33'57.48	5:10Pm	Cattle egret	3	-	-	-	Flying
				Black drongo	6				Flying
				Indian roller	1	-	-	-	Chirping
300m	22 ⁰ 18'34.83	82 ⁰ 33'49.10	5:17pm	Red vented bulbul	1	-	-	-	Chirping
				Common hoop	2	18m	330 ^o	60 ^o	Perching
				Laughing dove	04	-	-	-	Chirping
600m	22 ⁰ 18'30.66	82 ⁰ 33'38.46	5:27pm	Purple sunbird	1	-	-	-	Chirping
				House crow	2	-	-	-	Chirping
				Indian roller	1	-	-	-	Chirping
				Black drongo	3	-	-	-	Flying
900m	22 ⁰ 18'27.03	82 ⁰ 33'30.00	5:39am	Indian silver bill	4	-	-	-	Flying
				Spotted dove	2	19m	320 ^o	70 ^o	Perching
				Red vented bulbul	3	-	-	-	Flying

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

				House crow	3	-	-	-	chirping
				Cattle egret	2	-	-	-	Flying

**OCP Gevra
Datasheet for Bird status survey**

Date: 28.03.2019

Cell-ID: G 02

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22 ⁰ 14'39.12	82 ⁰ 29'58.56	6:40am	Greater coucal	1	-	-	-	Chirping
				Red vented bulbul	4	-	-	-	Chirping
				Laughing dove	1	7m	20°	300°	Perching
				Purple sunbird	3	-	-	-	Chirping
				Jungle warbler	7	-	-	-	Chirping
				Indian roller	1	-	-	-	Chirping
				Indian magpie robin	2	-	-	-	Perching
				Rose ringed parakeet	2	-	-	-	flying
300m	22 ⁰ 14'05.92	82 ⁰ 30'06.58	6:55am	Laughing dove	3	-	-	-	flying
				Red vented bulbul	2	-	-	-	Chirping
				Black kite	1	-	-	-	Flying
				Green bee eater	3	7m	20°	300°	Flying

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

				Purple sunbird	2	-	-	-	Chirping
				Nightjar	3	-	-	-	Perching
600m	22°14'09.34	82°30'14.25	7:10am	Eurasian Collared dove	3	-	-	-	Perching
				Red vented bulbul	1	-	-	-	Perching
				Little swift	3	-	--	-	Perching
				Spotted dove	1	-	-	-	flying
				Paddy field pipit	2	-	-	-	Perching
900m	22°14'15.37	82°30'21.02	7:25 am	Black drongo	1	-	-	-	Flying
				Singing bus lark	1	-	-	-	Chirping
				Indian robin	1	-	-	-	Chirping
				Green bee eater	1	-	-	-	flying

OCP Gevra

Datasheet for Bird status survey

Date: 28.03.2019

Cell-ID: G03

Trail-length: 900m

Team:- Manas Ujjaini(TA,/PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo (FA)

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°18'03.58	82°30'15.12	7:45 Am	Indian robin	3	30m	110°	130°	Perching
				Purple sunbirds	4				Perching
				Collar dove	4	35m	200°	190°	Flying
				Red vented bulbul	1	-	-	-	Flying

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

				Laughing dove	8				Chirping
300m	22 ⁰ 18'08.68	82 ⁰ 30'08.32	7:52 Am	Spotted eagle	5	15m	190°	120°	Flying
				Laughing Dove	5	12m	190°	170°	Flying
				Sulfur bellied warbler	4	-	-	-	Flying
				Collar dove	3	-	-	-	Perching
				Spotted dove	3	-	-	-	Perching
600m	22 ⁰ 18'10.38	82 ⁰ 29'59.37	8:02 Am	Black drongo	2	-	-	-	Perching
				Indian Robin	1	-	-	-	Flying
				Indian silver bill	5	-	-	-	Flying
				Red vented bulbul	2	-	-	-	Chirping
				Purple sunbirds	3	-	-	-	Chirping
900m	22 ⁰ 18'09.76	82 ⁰ 29'51.61	8:20 Am	Black drongo	2	36m	110°	110°	Perching
				Red vented bulbul	2	30m	110°	40°	Chirping

OCP Gevra

Datasheet for Bird status survey

Date: 29.03.2019

Cell-ID: G04

Trail-length: 900m

Team:- Manas Ujjaini(TA,/PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Dhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22 ⁰ 18'30.75	82 ⁰ 33'14.35	4:40 pm	Jungle Babbler	2	30m	240°	260°	Flying
				Indian roller	1	-	-	-	Flying
				Common Hoopoe	1	-	-	-	Flying

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

300m	22 ⁰ 18'26.14	82 ⁰ 34'06.14	4:50 pm	Common myna	1	-	-	-	Flying
				Indian Robin	2	-	-	-	Flying
				Black drongo	4	-	-	-	Flying
600m	22 ⁰ 18'22.43	82 ⁰ 33'37.01	5:05 pm	Indian roller	1	-	-	-	Flying
				Indian robin	2	-	-	-	Flying
				Black drongo	2	-	-	-	Flying
900m	22 ⁰ 18'19.00	82 ⁰ 33'48.17	5:20 pm	Silver bill	1	18 m	102 ⁰	270 ⁰	perching
				Jungle Babbler	3	-	-	-	Chirping
				Common myna	1				

OCP Gevra

Datasheet for Bird status survey

Date: 30.03.2019

Cell-ID: G05

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22 ⁰ 16'30.60	82 ⁰ 33'55.53	7:45am	Spotted dove	1	-	-	-	Chirping
				Red vented bulbul	2	-	-	-	Chirping
				Cattle egret	2	-	-	-	Flying
				Ashy prinia	3	-	-	-	Flying
				Black drongo	2	-	-	-	Flying
				Yellow vented lapwing	6	-	-	-	Flying
				Jungle babbler	6	-	-	-	Chirping
				Eagle	1	-	-	-	Perching
300m	22 ⁰ 16'34.09	82 ⁰ 34'03.03	7:55am	House crow	1	-	-	-	Flying
				Laughing dove	1	-	-	-	Flying
				Common hoopoe	1	-	-	-	Flying
				Red vented bulbul	2	-	-	-	Flying
				Jungle babbler	15	-	-	-	Flying
600m	22 ⁰ 16'34.42	82 ⁰ 34'11.78		Greater Cauca	1	24y	215°	245°	Perching

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

			8:12Am	Plum headed parakeet	1	-	-	-	Flying
				Common myna	2	-	-	-	Chirping
				Purple sunbird	2	28Y	175°	210°	Perching
				Scaly breasted munia	1	-	-	-	Chirping
750m	22°16'34.59	82°34'14.77	8:20 Am	Singing buslark	3	18Y	170°	200°	Perching
				Small parakeet	1	-	-	-	Flying
				Red vented bulbul	2	-	-	-	Chirping
				Indian roller	1	-	-	-	Perching

OCP Gevra

Datasheet for Bird status survey

Date: 30.03.2019

Cell-ID: G06

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

GPS at every 300 m				Sighting information					
S.N.	Latitude	Longitude	Time	Species	Number	Perp. Dist.	Bearing		Observation
							A	T	
0m	22°18'04.55	82°29'56.88	8:20am	Indian Roller	5	35m	30°	280°	Perching
				Indian Robin	1	20m	30°	280°	Perching
				Indian silver bill	3	15m	210°	280°	Perching
				Spotted dove	2				Flying
				Red vented bulbul	3	-	-	-	Chirping
				Green bee eater	1	15m	210°	280°	Perching
				Jungle babbler	2	-	-	-	Flying
				Parakeet	5	-	-	-	Flying
				Red vented bulbul	1				Chirping
300m	22°18'03.37	82°30'04.43	8:29am	Indian silver bill	2	-	-	-	Flying
				Parakeet	1	-	-	-	Flying
				Laughing dove	4	-	-	-	Chirping
				Purple sunbirds	2	-	-	-	Chirping
				Jungle babbler	5	-	-	-	Flying
				Red vented bulbul	1				Chirping
600m	22°18'00.26	82°30'13.45	8:40Am	Laughing dove	1	25m	130°	190°	Perching

WILDLIFE AND AVIFAUNA CONSERVATION PLAN OF OCP GEVRA

				Indian Roller	1	-	-	-	Flying
				Black drongo	3	-	-	-	Chirping
				Purple sunbird	3	28Y	175°	210°	Perching
				Singing buslark	2	-	-	-	Chirping
				Red vented bulbul	2	-	-	-	Chirping
				Indian roller	2	-	-	-	Perching

OCP Gevra
Datasheet for Bird status survey (March 2019)

Date: 27.03.2019

Cell-ID: G 01

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)				Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Nu m.	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %		Shrub %	Regeneration %
								H (m)	G (cm)						
0m	22°18'36.21	82°33'57.48	5:10Pm	B,A,G	Sal	6	12	97	4	-	-	-	-	S,H,R,E	
300m	22°18'34.83	82°33'49.10	5:17pm	A,G,S	Sal	5	15	110	1,4	1	1	2	3	S,H,R,E	
					Teak	2	2	25							
600m	22°18'30.66	82°33'38.46	5:27pm	A,G,S	Sal	7	13	116	1,4	1	2	2	5	S,H,R,E	
900m	22°18'27.03	82°33'30.00	5:39pm	A,G,W	Sal	6	8	74	1,4	1	2	2	4	S,H,R,E	
					Teak	1	3	20							

SFRTI 2019

OCP Gevra
Datasheet for Bird status survey
Datasheet for habitat study at every 300 m on transect line

Date: 28.03.2019

Cell-ID: G 02

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)				Vegetation composition				Human structure (500m radius)			
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3/ 4/ 5	Grass %	Herb %		Shrub %	Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°18'39.12	82°29'58.56	6:40am	B,A,S	Kekat	3	10	100	4	1	2	10	5	R		
					Char	2	3	35						R		
					Saja	5	6	70						R		
300m	22°18'05.92	82°30'06.58	6:55am	B	Saja	3	6	75	4	1	2	2	4	R		
					Kekat	2	3	65						R		
					Sal	6	12	90						R		
600m	22°18'09.34	82°30'14.25	7:10am	B,A	Senha	3	3	25	4	1	2	4	5	R		
					Sal	4	10	70								
900m	22°18'15.37	82°30'21.02	7:25am	A,B	Sal	6	8	70	4	1	-	2	5	REP		
					Koriya	2	3	35						Pond		

OCP Gevra
Datasheet for Bird status survey
Datasheet for habitat study at every 300 m on transect line

Date: 28.03.2019

Cell-ID: G 03

Trail-length: 900m

Team:- Manas Ujjaini(TA,/PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)					Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3/ 4/ 5	Grass %	Herb %	Shrub %		Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°18'03.58	82°30'15.12	7:45 Am	B,W,S	Mahua	4	5	35	4	3	3	4	4	R		
					Char	6	4	35					R			
					Saja	4	7	145					R			
300m	22°18'08.68	82°30'08.32	7:52 Am	B	Mahua	4	7	65	4	2	3	4	5	R		
					Saja	10	7	85					R			
					Sal	3	6	35					R			
600m	22°18'10.38	82°29'59.37	8:02 Am	B,G	Senha	3	3	25	4	1	2	3	3	P		
					Sal	4	10	145								
					Tendu	3	6	45								
900m	22°18'09.76	82°29'51.61	8:20 Am	B,W	Sal	6	8	70	4	1	-	2	5	R,P		
					Koriya	2	3	35								

OCP Gevra
Datasheet for Bird status survey
Datasheet for habitat study at every 300 m on transect line

Date: 29.03.2019

Cell-ID: G 04

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), ,Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)					Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %	Shrub %		Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
<i>0m</i>	22°18'03.58	82°30'15.12	7:40 Am	<i>B</i>	-	-	-	-	-	-	-	-	-	-		
<i>300m</i>	22°18'08.68	82°30'08.32	7:48 Am	<i>B</i>	<i>Kusum</i>	2	7	165	4	2	3	4	5	R		
<i>600m</i>	22°18'10.38	82°29'59.37	8:00Am	<i>B</i>	-	-	-	-	-	-	-	-	-	-		
<i>900m</i>	22°18'09.76	82°29'51.61	8:13 Am	<i>B</i>	-	-	-	-	-	-	-	-	-	<i>P,S</i>		

OCP Gevra
Datasheet for Bird status survey
Datasheet for habitat study at every 300 m on transect line

Date: 30.03.2019

Cell-ID: G 05

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)					Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %	Shrub %		Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°16'30.60	82°33'55.53	7:45am	W	Palash	3	2	35	1,4	-	-	-	2	-		
					Senha	2	1.5	25								
					Koriya	3	2	30								
300m	22°16'34.09	82°34'03.03	7:55am	W	Palash	2	7	165	1,4	2	3	4	3	R		
					Koriya											
					Senha											
600m	22°16'34.42	82°34'11.78	8:12Am	W	Tendu	-	-	-	1,4	-	-	-	2	-		
					Koriya											
750m	22°16'34.59	82°34'14.77	8:20 Am	B	-	-	-	-	1, 4,3	-	-	-	-	P,S		

OCP Gevra
Datasheet for Bird status survey
Datasheet for habitat study at every 300 m on transect line

Date: 30.03.2019

Cell-ID: G 06

Trail-length: 900m

Team:- Manas Ujjaini(TA./PI), Amit Kumar Baghel (JRF), Kamlesh Kumar Dadsena (JRF), Vijay Kumar Bhagat (JRF), Jeevan Shirin Toppo(SRF),Rajesh Kumar Toppo(FA)

S.N.	GPS Location		Time (hrs.)	Land-cover (100m radius)	Vegetation (3 dominant species)					Vegetation composition				Human structure (500m radius)		
	Lat.	Long.			B / A / G / W / S	Tree spp.	Number	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %	Shrub %		Regeneration %	S/H/R/E/W/P
								H (m)	G (cm)							
0m	22°18'04.55	82°29'56.88	8:20am	W	Sal	6	12	95	1,4	2%	3%	4%	4%	-		
					Char	3	5	55								
					Saja	2	6	85								
300m	22°18'03.37	82°30'04.43	8:29am	W	Mahua	2	7	165	1,4	1	3%	4%	3%	p		
					Saja	2	4	75								
					Char	2	3	40								
600m	22°18'00.26	82°30'13.45	8:40Am	W	Sal	12	7	141	1,4	-	-	-	2	-		
					Mahua	3	8	95								
					Char	6	5	45								

* Land cover – B (barren) / A (Agriculture) / G (Grassland) / W (Woodland) / S (Scrubland)

** Human structure – S (Settlement) / R (Metal road) / E (Electricity) / P (Pond) / W (Well / tube well)

*** Observation – 1. Illicit felling 2. Girdling 3. Dead tree 4. Living / Healthy 5. Diseased

ANNEXURE – III

DETAILS OF AVI-FAUNA: HABITAT AND NESTING PATTERN

- Earlier 26 species of birds has been recorded from Core and Buffer zone of OCP Gevra and mentioned in the EIA-EMP report of OCP Gevra. The checklist of these species are as follows:

Checklist of Avifauna on the Basis of EIA-EMP report of OCP Gevra

S.No	Common Name	Zoological Name	Wildlife (Protection) Act	IUCN Status
1	Cattle Egret	<i>Bubulcus ibis</i>	Schedule-IV, Section,11	LC
2	Indian Pond Heron	<i>Ardeola grayii</i>	Schedule-IV, Section,11	LC
3	Black Kite	<i>Milvus migrans</i>	Schedule-IV, Section,11	LC
4	Spotted Dove	<i>Streptopelia chinensis</i>	Schedule-IV, Section,11	LC
5	Common Kingfisher	<i>Alcedo atthis</i>	Schedule-IV, Section,11	LC
6	White-Throated Kingfisher	<i>Halcyon smyrensis</i>	Schedule-IV, Section,11	LC
7	Green Bee-eater	<i>Merops orientalis</i>	Schedule-IV, Section,11	LC
8	Common Myna	<i>Acridotheres tristis</i>	Schedule-IV, Section,11	LC
9	Asian Pied Starling	<i>Sturnus contra</i>	Schedule-IV, Section,11	LC
10	Red-Wattled Lapwing	<i>Venellus indicus</i>	Schedule-IV, Section,11	LC
11	Rose Ringed Parakeet	<i>Psittakula krameri</i>	Schedule-IV, Section,11	LC
12	Red-Vented Bulbul	<i>Pycnonotus cafer</i>	Schedule-IV, Section,11	LC
13	Indian Roller	<i>Coracias benghalensis</i>	Schedule-IV, Section,11	LC
14	Common Babbler	<i>Turdoides caudatus</i>	Schedule-IV, Section,11	LC
15	Crow Pheasant	<i>Centropus sinensis</i>	Schedule-IV, Section,11	LC
16	Black Drango	<i>Dicrurus adsimilis</i>	Schedule-IV, Section,11	LC
17	House Swift	<i>Apus affinis</i>	Schedule-IV, Section ,11	LC
18	House Crow	<i>Carvus splendens</i>	Schedule-V, Section,11	LC
19	Larger Egret	<i>Egretta alba</i>	Schedule-IV, Section,11	LC
20	Brahminy Kite	<i>Haliastur indus</i>	Schedule-IV, Section,11	LC
21	Common Woodpecker	<i>Dinopium benghalensis</i>	Schedule-IV, Section,11	LC
22	Common Hoopoe	<i>Upupa epops</i>	Schedule-IV, Section,11	LC
23	Rufous Treepie	<i>Dendrocitta vagabond</i>	Schedule-IV, Section,11	LC
24	Little Ringed Plover	<i>Chardrius dubius</i>	Schedule-IV, Section,11	LC
25	Jungle Crow	<i>Carvus macrorhynchos</i>	Schedule-IV, Section,1	LC
26	Baya Weaver	<i>Ploceus philippinus</i>	Schedule-IV, Section,11	LC

Checklist of Avifauna on the Basis of First Seasonal Field Survey by SFRTI

S. No.	Name of the birds	Scientific Name	IUCN status	ZSI status
1	Ashy Prinia	<i>Prinia socialis</i>	LC	Presence
2	Asian Open Bill Stork	<i>Anastomus oscitans</i>	LC	Presence
3	Asian Pied Starling	<i>Sturnus contra</i>	LC	Presence
4	Bank Myna	<i>Acridotheres ginginianus</i>	LC	Presence
5	Barn Owl	<i>Tyto alba</i>	LC	Presence
6	Common Swallow	<i>Hirundo rustica</i>	LC	Presence
7	Black Drongo	<i>Dicrurus macrocercus</i>	LC	Presence
8	Black Kite	<i>Milvus migrans</i>	LC	Presence
9	Bramhiny Starling	<i>Sturnia pagodarum</i>	LC	Presence
10	Cattle Egret	<i>Bubulcus ibis</i>	LC	Presence
11	Red Collored Dove	<i>Streptopelia tranquebarica</i>	LC	Presence
12	Common Hoopoe	<i>Upupa epops</i>	LC	Presence
13	Common Kingfisher	<i>Alcedo atthisp</i>	LC	Presence
14	Common Myna	<i>Acridotheres tristis</i>	LC	Presence
15	Common Tailor Bird	<i>Orthotomus sutorius</i>	LC	Presence
16	Crested Serpent-eagle	<i>Spilornis cheela</i>	LC	Presence
17	Eurasian Collared dove	<i>Streptopelia decaocto</i>	LC	Presence
18	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	LC	Presence
19	Large Egret	<i>Ardea alba</i>	LC	Presence
20	Greater coucal	<i>Centropus sinensis</i>	LC	Presence
21	Green bee-eater	<i>Merops orientalis</i>	LC	Presence
22	Greenish Warbler	<i>Phylloscopus trochiloides</i>	LC	Absence
23	House Crow	<i>Corvus splendens</i>	LC	Presence
24	House Sparrow	<i>Passer domesticus</i>	LC	Presence
25	Hawk Eagle	<i>Nisaetus cirrhratus</i>	LC	Presence
26	Indian Robin	<i>Saxicoloides fulicata</i>	LC	Presence
27	Indian Roller	<i>Coracias benghalensis</i>	LC	Presence
28	Indian Silver Bill	<i>Euodice malabarica</i>	LC	Absence
29	Indian Spotted Dove	<i>Spilopelia chinensis</i>	LC	Presence
30	Indian Spotted eagle	<i>Clanga hastata</i>	VU	Absence
31	Jungle Babbler	<i>Turdoides striata</i>	LC	Presence
32	Jungle Owlet	<i>Glaucidium radiatum</i>	LC	Presence
33	Jungle Prinia	<i>Prinia sylvatica</i>	LC	Presence
34	Laughing Dove	<i>Streptopelia senegalensis</i>	LC	Presence
35	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	LC	Presence
36	Little Cormorant	<i>Microcarbo niger</i>	LC	Presence
37	Little Egret	<i>Egretta garzetta</i>	LC	Presence
38	Little Swift	<i>Apus affinis affinis</i>	LC	Presence
39	Oriented Magpie Robin	<i>Copsychus saularis</i>	LC	Presence
40	Common Indain Nightjar	<i>Caprimulgus asiaticus</i>	LC	Presence

41	Paddy Field Pipit	<i>Anthus rufulus</i>	LC	Presence
42	Plain Prinia	<i>Prinia inornata</i>	LC	Presence
43	Plum Headed Parakeet	<i>Psittacula cyanocephala</i>	LC	Presence
44	Purple Sunbird	<i>Certhia asiaticus</i>	LC	Presence
45	Red Vented Bulbul	<i>Pycnonotus cafer</i>	LC	Presence
46	Rose Ringed Parakeet	<i>Psittacula krameri</i>	LC	Presence
47	Scaly Breasted Munia	<i>Lonchura punctulata</i>	LC	Presence
48	Singing bush lark	<i>Mirafra cantillans</i>	LC	Presence
49	Alexandrine Parakeet	<i>Psittacula eupatria</i>	NT	Presence
50	Spotted Dove	<i>Streptopelia chinensis</i>	LC	Presence
51	Steppe Eagle	<i>Aquila nipalensis</i>	EN	Absence
52	Sulfur Bellied Warbler	<i>Phylloscopus griseolus</i>	LC	Absence
53	Variable Wheatear	<i>Oenanthe picata</i>	LC	Absence
54	White Rumped Munia	<i>Lonchura striata</i>	LC	Presence
55	White Breasted Kingfisher	<i>Halcyon smyrnensis</i>	LC	Presence
56	Yellow Wattled lapwing	<i>Vanellus malabaricus</i>	LC	Presence

Characterization of bird species according to their nesting pattern

1. **Scrape Nesting Birds:** - The simplest nest construction is the Scrape, which merely a shallow depression in soil or vegetation.

Bird species found:

- a) Red Wattled Lapwing
- b) Little Ringed Plover

2. **Burrow Nesting Birds:** - Soil plays a different role in the burrow nest: the eggs and young in most cases the incubating parent birds are sheltered under the earth.

Bird species found :

- a) Little Swift
- b) Barn Swallow
- c) Green Bee eater
- d) White throated Kingfisher
- e) Lesser pied Kingfisher

3. **Cavity Nesting Birds:-** The cavity nest is a chamber, typically in living or dead wood, but sometimes in the trunks of tree ferns or large cacti, including

saguaro. In tropical areas, cavities are sometimes excavated in arboreal insect nests.

Bird species found:-

- a) Common Myna (Secondary cavity nester)
- b) Lesser Golden backed Woodpecker (Primary cavity nester)
- c) House Sparrow (Secondary cavity nester)
- d) Bramhiny Myna (Secondary cavity nester)
- e) Indian robin (Secondary cavity nester)
- f) Indian roller (Secondary cavity nester)
- g) Rose ringed Parakeet (Secondary cavity nester)
- h) Asian Pied Starling (Secondary cavity nester)
- i) Common Hoopoe (Primary cavity nester)
- j) Variable wheatear (Secondary cavity nester)
- k) Jungle Owlets (Secondary cavity nester)
- l) Barn Owl (Secondary cavity nester)
- m) Plum Headed Parakeet (Secondary cavity nester)
- n) Bank Myna (Secondary cavity nester)

4. **Cup Shaped Nesting Birds:** - The cup nest is smoothly hemispherical inside, with a deep depression to house the eggs. Most are made of pliable materials including grasses though a small number are made of mud or saliva.

Bird species found:

- a) Sulphur Bellied Warbler
- b) Indian Spotted Dove
- c) Black Drongo
- d) Common Tailor Bird
- e) House Crow
- f) Ashy Prinia or Ashy Wren Warbler
- g) Greenish Warbler
- h) Jungle Babbler
- i) Laughing Dove

- j) Common Babbler
- k) Eurasian Collared Dove
- l) Paddy field Pipit
- m) White Rumped Munia
- n) Eurasian golden Oriole

5. **Saucer or Plate form nest:** - The saucer or plate nest, though superficially similar to a cup nest, has at most only a shallow depression to house the eggs.

Bird species found

- a) Greater Coucal / Crow Pheasant

6. **Platform Nesting Birds:** - The platform nest is a large structure, often many times the size of the (typically large) bird which has built it. Depending on the species, these nests can be on the ground or elevated.

Bird species found

- a) Indian pond Heron
- b) Black Kite
- c) Cattle Egret
- d) Little Cormorant (mostly nest beside Indian pond heron and Little Egret in colonies)
- e) Larger Egret / Greater Egret
- f) Bramhiny Kite
- g) Common hawk Eagle
- h) Asian Openbill Stork
- i) Little Egret
- j) Jungle Crow

7. **Pendant Nesting Birds:** - The pendant nest is an elongated sac woven of pliable materials such as grasses and plant fibers and suspended from a branch.

Bird species found

- a) Common Kingfisher
- b) Purple Sunbird

- c) Baya Weaver
- d) Indian Silverbill

8. **Sphere Shaped Nesting Birds:** - The Sphere nest is roundish structure; it is completely enclosed, except for a small opening which allows access.

Bird species found

- a) Red Vented Bulbul
- b) Scaly Breasted Munia
- c) Plain Prinia

ANNEXURE IV

REPTILES

- Reptiles has not been directly sighted / Recorded during the seasonal survey of OCP Gevra.
- As per the EIA/EMP record they enlisted 4 species of reptiles at core and buffer area of OCP Gevra.
- On the basis of EIA/EMP report the table of reptiles are shown below:

S.No	Common Name	Zoological Name	Wildlife (Protection) Act	IUCN Red List Status
1	Garden Lizard	<i>Calotes versicolor</i>	Schedule – IV, Section,12	LC
2	Smooth Water Snake	<i>Enhydris enhydris</i>	Schedule – IV, Section,12	LC
3	Olive keel back snake	<i>Natrix piscator</i>	Schedule – IV, Section,12	LC
4	Common Krait	<i>Bungarus caeruleus</i>	Schedule – IV, Section,12	LC

1. Common Name: Garden Lizard

Zoological Name: *Calotes versicolor*

Family: Agamidae

Conservation Status: least concern

Description: It measures over 10 cm (3.9 in) in length snout-to-vent. Total length including the tail is up to 37 cm (14.5 in). Two small groups of spines perfectly separated from each other, above each tympanum. Dorsal crest moderately elevated on the neck and anterior part of the trunk, extending on to the root of the tail in large individuals, and gradually disappearing on the middle of the trunk in younger ones. No fold in front of the shoulder, but the scales behind the lower jaw are much smaller than the others, gular sac not developed.

Habitat: The Garden Lizard is an arboreal (found on trees) species and mostly prefers scrubland and undergrowth. It is excellently camouflaged in these habitats and can make itself almost invisible by staying very still. But if the camouflage fails, this feisty lizard can make a quick getaway with considerable speed, and being an excellent climber; can be up a tree in a jiffy!

Feeding: Changeable Lizards eat mainly insects and small vertebrates, including rodents and other lizards. Although they have teeth, these are designed for gripping prey and not tearing it up. So prey is swallowed whole, after it is stunned by shaking it about.

Breeding: In the breeding season, which starts around April and ends in September, the head of the male turns a conspicuous red when excited. In fact, its shoulders and parts of the forelegs too turn scarlet red. This is why this lizard is sometimes also called ‘bloodsucker’!



Male



Female

2. Common Name: Smooth Water Snake

Zoological Name: *Enhydris enhydris*

Family: Homalopsidae

Conservation Status: Least concern

Description: This snake is best identified by the two pale stripes running down the full length of the body and tail on either side of the vertebral line: these two stripes converge on the crown. The body is medium brown to greenish brown, and the head and neck is generally more olive coloured than the body. The belly is pale, with a thin brown line running down the middle. The head is much narrower than the thickset body, and is quite flattened. The snout is squarish. The eyes are small and located towards the top of the head, and the valvular nostrils are positioned above the snout. The tail is relatively short and tapers quickly.

Habitat: The Rainbow Water Snake *Enhydris enhydris* inhabits freshwater habitats including marshlands, rural ponds and rice paddies.

Feeding: The species is mainly a fish eater, but reportedly also consumes amphibians and other small vertebrates.



3. Common Name: Olive Keel Back Snake**Zoological Name:** *Natrix piscator***Family:** Natricidae**Conservation Status:** Least concern

Description: This snake's eyes are rather small and shorter than its distance from the nostril in the adult. Its rostral scale is visible from above. The internasal scales are much narrowed interiorly and sub triangular, with the anterior angle truncated and as long as the prefrontal scales. The frontal scale is longer than its distance from the end of the snout, and as long as the parietals or a little shorter. The loreal is nearly as long as it is deep. There is one preocular and three (rarely four) post-oculars. Its temporals are 2+2 or 2+3. There are normally nine upper labials, with the fourth and fifth entering the eye and five lower labials in contact with the anterior chin-shields, which are shorter than the posterior. Scales are arranged in 19 rows, strongly keeled, with outer rows smooth. Ventrals are at 125–158, anal divided, with subcaudals at 64–90. Coloration is very variable, consisting of dark spots arranged quincuncially and often separated by a whitish network, or of black longitudinal bands on a pale ground, or of dark cross bands, with or without whitish spots. Two oblique black streaks, one below and the other behind the eye, are nearly constant, and lower parts white, with or without black margins to the shields

Habitat: Lives around any type of water body including lakes, river, pond, and sewer line, logged water in agricultural lands, wells; can survive in moist surrounding without any water supply. Activity both diurnal and nocturnal, Behaviour very alert, active and aggressive.

Feeding: Feeds mainly on fishes, frogs and toads. Also feeds on rodents, other snakes, rejected meat pieces etc. Juveniles feed on tadpoles also. Majorly fish feeder (77%). *piscator* showed significantly higher feeding frequencies in males and less in females than expected.

Breeding: Reproduction - Mating is from winter starting to middle of summer. Female laid up to 90 eggs in dry and moist place. Maximum hatchlings observe during late June to July.



4. Common Name: Common Krait

Zoological Name: *Bungarus caeruleus*

Family: Elapidae

Description: The average length is 0.9 m (3.0 ft), but they can grow to 1.75 m (5 ft 9 in). Males are longer, with proportionately longer tails. The head is flat and the neck hardly evident. The body is cylindrical, tapering towards the tail. The tail is short and rounded. The eyes are rather small, with rounded pupils, indistinguishable in life. The head shields are normal, with no loreals; four shields occur along the margin of the lower lip; the third and fourth supraoculars touch the eye. The scales are highly polished, in 15-17 rows; the vertebral row is distinctly enlarged and hexagonal. Ventrals number 185-225 and caudals 37-50, entire.

Habitat: Its range comprises a wide variety of habitats. It is found in fields and low scrub jungle, as well as inhabited areas. It is known to take up residence in termite mounds, brick piles, rat holes, even inside houses. It is frequently found in water or in proximity to a water source.

Feeding: The Common Krait feeds primarily on other snakes, including: "blind worms" (snakes of the genus *Typhlops*); and cannibalizes on other kraits, including the young. It also feeds on small mammals (such as rats, and mice), lizards and frogs. The young are known to eat arthropods.

Reproduction: oviparous



ANNEXURE V

MAMMALS

- Mammals has not been directly sighted / Recorded during the first seasonal survey of OCP Gevra except jackal that was sighted in core area of OCP Gevra.
- As per the EIA/EMP record they enlisted 12 species of Mammals at core and buffer area of OCP Gevra.
- On the basis of EIA/EMP report the table of Mammals are shown below:

S.No	Common Name	Zoological Name	Wildlife (Protection) Act	IUCN Status
1	5 Strip Palm squirrel	<i>Funambulus pennanti</i>	Schedule-V, Section 3	DD
2	Indian Fulvous - Bat	<i>Rousettus leschenaulti</i>	Schedule-V, Section 3	LC
3	Indian Field Mouse	<i>Mus booduga</i>	Schedule-V, Section, 5	LC
4	Common House Rat	<i>Mus rattus rattus</i>	Schedule-V, Section, 6	LC
5	Bandicoot Rat	<i>Bandicoota bengalensis</i>	Schedule-V, Section, 6	LC
6	Indian Grey mongoose	<i>Herpestes edwardsi</i>	Schedule-IV, Section, 6A	LC
7	Common Languor	<i>Presbytis entellus</i>	Schedule-II, Part-I, Section 1-A	LC
8	Rhesus Macaque	<i>Macaca mulatta</i>	Schedule -II, Part-I, Section 17-A	LC
9	Jackal	<i>Canis aureus</i>	Schedule-II, Part –II, Section 2-B	LC
10	Indian Fox	<i>Vulpes bengalensis</i>	Schedule-II, Part-II, section, I-B	LC
11	Wild Pig	<i>Sus scrofa</i>	Schedule-III, Section, 19	LC
12	Black napped Hare	<i>Lepus nigricollis</i>	Schedule-IV, Section, 3A	LC

1. Common Name- The Five Striped Palm Squirrel

Zoological Name- *Funambulus pennantii*

Family-Sciuridae

Conservation Status- Least Concern

Habitat- The northern **Palm Squirrel** is a very adaptable species. It occurs in tropical and subtropical dry deciduous forest, montane forests to altitudes of 4,000 m (13,123 ft), scrublands, plantations, grasslands, arable land, rural gardens and urban areas.

SFRTI 2019

Physical Description- Northern Palm Squirrels are about the size of rats and have a bushy tail slightly shorter than the body. Their back is a grizzled grey-brown colour with five conspicuous white stripes, three of which run from head to tail. The two outer stripes run from the forelegs to the hind legs only. The belly is creamy white and the tail is covered with long interspersed black and white hairs. The ears are small and triangular.

Reproduction- Breeding takes place in grass nests during autumn. Litters of two or three are common. The young are weaned after about ten weeks and are sexually mature at nine months.



2. Common Name- Indian Fulvous -Bat

Zoological Name- *Rousettus leschenaultii*

Family- Pteropodidae

Conservation Status - Least Concern

Habitat- It ranges from arid areas to the hot humid forests, extending from sea level to 1372 metres (Bates & Harrison, 1997). This species has a wide habitat tolerance. Generally, they roost in caves during the day, also in deserted buildings and disused tunnels. Occasionally, solitary males may be found in the dense foliage of a large-leafed tree or palm (Bates & Harrison, 1997). This bat species is found in a variety of habitats ranging from tropical forests to urban environments. It roosts in caves, old abandoned buildings and tunnels, and other

such structures. A colony of this animal can contain up to several thousand individuals. It feeds on fruits, nectar and flowers.

Physical Description- Dorsal fur is fulvous brown, including crown of the head, back, flanks, and throat. Ventral fur is grey or brown-grey, more greyish in the median area. Average forearm length 80.6mm (75-86mm) (Bates & Harrison, 1997). In some areas of India this species can undergo two pregnancies in a year. Young are born at 12g, and suckling may last 35-40 days. Females may attain sexual maturity at 5 months, males at 15 months (Bates & Harrison 1997).



3. Common Name- Indian Field Mouse

Zoological Name- *Mus booduga*

Family- Muridae

Conservation Status- Least Concern

Habitat- This species is common in rice fields and other irrigated croplands in India. It occurs in tropical and subtropical dry deciduous forests (Molur *et al.* 2005). In Myanmar, it lives in drier, sandy habitat and scrubby areas, and is a serious pest in cropland areas (such as peanut crops).

Physical Description- Head and body length is 7 cm. Tail is 6 cm. Upper parts a glossy light brown fading to grayish white or white on the ventral surface. There is often a light brown band or splotch across the chest. Large rounded ears set on the head. Muzzle rather pointed. Tail is dark above, and paler below. Upper incisors curve backwards. The Little Indian Field Mouse is a small-sized rodent.

SFRTI 2019

Dorsum is buff to light grey in colour and the venter is white or pale grey. Tail length is almost equal to head-body length. Ear pinnae are large, circular and prominent.

Threats- Habitat loss and degradation due to expansion of agricultural activities, livestock grazing, non-farm activities, accidental mortality due to poisoning for hunting, pest control practices, and natural disasters such as, drought, storms, flooding, habitat change, and persecution by domestic predators, harvested for local consumption purposes.



4. Common Name: Black Rat

Zoological Name: *Rattus rattus*

Family: Muridae

Conservation Status: Least Concern

Description: The Black Rat originated in India and Southeast Asia, and spread to the Near East and Egypt. The black rat is again largely confined to warmer areas, having been supplanted by the brown rat (*Rattus norvegicus*) in cooler regions and urban areas. In addition to being larger and more aggressive, the change from wooden structures and thatched roofs to bricked and tiled buildings favored the burrowing brown rats over the arboreal black rats. In addition, brown rats eat a wider variety of foods, and are more resistant to weather extremes.

Habitat: Black Rats adapt to a wide range of habitats. In urban areas they are found around warehouses, residential buildings, and other human settlements. In urban areas, they prefer to live in dry upper levels of buildings, so they are

commonly found in wall cavities and false ceilings. In the wild, black rats live in cliffs, rocks, the ground, and trees. They are great climbers and prefer to live in trees, such as pines and palm trees. Their nests are typically spherical and made of shredded material, including sticks, leaves, other vegetation, and cloth. Black rats are also found around fences, ponds, riverbanks, streams, and reservoirs.

Reproduction: They often meet and forage together in close proximity within and between sexes. Rats tend to forage after sunset.



5. Common Name: Field Rat / Bandicoot Rat

Zoological Name: *Bandicota bengalensis*

Family: Muridae

Conservation Status: Least Concern

Description: The lesser Bandicoot and two other species are nocturnal or most active at twilight. They construct burrows to nest and bear their litters. The number of bandicoot babies can range from two to 18. Their staple diet is grains, fruit, and invertebrates. They are prone to destroying cultivated crops in fields. Of all the three species, the lesser bandicoot is an especially aggressive burrower and has been reported to make tunnels in concrete cellars.

Habitat: These rats are also known to inhabit houses in villages and are particularly aggressive when threatened. The controls are done by mechanical (mouse trap etc.), rodenticides and biological control (by introducing rodent diseases etc.)

Reproduction: Female can have up to 10 litters. Young (10-12 per litter) are born blind and naked. Young reach sexual maturity around 60 days after birth. Lifespan of adults is about 8–9 months.



6. Common Name: Common Mongoose

Zoological Name: *Herpestes edwardsi*

Family: Herpestidae

Conservation Status: Least Concern

Description: The Indian Grey Mongoose or Common Grey Mongoose (*Herpestes edwardsi*) is a mongoose species mainly found in West Asia and on the Indian subcontinent. In North Indian languages (Hindi/Punjabi) it is called Nevlaa. The grey mongoose is commonly found in open forests, scrublands and cultivated fields, often close to human habitation. It lives in burrows, hedgerows and thickets, among groves of trees, and takes shelter under rocks or bushes and even in drains. It is very bold and inquisitive but wary, seldom venturing far from cover. It climbs very well. Usually found singly or in pairs. It preys on rodents, snakes, birds' eggs and hatchlings, lizards and variety of invertebrates.

