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

सिंधी कॉलोनी, जरहामाठा, बिलासपुर (छ.ग.) पिन कोड–495001
फोन : 07752–227624, फैक्स : 07752–221385 E-mail : cct.bilaspur-cg@gov.in

क्रमांक/तक./ 1989 बिलासपुर, दिनांक 08/07/2025

प्रति,

प्रधान मुख्य वनसंरक्षक
(भू–प्रबंध)
अरण्य भवन, अटल नगर, नवा रायपुर (छ.ग.)

विषय :– Request to provide land for Compensatory Afforestation (CA) approx 190.00 Ha. against diversion of 94.293 ha. Revenue Forest Land of SECL Gevra OCP. (Registration No. FP/CG/MIN/41389/2018)

संदर्भ :–1. भारत सरकार पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय नई दिल्ली का पत्र दिनांक 09.02.2024 एवं छ.ग. शासन वन एवं जलवायु परिवर्तन विभाग मंत्रालय महानदी भवन रायपुर का पत्र क्रमांक S–41/2023–10–2 दिनांक 29.02.2024

2. आवेदक पत्र क्र./भू–प्रबंध/खनिज/331–274/11 दि.02.01.2025 एवं उ.न.अ. कटघोरा का पत्र क्र./तक./2795 दिनांक 05.06.2025

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विषयांतर्गत लेख है कि आवेदक एस.ई.सी.एल. गेवरा क्षेत्र, जिला कोरबा (छ.ग.) वनमंडल कटघोरा के अंतर्गत गेवरा ओपन कास्ट कोयला खनन परियोजना का वन संरक्षण अधिनियम 1980 के तहत गैर वानिकी कार्य हेतु 94.293 हे. राजस्व वन भूमि का भारत सरकार पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय नई दिल्ली के पत्र दिनांक 09.02.2024 के द्वारा प्रथम चरण की स्वीकृति प्रदान की गई है, प्रथम चरण स्वीकृति में अधिरोपित समस्त शर्तों का बिन्दुवार पालन प्रतिवेदन मय पृथक–पृथक वचन पत्र वनमण्डलाधिकारी कटघोरा के पत्र क्र./तक./2795 दिनांक 05.06.2025 के द्वारा अनुशंसा सहित प्रेषित किया गया है।

अतः निर्देशानुसार प्रथम चरण स्वीकृति में अधिरोपित समस्त शर्तों का बिन्दुवार पालन प्रतिवेदन मय वचन–पत्र अनुशंसा सहित आवश्यक कार्यवाही हेतु संप्रेषित है।

संलग्न – उपरोक्तानुसार।

मुख्य वनसंरक्षक
बिलासपुरवृत्त, बिलासपुर

पृ.क्रमांक/तक./ 1990 बिलासपुर, दिनांक 08/07/2025

प्रतिलिपि –

1. वनमण्डलाधिकारी कटघोरा वनमण्डल, कटघोरा की ओर सूचनार्थ अग्रेषित।
2. महाप्रबंधक, एसईसीएल गेवरा क्षेत्र जिला कोरबा (छ.ग.) की ओर सूचनार्थ प्रेषित।

मुख्य वनसंरक्षक
बिलासपुरवृत्त, बिलासपुर

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)
Phone/Fax No.: 07815-250157, mail : dfokatghora@gmail.com

क्रमांक/वनक्षेवि/2025/ 3205 कटघोरा, दिनांक 05.06.2025

प्रति,

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

विषय: Proposal for seeking prior approval of the central Goverment under section 2 (1) (ii) of the Van (Samrakshan Evam Samvardhan) Adhiniyam, 1980 in favor of M/s South Eastern Coalfield Limited for non-forestry) use of additonal 94.293 ha. Revenue forest land of Gevra OC expansion project of Coal Mining in Korba District of Chhattisgarh.

(RegistrationNo. FP/CG/MIN/41389/2019)

संदर्भ: 1. आपका पत्र क्र./2070 दिनांक 24.03.2025
2. महाप्रबंधक एस.ई.सी.एल.गेवरा क्षेत्र जिला कोरबा का पत्र क्र./04 दिनांक 04.04.2025

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उपरोक्त विषयांतर्गत लेख है कि महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा द्वारा गेवरा ओपन कास्ट परियोजना रकबा 94.293 हे. हेतु भारत सरकार पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली के पत्र दिनांक 06.02.2024 को प्रथम स्वीकृति प्रदान की गई है। प्रथम चरण स्वीकृति में निहित शर्त 01 से 41 तक विधुबार पालन प्रतिवेदन तैयार कर प्रेषित किया गया था जिसमें 09 बिंदुओं की आपत्ति आपके द्वारा उठाई गई है। उक्त 09 बिंदुओं की जानकारी तैयार कर आपकी ओर सादर संप्रेषित है।

क्र.	Information sought	Details
1	प्रकरण में समस्त राशियों को कैम्पा खाते में जमा कराने उपरांत कैम्पा पत्रक संलग्न नहीं है।	आवेदक विभाग द्वारा एन.पी.व्ही. की राशि रू. 9,92,07,248/- दिनांक 02.07.2024 को UTBR संख्या 720240702000015870 के माध्यम से कैम्पा खाते में जमा किया गया है। पावती संलग्न है। अनुलग्नक –1
2.	क्षतिपूर्ति वृक्षारोपण हेतु 190.00 है. जिसके वनभूमि हेतु राशि जमा किये जाने का विवरण नहीं दिया गया है।	क्षतिपूर्ति वृक्षारोपण हेतु एस.ई.सी.एल. मटगांव क्षेत्र अंतर्गत दुर्गा ओपन कास्ट माईन्स, सूरजपुर वनमंडल अंतर्गत 94.293 हे. गैर वन भूमि की गयन किया गया है। जिसमें क्षतिपूर्ति वृक्षारोपण की राशि का भुगतान लागू नहीं है। इसके अतिरिक्त क्षतिपूर्ति वृक्षारोपण की राशि जमा करने के लिये आवेदक विभाग का वचन पत्र संलग्न है। अनुलग्नक –2
3	बिंदु कमांक 02 a,b,c,d,e,f का स्पष्ट प्रतिवेदन प्रस्तुत करें एवं g के अनुसार जमा राशि का विवरण प्रस्तुत करें।	a. क्षतिपूर्ति वृक्षारोपण हेतु एस.ई.सी.एल. मटगांव क्षेत्र अंतर्गत दुर्गा ओपन कास्ट माईन्स, सूरजपुर वनमंडल अंतर्गत 94.293 हे. गैर वन भूमि को चयनित किया गया है। उपयुक्त गैर वनभूमि की पहचान के लिये प्रस्तावित क्षेत्र का नक्शा, के.एम.एल. फाईल, ग्रामवार एवं आदि दस्तावेज वनमंडलाधिकारी सूरजपुर को दिनांक 07.03.2025 को आवेदक विभाग द्वारा प्रस्तुत किया गया है। अनुलग्नक –3 b. आवेदक विभाग का वचन पत्र संलग्न है। अनुलग्नक –2 c. क्षतिपूर्ति वृक्षारोपण हेतु चयनित क्षेत्र का अधिसूचना तैयार करने की लिये वनभूमि से संबंधित दस्तावेज नक्शा, के.एम.एल. एवं उपयुक्तता प्रमाण पत्र सूरजपुर वनमंडल को दिनांक 07.03.2025 को प्रेषित है। अनुलग्नक –3 d. आवेदक विभाग ने क्षतिपूर्ति वृक्षारोपण हेतु चयन किये गये क्षेत्र का सर्वेक्षण, सीमांकन एवं पिल्लर लगाने हेतु

10/6/2025 वृत्त बिलासपुर (छ.ग.)

		राशि जमा कराने का बचन पत्र दिया गया है। अनुलग्नक–2 एवं मांग पत्र जारी करने हेतु सूरजपुर वनमंडल को दिनांक 28.11.2024 को लेख किया गया एवं दिनांक 24.02.2025 को स्मरण कराया गया है। अनुलग्नक –4 e. आवेदक विभाग द्वारा वृक्षारोपण हेतु उक्त क्षेत्र 0.4 घनत्व होने के कारण CA की राशि लागू नहीं होगी लेख किया है। यदि आवश्यक हो तो क्षतिपूर्ति वृक्षारोपण की राशि जमा कराने का बचन पत्र संलग्न किया है। अनुलग्नक – 2 f. माईनिंग लीज एरिया के 100 मी के भीतर स्थित अवशासित खुला वन जिसका घनत्व 0.4 से कम है जिस पर गए एसोसन तथा मृदा एवं जल संरक्षण योजना हेतु क्षेत्र उपलब्ध कराने के लिये वन परिक्षेत्र अधिकारी लटघोरा को लेख किया गया है। g. प्रस्तावित अतिपूर्ति वृक्षारोपण में मृदा एवं जल संरक्षण गतिविधियों के लिए सी.ए. लागत का 25 प्रतिशत अतिरिक्त खर्च किये जाने हेतु आवेदक विभाग का बचन पत्र संलग्न है। अनुलग्नक – 6
4	बिंदु कमांक 04 वन्यप्राणी योजना एवं पक्षी संवर्धन योजना कैट प्लाट योजना अनुमोदन उपरांत प्रावधानित राशि जमा किये जाने का विवरण प्रस्तुत करें।	आवेदक विभाग द्वारा वन्यप्राणी योजना एवं पक्षी संवर्धन योजना कैट प्लाट योजना अनुमोदन उपरांत प्रावधानित राशि जमा किये जाने का विवरण एवं बचन पत्र संलग्न है। अनुलग्न 7 एवं अनुलग्नक 8
5	बिंदु कमांक 06 के अनुसार बायोलॉजिकल रिक्लेमेशन के संबंध में आपके द्वारा 200 है क्षेत्र में साल वृक्षारोपण के लिये राशि 56949047.45 के प्रस्तावित किया गया मांग पत्र राशि रुपये 62557652 में का उल्लेख है। स्पष्ट करें कि प्रावधानित राशि जमा कराई गई है अथवा नहीं स्पष्ट करें।	बिंदु कमांक 06 के अनुसार बायोलॉजिकल रिक्लेमेशन के संबंध में 200 है क्षेत्र में साल वृक्षारोपण हेतु 10 विंदुओं की जानकारी तैयार कर आवेदक विभाग को प्रेषित है। वर्तमान में आवेदक विभाग द्वारा राशि जमा नहीं की गई है।
6	बिंदु कमांक 12 a,b,c,d के अनुसार मृदा संरक्षण योजना का प्रस्ताव एवं प्रावधानित राशि जमा कराया गया है स्पष्ट प्रतिवेदन प्रस्तुत करें।	आवेदक विभाग द्वारा लेख है कि मृदा संरक्षण योजना के साथ तैयार की गई है। और इसे माईनिंग लीज एरिया के भीतर लागू की है ताकि मिट्टी के कटाव और जल धाराओं के अवरुद्ध होने को न्यूनतम किया जा सके योजना में उल्लेखित सभी गतिविधियों को एसईसीएल गेवरा क्षेत्र द्वारा माईनिंग लीज के भीतर की जा रही है। इसलिये उक्त कार्य हेतु राशि वनमंडल के खाते में जमा नहीं की गई है।
7	बिंदु कमांक 13 a,b,c,d सैपटीजोन का कार्य भारत सरकार द्वारा दिये गए निर्देशानुसार किसके द्वारा कराई जा रही है, स्पष्ट करते हुए प्रतिवेदन प्रस्तुत करें। (अनु. 13 में एक पेज का फोटो ग्राफ्स संलग्न किया गया है।)	सैपटीजोन का कार्य छत्तीसगढ़ राज्य वन विकास निगम द्वारा कराया जा रहा है। आदेश की प्रति संलग्न है। अनुलग्नक –10 एवं फोटोग्राफ्स संलग्न है। अनुलग्नक –11
8	बिंदु कमांक 16 के अनुसार खनन क्षेत्र में खड़े वृक्षों का / वृक्षों की कटाई एवं विदोहन योजना अनुसार राशि जमा करा ली गई है या नहीं स्पष्ट करें।	संयुक्त ओपन कास्ट परियोजना हेतु प्रस्तावित क्षेत्र में आने वाले 010 नग वृक्षों के विदोहन एवं परिवहन हेतु राशि 11,10,822/– राजस्व जमा करने हेतु आवेदक विभाग को लेख किया गया है। राशि अप्राप्त है।

9	बिंदु क्रमांक 19 के अनुसार कितने वृक्षों का ट्रांसलोकेशन आवेदक संस्थान के द्वारा किन साधन एवं संसाधनों के द्वारा किया जाना है प्रतिवेदन अभिमत सहित प्रस्तुत करे।	आवेदक विभाग द्वारा लेख किया गया है कि एसईसीएल रायगढ़ क्षेत्र ने वृक्ष स्थानांतरण के लिए एक जर्मन निर्मित मशीन का यूज किया है। हालांकि स्थानांतरित किए गए वृक्षों का जीवित रहने की दर शून्य पाई गई इसके अलावा यह मशीन बार-बार खराब होती है। और जर्मन पार्ट्स की सीमित उपलब्धता के कारण इसकी रखरखाव चुनौती पूर्ण साबित हुआ है फिर भी कटाई के लिए चिन्हित वृक्षों के स्थानांतरण का पता लगाया जा रहा है। इस संबंध में आवेदक विभाग का वचन पत्र संलग्न है। अनुलग्नक – 13

संलग्न : पालन प्रतिवेदन 04 प्रतियों में।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा
कटघोरा दिनांक 05.06.2025

पृ. क्रमांक / वक.अधि. / 2025 / 3736
प्रतिलिपि :

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

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा

SEEPAT ROAD
P.O.: SECL,
BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
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

STD :07815 225430(O)
:7815 275022(R)
Fax :07815 275434
email :gevraenvt@gmail.com

पो.आ.ः गेवरापोलेन्ट
जिला: कोरबा(छत्तीसगढ़)
पिन: 495453

P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495453

क्रमांक:एस.ई.सी.एल/मप्र/गे.क्षे./पर्यावरण/2025/64 दिनांक 04/04/2025

To
The DFO Katghora
Katghora Division

SUB: Diversion of Additional 94.293 ha. Revenue Forest Land of Gevra OC Expansion Project of M/s South Eastern Coalfields Limited for Coal Mining in Korba District of Chhattisgarh (Registration no. FP/CG/MIN/41389/2019 dt:05.11.2019).

REF:

1. Your letter vide no.1629 dt: 02.04.2025
2. CCF, Bilaspur Letter vide no. 2070 dt:24.03.2025

Dear Sir

Please find below point wise reply to the additional information sought.

क्र.	Information sought	Details
1	प्रकरण में समस्त राशियों को कैम्पा खाते में जमा कराने उपरांत कैम्पा पत्रक संलग्न नहीं है।	NPV Payment of Rs.99207246/- has been made on dt: 02.07.2024 vide UTBR no. 720240702000015870. Copy of Demand Note & payment confirmation generated through PARIVESH portal is enclosed as Annex 1 NPV भुगतान राशि ₹99,207,246/- दिनांक 02.07.2024 को UTBR संख्या 720240702000015870 के माध्यम से किया गया है। मांग पत्र एवं PARIVESH पोर्टल के माध्यम से उत्पन्न भुगतान पुष्टि की प्रति संलग्नक-1 के रूप में संलग्न है।
2	क्षतिपूर्ति वृक्षारोपण हेतु 190.00 हे. बिगड़े वनभूमि हेतु राशि जमा किये जाने का विवरण नहीं दिया गया है।	The Compensatory afforestation is being carried out in Non forest land as per the Van (Sanrakshan Evam Samvardhan) Rules, 2023 and not in degraded forest land. A Non Forest Land covering an area of 94.293 Ha. has been identified for compensatory afforestation at Dugga OC, SECL Bhatgaon area, Surajpur District which bears vegetation of 0.4 canopy density. Therefore payment for Compensatory Afforestation is not applicable. However a Vanchan patra for deposition of CA cost,

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		if required is enclosed as Annex 2 क्षतिपूर्ति वृक्षारोपण वन (संरक्षण एवं संवर्धन) नियम, 2023 के अनुसार गैर-वन भूमि पर किया जा रहा है न कि विगड़े वनभूमि पर। दुग्गा ओसी, एसईसीएल भटगांव क्षेत्र, सुरजपुर जिले में 94.293 हेक्टेयर गैर-वन भूमि को क्षतिपूर्ति वृक्षारोपण के लिए चिन्हित किया गया है, जिसकी वृक्ष आच्छादन घनत्व 0.4 है। अतः, क्षतिपूर्ति वृक्षारोपण हेतु भुगतान लागू नहीं है। हालांकि, यदि आवश्यक हो, तो प्रतिपूरक वनीकरण लागत जमा करने के लिए एक वचन पत्र संलग्न (परिशिष्ट 2) किया गया है।
3	बिंदु क्रमांक 02 a,b,c,d,e,f का स्पष्ट प्रतिवेदन प्रस्तुत करें एवं g के अनुसार जमा राशि का विवरण प्रस्तुत करें।	a. A Non Forest Land covering an area of 94.293 Ha. has been identified for compensatory afforestation at Dugga OC, SECL Bhatgaon area, Surajpur District which bears vegetation of 0.4 canopy density. Relevant documents/ certificates/ maps/KML file for suitable non-forest land so identified has been submitted to DFO Surajpur on dt: 07.03.2025 (Annex 3). दुग्गा ओसी, एसईसीएल भटगांव क्षेत्र, जिला सुरजपुर में **94.293 हेक्टेयर गैर-वन भूमि** को क्षतिपूर्ति वृक्षारोपण के लिए चिन्हित किया गया है, जिसकी वृक्ष आच्छादन घनत्व 0.4 है। उपयुक्त गैर-वन भूमि की पहचान से संबंधित **प्रासंगिक दस्तावेज/प्रमाण पत्र/मानचित्र/KML फ़ाइल** दिनांक **07.03.2025** को **डीएफओ, सुरजपुर** को प्रस्तुत कर दी गई है (परिशिष्ट 3)। b. A vachan Patra in this regard has been submitted. (Annex 2) इस संदर्भ में एक **वचन पत्र** प्रस्तुत किया गया है (परिशिष्ट 2) c. Relevant documents/ certificates/ maps/KML file for non-forest land so identified has been submitted to DFO Surajpur on dt: 07.03.2025 (Annex 3) for notification by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the

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relevant Section (s) of the local Forest Act, as the case may be.

चिन्हित **गैर-वन भूमि** से संबंधित **प्रासंगिक दस्तावेज/प्रमाण पत्र/मानचित्र/KML फ़ाइल** दिनांक **07.03.2025** को **डीएफओ, सुरजपुर** को प्रस्तुत कर दी गई है (परिशिष्ट 3), ताकि राज्य सरकार द्वारा इसे **भारतीय वन अधिनियम, 1927** की **धारा-4** के तहत **संरक्षित वन (RF)** या **धारा-29** के तहत **अवर्गीकृत वन (PF)** अथवा संबंधित **स्थानीय वन अधिनियम की प्रासंगिक धारा** के तहत अधिसूचित किया जा सके।

d. A vachan patra for deposition of cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, has been submitted (Annex 2). Besides DFO surajpur has been requested to raise demand note for construction of Munnara vide our letter no. 301 dt: 26.11.2024, later a reminder has been sent vide our letter no.424 dt:24.02.2025 for the same (Annex 4).

चिन्हित क्षतिपूर्ति वृक्षारोपण **(CA) भूमि** पर **सर्वेक्षण, सीमांकन और स्थायी स्तंभों की स्थापना** की लागत जमा करने के लिए, यदि आवश्यक हो, तो एक **वचन पत्र** प्रस्तुत किया गया है (परिशिष्ट 2)।इसके अतिरिक्त, **डीएफओ, सुरजपुर** से **मुनारा निर्माण** हेतु **मांग पत्र जारी करने** का अनुरोध हमारे **पत्र संख्या 301, दिनांक 26.11.2024** द्वारा किया गया था। बाद में, इसके संदर्भ में एक **अनुस्मारक पत्र संख्या 424, दिनांक 24.02.2025** प्रेषित किया गया है (परिशिष्ट 4)।

e. As of now, deposition for CA cost is not applicable as vegetation of 0.4 canopy density exists at the site identified for CA. However a Vanchan patra for deposition of CA cost, if required is enclosed as Annex 2.

वर्तमान में, क्षतिपूर्ति वृक्षारोपण **(CA) लागत का जमा किया जाना लागू नहीं है**, क्योंकि **चिन्हित स्थल पर 0.4 वृक्ष आच्छादन घनत्व वाली वनस्पति मौजूद है**।हालांकि, यदि आवश्यक हो, तो क्षतिपूर्ति वृक्षारोपण **लागत जमा करने हेतु एक वचन पत्र संलग्न** किया गया है (परिशिष्ट 2)।

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		f. For gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease, a request letter has been made to DFO Katghora for confirmation of existence of such area within 100 m from outer boundary of ML vide our letter no. 577 dt: 22.03.2024 & a remide letter vide no. 434 dt: 08.03.2025 (Annex 5). **गैप प्लांटेशन एवं मृदा एवं नमी संरक्षण गतिविधियों** के माध्यम से **अवक्रमित खुले वनों** (जिनका क्राउन घनत्व 0.40 से कम है) के पुनः भंडारण और पुनर्जीवन हेतु, यदि कोई ऐसा क्षेत्र खनन लीज (ML) की बाहरी परिधि से **100 मीटर के भीतर** स्थित है, तो उसकी पुष्टि के लिए **डीएफओ, कटघोरा** को अनुरोध पत्र भेजा गया है।यह अनुरोध हमारा **पत्र संख्या 577, दिनांक 22.03.2024** द्वारा किया गया था, तथा इसके संदर्भ में एक **अनुस्मारक पत्र संख्या 434, दिनांक 08.03.2025** प्रेषित किया गया है (परिशिष्ट 5)। g. As per the site requirement, 25% of the CA cost additionally will be spent towards soil and moisture conservation activities in the proposed CA. A Vachan Patra in this regard is hereby enclosed as Annex 6. **स्थल की आवश्यकतानुसार**, प्रस्तावित क्षतिपूर्ति वृक्षारोपण **(CA)** में **मृदा एवं नमी संरक्षण गतिविधियों** के लिए **सीए लागत का 25% अतिरिक्त खर्च किया जाएगा।** इस संदर्भ में एक **वचन पत्र संलग्न** किया गया है (परिशिष्ट 6)।
4	बिंदु क्रमांक 04 वन्यप्राणी योजना एवं पक्षी संरक्षण योजना कैट प्लांट योजना अनुमोदन उपरांत प्रावधानित राशि जमा किये जाने का विवरण प्रस्तुत करें।	The WLMP for small cats has been forwarded to Chief Wild Life Warden, Raipur for approval via CCF Bilaspur on dt:24.03.2025 (Annex 7). A vachan Patra in this regard for deposition of amount in CAMPA is hereby enclosed as Annex 8. **छोटे बिल्लियों (Small Cats) के लिए वन्यजीव प्रबंधन योजना (WLMP)** को **स्वीकृति हेतु मुख्य वन्यजीव प्रतिपालक, रायपुर** को **सीसीएफ, बिलासपुर** के माध्यम से दिनांक **24.03.2025** को प्रेषित किया गया है (परिशिष्ट 7)।इस संदर्भ में

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		CAMPA निधि में राशि जमा करने हेतु एक वचन पत्र संलग्न किया गया है (परिशिष्ट 8)।
5	बिंदु क्रमांक 06 के अनुसार बायो इंजिनियरिंग रिक्लेमेशन के संबंध में आपके द्वारा 200 है क्षेत्र में साल वृक्षारोपण के लिए राशि 56849047.46 रू प्रस्तावित किया गया मांग पत्र राशि रूपये 62557652 रू का उल्लेख है। स्पष्ट करें कि प्रावधानित राशि जमा कराई गई है अथवा नहीं स्पष्ट करें।	It is proposed to take up plantation of 200 ha Sal forest through Katghora Forest division due to non-availability of 200 Ha. Area within the Mine lease of Gevra OCP for plantation. A Request letter was made to DFO Katghora for the same, accordingly the proposal was submitted by DFO Katghora on dt 31.05.2024. Following which additional data was sought from DFO Katghora on dt: 26.06.2024 & reminder has been sent to DFO Katghora on dt:08.03.2025 Annex 9. Once the additional details are obtained from DFO Katghora it will be sent for competent approval. The approved amount will be deposited in DFO Katghora account. **गेवरा ओसीपी खनन लीज के भीतर 200 हेक्टेयर क्षेत्र के अनुपलब्ध होने के कारण, कटघोरा वनमंडल के माध्यम से 200 हेक्टेयर साल वनारोपण करने का प्रस्ताव रखा गया है।**इसके लिए **डीएफओ, कटघोरा** को अनुरोध पत्र भेजा गया था, जिसके अनुसार **डीएफओ, कटघोरा द्वारा दिनांक 31.05.2024 को प्रस्ताव प्रस्तुत किया गया।** इसके बाद, **दिनांक 26.06.2024 को अतिरिक्त डेटा मांगा गया**, तथा **दिनांक 08.03.2025 को अनुस्मारक पत्र प्रेषित किया गया** (परिशिष्ट 9)।**डीएफओ, कटघोरा से अतिरिक्त जानकारी प्राप्त हो जाने पर, इसे सक्षम स्वीकृति के लिए भेजा जाएगा।** स्वीकृत राशि **डीएफओ, कटघोरा के खाते में जमा की जाएगी।**
6	बिंदु क्रमांक 12 a,b,c,d के अनुसार मृदा संरक्षण योजना का प्रस्ताव एवं प्रावधानित राशि जमा कराया गया है स्पष्ट प्रतिवेदन प्रस्तुत करें।	Soil Conservation Plan with appropriate mitigative measures to minimize soil erosion and choking of streams has been prepared and implemented within the Mine lease Area. All the activities mentioned in the plan are undertaken by SECL Gevra OCP within the Mine lease area. Therefore this amount is not being deposited in DFO Katghora account. मिट्टी संरक्षण योजना उपयुक्त शमन उपायों के साथ तैयार की गई है और इसे खान पट्टा क्षेत्र के भीतर लागू किया गया है ताकि मिट्टी के कटाव और जलधाराओं के अवरुद्ध होने को न्यूनतम किया जा सके। योजना में उल्लिखित सभी गतिविधियाँ **SECL गेवरा OCP** द्वारा खान पट्टा क्षेत्र के भीतर की जाती हैं। इसलिए, यह राशि **DFO कटघोरा** खाते में जमा नहीं की जा रही है।

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7	बिंदु क्रमांक 13. a,b,c,d सेफ्टी जोन का कार्य भारत सरकार द्वारा दिये गये निर्देशानुसार किसके द्वारा कराये जा रही है, स्पष्ट करते हुए प्रतिवेदन प्रस्तुत करें। (अनु. 13 में एक पेज का फोटोग्राफ्स संलग्न किया गया है।)	The work of Safety Zone has been undertaken at project cost, as per relevant guidelines issued by the Ministry The 7.5 meter strip all along the inner boundary of the mining lease has been demarcated. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, have been properly fenced. Safety zone is being maintained as green belt around mining lease. 28000 saplings have been planted along 14 KM. This work has been carried out through CGRVVN. Work order copy enclosed as Annex 10 & Photographs enclosed as Annex 11 सुरक्षा क्षेत्र का कार्य परियोजना लागत पर, मंत्रालय द्वारा जारी प्रासंगिक दिशानिर्देशों के अनुसार किया गया है। खनन पट्टे की आंतरिक सीमा के साथ 7.5 मीटर चौड़ी पट्टी का सीमांकन किया गया है। निवास क्षेत्रों/सड़कों से सटे सुरक्षा क्षेत्र की सीमा को उचित रूप से घेरा गया है। सुरक्षा क्षेत्र को खनन पट्टे के चारों ओर हरित पट्टी के रूप में विकसित किया जा रहा है, जिसके तहत **14 किमी क्षेत्र में 28,000 पौधे लगाए गए हैं।** यह कार्य CGRVVN के माध्यम से संपन्न किया गया है। **कार्य आदेश की प्रति परिशिष्ट 10 में संलग्न है एवं फोटोग्राफ परिशिष्ट 11 में संलग्न हैं।**
8	बिंदु क्रमांक 16 के अनुसार खनन क्षेत्र में खड़े वृक्षों का / वृक्षों की कटाई एवं विदोहन योजना अनुसार राशि जमा करा ली गई है या नहीं स्पष्ट करें।	The vachan patra for deposition of the cost of felling of trees is hereby enclosed as Annex 12. वृक्षों की कटाई की लागत जमा करने हेतु **वचन पत्र** संलग्न किया गया है, जो परिशिष्ट 12 में सम्मिलित है।
9	बिंदु क्रमांक 19 के अनुसार कितने वृक्षा का ट्रांसलोकेशन आवेदक संस्थान के द्वारा किन साधन एवं संसाधनों के द्वारा किया जाना है प्रतिवेदन अभिमत सहित प्रस्तुत करें।	In this regard, the SECL Raigarh Area had deployed a German-made machine for tree translocation. However, the survival rate of translocated trees was found to be zero. Additionally, the machine has been prone to frequent breakdowns, and its maintenance has proven challenging due to the limited availability of German parts. Nevertheless, the possibility of translocating trees identified for felling is being explored. A *Vachan Patra* in this regard is enclosed as Annex 13. इस संबंध में, एसईसीएल रायगढ़ क्षेत्र ने वृक्ष स्थानांतरण के लिए एक जर्मन निर्मित

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंश/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालयः महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
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:7815 275032(R)
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पो0आ0 गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन-495452

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

		मशीन तैनात की थी। हालांकि, स्थानांतरित किए गए वृक्षों का जीवित रहने की दर शून्य पाई गई। इसके अलावा, यह मशीन बार-बार खराब होती रही है, और जर्मन पार्ट्स की सीमित उपलब्धता के कारण इसका रखरखाव चुनौतीपूर्ण साबित हुआ है। फिर भी, कटाई के लिए चिह्नित वृक्षों के स्थानांतरण की संभावना का पता लगाया जा रहा है। इस संबंध में एक *वचन पत्र* संलग्न किया गया है (अनुबंध-13)।

This is for your kind information & further necessary action.

Thanking you,

Yours faithfully

4/4/25

General Manager
SECL Gevra Area

Copy to :
1. APCCF (LM), Raipur
2. CCF, Bilaspur

Annex 1

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)

Phone/Fax No.: 07815-250157, mail : dfokatghora@gmail.com

क्रमांक / तक.अधि. / 2024 / 3769 कटघोरा, दिनांक 13.06.2024

प्रति,

महाप्रबंधक
एस.ई.सी.एल. गेवरा क्षेत्र
जिला कोरबा (छ.ग.)

संशोधित

विषय : Proposal for seeking prior approval of the central Goverment under section 2 (i) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favor of M/s South Eastern Coalfield Limited for non-forestry) use of additonal 94.293 ha. Revenue forest land of Gevra OC expansion project of Coal Mining in Korba District of Chhattisgarh. **(RegistrationNo. FP/CG/MIN/41389/2019)**

संदर्भ : 1. क्षे.प्र.मु.व.सं.(भू–प्रबंध) रायपुर का पत्र क्र/भू प्रबंध/खनिज/331–271/553 दिनांक 21.01.2024
2. कार्यालयीन पत्र क्र./तक.अधि./1461 दिनांक 26.02.2024 एवं 1792 दिनांक 11.03.2024

—— ::000:: ——

उपरोक्त विषयांतर्गत लेख है कि महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा द्वारा गेवरा ओपन कास्ट परियोजना रकबा 94.293 हे. हेतु भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली के पत्र दिनांक 09.02.2024 द्वारा प्रथम स्वीकृति प्रदान की गई है।

अतः उक्त स्वीकृति के अनुपालन शर्त क्र. 01 से 47 तक का विधुत्पर पालन प्रतिवेदन शीघ्र इस कार्यालय में प्रस्तुत करना सुनिश्चित करें साथ ही शुद्ध प्रस्तावित मूल्य की राशि निम्नानुसार ई–चालान जनरेट कर कैम्पा फंड में RTGS के माध्यम से जमा करें।

शर्त क्र. 3. के पालन हेतु प्रत्याशित मूल्य की राशि निम्नानुसार **Ad-hoc Campa** में जमा करें।

क्र.	इको क्लास अनुसार	रकबा हे.मे.	वन प्रकार	दर	राशि
1.	5B/C2 Northern dry Mixed Deciduous forest	32.847	Dense Forest	1228590/-	40355496
2.	5B/C2 Northern dry Mixed Deciduous forest	61.446	Open Forest	957780/-	58851750
	कुल योग :-	94.293			99207246/-

उपरोक्तानुसार शुद्ध प्रस्तावित मूल्य की राशि रु. 9,92,07,246/– (रूपये नौ करोड़ ब्यानवे लाख सात हजार दो सौ छियालिस मात्र) का ई चालान जनरेट कर कैम्पा फंड में राशि जमा कर भुगतान प्रस्तुत करें।

संलग्न : एन.पी.व्ही.रकबा मैप की छायाप्रति।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा

पृ. क्रमांक / तक.अधि. / 2024 / 3770 कटघोरा, दिनांक 13.06.2024

प्रतिलिपि :

1. अपर प्रधान मुख्य वन संरक्षक (भू–प्रबंध) अरण्य भवन, सेक्टर–19, अटल नगर रायपुर की ओर सूचनार्थ संप्रेषित।
2. मुख्य वन संरक्षक बिलासपुर वृत्त, बिलासपुर की ओर सूचनार्थ संप्रेषित।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा

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Proforma for NPV Realization in Forest land diversion cases under FCA,1980.

Name of user agency: SECL Gevra Area 94.293 ha. (For Gevra Open Cast Coal Mine)

Circle: Bilaspur **Division:** Katghora

A. For Open Cast Mine

Category of Land	Forest type (as per Champion & Seth)	Total area (ha)	Eco-class determined: Eco-class III Area under different Density class & NPV Amount						Total area Eco-class III (4+6+8)	Total NPV for realization (5+7+9)
			Very Dense Forest	NPV Amount (Rate 1357110 Per ha.) Rs	Dense Forest	NPV Amount (Rate 1228590 Per ha.) Rs.	Open Forest	NPV Amount (Rate 957780 Per ha.) Rs.	(ha)	Rs.
1	2	3	4	5	6	7	8	9	10	11
Protected Forest		-	-	-	-	-	0	0	0.000	0
Revenue Forest Land	5B/C2 Northern dry Mixed Deciduous forest	94.293	-	-	32.847	40355496	61.446	58851750	94.293	99207246
Total (A)		94.293	0	0	32.847	40355496	61.446	58851750	94.293	99207246

1. Total NPV for realization in (Column 11): Rs. 99207246/- (Nine Crore Ninty Two Lac Seven Thousand Two Hundred Fourty Six Only)

Prepared By (Name): B.L. Shastri
Senior Technical Officer
Division: Katghora

Checked By (Name): C.K. Tiwariha
SDO: Pali
Division: Katghora

Verified By (Name): Kumar Nishant
Divisional Forest Officer
Division: Katghora

Chief Conservator of Forest
Bilaspur Circle, Bilaspur (C.G.)
Circle: .....

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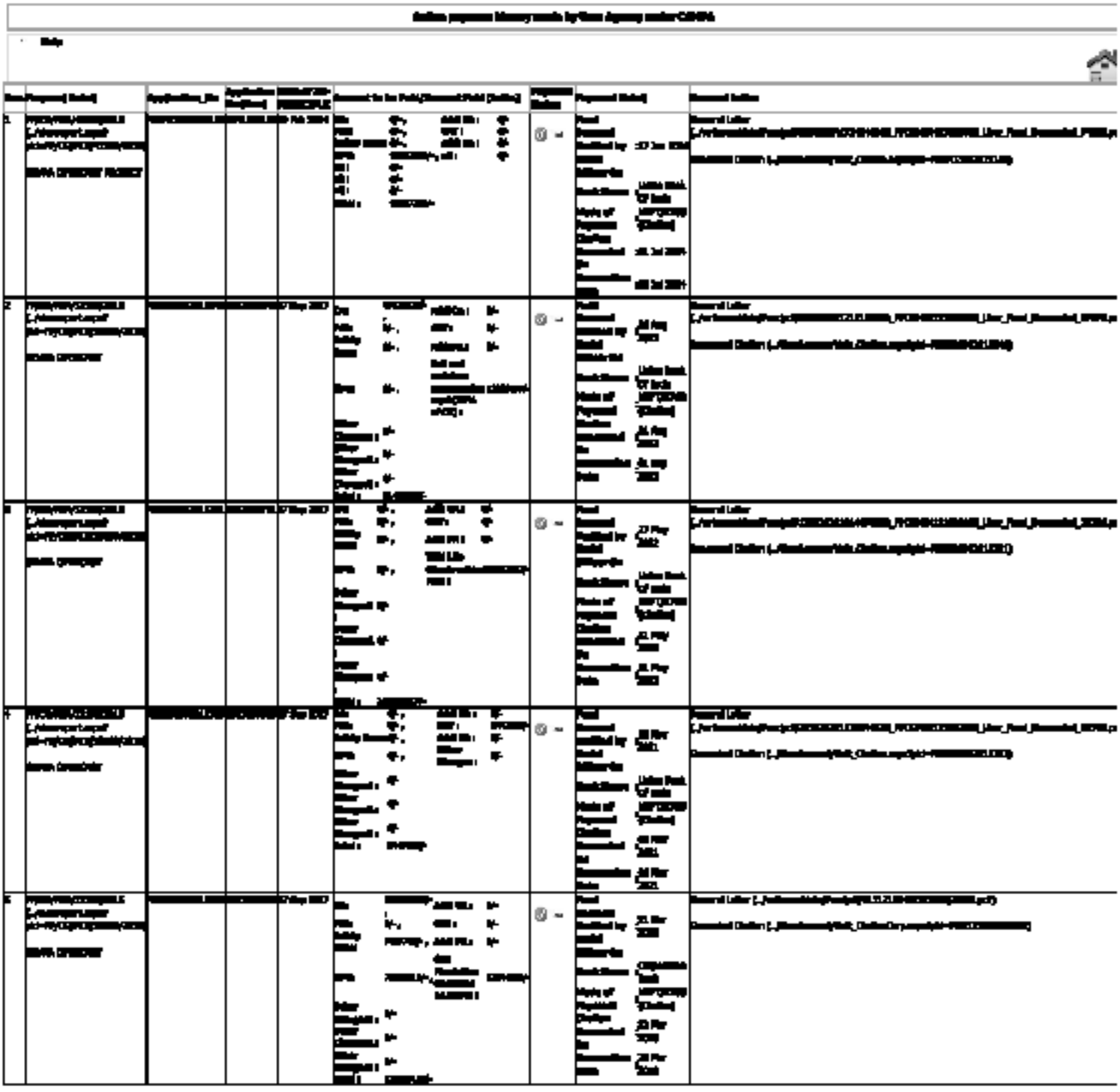
Annex 1



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For any Technical support, Please Contact: DOCEA, NIC, New Delhi, mailto:ag-hi[at]gov[dot]in

Annex 2

SEEPAT ROAD
P.O : SECL
BILASPUR

साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीसहायकA subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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पी०ओ० गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin 495452

जिला: कोरबा(छत्तीसगढ़)
पिन 495452

क्रमांक/एस.ई.सी.एल/एम.जी.ओ./पर्यावरण/2024/ 147 (C) दिनांक 19/08/2024

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

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The User Agency shall transfer the funds towards the cost of Net Present Value (NPV) of the forest land being diverted and
To pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India."