Habitat: They appear to be able to occupy a wide variety of habitats but preferring open types. These include grasslands, open areas, rocky patches, scrub, semi-desert, cultivated fields and other disturbed areas, areas of thickets,

bushy vegetation, dry secondary forest, thorn forest, forest edges, and also near human settlement.

Reproduction: The Indian Grey Mongoose mates between March and October, it breeding two to three times each year. The gestation period lasts for 60 to 65 days; the female gives birth to two to four offsprings.



7. Common Name: Indian Langur / Gray Langur

Zoological Name: *Presbytis entellus*

Family: *Cercopithecidae*

Conservation Status: Least Concern

Description: Hanuman Langurs have brownish gray fur, with a tinge of red on their dorsal surface and white fur on their ventral surface. Their feet, hands, face, and ears are black, and their face is framed with white fur. Their tail is usually longer than the body, with a white tip. Infants are born with fine, dark brown or black fur. Their skin is pale, but darkens to black by three months old. They are sexually dimorphic, with males being slightly larger than females. Males weigh about 13 kg and females weigh about 9.9 kg. Excluding their tail, males are about 64 cm long, and females are about 58.5 cm long. Male Hanuman langur tails average 91.0 cm and those of females average 86 cm. They have 32 teeth and their dental formula is $2/2 \ 1/1 \ 2/2 \ 3/3$.

Habitat: Hanuman Langurs are found in a wide variety of habitats, ranging from arid to tropical evergreen rainforests. They are also known to live in close proximity to humans, including the city of Jodhpur, India, which has over a million inhabitants (Gron, 2008). They are forest dwelling primates in India but are found only in forest openings in Bangladesh (Farid Ahsan and Reza

Khan, 2006). The amount of rainfall varies greatly throughout their range (10 to 200 cm). Hanuman langurs are able to withstand a wide range of temperatures, from -7°C to 46°C , and spend about 80% of their time on the ground. (Carlson, 2004; Farid Ahsan and Reza Khan, 2006; Gron, 2008).

Reproduction: Hanuman Langurs live in both polygynous and polygynandrous groups and unpaired males form bachelor groups. Male dominance is usually determined through fighting, whereas younger, sexually mature females are higher ranking, and decrease in rank with age. Females advertise estrous via head shaking and presenting the anogenital region to potential mates. Females continue mating during gestation to prevent infanticide by dominant males. ("Old World monkeys I", 2004; Gron, 2008).

Breeding season: Hanuman Langurs breed once annually. Varies by locations, but often falls between July to October.

Food Habits: Hanuman Langurs are primarily herbivores. Their diet is composed of leaves (52-61%), fruits (15-25%), flowers (4-13%), insects (0.4-3%), and other foods such as bark, gum, and soil (9-16%) (Gron, 2008). More developed leaves are preferred over young leaves. They are not highly selective foragers, and consume human food when available. In times of food shortage, they are known to consume bark. (Gron, 2008).



8. Common Name: Rhesus Macaque

Zoological Name: *Herpestes edwardsi*

Family: Herpestidae

Conservation Status: Least Concern

Description: The Rhesus Macaque is brown or grey in color and has a pink face, which is bereft of fur. Its tail is of medium length and averages between 20.7 and 22.9 cm (8.1 and 9.0 in). Adult males measure about 53 cm (21 in) on average and weigh about 7.7 kg (17 lb). Females are smaller, averaging 47 cm (19 in) in length and 5.3 kg (12 lb) in weight. Rhesus macaques have, on average, 50 vertebrae. Their ratio of arm length to leg length is 89%. They have dorsal scapulae and a wide rib cage. The rhesus macaque has 32 teeth with a dental formula of 2.1.2.3/2.1.2.3 and bilophodont molars. The upper molars have four cusps: paracone, metacone, protocone, and hypocone. The lower molars also have four cusps: metaconid, protoconid, hypoconid, and entoconid.

Habitat: Rhesus Macaques are native to India, Bangladesh, Pakistan, Nepal, Burma, Thailand, Afghanistan, Vietnam, Southern China, and some neighboring areas. They have the widest geographic ranges of any nonhuman primate, occupying a great diversity of altitudes throughout Central, South, and Southeast Asia. Inhabiting arid, open areas, rhesus macaques may be found in grasslands, woodlands, and in mountainous regions up to 2,500 m (8,200 ft) in elevation.

Reproduction: Adult male macaques try to maximize their reproductive success by entering into sex with females, both in and outside the breeding period. Females prefer to mate with males that will increase the survival of their young. Thus, a consort male provides resources for his female and protects her from predators. Larger, more dominant males are more likely to provide for the females. The breeding period can last up to 11 days, and a female usually mates with four males during that time.



9. Common Name- Indian Fox

Zoological Name- *Vulpes bengalensis*

Family- Canidae

Conservation Status- Least Concern

Habitat- The Indian Fox prefers semi-arid, flat to undulating terrain, scrub and grassland habitats where it is easy to hunt and dig dens. It avoids dense forests, steep terrain, tall grasslands and true deserts (Johnsingh and Jhala 2004). The species is relatively common in areas of low rainfall, where the vegetation is typically scrub, thorn or dry deciduous forests, or short grasslands (Rodgers et al. 2000). In the Indian peninsula, the species is restricted to plains and open scrub forest. Home ranges have been estimated at about 2 km² (Maurya 2012). Diet mostly consists of arthropods, rodents, reptiles, fruits and birds, in that order of occurrence in scats (Home and Jhala 2009). Pups are born between December and February, but can be as late as March. Short resource rich grassland patches in an agro-pastoral landscape are preferred for denning and pup rearing (Punjabi et al. 2013).

Physical Description- The Bengal fox is a medium-sized fox with an elongated muzzle with black hair in small patches on the upper part of the muzzle. Its large, bushy, black-tipped tail is its most prominent feature, accounting for as much as 60% of the length of its body. Usually the tail trails behind but when the fox is running, it carries its tail horizontally, then holds it vertically when making sudden turns. The color of the fox's coat varies according to the season and within a population but is usually gray on the back and paler on the belly, with dark brown on the ears, with black edges. Their ears are large in comparison to their body and are possibly an adaptation for thermoregulation in their hot and dry habitats.

Reproduction- Bengal foxes are usually monogamous and form pair bonds that may last for their lifetime. The breeding season is from December to January, announced by digging a new den or re-excavating an old one. Pups are born from January to March. The gestation period is 50–60 days, and between 3 to 6 pups are born within a den. Both mother and father help to raise the pups, which are weaned at about 1 month old. Pups are sometimes nursed by a number of females. In the daytime they are likely to rest under bushes, but in summer they rest in dens. Independence is reached at 4 - 5 months old and sexual maturity by 1 - 2 years old.



10. Common Name: Jackal

Zoological Name: *Canis aureus*

Family: Canidae

Conservation Status: Least Concern

Description: The body length of the Golden Jackal is 70 to 85 cm., with a tail length of about 25 cm. Its standing height is approximately 40 cm. The fur is generally coarse and not very long. Its coat is usually yellow to pale gold and brown-tipped, but the color can vary with season and region. On the Serengeti Plain in Northern Tanzania, golden jackals are brown-tipped yellow in the rainy season (December-January), changing to pale gold in the dry season (September-October).

Habitat: The Golden jackal is the most northerly of jackal species, and also the most widely distributed. It overlaps biotopes only with the black-backed jackal in East African savannas. Golden jackals prefer dry open country, arid short grasslands and steppe landscapes.

Reproduction: Golden jackals live in mated pairs and are strictly monogamous. In most jackal families, there are one or two adult members called "helpers." Helpers are jackals who stay with the parents for a year after reaching sexual maturity, without breeding, to help take care of the next litter. Births occur mainly in January-February in East Africa and in April-May in Southeast Europe, but take place throughout the year in tropical Asia. Golden jackals of the Serengeti court at the end of the dry season and produce pups during the rainy season. They have been observed to produce pups for at least

eight years. The gestation period is 63 days. Young are born in a den within the parents' marked territory. Litters can contain one to nine pups, but two to four is the usual number. Weight at birth is 200-250 grams. Pups' eyes open after about ten days. The pups are nursed for about eight weeks, and then weaned. The young are fed by regurgitation and begin to take some solid food at about three months. Both parents provide food and protection. Sexual maturity comes at eleven months.

Food Habits: Golden jackals consume 54% animal food and 46% plant food. They are opportunistic foragers with a very varied diet, which consists of young gazelles, rodents, (especially during winter), hares, ground birds and their eggs, reptiles, frogs, fish, insects and fruit. They take carrion on occasion.



11. Common Name: Indian Wildboar

Zoological Name: *Sus scrofa cristatus*

Family: Suidae

Conservation Status: Least Concern

Description: The Indian boar differs from its European counterpart by its large mane which runs in a crest along its back from its head to lower body, larger, more sharply featured and straighter skull, its smaller, sharper ears and overall lighter build. It is taller and more sparsely haired than the European form, though its back bristles are much more developed. The tail is also more tufted, and the cheeks hairier. Adults measure from 83.82 to 91.44 cm (33.00 to 36.00 in) in shoulder height (with one specimen in Bengal having reached 38 inches) and five feet in body length. Weight ranges from 90.72 to 136.08 kg (200.0 to 300.0 lb).

Habitat: The animal's primary habitat consists of well developed, broad-leaved and mixed forests, along with marshy mixed forests,

with coniferous forests and undergrowths being of secondary importance. Forests made up entirely of oak groves and beeches are used only during the fruit-bearing season.

Reproduction: The breeding period in most areas lasts from November to January, though most mating only lasts a month and a half. Prior to mating, the males develop their subcutaneous armor, in preparation for confronting rivals.



12. Common Name - Common Indian Hare

Zoological Name- *Lepus nigricollis ruficaudates*

Family- Liporadae

Conservation Status- Least Concern

Habitat- *Lepus nigricollis* are generally found in areas where large tracts of bush and jungle alternate with farm land. They are also commonly sighted in coastal herb communities. Hilly areas, particularly the depressions at the base of hills, are preferred habitats for *Lepus nigricollis*.

Physical Description- *Lepus nigricollis* are also called black-naped hares due to the patch of black fur that runs along the nape of the neck. The top of the tail is also black and the back and face are brown with black hairs scattered throughout. The under parts are white. Total length ranges from 40 to 70 cm and weight ranges from 1.35 to 7 kg. Like all hares, they have long ears and large hind feet which are well furred. There is some evidence that hares that have been introduced to islands are smaller than those in mainland India. Regardless of location, female *L. nigricollis* tend to be larger than males.

Reproduction- During mating season, male *Lepus nigricollis* become aggressive, spar ring with other males using their forepaws and "boxing" with their hind feet. Males will attempt to mate with as many females as they can. Breeding occurs year round but is highest between October and February.

Food habits: *Lepus nigricollis* is herbivorous, though the types of vegetation it eats varies. Many of the areas these animals inhabit have wet and dry seasons and these play a large role in food availability. During the wet season, short grasses are abundant and they are the preferred food. During the dry season, when short grasses are scarce, more flowering plants are consumed. They also eat crops and germinating seeds. Like all hares, *L. nigricollis* practices coprophagy.



PLATES OF OCP GEVRA

AVIFAUNA IMAGES



Variable Wheatear



Laughing Dove



Little Egret



Red Vented Bulbul



Plumb Headed Parakeet



Spotted Dove



Eurasian Golden Oriole



Little Cormorant



Asian Openbill Stork



Asian Pied Starling



Cattle Egret



Indian Silverbill

MINING AREA



Naraibodh Mining Area



OCP Gevra Mining Activity

Coal Seam



OCP Gevra Mining Area

OCP GEVRA HABITAT



Study sites of OCP Gevra



Mohariya Muda/ Ganga Nagar Post mining Reclaimed Site



Anand Vatika



Mudapar Revenue forest area

DUMP MANAGEMENT



Raliya Revenue Forest Land



Naraibodh Revenue Forest Land



Plantation Activities sites of OCP Gevra



Dump management sites of OCP Gevra

SOUTH EASTERN COALFIELDS LIMITED

(A MINI RATNA COMPANY)

BILASPUR (CHHATTISGARH)

GEVRA OC PROJECT

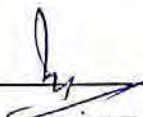


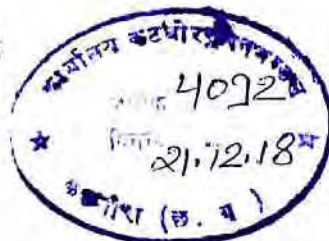
PROJECT REPORT

ON

DESILTATION OF PONDS

LOCATED WITHIN FIVE KM FROM THE MINE LEASE BOUNDARY


प्रबन्धक
General Manager
एस.ई.सी.एल., गेवरा क्षेत्र
SECL, Gevra Area




प्रबंधक / Manager
नोडल ऑफिसर (पर्यावरण/वन)
Nodal Officer (ENV/Forest)
SECL/Gevra Area
एस.ई.सी.एल./गेवरा क्षेत्र

DETAILS OF DESILTATION PONDS LOCATED WITHIN FIVE KM FROM THE MINE LEASE BOUNDARY OF GEVRA OC PROJECT

S. NO.	VILLAGE NAME	Length (m)	Width (m)	Desiltation Depth (m)	Volume (m3)	Rate (per m3)	Total	LOCATION	
								LATITUDE	LONGITUDE
I MARWADORA									
1	Pond near community building	80	60	1.5	7200	194.58	1400976	22°21'22.9" N	82°35'01.2" E
2	Pond 2 near Govt. High school	80	60	1.5	7200	194.58	1400976	22°22'19.2" N	82°35'44.2" E
3	Pond near Temple	80	60	1.5	7200	194.58	1400976	22°20'46.2" N	82°38'10.9" E
II BILAI BAZAR									
4	Welcome gate	100	60	1.5	9000	194.58	1751220	22°19'38.8" N	82°36'54.3" E
5	Near Overhead tank Pond 2	5 Ha.		1.5	75000	194.58	14593500	22°18'33.3" N	82°36'20.9" E
6	Near Sanskruti manch	100	60	1.5	9000	194.58	1751220	22°18'02.6" N	82°36'50.7" E
7	Near Aadivasi Seva Sanithy	100	80	1.5	12000	194.58	2334960	22°19'38.8" N	82°36'54.3" E
III BHARBATA									
8	Near Graveyard	100	60	1.5	9000	194.58	1751220	22°19'30.9" N	82°36'56.7" E
IV PADRIPANI									
9	Near paddy field	120	100	1.5	18000	194.58	3502440	22°18'36.5" N	82°37'39.6" E
V SALORA KH									
10	Near samudhahik bhavan	120	40	1.5	7200	194.58	1400976	22°18'36" N	82°38'04.9" E

वमण्डलाधिकारी
 कटघोरा वनमण्डल, कटघोरा
 18/12/18
 18/12/18
 Sr. Manager/ESR
 प्रबंधक/मानव संसाधन
 नोडल ऑफिसर (पर्यावरण एवं वन)
 Nodal Officer (ENV/Forest)
उप वनमण्डलाधिकारी
 पाली, उमरगांवडल पाली
 18/12/18
 18/12/18
 Sr. Manager/ESR
 प्रबंधक/मानव संसाधन
 नोडल ऑफिसर (पर्यावरण एवं वन)
 Nodal Officer (ENV/Forest)

11	Behind Govt. High School	60	30	1.5	2700	194.58	525366	22°18'43.3" N	82°38'07.2" E
VI									
RALIA									
12	Near Dhiraj electronics	130	106	1.5	20670	194.58	4021968.6	22°18'24" N	82°34'45" E
13	Outside Village	80	60	1.5	7200	194.58	1400976	22°18'23" N	82°34'53" E
14	Near Nawapara	100	60	1.5	9000	194.58	1751220	22°17'47" N	82°34'29" E
VII									
NAWAPARA									
15	Near Temple Pond 1	130	100	1.5	19500	194.58	3794310	22°17'26" N	82°34'38" E
16	Near Govt. School	100	60	1.5	9000	194.58	1751220	22°17'26" N	82°34'17" E
VIII									
MURIANAR									
17	Near Anganbadi	170	130	1.5	33150	194.58	6450327	22°18'23" N	82°35'29" E
IX									
CHINDPUR									
18	Near Anganbadi	100	80	1.5	12000	194.58	2334960	22°18'5" N	82°35'35" E
19	Near Govt. School	70	50	1.5	5250	194.58	1021545	22°17'54" N	82°35'44" E
X									
CHURAIL									
20	Near Shamshanghat	80	70	1.5	8400	194.58	1634472	22°18'57" N	82°38'57" E
XI									
AMGAON									
21	Near Amgaon Bata Road Junction	165	100	1.5	24750	194.58	4815855	22°18'39" N	82°39'37" E
22	Near Survey Stone Kustumda Pond 1	100	80	1.5	12000	194.58	2334960	22°18'43" N	82°39'34" E
23	Govt. Pond	130	100	1.5	19500	194.58	3794310	22°18'19" N	82°39'36" E
XII									
KHODRI									
24	Near Mine Boundary Kustumda	100	100	1.5	15000	194.58	2918700	22°19'35" N	82°38'40" E

वनमण्डलाधिकारी
कटघोरा वनमण्डल, कटघोरा

18-12-18
EACC
LALHA

प्रबंधक / वनमंडल
D.V.G.M. (C) Staff Officer (C)
नोडल ऑफिसर (पर्यावरण/सुदृढ) प्र
Modal Officer (ENV/Forestry)

उप वनमण्डलाधिकारी
पाली, उमरगंजल गांधी

25	Pond 2	100	80	1.5	12000	194.58	2334960	22°17'49" N	82°35'59" E
XIII MAUWADI									
26	Pond 2	150	100	1.5	22500	194.58	4378050	22°17'13" N	82°36'33" E
XIV HARDI BAZAR									
27	Pond 1	100	60	1.5	9000	194.58	1751220	22°18'24" N	82°33'1" E
28	Pond 2	100	80	1.5	12000	194.58	2334960	22°18'17" N	82°32'53" E
29	Pond 3	190	180	1.5	51300	194.58	9981954	22°18'29" N	82°32'29" E
30	Pond 4	100	80	1.5	12000	194.58	2334960	22°18'21" N	82°31'52" E
31	Pond 5	100	50	1.5	7500	194.58	1459350	22°18'21" N	82°31'52" E
XV SUHABORI									
32	Pond 1	100	50	1.5	7500	194.58	1459350	22°18'29" N	82°31'40" E
XVI MALGAON									
33	Pond 1	100	70	1.5	10500	194.58	2043090	22°19'5" N	82°32'44" E
XVII DIPKA									
34	Dipka Washery bypass road	80	70	1.5	8400	194.58	1634472	22°21'26" N	82°33'80" E
35	Dipka Chakabuda Road	100	100	1.5	15000	194.58	2918700	22°21'25" N	82°32'51" E
XVIII GOBARGHORA									
36	Near Petrol Pump	150	100	1.5	22500	194.58	4378050	22°22'00" N	82°33'12" E
XIX VIJAYNAGAR									
37	Khusrudin Basti	100	80	1.5	12000	194.58	2334960	22°22'10" N	82°33'58" E
XX BINJIRA									
38	Near Anganbadi	100	80	1.5	12000	194.58	2334960	22°21'50" N	82°33'52" E
XXI DHURENA									
39	Near Panchyat Bhavan	150	80	1.5	18000	194.58	3502440	22°21'48" N	82°34'46" E

Adh

वनमण्डलाधिकारी

कटघोरा वनमण्डल, कटघोरा

12.18

EA/CA/TA

Verdick
S. N. Bhandari
S. N. Bhandari
S. N. Bhandari

प्रबंधक/Manager
नोडल ऑफिसर (म्यंजिरण/खन) म. प्र. (मि.)

By G.M. (CA/TA) Officer (M)

परी, उपवनमंडल वाली

उप वनमण्डलाधिकारी

292

XXII	DADARPARA											
40	Near Navdurga Temple	150	80	1.5	18000	194.58	3502440	22°21'19" N	82°36'59" E			
XXIII	KUCHENA											
41	Near Fire & Safety College	150	100	1.5	22500	194.58	4378050	22°21'16" N	82°37'31" E			
				631620		Total		122900620				

उप वनमण्डलाधिकारी
पाली, उपवनमंडल पाली

Sr. f
18/12/18

Dy G.M. (C) Staff Officer (C)
उप. म. प्र. (सि.)
एन. ई. सी. एल. क्षेत्र
SECL, GEVRA AREA

Sr. f

प्रबंधक/Manager
नोडल ऑफिसर (पर्यावरण/वन)
Nodal Officer (ENV/Forest)
SECL/Gevra Area
एन. ई. सी. एल. क्षेत्र

Sr. f
18/12/18

वरि. प्रबंधक (सि.)
Sr. Manager/CSR
एन. ई. सी. एल. क्षेत्र
SECL, GEVRA AREA

18/12/18
FAG
PAG

वनमण्डलाधिकारी
कटघोरा वनमण्डल, कटघोरा

NAME OF WORK:DESILTATION OF PONDS / WATER BODIES LOCATED WITHIN FIVE KM FROM THE MINE LEASE BOUNDARY OF GEVRA OC PROJECT

S. NO	DESCRIPTION OF WORK	ESTIMATED AMOUNT			JUSTIFIED AMOUNT (AS PER ANALYSIS)		REMARKS
		QTY M3	RATE (PER M3)	AMOUNT (Rs.)	RATE (PER M3)	AMOUNT (Rs.)	
1	41 ponds located within 5 km	631620	146.50	92532330	194.58	122900619.60	Item no.2.6.1 in DSOR 2013 & analysis of rate

18/11/2018
EAC
TAGA

18/11/18
वरिष्ठ प्रबंधक (सि.)
Sr. Manager/CSR
एस.ई.सी.एल. गेवरा क्षेत्र
SECL, GEV

प्रबंधक/Manager
नोडल ऑफिसर (पर्यावरण/वनस्पति)
Nodal Officer (ENV/Forest)
SECL/Gevra Area
एस.ई.सी.एल./गेवरा क्षेत्र

Dy G.M. (C)/ Staff Officer (C)
म. प्र. (सि)/स्टाफ ऑफिसर (सि)
एस.ई.सी.एल. गेवरा क्षेत्र
SECL, GEVRA AREA

वनमण्डलाधिकारी
कटघोरा वनमण्डल, कटघोरा

उप वनमण्डलाधिकारी
पाली, उपवनमंडल पाली

जनरल मॅनेजर
General Manager
एस.ई.सी.एल., गेवरा क्षेत्र

112.385 Ha. Stage I / In-Principle Approval
MoEF&CC Clearance L.No. 8-41/2017-FC dated 27.09.2017

SL NO.	CONDITION	COMPLIANCE
1	Legal status of the diverted forest land remain unchanged	Agreed. Legal status of the diverted forest land will remain unchanged.
2	Compensatory Afforestation shall be done over degraded forest land twice in extent to the forest area proposal to be diverted within a period of three years with effect from the date of issue of Stage – II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest department at the cost of the user agency. At least 1000 saplings per hectares shall be planted over 224.77 he. (224770 plants). If this is not possible to plant this many seedlings in the identified DFL, the balance seedlings will be planted in other suitable degraded forest land as per the prescription of the Working Plan at the cost of the User agency. In such case CA cost will be revised and duly approved by competent authority and deposited online in the CAF managed by CAMPA 25% of the CA cost additionally will be spent towards Soil and Moisture Conservation activities in the proposed CA area as per the requirement and deposited in CAF.	Agreed. Demand note no. 8901 DT: 13.10.17 Rs. 20.53 Crore Revised Demand Note no.10009 DT: 17.11.17 Rs.26.82 Crore Revised Demand Note no. 991 DT:03.02.18 Rs.1.75 Crore Revised Demand Note no. 2031 DT: 03.03.18 Rs.27.58 Crore was raised by DFO. Amount deposited as per demand note raised by DFO Kathghora vide no. 2031 of Rs. 275829196/- through NEFT vide reference UTR no. SBIN618082376488 Dt: 23.03.2018.
3	On examination of Compensatory Afforestation land on Google Satellite Imagery and DSS tools, it is found that 30 ha area is having dense vegetation and 53 ha land seems to be under encroachment. State Government shall exclude the land under encroachment and very dense vegetation from the proposed CA area and additional degraded forest land which is free from encumbrances/encroachment and	83 Ha. CA land was identified at Kendai.

	degraded shall be selected prior to stage II approval. The land shall be analysed through DSS at state level prior to submission to MoEF&CC for consideration. State Government shall submit DSS analysis report along with the compliance of this condition.	
4	State Government Shall reconfirm the enumeration list of trees prior to stage II approval.	Enumeration of list of trees was done on 14.12.18 & 15.12.18. An addition of 984 trees were confirmed. Accordingly amount of Rs. 1.53 Lakh was submitted vide letter no. 394 & dt.30.03.2019. (DD dt.16.03.2019)
5	The User agency shall ensure the construction of residential accommodation for workers will be undertaken separately on non – forest land to avoid pressure on forest land for temporary construction.	No activity other than mining will be undertaken in the diverted forest land.
6	Safety zone shall be fenced with coiled barbed wire fencing of a 6 feet high for the protection of forests.	Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT. 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost. The work is in progress. Annex 1
7	Safety zone along the lease boundary, shall be implemented by the User agency in accordance with the guidelines issued by the MoEF & CC in this regard.	Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT. 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost. Work is in Progress.. Annex 1
8	Encroachment from the lease area of the User Agency should be avicted and in case eligible claimants are found in the area propose for diversion, they should be rehabilitated as per R&R policy of the State Government of Chhattisgarh in consonance with the National R&R policy.	Agreed. As per the guidelines of State Govt. CG, necessary compliance shall be made.
9	The user agency should undertake comprehensive greening in the villages located	Agreed. 4000 saplings distributed in the villages located in

	in the surrounding of their lease area.	the surrounding of the lease area under comprehensive greening of villages								
10	Mined out forest area already reclaimed by the User Agency, should be handed over back in the State Forest Department with a view to bring it under the ambit of core forestry management.	Agreed. Mined out forest area reclaimed by the User Agency, will be handed over back (as per the guidelines issued by MoC applicable for land acquired under CBA Act) to the State Forest Department by 2038-39 after Final Mine closure activities (As per the Calender programme for excavation of coal in approved 49 MTY PR of Gevra OCP)								
11	The UA should prepare a land surrender schedule for surrender of the mined out and biologically reclaimed forest land in accordance with the existing mine plan irrespective of progressive mine closure plan and submit an surrender schedule and an undertaking that mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per this schedule. No. further change in the schedule for surrendering of forest land should be allowed.	Agreed. Land Surrender schedule <table border="1"> <thead> <tr> <th>Year</th> <th>Land in Ha.</th> </tr> </thead> <tbody> <tr> <td>2036-37</td> <td>40</td> </tr> <tr> <td>2037-38</td> <td>40</td> </tr> <tr> <td>2038-39</td> <td>32.385</td> </tr> </tbody> </table>	Year	Land in Ha.	2036-37	40	2037-38	40	2038-39	32.385
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12	With a view to enrich the water regime in the area, a comprehensive Catchment area Treatment Plan in the area to arrest flow of silt in the Hasdeo River and to improve water regime should be implemented at the project cost.	Agreed. Work has been awarded in favour of CCST vide no.259 DT, 23.03.2018. Work order accepted by CCOST& 1 st installment payment (Rs. 600430/-) made. Work is in progress. Field visit conducted by Technical Experts on 24.12.2018 to 27.12.2018. Interim Report submitted by CCOST on 13.01.2019.								
13	A study should be undertaken at the project cost to assess the impact of intervention undertaken by the SECL, in consultation with the State Forest Department, for the protection, conservation and development of wildlife in the area. Based on the outcome of such study, the measures for protection, conservation and development of the wildlife, if needed may further be strengthened at the project cost.	Agreed. For study on the protection, conservation and development of wildlife in the area, a work order vide no.20 DT, 11.05.2018 is submitted to SFRTI for start of work & early completion. Full & Final payment vide no. 2357 Dt. 02.06.2018 (Rs. 2602600/-) made. SFRTI Team members visited Gevra for the field study from 24.11.18 to 01.12.2018. Interim report of the field study submitted dt: 13.03.2019 . Another Field Visit for the preparation of Final Report was made from 27.03.2019 to 30.03.2019. Final Report Submitted on								

		27.08.2019.
14	No forest land should be used for undertaking the diversion of district road, bifurcating the Revenue forest land proposed to divert by the User Agency, While undertaking diversion of the said road, the User Agency should select such alignment ensuring that accessibility / connectivity is maintained in the ease of the local residents.	Agreed. No activity other than mining will be undertaken in the diverted forest land.
15	It is reported that the user agency had biologically reclaimed 404.8 ha. of land. A subcommittee of FAC under the chairmanship of SH. Deepak Sinha IG (FC), Sh. R.K. Dey APPCF regional office Bhuvneshwar and Sh. Sandeep Sharma AIG(FC) shall visit the site and submit report on the status of biologically reclaimed area to MoEF and CC.	Agreed. A committee of FAC consisting of Shri Siddhanta Das, IFS New Delhi & Forest Officials from Raipur, Bilaspur & Katghora visited the site on 19.11.2017.
16	The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale.	Stock Map, Forest Cover Map, Forest Type Map & KML file Submitted.
17	The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in the account of the Ad-hoc CAMPA of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT. 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt. 23.03.2018, in the account of the Ad-hoc CAMPA of the concerned State through online portal.
18	The User Agency shall transfer the funds for the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of Ad-hoc	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT. 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt. 23.03.2018, in the account of the Ad-hoc CAMPA of the concerned State through online portal.

	CAMPA account of the State Concerned.	
19	At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.	Agreed.
20	Any fund received from the user agency under the project, except the funds realized for regeneration / demarcation of safety zone, shall be transferred to Ad-hoc CAMPA through online portal of Ad-hoc CAMPA account of the State Concerned.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT, 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 - D 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal.
21	<p>Following activities shall be undertaken by the user agency at the project cost and appropriate cost of the plan/scheme shall be deposited in Ad-hoc CAMPA Account.</p> <p>(a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared implemented.</p> <p>(b) Planting of adequate drought hardy plan species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion.</p> <p>(c) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour.</p> <p>(d) Stabilize the overburden dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28, and</p> <p>(e) Strict adherence to the prescribed top soil management.</p>	<p>Agreed.</p> <ol style="list-style-type: none"> 1. There are 7 nos. of external dump & 8 nos. of internal dumps. The external dump nos. 1, 2, 3, 4, 5, 6 & 7 are already biologically reclaimed during the year 1987 to 2018 & there is no problem of Soil erosion & choking of streams in the adjoining dump area. Internal Dump no 1 is biologically reclaimed. The rest Internal Dump nos. 2, 3, 4, 5, 6, 7 & 8 are running dumps However part of Dump nos. 2, 3, 4, 5 & 6 are Biologically reclaimed. Details along with the Soil Conservation Plan enclosed (ANNEX 2) 2. Year wise Plantation details on Plain areas & Dumps is enclosed. (ANNEX 3) Species planted include Sal, Neem, Karenj, Amla, Siras, Sissoo, Bel, Bamboo, GangaImli, Bahera, Ashok, Golmohar, Satwan, Cassia Gemec, Teak, Jamun, Peltaforum, CassiaGulco, Bogan vallia, Khamar, Sitaphal, Amrood, Kathal, Imli, Mango, Sisham jatropa etc 3. 11.5 KM Check Dams In Dump Slope (Ext. dump nos. 2, 3 & 4) Drainage System & 2.8 KM of pucca catch drain of dimension 1.5m X 15.m & Toe Wall were provided in External Dump No : 5 to Prevent soil Erosion &

		<p>Siltation. Photographs enclosed</p> <ul style="list-style-type: none"> • 2018-19 Plantation dump area have been provided with Contour trench 300 per trench, check dam 20 per cubic meter and bund with stone bolders 20 per cubic meter • A toe wall is constructed at External Dump no. 6 & 7 of dimensions. Length 650 meters, height above ground 1.00 meters and top width of wall 200 mm in the year 2018-19 • Construction of Gabion wall (3m X 3m for 0.5 Km) along the toe wall of approach road / ramp (newly constructed in pit conveyor of Gevra Project) is in progress (ANNEX 4)
22	User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986.	45 MTY EC granted (Enclosed) ANNEX 5
23	User agency in consultation with the State Forest Department shall create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest areas and human settlements, adjoining the forest area being diverted for the project.	For study on the protection, conservation and development of wildlife in the area, a work order vide no.20 DT. 11.05.2018 is submitted to SFRTI for start of work & early completion. Full & Final payment vide no. 2357 Dt. 02.06.2018 (Rs. 2602600/-) made. SFRTI Team members visited Gevra for the field study from 24.11.18 to 01.12.2018. Interim report of the field study submitted dt. 13.03.2019. Another Field Visit for the preparation of Final Report was made from 27.03.2019 to 30.03.2019. Final Report Submitted on 27.08.2019.
24	Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done at the project cost within three years and maintained thereafter forest land to be selected elsewhere measuring one & a half times the area under safety zone also be at the project cost.	Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT. 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost. Work is in Progress. ANNEX 1

25	User agency either himself or through the State Forest department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT. 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt. 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal.
26	Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of mining lease proposed to be granted under the Mines and Minerals (Development and regulation) Act, 1957, and the Rules framed there-under as amended.	Agreed.
27	User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100 meters from outer perimeter of the mining lease.	Agreed.
28	The User agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. From the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User agency shall regularly undertaking desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/ware bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval.	A list of existing village tanks and other water bodies with GPS co-ordinates located is prepared. The list is submitted to DFO for verification on 18.07.2018.
29	User agency shall undertake mining in a phased manner and take due case for reclamation of the mined over area. The concurrent reclamation plan shall executed by the user agency as per the approved mining plan/scheme and annual report in implementation thereof shall be submitted – to	Enclosed. Annex 6

	the Nodal Officer, Forest (Conservation) Act, 1980, Government of Odisha and the Addl. Principal Chief of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation being executed by the user agency, the Nodal Officer of the Addl. Principal Chief Conservator of Forest (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed.	
30	No labour camp shall be established on the forest land.	Agreed. There is no Labor camp inside Forest Area.
31	User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas.	A Cooperative Society is set up in Gevra Project to facilitate the supply of LPG gas connection to the people working at the site to avoid damage / felling of trees.
32	Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillar to pillar and GPS co-ordinates.	Boundary of the mining lease and safety zone demarcated on ground by User Agency.
33	Forest land shall not be used for any purpose other than that specified in the proposal.	No activity other than mining will be undertaken in the diverted forest land.
34	State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry vide their letter No. 11-9/1998-FC(pt.) dated 3 rd August 2009 read with 05.07.2013, in support thereof.	FRA copy Enclosed. ANNEX 7
35	The user agency shall submit the annual self compliance report of the above conditions to the state Government, concerned Regional Office	Agreed. Last report submitted on 17.04.2019.

	and this Ministry by the end of March every year regularly.	
36	Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife, and	Agreed.
37	The State Government and user agency shall comply the provisions of the all Act, Rules, Regulations, guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	Agreed.

G. K. S.

Manager / Manager
 District Office (Western) / व.प.
 Nodal Officer, Forest, Forest
 Conservation Area
 Bhopal, Madhya Pradesh

112.385 Ha. Stage I / In-Principle Approval
MoEF&CC Clearance L.No. 8-41/2017-FC dated 27.09.2017

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2038-39	32.385									
12	With a view to enrich the water regime in the area, a comprehensive Catchment area Treatment Plan in the area to arrest flow of silt in the Hasdeo River and to improve water regime should be implemented at the project cost.	Agreed. Work has been awarded in favour of CCST vide no.259 DT, 23.03.2018. Work order accepted by CCOST& 1 st installment payment (Rs. 600430/-) made. Work is in progress. Field visit conducted by Technical Experts on 24.12.2018 to 27.12.2018. Interim Report submitted by CCOST on 13.01.2019.								
13	A study should be undertaken at the project cost to assess the impact of intervention undertaken by the SECL, in consultation with the State Forest Department, for the protection, conservation and development of wildlife in the area. Based on the outcome of such study, the measures for protection, conservation and development of the wildlife, if needed may further be strengthened at the project cost.	Agreed. For study on the protection, conservation and development of wildlife in the area, a work order vide no.20 DT, 11.05.2018 is submitted to SFRTI for start of work & early completion. Full & Final payment vide no. 2357 Dt. 02.06.2018 (Rs. 2602600/-) made. SFRTI Team members visited Gevra for the field study from 24.11.18 to 01.12.2018. Interim report of the field study submitted dt: 13.03.2019 . Another Field Visit for the preparation of Final Report was made from 27.03.2019 to 30.03.2019. Final Report Submitted on								

		27.08.2019.
14	No forest land should be used for undertaking the diversion of district road, bifurcating the Revenue forest land proposed to divert by the User Agency, While undertaking diversion of the said road, the User Agency should select such alignment ensuring that accessibility / connectivity is maintained in the ease of the local residents.	Agreed. No activity other than mining will be undertaken in the diverted forest land.
15	It is reported that the user agency had biologically reclaimed 404.8 ha. of land. A subcommittee of FAC under the chairmanship of SH. Deepak Sinha IG (FC), Sh. R.K. Dey APPCF regional office Bhuvneshwar and Sh. Sandeep Sharma AIG(FC) shall visit the site and submit report on the status of biologically reclaimed area to MoEF and CC.	Agreed. A committee of FAC consisting of Shri Siddhanta Das, IFS New Delhi & Forest Officials from Raipur, Bilaspur & Katghora visited the site on 19.11.2017.
16	The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale.	Stock Map, Forest Cover Map, Forest Type Map & KML file Submitted.
17	The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in the account of the Ad-hoc CAMPA of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT. 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt. 23.03.2018, in the account of the Ad-hoc CAMPA of the concerned State through online portal.
18	The User Agency shall transfer the funds for the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of Ad-hoc	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT. 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt. 23.03.2018, in the account of the Ad-hoc CAMPA of the concerned State through online portal.