19/8/24
S.K Mohanty
General Manager
SECL Gevra Area

SEEPAT ROAD
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BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
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Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
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पो.आ.:गेवरापरियोजना
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

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

क्रमांक एस.ई.सी.एल./गेप्र/जी.क्षे./ पर्यावरण/2025/ 428 दिनांक 06/03/2025

To
The Divisional Forest Officer
Surajpur Division
Surajpur CG

SUB: Proposal for seeking prior approval of the central Government under section 2(i)(ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of M/s South Eastern Coalfields Limited for non -forestry use of additional 94.293 ha. Revenue Forest Land of Gevra OC expansion project of Coal Mining in Korba District of Chhattisgarh. (Registration no. FP/CG/MIN/41229/2019)

REF: Your letter vide no. 7391 dt: 26.10.2024

Dear Sir

Please find below the point wise reply to the additional points sought vide your above referred letter

S. No.	Points sought	Compliance
1	प्रस्तावित गैर वन भूमि के वैधानिक स्वरुप (राजस्व भूमि अथवा निजी भूमि) बाबत राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र	राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र संलग्न Annex 1
2	उक्त भूमि में छोटे एवं बड़े झाड़ के जंगल की भूमि सम्मिलित नहीं होने बाबत राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र	राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र संलग्न Annex 1
3	उक्त भूमि को वन विभाग के पक्ष में नामान्तरित व हस्तांतरित करने Mutation संबंधी आदेश	राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र संलग्न Annex 2
4	उक्त भूमि पर व्यक्तियों एवं समुदायों के विद्यमान अधिकारों का सक्षम राजस्व अधिकारी द्वारा किए गए अभिलेखन का प्रतिवेदन	राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र संलग्न Annex 2
5	उक्त भूमि का अतिक्रमण मुक्त होने बाबत सक्षम राजस्व अधिकारी का प्रमाण पत्र	राजस्व विभाग के सक्षम अधिकारी का प्रमाण पत्र संलग्न Annex 3
6	उक्त भूमि का राजस्व विभाग के सक्षम अधिकारी द्वारा वन अधिकारी की उपस्थिति में किया गया सीमांकन का प्रतिवेदन रिपोर्ट	दिनांक 04.12.2024 को आपके सम्मानित कार्यालय के साथ हुई चर्चा के अनुसार, यह निष्कर्ष निकाला गया कि ये विवरण आवश्यक नहीं

SEEPAT ROAD
P.O : SECL
BILASPUR

पो0आ0 गेवरापोजेक्ट
जिला कोरबा (छत्तीसगढ़)
पिन-495452

साउथईस्टर्नकोलफील्डलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकायकअंग/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl.gov.in
कार्यालय महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
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Distt.: Korba (C.G.)
Pin: 495452

		है, क्योंकि भूमि का अधिग्रहण कोल बेयरिंग एरियाज़ (अधिग्रहण और विकास) अधिनियम, 1957 के तहत किया गया है।"
7	उक्त भूमि के पटवारी मानचित्र एवं खसरा खतौनी की प्रतियां	पटवारी मानचित्र एवं खसरा खतौनी की प्रति संलग्न Annex 4
8	उक्त भूमि हेतु वन प्रबंधन एवं वृक्षारोपण की दृष्टि से उपयुक्त होने संबंधी सक्षम वन अधिकारी द्वारा दिया गया उपयोगिता प्रमाण पत्र	वन प्रबंधन एवं वृक्षारोपण की दृष्टि से उपयुक्त होने संबंधी सक्षम वन अधिकारी द्वारा दिया गया उपयोगिता प्रमाण पत्र संलग्न Annex 5
9	उक्त भूमि किसी अन्य परियोजना में वैकल्पिक वृक्षारोपण हेतु नहीं दिए संबंधी प्रमाण पत्र	उक्त भूमि किसी अन्य परियोजना में वैकल्पिक वृक्षारोपण हेतु नहीं दिए संबंधी प्रमाण पत्र संलग्न Annex 6

Thanking you,

Yours faithfully

General Manager
SECL Gevra Area

Copy to:
1. General Manager (Forest), SECL HQ Bilaspur
2. General Manager, SECL, Bhatgaon Area
3. DFO, Katghora

Annex 4

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंगइकA subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
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: 7815 275032(R)
Fax :07815 275434
email :gevrsonvt@gmail.com

पी.ओ.गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ)
पिन:495452

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

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./ पर्यावरण/2025/ 42/1 दिनांक 24/02/2025

To
The Divisional Forest Officer
Surajpur Division
Surajpur CG

SUB: Proposal seeking prior approval of the central Government under section 2(1)(ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of M/s South Eastern Coalfields Limited for non-forestry use of additional 94.293 ha. Revenue Forest Land of **Gevra OC expansion project of Coal Mining** in Korba District of Chhattisgarh.
(Registration no. FP/CG/MIN/41329/2019)

REF: Our letter vide no. 301 dt: 26.11.2024

Dear Sir

Kindly refer to the enclosed letter requesting the issuance of a Demand Note for the construction of 110 Munmuras on ACA land identified at Dugga OC, SECL Bhatgaon, in Surajpur District. This is in connection with the diversion of 94.293 hectares of Revenue Forest land for SECL Gevra OCP.

Furthermore, officials from SECL Gevra OCP visited your office on 16.01.2025 to follow up on the matter, during which it was assured that the Demand Note would be issued within a week.

In light of the above, we kindly request you to issue the Demand Note at the earliest. For your ready reference, the DGPS report is hereby resubmitted.

Thanking you,

Yours faithfully

24/2/25

General Manager
SECL Gevra Area

Copy to:
1. General Manager (Forest), SECL HQ Bilaspur
2. General Manager, SECL Bhatgaon Area.

SEEPAT ROAD
P.O.: BILCL
PIN-495001(CG)
BILASPUR

साउथईस्टर्नकोल्डफिल्डलिमिटेड
South Eastern Coalfields Limited
(कोलइंडियालिमिटेडकीअनुषंगीकंपनी) A subsidiary of Coal India Ltd.
CIN U10102CT1985GOI003161,

TD 07815 275430(O)
7815
Fax 07815 275434
email

Website : www.secl-cil.in
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/गे.क्षे./पर्यावरण/2024/ 3 0 1 दिनांक 21.11.2024

प्रति,
वनमण्डलाधिकारी,
सूरजपुर वनमण्डल, सूरजपुर

विषय– **Proposal for seeking prior approval of the Central Government under section 2(1) (ii) of the Van (Saarakshan Evam Samvardhan) Adhiniyam, 1980 in favour of M/s South Eastern Coalfield Limited for non-forestey) use of additional 94.293 ha. Revenue Forest Land of Gevra OC expansion project of Coal Mining in Korbe District of Chhattisgarh.**
(Registration No. FP/CG/MIN/41389/2019)

संदर्भ–कमांक/मा.वि./2117, सूरजपुर दिनांक 18.11.2024

महोदय,

उपरोक्त विषयांतर्गत लेख है कि आपके पत्र क./मा.वि./2117 के अनुसार डी.जी.पी.एस. सर्वे पूर्ण कर रिपोर्ट की 5 प्रति आपके अवलोकन एवं अनुमोदन हेतु प्रेषित किया जा रहा है।

डी.जी.पी.एस. सर्वे के अनुसार 110 प्वाइंट के Latitude व Longitude मिले हैं जिसमे बिल्स लगाने हेतु मुनारा के निर्माण में होने वाले खर्च का डिमांड नोट भेजने का कष्ट करें ।

संलग्न– उपरोक्तानुसार

भवदीय

महाप्रबंधक
एसईसीएल गेवरा एरिया

प्रतिलिपि– 1.आपर प्रधान मुख्य वन संरक्षक अरण्य भवन, रायपुर
2.वन मण्डल अधिकारी कटघोरा वनमण्डल कटघोरा
3 मुख्य वन संरक्षक बिलासपुर वृत्त, बिलासपुर

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंग/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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

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

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

क्रमांक:एस.ई.सी.एल.जी.ए./पर्यावरण/2025/ 134 दिनांक 08/03/2025

To
The DFO
Katghora Range
Katghora Division,
Korba-CG

SUB: Regarding gap planting and soil & moisture conservation activities to restock and rejuvenate the degraded open forests (having crown density less than 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease w.r.t SECL Gevra OCP.
FC proposal No. FP/CG/MIN/41389/2019: 94.293 Ha.

REF:

1. In-principle/Stage I Approval vide MoEFCC file no. 8-41/2017-FC Vol. dt: 09.02.2024
2. Our letter vide no. 577 dt: 22.03.2024

Dear Sir

SECL Gevra OCP has been granted In-principle/Stage I clearance for diversion of 94.293 Ha. Revenue Forest Land for non forestry purpose on dt: 09.02.2024. (Copy enclosed as Annex 1).

The condition no. 2f of the above mentioned approval states *"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 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF &CC before Stage-II Clearance"*

As the above mentioned work has to be carried out within 100 m from the outer perimeter of the mining lease & that too in the degraded open forest having crown density less than 0.4 if any, it has been proposed to take up this work through DFO Katghora Division.

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंग/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
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पोऑफा.गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन 495452

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

Therefore you are kindly requested to identify if such area (degraded open forest having crown density less than 0.4) exists within 100 m from the outer perimeter of the mining lease of SECL Gevra OCP and if so, kindly requested to submit the Scheme for the above mentioned work along with the demand Note for estimated expenditure at the earliest.

Thanking You

Yours sincerely

General Manager
SECL Gevra Area

Copy to:
1. APCCF(LM), Raipur
2. CCF, Bilaspur

Government of India
Ministry of Environment, Forest and Climate Change
(Forest Conservation Division)
*****

Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj
New Delhi – 110003
Dated: February, 2024

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

Sub: Proposal for seeking prior approval of the Central Government under section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of M/s South Eastern Coalfield Limited for non-forestry use of additional 94.293 ha revenue forest land of Gevra OC expansion project of Coal Mining in Korba District of Chhattisgarh (Online proposal No. FP/CG/MIN/41389/2019).

Madam/Sir,

I am directed to refer to the State Government of Chhattisgarh vide letter No. 5-41/2023/10-2 dated 13.10.2023 (uploaded on Ministry's website on 18.10.2023); and additional information submitted vide no. Bhu-Prabandh/Khanij/331-274/2690 dated 07.12.2023 on the above subject seeking prior approval of the Central Government in accordance with the section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980. The proposal was considered by the Advisory Committee (AC) in its meeting held on 17.01.2024 and to say that the proposal has been examined by the Advisory Committee constituted by the Central Government under Section - 3 of the aforesaid Act.

2. After careful examination of the proposal of the State Government and on the basis of the recommendations of the Advisory Committee, and approval of the same by the competent authority of the MoEF&CC, New Delhi, the Central Government under section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favour of M/s South Eastern Coalfield Limited for non-forestry use of additional 94.293 ha revenue forest land of Gevra OC expansion project of Coal Mining in Korba District of Chhattisgarh subject to fulfilment of the following conditions:

1. Legal status of the diverted forest land shall remain unchanged;
2. **Compensatory Afforestation:**
    a. ***As per the provisions of rule (13) of Van (Sanrakshan Evam Samvardhan) Rules, 2023, the Compensatory Afforestation shall be carried over non-forest land equal in extent to the forest area proposed. The State shall submit relevant documents/ certificates/ maps/KML file for suitable non-forest land so identified. The suitable non-forest land for the compensatory afforestation shall***

be identified as per the extant guidelines on the matter and approval for the same will be taken from the Ministry before going for notification as forest under Indian Forest Act or other relevant Act;

b. The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation as per the approved CA Scheme at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State through online portal;

c. The land to be identified for raising Compensatory Afforestation shall be notified by the State Government as RF under Section-4 or PF under Section-29 of the Indian Forest Act, 1927 or under the relevant Section (s) of the local Forest Act, as the case may be, before the Stage-II approval;

d. The cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years;

e. The compensatory afforestation over non-forest land, equal in extent to the forest land being diverted i.e. 94.293 ha, shall be raised by the State Forest Department at the project cost within three years from the date of grant of Stage - II approval;

f. 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 0.40), if any, located in the area within 100 meter from outer perimeter of the mining lease. The plan for plantation and SMC activities will be prepared and submitted to MoEF &CC before Stage-II Clearance;

g. 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;

3. **NPV:**

a. The User Agency shall transfer the funds towards the cost of 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 06.01.2022 read with 22.03.2022 through online portal of CAMPA account of the State Concerned;

b. 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;

4. ***A Wildlife management with small cats as one of the focus areas shall be prepared and got approved from the Chief Wildlife Warden. The wildlife plan for the small cats will be subset of the integrated wildlife***

plan for which money has been deposited and work has to be started. The additional funds required for the 'small cat' plan shall be deposited by the User Agency and State will start the work of wildlife conservation without further delay;

5. ***The State Government shall ensure the preparation of R&R plan and its implementation shall be done in accordance with the provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCTLARR, 2013) and the R&R plan will be shown to Ministry at the time of the compliance of the Stage-I;***
6. ***The biological reclamation shall be done keeping in mind the seral stages of the species. Monoculture of species should be avoided. Attempts should be made to develop multi-storeyed forest with ground flora. Species like Sal may be promoted with special nursery to augment the supply sources;***
7. ***Mined out forest areas which are already reclaimed by the User Agency, shall be handed over back to the State Forest Department for management and control. The UA shall prepare a land surrender schedule for surrender of the mined out and biologically reclaimed forest land;***
8. ***The UA shall undertake extensive greening programme in the surrounding area and improve its environmental and ecological health. Mixed plantation of local species should be encouraged. The User Agency shall maintain nursery of local species and fruit trees and distribute to locals every year as an additional means to enrich vegetation;***
9. ***The top-soil shall be preserved for better growth of plants in the OB dumps/reclaimed areas;***
10. Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (https://parivesh.nic.in/);
11. The KML files of diverted area, the CA areas, the proposed SMC treatment area and the WLMP area shall be uploaded on the e-Green watch portal with all requisite details prior to Stage-II approval;
12. The following activities, as per approved plan / schemes, shall be undertaken in the lease area by the User Agency under the supervision of the State Forest Department. Approved scheme/plan shall be submitted to the Ministry along with compliance of Stage-I approval:
    a. Mitigative measures to minimize soil erosion and choking of stream shall be implemented within a period of three years with effect from the issue of Stage-II clearance in accordance with the approved Plan in consultation with the State Forest Department;
    b. Planting of adequate drought hardy plant species and sowing of seeds, in the appropriate area within the mining lease to arrest soil erosion in accordance with the approved scheme;
    c. Construction of check dams, retention /toe walls to arrest sliding down of the excavated material along the contour in accordance with the approved scheme;

d. Stabilize the overburden dumps by appropriate grading/benching, in accordance with the approved scheme, so as to ensure that angles of repose at any given place is less than 28o; and

13. **Safety Zone Management:** Following activities, at project cost, shall be undertaken by the user agency for the management of safety zone as per relevant guidelines issued by the Ministry's guidelines:
    a. User agency shall ensure demarcation of safety zone (7.5-meter strip all along the inner boundary of the mining lease area), and its fencing, protection and regeneration by erecting adequate number of 6 feet high RCC boundary pillars inscribed with DGPS coordinates with barbed wire fencing and deploying adequate number of watchers under the supervision of the. State Forest Department;
    b. Boundary of the safety zone of the mining lease, adjacent to habitation/roads, should be properly fenced by the user agency;
    c. Safety zone shall be maintained as green belt around mining lease and to ensure dense canopy in the area, regeneration shall be taken up in this area by the user agency at project cost under the supervision of the State Forest Department;
    d. The State Government and the user agency shall ensure that safety zone is maintained as per the prescribed norms;
14. No damage shall be caused to the top-soil and the user agency will follow the top soil management plan;
15. 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 approved 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;
16. The cost of felling of trees shall be deposited by the User Agency with the State Forest Department;
17. Trees should be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO;
18. The User Agency shall undertake that afforestation of the non-mineralized virgin forest land within the mining area shall be taken up at project cost;
19. The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department.
20. A copy of approved WLM Plan shall be submitted to the Ministry along with the compliance of Stage-I approval. Entire cost of implementation of the provisions of the Wildlife Management Plan shall be deposited into the account of CAMPA of the State;
21. **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 as per the sub-rule (7) of Rule 11 of the Van (Sanrakshan Evam Samvardhan) Rules, 2023;**

22. The User Agency shall undertake that user agency and the State Forest Department shall create and maintain from funds to be provided by the user agency alternate habitat/ home for the avifauna, whose nesting trees are to be cleared in this project as per the plan duly approved by the Principal Chief Conservator of Forests (Wildlife) and the Chief Wildlife Warden Chhattisgarh. 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;
23. The User Agency shall undertake that the project authority needs to take up works for construction and cleaning of garland drains, stabilizing retaining walls, proper terracing of OB dumps and checking gully formation resulting in soil erosion;
24. The User Agency shall undertake that plants which are having lowest translocation factor can be preferred under afforestation on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps;
25. The User Agency shall undertake that prevention of fall of wild animals into mining pit by fencing the open pit area;
26. The User Agency shall undertake that the angle of repose in OB dumps to be maintained to ensure stability and safety;
27. The User Agency shall undertake that vetiver grass can be planted at the lower reaches of the dump to bind the soil and prevent soil erosion giving better stability to the dump;
28. The User Agency shall undertake mining in a phased manner after taking due care for reclamation of the mined over area. The concurrent reclamation plan as per the approved mining plan shall be executed by the User Agency from the very first year, and an annual report on implementation thereof shall be submitted to the Nodal Officer, Forest (Conservation) Act, 1980, in the concerned State Government and the concerned Regional Office of the Ministry. If it is found from the annual report that the activities indicated in the concurrent reclamation plan are not being executed by the User Agency, the Nodal Officer or the concern Addl. Principle Chief Conservator of Forests (Central) may direct that the mining activities shall remain suspended till such time, such reclamation activities area satisfactorily executed;
29. The User Agency shall comply with the Hon'ble Supreme Court order on re-grassing, and re-grass the mining area and any other areas which may have been disturbed due to mining to restore them to a condition which is fit for growth of fodder, flora, fauna, etc. in a timely manner;
30. 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, as amended and the Rules framed there-under;
31. The User Agency shall obtain the Environment Clearance as per the provisions of the Environmental (Protection) Act, 1986, if required;
32. No labour camp shall be established on the forest land and the User Agency shall provide fuels preferably alternate fuels to the labourers and the staff working at the site so as to avoid any damage and pressure on the nearby forest areas;
33. The boundary of the diverted forest land, mining lease and safety zone, as

applicable, shall be demarcated on ground at the project cost, by erecting four feet high reinforced cement concrete pillars, each inscribed with its serial number, distance from pillar to pillar and GPS coordinates;

34. The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal;
35. The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government;
36. No damage to the flora and fauna of the adjoining area shall be caused;
37. Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife; and
38. The user agency shall comply with all 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.
39. Violation of any of these conditions will amount to violation of Forest (Conservation) Act, 1980 and action would be taken as prescribed in para 1.21 of Chapter 1 of the Handbook of comprehensive guidelines of Forest (Conservation) Act, 1980 as issued by this Ministry's letter No. 5-2/2017-FC dated 29.12.2023.
40. The User Agency shall submit the annual self -compliance report in respect of the above stated conditions to the State Government, concerned Regional Office and to this Ministry by the end of March every year regularly;
41. The compliance report shall be uploaded on **e-portal** (https://parivesh.nic.in/).

3. After receipt of the compliance report on fulfilment of the conditions mentioned above, the proposal shall be considered for final approval under section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 Transfer of forest land shall not be affected till final approval is granted by the Central Government in this regard.

Yours Sincerely,

Signed by Amit Anand
Date: 09-02-2024 14:47:07

Sd/
(Amit Anand)
Assistant Inspector General of Forests

Copy to:

1. PCCF (HoFF), State Forest Department, Government of Chhattisgarh, Raipur
2. DDGF (Central), Regional Office of MoEF&CC at Nagpur.
3. APCCF & Nodal Officer (FCA), O/o PCCF, State Forest Department, Government of Chhattisgarh, Raipur.
4. IGF (Central), subOffice of MoEF&CC at Raipur.
5. User Agency.
6. Monitoring Cell, FC Division, MoEF&CC, New Delhi.
7. Guard File.

Annex – 6

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंशA subsidiary of Coal India Ltd.)
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जिला: कोरबा(छत्तीसगढ़)
पिन:495452

क्रमांक/एस.ई.सी.एल:मप्र/गे.क्षे./पर्यावरण/2025/ 66 दिनांक: 04 / 04 /2025

VACHAN- PATRA 19
(94.293 HA. FOREST LAND)
(CONDITION NO.2.g)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "*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*".

4/4/25
S K Mohanty
General Manager
SECL Gevra Area

Annex.7

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

सिंधी कॉलोनी, जरहामाठा, बिलासपुर (छ.ग.) पिन कोड–495001
फोन : 07752–227624, फैक्स : 07752–221385 ई-मेल रू dfobsp@gmail.com

क्रमांक/तक./ 930 बिलासपुर, दिनांक 24/03/2025

प्रति,

प्रधान मुख्य वनसंरक्षक
(वन्यप्राणी सह मुख्य वन्यप्राणी अभिरक्षक)
अटल नगर, नवा रायपुर (छ.ग.)

विषय :– Submission of Wildlife Management Plan for Small Cats with respect to SECL Gevra OCP, Proposal No. FP/CG/MIN/41389/2019

संदर्भ :– वनमण्डलाधिकारी कटघोरा का पत्र क्र./तक.अधि./1207, दिनांक 10.03.2025

विषयान्तर्गत लेख है कि आवेदक संस्थान महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र, जिला कोरबा द्वारा गेवरा ओपनकास्ट परियोजना रकबा 94.293 हे. के प्रकरण में भारत सरकार पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय के द्वारा प्रथम चरण स्वीकृति के अधिरोपित शर्त क्रमांक 04 के परिपालन में राशि रू. 1470.00 लाख का Wildlife Management Plan for Small Cats Plan, State Forest Research and Training Istitute (SFRTI) C.G. के द्वारा तैयार कर प्रस्तुत किया गया है, अतः Wildlife Management Plan for Small Cats Plan अनुसंशा सहित अनुमोदन हेतु संप्रेषित है।

संलग्न – वन्यप्राणी संरक्षण योजना 01 प्रति में।

मुख्य वनसंरक्षक
बिलासपुर वृत्त, बिलासपुर

पृक्र./तक./ 931 /बिलासपुर, दिनांक : 24/03/2025

प्रतिलिपि :–

(1) अ.प्र.मु.व.स. (मू–प्रबंध), अरण्य भवन, अटल नगर, नवा रायपुर की ओर सूचनार्थ संप्रेषित
(2) वनमण्डलाधिकारी कटघोरा की ओर सूचनार्थ प्रेषित ।
(3) महाप्रबंधक, एसईसीएल गेवरा क्षेत्र जिला कोरबा (छ.ग.) की ओर सूचनार्थ प्रेषित।

मुख्य वनसंरक्षक
बिलासपुर वृत्त, बिलासपुर

wild life

Annex- 8

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंग/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl.cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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

पो0आ0 गेवरप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन 495452

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

क्रमांक एस.ई.सी.एल/महा.गे.क्षे./ पर्यावरण/2025/ 65 दिनांक 04/04/2025

VACHAN- PATRA 20
(94.293 HA. FOREST LAND)
(CONDITION NO.4)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that *"The additional funds required for the 'small cat' plan shall be deposited by the User Agency"*.

4/4/25

S K Mohanty
General Manager
SECL Gevra Area

Annex 9

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंग/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र

STD 07815 275430(O)
7815 275032(R)
Fax 07815 275434
emails: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

क्रमांक:एस ई सी एल/महा/गे क्षे / पर्यावरण/2025 /433

दिनांक 02/05/2025

To
The DFO
Katghora Division,
Korba-CG

SUB: Plantation of Sal Trees (only) in 200 Ha. for redevelopment of Sal Forest in the region as per Environment Clearance Condition with respect to SECL Gevra OCP.

REF:

1. Environment Clearance vide No: J-11015/85/2010-IA. II (M) Dt: 10.05.2021.
2. Your letter vide no. 1942 dt: 31.05.2024
3. Our letter vide no. 129 dt: 26.06.2024, 389 dt:14.01.2025

Dear sir

In compliance with the conditions stipulated in the Environmental Clearance for the 70 MTPA capacity of SECL Gevra OCP regarding the exclusive plantation of Sal trees over 200 hectares for the redevelopment of Sal forests, a plantation scheme was requested. Accordingly, the scheme was submitted by your esteemed office on 31.05.2024.

Subsequently, the proposal was forwarded for competent approval. However, during discussions with the Senior Advisor (Forest & Environment), SECL HQ Bilaspur, additional data was deemed necessary. This requirement was communicated to your office via our letter no. 129 dated 26.06.2024 (copy enclosed).

You are kindly requested to provide the requisite details mentioned in our letter at the earliest so that the plantation work can commence before the upcoming monsoon season.

Thanking you,

Yours Faithfully

General Manager
SECL Gevra Area

Copy: CCF, Bilaspur

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफील्डलिमिटेड
South Eastern Coalfields Limited
(कोल इण्डिया लिमिटेड की अनुषंगी/A subsidiary of Coal India Ltd)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in

TD 07815 275430(O)
7815 275032(R)
Fax 07815 275434
mail: gevraareavt@gmail.com

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

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

पोस्ट ऑफिस: गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

क्रमांक: एस.ई.सी.एल/जन.प्र.क्षे./पर्यावरण/2024/1257 दिनांक 25/05/2024

To
The Divisional Forest Officer,
Katghora Division
Korba

Sub: Plantation of Sal trees (Only) in 200 Ha for redevelopement of Sal forest in the region as per Environment Clearance with respect to SECL Gevra OCP.

REF: कार्या./जन. अधि./2024/1942 मनेंद्रगढ़, दिनांक 31/05/024

The following points were raised by SECL HQ Bilaspur after due discussion with the Sr. Advisor (Forest & Environment).

1. The viability of the Sal seed is seven days only and it is important to know the success rate of Sal seed germination at the nursery stage and what are the major changes adopted in the Sal Nursery Management.
2. The Sal seedling has the phenomenon of Dying Back which is universal hence the sapling growth starts to prominence only after two years of dying back period.
3. What are the measures adopted by forest department for checking forest fires, unrestricted grazing, surface exposure and desiccation, compaction of soil as in the project is not clear.
4. What is the measure taken in the project to check the moisture and root competition at the peak growing season which is one of the limiting factors and is responsible for dying back and whippy Sal seedlings.
5. What is the actual area of invasive alien species occupied in the proposed plantation project and Sal regeneration areas.
6. The site suitability for artificial regeneration as well as the natural Sal regeneration areas must be verified at the field level by the undersigned along with the DFO and Area Nodal Officer before embarking on the project.
7. The site suitability for Sal regeneration areas and major adopted for regeneration is not clear in the project.
8. Statistical Analysis of growth in the Sal Artificial Regeneration Project and Sal Regeneration Area Project is not clear in the proposed project.
9. The Expected Outcomes from the plantation and the problem faced by the area selected for the project are not clear.
10. The liability accountability factor is not clear in the proposed project in case of low survival percentage in the proposed project.

Kindly requested to furnish the details on the above mentioned points.

Thank you.

Nodal Officer (Environment)
SECL Gevra Area

साउथ ईस्टर्न कोलफील्ड्स लिमिटेड
South Eastern Coalfields Limited
भारत के सार्वजनिक उपक्रम की एक "मिनी रत्न कंपनी"
A "MINI RATNA COMPANY" P.S.U. OF INDIA
(कोल इण्डिया लिमि. की एक सहायक कंपनी)
(A SUBSIDIARY OF COAL INDIA LIMITED)

वन प्रमुख का कार्यालय,
Office of The Chief of Forest,
वन विभाग, Forest Department,
मुख्यालय कार्यालय:सीपत रोड,पी.ओ.–एसईसीएल
Regd. Office: Seepat Road, P.O.- SECL
बिलासपुर (छग) Bilaspur (CG) - 495006
CIN – U10102CT1985GOI003161
टेली Tele/फैक्स fax – 07752-246351
ई–मेल e-mail - [illegible] hodforest@secl.gov.in)
Website: www.secl.gov.in

पत्रांक–एसईसीएल / बीएसपी / वन / कार्यआ0 / छगरावविनिलि. / 2016 / 151 दि0 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 फैन्सिंग वृक्षारोपण सहित (Safty zone fencing with plantation work) का कार्य तथा आगामी चार वर्षों अर्थात 2020–21 तक इनके रखरखाव के संबंध में कार्यादेश (Work Order)"

संदर्भ क्र.–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 फैंसिंग 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 सात एवं पैसे सतानवे) (**Escalation** एवं टैक्स सहित) मात्र के लिए एतद द्वारा आपको कार्य अवार्ड किया जाता है।

मद क्रं.	कार्य का विवरण	मात्रा	इकाई	दर (रू.)	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 wth 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 15th 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 सात एवं पैसे सतानवे मात्र)					26,16,49,760.97

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वृक्षारोपण हेतु एमओयू में विभिन्न प्रजातियाँ 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, हरा बहेरा, आँवला (आमला), अर्जुन, शिकाकाई, कुसुम, महुआ आदि।
मूल्यवान लकड़ी के पेड़ : टीक, खमहार, 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 एतद्द्वारा 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,

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 कं.– 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, रू. 1539.34 लाख दिनांक 21.09.2016
- मुमप्र / मप्र,एसईसीएल, गेवरा, 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, गेवरा, 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 (के0),बिलासपुर (छ0ग0) के कृपया सूचनार्थ।

मुख्य प्रबंधक (खनन)
वन विभाग,
एसईसीएल,बिलासपुर

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Annexure- A

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

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सेफ्टी जोन में सुरक्षा हेतु 1 कि0मी0 में फेंसिंग कार्य

प्रथम वर्ष (2016–17)

1 कि0मी0 में दोनों ओर वृक्षारोपण हेतु

1 मानव दिवस = 1 मजदूरी दर रू0 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 कि0मी0	275.00	275.00
	फेंसिंग आरसीसी पोल्स एवं बारबेड वायर फेंसिंग 1000 मी0 के लिए 2.50 मी0 के अंतराल पर।			
2.	आर.सी.सी.फेंसिंग पोल्स (Goose neck) 2.4 मी0 की लंबाई, 2000 मी0, 2.5 मी0 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 से0मी0 साईज 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 बैतिज लाईनों के लिए तथा 2 विकर्ण लाईनों के लिए कुल 9 लाईनों में 914 पोल्स X 2.5 मी0 7 बैतिज लाईन = 15995 मी0, 914 पोल्स X 2.8 मी0 2 बैतिज विकर्ण = 5118.4 = कुल 21113.4 मी0, 21114 मी0 (9.38 किलो/100 रनिंग मीटर)	2250 कि0ग्रा0	70.00	157500.00
5.	आर.सी.सी.पोल्स लगाने के लिए सीमेंट कांक्रीट का मिक्सन (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 मी0 (1 कि0मी0 हेतु) 0.30 मा.दि. प्रति रनिंग मीटर	2000 मी0	73.80 प्रति मी.	147600.00
7.	खम्भे पुताई का कार्य (हरा पेंट 2 फीट एवं ऊपर सफेद रंग)	914 नग	32.82 प्रति नग	29997.00
(अ)	2000 रनिंग मीटर हेतु (1 कि0मी0) कुल रूपए			989798.00
	वृक्षारोपण पूर्व तैयारी			
8.	क्षेत्र सफाई कार्य एवं मृदा परीक्षण कार्य 3 X 3 मीटर	1 कि0मी0	2310.00	2310.00
9.	पौधा लगाने हेतु स्टेकिंग का कार्य 2 X 2 मीटर अंतराल स्टेगर्ड विन्यास में = 1 कि0मी0 = 1000 मी0 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. साईज कड़ी मिट्टी प्रति कि0मी0 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 25X30 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 कि0मी0	10973.00	10973.00
(ब)				78893.00
			(अ)+(ब)	1068691.00
			सुपरविजन एवं स्थापना व्यय 25 प्रतिशत	267172.00
			कुल योग	1335861.00

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द्वितीय वर्ष (2016–17)

1 कि0मी0 में दोनों ओर वृक्षारोपण हेतु

क्र.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रू.)
1.	50 प्रतिशत गड्ढों में मिट्टी क्रय, 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
	गोबर खाद / वर्मी कम्पोस्ट 1 कि.ग्रा. प्रति पौधा परिवहन सहित	2000 कि.ग्रा.	9.74	19480.00
2.	गड्ढों में मिट्टी खाद इत्यादि का मिश्रण भरना	2000 गड्ढे	2.66	5320.00
3.	पौधा परिवहन कार्य	1200 पौधे	10.08	12096.00
4.	जैविक रासायनिक खाद क्रय–			
	1. एन.पी.के. 20 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि.मी. सड़क के दोनों तरफ हेतु = 100 कि.ग्रा.	100 कि0ग्रा0	22.00	2200.00
	2. नीम, करंज महुआ, खल्ली, हड्डी चूर्ण 250 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि0मी0 सड़क के दोनों तरफ हेतु = 500 कि.ग्रा.	500 कि0ग्रा0	33.00	16500.00
5.	गड्ढों के दीमक रोधी उपचारण हेतु दीमक नाशक दवाई इंडो सल्फान डस्ट इत्यादि को डालना 10 ग्राम प्रति पौधा 2000 गड्ढे प्रति कि0मी0 सड़क के दोनों तरफ हेतु = 20 कि.ग्रा.	20 कि0ग्रा0	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 म. दि.प्रति सैकड़ा का 65 प्रतिशत) 9.1X246X65 प्रतिशत = 1455.09	200 नग	1455.09 प्रतिसै.	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	5396.00
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 फरवरी में / इसमें थाला भी बनाया जावेगा) (1.3 मा.दि. प्रति सैकड़ा) X246 = 319.80	2000 पौधे	319.80 प्रति सैकड़ा	5396.00
11.	जैविक एवं रासायनिक खाद एवं कीटनाशक का क्रय (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

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तृतीय वर्ष (2018–19)

1 कि0मी0 में दोनों ओर वृक्षारोपण हेतु

क्र.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रू.)
1.	पौधा परिवहन कार्य नर्सरी से पौधा तैयारी सहित (9.1 मा.दि. का 35 प्रतिशत) 9.1 X 246.00 X 35%	200 पौधे	783.51 प्रति सैकड़ा	1567.00
2	पौध 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 X246 = 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 X246 = 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 X 30 दिवस X 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 कि0मी0 में दोनों ओर वृक्षारोपण हेतु

क्र.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रू.)
1.	द्वितीय निदाई / गुड़ाई कीटनाशक एवं रासायनिक खाद डालना (1.3 मा.दि. प्रति सैकड़ा) 1.3 X246 = 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

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पंचम वर्ष (2020–21)

1 कि0मी0 में दोनों ओर वृक्षारोपण हेतु

क्र.	कार्य विवरण	मात्रा	दर	अधिकतम व्यय (रू.)
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 कि0मी0 में दोनों ओर वृक्षारोपण हेतु

क्र.	वर्ष	अधिकतम व्यय सर्वेस 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

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Sr. No.	Area Allot	Safety Zone leasing area (In Ltr)	Unit rate for Fencing & Plantation 2018-19 1st year Fencing & Plantation Cost (In Rs)	Cost of Fencing & Plantation for 2018-19 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 for 2019-20 2nd year i.e. 1st year maintenance cost (In Rs.)	Cost of Fencing & Plantation for 2019-20 2nd year i.e. 1st year maintenance cost (In Rs.)	Unit rate for Fencing & Plantation for 2020-21 3rd year i.e. 2nd year maintenance cost (In Rs.)	Cost of Fencing& Plantation for 2020-21 3rd year i.e. 2nd year maintenance cost (in Rs.)	Unit rate for Fencing & plantation for 2020-21 4th year i.e. 3rd year maintenance cost (In Rs.)	Cost of Fencing & Plantation for 2020-21 4th year i.e. 3rd year maintenance cost (In Rs.)	Unit rate for fencing & plantation in 2021-22 5th year i.e. 4th year maintenance cost (In Rs.)	Cost of Fencing & Plantation for 2021-22 5th year i.e. 4th year maintenance cost (In Rs.)	Unit rate for fencing & plantation in 2021-22 (5 years)	Total Cost for fencing & plantation in 2018-19 to 2021-22 (5 years)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Kanta	36.000	15625705	3041400.00	2127980.00	1065070.40	2448571.2	936285.00	2343847.87	736307.30	177534.0	46115640.00	1467584.0	381592384.00	2316703	601918491.30
2	Dadan	5.156	13925700	431980.68	302386.48	151307.41	2448571.0	1262552.26	2343847.87	1482870.75	177534.0	9153834.12	1467584.0	756897.54	2316703.1	15038776.85
3	Kanta	76.000	13925700	6368000.00	4457600.00	2231040.00	2448571.0	2050448.00	2343847.0	2134869.22	177534.0	52112786.11	1467584.0	19309632.00	2316703.1	171451867.38
4	Rajpati	4.250	13925700	356125.00	249287.50	124818.75	2448571.0	1537884.75	2343847.0	1850948.25	177534.0	943194.38	1467584.0	697363.00	2316703.1	15501100.63
5	Mandhar	3.040	13925700	254780.00	178346.00	89303.52	2448571.1	1024202.74	2343847.0	1234632.16	177534.0	631462.15	1467584.0	446232.00	2316703.1	10331400.42
	TOTAL	124.446		10396452.68	7277516.98	3644239.70		6358373.75		6538640.33		109356333.76		1359863868.72		2915680758.39

Chief Manager Mktl. Forest Department

Sub Ordinate Engg.(Civil)

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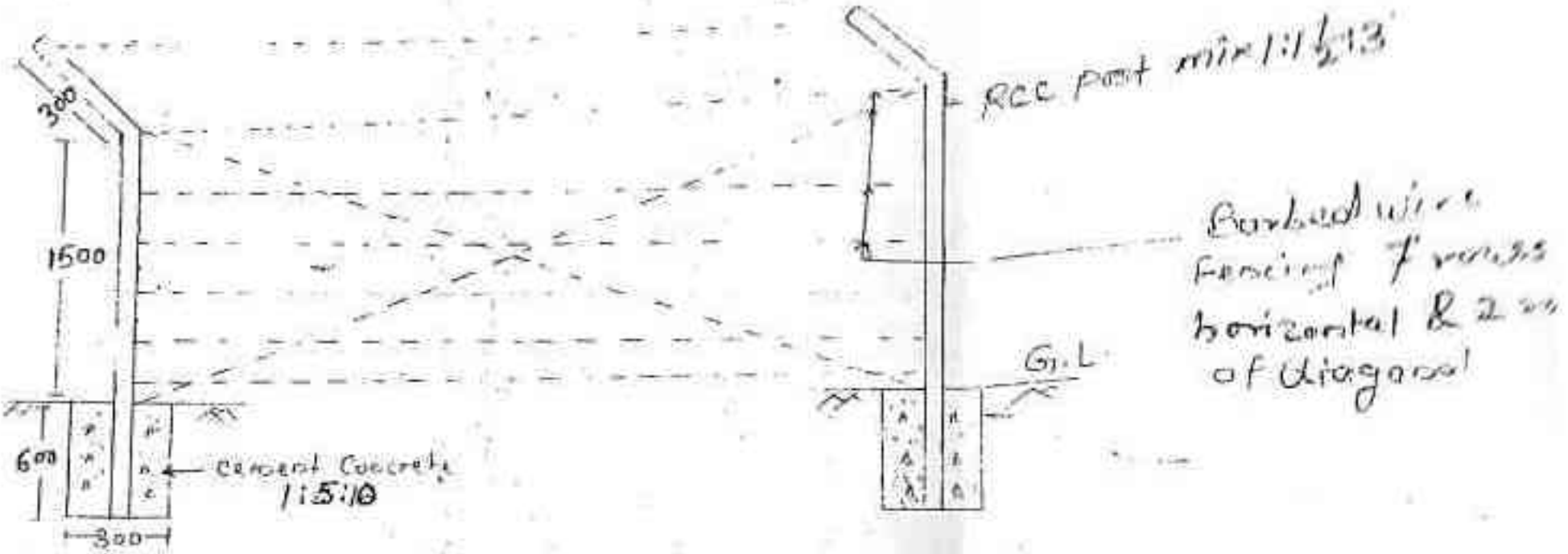
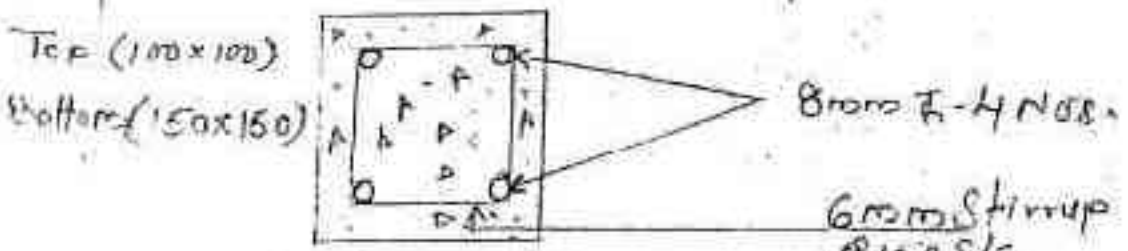
BARBED WIRE FENCE





Section of RCC Post

- NOTE - ALL DIMENSIONS IN MILLIMETRES

Annex 11

SEEPAT ROAD
P.O.: SECL
BILASPUR

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

STD : (07815) 276430(O)
: 7815 275832(R)
Fax : (07815) 275434
email : gevracmvtl@gmail.com

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

जिला: कोरबा (छत्तीसगढ़)
पिन:495452

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

क्रमांक/एस.ई.सी.एल/जी.क्षे./पर्यावरण/2024/ 1479 (5) दिनांक 19/08/2024

VACHAN- PATRA 15
(94.293 HA. FOREST LAND)
(CONDITION NO. 35)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

SEEPAT ROAD
P.O: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटे
South Eastern Coalfields Limited
(साउथईस्टर्नकोलफील्ड्स लिमिटेड) (A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा (छत्तीसगढ़)
पिन 495452

STD : 07815 275403(O)
7815 275832(R)
Fax : 07815 275434
email: gm.gevra@gmail.com

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

क्रमांक एस.ई.सी.एल/गे.क्षे./पर्यावरण/2024/149 (पट्टा) दिनांक 19/08/2024

VACHAN- PATRA 18
(94.293 HA. FOREST LAND)
(CONDITION NO.38)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The user agency shall comply with all 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".

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

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/ 2070 बिलासपुर, दिनांक 24/03/2025

प्रति,

वनमण्डलाधिकारी
कटघोरा वनमण्डल, कटघोरा (छ.ग.)