	CAMPA account of the State Concerned.	
19	At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall furnish an undertaking to pay additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.	Agreed.
20	Any fund received from the user agency under the project, except the funds realized for regeneration / demarcation of safety zone, shall be transferred to Ad-hoc CAMPA through online portal of Ad-hoc CAMPA account of the State Concerned.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT, 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 - D 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal.
21	<p>Following activities shall be undertaken by the user agency at the project cost and appropriate cost of the plan/scheme shall be deposited in Ad-hoc CAMPA Account.</p> <p>(a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared implemented.</p> <p>(b) Planting of adequate drought hardy plan species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion.</p> <p>(c) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour.</p> <p>(d) Stabilize the overburden dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28, and</p> <p>(e) Strict adherence to the prescribed top soil management.</p>	<p>Agreed.</p> <ol style="list-style-type: none"> 1. There are 7 nos. of external dump & 8 nos. of internal dumps. The external dump nos. 1, 2, 3, 4, 5, 6 & 7 are already biologically reclaimed during the year 1987 to 2018 & there is no problem of Soil erosion & choking of streams in the adjoining dump area. Internal Dump no 1 is biologically reclaimed. The rest Internal Dump nos. 2, 3, 4, 5, 6, 7 & 8 are running dumps However part of Dump nos. 2, 3, 4, 5 & 6 are Biologically reclaimed. Details along with the Soil Conservation Plan enclosed (ANNEX 2) 2. Year wise Plantation details on Plain areas & Dumps is enclosed. (ANNEX 3) Species planted include Sal, Neem, Karenj, Amla, Siras, Sissoo, Bel, Bamboo, GangaImli, Bahera, Ashok, Golmohar, Satwan, Cassia Gemec, Teak, Jamun, Peltaforum, CassiaGulco, Bogan vallaia, Khamar, Sitaphal, Amrood, Kathal, Imli, Mango, Sisham jatropa etc 3. 11.5 KM Check Dams In Dump Slope (Ext. dump nos. 2, 3 & 4) Drainage System & 2.8 KM of pucca catch drain of dimension 1.5m X 15.m & Toe Wall were provided in External Dump No : 5 to Prevent soil Erosion &

		<p>Siltation. Photographs enclosed</p> <ul style="list-style-type: none"> • 2018-19 Plantation dump area have been provided with Contour trench 300 per trench, check dam 20 per cubic meter and bund with stone bolders 20 per cubic meter • A toe wall is constructed at External Dump no. 6 & 7 of dimensions. Length 650 meters, height above ground 1.00 meters and top width of wall 200 mm in the year 2018-19 • Construction of Gabion wall (3m X 3m for 0.5 Km) along the toe wall of approach road / ramp (newly constructed in pit conveyor of Gevra Project) is in progress (ANNEX 4)
22	User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986.	45 MTY EC granted (Enclosed) ANNEX 5
23	User agency in consultation with the State Forest Department shall create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest areas and human settlements, adjoining the forest area being diverted for the project.	For study on the protection, conservation and development of wildlife in the area, a work order vide no.20 DT. 11.05.2018 is submitted to SFRTI for start of work & early completion. Full & Final payment vide no. 2357 Dt. 02.06.2018 (Rs. 2602600/-) made. SFRTI Team members visited Gevra for the field study from 24.11.18 to 01.12.2018. Interim report of the field study submitted dt. 13.03.2019. Another Field Visit for the preparation of Final Report was made from 27.03.2019 to 30.03.2019. Final Report Submitted on 27.08.2019.
24	Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done at the project cost within three years and maintained thereafter forest land to be selected elsewhere measuring one & a half times the area under safety zone also be at the project cost.	Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT. 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost. Work is in Progress. ANNEX 1

25	User agency either himself or through the State Forest department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT. 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt. 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal.
26	Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of mining lease proposed to be granted under the Mines and Minerals (Development and regulation) Act, 1957, and the Rules framed there-under as amended.	Agreed.
27	User agency either himself or through the State Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100 meters from outer perimeter of the mining lease.	Agreed.
28	The User agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. From the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User agency shall regularly undertaking desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/ware bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval.	A list of existing village tanks and other water bodies with GPS co-ordinates located is prepared. The list is submitted to DFO for verification on 18.07.2018.
29	User agency shall undertake mining in a phased manner and take due case for reclamation of the mined over area. The concurrent reclamation plan shall executed by the user agency as per the approved mining plan/scheme and annual report in implementation thereof shall be submitted – to	Enclosed. Annex 6

	the Nodal Officer, Forest (Conservation) Act, 1980, Government of Odisha and the Addl. Principal Chief of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation being executed by the user agency, the Nodal Officer of the Addl. Principal Chief Conservator of Forest (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed.	
30	No labour camp shall be established on the forest land.	Agreed. There is no Labor camp inside Forest Area.
31	User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas.	A Cooperative Society is set up in Gevra Project to facilitate the supply of LPG gas connection to the people working at the site to avoid damage / felling of trees.
32	Boundary of the mining lease and safety zone shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillar to pillar and GPS co-ordinates.	Boundary of the mining lease and safety zone demarcated on ground by User Agency.
33	Forest land shall not be used for any purpose other than that specified in the proposal.	No activity other than mining will be undertaken in the diverted forest land.
34	State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry vide their letter No. 11-9/1998-FC(pt.) dated 3 rd August 2009 read with 05.07.2013, in support thereof.	FRA copy Enclosed. ANNEX 7
35	The user agency shall submit the annual self compliance report of the above conditions to the state Government, concerned Regional Office	Agreed. Last report submitted on 17.04.2019.

	and this Ministry by the end of March every year regularly.	
36	Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife, and	Agreed.
37	The State Government and user agency shall comply the provisions of the all Act, Rules, Regulations, guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	Agreed.

G. K. S.

Manager / Manager
 District Office (Western) /
 Model Office, Forest,
 Central Area
 Bhopal

**SOUTH EASTERN COAL FIELDS LTD
GEVRA AREA**

BANK CREDIT VOUCHER

523018 Page 1 of 1

Cheque No : 275829196.00 Run Date 27-Mar-2018
Amount(Rs) :

EFT statement to be submitted to the Bank with Cheque
Date From : 23-Mar-2018 Date To : 27-Mar-2018

Bank : 55 - STATE BANK OF INDIA - GEVRA

Cheque No : 523018 Dated : 23/03/2018 Cheque in favour of : 55 - STATE BANK OF INDIA - GEVRA

Amount(Rs) : 275829196.00 (This amount agree with detailed total at column 4)

Amount in Words : Rupees TWENTY SEVEN CRORE FIFTY EIGHT LAKH TWENTY NINE THOUSAND ONE HUNDRED NINETY SIX only

SL	Voucher No	Party CD	Party Name	Amount (Rs)	Bank Name	Branch	IFSC CODE	Bank A/C No
1	17-18/009899/P		CHATTISGARH CAMP	275829196.00	CORPORATION BANK		CORP0000633	150645813199398
				<u>275829196.00</u>				

Important instruction to the Banker :
Amount may be credited to the beneficiary account after verification of name.


Authorized Signatory
SECL, Gevra Area

Authorized Signatory
SECL, Gevra Area

23-Mar-18 (23-Mar-2018)	SBI 522963 TO DEBIT THROUGH CHEQUE SBI 523012	523012	29,18,79,393.00	43,23,79,053.00
23-Mar-18 (23-Mar-2018)	SBI 522961 TO DEBIT THROUGH CHEQUE SBI 523001	522961	1,26,192.00	43,22,52,861.00
23-Mar-18 (23-Mar-2018)	SBI 523004 TO DEBIT THROUGH CHEQUE SBI 523009	523001	4,00,569.00	43,18,52,292.00
23-Mar-18 (23-Mar-2018)	SBI 523004 TO DEBIT THROUGH CHEQUE SBI 523009	523004	54,42,944.00	42,64,09,348.00
23-Mar-18 (23-Mar-2018)	SBI 523009 CHQ TRANSFER NEFT UTR NO: SBIN618082372115 523017 MSS E C L GEVRA AREA	523009	22,56,901.00	42,41,52,447.00
23-Mar-18 (23-Mar-2018)	523017 MSS E C L GEVRA AREA	523017 MSS E C L GEVRA AREA	2,00,00,000.00	40,41,52,447.00
23-Mar-18 (23-Mar-2018)	523016 MSS E C L GEVRA AREA	523016 MSS E C L GEVRA AREA	2,00,00,000.00	38,41,52,447.00
23-Mar-18 (23-Mar-2018)	523018 CHTTISGARH CAMPA	523018 CHTTISGARH CAMPA	27,58,29,196.00	10,83,23,251.00

Print Back



क्रं.-एसईसीएल/बीएसपी/वन/कार्यआ0/छगरावविनिलि./2016/15)

दि 01.10.2016

कार्य आदेश

प्रति,
प्रबंध संचालक,
छत्तीसगढ़ राज्य वन विकास निगम लिमिटेड,
लोकेश प्लाजा,
शंकर नगर रोड, शंकर नगर,
रायपुर (छत्तीसगढ़)

विषय : एसईसीएल एवं छगरावविनिलि. के मध्य एमओयू के अंतर्गत "छत्तीसगढ़ राज्य के एस.ई.सी.एल. के क्षेत्रों में वर्ष 2016-17 के दौरान किए जाने वाले सेफ्टी जोन फेंसिंग वृक्षारोपण सहित (Safty zone fencing with plantation work) का कार्य तथा आगामी चार वर्षों अर्थात् 2020-21 तक इनके रखरखाव के संबंध में कार्यदेश (Work Order)"

संदर्भ क्रं.-SECL/BSP/CAD/249 BM EXT/16-17/353 दिनांक 16.09.2016

महोदय,

उपर्युक्त के संदर्भ में एस.ई.सी.एल. बिलासपुर एवं छगरावविनि लिमिटेड, रायपुर (छ0ग0) के मध्य एमओयू के अंतर्गत मेसर्स छत्तीसगढ़ राज्य वन विकास लिमिटेड, रायपुर (छ0ग0) के पक्ष में विषयांकित कार्य के लिए कार्य आदेश देने के संबंध में एस.ई.सी.एल. बोर्ड का अनुमोदन एतद् द्वारा संसूचित किया जाता है। सेफ्टी जोन फेंसिंग वृक्षारोपण सहित (Safty zone fencing with plantation work) का कार्य वर्ष 2016-17, तत्पश्चात आगामी 04 (चार) वर्षों अर्थात् 2020-21 तक इसके रख-रखाव कार्य, जिसका कुल मूल्य रूपए 26,16,49,760.97 (रूपए छब्बीस करोड़ सोलह लाख उनचास हजार सात सौ साठ एवं पैसे संतानबे) (Escalation एवं टैक्स सहित) मात्र के लिए एतद् द्वारा आपको कार्य अवाई किया जाता है।

मद कं.	कार्य का विवरण	मात्रा	इकाई	दर (रु.)	राशि (रूपए में)
1	Strip of safety zone of 7.5m width with fencing (on both side) including plantation 2000 nos. per k.m. as per specification (enclosed), with Goose neck R.C.C. Post (1.8 mtr. high fencing with 2.4 mtr. long RCC post) as per specification placed every 2.5 mtr. apart embedded in Cement Concrete Block (1:5:10) and every 15 th post, last but one end post and corner post strutted on both side and end post on one side only. Provided with 7 horizontal lines and two diagonal of barbed-wire (9.38kg per 100mtr.) between 2 posts fitted and fixed with iron clips made in RCC posts, as per instruction of In-charge of the work, in the year 2016-17 with its subsequent maintenance for four years i.e. up to 2020-21.	112.973	Per Km.	2316038.00	261649760.97
(कुल राशि- छब्बीस करोड़ सोलह लाख उनचास हजार सात सौ साठ एवं पैसे संतानबे मात्र)					26,16,49,760.97

वृक्षारोपण हेतु एमओयू में विभिन्न प्रजातियों सुझाई गई हैं जो इस प्रकार हैं:

पौधे के प्रकार
फलदार वृक्ष : जामुन, इमली, गंगा इमली, बेल, आम, सीताफल आदि।
औषधीय / हर्बल पौधे : नीम, करंज, हर्रा, बहेरा, ऑवला (आमला), अर्जुन, शिकाकाई, कुसुम, महुआ आदि।
मूल्यवान लकड़ी के पेड़ : टीक, खम्हार, सिस्सू, कालाशीशम, सफेद सिरस, बांस, पेल्टाफोरम, बबूल, अकेसिया आरिकुलिफार्मिस आदि।
सजावटी पेड़ (सड़क और कालोनियों की तरफ से) : गुलमोहर, कचनार, अमलतास, सप्तपर्णी, ग्रेविलिया, पीपल, पाम ट्री आदि।

समस्त वृक्ष वन संरक्षण अधिनियम 1980 के अंतर्गत 'वन' के अर्थ में आना चाहिए।

क्षेत्रवार वृक्षारोपण एवं पाँच वर्षों अर्थात 2016-17 (सेफ्टी जोन फेंसिंग कार्य वृक्षारोपण सहित- प्रथम वर्ष) तथा तत्पश्चात 2020-21 तक चार वर्षों के लिए रखरखाव में होने वाले वर्षवार व्यय का विवरण एतद्वारा संलग्न है। (अनुलग्नक-“ए एवं बी”)

सेफ्टी जोन का कार्य वनमंडलाधिकारी (सामान्य) के निर्देशानुसार पूर्ण किया जाए। आपसे अनुरोध है कि आप कार्य प्रारंभ करने के लिए संबंधित क्षेत्र के मुख्य महाप्रबंधक/महाप्रबंधक से संपर्क करें।

संलग्न- यथोक्त।

भवदीय,

 1.10.16
 मुख्य प्रबंधक (खनन)
 वन विभाग,
 एसईसीएल, बिलासपुर

प्रतिलिपि

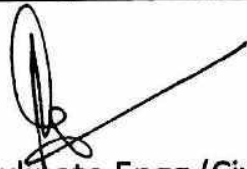
- निदेशक तक.(योजना/परि.),एसईसीएल,बिलासपुर - सादर सूचनार्थ।
- निदेशक (वित्त), एसईसीएल,बिलासपुर - सादर सूचनार्थ।
- मुख्य सतर्कता अधिकारी,एसईसीएल,बिलासपुर - सादर सूचनार्थ।
- अप्रनि के तक. सचिव,एसईसीएल,बिलासपुर - अप्रनि के सादर सूचनार्थ।
- महाप्रबंधक(विश्व बैंक/पर्यावरण.),एसईसीएल, बिलासपुर।
- महाप्रबंधक(वित्त.),एसईसीएल, बिलासपुर को उनके संदर्भित डायरी क्रं.- एफसी/एरिया आफ एसईसीएल क्षेत्र /सी/लेण्ड/16-17/66,दिनांक 21.09.2016 तथा बीसी/एरिया आफ एसईसीएल क्षेत्र /सी/लेण्ड/16-17/29, रु. 1539.34 लाख दिनांक 21.09.2016
- मुमप्र/मप्र,एसईसीएल, गोवरा, दीपिका, कोरबा, रायगढ़ एवं बिश्रामपुर क्षेत्र- क्षेत्रवार विवरण, वर्षवार वृक्षारोपण एवं पांच वर्ष के लिए किए गए व्यय अर्थात 2016-17 (सेफ्टी जोन फेंसिंग कार्य वृक्षारोपण सहित- प्रथम वर्ष) और आगामी 04 (चार) वर्ष अर्थात 2020-21 तक इसी के साथ संलग्न किया गया है।
- क्षेत्रीय वित्त अधिकारी/नोडल अधिकारी,एसईसीएल, गोवरा, दीपिका, कोरबा, रायगढ़ एवं बिश्रामपुर क्षेत्र - क्षेत्रवार विवरण,वर्षवार वृक्षारोपण एवं पांच वर्ष के लिए किए गए व्यय अर्थात 2016-17 (सेफ्टी जोन फेंसिंग कार्य वृक्षारोपण सहित- प्रथम वर्ष) और आगामी 04 (चार) वर्ष अर्थात 2020-21 तक इसी के साथ संलग्न किया गया है।
- क्षेत्रीय महाप्रबंधक, छगरावविनि लिमिटेड, बिलासपुर (छ0ग0)।
- मण्डल प्रबंधक, छगरावविनि लिमिटेड, औद्योगिक वृक्षारोपण मंडल,कोरबा (छ0ग0)।
- मण्डल प्रबंधक, छगरावविनि लिमिटेड, सरगुजा परियोजना मंडल, अंबिकापुर (छ0ग0)।
- सहायक श्रम आयुक्त (कें0),बिलासपुर (छ0ग0) के कृपया सूचनार्थ।


 1.10.16
 मुख्य प्रबंधक (खनन)
 वन विभाग,
 एसईसीएल, बिलासपुर

**AREA WISE SAFETY ZONE FENCING WORK FOR THE YEAR 2016-17 WITH ITS
SUBSEQUENT FOUR YEAR MAINTENANCE i.e. UP TO 2020-21 FOR
ADMINISTRATIVE AREAS UNDER CHHATTISGARH STATE [SECL AREAS -
GEVRA, DIPKA, KORBA, RAIGARH & BISHRAMPUR] BY CGRVVN LTD.,
RAIPUR.**

Sl. No	Name of the Area.	Name of the Mine (Area of FC proposal)	safety zone fencing (In Rmt.)	For safety zone fencing double row (In RMT)
1	Gevra	Gevra OC (803.129 Ha.)	52000	26000
2	Dipka	Dipka OC (206.638Ha. + 148.866Ha.)	10310	5155
3	Korba	Manikpur OC (194.728 Ha.+181.177 Ha.)	34000	17000
4	Korba	Rajgamar (419.34, 461.80 & 20.00)	90056	45028
5	Korba	Saraipali OC (33.266Ha.)	24000	12000
6	Raigarh	Baroud OC	9500	4750
7	Bishrampur	Amera OC	6080	3040
TOTAL:			225,946	112973


Chief Manager (Mining),
Forest Department, SECL


Sub Ordinate Engg.(Civil)
Forest Department, SECL

सेफ्टी जोन में सुरक्षा हेतु 1 कि०मी० में फेंसिंग कार्य

प्रथम वर्ष (2016-17)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

1 मानव दिवस = 1 मजदूरी दर रू० 246=00

क्र.	कार्य विवरण	कार्य ईकाई	दर	राशि
1.	रोपण स्थल का सर्वेक्षण एवं सीमांकन कार्य, उपचार, मानचित्र एवं प्रोजेक्ट रिपोर्ट तैयार करना।	1 कि०मी०	275.00	275.00
	फेंसिंग आरसीसी पोल्स एवं बारबेड वायर फेंसिंग 1000 मी० के लिए 2.50 मी० के अंतराल पर।			
2.	आर.सी.सी.फेंसिंग पोल्स (Goose neck) 2.4 मी० की लंबाई, 2000 मी०, 2.5 मी० के अंतराल पर = 800 पोल्स + 114 पोल्स (प्रत्येक 15 पोल्स के अंतराल पर 2 पोल्स सपोर्ट के लिए) = 914 पोल्स आरसीसी पोल्स का मानचित्र संलग्न है। (अनुलग्नक-“डी”)	914 नग	575.00 प्रति नग	525550.00
3.	आर.सी.सी.पोल्स गाड़ने के लिए 60 X 60 X 60 से०मी० साईज का गड्डा खुदाई	914 नग	10.00	9140.00
4.	बारबेड वायर कय सी.एस.आई.डी.सी. आईटम कोड 11/B/B-5, 2 ply 7 क्षैतिज लाईनों के लिए तथा 2 विकर्ण लाईनों के लिए कुल 9 लाईनों में 914 पोल्स X 2.5 मी० 7 क्षैतिज लाईन = 15995 मी०, 914 पोल्स X 2.8 मी० 2 क्षैतिज विकर्ण = 5118.4 = कुल 21113.4 मी०, 21114 मी० (9.38 किलो/100 रनिंग मीटर)	2250 कि०ग्रा०	70.00	157500.00
5.	आर.सी.सी.पोल्स लगाने के लिए सीमेंट कांकीट का मिक्सर (1:5:10) सीमेंट, रेत एवं 20 मि.मि. गिट्टी नार्मल साईज - 914	914	131.00	119734.00
6.	आर.सी.सी.पोल्स (क्यूरिंग सहित) तथा बारबेड वायर लगाना 1000 X 2 साईड = 2000 मी० (1 कि०मी० हेतु) 0.30 मा.दि. प्रति रनिंग मीटर	2000 मी०	73.80 प्रति मी.	147600.00
7.	खम्भे पुताई का कार्य (हरा पेंट 2 फीट एवं उपर सफेद रंग)	914 नग	32.82 प्रति नग	29997.00
(अ)	2000 रनिंग मीटर हेतु (1 कि०मी०) कुल रूपए			989796.00
	वृक्षारोपण पूर्व तैयारी			
8.	क्षेत्र सफाई कार्य एवं मृदा परीक्षण कार्य 3 X 3 मीटर	1 कि०मी०	2310.00	2310.00
9.	पौधा लगाने हेतु स्टेकिंग का कार्य 2 X 2 मीटर अंतराल स्टेगर्ड विन्यास में = 1 कि०मी० = 1000 मी० X 8 मीटर = 8000 वर्गमीटर / 2 X 2 = 20000 नग 4 मा. दि. प्रति हजार	2000 नग	984 प्रति हजार	1968.00
10.	गड्डों की खुदाई कार्य 45X45X45 से.मी. साईज कड़ी मिट्टी प्रति कि०मी० 2000 गड्डा 6 मा. दि. प्रति सैकड़ा	2000 गड्डा	1476 प्रति सैकड़ा	29520.00
11.	रोपण व्यय 2000 पौधे + 10 प्रतिशत अतिरिक्त = 2200 पौधे हेतु 25 X 30 से.मी. साईज	2200 पौधे	15.51 प्रति पौधा	34122.00
	अन्य आकस्मिक व्यय - बोर्ड लगाना, गेट लगाना, अग्नि सुरक्षा, फेंसिंग मरम्मत, मूल्यांकन एवं अनुश्रवण इत्यादि।	1 कि०मी०	10973.00	10973.00
(ब)				78893.00
			(अ)+(ब)	1068689.00
	सुपरविजन एवं स्थापना व्यय 25 प्रतिशत			267172.00
			कुल योग	1335861.00

द्वितीय वर्ष (2016-17)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

कं.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	50 प्रतिशत गड्ढों में मिट्टी क्य, परिवहन सहित (1/4 हिस्से में) 0.45X0.45X0.45 मीटर = 0.091125 M ³ x 1/4 = 0.023 M ³ 1000 (50%) = 22.782 M ³	22.782 घ.मी.	96.00	2187.00
2.	गोबर खाद/वर्मी कम्पोस्ट 1 कि.ग्रा. प्रति पौधा परिवहन सहित गड्ढों में मिट्टी खाद इत्यादि का मिश्रण भरना	2000 कि.ग्रा.	9.74	19480.00
3.	पौधा परिवहन कार्य	2000 गड्ढे	2.66	5320.00
4.	जैविक रासायनिक खाद क्य-	1200 पौधे	10.08	12096.00
	1. एन.पी.के. 20 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि.मी. सड़क के दोनों तरफ हेतु = 100 कि.ग्रा.	100 कि०ग्रा०	22.00	2200.00
	2. नीम, करंज, महुआ, खल्ली, हड्डी चूर्ण 250 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि०मी० सड़क के दोनों तरफ हेतु = 500 कि.ग्रा.	500 कि०ग्रा०	33.00	16500.00
5.	गड्ढों के दीमक रोधी उपचारण हेतु दीमक नाशक दवाई इंडोसल्फान डस्ट इत्यादि को डालना 10 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि०मी० सड़क के दोनों तरफ हेतु = 20 कि.ग्रा.	20 कि०ग्रा०	172.70	3454.00
6.	नर्सरी कार्य-			
	1. प्रथम वर्ष रोपण हेतु पौधों की न्यूनतम उंचाई 3 फीट (9.1 मा.दि. प्रति सैकड़ा का 35 प्रतिशत) 9.1 X 246 X 35 प्रतिशत = 777.14	2200 नग	777.14 प्रति सै.	17097.00
	2. द्वितीय वर्ष में कैजुअल्टी पौधे की न्यूनतम उंचाई 3 फीट (9.1 मा. दि.प्रति सैकड़ा का 65 प्रतिशत) 9.1X246X65 प्रतिशत = 1455.09	200 नग	1455.09 प्रति सै.	2910.00
7.	पौधारोपण कार्य 2.6 मा.दि. X246/100 - 639.60	2000 नग	639.60 प्रति सैकड़ा	12792.00
8.	प्रथम निदाई/गुड़ाई कार्य/मृत पौधे का प्रतिस्थापन, कीटनाशक एवं जैविक/रासायनिक खाद डालने सहित (1.3 मा.दि.प्रति सैकड़ा) 1.3 X246 = 319.80 प्रति सै.	2000 पौधे	319.80 प्रति सैकड़ा	6396.00
9.	द्वितीय निदाई,गुड़ाई कार्य (3 मा.दि. प्रति सैकड़ा) 3 X246 738.00 प्रति सै.	2000 पौधे	738.00 प्रति सैकड़ा	14760.00
10.	तृतीय निदाई, गुड़ाई कार्य (माह फरवरीमें/इसमें थाला भी बनाया जावेगा) (1.3 मा.दि. प्रति सैकड़ा) X 246 = 319.80	2000 पौधे	319.80 प्रति सैकड़ा	6396.00
11.	जैविक एवं रासायनिक खाद एवं कीटनाशक का क्य (निदाई के समय उपयोग)	2000 पौधे	8.58 प्रति पौधा	17160.00
12.	सुरक्षा जुलाई से मार्च तक (9 माह तक) महिला स्व सहायता समितियों को प्राथमिकता (1 कि.मी. पर एक चौकीदार) 1 मजदूर X 30 दिवस X 246 = 7380.00	9 माह	7380.00/ प्रतिमाह	66420.00
13.	पानी सिंचाई 3 माह	2000 पौधे	26.00 प्रति पौधा/प्रतिमाह	52000.00
14.	अन्य आकस्मिक व्यय - अग्नि सुरक्षा,फेंसिंग मरम्मत एवं मूल्यांकन एवं अनुश्रवण इत्यादि।	2000 पौधे	6.64 प्रति पौधा	13280.00
			योग-	270448.00
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	67612.00
			कुल योग	338060.00

तृतीय वर्ष (2018-19)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

कं.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	पौधा परिवहन कार्य नर्सरी से पौधा तैयारी सहित (9.1 मा.दि. का 35 प्रतिशत) $9.1 \times 246.00 \times 35\%$	200 पौधे	783.51 प्रति सैकड़ा	1567.00
2.	पौधा परिवहन	200 पौधे	5.50 प्रति पौधा	1100.00
3.	प्रथम निदाई/गुड़ाई कार्य/मृत पौधे का प्रतिस्थापन, कीटनाशक एवं जैविक/रासायनिक खाद डालने सहित (250+100+20) (1.3 मा.दि. प्रति सैकड़ा) $1.3 \times 246 = 319.80$ प्रति सैकड़ा	2000 पौधे	319.80 प्रति सैकड़ा	6396.00
4.	द्वितीय निदाई/गुड़ाई कार्य/मृत पौधे का प्रतिस्थापन, कीटनाशक एवं जैविक/रासायनिक खाद डालने सहित (250+100+20) (3 मा.दि. प्रति सैकड़ा) $3 \times 246 = 738.00$ प्रति सैकड़ा	2000 पौधे	738.00 प्रति सैकड़ा	14760.00
5.	जैविक रासायनिक खाद एवं कीटनाशक क्रय	2000 पौधे	8.58 प्रति पौधा	17160.00
6.	सुरक्षा जुलाई से मार्च तक (12 माह तक) महिला स्व सहायता समितियों को प्राथमिकता (1 कि.मी. पर एक चौकीदार) 1 मजदूर \times 30 दिवस \times 246 = 7380.00	12 माह	7380.00 प्रतिमाह	88560.00
7.	पानी सिंचाई 03 माह हेतु	2000 पौधे	30.61 प्रति पौधा	61220.00
8.	अन्य आकस्मिक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत एवं मूल्यांकन एवं अनुश्रवण इत्यादि।	2000 पौधे	5.99 प्रति पौधा	11980.00
			योग-	202743.00
			(+) 10 प्रतिशत मजदूरी वृद्धि संभावित	20274.30
			योग-	223017.30
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	55754.00
			कुल योग	278771.30

चतुर्थ वर्ष (2019-20)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

कं.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	द्वितीय निदाई/गुड़ाई कीटनाशक एवं रासायनिक खाद डालना (1.3 मा.दि. प्रति सैकड़ा) $1.3 \times 246 = 319.80$ प्रति सैकड़ा	2000 पौधे	319.80 प्रति सै.	6396.00
2.	जैविक/रासायनिक खाद एवं कीटनाशक क्रय	2000 पौधे	4.40 प्रति पौधा	8800.00
3.	सुरक्षा 12 माह (महिला स्व सहायता समितियों को प्राथमिकता)	12 माह	7380.00 प्रतिमाह	88560.00
4.	अन्य आकस्मिक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत, मूल्यांकन इत्यादि।	2000 पौधे	6.13 प्रति पौधा	12260.00
			योग-	116016.00
			(+) 20 प्रतिशत मजदूरी वृद्धि संभावित	23203.00
			योग-	139219.00
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	34805.00
			कुल राशि:	174024.00

07

पंचम वर्ष (2020-21)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

कं.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	सुरक्षा 12 माह (महिला स्व. सहायता समितियों को प्राथमिकता)	12 माह	7380.00 प्रतिमाह	88560.00
			योग-	88560.00
			(+) 30 प्रतिशत मजदूरी वृद्धि समावित	26568.00
			योग-	115128.00
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	28782.00
			कुल राशि:	143910.00

गोशवारा

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

कं.	वर्ष	अधिकतम व्यय सर्विस चार्जेस रहित)	अधिकतम व्यय सर्विस चार्जेस सहित)
1.	प्रथम वर्ष (2016-17)	1335861.00	1362578.00
2.	द्वितीय वर्ष (2017-18)	338060.00	344821.00
3.	तृतीय वर्ष (2018-19)	278771.30	284347.00
4.	चतुर्थ वर्ष (2019-20)	174024.00	177504.00
5.	पंचम वर्ष (2020-21)	143910.00	146788.00
	योग-	2270626.30	2316038.00

मुख्य प्रबंधक (खनन),
वन विभाग,
एसईसीएल मुख्यालय



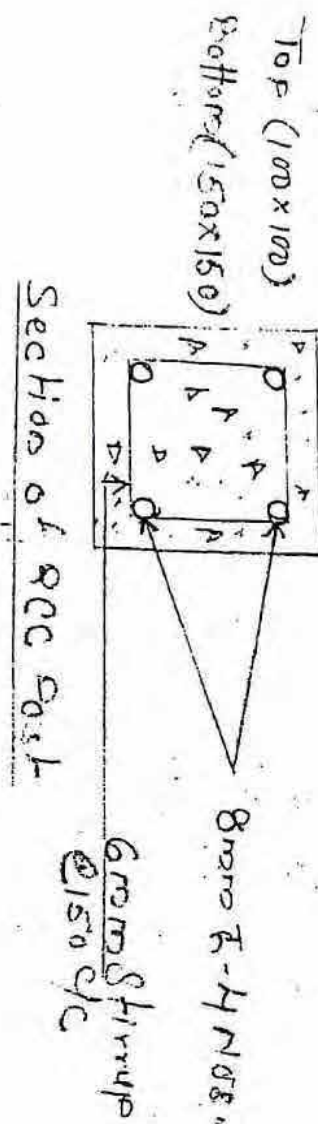
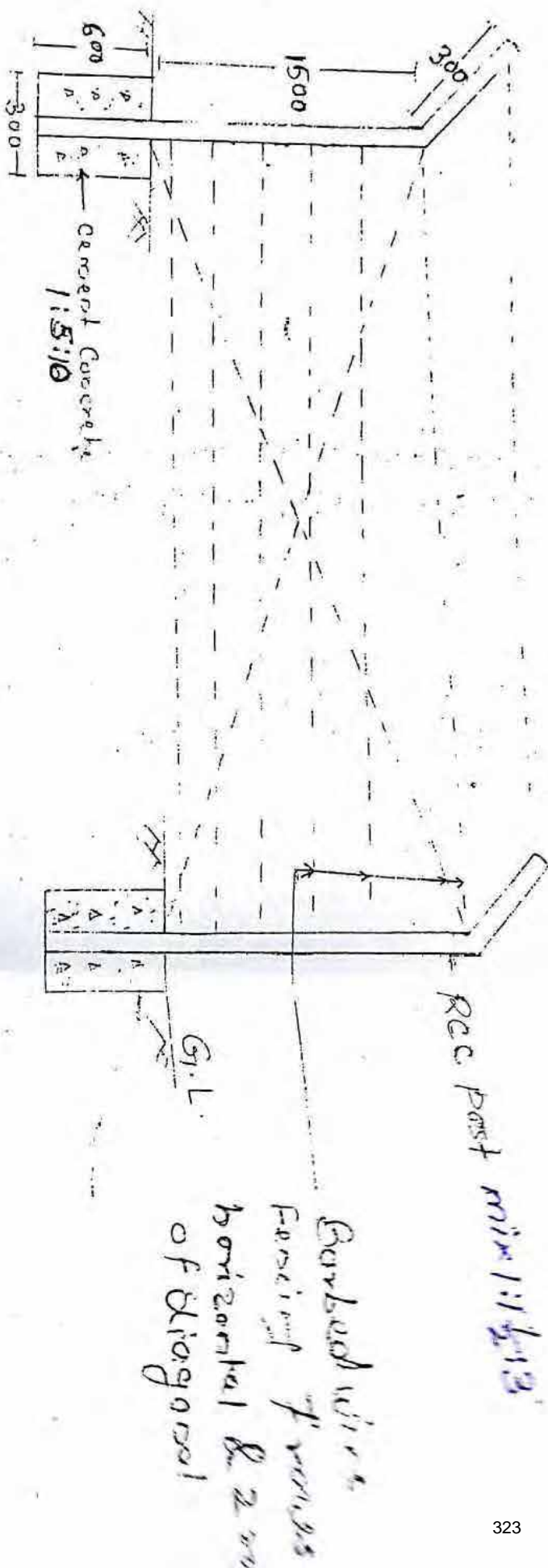
Annexure B

Sr. No.	Area / Unit	Safety Zone fencing work (In Km)	Unit rate for Fencing & Plantation in 2016-17 1st year Fencing & Plantation rate (in Rs.)	Cost of Fencing & Plantation in 2016-17 1st year Fencing & Plantation Cost (in Rs.)	Advance work amount i.e. 70% of the 1st year fencing & plantation cost (in Rs.)	Completion work amount i.e. 30% of the 1st year fencing & plantation cost (in Rs.)	Unit rate for fencing & plantation in 2017-18 2nd year i.e. 1st year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2017-18 2nd year i.e. 1st year maintenance cost (in Rs.)	Unit rate for Fencing & plantation in 2018-19 3rd year i.e. 2nd year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2018-19 3rd year i.e. 2nd year maintenance cost (in Rs.)	Unit rate for fencing & plantation in 2019-20 4th year i.e. 3rd year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2019-20 4th year i.e. 3rd year maintenance cost (in Rs.)	Unit rate for fencing & plantation in 2020-21 5th year i.e. 4th year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2020-21 5th year i.e. 4th year maintenance cost (in Rs.)	Unit rate for fencing & plantation in 2016-17 to 2020-21 (5 years)	Total Cost for fencing & plantation in 2016-17 to 2020-21 (5 years)
1	2	3	4	5	5a	5b	6	7	8	9	10	11	12	13	14	15
Safety Zone Fencing work (In Km.)																
1	Gevra	26.000	1362578.0	35427028.00	24798919.60	10628108.40	344821.0	8965346.00	284347.0	7393022.00	177504.0	4615104.00	146788.0	3816488.00	2316038.0	60216988.00
2	Dipka	5.155	1362578.0	7024089.59	4916862.71	2107226.88	344821.0	1777552.26	284347.0	1465808.79	177504.0	915033.12	146788.0	756692.14	2316038.0	11939175.89
3	Korba	74.028	1362578.0	100868924.18	70608246.93	30260677.26	344821.0	25526408.99	284347.0	21049639.72	177504.0	13140266.11	146788.0	10866422.06	2316038.0	171451661.06
4	Raigarh	4.750	1362578.0	6472245.50	4530571.85	1941673.65	344821.0	1637899.75	284347.0	1350648.25	177504.0	843144.00	146788.0	697243.00	2316038.0	11001180.50
5	Bishrampur	3.040	1362578.0	4142237.12	2899565.98	1242671.14	344821.0	1048255.84	284347.0	864414.88	177504.0	539612.16	146788.0	446235.52	2316038.0	7040755.52
	TOTAL	112.973		153934524.39	107754167.08	46180357.32		38955462.83		32123533.63		20853159.39		16583080.72		261649760.97

Chief Manager (Min),
Forest Department

Sub Ordinate
Engg. (Civil)

BARBED WIRE FENCE



NOTE - ALL DIMENSIONS IN MILLIMETRES

MILLIMETRES

[Handwritten signature]

Dump Details							
DUMP NO.	DUMP AREA	BIOLOGICALLY RECLAIMED	YEAR	BALANCE AREA	SPECIES	RL	
	HA.	Ha.		Ha.			
INTERNAL							
INT 1	15.26	13	1995 1997-2006	2.26	Neem, Karenej, Amla, Siras, Sissoo, Bel, Bamboo, Gangaimli, Bahera, Ashok, Golmohar, Satwan, Cassiageme Teak, Jamun, Peltaforum, Cassiagulco, Boganvallia Khamar, Sitaphal, Amrood, Kathal, Imli, Mango, Sisham,	324.78	
INT 2 & 3 INCLUDING AAMRA KANAN	123.94	68.85 15	1997 1998-2011	55.09		357.56	
INT 4	147.909	16.75	1999 2003-2006	131.159		331.92	
INT 5, 6 & 7 INCLUDING ANAND VATIKA	230.06	24 16	2000 2003-2012	206.06		326.75	
INT 8	74.624		2007				
TOTAL		122.6					
EXTERNAL							
EXT 1	5.25	5.25	1986 1887	0			
EXT 2, 3 & 4	109.26	103.534	1987 1993-2006	12.01	366.18		
EXT 5	61.7	61.7	1993 1997-2004	0	364.71		
EXT 6 & 7	156.716	156.716	1997 2002-	0	370.05		
EXT 1 DIPKA UNIT	8.909	8	1989 1993	0.909			
EXT 2 & 3 DIPKA UNIT	32.496	32	1993 1996-2009	0.496	359.7		
		367.2					



SOIL CONSERVATION PLAN

**GEVRA OPEN CAST MINE
SOUTH EASTERN COALFIELDS LIMITED**

The total Mine Lease area of the project is 4184.486 Ha. The total Forest Land involved is **1016.412 Ha** out of which **904.027 Ha.** has already been diverted for nonforest purpose after receiving the Stage II Forest Clearance. The remaining **112.385 Ha.** of Revenues Forest land has obtained In-principle /Stage I approval vide MoEF&CC Clearance L.No. 8-41/2017-FC dated 27.09.2017.

Physiography & Drainage

The general topography of the block is gently undulating .The surface contour ranges from 288-328 m above MSL. The general slope of the terrain is towards East. Water from the mine and nearby area flows into the seasonal nalla namely LaxmanNala located on the northern side. Ahiran River located towards NE. In addition there are quite a few ponds. Ahiran and Hasdeo River control the drainage of the area and are situated towards N-E and East respectively of the area under consideration.

The climate of the area is dry to moist tropical with well-defined summer from April to June, rainy season from July to September and winter from November to February. The temperature rises to a maximum of 48⁰C in May and drops to a minimum of 7⁰C in December. The average annual rainfall is 1265 mm.

MINE WATER ENVIRONMENT

Surface Water Resources

Hasdeo River, a major tributary of Mahanadi River flowing along the eastern side in North – South Direction is the master drainage of the area. The mine block is drained by Laxmannallah flowing in West- East direction and joins Ahiran Nadi, a tributary of Hasdeo river at about 4.5 KM in NE from the mine. Kholar stream which is also a tributary of Hasdeo River controls the drainage in the northern part whereas LilagerNadi and Gangadelnallah controls the SW and SE respectively. These streams are mostly perennial and behave as constant recharge sources. The pattern of the drainage in the area is mostly dendritic in nature.