विषय :– Diversion of Additional 94.293 Ha. Revenue Forest Land of Gevra OC Expansion Project of M/s South Eastern Coalfields Limited for Coal Mining in Korba District of Chhattisgarh (Registration No. FP/CG/MIN/41389/2019 dated 05.11.2019)

संदर्भ :–1. छ.ग. शासन वन एवं जलवायु परिवर्तन विभाग मंत्रालय महानदी भवन रायपुर का पत्र क्रमांक 5–41/2023 –10–2 दिनांक 29.02.2024
2. अपर प्रधान मुख्य वनसंरक्षक (भू–प्रबंध) का पत्र क्रमांक/खनिज/331–274/11 दि.02.01.2025
3. आपका पत्र क्र.तक.अधि./1223 दिनांक 10.03.2025

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विषयांतर्गत लेख है कि मेसर्स एसईसीएल गेवरा क्षेत्र, जिला कोरबा (छ.ग) वन मंडल कटघोरा के अंतर्गत गेवरा ओपन कास्ट कोयला खनन परियोजना का वन संरक्षण अधिनियम 1980 के तहत गैर वानिकी कार्य हेतु 94.293 है. राजस्व वन भूमि का भारत सरकार पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय नई दिल्ली के पत्र दिनांक 09.02.2024 के द्वारा प्रथम चरण की स्वीकृति प्रदान की गई है, प्रथम चरण स्वीकृति में अधिरोपित शर्तों का बिन्दुवार पालन प्रतिवेदन प्रेषित किया गया है, जिसका परिक्षण करने पर निम्नलिखित कमियां पाई गई हैं जिसका विस्तृत प्रतिवेदन अभिलेखों सहित प्रेषित करना सुनिश्चित करें।

1. प्रकरण में समस्त राशियों को कैम्पा खाते में जमा कराने उपरांत कैम्पा पत्रक संलग्न नहीं हैं।
2. क्षतिपूर्ति वृक्षारोपण हेतु 190.00 हे. बिगड़े वनभूमि हेतु राशि जमा किये जाने का विवरण नहीं दिया गया है।
3. बिन्दु क्रमांक 02 **a,b,c,d,e,f** का स्पष्ट प्रतिवेदन प्रस्तुत करें एवं **g** के अनुसार जमा राशि का विवरण प्रस्तुत करें।
4. बिन्दु क्रमांक 04 वन्यप्राणी योजना एवं पक्षी संवर्धन योजना कैट प्लांट योजना अनुमोदन उपरांत प्रावधानित राशि जमा किये जाने का विवरण प्रस्तुत करें।
5. बिन्दु क्रमांक 06 के अनुसार बायो लॉजिकल रिक्लेमेशन के संबंध में आपके द्वारा 200हे. क्षेत्र में साल वृक्षारोपण के लिये राशि 5,68,49,047.45 रू.प्रस्तावित किया गया है जबकि आपके अनुलग्नक 07 के अनुसार आवेदक संस्थान को जारी किया गया मांग पत्र राशि रूपये 6,25,57,552 रू. का उल्लेख है। स्पष्ट करें कि प्रावधानित राशि जमा कराई गई है अथवा नही स्पष्ट करें।
6. बिन्दु क्रमांक 12 **a,b,c,d** के अनुसार मृदा संरक्षण योजना का प्रस्ताव एवं प्रावधानित राशि जो आपके द्वारा जमा कराया गया है स्पष्ट प्रतिवेदन प्रस्तुत करें।

7. बिन्दु क्रमांक 13 a,b,c,d सेफ्टी जोन का कार्य भारत सरकार द्वारा दिये गये निर्देशानुसार किसके द्वारा कराया जा रही है. स्पष्ट करते हुए प्रतिवेदन प्रस्तुत करें। (अनु. 13 में एक पेज का फोटोग्राफ्स संलग्न किया गया है।)
8. बिन्दु क्रमांक 16 के अनुसार खनन क्षेत्र में खड़े वृक्षों का/ वृक्षों कि कटाई एवं विदोहन योजना अनुसार राशि जमा करा ली गई है या नहीं स्पष्ट करें।
9. बिन्दु क्रमांक 19 के अनुसार कितने वृक्षों का ट्रांसलोकेशन आवेदक संस्थान के द्वारा किन साधन एवं संसाधनों के द्वारा किया जाना है प्रतिवेदन अभिमत सहित प्रस्तुत करें।

मुख्य वनसंरक्षक
बिलासपुर वृत्त, बिलासपुर

क्रमांक/तक./ 2071 2025/ बिलासपुर, दिनांक 24/03/2025

प्रतिलिपि –

1. अपर प्रधान मुख्य वन संरक्षक (भू–प्रबंध) अरण्य भवन,सेक्टर –19 अटल नगर, नवा रायपुर की ओर सूचनार्थ संप्रेषित।
2. महाप्रबंधक, एसईसीएल गेवरा क्षेत्र जिला कोरबा (छ.ग.) की ओर सूचनार्थ प्रेषित।

मुख्य वनसंरक्षक
बिलासपुर वृत्त, बिलासपुर

SEEPAT ROAD
P.O.: SECL,
BILASPUR

साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियाकाएकअंशदA subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl.cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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

पी0ओ0-गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन-495452

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

क्रमांक:एस ई सी एल/सप्र/गे.क्षे./ पर्यावरण/2025/ 403

दिनांक 13/02/2025

To
The DFO Katghora
Katghora Division

SUB: Submission of Stage I compliance Report against Diversion of 94.293 ha. Revenue Forest Land for Non forestry purpose in respect of SECL Gevra OCP.
Online proposal No. FP/CG/MIN/41389/2019

REF:

1. MoEF&CC Clearance L.No. 8-41/2017 (Vol.) FC dated 09.02.2024
2. Your letter vide no. 3632 dt: 24.10.2024 received on dt: 08.01.2025

Dear Sir

In reference to your letter vide no. 3632 dt: 24.10.2024, Please find enclosed herewith the Stage I compliance Report against Diversion of 94.293 ha. Revenue Forest Land for Non forestry purpose in respect of SECL Gevra OCP incorporating the Wildlife Management Plan for Small cats.

Submitted for kind information & necessary action please.

Encl: 6 copies

Thanking you,

Yours Faithfully

13/2/25

General Manager
SECL Gevra Area

Copy to

1. APCCF (LM), Raipur
2. CCF Bilaspur

ANNEX-1

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन:495452

STD : 07815 275430(O)
: 7815 275052(R)
Fax : 07815 275434
email :gevramm@gmail.com

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

क्रमांक/एस.ई.सी.एल/महाप्रबं.क्षे./ पर्यावरण/2024/ 149 (A)

दिनांक 19/08/2024

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

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "Legal status of the diverted forest land shall remain unchanged".

19/8/24

S K Mohanty
General Manager
SECL Gevra Area

SEPAT ROAD
P.O. SECL
BILASPUR

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

STD 07815 275430(O)
: 7815 275072(Res)
Fax 07815 275434
email: gevraarea@gmail.com

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

पीओ: गेवरा प्रोजेक्ट
जिला: कोरबा (छत्तीसगढ़)
पिन 495452

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

क्रमांक/एस.ई.सी.एल/गेवरा क्षे./ पर्यावरण/2024 / 169 दिनांक 12/08/2024

प्रति,

अनुभाग अधिकारी
वनमण्डल सुरजपुर

विषय- Submission of Kml of 94.293 ha. Non-Forest for ACA purposed of Dugga Mine, SECL Bhatgoan Area for notification in lieu of proposal for Non-Foresty use of additional 94.293 ha. Revenue forest land in favour of M/s Gevra Opencast Expansion Project Of SECL Gevra Area in Korba District of Chhattisgarh reg.
Proposal No. FP/CG/MIN/41389/2019

संदर्भ- 1. कमांक / एफ.सी.ए. / 2023 / 10629 कटघोरा दिनांक 28.12.2023
2. उपमंडलाधिकारी सूरजपुर वनमंडल सूरजपुर का पत्र क्र./ गो.नि. / 11000 दिनांक 20.12.2023

महोदय,

उपरोक्त विषयांतर्गत वांछित अतिरिक्त आवेदनुसार ग्राम 94.293 है. क्षेत्र को पूर्व में पुष्टारोपण क्षेत्र का डी.पी.आर. बी.जी.पी.एस. सर्वे एवं सिर्फ की कार्यालयी अवलोकन एवं अग्रिम कार्यवाही हेतु आपकी ओर प्रेषित की जा रही है।

संलग्न – उपरोक्तानुसार

भवदीय,

प्रतिलिपि –
1. वनमंडलाधिकारी कटघोरा वनमण्डल कटघोरा
2. महाप्रबंधक वन एवं पर्यावरण विभाग एसईसीएल बिलासपुर

12/8/24
महाप्रबंधक
एस.ई.सी.एल. गेवरा क्षेत्र

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)

Phone/Fax No.: 07815-250157, mail : dfo-katghora.cg@gov.in

360

क्रमांक / तक.अधि. / 2023 / 1810

कटघोरा, दिनांक 26.12.2023

प्रति,

महाप्रबंधक,
एस.ई.सी.एल. गेवरा क्षेत्र
जिला कोरबा (छ.ग.)

विषय : Submission of Kml of 94.293 ha. Non-Forest Land for ACA purposed of Dugga Mine, SECL Bhatgoan Area for notification in lieu of proposal for Noc –foresty use of additional 94.293ha. Revenue forest land in favour of M/s Gevra Opencast Expansion Project of SECL Gevra Area in Korba District of Chhattisgarh reg.
Proposal No. FP/CG/MIN/41389/2019

संदर्भ : वनमंडलाधिकारी सूरजपुर वनमंडल सूरजपुर का पत्र क्र. / मा.नि. / 11009 दिनांक 20.12.2023

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उपरोक्त विषयांतर्गत लेख है कि महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा द्वारा गेवरा ओपन कास्ट परियोजना 94.293 है. हेतु ACA (Accredited Compensatory Afforestation) क्षेत्र चयन कर के, एम.एल. फाईल संलग्न कर सूरजपुर वनमंडल में प्रेषित की गई थी। वनमंडल सूरजपुर के द्वारा लेख है कि के एम.एल. फाईल के आधार पर उक्त प्रस्तावित क्षेत्र का सही–सही सीमा लाईन ज्ञात किया जाना संभव नहीं हो पा रहा है।

अतः उक्त प्रकरण के संबंध में प्रतिपूरक वनरोपण हेतु 94.293 है. क्षेत्र का पूर्व में वृक्षारोपण क्षेत्र का डी.पी.आर., डी.जी.पी.एस. कार्य एवं जिससे सही जानकारी सूरजपुर वनमंडल को उपलब्ध कराना सुनिश्चित करें जिससे उक्त क्षेत्र का डी.जी.पी.एस. कार्य तथा क्षेत्र का सत्यापन किया जा सके।

संलग्न : उपरोक्त पत्र की छायाप्रति।

वन मण्डलाधिकारी
कटघोरा वनमण्डल कटघोरा

पृ. क्रमांक / तक.अधि. / 2023 / 1810

कटघोरा, दिनांक 26.12.2023

प्रतिलिपि,

1. अपर प्रधान मुख्य वन संरक्षक (भू–प्रबं.) आरण्य भवन, सेक्टर–19, नया रायपुर की ओर सूचनार्थ संप्रेषित।
2. मुख्य वन संरक्षक बिलासपुर वृत्त, बिलासपुर की ओर सूचनार्थ संप्रेषित।
3. मुख्य वन संरक्षक सरगुजा वृत्त, सरगुजा की ओर सूचनार्थ संप्रेषित।
4. वनमंडलाधिकारी सूरजपुर वनमंडल सूरजपुर की ओर सूचनार्थ प्रेषित।

वन मण्डलाधिकारी
कटघोरा वनमण्डल कटघोरा

कार्यालय वनमण्डलाधिकारी, सूरजपुर वनमण्डल सूरजपुर (छ.ग.)

Phone No. (07775)-266592 (O) E-mail Id -dfosurajpur@gmail.com

क्रमांक/मा.वि./ 11009 सूरजपुर, दिनांक/20/12/2023

प्रति,

महाप्रबंधक एस.ई.सी.एल

गेवरा क्षेत्र।

विषय :- Submission of KML of 94.293 hac. Non Forest land for ACA Purposed of Dugga Mine SECL Bhatgoan Area for notification in lieu of proposal for Non foresty use of Additional 94.293 Hac. Revenue forest land in favour of M/s Gevra Open Cast Expansion Project of SECL Gevra Area in Korba District of Chhattisgarh-reg. Proposal No:- FP/CG/MIN/41389/2019

सन्दर्भ :- 1. वनमण्डलाधिकारी कटघोरा वनमण्डल कटघोरा के पत्र क्रमांक/तक.अधि./2023/10275 दिनांक 14.12.2023

2. उपवनमण्डलाधिकारी सूरजपुर का पत्र क्रमांक/1641/वि.लि./2023 दिनांक 15.12.2023

—00—

विषयान्तर्गत संदर्भित पत्र में वनमण्डलाधिकारी कटघोरा वनमण्डल कटघोरा के द्वारा महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा द्वारा गेवरा ओपन कास्ट परियोजना 94.293 है. हेतु ACA (Accredited Compensatory Afforestation) क्षेत्र जिला सूरजपुर में चयन किया गया है, जिसका स्थल निरीक्षण के.एम.एल फाईल के आधार पर किया जाकर जांच प्रतिवेदन उपवनमण्डलाधिकारी सूरजपुर के द्वारा दिनांक 15.12.2023 को किया गया। जांच प्रतिवेदन अनुसार उक्त प्रस्तावित क्षेत्र में एस.ई.सी. एल गेवरा क्षेत्र के अधिकारी/कर्मचारियों के साथ भ्रमण किया गया। प्रस्तावित क्षेत्र का जी.जी.पी.एस. सर्वे कार्य नहीं किया गया है एवं पिल्लर नहीं लगाये गये है, मात्र के.एम.एल फाईल के आधार पर प्रस्तावित क्षेत्र का सीमा लाईन ज्ञात किया जाना संभव नहीं हो पाया। उक्त क्षेत्र में के.एम.एल फाईल के अनुसार अकेशिया, सागौन एवं मिलगिरी प्रजाति के वृक्ष विद्यमान पाये गये जिनका घनत्व 0.4 से अधिक होना पाया गया।

अतः आपको निर्देशित किया जाता है कि उक्त प्रकरण के सापेक्ष में सम्भावित क्षतिपूर्ति वृक्षारोपण हेतु 94.293 है. क्षेत्र का पूर्व में वृक्षारोपण क्षेत्र का जी.पी.आर. उपलब्ध कराना सुनिश्चित करें, ताकि उक्त वृक्षारोपण किस वर्ष का है एवं मुख्य रूप से किन प्रजातियों का रोपण कितनी मात्रा में किया गया है। तथा उक्त क्षेत्र का जी.जी.पी.एस. सर्वे कार्य एवं पिल्लर लगाना सुनिश्चित करें। ताकि प्रस्तावित क्षेत्र का सीमा लाईन ज्ञात किया जाना एवं जी.जी.पी.एस. सर्वे रिपोर्ट का सत्यापन किया जा सके।

वनमण्डलाधिकारी
सूरजपुर वनमण्डल, सूरजपुर

पृ.क्रमांक/मा.वि./ 11010 सूरजपुर, दिनांक/20/12/2023

प्रतिलिपि- 1. अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध) अटलनगर नया रायपुर की ओर सूचनार्थ सम्प्रेषित।

2. वनमण्डलाधिकारी कटघोरा वनमण्डल कटघोरा को ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

वनमण्डलाधिकारी
सूरजपुर वनमण्डल, सूरजपुर

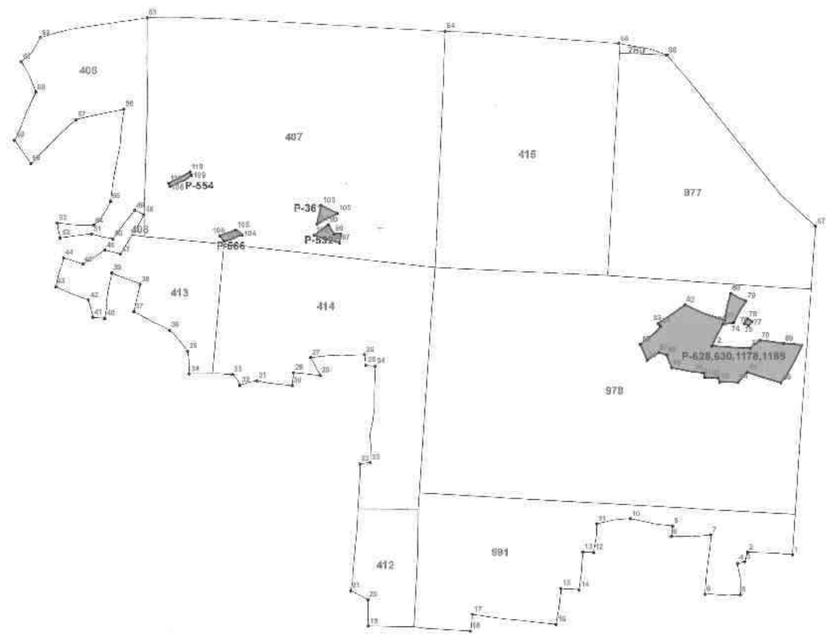
GEO-REFERENCED BOUNDARY MAP OF ACA LAND (AREA-94.293 HA) AT DUGGA OCM,BHATGAON AREA AGAINST DIVERSION OF 94.293 HA REVENUE FOREST LAND OF GEVRA OCP,GEVRA AREA,SECL

82°58'0"E 82°58'30"E 82°59'0"E 82°59'30"E 83°0'0"E

23°23'0"N 23°22'30"N 23°22'0"N 23°21'30"N

N

Points Id	Latitude	Longitude
1	23° 22' 10.767" N	82° 59' 24.121" E
2	23° 22' 10.933" N	82° 59' 21.479" E
3	23° 22' 10.374" N	82° 59' 21.313" E
4	23° 22' 10.283" N	82° 59' 20.898" E
5	23° 22' 8.440" N	82° 59' 21.042" E
6	23° 22' 8.472" N	82° 59' 16.989" E
7	23° 22' 11.951" N	82° 59' 19.340" E
8	23° 22' 11.846" N	82° 59' 17.032" E
9	23° 22' 12.479" N	82° 59' 17.113" E
10	23° 22' 12.902" N	82° 59' 14.625" E
11	23° 22' 12.613" N	82° 59' 12.665" E
12	23° 22' 10.944" N	82° 59' 12.471" E
13	23° 22' 10.976" N	82° 59' 11.839" E
14	23° 22' 8.757" N	82° 59' 11.626" E
15	23° 22' 8.846" N	82° 59' 10.551" E
16	23° 22' 6.729" N	82° 59' 10.278" E
17	23° 22' 7.313" N	82° 59' 5.362" E
18	23° 22' 5.343" N	82° 59' 5.250" E
19	23° 22' 5.644" N	82° 58' 59.254" E
20	23° 22' 8.207" N	82° 58' 59.248" E
21	23° 22' 8.740" N	82° 58' 58.224" E
22	23° 22' 16.182" N	82° 58' 58.793" E
23	23° 22' 16.254" N	82° 58' 59.406" E
24	23° 22' 21.894" N	82° 58' 59.704" E
25	23° 22' 21.972" N	82° 58' 59.157" E
26	23° 22' 22.581" N	82° 58' 59.073" E
27	23° 22' 22.414" N	82° 58' 55.895" E
28	23° 22' 21.367" N	82° 58' 56.440" E
29	23° 22' 21.539" N	82° 58' 54.905" E
30	23° 22' 20.783" N	82° 58' 54.788" E
31	23° 22' 21.078" N	82° 58' 52.767" E
32	23° 22' 20.812" N	82° 58' 51.758" E
33	23° 22' 21.446" N	82° 58' 51.310" E
34	23° 22' 21.493" N	82° 58' 48.782" E
35	23° 22' 22.819" N	82° 58' 48.682" E
36	23° 22' 24.068" N	82° 58' 47.625" E
37	23° 22' 25.149" N	82° 58' 45.559" E
38	23° 22' 26.759" N	82° 58' 45.925" E
39	23° 22' 27.424" N	82° 58' 44.257" E
40	23° 22' 24.767" N	82° 58' 43.862" E
41	23° 22' 24.809" N	82° 58' 43.156" E
42	23° 22' 25.837" N	82° 58' 42.904" E
43	23° 22' 26.641" N	82° 58' 40.973" E
44	23° 22' 28.312" N	82° 58' 41.451" E
45	23° 22' 27.939" N	82° 58' 42.567" E
46	23° 22' 28.761" N	82° 58' 43.869" E
47	23° 22' 28.524" N	82° 58' 44.771" E
48	23° 22' 30.854" N	82° 58' 46.158" E
49	23° 22' 31.095" N	82° 58' 45.615" E
50	23° 22' 29.433" N	82° 58' 44.335" E
51	23° 22' 29.734" N	82° 58' 43.105" E
52	23° 22' 29.494" N	82° 58' 41.261" E
53	23° 22' 30.370" N	82° 58' 41.086" E
54	23° 22' 30.213" N	82° 58' 43.214" E
55	23° 22' 31.640" N	82° 58' 44.199" E
56	23° 22' 37.025" N	82° 58' 44.990" E
57	23° 22' 36.419" N	82° 58' 42.201" E
58	23° 22' 33.878" N	82° 58' 39.547" E
59	23° 22' 35.262" N	82° 58' 38.595" E
60	23° 22' 38.036" N	82° 58' 39.818" E
61	23° 22' 39.858" N	82° 58' 39.021" E
62	23° 22' 41.268" N	82° 58' 40.136" E
63	23° 22' 42.435" N	82° 58' 46.381" E
64	23° 22' 41.567" N	82° 59' 3.855" E
65	23° 22' 40.794" N	82° 59' 14.031" E
66	23° 22' 40.103" N	82° 59' 16.838" E
67	23° 22' 30.047" N	82° 59' 25.509" E
68	23° 22' 20.882" N	82° 59' 23.472" E
69	23° 22' 23.172" N	82° 59' 23.609" E
70	23° 22' 23.358" N	82° 59' 22.232" E
71	23° 22' 22.914" N	82° 59' 21.636" E
72	23° 22' 23.053" N	82° 59' 19.421" E
73	23° 22' 24.325" N	82° 59' 20.061" E
74	23° 22' 24.421" N	82° 59' 20.707" E
75	23° 22' 24.364" N	82° 59' 21.316" E
76	23° 22' 24.230" N	82° 59' 21.563" E
77	23° 22' 24.483" N	82° 58' 21.765" E
78	23° 22' 24.613" N	82° 58' 21.504" E
79	23° 22' 25.684" N	82° 59' 21.408" E
80	23° 22' 26.143" N	82° 59' 20.533" E
81	23° 22' 24.552" N	82° 59' 20.166" E
82	23° 22' 25.460" N	82° 59' 17.854" E
83	23° 22' 24.369" N	82° 59' 16.274" E
84	23° 22' 24.200" N	82° 59' 16.433" E
85	23° 22' 23.137" N	82° 59' 15.249" E
86	23° 22' 22.215" N	82° 59' 15.636" E
87	23° 22' 22.533" N	82° 59' 16.316" E
88	23° 22' 22.522" N	82° 59' 16.775" E
89	23° 22' 21.749" N	82° 59' 17.066" E
90	23° 22' 21.484" N	82° 59' 18.949" E
91	23° 22' 21.205" N	82° 59' 19.014" E
92	23° 22' 21.152" N	82° 59' 19.769" E
93	23° 22' 20.950" N	82° 59' 19.862" E
94	23° 22' 20.911" N	82° 59' 20.951" E
95	23° 22' 21.481" N	82° 59' 21.495" E
96	23° 22' 29.148" N	82° 58' 57.604" E
97	23° 22' 29.662" N	82° 58' 57.668" E
98	23° 22' 29.699" N	82° 58' 57.257" E
99	23° 22' 30.211" N	82° 58' 56.927" E
100	23° 22' 29.597" N	82° 58' 56.117" E
101	23° 22' 30.254" N	82° 58' 56.296" E
102	23° 22' 30.888" N	82° 58' 57.472" E
103	23° 22' 31.351" N	82° 58' 56.530" E
104	23° 22' 29.628" N	82° 58' 51.892" E
105	23° 22' 29.903" N	82° 58' 51.515" E
106	23° 22' 29.585" N	82° 58' 50.597" E
107	23° 22' 29.268" N	82° 58' 50.839" E
108	23° 22' 32.485" N	82° 58' 47.655" E
109	23° 22' 33.139" N	82° 58' 48.929" E
110	23° 22' 33.334" N	82° 58' 48.835" E
111	23° 22' 32.666" N	82° 58' 47.584" E