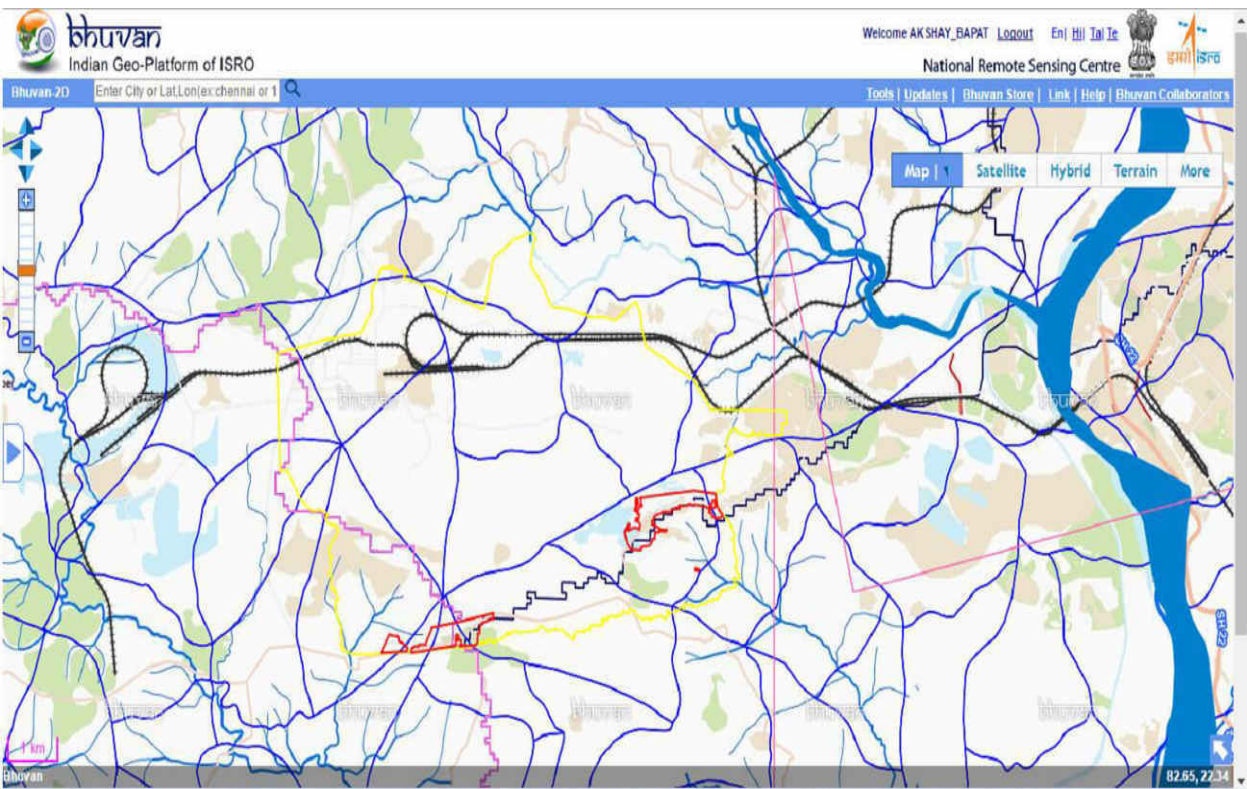
Ground Water Resources

The formations within the study area are Barakars, Talchirs and Metamorphics. Major portion of the study area is occupied by Gondwanas. Talchirs and metamorphics occupy the rest. The Project area is situated in Barakars formation comprising sandstone of different grain sizes with shale beds and coal seams. This permeable sandstone is saturated

and behaves as aquifers. Shale and coal seams act as aquicludes. Stratification and the presence of aquicludes lead the aquifer system into multiaquifer system.

The formation comprising mainly of alluvium and sandstone (average thickness 50.0 m), lying above the working seam E&F behave as unconfined aquifer. Whereas, lower formations consisting of compact sandstone mainly with secondary porosity behave as semi-confined/confined aquifer.

In the unconfined aquifer ground water moves laterally through the intergranular pore spaces in the sandstone. Whereas, in lower aquifers the groundwater movement is restricted mainly through joints and fractures (i.e. secondary porosity). With intercalation of shales and carbonaceous shale beds and reduction in permeability with depths in the lower aquifers are very poor in potential. A flat water table with a gradient of 1.8×10^{-2} , slopping towards east, was observed in the area.



Plan showing hydrological features of the area

A. PREPARATION AND IMPLEMENTATION OF A PLAN CONTAINING APPROPRIATE MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAMS

Soil conservation in its widest sense includes not only control over erosion but all those measures like correction of soil defects, application of manures and fertilizers, proper crop rotations, irrigation, drainage etc. which aim at maintaining the productivity of the soil at a high level. In this sense, soil conservation is closely allied to improvement of land use in general.

In OC mines, the earth material is dug out to extract coal. The excavated overburden material consists of alluvial, top soil, sub soil and rocks. The OB is placed in the nearby areas in the form of dumps. If no measures are taken for the management of OB dumps, after precipitation, water will take away the soil particles along with itself thereby causing soil erosion. This eroded soil will flow into the nearby streams, rivers, water channels and cause choking/ contamination of the water bodies. In order to prevent this, an effective soil erosion management plan needs to be prepared and implemented.

MITIGATIVE MEASURES TO MINIMIZE SOIL EROSION AND CHOKING OF STREAMS

In order to control soil erosion, a step by step procedure needs to be adopted so that the water flows through a proper path and does not take away with it the essential soil material. The steps to be followed are:

1. **Garland Drains:** To arrest the surface runoff into the quarry, garland drains with suitable dimension (4 m x 1.5m) to carry the peak discharge are constructed.



B. PLANTING OF ADEQUATE DROUGHT HARDY PLANT SPECIES AND SOWING OF SEEDS IN THE APPROPRIATE AREA WITHIN THE MINING LEASE TO ARREST SOILEROSION

In view of importance of vegetation cover towards environment, the technical reclamation will be strengthened by biological reclamation for conserving the environment.

Plantation Technique on Overburden Dumps

To improve the environment and greenery in the area, SECL had taken up plantation on a larger scale. The improvement in vegetation cover has a direct bearing on augmentation of ground water recharge. The compensatory afforestation has been carried out through the State Forest Departments. In addition to compensatory afforestation, to improve the greenery and dust control, the project did heavy plantation both on reclaimed and at various other locations in the project area. This greenery not only controls air pollution but also controls the soil erosion and increase groundwater recharge.

The top surface of the overburden dumps selected for plantation will be roughly levelled by dozer keeping a mild slope of about 1 in 200 for surface water drainage.

Seeds of grass legumes will be sown on beds of 1.5m x 0.5 m, alternating with slopes to be planted with tree species. Gully plugging and constructing check dams on water courses flowing through OB dumps with boulders, will also be made to arrest soil erosion.

In SECL Plantations are carried out by CGRVVN (Chhattisgarh Rajya Van Vikas Nigam Limited). Long term MoU was signed between SECL and CGRVVN Ltd. Raipur for five consecutive years plantation works with subsequent maintenance of four years in SECL command area in Chhattisgarh State.

Various species suggested for plantation are:

- Fruit bearing (15%) & Medicinal / Herbal (35%):
- Jamun, Imli, Ganga Imli, Bel, Mango, Neem, Bahera, Amla, Mahua, Kusum, Arjuna etc.
- Timber/ forest (48%): Teak, Shisham, Siris, Bamboo, Babool, Ghamhar, Pipal etc.
- Ornamental / avenue (2%): Gulmohar, Kachnar, Gravelia, Ashok, August etc.
- Grass Species: StyloHemata, Dinanath on slope of OBD

TOP SOIL MANAGEMENT PLAN

Introduction

The topsoil at proposed Gevra OC Expansion (35.0-70.0Mty) comprises of rich humus with minerals and nutrients. Proper handling and management is necessary for future vegetation growth in the mine reclaimed area. The thickness of the top soil varies between 25 cm to 35 cm.

Objectives of the Soil Stripping management plan

The objectives of Top Soil Management are to:

- Maintain a topsoil balance that achieves rehabilitation objectives during the life of Mine.
- Ensure effective topsoil removal techniques are employed to maximize volumes of suitable topsoil removed and minimize wastage.
- Maintain topsoil viability during stripping, spreading, and stockpiling, through best practice technique and effective stockpile design and treatment.

In accordance with the objective of providing sufficient stable soil material for rehabilitation and to optimize soil recovery, the following strategies will be adopted during the mining operation at Gevra opencast mines.

Stripping

Prior to the commencement of stripping, areas will be cleared of vegetation. Soil stripping will be undertaken by dozers and hydraulic backhoe excavators to maximize the preservation of the quality of the soil. The HEMM operators and supervisors should be trained and made aware for the same. This will ensure that all suitable topdressing material resources are salvaged and that the quality of the stripped top dressing material is not reduced through contamination with unsuitable soils. Care will be taken during stripping, stockpiling, and re-spreading to ensure that structural degradation of the soil is avoided and that excessive compaction does not occur during stockpiling.

Stock piling

- Where possible, topdressing material will be re-spread directly from stripped areas onto areas being rehabilitated. Where this is not possible, topdressing material will be stored in stockpiles.
- Stock piles will be dumped at places where they would not be disturbed by future mining. Sediment fences or other barriers can be used where necessary to retain sediment.
- The overall topography for the graded surface should be designed to minimize the uncontrolled flow of runoff.
- Dispersed sheet flow should be broken up by terraces or benches along the slope that also follow topographic contours.
- On a fine scale the ground surface can be roughened by the tracks of a bulldozer perpendicular to the slope. Construction of stockpiles with a “rough” surface condition will reduce erosion hazard, improve drainage and promote revegetation.

Stockpile preservation

Stockpiling topsoil may result in disruption & loss of beneficial soil microorganisms and nutritional values, hence needs the following amendments during preservation:-

1) Re-vegetation of the stockpile will be done as scheduled below to protect the soil from erosion, discourage weeds and maintain active populations of beneficial soil microbes.

- Temporary Seeding- To protect topsoil stockpiles by temporarily seeding as soon as possible, within 30 days after the formation of the stockpile.
- Permanent Vegetation- If stockpiles will not be used within 12 months they will be stabilized with permanent vegetation to control erosion and weeds. Likely grass species for revegetating top soil stock piles are green panic, Japanese millet (spring sowing), Oats (winter sowing), Dryland Lucerne, Seaton park sub-clover.

Topsoil can be mixed with organic material or manufactured soil amendments to improve the growing capability.

2) To the extent practicable, above ground vegetation, including tree litter should be mixed or otherwise incorporated into the topsoil.

3) Soil amendments: Soil amendments should be applied before seeding or planting. Common soil amendments used are biosolids, compost, manure, lime and coal combustion byproducts.

Prior to the placement, the top 0.30cm of the stock pile material should be mixed with the remainder of stockpile to ensure that living organisms are distributed throughout the top soil material at the time of final placement. In case, the material has been stockpiled for over nine months period, used of micro organisms inoculates may be necessary to re-establish microorganisms in the top soil material. The quantity should be 200ml for one Ha. area in case of Azatobactor and Rhizobium.

Site Preparation

- Before spreading topsoil, establish erosion and sedimentation control structures such as diversions, berms, dikes, waterways and sediment basins.
- Adjust grades and elevations for receipt of topsoil.
- Roughening - Immediately prior to spreading the topsoil, loosen the subgrade to ensure bonding of the topsoil and subsoil.
- Soil horizons will be replaced in the same order that they were removed.
- Top soil will be uniformly distributed to pre-mining thickness. Topsoil will not be spread while it is frozen or muddy.
- The topsoil will be compacted to ensure good contact with the underlying soil, but excessive compaction will be avoided, as it increases runoff and inhibits seed germination. Light compaction with roller will be done where turf is to be established.

On slopes and areas that will not be mowed, the surface will be left rough after spreading topsoil.

Monitoring

Specific team / manpower is to be deployed for this most important step of topsoil management. The team will monitor the area and quantum of top soil management with the authorities of mine on quarterly basis and regularly monitor the given points of significant importance:

- Monitoring Erosion Control: This step is necessary during stock piling as well as reclamation stage of topsoil management. Take corrective measure in areas showing evidence of erosion, sedimentation or slope failure. This is a serious problem, because erosion causes fertile farmland to lose nutrients and water retention ability
- Regular monitoring of top soil management should be done until vegetation is demonstrated to be successfully established.
- Reseeding: Take appropriate measures to address evidence of invasive species or poorly established vegetation. Reseeding should be done, if germination is not uniform or poor.

YEARWISE PLANTATION AT GEVRA AREA



AVENUE PLANTATION



C. CONSTRUCTION OF CHECK DAMS, RETENTION/TOE WALLS ALONG THE CONTOUR TO ARREST SLIDING DOWN OF THE EXCAVATED MATERIAL

- 1. Catch Drain:** 2.8 KM of pucca catch drains of dimension 1.5 X 1.5 m were constructed for channelling of surface runoff during Rainy Period.
- 2. Check Dams & Retaining Wall:** To prevent soil Erosion & arrest sliding down of excavated material along the contour. Regular maintenance is carried out to prevent siltation.



- 2018-19 Plantation dump area have been provided with Contour trench 300 per trench, check dam 20 per cubic meter and bund with stone bolders 20 per cubic meter.



- A toe wall is constructed at External Dump no. 6 & 7 of dimensions: Length 650 meters, height above ground 1.00 meters and top width of wall 200 mm in the year 2018-19

D. STABILIZE THE OVERBURDEN DUMPS BY APPROPRIATE GRADING/BENCHING SO AS TO ENSURE THAT THAT ANGLES OF REPOSE AT ANY GIVEN PLACE IS LESS THAN 28⁰

PROGRAMME OF O.B. REMOVAL, DUMPING & PLANTATION:

Year	Coal production (MTes)	OB removal (Mcum)	Dump plan (Mcum)		Dump area available for reclamation (Ha.)		No. of plantation @ 2500 Nos / Ha.		Total plantation @ 2500 Nos / Ha.
			External	Internal	External	Internal	External	Internal	
1	40	72.69	0	72.69	0	0	0	0	0
2	41	72.67	0	72.67	0	0	0	0	0
3	41	73.8	0	73.8	0	0	0	0	0
4	45	82.12	0	82.12	0	0	0	0	0
5	49	86.92	0	86.92	0	0	0	0	0
6	61	108.62	0	108.62	0	59.13	0	147825	147825
7	70	125.06	0	125.06	0	59.13	0	147825	147825
8	70	125.53	0	125.53	0	59.13	0	147825	147825
9	70	125.51	0	125.51	0	59.12	0	147800	147800
10	70	125.17	0	125.17	0	59.12	0	147800	147800
11	70	125.09	0	125.09	0	63.36	0	158400	158400
12	70	125.51	0	125.51	0	63.36	0	158400	158400
13	70	125.54	0	125.54	0	63.36	0	158400	158400
14	70	124.82	0	124.82	0	63.36	0	158400	158400
15	70	124.95	0	124.95	0	63.36	0	158400	158400
16	70	107.8	0	107.8	0	63.36	0	158400	158400
17	70	107.66	0	107.66	0	63.36	0	158400	158400
18	70	86.34	0	86.34	0	63.36	0	158400	158400
19	70	84.96	0	84.96	0	63.36	0	158400	158400
20	70	85.18	0	85.18	0	63.36	0	158400	158400
21	50	40.8	0	40.8	0	63.36	0	158400	158400
22	30.68	29.89	0	29.89	0	63.36	0	158400	158400
MC₁	0	0	0	0	0	77.3	0	193250	193250
MC₂	0	0	0	0	0	77.3	0	193250	193250
MC₃	0	0	0	0	0	77.3	0	193250	193250
Total	1337.68	2166.61	0	2166.61	0	1287.85	0	3219625	3219625

The spoil dump benches in the internally backfilled OB will be in the form of benches. With the sufficient advance of coal production bench, the non-active backfilled OB will be leveled with dozer. Dumper/Tipper will transport soil/alluvium OB from the top OB bench and will dump the soil directly on the leveled backfilled OB. Otherwise; top soil will be removed and stored separately. This soil will be directly spread over the levelled graded backfilled spoil for reclamation of the quarried out land. OB dumps will be properly benched and the maximum height of the bench will be kept not more than 30m. Dump benches will have a mild gradient of 0.6% to facilitate the drainage. Wherever possible, simultaneous land reclamation will be done along with the OB dumping.

The following design criteria have been considered for waste dumps.

- (i) OB in external dumps will be stacked in 30 m high benches.
- (ii) OB in internal dumps will also be stacked in 30 m high benches.
- (iii) Dozers to be deployed for shaping the dumps overall slope is 28° .
- (iv) Final reclamation will be achieved using the equipment provided for the purpose.

Once, the external dumping is completed, the spoil will be graded and landscaped in harmony with surrounding topography and biological reclamation carried out. Alternatively, the final void at the end of mining operations in the mine can be converted into a water reservoir.

RECLAMATION SCHEDULE

E. STRICT ADHERENCE TO THE PRESCRIBED TOP SOIL MANAGEMENT

Systematic handling of topsoil

Topsoil shall be removed before any drilling, blasting, mining, or other surface disturbance. The stock piling of top soil will be as follows:

- Top soil and other materials removed shall be stock piled only when it is impractical to promptly redistribute such materials on regarded areas.
- Stock-piled materials shall be selectively placed on a stable area, not distributed, and protected from wind and water erosion, unnecessary compaction, and contaminants which lessen the capability of the materials to support vegetation when redistributed.

Top soil redistribution

After the final grading the top soil would be redistributed in a manner that achieves an approximate uniform stable thickness consistent with the post mining land uses, contours, and surface water drainage system.

Biological reclamation

In view of importance of vegetation cover towards environment, the technical reclamation will be strengthened by biological reclamation for conserving the environment.



FINANCIAL PROVISIONS

I. Financial provision for soil erosion management

S. No	Activity	Amount (in Rs.)
1	Garland Drains	30.00
2	Arboriculture/plantation in industrial area	5.67
3	Barbed fencing/boundary walls/Toe walls/Gabion structures for the project	19.37
4	Land Reclamation / Restoration	42.50
5	Green Belt in and around the Mine	10.00
	Total	107.54

* Subsequent additional provision will be made as and when required.

II. Mine Closure cost for OCMine

Mine closure plan has been approved by SECL Board on 28.11.2013. The Mine Closure cost of Gevra OC is **Rs. 26412.48 lakhs** (@ Rs. 6.312 lakh per Ha.) as per approved Mine Closure Plan.

III. Detail of EscrowAccount

The current value of corpus is **Rs.26412.48 lakhs** (as on April 2010). This corpus is to be divided by estimated life of mine. Considering total life as 24 years (as on April 2010), the annual corpus comes to **Rs. 1100.52 Lakhs**. This amount is to be deposited in escrow account every year with 5% annual escalation.

FUND TO BE DEPOSITED IN ESCROW ACCOUNT

YEAR	FUND DEPOSITED IN ESCROW FUND	FUNDS TO BE REIMBURSED (MAX.)	
1	1100.52	NIL	(+) accrued interest as applicable
2	1155.55	NIL	
3	1213.32	NIL	
4	1273.99	NIL	
5	1337.69	NIL	
1ST PHASE	6081.07	4864.85	
6	1404.57	NIL	
7	1474.80	NIL	
8	1548.54	NIL	
9	1625.97	NIL	
10	1707.27	NIL	
2ND PHASE	7761.15	6208.92	
11	1792.63	NIL	
12	1882.26	NIL	
13	1976.38	NIL	
14	2075.19	NIL	
15	2178.95	NIL	
3RD PHASE	9905.42	7924.33	
16	2287.90	NIL	
17	2402.30	NIL	
18	2522.41	NIL	
19	2648.53	NIL	
20	2780.96	NIL	
4TH PHASE	12642.10	10113.68	
21	2920.01	NIL	
22	3066.01	NIL	
23	3219.31	NIL	
24	3380.27	NIL	
FINAL PHASE	12585.60	19863.54	
TOTAL	48975.34	48975.34	

FUND REIMBURSEMENT SCHEDULE

YEAR	Escrow Fund as on Aug 2009	Total Escalation	FUND DEPOSITED IN Escrow Fund
1	1046.12	54.40	1100.52
2	1046.12	109.43	1155.55
3	1046.12	167.20	1213.32
4	1046.12	227.87	1273.99
5	1046.12	291.57	1337.69
1ST PHASE	5230.60	850.47	6081.07
6	1046.12	358.45	1404.57
7	1046.12	428.68	1474.80
8	1046.12	502.42	1548.54
9	1046.12	579.85	1625.97
10	1046.12	661.15	1707.27
2ND PHASE	5230.60	2530.55	7761.15
11	1046.12	746.51	1792.63
12	1046.12	836.14	1882.26
13	1046.12	930.26	1976.38
14	1046.12	1029.27	2075.19
15	1046.12	1132.83	2178.95
3RD PHASE	5230.60	4674.82	9905.42
16	1046.12	1241.78	2287.90
17	1046.12	1356.18	2402.30
18	1046.12	1476.29	2522.41
19	1046.12	1602.41	2648.53
20	1046.12	1734.84	2780.96
4TH PHASE	5230.60	7411.50	12642.10
21	1046.12	1873.89	2920.01
22	1046.12	2019.89	3066.01
23	1046.12	2173.19	3219.31
24	1046.12	2334.15	3380.27
FINAL STAGE	4184.48	8401.12	12585.60
GRAND TOTAL	25106.88	23868.46	48975.34

IV. TENTATIVE FINAL MINE CLOSURE ACTIVITIES AND COST BREAK-UP

Type of mine: Opencast

Production Capacity: 45.00MTY

Mining Lease Area: 4184.486Ha.

Depth of the mine: 190m

S. No.	Major Closure Activities	% of Total
A	Dismantling of Structures	
	Service Buildings	0.2
	Residential Buildings,	2.67
	Industrial Structures i.e. workshop complex, 33kv/3.3kv Sub-Station, Unit Stores, Security Barrack	0.3
B	Permanent fencing of mine void & other dangerous areas	
	Random rubble masonry of height 1.2m including levelling up in cement concrete 1:6:12 in mud mortar.	1.5
C	Grading of highwall slopes	
	Levelling & grading of highwall slopes	1.77
D	OB Dump Reclamation	
	Handling/Dozing of external OB dump into mine void.	88.66
	Bio-reclamation including soil spreading, plantation &	0.0
E	Landscaping	
	Landscaping of the cleared land for improving its aesthetic	0.3
F	Plantation	
	Plantation over area obtained after dismantling.	0.5
	Plantation around fencing	0.2
	Plantation over the cleared off external OB dump.	0.00
G	Monitoring / testing of environmental parameters for three	
	Air quality	0.22
	Water quality	0.2
H	Entrepreneurship development (vocational and skill development training for sustainable income of affected people)	0.26
I	Miscellaneous & other mitigative measures	2.60
J	Manpower Cost for supervision	0.8
	Total	100

Note:- The above cost expenditure will be met from the corpus escrow account deposited by the mine operator. In case of mines having acid mine drainage, post closure acid mine drainage management cost shall also be included in the total closure cost. However the additional amounts beyond the escrow account will be provided by the mine operator after estimating the final mine closure cost five years prior to mine closure (as per the mine closure guidelines).

TIME SCHEDULE

The time scheduling is being provided on the basis of time interval of five year as required in the MoC guidelines. This period of 5 years is considered as one phase of five years and reclamation of one phase must be taken-up before commencement of mining activity in the subsequent phase. The action plan for progressive closure activities has been provided in the Figure below:

Sl. No.	Activities	Time Frame	Half Yearly					
			1	2	3	4	5	6
1.	Preparation of Survey & Disposal Report	One month						
2.	Slope Stability study for high walls and internal backfilled dumps	One month						
3.	Disposal of P&M including HEMM, CHP, W/S, Siding	2 and half years						
4.	Backfilling of mined out Area (OC)	2 years						
5.	Dismantling of Industrial structure	2 years						
6.	Grading & dozing of high walls for OC	2 years						
7.	Fencing of quarry	2 years						
8.	Clearing of Coal Stock and Infrastructural Area.	2 years						
9.	Disposal / Dismantling of Residential colony	2 & 1/2 years						
10.	Plantation & landscaping on backfilled area.	3 years						
11.	Plantation over cleaned land of Infrastructure.	from 2 nd year						
12.	Sealing of mine entries for UG mine	from 2 nd year	Not Applicable					
13.	Environmental Monitoring	3 years						
14.	Subsidence Management for U/G	3 years	Not Applicable					
15.	Post closure subsidence monitoring for UG	3 years	Not Applicable					
16.	Any project specific activities	Nil	Not Applicable					

REIMBURSEMENT OF EXPENDITURE INCURRED ON PROGRESSIVE MINE CLOSURE ACTIVITIES OF GEVRA OCP

The Progressive Mine Closure Plan for Gevra OCP has been approved in the 218th meeting of SECL Board held on 28.11.2013. Accordingly, Escrow Account No: 423803800000294 is opened in Union Bank of India, Bilaspur and Annual Deposits as per the approved MCP have been made in the above account regularly since 2010-11 and the balance amount as on 31.03.15 is Rs. 651870304.00 only in the said account. As per the clause No: 6 of MoC guidelines dated 07.01.2013 and provisions of approved MCP, the reimbursement of expenditure on Mine closure activities is due in respect of Gevra OCP for the activities undertaken from 2010-11 to 2014-15.

SR. NO.	ACTIVITIES OF PROGRESSIVE MINE CLOSURE	YEAR WISE EXPENDITURE (IN LAKHS).					TOTAL EXPENDITURE IN 5 YRS (IN LAKHS)	REMARKS
		2010-11	2011-12	2012-13	2013-14	2014-15		
1	Backfilling and grading of Dump	984.32	986.29	1142.37	1256.03	1127.06	5496.07	Cost of backfilling is too high, therefore only grading & dozing work is taken into consideration under this head
2	Leveling of dump							
3	Toe walling	0.00	0.00	0.00	0.00	0.00	0.00	
4	Provision of water coursing channels	0.00	0.00	0.00	54.88	104.06	158.94	
5	Provision of sedimentation pond	0.00	0.00	0.00	0.00	0.00	0.00	Sedimentation pond, garland drains & Check dams has been constructed before 2009.
6	Provision of garland drains	0.00	0.00	5.92	6.29	8.67	20.88	
7	Provision of check dams at high velocity points	0.00	0.00	0.00	0.00	0.00	0.00	
8	Top Soil preservation and application	0.00	0.00	0.00	0.00	0.00	0.00	Top soil preserved before 2009 has been spread over newly reclaimed area & plantation area
9	Terracing of Slopes	0.00	0.00	0.00	0.00	0.00	0.00	Expenditure of terracing of slopes is include in plantation expenditure
10	Site preparation for plantation & Plantation	53.43	63.23	57.01	57.67	28.11	259.45	
11	Monitoring	13.55	13.55	13.55	13.55	13.55	67.75	
TOTAL		1051.30	1063.07	1218.85	1388.42	1281.45	6003.09	

[Signature]
21/5/16
Maha Prbhat (General)
Gevra Area

[Signature]
उप महाप्रबंधक (सिमेंट)
Dy. General Manager (F)
महा. ई. सी. एल. गेवरा क्षेत्र

[Signature]
Dy. G.M. (Mining) / Colliery Manager
SECL, Gevra - Project
3-5-16
महाप्रबंधक
General Manager
केवरा परियोजना

[Signature]
उप महाप्रबंधक (सिमेंट)
Dy. General Manager (F)
महा. ई. सी. एल. गेवरा क्षेत्र
SECL GEVRA PROJECT

As per the above clause, claims against expenditure incurred on progressive mine closure activities can be made upto 80% of total deposited amount including interest accrued in the escrow account may be released after every five years in line with periodic examination of the Closure Plan as per clause 3.1 of the Annexure of the guidelines. The amount released should be equal to expenditure incurred on the Progressive Mine Closure in past five years or 80% of deposited amount, whichever is less.

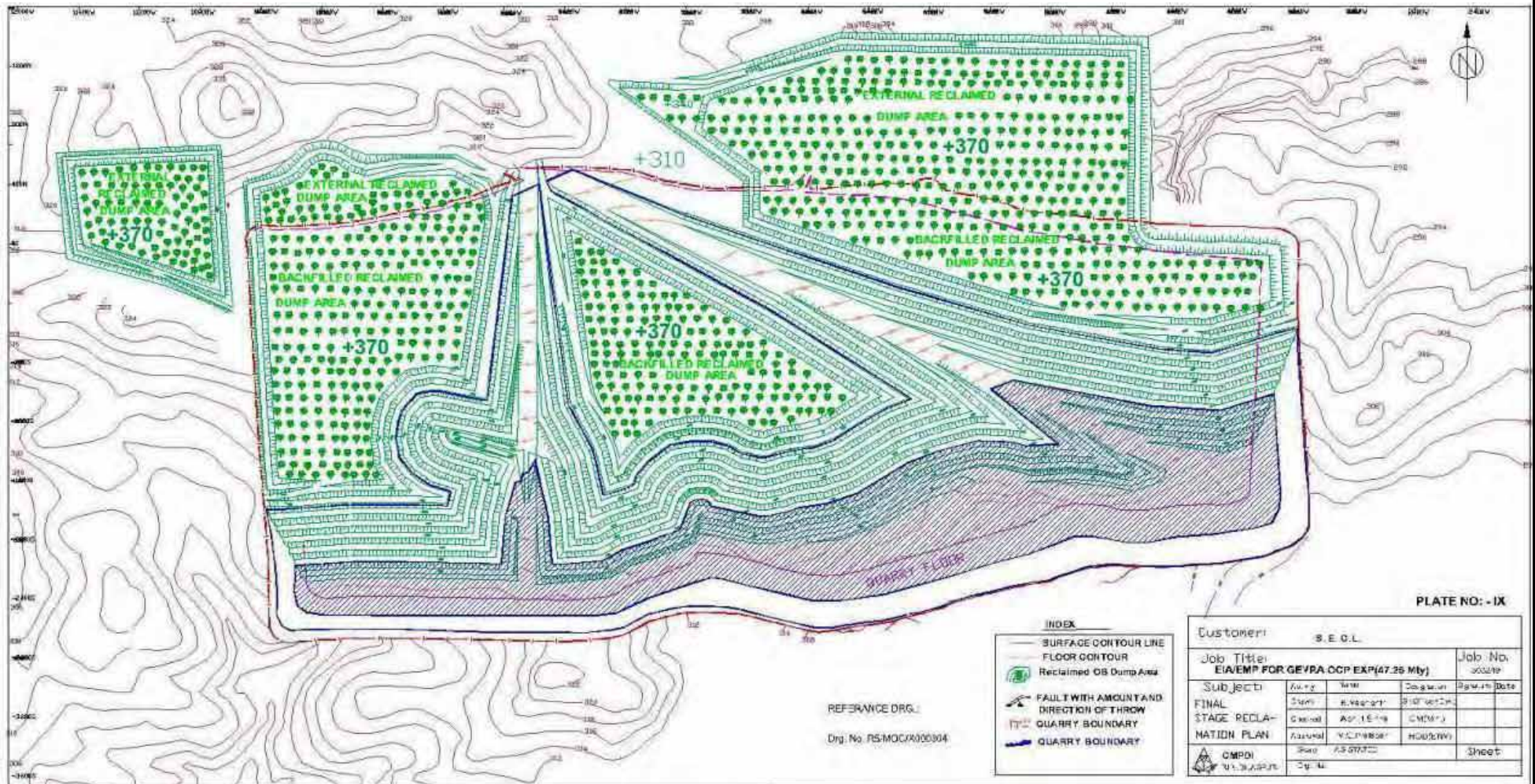
The Expenditure from 2010-11 to 2014-15 has been provided in brief below:

Sl.No	Year	Expenditure on Mine closure activities in (Lakhs)
1	2010-11	1051.30
2	2011-12	1063.07
3	2012-13	1218.85
4	2013-14	1388.42
5	2014-15	1281.45
	Total	6003.09

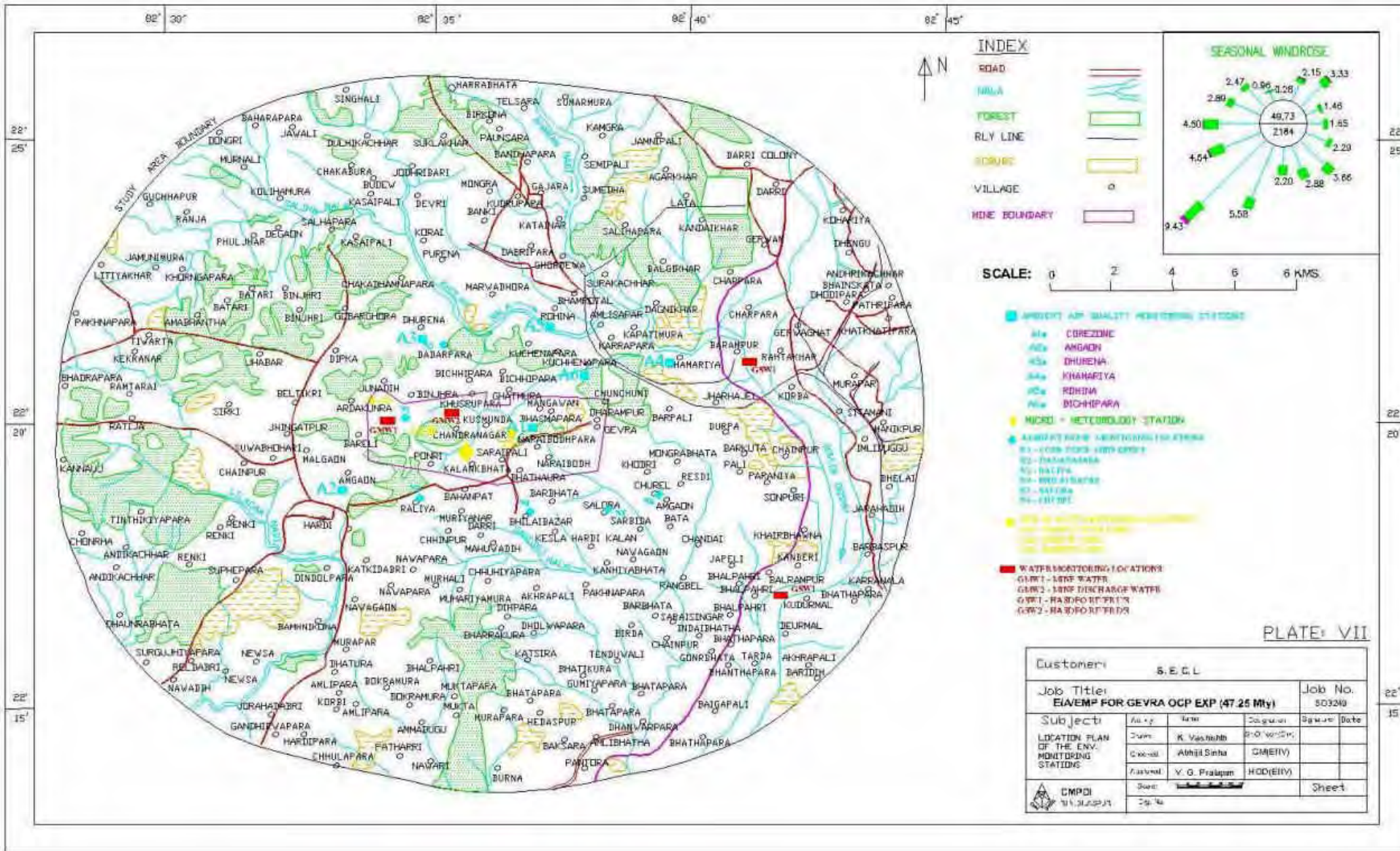
Hence, the details of claimed amount has been presented below:

Sl.No	Subject	Amount in Rs/
1	Amount balance in the Escrow Account as on 31.3.15	651870304.00
2	Amount Eligible for claim against Mine closure activities as per the guidelines and approved MCP (80% of Row 1)	521496243.00
3	Actual Expenditure incurred on Mine Closure activities	6003.09 Lakhs
4	Final Claim(Sl.No 2 or Sl.No 3 whichever is less)	521496243.00

APPENDIX



FINAL STAGE RECLAMATION PLAN



LOCATION PLAN OF ENVIRONMENTAL MONITORING STATIONS

STATEMENT SHOWING DETAILS OF PLANTATION OF GEVRA PROJECT							
YEAR	PLANTATION DONE ON				Total Plantation done (in nos)	CPT (1.5mx0.9mx0. 75m) (in Rmtrs)	GRASS BED (Nos.)
	On Plain area (nos)	On internal dumps (nos).	On External dumps (nos).	Total Plantation on dumps (nos).			
1	2	3	4	5=(3+4)	6=(2+3+4)	7	8
1986	236000	0	0	0	236000	0	0
1987	245750	0	46000	46000	291750	0	0
1988	419500	0	0	0	419500	0	0
1989	454000	0	0	0	454000	0	0
1990	372883	0	0	0	372883	0	0
1991	360000	0	0	0	360000	0	0
1992	64900	0	0	0	64900	0	0
1993	87230	0	26970	26970	114200	0	0
1994	0	0	0	0	0	0	0
1995	77000	0	0	0	77000	0	0
1996	68000	0	64000	64000	132000	0	0
1997	50000	17500	105500	123000	173000	0	0
1998	42000	52150	31850	84000	126000	0	15000
1999	11950	0	65000	65000	76950	3150	18000
2000	0	0	130000	130000	130000	0	15000
2001	0	0	66000	66000	66000	0	13000
2002	10000	0	30000	30000	40000	500	4000
2003	30000	81000	20000	101000	131000	1270	15000
2004	22000	5500	78500	84000	106000	3583	36000
2005	76000	0	39500	39500	115500	4800.33	39500
2005	41500	0	0	0	41500	2000	0
2006	75000	40000	5000	45000	120000	4500	45000
2007	50000	0		0	50000	0	0
2008	5000	0	20000	20000	25000	0	0
2009	32500	0	30000	30000	62,500	0	20000
2010	2500	36500		36500	39,000	0	0
2011	0	27500	0	27500	27,500	0	12500
2012	10000	20000	0	20000	30000	0	3125
2013	5000	0	35000	35000	40000	0	5000
2014	0	0	20000	20000	20000	0	0
2015	0	0	80000	80000	80000	0	10000
2016	0	0	50000	50000	50000	0	0
2017	0	0	100000	100000	100000	0	5000
2018	3500	0	60000	60000	63500	0	0
Total	2852213	280150	1103320	1383470	4235683	19803.33	256125
Planted area (Ha)	623.22	122.60	367.20	489.80	1113.02		

1988-89 Plantation includes Bareli Village 140000 plants over an area of 56.000 Ha.
1989-90 Plantation includes Near Bareli Village 206600 plants over an area of 82.640 Ha.
1990-91 Plantation includes Mine Boundary near Bareli 20000 plants over an area of 8.000 Ha.
1991-92 Plantation includes Bareli Bhata Village (A) 138303 plants over an area of 55.320 Ha.
Plantation includes Bareli Bhata Village (B) 144185 plants over an area of 57.670 Ha.
1992-93 Plantation includes Near Bareli Pondi Bhata Village 43802 plants over an area of 17.520 Ha.

Therefore Presently Plain area Plantation: 2162323 nos. over an area of 347.570 Ha. within the Mine lease.



Gabion wall (3m X 3m for 0.5 Km) along the toe wall of approach road

No.J-11015/85/2010-IA.II(M)
Government of India
Ministry of Environment, Forest & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi - 3
Dated: 28th March, 2019

To,

The General Manager,
M/s South Eastern Coalfields Ltd,
W B P & Environment Department,
Seepat Road, P B. No.60
Bilaspur - 495 006 (Chhattisgarh) Email: gmenvtsecl@gmail.com;

Sub: Expansion of Gevra Opencast Coal Mining Project from 41 MTPA to 45 MTPA of M/s South Eastern Coalfields Limited in mine lease area of 4184.486 ha in District Korba (Chhattisgarh) - Environmental Clearance - reg.

Sir,

This has reference to your online proposal No.IA/CG/CMIN/19281/2012 dated 3rd January, 2019 on the above-mentioned subject.

2. The Ministry of Environment, Forest and Climate Change, vide letter dated 21st February, 2018, has granted environmental clearance to the expansion of Gevra Opencast Coal Mining Project from 41 to 45 MTPA in mine lease area of 4184.486 ha, subject to compliance of certain terms and conditions, which *inter-alia* included the following:-


'The environmental clearance for the proposed increase in capacity shall be valid up to 31st March, 2019. The continuance of the project thereafter at the increased capacity, shall be based on evaluation of the proposed control measures and its impact on the ambient air quality by the EAC in later half of the FY 2018-19.'

3. In line with the above condition, site inspection was carried out by Ministry's Regional Office at Nagpur on 12th December, 2018 to monitor compliance status of the conditions stipulated in the said environmental clearance. The report in this regard has been forwarded by the Regional Office vide letter dated 19th January, 2019.

4. The proposal was considered by the sectoral Expert Appraisal Committee (EAC) in its meeting held in the Ministry on 21st February, 2019. Based on recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords approval for continuance of the **Gevra Opencast Coal Mining Project from 41 to 45 MTPA of M/s South Eastern Coalfields Limited** in mine lease area of 4184.486 ha located in District Korba (Chhattisgarh), **for a further period of one year**, under the provisions of the Environment Impact Assessment Notification, 2006 and subsequent amendments/circulars thereto, subject to review of compliance status of the conditions by the EAC to consider continuance of the project after one year.




5. All other terms and conditions stipulated in the said environmental clearance dated 21st February, 2018 shall remain unchanged.


28/3/2019
(S. K. Srivastava)
Scientist E

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The APCCF, Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur (Maharashtra)
3. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
4. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 32
6. The Member Secretary, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur - 492001 (Chhattisgarh)
7. The District Collector, Korba, Government of Chhattisgarh.
8. Monitoring File 9. Guard File 10. Record File 11. Notice Board


28/3/2019
(S. K. Srivastava)
Scientist E

SOUTH EASTERN COALFIELDS LIMITED

STATUS OF TECHNICAL & BIOLOGICAL LAND RECLAMATION DETAILS OF GEVRA PROJECT AS ON 01.01.2019

Name of Area	Name of unit	Approved EMP Capacity (MTY)	INTERNAL DUMP / BACKFILLED AREA DETAILS (In Hect)										Total Reclaimed area				
			Total Quamrable area of the project as per approved EMP (Hac)	Void be left at the closure of the project as per approved EMP(35MTY) (Hac)	Total Area excavated as on 01.04.2018 (Ha)	Prorata area not required to be Backfilled (Ha)	Total area technically reclaimed /back-filled as on 01.01.2019 (In/Dump) (Hac)	Balance area to be technically reclaimed/ back-filled at 01.01.2019 (Hect)	Area already reclaimed as biological on 01.01.2019 (Hact.)	Balance area to be Biologically reclaimed as on 01.01.2019 (Hect)	Total area of External OB dump as on 01.01.2019 (Hect)	Area of Ext. OB dump technically reclaimed OE - as on 01.01.2019	Balance area ext. OB dump to be technically reclaimed as on 01.01.2019	Area already Biolog-ically reclaimed as on 01.01.2019	Balance area to be biolog-ically reclaimed as on 01.01.2019	Total Technically reclaimed as on 01.01.2019	Total Biologically reclaimed as on 01.01.2019
A	B	C	D	E	F	G=(E-F)/D	H	I=(F-G)/H	J	K=(F-G)/J	L	M	N=L/M	O	P=L-O	H=M	J=O
Gevra area	Gevra OCP	45 MTY	2037.250	659.250	1480.000	478.925	779.015	222.060	122.600	878.475	374.331	374.331	0.000	357.200	7.131	1153.346	489.800

NODAL OFFICER (ENV/FOREST)
GEVRA AREA

AREA SURVEY OFFICER
GEVRA AREA

ENVIRONMENT OFFICER
GEVRA PROJECT

DY.MANAGER(SURVEY)
GEVRA PROJECT

[Signature]
22/11/19

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22/11/19

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22/11/19

[Signature]
22/11/19

कार्यालय कलेक्टर एवं जिला दण्डाधिकारी, कोरबा (छत्तीसगढ़)

क्रमांक/ 801 / भू0अ0 / स0अ0भू0अ0 / 2015
प्रति,

कोरबा, दिनांक 29/04/2015

सचिव
छ0ग0 शासन
राजस्व एवं आपदा प्रबंधन विभाग
मंत्रालय, महानदी भवन
नया रायपुर

विषय :- कोरबा जिले के कटघोरा वनमण्डल अंतर्गत एसईसीएल की गोवरा खुली खदान रकबा 126.341 हेक्टर राजस्व वन भूमि के व्यपवर्तन हेतु वन संरक्षण अधिनियम के अंतर्गत पंजीयन बाबत संशोधित अनापत्ति प्रमाण पत्र जारी करने हेतु।

संदर्भ :- महाप्रबंधक एसईसीएल गोवरा का पत्र क्रमांक एस.ई.सी.एल./मप्र/गे.क्षे./पर्यावरण/2015/09 दिनांक 15.04.2015 एवं पत्र क्रमांक 52, दिनांक 23.04.2015

—00—

विषयान्तर्गत संदर्भित पत्र का अवलोकन करने का कष्ट करें। कार्यालयीन पत्र क्रमांक 401/भू.अ./स.अ.भू.अ./13 कोरबा, दिनांक 07.03.2013 को जारी किये गये अनापत्ति प्रमाण पत्र (ग्राम रलिया में 54.873 हेक्टर, ग्राम नरईबोध में 71.468 हेक्टर कुल रकबा 126.341 हेक्टर) को संशोधित अनापत्ति प्रमाण पत्र जारी करने बाबत मुख्य महाप्रबंधक द्वारा निवेदन किया गया है, जो निम्नानुसार है :-

क्र0	ग्राम का नाम	आवेदित खसरा नं0	कुल रकबा हेक्टर में	आवेदित रकबा हेक्टर में	(राजस्व वन भूमि का मद)
1	2	3	4	5	6
1	रलिया	6/1	1.757	1.756	बड़ेझाड़ का जंगल
		16/1	18.402	7.000	बड़ेझाड़ का जंगल
		32/1	7.381	4.425	बड़ेझाड़ का जंगल
		38/1	80.047	35.000	बड़ेझाड़ का जंगल
		38/3	0.397	0.397	बड़ेझाड़ का जंगल
		38/4	0.405	0.405	बड़ेझाड़ का जंगल
		38/5	0.405	0.405	बड़ेझाड़ का जंगल
		38/6	0.178	0.178	बड़ेझाड़ का जंगल
	योग			49.566	
2	नरईबोध	1/1	0.628	0.628	बड़े झाड़ के जंगल
		8/1 ढ	16.140	16.140	बड़ेझाड़ का जंगल
		8/1 झ	0.405	0.405	बड़ेझाड़ का जंगल
		8/1 त	0.283	0.283	बड़ेझाड़ का जंगल
		8/1 ठ	0.018	0.073	बड़ेझाड़ का जंगल
		8/1 ड	0.073	0.073	—
		8/1 ढ	0.287	0.287	—
		8/1 म	0.372	0.372	—
		13/1	11.018	4.209	—
		13/1 प		6.809	जंगल
		13/6	0.121	0.121	जंगल
		15/1	5.917	5.917	जंगल
		44/1, 2	5.354	4.969+ 0-182	बड़ेझाड़ का जंगल
		417/1	18.773	18.773	बड़ेझाड़ का जंगल
		417/2	0.648	0.648	बड़ेझाड़ का जंगल
		419/1	2.744	2.744	बड़ेझाड़ का जंगल
		259	0.186	0.186	—
	योग			62.819	
	महायोग			112.385	

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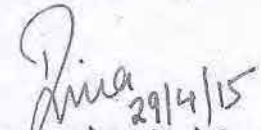
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29/4/15

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उपरोक्त राजस्व वन भूमि के गैर वानिकी प्रयोजन हेतु जारी अनापत्ति प्रमाण पत्र में आंशिक संशोधन करते हुए वनमण्डलाधिकारी कटघोरा एवं अनुविभागीय अधिकारी (रा०) कटघोरा के प्रतिवेदन अनुसार मुख्य महाप्रबंधक एस.ई.सी.एल. गोवरा को गोवरा विस्तार परियोजना हेतु उपरोक्त खसरा नम्बर पर कुल रकबा 112.385 हेक्टेयर (ग्राम रलिया में 49.566 हेक्टेयर तथा ग्राम नरईबोध में 62.819 हेक्टेयर) राजस्व वन भूमि पर गैर वानिकी प्रयोजन हेतु अनुमति यदि सक्षम विभाग द्वारा दी जाती है तो निम्न शर्तों के तहत इस कार्यालय को कोई आपत्ति नहीं होगी :-

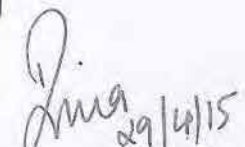
1. यह अनापत्ति प्रमाण पत्र मात्र उपरोक्त उल्लेखित राजस्व वन भूमि पर गोवरा विस्तार परियोजना हेतु दी जा रही है इसके अतिरिक्त अनापत्ति प्रमाण पत्र का उपयोग अन्य प्रयोजन के लिए नहीं किया जा सकेगा ।
2. गोवरा विस्तार परियोजना पर वन संरक्षण अधिनियम 1980 लागू होने पर संबंधित विभाग से अनुमति लिया जाना अनिवार्य होगा ।
3. गोवरा विस्तार परियोजना में किसी प्रकार की क्षति होती है तो इसकी सम्पूर्ण जवाबदारी आवेदक संस्थान की होगी ।
4. इस अनुमति के द्वारा विभाग के स्वामित्व का हस्तारण नहीं किया जा रहा है ।
5. आवेदित भूमि पर सीमांकन उपरांत शासन द्वारा संचालित भवन पाए जाने पर मूल्यांकन कर देयक छ. ग. शासन राजस्व विभाग को होगा ।
6. सीमांकन उपरांत आवेदित भूमि पर वन अधिकार पत्र वितरण होना पाया जाता है । उक्त स्थिति में छ०ग० शासन की पुर्नवास नीति 2007 का उचित पालन एवं वन अधिकार पत्र धारियों के उचित व्यवस्थापन किये जाने की शर्त पर अनापत्ति दिया जाता है ।

(टीप :- शेष आवेदित भूमि राजस्व वन भूमि नहीं होने के कारण अनापत्ति प्रमाण पत्र की आवश्यकता प्रतीत नहीं होती ।)


(रीना बाबासाहेब कंगाले)
कलेक्टर
कोरबा (छत्तीसगढ़)

पृ० क्रमांक / 802 / भु०अ० / स०अ०भू०अ० / 2015 कोरबा दिनांक 29/04/2015
प्रतिलिपि:-

- 1- वनमण्डलाधिकारी कटघोरा जिला कोरबा को सूचनार्थ ।
- 2- अनुविभागीय अधिकारी (रा०) कटघोरा जिला कोरबा को सूचनार्थ ।
- 3- मुख्य महाप्रबंधक एस.ई.सी.एल. गोवरा क्षेत्र गोवरा को सूचनार्थ ।


(रीना बाबासाहेब कंगाले)
कलेक्टर
कोरबा (छत्तीसगढ़)

कार्यालय कलेक्टर कोरबा (छत्तीसगढ़)

// संशोधित प्रमाण-पत्र //

कमॉक / 803 / भू.अ. / स.अ.भू.अ. / 2014

कोरबा दिनांक 29/04/2015

मेसर्स मुख्य महाप्रबंधक एस.ई.सी.एल.गेवरा विस्तार परियोजना कार्य हेतु कोरबा जिला में कटघोरा वनमंडल के नरईबोध गाँव के वन भूमि व्यपवर्तन हेतु 62.819 हे.वन भूमि के प्रकरण में अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006 का पालन प्रतिवेदन।

01. प्रमाणित किया जाता है कि अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006 में नियत सम्पूर्ण प्रक्रिया का पालन कर अधिकारो को स्थापित किया गया है तथा सम्पूर्ण प्रस्तावित क्षेत्र वन भूमि 0 हे.एवं/राजस्व वन भूमि 62.819 हे.जो इस कार्य हेतु व्यपवर्तित की जानी है तथा ग्राम नरईबोध तहसील कटघोरा में स्थित है,में तदनुसार यह कार्यवाही पूर्ण की गयी है।
02. ग्राम नरईबोध नगर पालिक निगम क्षेत्र (वार्ड कमॉक 57) होने के कारण ग्राम सभा का आयोजन नहीं किया गया है।
03. यह प्रमाणित किया जाता है कि संयुक्त सत्यापन प्रतिवेदन अनुसार विलुप्तप्राय जनजाति समूह (पी.टी.जी.) के सदस्य व्यपवर्तन हेतु प्रश्नाधीन वन भूमि पर निवासरत नहीं है, जिनका वन अधिकार "अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006" की धारा(3)(e) अंतर्गत विशेष रूप से संरक्षित रखना है।
04. संयुक्त सत्यापन प्रतिवेदन दिनांक 08.07.2011 के आधार पर यह प्रमाणित किया जाता है कि व्यपवर्तन के लिए प्रस्तावित वन भूमि पर अनुसूचित जन जाति एवं अन्य परम्परागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006 की धारा (3)(2) अंतर्गत शासन द्वारा संचालित कोई सुविधा विद्यमान नहीं है।



[Handwritten Signature]
29/4/15
(रीना बाबासाहेब कंगाले)

कलेक्टर
एवं अध्यक्ष—जिला वन अधिकार समिति
जिला—कोरबा(छत्तीसगढ़)

कायालय कलेक्टर, जिला-कोरबा (छ.ग.)

क./2656/भू.अ./स.अ.भू.अ./2014

कोरबा, दिनांक 4.12.14

प्रदर्श-"स"

प्रमाण पत्र

मेसर्स मुख्य महाप्रबंधक, एस.ई.सी.एल. गोवरा का विस्तार परियोजना कार्य हेतु कोरबा जिला में कटघोरा वनमंडल के रलिया गांव के वन भूमि व्यपवर्तन हेतु 49.566 हे. राजस्व वन भूमि के प्रकरण में अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 का पालन प्रतिवेदन।

1. प्रमाणित किया जाता है कि अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 में नियत सम्पूर्ण प्रक्रिया का पालन कर अधिकारों को स्थापित किया गया है तथा सम्पूर्ण प्रस्तावित क्षेत्र की वन भूमि 0 हे. एवं/राजस्व वन भूमि 49.566 हे. जो इस कार्य हेतु व्यपवर्तित की जानी है तथा ग्राम रलिया तहसील कटघोरा में स्थित है, में तदनुसार यह कार्यवाही पूर्ण की गयी है।

ग्राम सभा की बैठक एवं उसमें पारित प्रस्ताव दिनांक 09.10.2014 (प्रदर्श-"अ") एवं वन तथा राजस्व विभाग का संयुक्त जांच प्रतिवेदन (प्रदर्श-"ब") पर दर्शित है।

2. प्रमाणित किया जाता है कि उक्त प्रकरण का प्रस्ताव दिनांक 09.10.2014 ग्राम के सरपंच श्रीमती फुल बाई की अध्यक्षता में हुई ग्राम सभा की बैठक दिनांक 09.10.2014 में रखा गया था (कई गांव होने पर प्रत्येक का विवरण दें दिनांक सहित) एवं इसमें 50 प्रतिशत ग्राम सभा के तथा ग्राम वन समिति के सदस्य उपस्थित थे, जिनको परियोजना के क्रियान्वयन एवं प्रकरण के पूर्ण विवरण तथा प्रभाव से अवगत करा कर विस्तार से समझाईश हिन्दी एवं स्थानीय भाषा में दी गयी। यह पाया गया कि इस क्षेत्र में उपरोक्त अधिनियम के तहत वन अधिकार की मान्यता पत्र की पात्रता रखने वाले व्यक्ति है।

अथवा

प्रस्तावित वन क्षेत्र में प्रदत्त वन अधिकार मान्यता पत्र धारकों की संख्या ग्रामवार निम्नानुसार है :-

क्रमांक	ग्राम का नाम	वन अधिकार मान्यता पत्र धारक का नाम	रकबा (हे.में)
1	2	3	4
1	रलिया	बीरसिंह	0.020
2		विजयपाल सिंह	0.081
3		कृष्णा कुमार	0.081
4		जितेन्द्र कुमार	0.012
5		राजेन्द्र कुमार	0.012
6		गोपाल सिंह	0.008
7		छत्रपाल सिंह	0.008
8		प्रदीप कुमार	0.132
9		परदेशीराम	0.081
10		रामायण सिंह	0.202
11		हराबाई	0.202
12		रूपरतन सिंह	0.020
13		चंदन सिंह	0.375
14		जोहिराम	0.202
15		रणजीत सिंह	0.202
16		चमरीन बाई	0.016
17		केवरा बाई	0.020
18		तीज बाई	0.061
19		मुंशीराम	0.016
20		दल्लूराम	0.008
21		राजकुमार	0.020
22		सूर्यभवन सिंह	0.028

1	2	3	4	
23	रलिया	सुकुल	0.040	
24		कृपासिंह	0.040	
25		जयराम सिंह	0.048	
26		अरुण कुमार	0.116	
27		सुरसेन	0.040	
28		शिवनंदन सिंह	0.012	
29		संतराम	0.020	
30		सुख सिंह	0.012	
31		सुकलाल	0.012	
32		बजरंग	0.016	
33		रामरतन सिंह	0.028	
34		भारत भूषण	0.020	
35		चन्द्रशेखर	0.020	
36		टिकैतराम	0.040	
37		साहीन बाई	0.008	
38		धनकुंवर	0.020	
39		इतवार सिंह	0.040	
40		हरिया प्रसाद	0.028	
41		मिलकराम	0.016	
		योग :-		2.383

3. यह प्रमाणित किया जाता है कि जो भी चर्चा एवं निर्णय लिए गए उसमें ग्राम सभा के न्यूनतम 50 प्रतिशत सदस्यों की उपस्थिति का कोरम पूर्ण था।

4. यह प्रमाणित किया जाता है कि संयुक्त सत्यापन प्रतिवेदन एवं ग्राम सभा के ठहराव प्रस्ताव दिनांक 09.10.2014 अनुसार ऐसे विलुप्तप्राय जनजाति समूह (पी.टी.जी.) के सदस्य व्यपवर्तन हेतु प्रश्नाधीन वन भूमि पर निवासरत नहीं हैं, जिनका वन अधिकार "अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006" की धारा (3)(e) अंतर्गत विशेष रूप से संरक्षित रखना है।

5. संयुक्त सत्यापन प्रतिवेदन एवं ग्राम सभा के दिनांक 09.10.2014 के संकल्पों के आधार यह प्रमाणित किया जाता है कि व्यपवर्तन के लिए प्रस्तावित वन भूमि पर अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 की धारा 3 (2) अंतर्गत शासन द्वारा संचालित कोई सुविधा विद्यमान नहीं हैं।

संलग्न :- उपरोक्तानुसार।



दिनांक :

(रीना बाबा साहेब कंगाले)
कलेक्टर

एवं अध्यक्ष-जिला वन अधिकारी समिति
जिला कोरबा (छत्तीसगढ़)

पृ.क./ 2657/भू.अ./स.अ.भू.अ./2014
प्रतिलिपि:-

कोरबा, दिनांक 4.12.2014

1. सचिव, छत्तीसगढ़ शासन, राजस्व एवं आपदा प्रबंधन विभाग, मंत्रालय, महानदी भवन, नया रायपुर की ओर सादर सूचनार्थ।
2. वनमण्डलाधिकारी, कटघोरा को सूचनार्थ।
3. अनुविभागीय अधिकारी (रा.) कोरबा को सूचनार्थ एवं आवश्यक कार्यवाही हेतु।

७८

(रीना बाबा साहेब कंगाले)
कलेक्टर
एवं अध्यक्ष-जिला वन अधिकारी समिति
जिला कोरबा (छत्तीसगढ़) 359

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)

फोन/फैक्स नं. 07815-250157, Email : dfokatghora@gmail.com

क्रमांक/तक.अधि./2011/

6623

कटघोरा, दिनांक 20-10-11

प्रति,

✓ अतिरिक्त तहसीलदार

दीपका, जिला कोरबा (छ.ग.)


विषय : वन भूमि व्यपवर्तन के संबंध में अनापत्ति प्रमाण पत्र प्रदाय करने बाबत।

संदर्भ : आपका पत्र क्र./क/अति.तह./2011/दीपका दि. 25.01.11

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उपरोक्त विषयांतर्गत संदर्भित पत्र के तारतम्य में स्थल निरीक्षण परिक्षेत्र अधिकारी कटघोरा एवं उप वनमण्डलाधिकारी पाली द्वारा कराया गया, उनके प्रतिवेदनानुसार ग्राम रलिया की 54.873 हे. एवं ग्राम नरईबोध की 71.468 हे. भूमि पर वृक्षों का घनत्व शून्य से शून्य अर्थात् भूमि वृक्ष विहीन है।

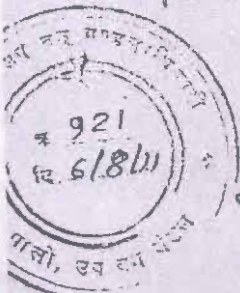
उक्त आवेदित राजस्व वन भूमि वन संरक्षण अधिनियम 1980 के अंतर्गत गैर शानिकी प्रयोजन हेतु भूमि प्रत्यावर्तन किया जाता है तो वन विभाग को कोई आपत्ति नहीं है।


वन मण्डलाधिकारी
कटघोरा वनमण्डल कटघोरा

अतिरिक्त तहसीलदार
महोदय, सिपा

विषय:- वन शक्ति व्ययवर्तन के संकथामें अनापति प्रकरण पत्र
प्रदान करने के संकथामें।

महोदय:- उपरोक्त विषयांकित आवेदन पत्र द्वारा ए.एस.ई.सी.एल
ओवरा विस्तार परियोजना हेतु ग्राम रलीया की भूखे. 54, 873
हेक्टर और वानगी उपयोग हेतु अनापति प्रकरण पत्र को
के संकथामें ग्राम रलीया की भूखे 30 सिकंडन दिनांक 8/7/2011
को वन विभाग के रेंज अधिकारी-असमी कुमर पाखेरा ए.एस.ई.सी.एल.
के तहसिलदार, एस. डिप्लम (वरि. संकथ, वन एवं पर्यावरण)
ओवरा क्षेत्र तथा रीजस विभाग के हल्का पर्यारि 4
मनोज कुमर साहू प.ए.उ-30 की संयुक्त रिट के द्वारा
सिमांकन कर पिठांकित किया गया।



अतः उचित धार्जवादी हेतु पालन
प्रतिवेदन संप्रेषित है।

(Signature)
वरिष्ठ प्रबंधक / नोडल अधिकारी
Sr. Manager / Nodal Officer
पर्यावरण एवं वन / Env. / Forest
एसईसीएल मेवरा क्षेत्र / SECL Gevra Area

(Signature)
न्या. परिक्षेत्र अधिकारी,
रीजस,
कटघोरा वन परिक्षेत्र

(Signature) 8/7/2011
मनोज कुमार साहू
टपारि 30

कोई भी अतिरिक्त रिट
स्वीकारा

2/9/11
प. अ. कटघोरा

कार्यालय आयुक्त नगर पालिक निगम कोरबा (छ0ग0)

पत्र क्रमांक /2661 /2014

कोरबा, दिनांक : /12/2014

// प्रमाण पत्र //

प्रति,

कलेक्टर
कोरबा

विषय :- अनुसूचित जनजाति एवं अन्य परम्परागत वन-निवासी (वन अधिकारों की मान्यता) अधिनियम 2006 के अंतर्गत वन भूमि का प्रत्यावर्तन हेतु अनापत्ति प्रमाण पत्र प्रदाय करने बाबत ।

संदर्भ :- आपका पत्र क्रमांक /2661 /भू-अभि0 /स0अ0भू0अ0 /2014 कोरबा दिनांक

—00—

मेसर्स मुख्य महाप्रबंधक, एसईसीएल गेवरा का विस्तार परियोजना कार्य हेतु कोरबा जिले में कटघोरा

अन्य परम्परागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 का पालन प्रतिवेदन

- 1- प्रमाणित किया जाता है कि ग्राम नरईबोध वार्ड क्र. 57 नगर पालिक निगम कोरबा के अंतर्गत आता है ।
- 2- उपरोक्त भूमि पर वर्तमान में नगर निगम की कोई योजना प्रस्तावित नहीं है अतः महाप्रबंधक एसईसीएल गेवरा क्षेत्र को ग्राम नरईबोध वार्ड क्र. 57 में खुली खदान विस्तार परियोजना हेतु 62.351 हे0 राजस्व वन भूमि पर व्यपवर्तन हेतु नगर पालिक निगम कोरबा को कोई आपत्ति नहीं है ।

आयुक्त
नगर पालिक निगम
कोरबा (छ0ग0)

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)
CIN U10102CT1985GO1003161
Website : www.secl.gov.in



STD :07815 275430(O)
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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

OFFICE OF THE GENERAL MANAGER
GEVRA AREA

P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 69

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To
The DFO
Katghora Range
Katghora, Korba (C.G.)

Subject: - Diversion of 112.385 Ha. of Forest land for Gevra Open Cast Mining Project of South Eastern Coalfields limited (SECL) in Korba, District of Chhattisgarh.

Ref :- Letter no. 8-41/2017-FC DT: 27.09.2017

Dear Sir

Under the above referred subject matter, MoEF&CC, New Delhi has issued Stage I / In-principle approval under certain conditions to Gevra Project, Gevra Area. Point wise compliance of conditions is as follows:-

SL NO.	CONDITION	COMPLIANCE
1	Legal status of the diverted forest land remain unchanged	Agreed. Legal status of the diverted forest land will remain unchanged. (Vachan Patra 1)
2	Compensatory Afforestation shall be done over degraded forest land twice in extent to the forest area proposal to be diverted within a period of three years with effect from the date of issue of Stage - II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest department at the cost of the user agency. At least 1000 saplings per hectares shall be planted over 224.77 he. (224770 plants). If this is not possible to plant this many seedlings in the identified DFL, the balance seedlings will be planted in other suitable degraded forest land as per the prescription of the Working Plan at the cost of	Agreed. Demand note no. 8901 DT: 13.10.17 Rs. 20.53 Crore Revised Demand Note no.10009 DT: 17.11.17 Rs.26.82 Crore Revised Demand Note no. 991 DT:03.02.18 Rs.1.75 Crore Revised Demand Note no. 2031 DT: 03.03.18 Rs.27.58 Crore was raised by DFO. Amount deposited as per demand note raised by DFO Kathghora vide no. 2031 of Rs. 275829196/- through NEFT vide reference UTR no. SBIN618082376488 Dt: 23.03.2018. Annex 1



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	the User agency. In such case CA cost will be revised and duly approved by competent authority and deposited online in the CAF managed by CAMPA 25% of the CA cost additionally will be spent towards Soil and Moisture Conservation activities in the proposed CA area as per the requirement and deposited in CAF.	
3	On examination of Compensatory Afforestation land on Google Satellite Imagery and DSS tools, it is found that 30 ha area is having dense vegetation and 53 ha land seems to be under encroachment. State Government shall exclude the land under encroachment and very dense vegetation from the proposed CA area and additional degraded forest land which is free from encumbrances/encroachment and degraded shall be selected prior to stage II approval. The land shall be analysed through DSS at state level prior to submission to MoEF&CC for consideration. State Government shall submit DSS analysis report along with the compliance of this condition.	User Agency will abide with the guidelines of the District Forest Dept. DFO Katghora has directed Range Officer Jatga to identify additional CA land. In pursuance of that 50 Ha. Of Forest land has been identified within compartment nos. OA/776 Tivarta (21.780 Ha.) & OA/787 Dipka (51.230 Ha.) by range Officer Katghora. Encroachment has been cleared by State Forest Department.
4	State Government Shall reconfirm the enumeration list of trees prior to stage II approval.	DFO Katghora has directed for reconfirmation to Range Officer katghora.
5	The User agency shall ensure the construction of residential accommodation for workers will be undertaken separately on non – forest land to avoid pressure on forest land for temporary construction.	No activity other than mining will be undertaken in the diverted forest land. (Vachan Patra 2)
6	Safety zone shall be fenced with coiled barbered wire fencing of a 6 feet high for the protection of forests.	Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT: 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost. The work is under progress. Annex 2
7	Safety zone along the lease boundary, shall be implemented by the User agency in accordance with the guidelines issued by the MoEF & CC in this regard.	Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT: 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost. Work is in Progress.. Annex 2

8	Encroachment from the lease area of the User Agency should be avicted and in case eligible claimants are found in the area propose for diversion, they should be rehabilitated as per R&R policy of the State Government of Chhattisgarh in consonance with the National R&R policy.	Agreed.As per the guidelines of State Govt. CG, necessary compliance shall be made. (Vachan Patra 3)								
9	The user agency should undertake comprehensive greening in the villages located in the surrounding of their lease area.	Agreed. A letter vide no.188 Dt: 01.01.2018 to all sarpanch of the adjoining villages was made requesting for their consent for greening in the villages for which land should be provided to SECL. Received request for plantation from Hardi Bazar Sarpanch, awaiting reply from other villages & plantation will be done as per their request. (Vachan Patra 4)								
10	Mined out forest area already reclaimed by the User Agency, should be handed over back in the State Forest Department with a view to bring it under the ambit of core forestry management.	Agreed. Mined out forest area reclaimed by the User Agency, will be handed over back (as per the guidelines issued by MoC applicable for land acquired under CBA Act) to the State Forest Department by 2038-39 after Final Mine closure activities (As per the Calender programme for excavation of coal in approved 49 MTY PR of Gevra OCP) Annex 3								
11	The UA should prepare a land surrender schedule for surrender of the mined out and biologically reclaimed forest land in accordance with the existing mine plan irrespective of progressive mine closure plan and submit an surrender schedule and an undertaking that mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per this schedule. No. further change in the schedule for surrendering of forest land should be allowed.	Agreed. Land Surrender schedule <table border="1"> <thead> <tr> <th>Year</th> <th>Land in Ha.</th> </tr> </thead> <tbody> <tr> <td>2036-37</td> <td>40</td> </tr> <tr> <td>2037-38</td> <td>40</td> </tr> <tr> <td>2038-39</td> <td>32.385</td> </tr> </tbody> </table> (Vachan Patra 5)	Year	Land in Ha.	2036-37	40	2037-38	40	2038-39	32.385
Year	Land in Ha.									
2036-37	40									
2037-38	40									
2038-39	32.385									
12	With a view to enrich the water regime in the area, a comprehensive Catchment area Treatment Plan in the area to arrest flow of silt in the Hasdeo River and to improve water regime should be implemented at the project cost.	Agreed. Work has been awarded in favour of CCST vide no.259 DT: 23.03.2018. Completion time 120 days. Work order accepted by CCST& 1 st installment payment (Rs. 600430/-) made Annex 4 (Vachan Patra 6)								
13	A study should be undertaken at the project cost to assess the impact of intervention undertaken by the SECL, in consultation with the State Forest	Agreed. For study on the protection, conservation and development of wildlife in the area, a work order								

	Department, for the protection, conservation and development of wildlife in the area. Based on the outcome of such study, the measures for protection, conservation and development of the wildlife, if needed may further be strengthened at the project cost.	vide no.20 DT: 11.05.2018 is submitted to SFRTI for start of work & early completion. Full & Final payment vide no. 2357 Dt: 02.06.2018 (Rs. 2602600/-) made. Annex 5 (Vachan Patra 7)
14	No forest land should be used for undertaking the diversion of district road, bifurcating the Revenue forest land proposed to divert by the User Agency, While undertaking diversion of the said road, the User Agency should select such alignment ensuring that accessibility / connectivity is maintained in the ease of the local residents.	Agreed. No activity other than mining will be undertaken in the diverted forest land. (Vachan Patra 2)
15	It is reported that the user agency had biologically reclaimed 404.8 ha. of land. A subcommittee of FAC under the chairmanship of SH. Deepak Sinha IG (FC), Sh. R.K. Dey APPCF regional office Bhuvneshwar and Sh. Sandeep Sharma AIG(FC) shall visit the site and submit report on the status of biologically reclaimed area to MoEF and CC.	Agreed. A committee of FAC consisting of Shri Siddhanta Das, IFS New Delhi & Forest Officials from Raipur, Bilaspur & Katghora visited the site on 19.11.2017.
16	The land identified for the purpose of CA shall be clearly depicted on a Survey of India topo-sheet of 1:50,000 scale.	Stock Map, Forest Cover Map, Forest Type Map & KML file Submitted.
17	The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation at the current wage rate in consultation with State Forest Department in the account of the Ad-hoc CAMPA of the concerned State through online portal. The scheme may include appropriate provision for anticipated cost increase for works scheduled for subsequent years.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT: 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt: 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal. ANNEX 1
18	The User Agency shall transfer the funds for the Net Present Value (NPV) of the forest land being diverted under this proposal from the User Agency as per the orders of the Hon'ble Supreme Court of India dated 28.03.2008, 24.04.2008 and 09.05.2008 in Writ Petition (Civil) No. 202/1995 and the guidelines issued by this Ministry vide its letter No. 5-3/2007-FC dated 05.02.2009 through online portal of Ad-hoc CAMPA account of the State Concerned.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT: 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt: 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal. ANNEX 1
19	At the time of payment of the Net Present Value (NPV) at the present rate, the user agency shall	Agreed. (Vachan Patra 8)

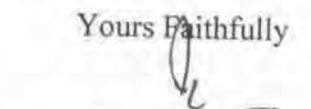
	furnish an undertaking to pay additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India.	
20	Any fund received from the user agency under the project, except the funds realized for regeneration / demarcation of safety zone, shall be transferred to Ad-hoc CAMPA through online portal of Ad-hoc CAMPA account of the State Concerned.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT: 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt: 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal. ANNEX 1
21	<p>Following activities shall be undertaken by the user agency at the project cost and appropriate cost of the plan/scheme shall be deposited in Ad-hoc CAMPA Account.</p> <p>(a) A plan containing appropriate mitigative measures to minimize soil erosion and choking of streams shall be prepared implemented.</p> <p>(b) Planting of adequate drought hardy plan species and sowing of seeds in the appropriate area within the mining lease to arrest soil erosion.</p> <p>(c) Construction of check dams, retention / toe walls to arrest sliding down of the excavated material along the contour.</p> <p>(d) Stabilize the overburden dumps by appropriate grading/benching so as to ensure that angles of repose at any given place is less than 28, and</p> <p>(e) Strict adherence to the prescribed top soil management.</p>	<p>Agreed.</p> <p>1. There are 7 nos. of external dump & 8 nos. of internal dumps. The external dump nos. 1, 2, 3, 4 & 5 is already biologically reclaimed during the year 1987 to 2006 & there is no problem of Soil erosion & choking of streams in the adjoining dump area. Internal Dump no 1 is biologically reclaimed. The rest Internal Dump nos. 2, 3, 4, 5, 6, 7 & 8 are running dumps However part of Dump nos. 2, 3, 4, 5 & 6 are Biologically reclaimed. Details enclosed. ANNEX 7</p> <p>Renovation & re-alignment of drain from silo crossing to railway was done in the year 2014, execution of work amounted to Rs.89.59 lakhs.</p> <p>Grass bedding on Dump Slope is taken up to prevent soil Erosion as per the requirement.</p> <p>2. Year wise Plantation details on Plain areas & Dumps along with Species planted is enclosed. ANNEX 7</p> <p>Plantation of 100000 Saplings Over an Area of 30 Ha. is done in the year 2017-18 & during the previous year 50000 Saplings were plantation over an area of 20 Ha.</p> <p>3. Check Dams in Dump Slope (Ext. dump nos. 2, 3 & 4) Drainage System , pucca catch drain of dimension 1.5m X 15.m & Toe Wall are provided in External Dump No: 5 to Prevent soil Erosion & Siltation.</p> <p>Construction of Check dam & Soil conservation</p>

		<p>work for the plantation year 2013,2015,2016 & 2017 slope as well as drain portion has been included in 2018-19 plantation work. The same will be done by CGRVVN</p> <p>Construction of Gabion wall (3m X 3m for 0.5 Km) along the toe wall of approach / ramp (newly constructed inpit conveyor of Gevra project) is in progress.</p>
22	User agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986.	45 MTY EC granted (Enclosed) ANNEX 8
23	User agency in consultation with the State Forest Department shall create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest areas and human settlements, adjoining the forest area being diverted for the project.	<p>For study on the protection, conservation and development of wildlife in the area, a work order vide no.20 DT: 11.05.2018 is submitted to SFRTI for start of work & early completion. Full & Final payment vide no. 2357 Dt: 02.06.2018 (Rs. 2602600/-) made.</p> <p>(Vachan Patra 9)</p>
24	Fencing, protection and regeneration of the safety zone area [7.5 meters strip shall be kept within the mining lease boundary and area of the safety shall be part of the total area of mining lease as per the Ministry's guidelines dated 27.05.2015] shall be done at the project cost within three years and maintained thereafter forest land to be selected elsewhere measuring one & a half times the area under safety zone also be at the project cost.	<p>Agreed. Safety Zone Fencing & afforestation work has been taken up by CGVVN vide S.No/SECL/BSP/FOREST no. 151 DT: 01.10.16 as per the guidelines issued by MoEF&CC at Project Cost.</p> <p>Work is in Progress.</p> <p>ANNEX 2</p>
25	User agency either himself or through the State Forest department shall undertake afforestation on degraded forest land, one and half time in extent to the area used for safety zone.	As per the Revised Demand Note Issued by DFO Katghora vide Letter no. 2031 DT: 03.03.2018 for an amount of Rs 27.58 crore, is deposited through NEFT vide reference UTR no. SBIN618082376488 Dt: 23.03.2018. in the account of the Ad-hoc CAMPA of the concerned State through online portal. ANNEX 1
26	Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of mining lease proposed to be granted under the Mines and Minerals (Development and regulation) Act, 1957, and the Rules framed there-under as amended.	Agreed. (Vachan Patra 10)
27	User agency either himself or through the State	Agreed.