Sl.No	District	Tehsil	Village	Khasra	Area
1	Surajpur	Bhatgaon	Bhatgaon	413	3.487
2	Surajpur	Bhatgaon	Bhatgaon	414	9.690
3	Surajpur	Bhatgaon	Bhatgaon	978	23.952
4	Surajpur	Bhatgaon	Bhatgaon	415	12.201
5	Surajpur	Bhatgaon	Bhatgaon	780	0.079
6	Surajpur	Bhatgaon	Bhatgaon	977	9.800
7	Surajpur	Bhatgaon	Bhatgaon	412	2.056
8	Surajpur	Bhatgaon	Bhatgaon	991	8.355
9	Surajpur	Bhatgaon	Bhatgaon	408	4.752
10	Surajpur	Bhatgaon	Bhatgaon	407	20.109
11	Surajpur	Bhatgaon	Bhatgaon	408	0.038
Total Area					94.293

SL.No	Mine Name	Khasra	Area (Ha)	Remarks
1	Dugga	P-554	0.028	Forest Land
2	Dugga	P-566	0.036	Forest Land
3	Dugga	P-361	0.049	Forest Land
4	Dugga	P-532	0.069	Forest Land
5	Dugga	P-631	0.008	Forest Land
6	Dugga	P-628,630,1178,1189	1.980	Forest Land
			2.170	

Legend NOT TO SCALE

- Points
- Gevra_ACA Land_Gevra_94.293 HA
- Forest_Land

Note:-
1. DGPS Survey has been conducted on the pillars that were established by the Unit/Mine authority.
2. DGPS Survey carried by CMPDI Headquarter team.

General Manager, Bhatgaon Area — 16/1/25
Nodal officer(Forest), Bhatgaon Area — 16/1/25
Nodal officer (L&R), Bhatgaon Area — 12/01/25
Area Survey officer, Bhatgaon Area — 16/1/25
Sub Area Manager, Dugga Sub Area — 16/1/25
Colliery Manager, Dugga O.C.M. — 15/01/2025
Colliery Surveyer, Dugga O.C.M. — 16/1/25

Note # 1

SECL Gevra OCP has been granted Stage I/ In-principle approval for diversion of 94.293 Ha. Revenue Forest land for Non Forestry Purpose on dt: 09.02.2024 Annex 1. The condition no. 1 a of the above mentioned approval states

"*As per the provisions of rule (13) of Van (Sanrakshan Evam Samvardhan) Rules, 2023, the Compensatory Afforestation shall be carried over non-forest land equal in extent to the forest area proposed. The State shall submit relevant documents/ certificates/ maps/KML file for suitable non-forest land so identified. The suitable non-forest land for the compensatory afforestation shall 8-41/2017-FC(Vol.) I/64933/2024 be identified as per the extant guidelines on the matter and approval for the same will be taken from the Ministry before going for notification as forest under Indian Forest Act or other relevant Act;*"

On dt: 14.12.2023, APCCF (LM), Raipur communicated to DFO, Katghora that CA sites earlier identified in Degraded Forest Land (DFL) (1:2) is to be changed to Non Forest Land (NFL) belonging to User Agency (1:1) as per the ACA Guideline dtd. 21.08.2023. Accordingly the Site at Dugga OC, Surajpur was identified and inspection was done by State Forest Department officials on 15.12.2023. In continuation with the same, it was directed by DFO Surajpur for installations of boundary pillars & submission of DGPS survey Report of the identified site through his letter vide no. 11009 dt: 20.12.2023 (Annex 2). Accordingly Dugga OC Surajpaur was directed to install boundary pillars via E office file no. 1333623 dt: 08.01.2024 (Annex 3).

Recently on dt: 10.04.2024, Mr. K. Kumre, Manager Dugga OC has telephonically communicated that the work of pillaring has been completed.

Therefore now it is required to carry out DGPS survey of 94.293 Ha. ACA land at Dugga through CMPDIL RI V.

Submitted for kind perusal please & onward submission to General Manager (Forest), SECL HQ Bilaspur towards obtaining Approval to carry out DGPS survey of ACA land at Dugga OC against diversion of 94.293 ha. Revenue Forest land through CMPDIL RI V w.r.t SECL Gevra OCP & to direct CMPDIL RI V to carry out DGPS survey of the said land.

Annex 1 94_293Ha_09022024_Stage I.pdf
Annex 2 20_12_2023.pdf
Annex 3.pdf

11/04/2024 11:42 AM

ANUMOL R PANICKER
MANAGER(ENVIRONMENT)

File No. SNO./SECL/GM/GA/ENVT./2024/28 (Computer No. 1455985)
Generated from eOffice by S MISHRA, CM(MIN/GEOM)-RI-5, CMPDI, CHIEF MANAGER(MINING), CMPDI on 01/08/2024 05:01 PM

Note # 2

Submitted for kind perusal please & onward submission to General Manager (Forest), SECL HQ Bilaspur towards obtaining Approval to carry out DGPS survey of ACA land at Dugga OC against diversion of 94.293 ha. Revenue Forest land through CMPDIL RI V w.r.t SECL Gevra OCP & to direct CMPDIL RI V to carry out DGPS survey of the said land.

11/04/2024 11:47 AM **GAGAN KUMAR KAPARIYA**
SENIOR MANAGER(MINING)

Note # 3

Forwarded for needful action.

11/04/2024 01:32 PM **SWARUP KUMAR MOHANTY**
AREA GENERAL MANAGER

Note # 4

P

12/04/2024 10:33 AM **BABULI KISHORE JENA**
GENERAL MANAGER(FOREST)/HOD

Note # 5

Gevra Area at Note # 1 confirmed that Pillaring work at identified ACA land at Dugga OC has been completed.

Therefore, CMPDIL, RI-V, Bilaspur has requested to confirm the timeline by which this job can be completed as the project is critical.

May be forwarded for needful please.

13/04/2024 10:34 AM **DUSHYANT KUMAR SAHU**
MANAGER(MINING 1ST CLASS)

Note # 6

Forwarded to CMPDIL, RI-V, Bilaspur has requested to confirm the timeline by which this job can be completed as the project is critical.

13/04/2024 10:49 AM **BABULI KISHORE JENA**
GENERAL MANAGER(FOREST)/HOD

Note # 7

For needful please.

13/04/2024 09:01 PM **MANOJ KUMAR**
REGIONAL DIRECTOR(RI-V)

Note # 8

Presently CMPDI is taking up job of DGPS survey of Pandavpara, Katkona

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UG and CA land for Katkona UG. After completion of these jobs job related Gevra area CA land shall be taken up. In case job related to CA land of Gevra OC is having high priority CMPDI shall take up this job before above job.
Please suggest accordingly.

15/04/2024 01:22 PM **S MISHRA**
CHIEF MANAGER(MINING)

Note # 9
The DGPS survey of CA land at Dugga OC may be carried out after completion of DGPS survey of Pandavpara, Katkona UG and CA land for Katkona UG. Accordingly time line may be given.

15/04/2024 11:59 PM **MANOJ KUMAR**
REGIONAL DIRECTOR(RI-V)

Note # 10
This survey shall be carried out tentatively after 02/05/2024.

16/04/2024 01:03 PM **S MISHRA**
CHIEF MANAGER(MINING)

Note # 11
For needful please.

16/04/2024 06:04 PM **MANOJ KUMAR**
REGIONAL DIRECTOR(RI-V)

Note # 12

Forwarded for kind approval to carryoutDGPS survey of proposed ACA land at Dugga OC, Bhatgaon Area against diversion of 94.293 ha. Revenue Forest land of Gevra OC through CMPDIL RI V , Bilaspur

18/04/2024 05:01 PM **BABULI KISHORE JENA**
GENERAL MANAGER(FOREST)/HOD

Note # 13
Please examine & comments.

18/04/2024 05:22 PM **N. FRANKLIN JAYAKUMAR**
DIRECTOR(TECHNICAL/PROJECT & PLANNING)

Note # 14
For needful.

20/04/2024 02:02 PM **PRADIP KUMAR**
AREA GENERAL MANAGER

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Note # 15
Please examine & comments.

23/04/2024 12:59 PM **SUNIL HARSH**
STAFF OFFICER(P&P)

Note # 16
Dear Sir
The Area of CA land under Dugga OCM has been Recommebded by GM(ENVT) for kusumunda OC (43.94 ha)and Gevra OCM (94.293) under ACA scheme
DGPS for above ACA land is required and may kindly be considered for the same.

gmail Gm envt.pdf

28/04/2024 11:47 AM **KHILANAND KOMRE**
DEPUTY MANAGER(MINING)

Note # 17
As per Note #1

Eoffice no. 1333623, competent approval for installation of boundary pillars along the boundary of 95 hac non forest land at Dugga OC, Accredited CA against diversion of 94.293 hac of forest through SECL Dugga OC has been obtained.

As per Note # 10

This DGPS survey shall be carried out tentatively after 2/5/2024.

As per note # 12

DGPS survey of proposed CA land at Dugga OC Bhatgaon Area against the diversion of 94.293 hac. Revenue forest land of Gevera OC through CMPDIL RI V Bilaspur.

As per note # 16

The CA land under Dugga OCM has been recommended by GM(Envt.) for Gevera OC 94.293 hac under ACA scheme.

Therefore, DGPS survey for above non forest land of Dugga OC, may kindly be considered.

30/04/2024 06:43 PM **SUNIL HARSH**
STAFF OFFICER(P&P)

Note # 18
DGPS survey of proposed ACA land at Dugga OC, Bhatgaon Area against diversion of 94.293 ha. Revenue Forest land of Gevra OC may be done through CMPDIL RI V , Bilaspur, as recommended by GM(Forest)/HOD, SECL, Bilaspur.

02/05/2024 05:35 PM **PRADIP KUMAR**
AREA GENERAL MANAGER

Note # 19
Forwarded for kind perusal and approval please.

02/05/2024 05:45 PM **BABULI KISHORE JENA**
GENERAL MANAGER(FOREST)/HOD

Note # 20
Approved.

02/05/2024 07:11 PM **N. FRANKLIN JAYAKUMAR**
DIRECTOR(TECHNICAL/PROJECT & PLANNING)

Note # 21
Forwarded for needful please.

03/05/2024 05:27 PM **BABULI KISHORE JENA**
GENERAL MANAGER(FOREST)/HOD

Note # 22
For necessary action please.

03/05/2024 06:27 PM **MANOJ KUMAR**
REGIONAL DIRECTOR(RI-V)

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साउथ ईस्टर्न कोलफील्डस लिमिटेड
कार्यालय–महाप्रबंधक
भटगांव क्षेत्र

पत्र क्रमांक–एसईसीएल/जीएम/भट/राजस्व/2025/21

दिनांक–16/01/2025

प्रमाण पत्र

दुर्गा ओसीएम0 की 94.293 है0 भूमि जिसका खसरा क्रमांक एवं रकबा नीचे दी गयी तालिका में अंकित है एवं जो एसईसीएल भटगांव क्षेत्र के लिये ए0सी0ए0 हेतु प्रस्तावित है के संबंध में उपखण्डअधिकारी सूरजपुर के पत्र क्रमांक–सडिए/2387 सूरजपुर दिनांक 28.10.2024 के द्वारा लिखित बिन्दुवार प्रमाण पत्र निम्नानुसार है–

बिन्दु क्रमांक–(1) प्रस्तावित गैर वन भूमि का वैधानिक स्वरूप निम्नानुसार है–

संरत क्रमांक	खसरा नं.	रकबा (है0 में)	गैर वन भूमि के वैधानिक स्वरूप	
			निजी भूमि (है0 में)	शासकीय भूमि (है0 में)
1	413	3.487	2.966	0.521
2	414	9.680	9.604	0.076
3	978	23.662	22.320	0.848
4	415	12.261	11.887	0.374
5	780	0.079	0.079	Nil
6	977	9.800	9.728	0.072
7	412	2.069	2.069	Nil
8	991	8.356	8.356	0.494
9	408	4.790	4.122	0.668
10	407	20.109	19.486	0.623
कुल		**94.293**	**90.617**	**3.676**

बिन्दु क्रमांक–(2)–प्रमाणित किया जाता है कि उक्त भूमि में छोटे–बड़े–झाड़/के जंगल की भूमि शामिल नहीं है।

15/01/25
उपखण्ड अधिकारी
दुर्गा ओसीएम0

12/01/2025
खान प्रबंधक
दुर्गा ओसीएम0

19/1/25
सर्वेयर/सर्वे अधिकारी
दुर्गा ओसीएम0

16/1/25
नोडल अधिकारी (भू–राजस्व)
भटगांव क्षेत्र

15/1/25
नोडल अधिकारी (वन)
भटगांव क्षेत्र

15/1/25
क्षेत्रीय सहायक अधिकारी
भटगांव क्षेत्र

महाप्रबंधक (सतर्कता)
भटगांव क्षेत्र

महाप्रबंधक 15/1/25
भटगांव क्षेत्र

महाप्रबंधक
General Manager
एस.ई.सी.एल. भटगांव क्षेत्र
S.E.C.L. Bhatgaon Area

List of the Coordinates of Cardinal Points of ACA Land (Area-94.293 Ha) at Dugga 0 CM, Bhatgaon Area, SECL				
Points_Id	Latitude	Longitude	X_UTM44	Y_UTM44
1	23°22'10.767" N	82°59'24.121" E	703410.324	2585843.275
2	23°22'10.933" N	82°59'21.479" E	703335.236	2585847.361
3	23°22'10.374" N	82°59'21.313" E	703330.761	2585830.095
4	23°22'10.283" N	82°59'20.898" E	703319.012	2585827.130
5	23°22'8.440" N	82°59'21.042" E	703323.886	2585770.480
6	23°22'8.472" N	82°59'18.969" E	703264.988	2585770.658
7	23°22'11.951" N	82°59'19.340" E	703274.054	2585877.838
8	23°22'11.846" N	82°59'17.032" E	703208.535	2585873.698
9	23°22'12.479" N	82°59'17.113" E	703210.568	2585893.209
10	23°22'12.902" N	82°59'14.626" E	703139.770	2585905.263
11	23°22'12.613" N	82°59'12.668" E	703084.273	2585895.604
12	23°22'10.944" N	82°59'12.471" E	703079.379	2585844.181
13	23°22'10.976" N	82°59'11.839" E	703061.423	2585844.923
14	23°22'8.757" N	82°59'11.626" E	703056.317	2585776.579
15	23°22'8.846" N	82°59'10.551" E	703025.745	2585778.879
16	23°22'6.729" N	82°59'10.278" E	703018.875	2585713.652
17	23°22'7.313" N	82°59'5.362" E	702879.016	2585729.691
18	23°22'6.343" N	82°59'5.250" E	702876.262	2585699.804
19	23°22'6.644" N	82°58'59.254" E	702705.834	2585706.721
20	23°22'8.207" N	82°58'59.248" E	702704.995	2585754.826
21	23°22'8.740" N	82°58'58.224" E	702675.691	2585770.798
22	23°22'16.182" N	82°58'58.793" E	702688.698	2585999.986
23	23°22'16.254" N	82°58'59.406" E	702706.089	2586002.419
24	23°22'21.894" N	82°58'59.704" E	702712.155	2586176.070
25	23°22'21.972" N	82°58'59.157" E	702696.597	2586178.248
26	23°22'22.581" N	82°58'59.073" E	702693.959	2586196.938
27	23°22'22.414" N	82°58'55.895" E	702603.764	2586190.574
28	23°22'21.367" N	82°58'56.440" E	702619.683	2586158.576
29	23°22'21.539" N	82°58'54.906" E	702576.055	2586163.259
30	23°22'20.783" N	82°58'54.788" E	702573.033	2586139.954
31	23°22'21.078" N	82°58'52.767" E	702515.509	2586148.251
32	23°22'20.812" N	82°58'51.758" E	702486.966	2586139.674
33	23°22'21.446" N	82°58'51.310" E	702473.965	2586159.013
34	23°22'21.493" N	82°58'48.782" E	702402.139	2586159.454
35	23°22'22.819" N	82°58'48.682" E	702398.741	2586200.213
36	23°22'24.068" N	82°58'47.625" E	702368.216	2586238.225
37	23°22'25.149" N	82°58'45.559" E	702309.081	2586270.693
38	23°22'26.759" N	82°58'45.925" E	702318.779	2586320.347
39	23°22'27.424" N	82°58'44.267" E	702271.431	2586340.154
40	23°22'24.767" N	82°58'43.862" E	702261.041	2586258.258
41	23°22'24.809" N	82°58'43.156" E	702240.969	2586259.299
42	23°22'25.837" N	82°58'42.904" E	702233.391	2586290.823
43	23°22'26.641" N	82°58'40.973" E	702178.211	2586314.807
44	23°22'28.312" N	82°58'41.451" E	702191.090	2586366.404
45	23°22'27.939" N	82°58'42.567" E	702222.922	2586355.337
46	23°22'28.761" N	82°58'43.869" E	702259.563	2586381.141
47	23°22'28.524" N	82°58'44.771" E	702285.286	2586374.214
48	23°22'30.854" N	82°58'46.158" E	702323.685	2586446.416
49	23°22'31.095" N	82°58'45.615" E	702308.159	2586453.617
50	23°22'29.433" N	82°58'44.335" E	702272.517	2586401.988
51	23°22'29.734" N	82°58'43.106" E	702237.493	2586410.766
52	23°22'29.494" N	82°58'41.261" E	702185.194	2586402.681
53	23°22'30.370" N	82°58'41.086" E	702179.839	2586429.556
54	23°22'30.213" N	82°58'43.214" E	702240.331	2586425.557
55	23°22'31.640" N	82°58'44.199" E	702267.704	2586469.835
56	23°22'37.025" N	82°58'44.990" E	702287.919	2586635.824
57	23°22'36.419" N	82°58'42.201" E	702208.971	2586616.091
58	23°22'33.878" N	82°58'39.547" E	702134.657	2586536.868