	Forest Department shall undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100 meters from outer perimeter of the mining lease.	(Vachan Patra 11)
28	The User agency shall prepare a list of existing village tanks and other water bodies with GPS co-ordinates located within five km. From the mine lease boundary. This list is to be duly verified by the concerned Divisional Forest Officer. The User agency shall regularly undertaking desilting of these village tanks and other water bodies so as to mitigate the impact of siltation of such tanks/ware bodies. A detailed plan for desilting of identified ponds and water bodies to be prepared in consultation with forest department and shall be submitted to MoEF & CC before Stage-II approval.	A list of existing village tanks and other water bodies with GPS co-ordinates located is prepared. Preparation of a detailed plan for desilting of identified ponds and water bodies is under process. ANNEX 9
29	User agency shall undertake mining in a phased manner and take due case for reclamation of the mined over area. The concurrent reclamation plan shall executed by the user agency as per the approved mining plan/scheme and annual report in implementation thereof shall be submitted – to the Nodal Officer, Forest (Conservation) Act, 1980, Government of Odisha and the Addl. Principal Chief of Forests (Central), Ministry of Environment & Forests, Regional Office (Eastern Zone), Bhubaneswar. If it is found from the annual report that the activities indicated in the concurrent reclamation being executed by the user agency, the Nodal Officer of the Addl. Principal Chief Conservator of Forest (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities are satisfactorily executed.	Enclosed. Annex 10
30	No labour camp shall be established on the forest land.	Agreed. There is no Labor camp inside Forest Area.
31	User agency shall provide firewood preferably alternate fuel to the labourers and the staff working at the site so as to avoid any damage and pressure on the adjacent forest areas.	A Cooperative Society is set up in Gevra Project to facilitate the supply of LPG gas connection to the people working at the site to avoid damage / felling of trees.
32	Boundary of the mining lease and safety zone shall	Boundary of the mining lease and safety zone

	be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, forward and back bearing, distance from pillar to pillar and GPS co-ordinates.	demarcated on ground by User Agency.
33	Forest land shall not be used for any purpose other than that specified in the proposal.	No activity other than mining will be undertaken in the diverted forest land. (Vachan Patra 2)
34	State Government shall complete settlement of rights, in term of the Scheduled Tribes and Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land to be diverted and submit the documentary evidence as prescribed by this Ministry vide their letter No. 11-9/1998-FC(pt.) dated 3 rd August 2009 read with 05.07.2013, in support thereof,.	FRA copy Enclosed. ANNEX 11
35	The user agency shall submit the annual self compliance report of the above conditions to the state Government, concerned Regional Office and this Ministry by the end of March every year regularly.	Agreed. (Vachan Patra 12)
36	Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife, and	Agreed. (Vachan Patra 13)
37	The State Government and user agency shall comply the provisions of the all Act, Rules, Regulations, guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project.	Agreed. (Vachan Patra 14)

Yours Faithfully


General Manager
SECL Gevra Area

Copy to

- (1) Chief Conservator of Forests, (L&M) Raipur
- (2) Chief Conservator of Forest, Bilaspur Circle
- (3) General Manager (Forest), SECL Bilaspur

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
South Eastern Coalfields Limited
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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**

P.O. : GEVRA PROJECT

Distt.: Korba (C.G.)


Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 69A

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VACHAN- PATRA 1
(112.385HA. FOREST LAND)
(CONDITION NO. I)

SECL Gevra Area Distt.Korba (C.G.) declares and agrees that "Legal status of the diverted forest land will remain unchanged".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 69 B

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18

VACHAN- PATRA 2
(112.385 HA. FOREST LAND)
(CONDITION NO. V& XIV)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "No activity other than mining will be undertaken in the diverted forest land".


(S. K. Patil)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

South Eastern Coalfields Limited

(कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)

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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER
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जिला: कोरबा(छत्तीसगढ़)

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18

VACHAN- PATRA 3
(112.385 HA. FOREST LAND)
(CONDITION NO. VIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Rehabilitation as per R & R policy of the State Government of Chhattisgarh in consonance with the National R & R policy shall be made".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

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दिनांक /07/2018
18

VACHAN- PATRA 4
(112.385 HA. FOREST LAND)
(CONDITION NO. IX)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees to "Undertake comprehensive greening in the villages located in the surrounding of their lease area".


(S.K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

South Eastern Coalfields Limited

(कोलइण्डियाकाएकअंश/ A subsidiary of Coal India Ltd.)

CIN U10102CT1985GO1003161

Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER
GEVRA AREA



STD :07815 275430(O)

: 7815 275032(R)

Fax :07815 275434

email :noenvgevra@gmail.com

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

P.O. : GEVRA PROJECT

Distt: Korba (C.G.)

Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69 E

दिनांक /07/2018
18

VACHAN- PATRA 5
(112.385 HA. FOREST LAND)
(CONDITION NO. XI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that " mined out and biologically reclaimed forest land will be surrendered to the State Forest Department as per the schedule mentioned in the compliance of Condition no. XI".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



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दिनांक /07/2018

18.

VACHAN- PATRA 6
(112.385 HA. FOREST LAND)
(CONDITION NO. XII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "With a view to enrich the water regime in the area, a comprehensive Catchment area Treatment Plan in the area to arrest flow of silt in the Hasdeo River and to improve water regime will be implemented at the project cost."

(S. K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**

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जिला: कोरबा(छत्तीसगढ़)
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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 699

दिनांक /07/2018
18.

VACHAN- PATRA 7
(112.385 HA. FOREST LAND)
(CONDITION NO. XIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that “.Based on the outcome of the Impact of intervention study, the measures for protection, conservation and development of the wildlife, if needed may further be strengthened at the project cost.”


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे

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Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69 H

दिनांक 10/07/2018
18

VACHAN- PATRA 8
(112.385 HA. FOREST LAND)
(CONDITION NO. XIX)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To pay additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India."

(S.K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे

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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**

पो0आ0:गेवराप्रोजेक्ट
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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 69 I

दिनांक /07/2018

18

VACHAN- PATRA 9
(112.385 HA. FOREST LAND)
(CONDITION NO. XXIII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To create and maintain alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project. Bird nests artificially made out of eco-friendly materials shall be used in the area, including forest areas and human settlements, adjoining the forest area being diverted for the project."

(S. K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
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**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**


P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 69 J

दिनांक /07/2018
18.

VACHAN- PATRA 10
(112.385 HA. FOREST LAND)
(CONDITION NO. XXVI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that " The Period of diversion of the said forest land under this approval shall be for a period co-terminus with the period of mining lease proposed to be granted under the Mines and Minerals (Development and regulation) Act, 1957, and the Rules framed there-under as amended".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्डस्लिमिटे

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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

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जिला: कोरबा(छत्तीसगढ़)

पिन:495452

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Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69 K

दिनांक /07/2018

18

VACHAN- PATRA 11
(112.385 HA. FOREST LAND)
(CONDITION NO. XXVII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To undertake gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forest (having crown density less than 0.4) if any, located in the area within 100 meters from outer perimeter of the mining lease."


(S.K. Patil)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे
South Eastern Coalfields Limited
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CIN U10102CT1985GO1003161
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कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

**OFFICE OF THE GENERAL MANAGER
GEVRA AREA**

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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018/ 69 L

दिनांक /07/2018
18.

VACHAN- PATRA 12
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXV)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees "To submit the annual self compliance report of the above conditions to the state Government, concerned Regional Office and this Ministry by the end of March every year regularly".


(S. K. Pal)
General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटे

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जिला: कोरबा(छत्तीसगढ़)

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Distt.: Korba (C.G.)

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क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69 M

दिनांक 10/7/2018

16

VACHAN- PATRA 13
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXVI)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees that "Any other condition that the Regional Office (Western Zone), Bhopal of this Ministry, may stipulate, from time to time, in the interest of conservation, protection and development of forests & wildlife".

(S. K. Pal)

General Manager
Gevra Area.

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथ ईस्टर्न कोल फिल्ड्स लिमिटेड

South Eastern Coalfields Limited

(कोल इण्डिया का एक अंश / A subsidiary of Coal India Ltd.)

CIN U10102CT1985GO1003161

Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER
GEVRA AREA

पो0आ0:गेवरा प्रोजेक्ट
जिला: कोरबा (छत्तीसगढ़)
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Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 69 N

दिनांक /07/2018

18

VACHAN- PATRA 14
(112.385 HA. FOREST LAND)
(CONDITION NO. XXXVII)

SECL Gevra Area Distt. Korba (C.G.) declares and agrees to "comply the provisions of the all Act, Rules, Regulations, guidelines, Hon'ble Court Order (s) and NGT Order (s) pertaining to this project, if any, for the time being in force, as applicable to the project".

(S. K. Pal)

General Manager
Gevra Area.

SOUTH EASTERN COAL FIELDS LTD
GEVRA AREA
BANK CREDIT VOUCHER

EFT statement to be submitted to the Bank with Cheque

Date From : 23-Mar-2018 Date To : 27-Mar-2018

Bank : 55 - STATE BANK OF INDIA - GEVRA

Cheque No : 523018 Dated : 23/03/2018 Cheque in favour of :

Amount(Rs) : 275829196.00 (This amount agree with detailed total at column 4)

Amount in Words : Rupees TWENTY SEVEN CRORE FIFTY EIGHT LAKH TWENTY NINE THOUSAND ONE HUNDRED NINETY SIX only

Cheque No : 523018 Page 1 of 1
Amount(Rs) : 275829196.00 Run Date 27-Mar-2018

55 - STATE BANK OF INDIA - GEVRA

SL	Voucher No	Party CD	Party Name	Amount (Rs)	Bank Name	Branch	IFSC CODE	Bank A/C No
1	17-18/009899/P		CHATTISGARH CAMP	275829196.00	CORPORATION BANK		CORP0000633	150645813199398

275829196.00

Important instruction to the Banker :

Amount may be credited to the beneficiary account after verification of name.



Authorized Signatory
SECL, Gevra Area

Authorized Signatory
SECL, Gevra Area

23-Mar-18 (23-Mar-2018)	SBI 522963 TO DEBIT THROUGH CHEQUE SBI 523012	523012	29,18,79,393.00	43,23,79,053.00
23-Mar-18 (23-Mar-2018)	SBI 522961 TO DEBIT THROUGH CHEQUE SBI 522961	522961	1,26,192.00	43,22,52,861.00
23-Mar-18 (23-Mar-2018)	SBI 523001 TO DEBIT THROUGH CHEQUE SBI 523001	523001	4,00,569.00	43,18,52,292.00
23-Mar-18 (23-Mar-2018)	SBI 523004 TO DEBIT THROUGH CHEQUE SBI 523004	523004	54,42,944.00	42,64,09,348.00
23-Mar-18 (23-Mar-2018)	SBI 523009 TO DEBIT THROUGH CHEQUE SBI 523009	523009	22,56,901.00	42,41,52,447.00
23-Mar-18 (23-Mar-2018)	CHQ TRANSFER NEFT UTR NO: SBIN618082372115 523017 MSS E C L GEVRA AREA	523017 MSS E C L GEVRA AREA	2,00,00,000.00	40,41,52,447.00
23-Mar-18 (23-Mar-2018)	CHQ TRANSFER NEFT UTR NO: SBIN618082373431 523016 MSS E C L GEVRA AREA	523016 MSS E C L GEVRA AREA	2,00,00,000.00	38,41,52,447.00
23-Mar-18 (23-Mar-2018)	CHQ TRANSFER NEFT UTR NO: SBIN618082376488 523018 CHTTISGARH CAMPA	523018 CHTTISGARH CAMPA	27,58,29,196.00	10,83,23,251.00

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क्रं.-एसईसीएल/बीएसपी/वन/कार्यआ0/छगरावविनिलि./2016/151

दि 01.10.2016

कार्य आदेश

प्रति,
प्रबंध संचालक,
छत्तीसगढ़ राज्य वन विकास निगम लिमिटेड,
लोकेश प्लाजा,
शंकर नगर रोड, शंकर नगर,
रायपुर (छत्तीसगढ़)

विषय : एसईसीएल एवं छगरावविनिलि. के मध्य एमओयू के अंतर्गत "छत्तीसगढ़ राज्य के एस.ई.सी.एल. के क्षेत्रों में वर्ष 2016-17 के दौरान किए जाने वाले सेफ्टी जोन फेंसिंग वृक्षारोपण सहित (Safty zone fencing with plantation work) का कार्य तथा आगामी चार वर्षों अर्थात 2020-21 तक इनके रखरखाव के संबंध में कार्यदेश (Work Order)"

संदर्भ क्रं.-SECL/BSP/CAD/249 BM EXT/16-17/353 दिनांक 16.09.2016

महोदय,

उपर्युक्त के संदर्भ में एस.ई.सी.एल. बिलासपुर एवं छगरावविनि लिमिटेड, रायपुर (छ0ग0) के मध्य एमओयू के अंतर्गत मेसर्स छत्तीसगढ़ राज्य वन विकास लिमिटेड, रायपुर (छ0ग0) के पक्ष में विषयांकित कार्य के लिए कार्य आदेश देने के संबंध में एस.ई.सी.एल. बोर्ड का अनुमोदन एतद् द्वारा संसूचित किया जाता है। सेफ्टी जोन फेंसिंग वृक्षारोपण सहित (Safty zone fencing with plantation work) का कार्य वर्ष 2016-17, तत्पश्चात आगामी 04 (चार) वर्षों अर्थात 2020-21 तक इसके रख-रखाव कार्य, जिसका कुल मूल्य रूपए 26,16,49,760.97 (रूपए छब्बीस करोड़ सोलह लाख उनचास हजार सात सौ साठ एवं पैसे संतानबे) (Escalation एवं टैक्स सहित) मात्र के लिए एतद् द्वारा आपको कार्य अवाई किया जाता है।

मद कं.	कार्य का विवरण	मात्रा	इकाई	दर (रु.)	राशि (रूपए में)
1	Strip of safety zone of 7.5m width with fencing (on both side) including plantation 2000 nos. per k.m. as per specification (enclosed), with Goose neck R.C.C. Post (1.8 mtr. high fencing with 2.4 mtr. long RCC post) as per specification placed every 2.5 mtr. apart embedded in Cement Concrete Block (1:5:10) and every 15 th post, last but one end post and corner post strutted on both side and end post on one side only. Provided with 7 horizontal lines and two diagonal of barbed-wire (9.38kg per 100mtr.) between 2 posts fitted and fixed with iron clips made in RCC posts, as per instruction of In-charge of the work, in the year 2016-17 with its subsequent maintenance for four years i.e. up to 2020-21.	112.973	Per Km.	2316038.00	261649760.97
(कुल राशि- छब्बीस करोड़ सोलह लाख उनचास हजार सात सौ साठ एवं पैसे संतानबे मात्र)					26,16,49,760.97

वृक्षारोपण हेतु एमओयू में विभिन्न प्रजातियों सुझाई गई हैं जो इस प्रकार हैं:

पौधे के प्रकार
फलदार वृक्ष : जामुन, इमली, गंगा इमली, बेल, आम, सीताफल आदि।
औषधीय / हर्बल पौधे : नीम, करंज, हर्रा, बहेरा, ऑवला (आमला), अर्जुन, शिकाकाई, कुसुम, महुआ आदि।
मूल्यवान लकड़ी के पेड़ : टीक, खम्हार, सिस्सू, कालाशीशम, सफेद सिरस, बांस, पेल्टाफोरम, बबूल, अकेसिया आरिकुलिफार्मिस आदि।
सजावटी पेड़ (सड़क और कालोनियों की तरफ से) : गुलमोहर, कचनार, अमलतास, सप्तपर्णी, ग्रेविलिया, पीपल, पाम ट्री आदि।

समस्त वृक्ष वन संरक्षण अधिनियम 1980 के अंतर्गत 'वन' के अर्थ में आना चाहिए।

क्षेत्रवार वृक्षारोपण एवं पाँच वर्षों अर्थात 2016-17 (सेफ्टी जोन फेंसिंग कार्य वृक्षारोपण सहित- प्रथम वर्ष) तथा तत्पश्चात 2020-21 तक चार वर्षों के लिए रखरखाव में होने वाले वर्षवार व्यय का विवरण एतद्वारा संलग्न है। (अनुलग्नक-“ए एवं बी”)

सेफ्टी जोन का कार्य वनमंडलाधिकारी (सामान्य) के निर्देशानुसार पूर्ण किया जाए। आपसे अनुरोध है कि आप कार्य प्रारंभ करने के लिए संबंधित क्षेत्र के मुख्य महाप्रबंधक/महाप्रबंधक से संपर्क करें।

संलग्न- यथोक्त।

भवदीय,

 1.10.16
 मुख्य प्रबंधक (खनन)
 वन विभाग,
 एसईसीएल, बिलासपुर

प्रतिलिपि


- निदेशक तक. (योजना/परि.), एसईसीएल, बिलासपुर - सादर सूचनार्थ।
- निदेशक (वित्त), एसईसीएल, बिलासपुर - सादर सूचनार्थ।
- मुख्य सतर्कता अधिकारी, एसईसीएल, बिलासपुर - सादर सूचनार्थ।
- अप्रनि के तक. सचिव, एसईसीएल, बिलासपुर - अप्रनि के सादर सूचनार्थ।
- महाप्रबंधक (विश्व बैंक/पर्यावरण.), एसईसीएल, बिलासपुर।
- महाप्रबंधक (वित्त.), एसईसीएल, बिलासपुर को उनके संदर्भित डायरी क्रं.- एफसी/एरिया आफ एसईसीएल क्षेत्र /सी/लेण्ड/16-17/66, दिनांक 21.09.2016 तथा बीसी/एरिया आफ एसईसीएल क्षेत्र /सी/लेण्ड/16-17/29, रु. 1539.34 लाख दिनांक 21.09.2016
- मुमप्र/मप्र, एसईसीएल, गोवरा, दीपिका, कोरबा, रायगढ़ एवं बिश्रामपुर क्षेत्र- क्षेत्रवार विवरण, वर्षवार वृक्षारोपण एवं पांच वर्ष के लिए किए गए व्यय अर्थात 2016-17 (सेफ्टी जोन फेंसिंग कार्य वृक्षारोपण सहित- प्रथम वर्ष) और आगामी 04 (चार) वर्ष अर्थात 2020-21 तक इसी के साथ संलग्न किया गया है।
- क्षेत्रीय वित्त अधिकारी/नोडल अधिकारी, एसईसीएल, गोवरा, दीपिका, कोरबा, रायगढ़ एवं बिश्रामपुर क्षेत्र - क्षेत्रवार विवरण, वर्षवार वृक्षारोपण एवं पांच वर्ष के लिए किए गए व्यय अर्थात 2016-17 (सेफ्टी जोन फेंसिंग कार्य वृक्षारोपण सहित- प्रथम वर्ष) और आगामी 04 (चार) वर्ष अर्थात 2020-21 तक इसी के साथ संलग्न किया गया है।
- क्षेत्रीय महाप्रबंधक, छगरावविनि लिमिटेड, बिलासपुर (छ0ग0)।
- मण्डल प्रबंधक, छगरावविनि लिमिटेड, औद्योगिक वृक्षारोपण मंडल, कोरबा (छ0ग0)।
- मण्डल प्रबंधक, छगरावविनि लिमिटेड, सरगुजा परियोजना मंडल, अंबिकापुर (छ0ग0)।
- सहायक श्रम आयुक्त (कें0), बिलासपुर (छ0ग0) के कृपया सूचनार्थ।


 1.10.16
 मुख्य प्रबंधक (खनन)
 वन विभाग,
 एसईसीएल, बिलासपुर

**AREA WISE SAFETY ZONE FENCING WORK FOR THE YEAR 2016-17 WITH ITS
SUBSEQUENT FOUR YEAR MAINTENANCE i.e. UP TO 2020-21 FOR
ADMINISTRATIVE AREAS UNDER CHHATTISGARH STATE [SECL AREAS -
GEVRA, DIPKA, KORBA, RAIGARH & BISHRAMPUR] BY CGRVVN LTD.,
RAIPUR.**

Sl. No	Name of the Area.	Name of the Mine (Area of FC proposal)	safety zone fencing (In Rmt.)	For safety zone fencing double row (In RMT)
1	Gevra	Gevra OC (803.129 Ha.)	52000	26000
2	Dipka	Dipka OC (206.638Ha. + 148.866Ha.)	10310	5155
3	Korba	Manikpur OC (194.728 Ha.+181.177 Ha.)	34000	17000
4	Korba	Rajgamar (419.34, 461.80 & 20.00)	90056	45028
5	Korba	Saraipali OC (33.266Ha.)	24000	12000
6	Raigarh	Baroud OC	9500	4750
7	Bishrampur	Amera OC	6080	3040
TOTAL:			225,946	112973


Chief Manager (Mining),
Forest Department, SECL


Sub Ordinate Engg.(Civil)
Forest Department, SECL

सेफ्टी जोन में सुरक्षा हेतु 1 कि०मी० में फेंसिंग कार्य

प्रथम वर्ष (2016-17)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

1 मानव दिवस = 1 मजदूरी दर रू० 246=00

क्र.	कार्य विवरण	कार्य ईकाई	दर	राशि
1.	रोपण स्थल का सर्वेक्षण एवं सीमांकन कार्य, उपचार, मानचित्र एवं प्रोजेक्ट रिपोर्ट तैयार करना।	1 कि०मी०	275.00	275.00
	फेंसिंग आरसीसी पोल्स एवं बारबेड वायर फेंसिंग 1000 मी० के लिए 2.50 मी० के अंतराल पर।			
2.	आर.सी.सी.फेंसिंग पोल्स (Goose neck) 2.4 मी० की लंबाई, 2000 मी०, 2.5 मी० के अंतराल पर = 800 पोल्स + 114 पोल्स (प्रत्येक 15 पोल्स के अंतराल पर 2 पोल्स सपोर्ट के लिए) = 914 पोल्स आरसीसी पोल्स का मानचित्र संलग्न है। (अनुलग्नक-"डी")	914 नग	575.00 प्रति नग	525550.00
3.	आर.सी.सी.पोल्स गाड़ने के लिए 60 X 60 X 60 से०मी० साइज का गड्ढा खुदाई	914 नग	10.00	9140.00
4.	बारबेड वायर कय सी.एस.आई.डी.सी. आईटम कोड 11/B/B-5, 2 ply 7 क्षैतिज लाईनों के लिए तथा 2 विकर्ण लाईनों के लिए कुल 9 लाईनों में 914 पोल्स X 2.5 मी० 7 क्षैतिज लाईन = 15995 मी०, 914 पोल्स X 2.8 मी० 2 क्षैतिज विकर्ण = 5118.4 = कुल 21113.4 मी०, 21114 मी० (9.38 किलो/100 रनिंग मीटर)	2250 कि०ग्रा०	70.00	157500.00
5.	आर.सी.सी.पोल्स लगाने के लिए सीमेंट कांकीट का मिक्सर (1:5:10) सीमेंट, रेत एवं 20 मि.मि. गिट्टी नार्मल साइज - 914	914	131.00	119734.00
6.	आर.सी.सी.पोल्स (क्यूरिंग सहित) तथा बारबेड वायर लगाना 1000 X 2 साइड = 2000 मी० (1 कि०मी० हेतु) 0.30 मा.दि. प्रति रनिंग मीटर	2000 मी०	73.80 प्रति मी.	147600.00
7.	खम्भे पुताई का कार्य (हरा पेंट 2 फीट एवं उपर सफेद रंग)	914 नग	32.82 प्रति नग	29997.00
(अ)	2000 रनिंग मीटर हेतु (1 कि०मी०) कुल रूपए			989796.00
	वृक्षारोपण पूर्व तैयारी			
8.	क्षेत्र सफाई कार्य एवं मृदा परीक्षण कार्य 3 X 3 मीटर	1 कि०मी०	2310.00	2310.00
9.	पौधा लगाने हेतु स्टेकिंग का कार्य 2 X 2 मीटर अंतराल स्टेगर्ड विन्यास में = 1 कि०मी० = 1000 मी० X 8 मीटर = 8000 वर्गमीटर / 2 X 2 = 20000 नग 4 मा. दि. प्रति हजार	2000 नग	984 प्रति हजार	1968.00
10.	गड्ढों की खुदाई कार्य 45X45X45 से.मी. साइज कड़ी मिट्टी प्रति कि०मी० 2000 गड्ढा 6 मा. दि. प्रति सैकड़ा	2000 गड्ढा	1476 प्रति सैकड़ा	29520.00
11.	रोपण व्यय 2000 पौधे + 10 प्रतिशत अतिरिक्त = 2200 पौधे हेतु 25 X 30 से.मी. साइज	2200 पौधे	15.51 प्रति पौधा	34122.00
	अन्य आकस्मिक व्यय - बोर्ड लगाना, गेट लगाना, अग्नि सुरक्षा, फेंसिंग मरम्मत, मूल्यांकन एवं अनुश्रवण इत्यादि।	1 कि०मी०	10973.00	10973.00
(ब)				78893.00
			(अ)+(ब)	1068689.00
	सुपरविजन एवं स्थापना व्यय 25 प्रतिशत			267172.00
	कुल योग			1335861.00

द्वितीय वर्ष (2016-17)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

क्र.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	50 प्रतिशत गड्ढों में मिट्टी क्य, परिवहन सहित (1/4 हिस्से में) $0.45 \times 0.45 \times 0.45$ मीटर = $0.091125 \text{ M}^3 \times 1/4 = 0.023 \text{ M}^3$ $1000 (50\%) = 22.782 \text{ M}^3$	22.782 घ.मी.	96.00	2187.00
2.	गोबर खाद/वमी कम्पोस्ट 1 कि.ग्रा. प्रति पौधा परिवहन सहित गड्ढों में मिट्टी खाद इत्यादि का मिश्रण भरना	2000 कि.ग्रा.	9.74	19480.00
3.	पौधा परिवहन कार्य	2000 गड्ढे	2.66	5320.00
4.	जैविक रासायनिक खाद क्य-	1200 पौधे	10.08	12096.00
	1. एन.पी.के. 20 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि.मी. सड़क के दोनों तरफ हेतु = 100 कि.ग्रा.	100 कि०ग्रा०	22.00	2200.00
	2. नीम, करंज, महुआ, खल्ली, हड्डी चूर्ण 250 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि०मी० सड़क के दोनों तरफ हेतु = 500 कि.ग्रा.	500 कि०ग्रा०	33.00	16500.00
5.	गड्ढों के दीमक रोधी उपचारण हेतु दीमक नाशक दवाई इंडोसल्फान डस्ट इत्यादि को डालना 10 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि०मी० सड़क के दोनों तरफ हेतु = 20 कि.ग्रा.	20 कि०ग्रा०	172.70	3454.00
6.	नर्सरी कार्य-			
	1. प्रथम वर्ष रोपण हेतु पौधों की न्यूनतम उंचाई 3 फीट (9.1 मा.दि. प्रति सैकड़ा का 35 प्रतिशत) $9.1 \times 246 \times 35$ प्रतिशत = 777.14	2200 नग	777.14 प्रति सै.	17097.00
	2. द्वितीय वर्ष में केंजुअल्टी पौधे की न्यूनतम उंचाई 3 फीट (9.1 मा. दि.प्रति सैकड़ा का 65 प्रतिशत) $9.1 \times 246 \times 65$ प्रतिशत = 1455.09	200 नग	1455.09 प्रति सै.	2910.00
7.	पौधारोपण कार्य 2.6 मा.दि. $X 246 / 100 = 639.60$	2000 नग	639.60 प्रति सैकड़ा	12792.00
8.	प्रथम निदाई/गुड़ाई कार्य/मृत पौधे का प्रतिस्थापन, कीटनाशक एवं जैविक/रासायनिक खाद डालने सहित (1.3 मा.दि.प्रति सैकड़ा) $1.3 \times 246 = 319.80$ प्रति सै.	2000 पौधे	319.80 प्रति सैकड़ा	6396.00
9.	द्वितीय निदाई,गुड़ाई कार्य (3 मा.दि. प्रति सैकड़ा) $3 \times 246 = 738.00$ प्रति सै.	2000 पौधे	738.00 प्रति सैकड़ा	14760.00
10.	तृतीय निदाई, गुड़ाई कार्य (माह फरवरीमें/इसमें थाला भी बनाया जावेगा) (1.3 मा.दि. प्रति सैकड़ा) $X 246 = 319.80$	2000 पौधे	319.80 प्रति सैकड़ा	6396.00
11.	जैविक एवं रासायनिक खाद एवं कीटनाशक का क्य (निदाई के समय उपयोग)	2000 पौधे	8.58 प्रति पौधा	17160.00
12.	सुरक्षा जुलाई से मार्च तक (9 माह तक) महिला स्व सहायता समितियों को प्राथमिकता (1 कि.मी. पर एक चौकीदार) 1 मजदूर $X 30$ दिवस $X 246 = 7380.00$	9 माह	7380.00/ प्रतिमाह	66420.00
13.	पानी सिंचाई 3 माह	2000 पौधे	26.00 प्रति पौधा/ प्रतिमाह	52000.00
14.	अन्य आकस्मिक व्यय - अग्नि सुरक्षा,फेंसिंग मरम्मत एवं मूल्यांकन एवं अनुश्रवण इत्यादि।	2000 पौधे	6.64 प्रति पौधा	13280.00
			योग-	270448.00
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	67612.00
			कुल योग	338060.00

तृतीय वर्ष (2018-19)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

क्रं.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	पौधा परिवहन कार्य नर्सरी से पौधा तैयारी सहित (9.1 मा.दि. का 35 प्रतिशत) $9.1 \times 246.00 \times 35\%$	200 पौधे	783.51 प्रति सैकड़ा	1567.00
2.	पौधा परिवहन	200 पौधे	5.50 प्रति पौधा	1100.00
3.	प्रथम निदाई/गुड़ाई कार्य/मृत पौधे का प्रतिस्थापन, कीटनाशक एवं जैविक/रासायनिक खाद डालने सहित (250+100+20) (1.3 मा.दि. प्रति सैकड़ा) $1.3 \times 246 = 319.80$ प्रति सैकड़ा	2000 पौधे	319.80 प्रति सैकड़ा	6396.00
4.	द्वितीय निदाई/गुड़ाई कार्य/मृत पौधे का प्रतिस्थापन, कीटनाशक एवं जैविक/रासायनिक खाद डालने सहित (250+100+20) (3 मा.दि. प्रति सैकड़ा) $3 \times 246 = 738.00$ प्रति सैकड़ा	2000 पौधे	738.00 प्रति सैकड़ा	14760.00
5.	जैविक रासायनिक खाद एवं कीटनाशक क्रय	2000 पौधे	8.58 प्रति पौधा	17160.00
6.	सुरक्षा जुलाई से मार्च तक (12 माह तक) महिला स्व सहायता समितियों को प्राथमिकता (1 कि.मी. पर एक चौकीदार) 1 मजदूर \times 30 दिवस \times 246 = 7380.00	12 माह	7380.00 प्रतिमाह	88560.00
7.	पानी सिंचाई 03 माह हेतु	2000 पौधे	30.61 प्रति पौधा	61220.00
8.	अन्य आकस्मिक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत एवं मूल्यांकन एवं अनुश्रवण इत्यादि।	2000 पौधे	5.99 प्रति पौधा	11980.00
योग-				202743.00
(+ 10 प्रतिशत मजदूरी वृद्धि संभावित				20274.30
योग-				223017.30
सुपरविजन एवं स्थापना व्यय 25 प्रतिशत				55754.00
कुल योग				278771.30

चतुर्थ वर्ष (2019-20)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

क्रं.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	द्वितीय निदाई/गुड़ाई कीटनाशक एवं रासायनिक खाद डालना (1.3 मा.दि. प्रति सैकड़ा) $1.3 \times 246 = 319.80$ प्रति सैकड़ा	2000 पौधे	319.80 प्रति सै.	6396.00
2.	जैविक/रासायनिक खाद एवं कीटनाशक क्रय	2000 पौधे	4.40 प्रति पौधा	8800.00
3.	सुरक्षा 12 माह (महिला स्व सहायता समितियों को प्राथमिकता)	12 माह	7380.00 प्रतिमाह	88560.00
4.	अन्य आकस्मिक व्यय - अग्नि सुरक्षा, फेंसिंग मरम्मत, मूल्यांकन इत्यादि।	2000 पौधे	6.13 प्रति पौधा	12260.00
योग-				116016.00
(+ 20 प्रतिशत मजदूरी वृद्धि संभावित				23203.00
योग-				139219.00
सुपरविजन एवं स्थापना व्यय 25 प्रतिशत				34805.00
कुल राशि:				174024.00

पंचम वर्ष (2020-21)

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

क्र.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रु.)
1.	सुरक्षा 12 माह (महिला स्व. सहायता समितियों को प्राथमिकता)	12 माह	7380.00 प्रतिमाह	88560.00
			योग-	88560.00
			(+) 30 प्रतिशत मजदूरी वृद्धि संभावित	26568.00
			योग-	115128.00
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	28782.00
			कुल राशि:	143910.00

गोशवारा

1 कि०मी० में दोनों ओर वृक्षारोपण हेतु

क्र.	वर्ष	अधिकतम व्यय सर्विस चार्जेस रहित)	अधिकतम व्यय सर्विस चार्जेस सहित)
1.	प्रथम वर्ष (2016-17)	1335861.00	1362578.00
2.	द्वितीय वर्ष (2017-18)	338060.00	344821.00
3.	तृतीय वर्ष (2018-19)	278771.30	284347.00
4.	चतुर्थ वर्ष (2019-20)	174024.00	177504.00
5.	पंचम वर्ष (2020-21)	143910.00	146788.00
	योग-	2270626.30	2316038.00

मुख्य प्रबंधक (खनन),
वन विभाग,
एसईसीएल मुख्यालय



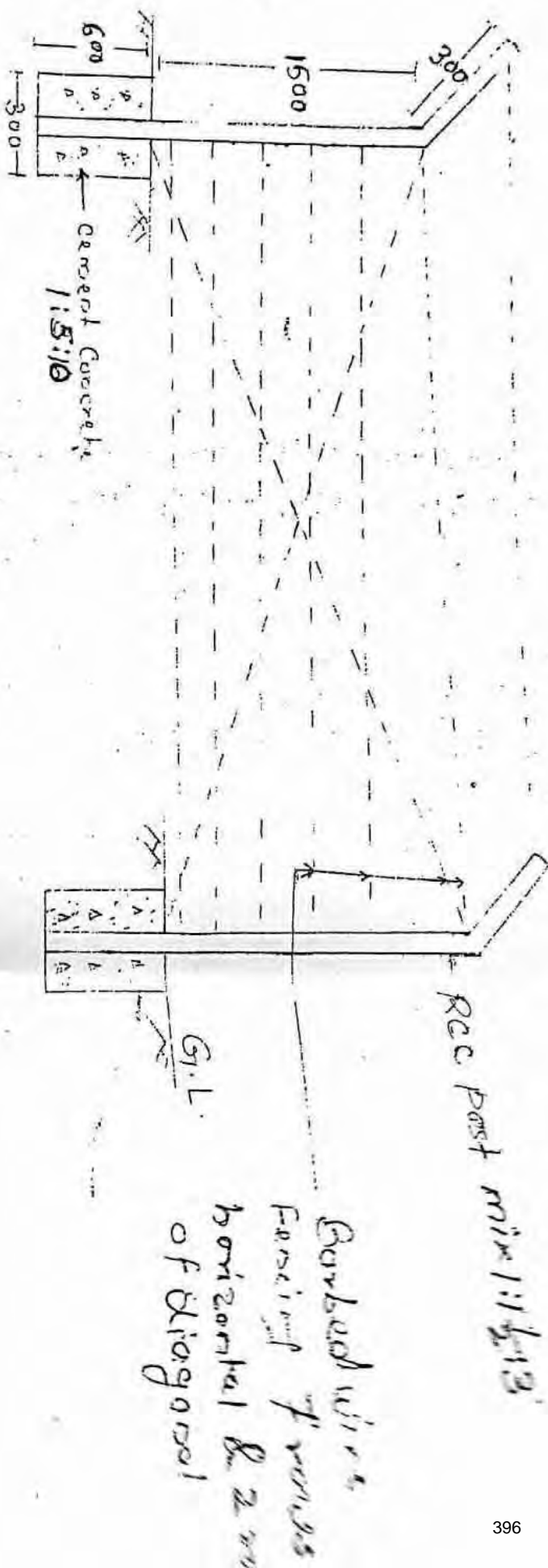
Annexure B

Sl. No.	Area/Unit	Safety Zone fencing work (In Km)	Unit rate for Fencing & Plantation in 2016-17 1st year Fencing & Plantation rate (in Rs.)	Cost of Fencing & Plantation in 2016-17 1st year Fencing & Plantation Cost (in Rs.)	Advance work amount i.e. 70% of the 1st year fencing & plantation cost (in Rs.)	Completion work amount i.e. 30% of the 1st year fencing & plantation cost (in Rs.)	Unit rate for fencing & plantation in 2017-18 2nd year i.e. 1st year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2017-18 2nd year i.e. 1st year maintenance cost (in Rs.)	Unit rate for Fencing & plantation in 2018-19 3rd year i.e. 2nd year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2018-19 3rd year i.e. 2nd year maintenance cost (in Rs.)	Unit rate for fencing & plantation in 2019-20 4th year i.e. 3rd year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2019-20 4th year i.e. 3rd year maintenance cost (in Rs.)	Unit rate for fencing & plantation in 2020-21 5th year i.e. 4th year maintenance rate (in Rs.)	Cost of Fencing & Plantation for 2020-21 5th year i.e. 4th year maintenance cost (in Rs.)	Unit rate for fencing & plantation in 2016-17 to 2020-21 (5 years)	Total Cost for fencing & plantation in 2016-17 to 2020-21 (5 years)
1	2	3	4	5	5a	5b	6	7	8	9	10	11	12	13	14	15
Safety Zone Fencing work (In Km.)																
1	Gevra	26.000	1362578.0	35427028.00	24798919.80	10628108.40	344821.0	8965346.00	284347.0	7393022.00	177504.0	4615104.00	146788.0	3816488.00	2316038.0	60216988.00
2	Dipka	5.155	1362578.0	7024089.59	4916862.71	2107226.88	344821.0	1777552.26	284347.0	1465808.79	177504.0	915033.12	146788.0	758692.14	2316038.0	11939175.89
3	Korba	74.028	1362578.0	100868924.18	70608246.93	30260677.26	344821.0	25526408.99	284347.0	21049639.72	177504.0	13140266.11	146788.0	10866422.06	2316038.0	171451661.06
4	Raigarh	4.750	1362578.0	6472245.50	4530571.85	1941673.65	344821.0	1637899.75	284347.0	1350648.25	177504.0	843144.00	146788.0	697243.00	2316038.0	11001180.50
5	Bishrampur	3.040	1362578.0	4142237.12	2899565.98	1242671.14	344821.0	1048255.84	284347.0	864414.88	177504.0	539612.16	146788.0	448235.52	2316038.0	7040755.52
	TOTAL	112.973		153934524.39	107754167.08	46180357.32		38955462.83		32123533.63		20953159.39		16583080.72		261649760.97

Chief Manager (Min),
Forest Department

Sub Ordinate
Engg.(Civil)

BARBED WIRE FENCE



Top (1000x1000)
 Bottom (1500x150)

Section of Rcc Post

Barbed wire
 Fastening 2 mm
 horizontal & 2 mm
 diagonal

Rcc Post min 1:1:2

G.L.

600
 1500
 300

Cement Concrete
 1:5:10

Barbed wire
 Fastening 2 mm
 horizontal & 2 mm
 diagonal

Rcc Post min 1:1:2

G.L.

600
 1500
 300

Cement Concrete
 1:5:10

NOTE - ALL DIMENSIONS IN

MILLIMETRES

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MINING PLAN FOR GEVRA OC EXPANSION

Phase	YEAR	Coal	OB	Inseam Band	Total OB
PHASE-I	1	40.00	71.00	1.69	72.69
	2	41.00	71.00	1.67	72.67
	3	41.00	72.00	1.80	73.80
	4	45.00	80.00	2.12	82.12
	5	49.00	84.00	2.92	86.92
PHASE-II	6	61.00	106.00	2.60	108.60
	7	70.00	122.00	3.06	125.06
	8	70.00	122.00	3.53	125.53
	9	70.00	122.00	3.51	125.51
	10	70.00	122.00	3.17	125.17
	11	70.00	122.00	3.09	125.09
	12	70.00	122.00	3.51	125.51
	13	70.00	122.00	3.54	125.54
	14	70.00	122.00	2.82	124.82
	15	70.00	122.00	2.95	124.95
	16	70.00	104.50	3.31	107.81
	17	70.00	104.50	3.16	107.66
	18	70.00	86.00	3.34	89.34
	19	70.00	79.00	2.96	81.96
	20	70.00	82.00	3.18	85.18
	21	50.00	39.30	1.50	40.80
	22	30.68	28.65	1.24	29.89
		Total	1337.68	2105.95	60.66

SOUTH EASTERN COALFIELDS LTD.