List of the Coordinates of Cardinal Points of ACA Land (Area-94.293 Ha) at Dugga 0 CM, Bhatgaon Area, SECL				
Points_Id	Latitude	Longitude	X_UTM44	Y_UTM44
59	23°22'35.262" N	82°58'38.595" E	702107.049	2586579.085
60	23°22'38.036" N	82°58'39.818" E	702140.609	2586664.915
61	23°22'39.858" N	82°58'39.021" E	702117.198	2586720.659
62	23°22'41.268" N	82°58'40.136" E	702148.263	2586764.455
63	23°22'42.435" N	82°58'46.381" E	702325.124	2586802.793
64	23°22'41.567" N	82°59'3.855" E	702821.730	2586782.913
65	23°22'40.794" N	82°59'14.031" E	703111.043	2586763.088
66	23°22'40.103" N	82°59'16.838" E	703191.053	2586742.927
67	23°22'30.047" N	82°59'25.509" E	703441.573	2586436.950
68	23°22'20.882" N	82°59'23.472" E	703387.615	2586154.217
69	23°22'23.172" N	82°59'23.609" E	703390.519	2586224.707
70	23°22'23.358" N	82°59'22.232" E	703351.337	2586229.898
71	23°22'22.914" N	82°59'21.636" E	703334.607	2586216.022
72	23°22'23.053" N	82°59'19.421" E	703271.640	2586219.405
73	23°22'24.325" N	82°59'20.061" E	703289.270	2586258.795
74	23°22'24.421" N	82°59'20.707" E	703307.596	2586262.019
75	23°22'24.364" N	82°59'21.316" E	703324.892	2586260.497
76	23°22'24.230" N	82°59'21.563" E	703331.982	2586256.469
77	23°22'24.483" N	82°59'21.765" E	703337.597	2586264.320
78	23°22'24.613" N	82°59'21.504" E	703330.141	2586268.218
79	23°22'25.684" N	82°59'21.408" E	703326.967	2586301.144
80	23°22'26.143" N	82°59'20.533" E	703301.901	2586314.906
81	23°22'24.552" N	82°59'20.166" E	703292.171	2586265.812
82	23°22'25.460" N	82°59'17.854" E	703226.105	2586292.862
83	23°22'24.369" N	82°59'16.274" E	703181.706	2586258.668
84	23°22'24.200" N	82°59'16.433" E	703186.304	2586253.528
85	23°22'23.137" N	82°59'15.249" E	703153.131	2586220.358
86	23°22'22.215" N	82°59'15.636" E	703164.494	2586192.166
87	23°22'22.633" N	82°59'16.316" E	703183.627	2586205.268
88	23°22'22.522" N	82°59'16.775" E	703196.730	2586202.055
89	23°22'21.749" N	82°59'17.066" E	703205.312	2586178.366
90	23°22'21.464" N	82°59'18.949" E	703258.921	2586170.362
91	23°22'21.205" N	82°59'19.014" E	703260.866	2586162.399
92	23°22'21.152" N	82°59'19.766" E	703282.258	2586161.063
93	23°22'20.950" N	82°59'19.862" E	703285.056	2586154.897
94	23°22'20.911" N	82°59'20.951" E	703315.996	2586154.125
95	23°22'21.481" N	82°59'21.495" E	703331.207	2586171.858
96	23°22'29.148" N	82°58'57.604" E	702649.456	2586398.399
97	23°22'29.662" N	82°58'57.668" E	702651.077	2586414.250
98	23°22'29.699" N	82°58'57.257" E	702639.363	2586415.225
99	23°22'30.211" N	82°58'56.927" E	702629.783	2586430.844
100	23°22'29.597" N	82°58'56.117" E	702607.037	2586411.636
101	23°22'30.254" N	82°58'56.296" E	702611.840	2586431.914
102	23°22'30.888" N	82°58'57.472" E	702644.984	2586451.890
103	23°22'31.351" N	82°58'56.530" E	702618.024	2586465.752
104	23°22'29.628" N	82°58'51.892" E	702487.048	2586410.940
105	23°22'29.903" N	82°58'51.515" E	702476.208	2586419.240
106	23°22'29.585" N	82°58'50.597" E	702450.281	2586409.114
107	23°22'29.268" N	82°58'50.839" E	702457.288	2586399.452
108	23°22'32.485" N	82°58'47.665" E	702365.787	2586497.183
109	23°22'33.139" N	82°58'48.929" E	702401.409	2586517.797
110	23°22'33.334" N	82°58'48.835" E	702398.667	2586523.756
111	23°22'32.666" N	82°58'47.584" E	702363.403	2586502.714

DGPS SURVEY DATA_AT DUGGA OCM		
Point Id	Latitude	Longitude
D1	23° 22' 22.78" N	82° 59' 33.00" E
D2	23° 22' 09.66" N	82° 59' 19.72" E
D3	23° 22' 11.19" N	82° 59' 11.37" E
D4	23° 22' 09.97" N	82° 59' 11.36" E
D5	23° 22' 07.55" N	82° 59' 10.67" E
D6	23° 22' 05.43" N	82° 59' 02.52" E
D7	23° 22' 06.87" N	82° 58' 58.32" E
D8	23° 22' 07.57" N	82° 58' 57.66" E
D9	23° 22' 07.97" N	82° 58' 57.36" E
D10	23° 22' 10.58" N	82° 58' 57.68" E
D11	23° 22' 15.29" N	82° 58' 58.54" E
D12	23° 22' 20.28" N	82° 58' 58.69" E
D13	23° 22' 30.07" N	82° 58' 44.51" E
D14	23° 22' 29.31" N	82° 58' 45.72" E
D15	23° 22' 31.38" N	82° 58' 44.30" E
D16	23° 22' 34.49" N	82° 58' 44.29" E
D17	23° 22' 36.81" N	82° 58' 39.88" E
D18	23° 22' 37.80" N	82° 58' 43.88" E
D19	23° 22' 40.83" N	82° 59' 05.73" E
D20	23° 22' 40.13" N	82° 59' 15.49" E
D21	23° 22' 40.25" N	82° 59' 17.20" E
D22	23° 22' 39.70" N	82° 59' 18.37" E
D23	23° 22' 39.66" N	82° 59' 18.42" E
D24	23° 22' 31.89" N	82° 59' 24.98" E
D25	23° 22' 30.41" N	82° 59' 27.08" E
D26	23° 22' 28.89" N	82° 59' 28.15" E
D27	23° 22' 24.24" N	82° 59' 27.86" E
D28	23° 22' 23.75" N	82° 59' 30.03" E
D29	23° 22' 07.02" N	82° 59' 52.32" E
D30	23° 22' 04.24" N	82° 59' 53.83" E
D31	23° 21' 58.84" N	82° 59' 49.56" E
D32	23° 22' 11.17" N	82° 59' 36.24" E
D33	23° 22' 12.35" N	82° 59' 30.38" E
D34	23° 22' 22.19" N	82° 59' 34.46" E
D35	23° 22' 21.42" N	82° 59' 39.45" E
D36	23° 22' 20.96" N	82° 59' 42.36" E
D37	23° 22' 21.32" N	82° 59' 44.53" E
D38	23° 22' 16.60" N	82° 59' 51.72" E
D39	23° 22' 17.67" N	82° 59' 55.66" E

ANNEX - 3

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटे
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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

जिला: कोरबा(छत्तीसगढ़)
पिन 495452

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

क्रमांक:एस.ई.सी.एल/अप्र/गे.क्षे./ पर्यावरण/2024/ 149 (3) दिनांक 19/ 08/2024

VACHAN- PATRA 2
(94.293 HA. FOREST LAND)
(CONDITION NO. 2)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that

"The User Agency shall transfer the cost of raising and maintaining the compensatory afforestation as per the approved CA Scheme at the current wage rate in consultation with State Forest Department in the account of CAMPA of the concerned State through online portal if required.

The cost of survey, demarcation and erection of permanent pillars, if required on the identified CA land, shall be deposited in advance with the Forest Department by the user agency."

19/8/24

S K Mohanty
General Manager
SECL Gevra Area

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)

Phone/Fax No.: 07815-250157, mail : dfokatghora@gmail.com

क्रमांक / वन.अधि. / 2024 / 3769

कटघोरा, दिनांक 13.06.2024

प्रति,

महाप्रबंधक
एस.ई.सी.एल. गेवरा क्षेत्र
जिला कोरबा (छ.ग.)

संशोधित

विषय : Proposal for seeking prior approval of the central Government under section 2 (1) (ii) of the Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 in favor of M/s South Eastern Coalfield Limited for non-forestry use of additional 94.293 ha. Revenue forest land of Gevra OC expansion project of Coal Mining in Korba District of Chhattisgarh. (RegistrationNo. FP/CG/MIN/41389/2019)

संदर्भ : 1. अ.क्षे.वन.(मु-प्रबंध) रायपुर का पत्र क्र./मु-प्रबंध/खनिज/331-271/553 दिनांक 23.01.2024

2. कार्यालयीन पत्र क्र./वन.अधि./1461 दिनांक 28.02.2024 एवं 1782 दिनांक 11.03.2024

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उपरोक्त विषयान्तर्गत लेख है कि महाप्रबंधक एस.ई.सी.एल. गेवरा क्षेत्र जिला कोरबा द्वारा गेवरा ओपन कास्ट विस्तारीकरण रकबा 94.293 हे. हेतु भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, नई दिल्ली के पत्र दिनांक 09.02.2024 को प्रथम स्वीकृति प्रदान की गई है।

अतः उक्त स्वीकृति के अतिरोपित शर्त क्र. 01 से 41 तक का बिंदुवार पालन प्रतिवेदन शीघ्र इस कार्यालय में प्रस्तुत करना सुनिश्चित करें साथ ही शुद्ध प्रत्याशा मूल्य की राशि निम्नानुसार ई-चालान जनरेट कर कैम्पा कोड में RTGS के माध्यम से जमा करें।

शर्त क्र. 3. के पालन हेतु प्रत्याशा मूल्य की राशि निम्नानुसार **Ad-hoc Campa** में जमा करें।

क्र.	इको क्लास अनुसार	रकबा हे.में.	वन प्रकार	दर	राशि
1.	5B/C2 Northern dry Mixed Deciduous forest	32.847	Dense Forest	1228590/-	40355496
2.	5B/C2 Northern dry Mixed Deciduous forest	61.446	Open Forest	957780/-	58851750
	कुल योग :-	94.293			99207246/-

उपरोक्तानुसार शुद्ध प्रत्याशा मूल्य की राशि रू. 9,92,07,246/- (रूपये नौ करोड़ बानवे लाख सात हजार दो सौ छियालिस मात्र) का ई-चालान जनरेट कर कैम्पा फंड में राशि जमा की जानकारी प्रस्तुत करें।

संलग्न : एन.पी.वी. गणना पत्रक की छायाप्रति।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा
कटघोरा, दिनांक 13/06/2024

पृ. क्रमांक / वन.अधि. / 2024 / 3770
प्रतिलिपि :

1. अपर प्रधान मुख्य वन संरक्षक (मु-प्रबंध) अरण्य भवन, सेक्टर-19, अटल नगर रायपुर की ओर सूचनार्थ संप्रेषित।
2. मुख्य वन संरक्षक बिलासपुर वृत्त, बिलासपुर की ओर सूचनार्थ संप्रेषित।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा

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Created from eOffice by GAGAN KUMAR KAPARIYA, SENIOR MANAGER(MINING), SOUTH EASTERN COALFIELDS LIMITED on 17/06/24 11:32 AM

ANNEX-

Invoice Voucher

South Eastern Coalfields

Business Place : BP22
Invoice Document No. : 5900127013

Amount : 9920724e
In Words : Nine Crore Ninety Two Lakh Seven Thousand Two Hundred Forty Six Rupees
Narration : E-Office No: 15/J/221

Section : 8001
Posting Date : 2/7/2024

Payee Name : CHHATTISGARH CAMPA
Payee Code : 10035566
PAN :
Bank Name : UNION BANK OF INDIA
IFSC : UBIN0990335
Invoice No. : 3769
OT Vendor :

CEMP Vendor :
CEMP Code :
GST :
Bank Branch : RDS BANGALORE
Bank A/c No. : 509842M199195
Date : 13/02/24

Sl No.	PK	G/L Acount	G/L Account Description	Profit Centre	Cost centre	Amount
1	31	7500010	Statutory Receipt			9920724e
2	50	1100080	ARBN clearing account	SECLBESS		9920724e

Parked by
CP(ENV)_8660
Gagan Kumar Khamitha

Parking Date
1/7/2024

Parking Time
8:29:56 PM

Signature

Posted By
BILPASS_8001
T M Sravan Kumar

Posting Date
2/7/2024

Signature

Approver

Signature

UTBR
720240702000153870

ANNEX - 4

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगीकंपनी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा (छत्तीसगढ़)
पिन 495452

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

पोआफि:गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist.: Korba (C.G.)
Pin: 495452

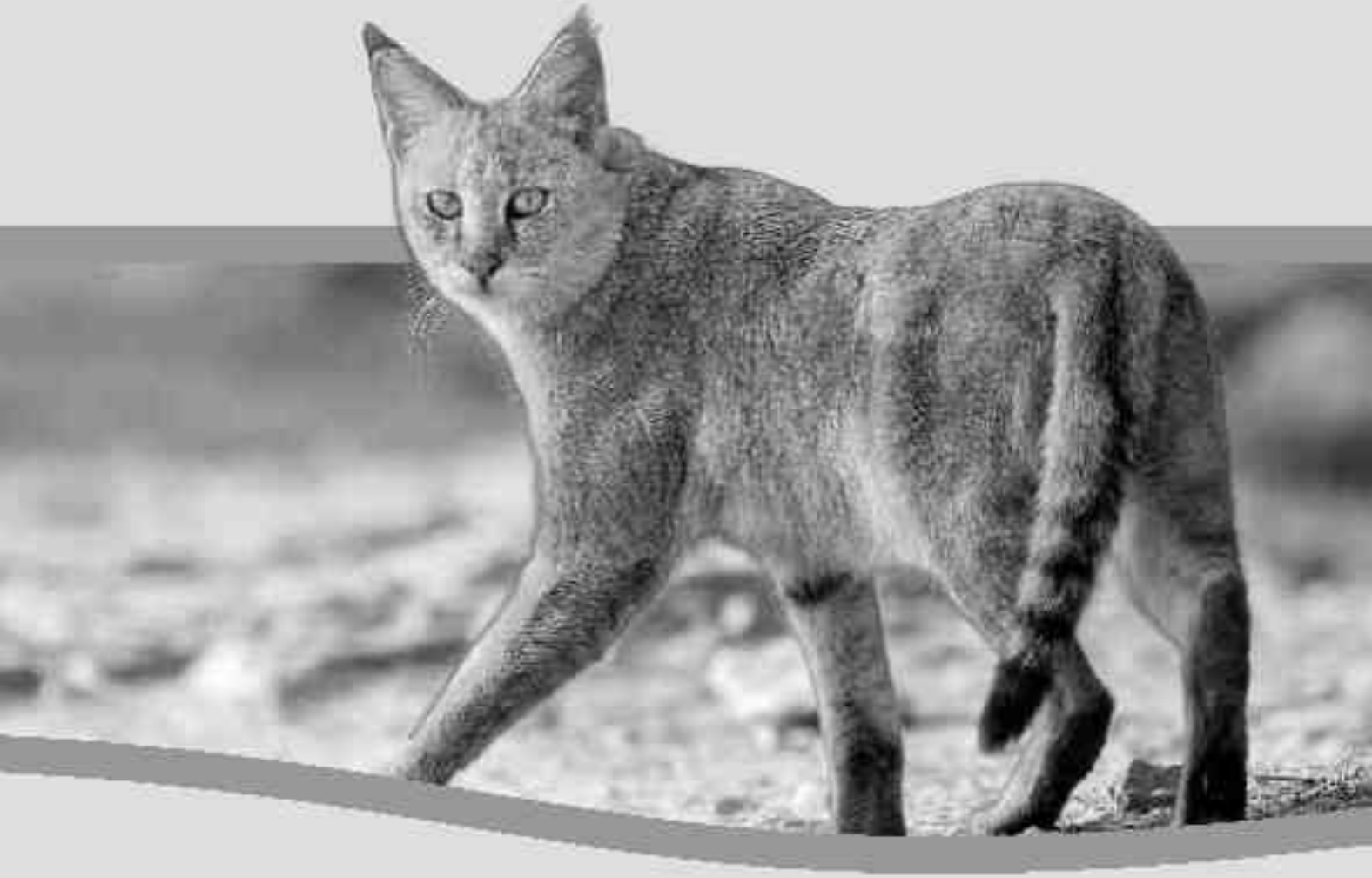
क्रमांक/एस.ई.सी.एल/गप/गे.क्षे./पर्यावरण/2024/147(C) दिनांक 19/09/2024

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

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The User Agency shall transfor the funds towards the cost of Net Present Value (NPV) of the forest land being diverted and
To pay the additional amount of NPV, if so determined, as per the final decision of the Hon'ble Supreme Court of India."

19/9/24
S K Mohanty
General Manager
SECL Gevra Area

WILDLIFE MANAGEMENT PLAN FOR SMALL CATS IN GEVRA OCP EXPANSION PROJECT, CHHATTISGARH



SOUTH EAST COAL LIMITED

November, 2024

Prepared and Published by

State Forest Research and Training Institute (SFRTI)

Zero Point, Near Vidhansabha, Baloda Bazar Road,
Raipur - 493111, Chhattisgarh, India
Phone: 0771-2285121 | Fax: 0771-2285125 | Email: directorsfrti@gmail.com

WILDLIFE MANAGEMENT PLAN FOR SMALL CATS IN GEVRA OCP EXPANSION PROJECT, CHHATTISGARH

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WILDLIFE MANAGEMENT PLAN FOR SMALL CATS IN GEVRA OCP EXPANSION PROJECT, CHHATTISGARH

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State Forest Research and Training Institute

Citation: SFRTI (2024). Wildlife Management Plan for Small Cats in Gevra OCP Expansion Project, Chhattisgarh. State Forest Research and Training Institute, Raipur, Chhattisgarh, India.

State Forest Research and Training Institute

South Eastern Coalfields Limited

Preface

As the Director of the State Forest Research and Training Institute (SFRTI), I am pleased to present the project report titled "Wildlife Management Plan for Small Cats in the Gevra OCP Expansion Project, Chhattisgarh." This report is a testament to our commitment to balancing developmental initiatives with the conservation of biodiversity, particularly in areas impacted by industrial activities.

The Gevra Open Cast Project (OCP) plays a significant role in the region's economic development, yet it also poses challenges to local wildlife, including small cat species that are crucial for maintaining ecological balance. Recognizing the importance of these species and their habitats, our team undertook this project to develop a comprehensive management plan aimed at minimizing adverse impacts while promoting the conservation of small cats in the area.

This report consolidates extensive field research, stakeholder consultations, and expert assessments. It outlines key strategies for habitat preservation, mitigating human-wildlife conflict, and fostering community engagement in wildlife conservation efforts. Our approach emphasizes sustainable practices that align with both environmental stewardship and the socio-economic needs of local communities.

I extend my heartfelt gratitude to all the researchers, field staff, and collaborating organizations who contributed their expertise and dedication to this project. I also appreciate the support from government agencies and local communities, without which this initiative would not have been possible.

We hope that this Wildlife Management Plan serves as a valuable resource for policymakers, conservationists, and industry stakeholders, guiding effective decision-making that safeguards our natural heritage while supporting responsible development.

(B. Ananda Babu)
PCCF & Director
State Forest Research and Training Institute
Raipur, Chhattisgarh

Acknowledgements

The completion of the project report titled "Wildlife Management Plan for Small Cats in the Gevra OCP Expansion Project, Chhattisgarh" represents a collaborative effort that would not have been possible without the dedication and support of numerous individuals and organizations.

I would like to express my appreciation to **Shri K. C. Bebarta** for his ongoing support and guidance as the subject expert. Your commitment to wildlife conservation plays a vital role in the sustainable development of our state.

I would like to extend my sincere gratitude to the research team, **Dr. Manoj Kumar Kashyap, Abhishek Maitry** and **Aakash Jaiswal** at the State Forest Research and Training Institute for their tireless work and commitment to this project. Their expertise and thorough field investigations have provided invaluable insights into the conservation needs of small cats in the region.

I also wish to acknowledge the contributions of **Mr. Kumar Nishant**, DFO Katghora, **Mr. Chandrakant Tikariha**, SDO Pali and staff of Katghora Forest Division, whose collaboration was essential in gathering data and fostering community engagement. Your support and input have enriched this report and strengthened our conservation efforts.

Special thanks are due to the local communities who shared their knowledge and experiences, highlighting the importance of integrating traditional practices with modern conservation strategies. Your involvement has been crucial in developing a management plan that is both effective and culturally sensitive.

Finally, I would like to acknowledge the scientific administrative staff of SFRTI for their assistance in organizing logistics and ensuring the smooth progress of this project.

Together, we have taken significant steps toward preserving the biodiversity of Chhattisgarh. It is my hope that this Wildlife Management Plan for small cats serves as a valuable tool for promoting the coexistence of industry and wildlife in the Gevra region.

(B. Ananda Babu)
PCCF & Director
State Forest Research and Training Institute
Raipur, Chhattisgarh

Contents

Executive Summary

The "Wildlife Management Plan for Small Cats in Gevra OCP Expansion Project", prepared by the State Forest Research and Training Institute (SFRTI), Raipur, is designed to address the conservation needs of small cat species in the Gevra Open Cast Project (OCP) area in Chhattisgarh. Located within one of India's largest coal-producing regions, the Gevra coalfield plays a vital role in meeting the country's energy demands. However, the expansion of mining activities has raised significant concerns for local biodiversity, specifically small cat species, including the Jungle Cat and Rusty-Spotted Cat, which play an important ecological role in controlling rodent and pest populations. These species, often residing outside protected areas, face increased threats from habitat loss, fragmentation, human-wildlife conflict, and poaching due to mining development.