GM OFFICE - GEVRA

BANK PAYMENT SLIP

SR	PAYEE NAME	BANK	IFSC/BRANCH	ACCOUNT NUMBER	NET AMOUNT
1	CHHATTISGARH COUNCIL OF SCIENCE AND TECHNOLOGY	AXIS Bank Ltd. (UTI)	UTIB0003163	916010051182219	600430.00

CHEQUE NO. : 523169

DATE : 24-APR-18

TOTAL :-

600430.00

Rupees Six Lakh Four Hundred Thirty Only

Bank pls.note:- Crediting to individual account is subject to matching of A/C No and Name

Amount may be credited to the Beneficiary's Account after verification of name.
South Eastern Coalfields Ltd Gevra Area

[Signature]
Auth. Signatory

[Signature]
Auth. Signatory



SEEPAT ROAD

P.O.: SECL

BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.)

CIN U10102CT1985GO1003161

Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER

GEVRA AREA



STD :07815 275430(O)

: 07815 275032(R)

Fax : 07815 275434

email noenvgevra@gmail.com

पो0आ0:गेवराप्रोजेक्ट

जिला: कोरबा(छत्तीसगढ़)

पिन:495452

P.O.: GEVRA PROJECT

Distt.: Korba (C.G.)

Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 / 2 59

दिनांक23/03/18

WORK ORDER

TO

The Director General

Chhattisgarh Council Of Science & Technology

Govt. Of Chhattisgarh, Raipur

SUB: Award of Work for Preparation of Comprehensive Catchment Area Treatment in respect of Gevra Open Cast Project SECL (CG).

REF: Your Letter no. 2950/CCOST/2017 DT: 12.12.2017

Dear Sir

With reference to the above this is to communicate to you the approval of competent authority to award the subject work to Chhattisgarh Council Of Science & Technology (CCOST), Raipur amounting to Rs. 1200861/- (Twelve lakhs and eight hundred and sixty one only) inclusive of all taxes on the terms & conditions as indicated below with the following scope of work.

SCOPE OF WORK

1. The problem of silt and debris load to river from the susceptible areas of the catchment.
2. Checking the sediment load from the tributaries directly discharging into the river.
3. Protecting the directly draining catchment from scouring / sloughing.
4. Mitigative measures for the erosion and other hazards resulting from the project activities.

WORK ELEMENTS

1. Estimation of soil erosion

- a. Study of drainage pattern of the catchment area

Seel
23/3/18

- b. Delineation of watersheds and sub-watersheds of free draining catchment.
- c. Assessment of slope of the catchment area
- d. Land use and land cover mapping using remote sensing and GIS
- e. Study of soil parameters under directly draining area
- f. Study of soil details, silt yield and its delivery potential

2. Prioritization of Sub-watersheds

- a. Preparation of a framework of sub-watersheds
- b. Generation of a map indicating erosion-intensity
- c. Assignment of weightage values to various mapping units
- d. Assignment of maximum delivery ratios to various erosion intensity mapping units and assessment of adjusted delivery ratios for different sub-watersheds.
- e. Computing Silt-Yield Index for individual sub-watersheds
- f. Grading of sub-watersheds for prioritization

3. Identification of area for Comprehensive Area Treatment.

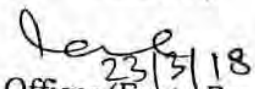
4. Preparation of Schedule of Implementation

TERMS & CONDITIONS

1. Total value of the work is Rs. 1200861/- (Twelve lakhs and eight hundred and sixty one only) inclusive of all taxes.
2. 50% amount will be released as an advance payment. The advance amount will be released on receipt of pre receipted bill from your end. Balance 50% will be released after submission of study report.
3. The Date of commencement of work shall be reckoned from date of acceptance of work order.
4. The copy of work order duly accepted on its body be sent back as a token of acceptance of the same.
5. The period of completion of work will be 120 days.
6. The report shall be submitted in 6 copies and soft copy to General Manager Gevra Area.
7. The proposal has been financially concurred vide FC/GVR/C/FL/17-18/27 DT: 17.03.2018 and BC/GVR/C/FL/17-18/62 and paying authority will be Area Finance Manager, Gevra SECL.

You are requested to contact Assistant Manager (ENVT.) 9425282479, Gevra Area to start the work and its early completion.

Yours Faithfully


23/5/18
Nodal Officer (Envt./ Forest)
SECL Gevra Area

SOUTH EASTERN POWER LTD.
(GN OFFICE - GEVRA-5150)

Page : 1 of 1

CLASSIFICATION SHEET

BPR NO.: 001047 BPR DATE: 02-JUN-18 PARTY CODE : PAR004181B

BILL NO: 921 BILL DATE: 25-MAY-18 OLD PARTY CODE :

Party Name: STATE FOREST RESEARCH & TRAINING INSTITUTE GSTIN : 18011

Unit Code	Memo No	HEAD OF ACCOUNTS	FC Code	Debit Rs.	Credit Rs.
5150		OTHER ENVIRONMENTAL EXPENSES	1003022	2607600.00	
		NET AMOUNT			
Total				2607600.00	2607600.00

2357
 2/6/18

Net: Rupees Twenty-Six Lakh Two Thousand Six Hundred Only

Cash Book Entry No.	Bank	Cheque No	Date	Party Code	Name of the Party	Amount
				PAR004181	STATE FOREST RESEARCH & TRAINING INSTITUTE	

IFSC : SBINORRCHGB

A/C No : 77010273747

BANK: GRAMIN BANK

Remarks: AMT. FOR PREPARATION OF WLCP BY SERTI

Cashier

Passed by

Checked by

Estimated by

Handwritten signatures and dates:
 02/06/18
 02/06/18

SEEPAT ROAD
P.O.: SECL
BILASPUR



साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.)



STD :07815 275430(O)
: 07815 275032(R)
Fax : 07815 275434
email noenvgevra@gmail.com

CIN U10102CT1985GO1003161
Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

पो0आ0:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

OFFICE OF THE GENERAL MANAGER
GEVRA AREA

P.O.: GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2018 /20

दिनांक 11/05/18

WORK ORDER

TO

PCCF & Director
State Forest Research & Training Institute
Raipur Chhattisgarh

SUB: Award of Work for Preparation of Wild Life Conservation Plan and Study of Avifauna for creation of artificially made ecofriendly Bird Nests whose nesting trees are to be cleared in Gevra OC Expansion project of SECL, Gevra Area.

REF: Your Letter no. S. No./SFRTI & CC/2018/96 Dt:06.01.2018

Dear Sir

With reference to the above this is to communicate to you the approval & sanction of SECL authority to award the subject work to State Forest Research & Training Institute, Raipur Chhattisgarh amounting to Rs. 2602600/- (Twenty Six lakhs Two Thousand and six hundred only) inclusive of all taxes on the terms & conditions as indicated below with the following scope of work.

SCOPE OF WORK

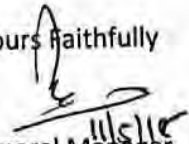
Preparation of Wild Life Conservation Plan and Study of Avifauna for creation of artificially made ecofriendly Bird Nests whose nesting trees are to be cleared in Gevra OC Expansion project of SECL, Gevra Area.

TERMS & CONDITIONS

1. Total value of the work is Rs. 2602600/- (Twenty Six lakhs Two Thousand and six hundred only) inclusive of all taxes. (Relevant bank details shall be communicated to transfer the amount through RTGS/ NEFT).
2. The Date of commencement of work shall be reckoned from date of acceptance of work order.
3. The copy of work order duly accepted on its body be sent back as a token of acceptance of the same.
4. The period of completion of work will be 1 year, interim report shall be submitted within six months.
5. The report shall be submitted in 6 copies and soft copy to General Manager Gevra Area.
6. The proposal has been financially concurred vide FC/GVR area/FL/18-19/04 & BC/GVR area/FL/18-19/06 Dt: 10.05.2018 and paying authority will be Area Finance Manager, Gevra SECL.

You are requested to contact Nodal Officer (ENVT.) 9425279521, Gevra Area to start the work and its early completion.

Yours faithfully


General Manager
SECL Gevra Area

Copy to:

1. APCCF, SECL Bilaspur- for Kind Information
2. General Manager(Mining / Forest) SECL Bilaspur – for information
3. General Manager(Mining), Gevra Project
4. Area Finance Manager, SECL Gevra Area (FC/GVR area/FL/18-19/04 & BC/GVR area/FL/18-19/06 Dt: 10.05.2018)
5. Dy. General Manager (P & P), SECL Gevra Area



Gabion wall (3m X 3m for 0.5 Km) along the toe wall of approach road

CATCH DRAINS



**CATCH DRAIN AND TOE WALL TO
PREVENT SILTATION EXTERNAL
DUMP NO : 5**

**CHECK DAMS IN DUMP SLOPE
DRAINAGE SYSTEM TO PREVENT
SOIL EROSION AND SILTATION
DUMP NO 2,3 & 4**





साउथ ईस्टर्न कोलफिल्ड्स लिमिटेड
South Eastern Coalfields Limited
(कोल इण्डिया का एक अंग/A subsidiary of Coal India Ltd.)

नोट शीट
NOTE SHEET

वन पर्यावरण विभाग
गेवरा परियोजना

फाईल संख्या एस.ई.सी.एल./गे.प./वन-प./117/ 82 दिनांक 17/7/17 पृष्ठ संख्या Sheet No.
लिपिक आर. आर. सिंह अधिकारी का नाम राकेश कुमार
Dealing Clerk Name of Officer

विषय - गेवरा क्षेत्र के अंतर्गत वन रोपण क्षेत्र में भू-संरक्षण व चेक डैम प्रस्ताव के संबंध में।


- संदर्भ - (1) SECL / BSP/FOREST/PLANTATION/2017/317 DT: 03.04.2017
(2) VANVIKAS NIGAM/INDUSTRIAL PLANTATION/EXP/2017/3324 DT:22.03.17
(3) VANVIKAS NIGAM/INDUSTRIAL PLANTATION/EXP/2017/1380 DT:11.07.2017.

With reference to the above subject CGVVN has submitted the proposal for construction of Check Dam and Soil Conservation Work for the plantation year 2013,2015,2016 & 2017 Slope as well as drain portion where there is acute chances of rain cut within the dump area of Dump No 6&7. A plan is enclosed herewith showing the area of proposed Soil conservation and Check dam Construction work. The estimate has been prepared by the officials of CGVVN Korba Division for an amount of Rs. 3565240/-. The estimate include the use of local available stone material in the dump area and sand filled cement bags for construction of check dam. The quantum of work has been taken on the basis of site requirement and estimation. The payment of the above work shall be made on the basis of the actual measurement of the executed work

Submitted for kind perusal and onward transmission for arranging and approval and award of the above work.

Enclosed: Detail Estimation Work along with Site Plan showing in detail


Nodal Officer (Envt/Forest)
SECL Gevra Area


General Manager
(Gevra Area)

Gm (Env/Forest)
SECL, Balespur.

SOUTH EASTERN COALFIELDS LIMITED

GEVRA AREA

GEVRA OPENCAST PROJECT

DETAIL OF DUMPS

EXTERNAL DUMPS

External Dump No. 1 (Completed)
Year Of Dumping Started : 1986
Technically Reclaimed Area : 5.250 Ha.
Biologically Reclaimed Area (1987) : 5.250 Ha.
Name Of Plants : Neem, Karenj, Amla, Siras,
Sissoo, Bel, Bamboo,
Gangaimli, Bahera, Ashok,
Golmohar, Satwan, Cassiagemec,
Teak, Jamun, Peltaforum,
Cassiagulco, Boganvallia Khamar,
Sitaphal, Amrood, Kathal, Imli,
Mango, Sisham, Jatropha Etc.

External Dump No. 2, 3 & 4 (Completed)
Year Of Dumping Started : 1987
Technically Reclaimed Area : 109.260 Ha.
Biologically Reclaimed Area (1993) : 97.250 Ha.
Name Of Plants : Neem, Karenj, Amla, Siras,
Sissoo, Bel, Bamboo, Gangaimli,
Bahera, Ashok, Golmohar, Satwan,
Cassiagemec, Teak, Jamun
Peltaforum, Cassiagulco, Boganvallia
Khamar, Sitaphal, Amrood, Kathal,

External Dump No. **5 (Completed)**
Year Of Dumping Started : 1993
Technically Reclaimed Area : 61.70 Ha.
Biologically Reclaimed Area (1997) : 61.70Ha.
Name Of Plants : Neem, Karenj, Amla, Siras,
Sissoo,Bel, Bamboo, Gangaimli,
Bahera, Ashok, Golmohar, Satwan,
Cassiagemec, Teak, Jamun,
Peltaforum, Cassiagulco, Boganvallia
Khamar, Sitaphal, Amrood, Kathal,
Imli, Mango, Sisham, Jatropha Etc.

External Dump No. **6 & 7 (Running Dump)**
Year Of Dumping Started : 1997
Technically Reclaimed Area : 156.716 Ha.
Biologically Reclaimed Area (2002) : 56.00 Ha.
Name Of Plants : Neem, Karenj, Amla, Siras,
Sissoo,Bel, Bamboo, Gangaimli,
Bahera, Ashok, Golmohar, Satwan,
Cassiagemec, Teak, Jamun,
Peltaforum, Cassiagulco, Boganvallia
Khamar, Sitaphal, Amrood, Kathal,
Imli, Mango, Sisham, Jatropha Etc.

External Dump No. **1 (DIPKA UNIT)(Completed)**
Year Of Dumping Started : 1989
Technically Reclaimed Area : 8.909 Ha.
Biologically Reclaimed Area (1993) : 8.00 Ha.
Name Of Plants : Neem, Karenj, Amla, Siras,
Sissoo,Bel, Bamboo, Gangaimli,
Bahera, Ashok, Golmohar, Satwan,
Cassiagemec, Teak, Jamun,
Peltaforum, Cassiagulco, Boganvallia,
Khamar, Sitaphal, Amrood, Kathal,
Imli, Mango, Sisham, Jatropha Etc.

External Dump No.	2 & 3 (DIPKA UNIT)(Completed)
Year Of Dumping Started	: 1993
Technically Reclaimed Area	: 32.496 Ha.
Biologically Reclaimed Area (1996)	: 32.00 Ha.
Name Of Plants	: Neem, Karenj, Amla, Siras, Sissoo, Bel, Bamboo, Gangaimli, Bahera, Ashok, Golmohar, Satwan, Cassiagemec, Teak, Jamun, Peltaforum, Cassiagulco, Boganvallia, Khamar, Sitaphal, Amrood, Kathal, Imli, Mango, Sisham, Jatropha Etc.

INTERNAL DUMPS

Internal Dump No.	1 (Completed)
Year Of Dumping Started	: 1995
Technically Reclaimed Area	: 15.260 Ha.
Biologically Reclaimed Area (1997)	: 13.00 Ha.
Name Of Plants	: Neem, Karenj, Amla, Siras, Sissoo, Bel, Bamboo, Gangaimli, Bahera, Ashok, Golmohar, Satwan, Cassiagemec, Teak, Jamun, Peltaforum, Cassiagulco, Boganvallia, Khamar, Sitaphal, Amrood, Kathal, Imli, Mango, Sisham, Jatropha Etc.

Internal Dump No.	2 & 3 (including Amrakanan) (Running Dumps)
Year Of Dumping Started	: 1997
Technically Reclaimed Area	: 123.940 Ha.
Biologically Reclaimed Area(1998)	: 68.85 Ha.
Name Of Plants	: Neem, Karenj, Amla, Siras, Sissoo, Bel, Bamboo, Gangaimli, Bahera, Ashok, Golmohar, Satwan, Cassiagemec, Teak, Jamun,

Peltaforum, Cassiagulco, Boganvallia
Khamar, Sitaphal, Amrood, Kathal,

Internal Dump No.

Year Of Dumping Started

Technically Reclaimed Area

Biologically Reclaimed Area (2003)

Name Of Plants

4 (Running Dumps)

: 1999

: 147.909 Ha.

: 16.750 Ha.

: Neem, Karenj, Amla, Siras,
Sissoo, Bel, Bamboo, Gangaimli,
Bahera, Ashok, Golmohar, Satwan,
Cassiagemec, Teak, Jamun,
Peltaforum, Cassiagulco, Boganvallia
Khamar, Sitaphal, Amrood, Kathal,
Imli, Mango, Sisham, Jatropha Etc.

Internal Dump No.

Year Of Dumping Started

Technically Reclaimed Area

Biologically Reclaimed Area (2003)

Name Of Plants

**5, 6 & 7 (including Anandvatika)
(Running Dumps)**

: 2000

: 230.060 Ha.

: 24.00 Ha.

: Neem, Karenj, Amla, Siras,
Sissoo, Bel, Bamboo, Gangaimli,
Bahera, Ashok, Golmohar, Satwan,
Cassiagemec, Teak, Jamun,
Peltaforum, Cassiagulco, Boganvallia ,
Khamar, Sitaphal, Amrood, Kathal,
Imli, Mango, Sisham, Jatropha Etc.

Internal Dump No.

Year Of Dumping Started

Technically Reclaimed Area

Biologically Reclaimed Area

Name Of Plants

8 (Running Dump)

: 2007

: 74.624 Ha.

: Nil

: NA

STATEMENT SHOWING DETAILS OF PLANTATION OF GEVRA PROJECT

YEAR	PLANTATION DONE ON				Total Plantation done (in nos)	CPT (1.5mx0.9 mx0.75m) (in Rmtrs)	GRASS BED (Nos.)	Expenditure (in Rupees) Apr to Mar
	On Plain area (nos)	On internal dumps (nos).	On External dumps (nos).	Total Plantation on dumps (nos).				
1986	236000	0	0	0	236000	0	0	NA
1987	245750	0	46000	46000	291750	0	0	NA
1988	419500	0	0	0	419500	0	0	NA
1989	454000	0	0	0	454000	0	0	NA
1990	372883	0	0	0	372883	0	0	NA
1991	360000	0	0	0	360000	0	0	NA
1992	64900	0	0	0	64900	0	0	NA
1993	87230	0	26970	26970	114200	0	0	NA
1994	0	0	0	0	0	0	0	NA
1995	77000	0	0	0	77000	0	0	101055
1996	68000	0	64000	64000	132000	0	0	1591413.97
1997	50000	17500	105500	123000	173000	0	0	1455346.79
1998	42000	52150	31850	84000	126000	0	15000	1718392
1999	11950	0	65000	65000	76950	3150	18000	5224383.48
2000	0	0	130000	130000	130000	0	15000	2833272.2
2001	0	0	66000	66000	66000	0	13000	9349014.8
2002	10000	0	30000	30000	40000	500	4000	3055517.12
2003	30000	81000	20000	101000	131000	1270	15000	6831909.6
2004	22000	5500	78500	84000	106000	3583	36000	5227269.06
2005	76000	0	39500	39500	115500	4800.33	39500	12687575
2005	41500	0	0	0	41500	2000	0	
2006	75000	40000	5000	45000	120000	4500	45000	5959232.66
2007	50000	0		0	50000	0	0	5814353
2008	5000	0	20000	20000	25000	0	0	3389957.13
2009	32500	0	30000	30000	62,500	0	20000	4769806
2010	2500	36500		36500	39,000	0	0	5343577
2011	0	27500	0	27500	27,500	0	12500	6323264
2012	10000	20000	0	20000	30000	0	3125	5701268.25
2013	5000	0	35000	35000	40000	0	5000	3648320
2014	0	0	20000	20000	20000	0	0	2811872
2015	0	0	80000	80000	80000	0	10000	7632507
2016	0	0	50000	50000	50000	0	0	11277749
2017	0	0	100000	100000	100000	0	5000	3709850
Total	2848713	280150	1043320	1323470	4172183	19803.33	256125	116456905.1
Planted area (Ha)	621.82	122.6	312.2	434.8	1056.62			

PLANTATION



GREEN BELT



No.J-11015/85/2010-IA.II (M)pt
Government of India
Ministry of Environment, Forest & Climate Change
IA-II (Coal Mining) Division

Indira Paryavaran Bhawan,
Jorbagh Road, N Delhi - 3
Dated: 21st February, 2018

To,

The General Manager (W B P & Environment)
M/s South Eastern Coalfields Ltd,
W B P & Environment Department,
Seepat Road, P B. No.60
Bilaspur - 495 006 (**Chhattisgarh**) Email: gmenvtsecl@gmail.com;

Sub: Expansion of Gevra Opencast Coal Mine from 41 MTPA to 45 MTPA of M/s South Eastern Coalfields Limited in an area of 4184.486 ha located in District Korba (Chhattisgarh) - Environmental Clearance-reg.

Sir,

This has reference to your letter No. SECL/BSP/ENVT/Gevra OC 49/17/6772 dated 20.10.2017, along with online proposal No. IA/CG/CMIN/70412/2017 dated 20th October, 2017 and subsequent letters dated 07.11.2017, 08.11.2017, 21.11.2018, 27.11.2017 25.01.2018 on the above-mentioned subject.

2. The Ministry of Environment, Forest and Climate Change has considered the proposal for environmental clearance to the project for expansion of Gevra Opencast Coal Mine from 41 MTPA to 45 MTPA of M/s South Eastern Coalfields Limited in an area of 4184.486 ha located in District Korba (Chhattisgarh).

3. The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for Thermal & Coal Mining Sector in its 22nd meeting held on 27th November, 2017. The details of the project, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported to be as under:-

(i) Earlier, the Environmental Clearance for Gevra Opencast coal mine granted by the Ministry vide letter no. J-11015/484/2007-IA.II (M) dated 3rd June, 2009 for expansion from 25 MTPA to 35 MTPA in leasehold area of 4184.486 ha, based on the public hearing held on 22nd August, 2008.

(ii) Further, EC for expansion from 35 MTPA to 40 MTPA was accorded vide letter no. J-11015/85/2010-IA.II (M) dated 31.01.2014 under clause 7(ii) of EIA Notification, 2006 (in accordance with OM J-11015/30/2004.IA.II(M) dated 19.12.2012) exempting public hearing.

(iii) In accordance to the OM J-11015/30/2004.IA.II (M) dated 2.9.2014 further, Ministry accorded amendment in the EC vide letter No. J-11015/85/2010-IA.II (M) dated 06.02.2015 for incremental difference in the production capacity from 40 MTPA to 41 MTPA

(iv) Further to meet the country's demand of coal, a proposal was made for expansion of project from 41 MTPA to 45 MTPA within the existing infrastructure and leasehold area. for same the ToR was accorded vide letter No. J-11015/85/2010-IA.II(M) dated 28th February, 2017 and the revised ToR dated 05.07.2017.

(v) To verify the status of compliance of EC conditions for Gevra opencast expansion project 41 MTPA, the Regional Office of MoEF&CC, Nagpur has carried out the site inspection on 11th September, 2016. The compliance and monitoring reports forwarded to

this Ministry vide their letter No. 3-28/2014(Env) dated 4th November, 2016, which was deliberated in the 4th EAC meeting held in January, 2017. The project proponent presented the action taken on each of the observations made by Regional Office during the site visit.

(vi) Meanwhile, MoEF&CC issued OM No.J-11015/224/2015-IA.II (M) dated 15.09.2107 for environmental clearance for expansion of coal mining projects up to 40% with exemption of public hearing. On the basis of same OM a fresh application has been submitted for expansion of Gevra Opencast coalmine project from 41 MTPA to 49 MTPA without public hearing in mining lease area of 4184.486 ha.

(vii) Project has the potential to produce and dispatch 49 MTPA of coal within existing mining lease area of 4184.486 ha and infrastructure.

(viii) Stage-1 Forest Clearance have been obtained for entire forest land, 1016.412 Ha involved in the mining lease area of 4184.486 ha.

(ix) Mining plan for 49 MTPA was approved by SECL Board in its 262nd meeting held on 10th/11th October 2017. Mine closure plan is an integral part of mining plan.

(x) The latitude and longitude of the project site are 22°18'00" to 22°21'42" N and 82°32'00" to 82°39' 30" E respectively.

(xi) Joint Venture: No

(xii) Coal Linkage : NTPC and various thermal power plants

(xiii) Employment generated / to be generated: 4391 Persons

(xiv) Benefits of the project: Project will considerably improve the socio-economic status of the adjoining areas. This will result in benefits such as improvements in physical infrastructure; improvements in social infrastructure, increase in employment potential, contribution to the exchequer, meet energy requirement and post-mining enhancement of green cover.

(xv) The land use pattern of the project will be as follows:

Pre-Mining:

SN.	Land use	Within Mining lease area (ha)	Outside Mining lease area (ha)	Total (ha)
1	Agricultural land	1273.426	1247.145	2520.571
2	Forest land	441.410	575.002	1016.412
3	Waste Land	0.000	0.000	0.000
4	Grazing Land	0.000	0.000	0.000
5	Surface Water Bodies	7.000	0.000	7.000
6	Settlements	0.000	0.000	0.000
7	Others (Specify); Govt. Land (including Waste Land and Grazing Land)	315.414	325.089	640.503
	Total	2037.250	2147.236	4184.486

Post-Mining:

S No	Pattern of utilization	Area (ha)
1.	Reclaimed External and Internal dumps	1858.00
2.	Green belt	5.670
3.	Final void /Water body	659.250
4.	Built up area (Infrastructure, colony, roads, R and R site)	1243.392
5.	Safety zone: Undisturbed area	418.174
	Total	4184.486

Core area :

S N	Particulars	Tenancy land (ha)	Forest land (ha)	Government Land (ha)					Grand Total (ha)
				Grazing land	Waste land	Water body	Others	Total	
1	Quarry area	1285.888	441.410	0.000	0.000	7.000	297.952	304.952	2032.250
2	Area for Top Soil in quarry	0.000	0.000	0.000	0.000	0.000	5.000	5.000	5.000
3	External dump	291.310	0.000	0.000	0.000	0.000	188.690	188.690	480.000
4	Infrastructure etc	504.509	509.434	0.000	0.000	0.000	88.839	88.839	1102.782
5	Roads	6.000	0.000	0.000	0.000	0.000	0.000	0.000	6.000
6	Residential Colony	65.000	0.000	0.000	0.000	0.000	0.000	0.000	65.000
7	R and R site	69.280	0.000	0.000	0.000	0.000	0.000	0.000	69.280
8	Explosive magazine	0.000	6.000	0.000	0.000	0.000	0.000	0.000	6.000
9	Nala Diversion, if any	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	Safety Zone	298.564	59.568	0.000	0.000	0.000	60.022	60.022	418.174
Total		2520.571	1016.412	0.000	0.000	7.000	640.503	647.503	4184.486

(xvi) Total geological/ mineable reserve within mining lease area of 4184.486 ha is 528.93 MT and extractable reserve is 528.93 MT (as on 1.4.2017).

(xvii) The life of mine is 11 Years.

(xviii) The grade of the coal is G-10 and the stripping ratio is 1.30 m³/T. The average gradient varies from 1 in 6 to 1 in 12 having 6 seams with thickness ranging from 3.14 m to 57.86 m.

(xix) Total estimated water requirement of the project is 22,560 KL/day. The level of ground water ranges from 2.30 m to 11.98 m in post-monsoon and 5.56 m to 14.60 m in pre-monsoon season.

(xx) The method of mining would be opencast.

(xxi) There are 7 external OB dumps in an area of 480 ha with quantity of 147.60 Mcum and height of 90 m above the ground level, and 8 internal dumps with quantity of 1119.40 Mcum in an area of 1378 ha.

(xxii) The final mine void would be in 659.250 ha with depth of 40 m, which is proposed to be converted into water body.

(xxiii) External OB dump area 480.00 ha and backfilled quarry area of 1378.00 ha shall be reclaimed with plantation.

(xxiv) The transportation of coal from face to in-pit crusher is by trucks, from surface to siding is by conveyor system upto Silo and from siding by Rail and MGR. In-pit belt conveyor is under construction and will be completed within December 2017.

(xxv) Rehabilitation and resettlement is involved in the project. There are 3428 PAFs.

(xxvi) Total capital cost of the project is Rs. 11,816.40 Crores.

(xxvii) The CSR cost: According to new CSR policy the fund for the CSR should be allocated, based on 2% of the average net profit of the Company for the three immediate preceding financial years or Rs. 2 per tonne of coal production of previous year, whichever is higher.

(xxviii) R&R Cost Rs. 455.96 Crores and Environmental Management Cost Rs. 142.82 Crores.

(xxix) Hasdeo river flows approximately at a distance of 8 km from the project site. There are number of seasonal nallah and tributaries of Hasdeo river like Ahiran, Kholar nallah and Lilagar river.

(xxx) The ground water clearance has been obtained for the project on 18.06.2004.

(xxxi) There are no national parks, wildlife sanctuary, biosphere reserves in the 10 km buffer zone of the study area.

(xxxii) Total forest area involved is 1016.412 ha. The status of diversion of forest land for non-forestry purposes is as under:-

Area (in ha)	Stage-1 /Final FC issued vide letter no. and date	Validity period of FC
100.898	vide MoEF Clearance F no.8-33/2005-FC dated 05.05.2008	Co-terminus with the mining lease or 20 years
46.198	vide MoEF Clearance F no.8-81/ 2006-FC dated 20-04-2015	Co-terminus with the mining lease or 20 years
192.046	vide MoEF Clearance F no.8-77/2006 – FC, dated 20-04-2015	Co-terminus with the mining lease or 20 years
564.885	vide MoEF Clearance F no.8-79/2006 – FC, dated 20-04-2015	Co-terminus with the mining lease or 20 years
112.385	vide MoEF&CC Clearance F.No. 8-41/2017-FC dated 27.09.2017.	Co-terminus with the mining lease
1016.412	Total forest land for which Stage-1 Forestry Clearance obtained	

(xxxiii) Afforestation plan shall be implemented covering an area of 2438.672 ha at the end of the mining. Density of tree plantation shall be 2500 trees/ ha of plants.

(xxxiv) There are court cases / violation pending with the project proponent as per the following details:-

S N	Year of Violation	Production	Case No	Court	Parties	Brief	Present Status
1	31.7.2000	Consent not renewed and capacity expanded from 10 MTY	613/2007	HC of CG, BSP	CECB, Korba. Vs. SECL Gevra Project	Regarding Cri. Complaint filed under Sec.15 and 17 of EP, 1986. Criminal revision.	Pending
2	2001-02 to 2004-05	More than 10 MTY	1217/2007	JMC Class-I Korba	CECB, Korba. Vs. CGM Dipka Extension Gevra area SECL	Regarding Cri. Complaint filed under Sec.15 and 17 of EP Act.	Pending for examination of proposed accused

4. The Expert Appraisal Committee in its 22nd meeting held on 27th November, 2017 has recommended the proposal for grant of environmental clearance. Based on recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the project for expansion of **Gevra Opencast coal mine from 41 MTPA to 45 MTPA for the present, commensurate with the proposed production plan, of M/s South Eastern Coalfields Limited in an area of 4184.486 ha located in District Korba (Chhattisgarh), under the provisions of the Environment Impact Assessment Notification, 2006**

and subsequent amendments/circulars thereto subject to the compliance of the terms & conditions and environmental safeguards mentioned below:

- (i) The environmental clearance for the proposed increase in capacity shall be valid up to 31st March, 2019. The continuance of the project thereafter at the increased capacity, shall be based on evaluation of the proposed control measures and its impact on the ambient air quality by the EAC in later half of the FY 2018-19.
- (ii) To control the of dust generation at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.
- (iii) Mitigative measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient numbers of water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions as presented before the Committee, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at railway siding, etc.
- (iv) Efforts shall be made to explore the possibility of providing wind shield/breaker arrangement with creepers and climbers.
- (v) Thick green belt of 50 m width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution.
- (vi) Persons of nearby villages shall be given training for their livelihood and skill development.
- (vii) To ensure health and welfare of nearby villages, regular medical camps shall be organized at least once in six months.
- (viii) The predominant Sai species in the forest area shall be protected, and in case of coal mining operations inevitable therein, compensatory afforestation of these species shall be carried out in consultation with State Forest Department.
- (ix) In view of the mining potential of the area and the pollution concerns, carrying capacity of the eco-system shall be studied through some expert agencies to assess optimal mining operations with minimal impact on ecosystem services.
- (x) A sustainable mining practice shall be developed in the mine, catering to attributes of ecological, societal and economical dimensions.

4.1 The grant of EC is further subject to compliance of the generic conditions as under:

(a) Mining

- (i) Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- (ii) No change in mining method i.e OC to UG, calendar programme and scope of work shall be made without obtaining prior approval of the Ministry of Environment, Forest and Climate Change (MoEFCC).
- (iii) Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- (iv) No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980 and also adhering to The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 read with provisions of Indian Forest Act, 1927.



(b) Land reclamation and water conservation

(i) Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale shall be submitted to Ministry of Environment, Forest and Climate Change/Regional Office (RO).

(ii) The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Gol Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS.

(iii) The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural/forestry purposes and shall be handed over to the respective state government as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.

(iv) The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the "during mining"/"post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the Ministry of Environment, Forest and Climate Change/Regional Office on six monthly basis.

(v) The top soil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized for long. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office on six monthly basis.

(c) Emissions, effluents, and waste disposal

(i) Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM₁₀/PM_{2.5}) such as haul road, loading/unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.

(ii) Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area in a phased manner. The green belt comprising a mix of native species shall be developed all along the major approach/ coal transportation roads.

(iii) The transportation of coal shall be carried out as per the provisions and route proposed in the approved Mining Plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, it is proposed to construct a 'bypass' road, it should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.

(iv) Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.

(v) Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.

(vi) Coal handling plant shall be operated with effective control measures viz. bag filters/water or mist sprinkling system etc to check fugitive emissions from crushing operations, conveyor system, transfer points, etc.

(vii) Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.

(viii) Catch/garland drains and siltation ponds of appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilized for dust suppression measures and green belt development. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.

(ix) Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Oil and grease trap shall be installed and maintained fully functional with effluents discharge adhering to the norms. Sewage treatment plant of adequate capacity shall be installed for treatment of domestic waste.

(x) Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

(d) Illumination, noise & vibration

(i) Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & its RO on six-monthly basis.



(ii) Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs/muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.

(iii) Controlled blasting techniques shall be practiced in order to mitigate ground vibrations and fly rocks as per the guidelines prescribed by the DGMS.

(iv) The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

(e) Occupational health & safety

(i) The project proponent shall undertake occupational health survey for initial and periodical medical examination of the workers engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any.

(ii) Personnel (including outsourcing employees) working in dusty areas shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.

(iii) Skill training as per safety norms specified by DGMS shall be provided to all workmen including the outsourcing employees to ensure high safety standards in mines.

(f) Ecosystem and biodiversity conservation

(i) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.

(g) Public hearing, R&R and CSR

(i) Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.

(ii) The project proponent shall ensure the expenditure towards socio-economic development in and around the mine, in every financial year in pursuance of the Corporate Social Responsibility Policy as per the provisions under Section 135 of the Companies Act, 2013.



(iii) The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.11 (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

(iv) The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

(h) Corporate environment responsibility

(i) The Company shall have a well laid down environment policy duly approved by Board of Directors. The environment policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions. Also, the company shall have a defined system of reporting of non-compliances/violations of environmental norms to the Board of Directors and/or shareholders/stakeholders.

(ii) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions should be displayed on website of the Company.

(iii) A separate environmental management cell both at the project and company headquarter level, with suitable qualified personnel shall be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

(iv) Action plan for implementing EMP and environmental conditions shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

(v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

(i) Statutory Obligations

(i) The environmental clearance shall be subject to orders of Hon'ble Supreme Court of India, Hon'ble High Court, NGT and any other Court of Law from time to time, and as applicable to the project.

(ii) This environmental clearance shall be subject to obtaining wildlife clearance, if applicable, from the Standing Committee of National Board for Wildlife.

(iii) The project proponent shall obtain Consent to Establish/Operate under the Air Act, 1981 and the Water Act, 1974 from the concerned State Pollution Control Board.

(iv) The project proponent shall obtain the necessary permission from the Central Ground Water Authority (CGWA).



(j) Monitoring of project

(i) Adequate ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM₁₀, PM_{2.5}, SO₂ and NO_x. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or in consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

(ii) The Ambient Air Quality monitoring in the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.

(iii) The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.

(iv) The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-IA.11 (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.

(v) Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to Ministry of Environment, Forest and Climate Change/Regional Office.

(vi) Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change/Regional Office.

(vii) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental conditions to the Ministry of Environment, Forest and Climate Change/Regional Office. For half yearly monitoring reports, the data should be monitored for the period of April to September and October to March of the financial years.

(viii) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(k) Miscellaneous

(i) Efforts should be made to reduce energy consumption by conservation, efficiency improvements and use of renewable energy.




- (ii) The project authorities shall inform to the Regional Office regarding commencement of mining operations.
- (iii) A copy of the environmental clearance shall be marked to concerned Panchayat. A copy of the same shall also be sent to the concerned State Pollution Control Board, Regional Office, District Industry Sector and Collector's Office/Tehsildar Office for information in public domain within 30 days.
- (iv) The EC shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in public domain.
- (v) The project authorities shall advertise at least in two local newspapers widely circulated, one of which shall be in the vernacular language of the locality concerned, within 7 days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at web site of the Ministry of Environment, Forest and Climate Change at www.environmentclearance.nic.in and a copy of the same shall be forwarded to the Regional Office.
- (vi) The environmental statement for each financial year ending 31 March in Form-V is mandated to be submitted by the project proponent for the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the Company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MoEF&CC by e-mail. Concerns raised during public hearing
- (vii) The Ministry may stipulate any further condition for environmental protection, if so required in due course of time.
- (viii) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India/High Courts and any other Court of Law relating to the subject matter.
5. The proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during presentation to the EAC. All the commitments made on the issues raised during public hearing shall also be implemented in letter and spirit.
6. The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
7. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
8. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

9. The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & othrs'.


10. The project proponent, without prejudice to this EC, shall be bound to comply with any other interpretation of the orders of Hon'ble Supreme Court also, in due course of time.

11. This EC supersedes the earlier EC granted vide letter No.J-11015/85/2010-IA.II (M) dated 31st January, 2014 for expansion from 35 to 40 MTPA, followed by amendment in the EC dated 6th February, 2015 for further expansion up to 41 MTPA.


21/2/2018
(S. K. Srivastava)
Scientist E

Copy to:

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. The Secretary, Department of Environment & Forests, Government of Chhattisgarh, Secretariat, Raipur
3. The APCCF, Ministry of Environment Forest and Climate Change, Regional Office (Western Central Zone), Ground Floor, East Wing, New Secretariat Building Civil Lines, Nagpur (Maharashtra)
4. The Member Secretary, Chhattisgarh State Environment Conservation Board, 1-Tilak Nagar, Shiv Mandir Chowk, Main Road, Avanti Vihar, Raipur-Chhattisgarh- 492001
5. The Member Secretary, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
6. The Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
7. The District Collector, Korba, Government of Chhattisgarh.
8. Monitoring File 9. Guard File 10. Record File. 11. Notice Board


21/2/2018
(S. K. Srivastava)
Scientist E

SEEPAT ROAD

P.O.: SECL
BILASPUR



साउथ ईस्टर्न कोलफिल्ड्स लिमिटेड
South Eastern Coalfields Limited
(कोल इण्डिया का एक अंश) A subsidiary of Coal India Ltd.)
CIN U10102CT1985GO1003161
noensjevra@gmail.com

Website : www.secl.gov.in

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

OFFICE OF THE GENERAL MANAGER
GEVRA AREA

पो03170:गेवरा प्रोजेक्ट
जिला: कोरबा (छत्तीसगढ़)
पिन: 495452

क्रमांक /एस.ई.सी.एल/मप्र/गे.क्षे./पर्यावरण/2018/ 188

STD :07815 275430(O)

: 07815 275032(R)

Fax : 07815 275434

email



P.O.: GEVRA PROJECT

Dist.: Korba (C.G.)

Pin: 495452

दिनांक 01/01/18

प्रति,

श्रीमान् सरपंच महोदय,

विषय - गेवरा क्षेत्र से संलग्न ग्रामों में राधन वृक्षारोपण हेतु ।

महोदय,

पर्यावरण संरक्षण व प्रदूषण रोकधाम हेतु गेवरा क्षेत्र संलग्न ग्रामों में राधन वृक्षारोपण करने हेतु तत्पर है । आपसे अनुरोध है कि संबंधित ग्राम में वृक्षारोपण हेतु स्थान चयनित कर अपना अभिमत इस कार्यालय को देने का कष्ट करें, ताकि आगामी वर्ष में वृक्षारोपण का कार्य सम्पन्न किया जा सके । इस संबंध में विस्तृत जानकारी हेतु नोडल अधिकारी (वन एवं पर्यावरण) से व्यक्तिगत या गोबाइल से सम्पर्क किया जा सकता है । जिनका गोबाइल नम्बर 9425279521 है ।

भवदीय

महाप्रबंधक

एस0ई0सी0एल0 गेवरा क्षेत्र

प्रतिलिपि :

0. क्षेत्रीय प्रबंधक (योजना परियोजन)
0. नोडल अधिकारी (वन एवं पर्यावरण)

आप सरपंच से व्यक्तिगत रूप से सम्पर्क कर अंतिम कार्यवाही करें ।

**SOUTH EASTERN COALFIELDS LIMITED
GEVRA AREA**

STATUS OF TECHNICAL & BIOLOGICAL LAND RECLAMATION DETAILS OF GEVRA PROJECT AS ON 01.07.2018

Name of Area	Name of unit	Approved EMP Capacity (MTY)	TECHNICAL & BIOLOGICAL RECLAMATION										Total Reclaimed area				
			INTERNAL DUMP / BACKFILLED AREA DETAILS (In Hact.)					EXTERNAL OB DUMPS DETAILS (In Hact.)					Total Technically reclaimed as on 01.07.2018	Total Biologically reclaimed as on 01.07.2018			
			Total Quarriable area of the project as per approved EMP (Hac.)	Void be left at the closure of the project as per approved EMP(35MTY) (Hac.)	Total Area excavated as on 01.04.2018 (Ha.)	Prorata area not required to be Backfilled (Ha.)	Total area technically reclaimed /backfilled as on 01.07.2018 (Int/Dump) (Hac.)	Balance area to be Technically reclaimed/backfilled at as on 01.07.2018 (Hect)	Area already biological reclaimed as on 01.07.2018(Hact.)	Balance area to be Biologically reclaimed as on 01.07.2018 (Hect)	Total area of External OB dump as on 01.07.2018 (Hect)	Area of Ext. OB dump technically reclaimed QE - as on 01.07.2018			Balance area ext OB dump to be technically reclaimed as on 01.07.2018.	Area already Biologically reclaimed as on 01.07.2018	Balance area to be biologically reclaimed as on 01.07.2018
A	B	C	D	E	F	G=(E*F)/D	H	I=F*G*H	J	K=F*G*J	L	M	N=L*M	O	P=L*O	H+M	J+O
Gevra area	Gevra OCP	45 MTY	2037.250	659.250	1480.000	478.925	770.001	231.074	122.600	878.475	374.331	374.331	0.000	312.200	62.131	1144.332	434.800

Sube
25/7/18

NODAL OFFICER (ENV/FOREST)
GEVRA AREA

ab
25/7/18

AREA SURVEY OFFICER
GEVRA AREA

Sube
25/7/18

ENVIRONMENT OFFICER
GEVRA PROJECT

Sube
25/7/18

DY.MANAGER(SURVEY)
GEVRA PROJECT

कार्यालय कलेक्टर एवं जिला दण्डाधिकारी, कोरबा (छत्तीसगढ़)

क्रमांक/ 801 / भू0अ0 / स0अ0भू0अ0 / 2015
प्रति,

कोरबा, दिनांक 29/04/2015

सचिव
छ0ग0 शासन
राजस्व एवं आपदा प्रबंधन विभाग
मंत्रालय, महानदी भवन
नया रायपुर

विषय :- कोरबा जिले के कटघोरा वनमण्डल अंतर्गत एसईसीएल की गोवरा खुली खदान रकबा 126.341 हेक्टर राजस्व वन भूमि के व्यपवर्तन हेतु वन संरक्षण अधिनियम के अंतर्गत पंजीयन बाबत संशोधित अनापत्ति प्रमाण पत्र जारी करने हेतु।

संदर्भ :- महाप्रबंधक एसईसीएल गोवरा का पत्र क्रमांक एस.ई.सी.एल./मप्र/गे.क्षे./पर्यावरण/2015/09 दिनांक 15.04.2015 एवं पत्र क्रमांक 52, दिनांक 23.04.2015

—00—

विषयान्तर्गत संदर्भित पत्र का अवलोकन करने का कष्ट करें। कार्यालयीन पत्र क्रमांक 401/भू.अ./स.अ.भू.अ./13 कोरबा, दिनांक 07.03.2013 को जारी किये गये अनापत्ति प्रमाण पत्र (ग्राम रलिया में 54.873 हेक्टर, ग्राम नरईबोध में 71.468 हेक्टर कुल रकबा 126.341 हेक्टर) को संशोधित अनापत्ति प्रमाण पत्र जारी करने बाबत मुख्य महाप्रबंधक द्वारा निवेदन किया गया है, जो निम्नानुसार है :-

क्र0	ग्राम का नाम	आवेदित खसरा नं0	कुल रकबा हेक्टर में	आवेदित रकबा हेक्टर में	(राजस्व वन भूमि का मद)
1	2	3	4	5	6
1	रलिया	6/1	1.757	1.756	बड़ेझाड़ का जंगल
		16/1	18.402	7.000	बड़ेझाड़ का जंगल
		32/1	7.381	4.425	बड़ेझाड़ का जंगल
		38/1	80.047	35.000	बड़ेझाड़ का जंगल
		38/3	0.397	0.397	बड़ेझाड़ का जंगल
		38/4	0.405	0.405	बड़ेझाड़ का जंगल
		38/5	0.405	0.405	बड़ेझाड़ का जंगल
		38/6	0.178	0.178	बड़ेझाड़ का जंगल
	योग			49.566	
2	नरईबोध	1/1	0.628	0.628	बड़े झाड़ के जंगल
		8/1 ढ	16.140	16.140	बड़ेझाड़ का जंगल
		8/1 झ	0.405	0.405	बड़ेझाड़ का जंगल
		8/1 त	0.283	0.283	बड़ेझाड़ का जंगल
		8/1 ठ	0.018	0.073	बड़ेझाड़ का जंगल
		8/1 ड	0.073	0.073	—
		8/1 ढ	0.287	0.287	—
		8/1 म	0.372	0.372	—
		13/1	11.018	4.209	—
		13/1 प		6.809	जंगल
		13/6	0.121	0.121	जंगल
		15/1	5.917	5.917	जंगल
		44/1, 2	5.354	4.969+ 0-182	बड़ेझाड़ का जंगल
		417/1	18.773	18.773	बड़ेझाड़ का जंगल
		417/2	0.648	0.648	बड़ेझाड़ का जंगल
		419/1	2.744	2.744	बड़ेझाड़ का जंगल
		259	0.186	0.186	—
	योग			62.819	
	महायोग			112.385	

//2//

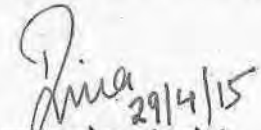
D
29/4/15

//2//

उपरोक्त राजस्व वन भूमि के गैर वानिकी प्रयोजन हेतु जारी अनापत्ति प्रमाण पत्र में आंशिक संशोधन करते हुए वनमण्डलाधिकारी कटघोरा एवं अनुविभागीय अधिकारी (रा०) कटघोरा के प्रतिवेदन अनुसार मुख्य महाप्रबंधक एस.ई.सी.एल. गोवरा को गोवरा विस्तार परियोजना हेतु उपरोक्त खसरा नम्बर पर कुल रकबा 112.385 हेक्टेयर (ग्राम रलिया में 49.566 हेक्टेयर तथा ग्राम नरईबोध में 62.819 हेक्टेयर) राजस्व वन भूमि पर गैर वानिकी प्रयोजन हेतु अनुमति यदि सक्षम विभाग द्वारा दी जाती है तो निम्न शर्तों के तहत इस कार्यालय को कोई आपत्ति नहीं होगी :-

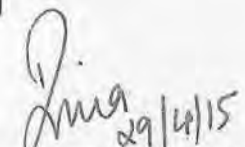
1. यह अनापत्ति प्रमाण पत्र मात्र उपरोक्त उल्लेखित राजस्व वन भूमि पर गोवरा विस्तार परियोजना हेतु दी जा रही है इसके अतिरिक्त अनापत्ति प्रमाण पत्र का उपयोग अन्य प्रयोजन के लिए नहीं किया जा सकेगा ।
2. गोवरा विस्तार परियोजना पर वन संरक्षण अधिनियम 1980 लागू होने पर संबंधित विभाग से अनुमति लिया जाना अनिवार्य होगा ।
3. गोवरा विस्तार परियोजना में किसी प्रकार की क्षति होती है तो इसकी सम्पूर्ण जवाबदारी आवेदक संस्थान की होगी ।
4. इस अनुमति के द्वारा विभाग के स्वामित्व का हस्तारण नहीं किया जा रहा है ।
5. आवेदित भूमि पर सीमांकन उपरांत शासन द्वारा संचालित भवन पाए जाने पर मूल्यांकन कर देयक छ. ग. शासन राजस्व विभाग को होगा ।
6. सीमांकन उपरांत आवेदित भूमि पर वन अधिकार पत्र वितरण होना पाया जाता है । उक्त स्थिति में छ०ग० शासन की पुर्नवास नीति 2007 का उचित पालन एवं वन अधिकार पत्र धारियों के उचित व्यवस्थापन किये जाने की शर्त पर अनापत्ति दिया जाता है ।

(टीप :- शेष आवेदित भूमि राजस्व वन भूमि नहीं होने के कारण अनापत्ति प्रमाण पत्र की आवश्यकता प्रतीत नहीं होती ।)


(रीना बाबासाहेब कंगाले)
कलेक्टर
कोरबा (छत्तीसगढ़)

पृ० क्रमांक/ 802 /भु०अ०/स०अ०भू०अ०/2015 कोरबा दिनांक 29/04/2015
प्रतिलिपि:-

- 1- वनमण्डलाधिकारी कटघोरा जिला कोरबा को सूचनार्थ ।
- 2- अनुविभागीय अधिकारी (रा०) कटघोरा जिला कोरबा को सूचनार्थ ।
- 3- मुख्य महाप्रबंधक एस.ई.सी.एल. गोवरा क्षेत्र गोवरा को सूचनार्थ ।


(रीना बाबासाहेब कंगाले)
कलेक्टर
कोरबा (छत्तीसगढ़)

कार्यालय कलेक्टर कोरबा (छत्तीसगढ़)

// संशोधित प्रमाण-पत्र //

क्रमांक / 803 / भू.अ. / स.अ.भू.अ. / 2014

कोरबा दिनांक 29/04/2015

मेसर्स मुख्य महाप्रबंधक एस.ई.सी.एल.गेवरा विस्तार परियोजना कार्य हेतु कोरबा जिला में कटघोरा वनमंडल के नरईबोध गाँव के वन भूमि व्यपवर्तन हेतु 62.819 हे.वन भूमि के प्रकरण में अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006 का पालन प्रतिवेदन।

01. प्रमाणित किया जाता है कि अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006 में नियत सम्पूर्ण प्रक्रिया का पालन कर अधिकारो को स्थापित किया गया है तथा सम्पूर्ण प्रस्तावित क्षेत्र वन भूमि 0 हे.एवं/राजस्व वन भूमि 62.819 हे.जो इस कार्य हेतु व्यपवर्तित की जानी है तथा ग्राम नरईबोध तहसील कटघोरा में स्थित है,में तदनुसार यह कार्यवाही पूर्ण की गयी है।
02. ग्राम नरईबोध नगर पालिक निगम क्षेत्र (वार्ड क्रमांक 57) होने के कारण ग्राम सभा का आयोजन नहीं किया गया है।
03. यह प्रमाणित किया जाता है कि संयुक्त सत्यापन प्रतिवेदन अनुसार विलुप्तप्राय जनजाति समूह (पी.टी.जी.) के सदस्य व्यपवर्तन हेतु प्रश्नाधीन वन भूमि पर निवासरत नहीं है, जिनका वन अधिकार "अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006" की धारा(3)(e) अंतर्गत विशेष रूप से संरक्षित रखना है।
04. संयुक्त सत्यापन प्रतिवेदन दिनांक 08.07.2011 के आधार पर यह प्रमाणित किया जाता है कि व्यपवर्तन के लिए प्रस्तावित वन भूमि पर अनुसूचित जन जाति एवं अन्य परम्परागत वन निवासी (वन अधिकारो की मान्यता) अधिनियम 2006 की धारा (3)(2) अंतर्गत शासन द्वारा संचालित कोई सुविधा विद्यमान नहीं है।



[Signature]
29/4/15
(रीना बाबासाहेब कंगाले)

कलेक्टर
एवं अध्यक्ष-जिला वन अधिकार समिति
जिला-कोरबा(छत्तीसगढ़)

कायालय कलेक्टर, जिला-कोरबा (छ.ग.)

क./2656/भू.अ./स.अ.भू.अ./2014

कोरबा, दिनांक 4.12.14

प्रदर्श-"स"

प्रमाण पत्र

मेसर्स मुख्य महाप्रबंधक, एस.ई.सी.एल. गोवरा का विस्तार परियोजना कार्य हेतु कोरबा जिला में कटघोरा वनमंडल के रलिया गांव के वन भूमि व्यपवर्तन हेतु 49.566 हे. राजस्व वन भूमि के प्रकरण में अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 का पालन प्रतिवेदन।

1. प्रमाणित किया जाता है कि अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 में नियत सम्पूर्ण प्रक्रिया का पालन कर अधिकारों को स्थापित किया गया है तथा सम्पूर्ण प्रस्तावित क्षेत्र की वन भूमि 0 हे. एवं/राजस्व वन भूमि 49.566 हे. जो इस कार्य हेतु व्यपवर्तित की जानी है तथा ग्राम रलिया तहसील कटघोरा में स्थित है, में तदनुसार यह कार्यवाही पूर्ण की गयी है।

ग्राम सभा की बैठक एवं उसमें पारित प्रस्ताव दिनांक 09.10.2014 (प्रदर्श-"अ") एवं वन तथा राजस्व विभाग का संयुक्त जांच प्रतिवेदन (प्रदर्श-"ब") पर दर्शित है।

2. प्रमाणित किया जाता है कि उक्त प्रकरण का प्रस्ताव दिनांक 09.10.2014 ग्राम के सरपंच श्रीमती फुल बाई की अध्यक्षता में हुई ग्राम सभा की बैठक दिनांक 09.10.2014 में रखा गया था (कई गांव होने पर प्रत्येक का विवरण दें दिनांक सहित) एवं इसमें 50 प्रतिशत ग्राम सभा के तथा ग्राम वन समिति के सदस्य उपस्थित थे, जिनको परियोजना के क्रियान्वयन एवं प्रकरण के पूर्ण विवरण तथा प्रभाव से अवगत करा कर विस्तार से समझाईश हिन्दी एवं स्थानीय भाषा में दी गयी। यह पाया गया कि इस क्षेत्र में उपरोक्त अधिनियम के तहत वन अधिकार की मान्यता पत्र की पात्रता रखने वाले व्यक्ति है।

अथवा

प्रस्तावित वन क्षेत्र में प्रदत्त वन अधिकार मान्यता पत्र धारकों की संख्या ग्रामवार निम्नानुसार है :-

क्रमांक	ग्राम का नाम	वन अधिकार मान्यता पत्र धारक का नाम	रकबा (हे.में)
1	2	3	4
1	रलिया	बीरसिंह	0.020
2		विजयपाल सिंह	0.081
3		कृष्णा कुमार	0.081
4		जितेन्द्र कुमार	0.012
5		राजेन्द्र कुमार	0.012
6		गोपाल सिंह	0.008
7		छत्रपाल सिंह	0.008
8		प्रदीप कुमार	0.132
9		परदेशीराम	0.081
10		रामायण सिंह	0.202
11		हराबाई	0.202
12		रूपरतन सिंह	0.020
13		चंदन सिंह	0.375
14		जोहितराम	0.202
15		रणजीत सिंह	0.202
16		चमरीन बाई	0.016
17		केवरा बाई	0.020
18		तीज बाई	0.061
19		मुंशीराम	0.016
20		दल्लूराम	0.008
21		राजकुमार	0.020
22		सूर्यभवन सिंह	0.028

1	2	3	4	
23	रलिया	सुकुल	0.040	
24		कृपासिंह	0.040	
25		जयराम सिंह	0.048	
26		अरुण कुमार	0.116	
27		सुरसेन	0.040	
28		शिवनंदन सिंह	0.012	
29		संतराम	0.020	
30		सुख सिंह	0.012	
31		सुकलाल	0.012	
32		बजरंग	0.016	
33		रामरतन सिंह	0.028	
34		भारत भूषण	0.020	
35		चन्द्रशेखर	0.020	
36		टिकैतराम	0.040	
37		साहीन बाई	0.008	
38		धनकुंवर	0.020	
39		इतवार सिंह	0.040	
40		हरिया प्रसाद	0.028	
41		मिलकराम	0.016	
		योग :-		2.383

3. यह प्रमाणित किया जाता है कि जो भी चर्चा एवं निर्णय लिए गए उसमें ग्राम सभा के न्यूनतम 50 प्रतिशत सदस्यों की उपस्थिति का कोरम पूर्ण था।

4. यह प्रमाणित किया जाता है कि संयुक्त सत्यापन प्रतिवेदन एवं ग्राम सभा के ठहराव प्रस्ताव दिनांक 09.10.2014 अनुसार ऐसे विलुप्तप्राय जनजाति समूह (पी.टी.जी.) के सदस्य व्यपवर्तन हेतु प्रश्नाधीन वन भूमि पर निवासरत नहीं है, जिनका वन अधिकार "अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006" की धारा (3)(e) अंतर्गत विशेष रूप से संरक्षित रखना है।

5. संयुक्त सत्यापन प्रतिवेदन एवं ग्राम सभा के दिनांक 09.10.2014 के संकल्पों के आधार यह प्रमाणित किया जाता है कि व्यपवर्तन के लिए प्रस्तावित वन भूमि पर अनुसूचित जन जाति एवं अन्य परंपरागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 की धारा 3 (2) अंतर्गत शासन द्वारा संचालित कोई सुविधा विद्यमान नहीं है।

संलग्न :- उपरोक्तानुसार।



दिनांक :

(रीना बाबा साहेब कंगाले)
कलेक्टर

एवं अध्यक्ष-जिला वन अधिकारी समिति
जिला कोरबा (छत्तीसगढ़)

पृ.क./ 2657/भू.अ./स.अ.भू.अ./2014
प्रतिलिपि:-

कोरबा, दिनांक 4.12.2014

1. सचिव, छत्तीसगढ़ शासन, राजस्व एवं आपदा प्रबंधन विभाग, मंत्रालय, महानदी भवन, नया रायपुर की ओर सादर सूचनार्थ।
2. वनमण्डलाधिकारी, कटघोरा को सूचनार्थ।
3. अनुविभागीय अधिकारी (रा.) कोरबा को सूचनार्थ एवं आवश्यक कार्यवाही हेतु।

70c

(रीना बाबा साहेब कंगाले)
कलेक्टर
एवं अध्यक्ष-जिला वन अधिकारी समिति
जिला कोरबा (छत्तीसगढ़)

सामग्री

सामग्री के

कारखाने पंजी

कारखाने अतिरिक्त

संख्या/2658/अ.स.स.प.अ.स.०.१.१२०१५ ५.१.२०१५

दिनांक

संस्थान का नाम: **रफिमा**
ई. पी. ए. ए. - रफिमा

1. कारखाने का पता: **राजपुरा**
 2. कारखाने का प्रकार: **रफिमा**
 3. कारखाने का स्वरूप: **राजपुरा**
 4. कारखाने की शक्ति: **10000**
 5. कारखाने का समूह: **12**

संस्थान का नाम (1)	सामग्री के संख्या वाले विवरण (2)	संस्थान के कारखाने (3)
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<p>1. रफिमा ई. पी. ए. ए. - रफिमा</p>	<p>2. राजपुरा</p>	<p>3. राजपुरा</p>
<p>4. 10000</p>	<p>5. 12</p>	<p>6. रफिमा</p>

संस्थापक का नाम: **रफिमा**
 पता: **राजपुरा**

कारखाने का नाम: **रफिमा**
 पता: **राजपुरा**

कारखाने का प्रकार: **रफिमा**
 पता: **राजपुरा**

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)

फोन/फैक्स नं. 07815-250157, Email : dfokatghora@gmail.com

क्रमांक/तक.अधि./2011/

6623

कटघोरा, दिनांक 20-10-11

प्रति,

✓ अतिरिक्त तहसीलदार

दीपका, जिला कोरबा (छ.ग.)


विषय : वन भूमि व्यपवर्तन के संबंध में अनापत्ति प्रमाण पत्र प्रदाय करने बाबत।

संदर्भ : आपका पत्र क्र./क/अति.तह./2011/दीपका दि. 25.01.11

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उपरोक्त विषयांतर्गत संदर्भित पत्र के तारतम्य में स्थल निरीक्षण परिक्षेत्र अधिकारी कटघोरा एवं उप वनमण्डलाधिकारी पाली द्वारा कराया गया, उनके प्रतिवेदनानुसार ग्राम रलिया की 54.873 हे. एवं ग्राम नरईबोध की 71.468 हे. भूमि पर वृक्षों का घनत्व शून्य से शून्य अर्थात् भूमि वृक्ष विहीन है।

उक्त आवंटित राजस्व वन भूमि वन संरक्षण अधिनियम 1980 के अंतर्गत गैर यानिकी प्रयोजन हेतु भूमि प्रत्यावर्तन किया जाता है तो वन विभाग को कोई आपत्ति नहीं है।


वन मण्डलाधिकारी
कटघोरा वनमण्डल कटघोरा

अतिरिक्त तहसीलदार
महोदय, सिपाडा

विषय:- वन रूफि अग्रयवर्तन के संकथामें अनापति प्रकाण पत्र
प्रदान करने के संकथामें।

महोदय:- उपरोक्त विषयांकित आवेदन पत्र द्वारा स.श.इ.सी.एल
ओवरा विस्तार परियोजना हेतु ग्राम रलीया की भूखे. 54. 873
हेक्टर और वानडी उपयोग हेतु अनापति प्रकाण पत्र को
के संकथामें ग्राम रलीया की भूखे 30 सिकंडन दिनांक 8/7/2011
को वन विभाग के रेंज अधिकारी-अंजी कुकर पाखे स.श.इ.सी.एल.
के तहद से प्राप्त है. एम. दिव्यन (वरि. संकथ, वन एवं पर्यावरण)
ओवरा क्षेत्र तथा राजस्व विभाग के हल्का परवारि 64
मनोज कुकर साहू प.ह.उ-30 की संयुक्त रिफ के द्वारा
सिमांकन कर चिहंकित किया गया।



अतः उचित धार्जवादी हेतु पालन
प्रतिवेदन संप्रेषित है।

(Signature)
वरिष्ठ प्रबंधक / नोडल अधिकारी
Sr. Manager / Nodal Officer
पर्यावरण एवं वन / Env. / Forest
एसईसीएल गेवरा क्षेत्र / SECL Gevra Area

(Signature)
न.ा. परिक्षेत्र अधिकारी,
रीयव,
कटघोरा वन परिक्षेत्र

(Signature) 8/7/2011
मनोज कुमार साहू
टवारी 30

कोई भी अनापति प्रकाण पत्र
स्वीकार्य नहीं।

2/9/11
प. अ. कटघोरा

कार्यालय आयुक्त नगर पालिक निगम कोरबा (छ०ग०)

पत्र क्रमांक /2661 /2014

कोरबा, दिनांक : /12/2014

// प्रमाण पत्र //

प्रति,

कलेक्टर
कोरबा

विषय :- अनुसूचित जनजाति एवं अन्य परम्परागत वन-निवासी (वन अधिकारों की मान्यता) अधिनियम 2006 के अंतर्गत वन भूमि का प्रत्यावर्तन हेतु अनापत्ति प्रमाण पत्र प्रदाय करने बाबत ।

संदर्भ :- आपका पत्र क्रमांक /2661 /भू-अभि० /स०अ०भू०अ० /2014 कोरबा दिनांक

—00—

मेसर्स मुख्य महाप्रबंधक, एसईसीएल गेवरा का विस्तार परियोजना कार्य हेतु कोरबा जिले में कटघोरा

अन्य परम्परागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम, 2006 का पालन प्रतिवेदन

- 1- प्रमाणित किया जाता है कि ग्राम नरईबोध वार्ड क्र. 57 नगर पालिक निगम कोरबा के अंतर्गत आता है ।
- 2- उपरोक्त भूमि पर वर्तमान में नगर निगम की कोई योजना प्रस्तावित नहीं है अतः महाप्रबंधक एसईसीएल गेवरा क्षेत्र को ग्राम नरईबोध वार्ड क्र. 57 में खुली खदान विस्तार परियोजना हेतु 62.351 हे० राजस्व वन भूमि पर व्यपवर्तन हेतु नगर पालिक निगम कोरबा को कोई आपत्ति नहीं है ।

आयुक्त
नगर पालिक निगम
कोरबा (छ०ग०)

SEEPAT ROAD,
P.O.: SECL
BILASPUR (



साउथ ईस्टर्न कोलफिल्ड्स लिमिटेड
South Eastern Coalfields Limited
कोल इण्डिया का एक अंश/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GO1003161
Website : www.secl.gov.in

STD: 07815 275430(O)
07815 275032(R)
Fax: 07815 275434
e-mail - nocnvgevra@gmail.com

कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

पौ० आ०: गेवरा प्रोजेक्ट
P.O.: GEVRA PROJECT
Dist.: Korba (C.G.)
Pin: 495452

जिला: कोरबा (छत्तीसगढ़)
पिन: 495452

क्रमांक/एस.ई.सी.एल./मप्र./गे.परि./पर्यावरण/2017/ 117
प्रति,

दिनांक 30/08/2017

वन मण्डलाधिकारी
कटघोरा वनमण्डल कटघोरा

विषय - Diversion of 112.385 Ha. of Revenue forest land for Gevra Open Cast Mine (OCM) in Katghora Forest range, District-Korba Chhattisgarh in favour of SECL, Chhattisgarh. Proposal Registration No.FP/CG/MIN/13199/2015.

संदर्भ - 17.08.2017 को FAC द्वारा आहुत बैठक के मिनट्स आफ मीटिंग से सम्बन्धित ।

महोदय,

उपरोक्त विषयांतर्गत यह लेख है कि के बैठक में उपरोक्त वनभूमि व्यपवर्तन प्रकरण में निम्नांकित शर्तों का उल्लेख किया गया है -

(I) On examination Compensatory afforestation land on Google Satellite Imagery and DSS tools, it is found that 30 ha. area is having dense vegetation and 53 ha. land seems to be under encroachment. State government shall exclude the land under encroachment and under very dense vegetation from the proposed CA area and additional degraded forest land which is free from encumbrances/encroachment and degraded shall be selected prior to stage II approval. The land shall be analyzed through DSS at state level prior to submission to MoEF&CC for consideration. State government shall submit DSS analysis report along with the compliance of this condition.

(II) State government shall reconfirm the enumeration list of trees prior to stage II approval.

आपसे अनुरोध है कि उपरोक्त शर्तों के उचित परिपालन हेतु आवश्यक कार्यवाही व दिशानिर्देश सम्बन्धित अधिकारी को देने का कष्ट करें ताकि शर्तों का परिपालन यथावांछित किया जा सके ।

संलग्न - Copy of Minutes of Meeting

भवदीय

महाप्रबंधक

एस.ई.सी.एल. गेवरा क्षेत्र

प्रतिलिपि 1. अपर प्रधान मुख्य वन संरक्षक एस.ई.सी.एल., बिलासपुर
2. महाप्रबंधक, वन, एस.ई.सी.एल., बिलासपुर ।



112. फेव

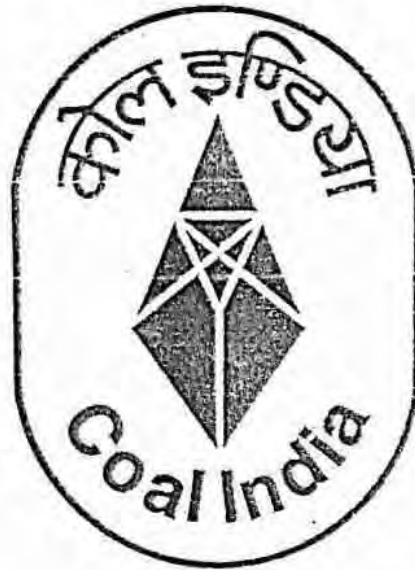
Against the
of time in
WP (Civil)
with any

SOUTH EASTERN COALFIELDS LIMITED

(A MINI RATNA COMPANY)

BILASPUR (CHHATTISGARH)

GEVRA OC PROJECT



PROJECT REPORT

ON

DESILTATION OF PONDS

LOCATED WITHIN FIVE KM FROM THE MINE LEASE BOUNDARY

27	Pond 1	100	60	1.5	9000	194.58	1751220	22°18'24" N	82°32'53" E
28	Pond 2	100	80	1.5	12000	194.58	2334960	22°18'17" N	82°32'53" E
29	Pond 3	130	90	1.5	17550	194.58	3414879	22°18'29" N	82°32'29" E
30	Pond 4	100	80	1.5	12000	194.58	2334960	22°18'21" N	82°31'52" E
31	Pond 5	100	50	1.5	7500	194.58	1459350	22°18'21" N	82°31'52" E
XV SUHABORI									
32	Pond 1	100	50	1.5	7500	194.58	1459350	22°18'29" N	82°31'40" E
XVI MALGAON									
33	Pond 1	100	70	1.5	10500	194.58	2043090	22°19'5" N	82°32'44" E
XVII DIPIKA									
34	Dipka Washery bypass road	80	70	1.5	8400	194.58	1634472	22°21'26" N	82°33'80" E
35	Dipka Chakabudla Road	80	60	1.5	7200	194.58	1400976	22°21'25" N	82°32'51" E
XVIII GOBARGHORA									
36	Near Petrol Pump	90	80	1.5	10800	194.58	2101464	22°22'00" N	82°33'12" E
XIX VIJAYNAGAR									
37	Khusrudin Basti	100	80	1.5	12000	194.58	2334960	22°22'10" N	82°33'58" E
XX BINJRA									
38	Near Anganbadi	100	80	1.5	12000	194.58	2334960	22°21'50" N	82°33'52" E
XXI DHURENA									
39	Near Panchyat Bhavan	150	80	1.5	18000	194.58	3502440	22°21'48" N	82°34'46" E
XXII DADARPARA									
40	Near Navdurga Temple	150	80	1.5	18000	194.58	3502440	22°21'19" N	82°36'59" E
XXIII KUCHENA									
41	Near Fire & Safety College	150	100	1.5	22500	194.58	4378050	22°21'16" N	82°37'31" E

462600 Total 90012708

Done

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OF WORK: DESILTATION OF PONDS / WATER BODIES LOCATED WITHIN
 KM FROM THE MINE LEASE BOUNDARY OF GEVRA OC PROJECT

S. NO	DESCRIPTION OF WORK	ESTIMATED AMOUNT			JUSTIFIED AMOUNT (AS PER ANALYSIS)		REMARKS
		QTY M3	RATE (PER M3)	AMOUNT	RATE (PER M3)	AMOUNT	
1	41 ponds located within 5 km	462600	146.50	67770900.00	194.58	90012708.00	Item no.2.6.1 in DSOR 2013 & analysis of rate

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 General Manager
 Gevra OC Project

ANALYSIS OF RATES

Estimate Item No - 2.6.1

Earth work in excavation by mechanical means (Hydraulic excavator/manual means over areas exceeding 30cm in depth, 1.5m in width as well as 10sqm on plan) including disposal of excavated earth, load upto 50m and fill upto 1.5m disposed earth to be leveled and neatly dressed.

All kinds of soil.

2.6.1] All kind of soil

Rate Rs. 146.50

Description	Qty	Unit	Rate	Amount
Details of cost for 10 Cum				
Average output of Hydraulic Excavator per hour=30cum				
MACHINERY				
0020 Hydraulic Excavator (30) with driver and fuel	0.04125	/day	8000.00	330.00
0018 Tire and running charges of loader	0.04125	/day	8000.00	330.00
Labour				
125 Male (Rs 420.00+12.72% PF)	0.40	/day	473.42	189.37
115 Baker/Cooks (Rs. 350.00+12.72% PF)	2.00	/day	404.66	809.32
Total				1675.27
Water Charges @1%				16.75
Total				1692.02
Contt Profit @15%				253.80
Cost for 10 Cum				1945.82
Cost for 1 Cum				194.58
Add CG Welfare Cess @ 1%				1.93
Total				196.51

Paul

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2.0 EARTH WORK

Description	Unit	Rate
Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including disposal of excavated earth upto 50 m and lift upto 1.5 m, disposed soil to be levelled and neatly dressed;		
21.1 All kinds of soil	100 sqm	4,553.55
22 Earth work in rough excavation, banking excavated earth in layers not exceeding 20 cm in depth, breaking clods, watering, rolling each layer with 1/2 tonne roller or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up in embankments for roads, flood banks, marginal banks and guide banks or filling up ground depressions, lead upto 50 m and lift upto 1.5 m;		
22.1 All kinds of soil	cum	346.00
Banking excavated earth in layers not exceeding 20 cm in depth, breaking clods, watering, rolling each layer with 1/2 tonne roller or wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 tonnes and dressing up, in embankments for roads, flood banks, marginal banks, and guide banks etc. lead upto 50 m and lift upto 1.5 m;		
23.1 All kinds of soil	cum	218.35
24 Deduct for not rolling with power roller of minimum 8 tonnes for banking excavated earth in layers not exceeding 20 cm in depth;	cum	2.85
25 Deduct for not watering the excavated earth for banking	cum	15.25
26 Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50 m and lift upto 1.5 m, disposed earth to be levelled and neatly dressed.		
26.1 All kinds of soil	cum	146.50
27 Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50 m and lift upto 1.5 m, disposed earth to be levelled and neatly dressed.		
27.1 Ordinary rock	cum	227.80
27.2 Hard rock (requiring blasting)	cum	333.60
27.3 Hard rock (blasting prohibited)	cum	571.90
28 Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including galling out of excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.		
28.1 All kinds of soil	cum	148.25
29 Excavation work by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift		

2.0 EARTH WORK

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LOCATION OF WATER BODIES LOCATED WITHIN FIVE KM FROM
THE MINE LEASE BOUNDARY OF GEVRA OC PROJECT

S. NO.	VILLAGE NAME	LOCATION	
		LATITUDE	LONGITUDE
I			
MARWADORA			
1	Pond near community building	22°21'22.9" N	82°35'01.2" E
2	Pond 2 near Govt. High school	22°22'19.2" N	82°35'44.2" E
3	Pond near Temple	22°20'46.2" N	82°38'10.9" E
II			
BILAI BAZAR			
4	Welcome gate	22°19'38.8" N	82°36'54.3" E
5	Near Overhead tank Pond 2	22°18'33.3" N	82°36'20.9" E
6	Near Sanskruti manch	22°18'02.6" N	82°36'50.7" E
7	Near Adivasi Seva Sanithy	22°19'38.8" N	82°36'54.3" E
III			
BHARBATA			
8	Near Graveyard	22°19'30.9" N	82°36'56.7" E
IV			
PADRI PANI			
9	Near paddy field	22°18'36.5" N	82°37'39.6" E
V			
SALORA KH			
10	Near samudhahik bhavan	22°18'36" N	82°38'04.9" E
11	Behind Govt. High School	22°18'43.3" N	82°38'07.2" E
VI			
RALIA			
12	Near Dhiraj electronics	22°18'24" N	82°34'45" E
13	Outside Village	22°18'23" N	82°34'53" E
14	Near Nawapara	22°17'47" N	82°34'29" E
VII			
NAWAPARA			
15	Near Temple Pond 1	22°17'26" N	82°34'38" E
16	Near Govt. School	22°17'26" N	82°34'17" E
VIII			
MURIANAR			
17	Near Anganbadi	22°18'23" N	82°35'29" E
IX			
CHINDPUR			
18	Near Anganbadi	22°18'5" N	82°35'35" E
19	Near Govt. School	22°17'54" N	82°35'44" E
X			
CHURAIL			
20	Near Shamshan ghat	22°18'57" N	82°38'57" E
XI			
AMGAON			

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21	Near Amgaon Bata Road Junction	22°18'39" N	82°39'37" E
22	Near Survey Stone Kusmunda Pond 1	22°18'43" N	82°39'34" E
23	Govt. Pond	22°18'19" N	82°39'36" E
XII	KHODRI		
24	Near Mine Boundary Kusmunda	22°19'35" N	82°38'40" E
25	Pond 2	22°17'49" N	82°35'59" E
XIII	MAUWADI		
26	Pond 2	22°17'13" N	82°36'33" E
XIV	HARDI BAZAR		
27	Pond 1	22°18'24" N	82°33'1" E
28	Pond 2	22°18'17" N	82°32'53" E
29	Pond 3	22°18'29" N	82°32'29" E
30	Pond 4	22°18'21" N	82°31'52" E
31	Pond 5	22°18'21" N	82°31'52" E
XV	SUHABORI		
32	Pond 1	22°18'29" N	82°31'40" E
XVI	MALGAON		
33	Pond 1	22°19'5" N	82°32'44" E
XVII	DIPKA		
34	Dipka Washery bypass road	22°21'26" N	82°33'80" E
35	Dipka Chakabuda Road	22°21'25" N	82°32'51" E
XVIII	GOBARGHORA		
36	Near Petrol Pump	22°22'00" N	82°33'12" E
XIX	VIJAYNAGAR		
37	Khusrudin Basti	22°22'10" N	82°33'58" E
XX	BINJRA		
38	Near Anganbadi	22°21'50" N	82°33'52" E
XXI	DHURENA		
39	Near Panchyat Bhavan	22°21'48" N	82°34'46" E
XXII	DADARPARA		
40	Near Navdurga Temple	22°21'19" N	82°36'59" E
XXIII	KUCHENA		
41	Near Fire & Safety College	22°21'16" N	82°37'31" E

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