The overarching objective of this management plan is to ensure the conservation and management of small cats within the buffer zones surrounding the Gevra OCP. Key initiatives include conducting field surveys to document small cat habitats, population densities, and the ecological impacts of mining. Mitigating these impacts, enhancing habitats, and creating critical zones with food sources, shelter, and water bodies are priority actions. Additionally, the plan emphasizes involving local communities in conservation efforts to reduce human-wildlife conflicts and increase awareness of small cats' ecological importance. Training local personnel is also crucial to this effort, as it aims to strengthen the protection measures and foster a sustainable coexistence between human activities and wildlife conservation.

Small cats, as keystone species, are essential for ecosystem health, providing natural pest control. With 94.293 hectares of forest land diverted for mining, the plan identifies the challenges these cats face, including habitat fragmentation and environmental degradation. The increased human encroachment and pollution from mining introduce physical and chemical barriers, which isolate small cat populations, reduce genetic diversity, and diminish prey availability. Road construction further fragments habitats, increasing vehicle collision risks for wildlife. As small cats are forced to venture into human-dominated landscapes due to habitat loss, the plan adopts a landscape-level conservation approach to create and maintain habitat connectivity, enabling ecological stability.

To address these threats, the plan outlines habitat management and restoration strategies that include augmenting prey populations, particularly rodents and birds, which are essential for small cats' diets. Water resource development, such as constructing ponds and check dams, is intended to support prey and small cat populations, especially in dry seasons. Vegetative enrichment efforts, including planting native species like Shorea robusta and Madhuca indica, aim to restore forest cover and provide shelter. Removing invasive species, such as Lantana camara, is also prioritized to improve the quality of habitats critical for the prey species that sustain small cats. These strategies are intended to stabilize and expand the small cat populations by restoring and enhancing the ecosystem components they rely on.

The plan's threat analysis categorizes risks into high, medium, and low impact levels. High-impact threats include habitat destruction from mining and unsustainable grazing by free-ranging cattle, which degrades critical habitats for small cats. Medium-impact threats include human-wildlife conflict, where small cats often raid poultry in nearby villages, and the presence of free-ranging dogs, which increase predation risks and can spread disease. Low-impact threats, such as overharvesting forest resources and wildfires, while less immediate, still impact habitat quality and prey availability. These threats underscore the need for a multi-faceted approach, combining habitat restoration, community engagement, and active management to ensure the plan's success.

Community involvement is a cornerstone of this management plan, recognizing that effective conservation depends on local support and awareness. Community outreach programs aim to educate locals about small cats' ecological roles and encourage coexistence. Enhancing the skills and knowledge of frontline staff is also central to the plan, as trained personnel will be better equipped to enforce conservation laws and manage potential conflicts. Institutional strengthening involves setting up conservation units at both the Circle and Division levels to coordinate activities across affected forest divisions, ensuring a cohesive and well-supported effort to protect these vulnerable species.

Monitoring, evaluation, and research are integral to the plan's adaptive approach, allowing for continuous assessment and refinement. Annual and mid-term assessments will track progress, with two comprehensive evaluations planned at the 5th and 10th years. Research will focus on population dynamics of small cats, prey abundance, and habitat changes, providing data to inform conservation strategies and make necessary adjustments. Additionally, studies on small cats' population dynamics and habitat

changes will provide crucial insights into their conservation needs, enabling a responsive and data-driven approach to management.

The plan spans a 10-year implementation period with distinct phases for each component. The initial phase (years 1-2) involves field surveys, area demarcation, and capacity-building efforts. Habitat development activities, including silvi-pasture and grassland enhancement, waterbody construction, and invasive species control, are scheduled for years 2-5. Continuous activities like community outreach, small cat protection measures, and monitoring will be ongoing throughout the 10 years, while long-term research initiatives are scheduled from years 4-10. A detailed budget of ₹2020 lakhs supports these conservation efforts, covering expenses for habitat development, institutional support, community engagement, and research.

Overall, this comprehensive Wildlife Management Plan for the Gevra OCP project area strives to integrate biodiversity conservation with responsible coalfield operations. By implementing structured, sustainable conservation interventions and fostering local community participation, this plan sets a valuable example of balancing economic development with the preservation of critical wildlife populations in an increasingly industrialized landscape.

WILDLIFE MANAGEMENT PLAN FOR SMALL CATS IN GEVRA OCP EXPANSION PROJECT, CHHATTISGARH

1. INTRODUCTION

The very existence of a nation depends on its economic growth. This has resulted in uncontrolled exploitation of available resources for speeding up industrialization, especially in developing countries. But in doing so it adversely effects the environment. It is now realized that a proper emphasis on environment is must for sustainable development. Environment and development should be considered as mutually complementary, interdependent, and an instrument of reinforcing the quality of life. Impact Assessment is the most important aspect of overall Wildlife conservation and management strategy. It identifies major impacts of industry on environment and provides the guidelines to prepare necessary control measures termed as Wildlife Conservation Plan.

Coal continues to remain as the principal source of energy in India, and the coal reserves are abundant in the country. Coal mining has inevitable impacts on forests and forest soils. The risks posed by forest diversion during land clearing activities in coal mining are significant. Because forests, apart from being source of timber and non-timber forest products, they also provide critical environmental/ecosystem services that are crucial for all life forms locally as well as regionally. In order to strike a balance between development and conservation, it has to be ensured that any activity involving diversion of forest land may be considered only after thorough investigation. It should take into account its impending impact on the biodiversity of the area and consequently on the management of the ecosystem.

A critical part of this balanced approach is to spell out the possible impact and possible mitigation measures to address such impacts. Any activities which would be taken up in the project area need to comply with the statutory requirements as provided in the Wildlife (Protection) Act, 1972 and subsequent amendments. Faunal assessment provides a basis for determining relative abundance and rarity of each species which is important for assessing the diversity of fauna of a particular area. Since animals are capable of movements from one place to another, this makes their study entirely different. Different animals prefer different types of habitats for food and shelter. In this regard, MoEFCC guidelines warrant preparation of a project specific Conservation Plan for endangered/Schedule-I faunal species reported in the study area. While the project authorities shall also participate in the Conservation Plan through budgetary support over

the life of the project. The plan will be implemented in consultation with the State Forest and Wildlife Departments.

2. PROJECT BACKGROUND

The Gevra Coalfield, located in the Korba district of Chhattisgarh, is one of the largest coal-producing areas in India, playing a critical role in meeting the nation's energy demands. The coal mining activities, while essential for energy generation, often have significant environmental and ecological impacts, particularly on wildlife. In response to the growing concern over habitat destruction, the diversion of 94.293 hectares of revenue forest land for mining in the Gevra Coalfield has been approved with stipulations to mitigate the impact on local biodiversity, particularly focusing on small cat species.

2.1 Why Small Cats Conservation

Small cats are keystone species, providing crucial economic and ecosystem services such as pest and disease control and their conservation is essential to underpin the integrity of wildlife conservation efforts as such and maintain natural ecosystems across the landscape. A substantial part of distribution of small cats occurs outside Protected Area (PA) Network, making protection, restoration, connectivity of habitats at a landscape level essential to their long-term conservation. These areas are subject to varying degree of habitat degradation and fragmentation and small cats face threatened by human-wildlife conflicts. Ongoing development activities such as mining, increased traffic of vehicles and enhanced anthropogenic footprints impact reduce and fragment wildlife habitat, increasing the interface between humans and wild cats. Considered in this context, the management plan for small cats will adopt a landscape conservation approach.

2.2 Ecological Significance of Small Cats in the Region

Small cats, such as the Jungle Cat (*Felis chaus*), and the Rusty-Spotted Cat (*Prionailurus rubiginosus*), are known to inhabit the forested areas in and around the Gevra Coalfield. These species play a crucial role in maintaining the ecological balance by controlling rodent populations and contributing to the overall health of forest ecosystems. However, they are highly vulnerable to habitat fragmentation, loss of prey base, and disturbances caused by mining activities.

2.3 Need for a Small Cats Management Plan

The diversion of forest land for coal mining can lead to severe habitat loss, forcing

small cats to venture into human-dominated landscapes, increasing human-wildlife conflict, and making them more vulnerable to poaching and road accidents. Recognizing the importance of safeguarding these species and their habitats, a Small Cats Management Plan has been made an integral part of the environmental approval conditions. This plan focuses on mitigating the impacts of mining on small cats and ensuring their long-term survival in the area.

The approval for the diversion of 94.293 hectares of revenue forest land for mining in the Gevra Coalfield comes with the responsibility of mitigating its ecological impacts. The Small Cats Management Plan aims to conserve the vulnerable small cat species in the region by focusing on habitat preservation, conflict mitigation, and research. By implementing this plan, the project strives to balance development with conservation, ensuring the protection of these important yet often overlooked species.

2.4 The major objectives of the study were:

2.4.1 Survey and documentation of the Small Cats in core and buffer zones of OCP Gevra area.

2.4.2 Habitat study of Small Cats in core and buffer zones of OCP Gevra area.

2.4.3 Impact assessment of proposed mining activities and other threats on existing population of Small Cats.

2.4.4 Preparation of Wildlife Management Plan for Small Cats for alternative habitat development in buffer zone.

a. Development of critical habitats for small cats and prey species within and adjacent to the diverted forest land.
b. Augmentation of prey population that form the primary diet of small cats.
c. Developing strategies to reduce human-wildlife conflicts in the nearby villages.
d. Training of forest guards and patrolling teams to monitor the presence of small cats and ensure their protection from illegal activities.

3. SITE INFORMATION

3.1 Gevra Opencast Mine

The project under consideration, i.e. Gevra OCP is administratively led by the General Manager, Gevra Area. In terms of geography, the Gevra Opencast Block is situated in the south-central region of the Korba Coalfield in the Chhattisgarh district of Korba. One of the biggest mega-operating mines in India, the Gevra opencast mine is situated in the center of the Korba coalfield and is listed on Survey of India Topo-sheet

No. 64 J/11. It is situated between latitudes 22°18'00" N and 22°21'42" N and longitudes 82°32'00" E and 82°39'30" E. Land reclamation or restoration activities started in 1986 after the mining area was formed in 1981. According to EC, the opencast mine's total leasehold area is currently 4184.486 hectares, with a 52.50 MTPA capacity. Within the mine area, there is only one working coal quarry (around 2037.25 ha) with fifteen OB dumps (8 internal dumps and 7 external dumps).

Figure 1. Geographical location of Gevra Coalfield.

3.2 Project Area

Coalfield region has characterized by tropical climates, The proposed project area of 94.293 ha falls under Katghora division in Korba district in Chhattisgarh. The proposed forest area is revenue forest with a canopy density of 0.3. The wildlife management plan for small cats has to prepared in the buffer zones of Gevra Open Cast (OC) Project. The project area and its 10 km buffer have forest cover over 6527 ha as per the State of Forest Report (SFR) 2011, Forest Survey of India, Dehradun. The density of forest cover within 10 km zone of influence around the project is shown in the Fig 01. The forest density wise composition in the area is mostly open forests followed by moderately dense area and scrubland. The 10 km buffer area is proposed for conservation small cats. Hence a wildlife management plan for small cats is being prepared for the buffer area of 62238.543 ha, out of which forest cover comprises 6527 ha. forest cover comprises less than 10% of the buffer areas.

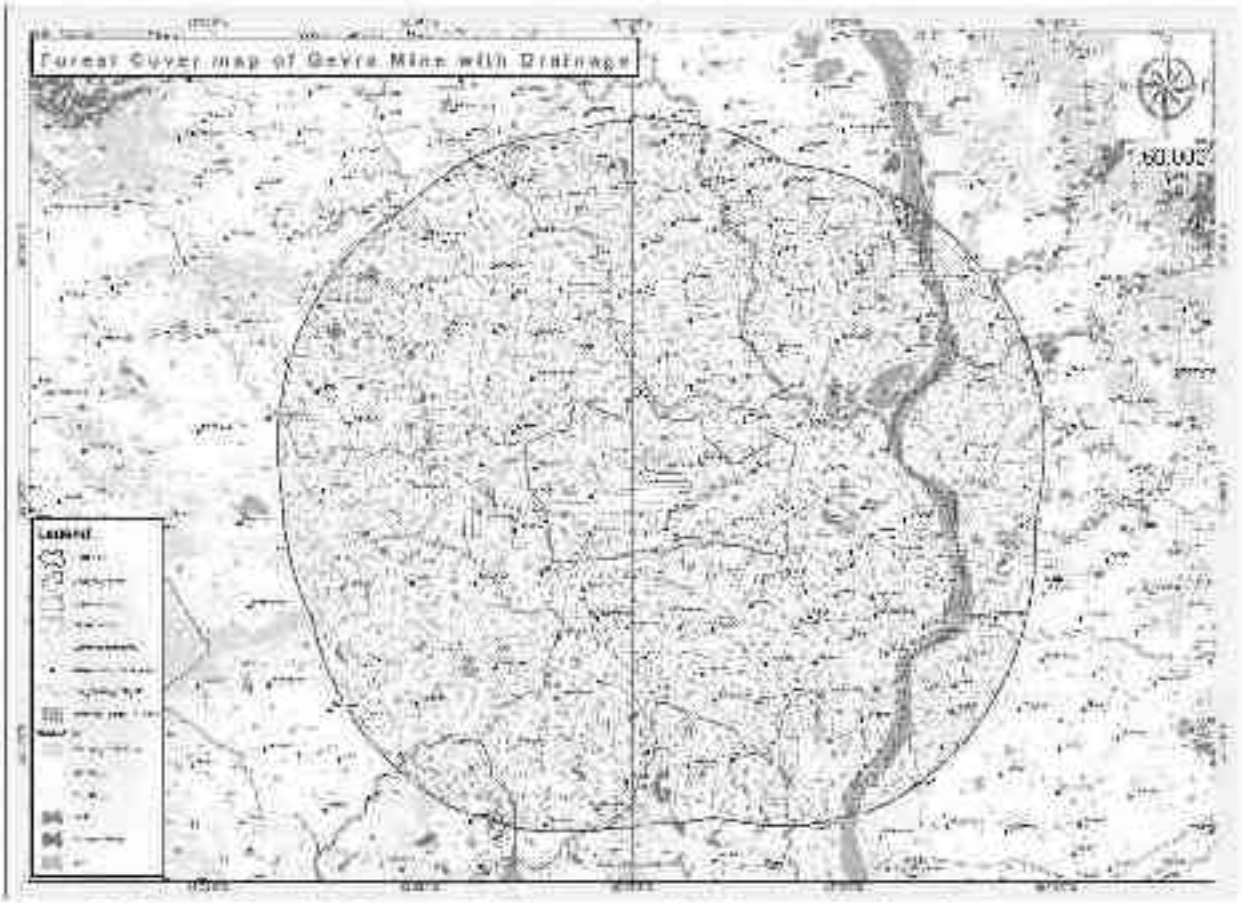

Figure 2. Forest Density Cover in 10 km zone of influence (Buffer Area)

3.3 Forest Division wise distribution of forests in the Buffer

The buffer of 10 km from the Gevra OC project area comprises mainly agricultural land and forest area. The forest area in the buffer comprises 6527.161 ha. There are about 58 forest compartments mostly Orange Areas and Protected Forest (PF) falling in the buffer. Out of total 58 compartments, 35 compartments, 09 compartments and 14 compartments fall in the jurisdiction Katghora forest division, Korba forest division and Jangir-Champa Forest division respectively. The eastern part of the 10 km buffer covers forest areas of Korba Forest division, the southern part of the buffer includes Janjgir - Champa Forest division and the northern and eastern part of the buffer encompasses forest areas of Katghora forest division. The forest division wise distribution of forests is presented in Table 1 and forest division and compartment wise detailed distribution of forest area in the buffer is presented in Table 2 and *Annexure 1*.

Table 1 Forest Division Wise Distribution of Forest Area of Buffer.

SN	Forest Division	Ranges	No of Compartments	Forest Area in ha	Forest Area in %
1	Katghora	Katghora, Pali, Chaitma & Jatga	35	4254.365	65
2	Korba	Korba & Balco	09	663.632	10
3	Janjgir-Champa	Baloda	14	1609.164	25
Total		**07**	**58**	**6527.161**	**100**

3.4 Forest Type and Cover Classification

The forest types prevailing in its 10 km buffer area as per the Champion and Seth Classification (1968) is Southern Dry Mixed Deciduous Forest (5A/C3), Moist Peninsular High-Level Sal Forest (3C/2e I), Dry Peninsular Sal Forest (5B/C1c), Northern Dry Mixed Deciduous Forest (5B/C2) and Plantation (TOF). Sal and its associates, such as Terminalia species along with shrubs were the major vegetation found in the buffer area of the study site.

Gevra Open cast project area and its 10 km buffer has forest cover of 6527 ha. (as per the State of Forest Report (SFR) 2011, Forest Survey of India, Dehradun). The density of forest cover within 10 km zone of influence around the project is shown in Figure 2. The forest density class-wise composition in the area is mostly Open Forest, followed by Moderately Dense Forest.

Table 2 Forest Cover Classification in the 10 km Buffer of Gevra OC project.

S. No.	Forest Cover Classification	Area (ha)	Area in %
1	Non-Forest Area	56286.184	91.32
2	Moderately Dense Area	506.336	0.81
3	Open Forest Area	4266.660	6.87
4	Scrubland	387.580	0.62
5	Waterbodies	791.783	0.01
Total Area		**62238.543**	**100%**

Note: Non-forest area includes agricultural land, habitation, fellow land, road and legally forest area completely bereft of forest cover.

3.5 Climate

Tropical conditions, with extremely hot summers and brutally cold winters, have defined the Gevra Coalfield region. The summer season (May to June) temperatures range from 42-45°C, while wintertime (December to January) temperatures range from 12-14°C. The monsoon season, which runs from June to September and accounts for about 1287 mm of the mean annual rainfall, sees more than 85% of all rainfall. During the rainy season, the relative humidity is around 82%, whereas during the winter, it is between 35 and 40%.

3.6 Geology

The upper members of the Barakar Formation, which comprise carbonaceous and grey shale, laminated sandstone (fine-grained), arkosic sandstone (coarse-grained), and coal seams of early Permian age that belong to the lower Gondwana litho-units and are unconformably underlain by Precambrian basement rocks, dominate the Gevra coalfield area (Rao, 1983). With transversal faults trending NE–SW, NW–SE, and E–W with variable throw magnitudes, the formations in this region have a complete dip of 5° to 8° towards the south and are moving east-west. This fault, which divides the Upper and Lower Barakar Formations, most likely vanishes or has negligible throw close to the Hasdeo River (CMPDIL, 2014).

3.7 Physiography

The Gevra coalfield's physiology is defined by its appropriately undulating terrain, which ranges in elevation from 275 to 335 meters. Erosion has shaped the plain and plateau terrain of the Korba coalfield. In contrast to the comparatively flat western and northern portions of the coalfield, the terrain is undulating, with steep hills to the east. The highest point (983 m) is located close to Pawan Akhar Pahar on the eastern side.

3.8 Hydrology

The Hasdeo River, which flows north to south throughout the district and eventually joins the Mahanadi, predominantly drains the eastern portion of the Gevra coalfield. The Beigar, Dhengur, Pathari, and Dom streams run west and empty directly into the Hasdeo River. The western portion empties into the Hasdeo River via the Aharan, Kholar, Saliha, and Jhulna streams. The river Lilagar is another important drainage system in the research area, in addition to the Gunjan, Ganjar, and Pitni streams (CMPDIL, 2013). The area's water table slopes towards the south or southeast at a gradient of 1.2 X 10-3 making it nearly horizontal. The rain that recharges the aquifer is a critical component in

the rejuvenation of dynamic groundwater.

3.9 Rainfall

The average annual rainfall of Korba district is about 1208.8 mm. The maximum rainfall takes place during the south-west monsoon period i.e. from June to September. The August month is the wettest month of the year and about 30% of the annual rainfall takes place only during this month. During winter & summer season about 10% & 3% of respectively rainfall takes place. From October to May, only 13% of the annual rainfall takes place.

3.10 Soil

The Korba district is covered by various rock types viz Basaltic, Sedimentary and Granitic terrains. Soil is also depending upon lithology of the area. Soils of Late rite Terrain, which are commonly found in undulating land are slightly deep, well-drained loamy skeleton to loamy soils with moderate erosion. Soils of Basaltic Rocks, which are commonly found in hills and hill ranges, are very thin stony with moderate erosion, moderately well drained clayey soils on gently sloping plateau. Soils of Sedimentary Rocks (Gondwanas), which are commonly found in the undulated plateau, are deep, moderately well drained clayey soils on foothills slopes with moderate erosion.

4. METHODOLOGY

4.1 Methodology of Study

In order to develop a Wildlife Management Plan for Small Cats in the buffer zone of Gevra open cast project, the following methodologies were adopted.

1. The existing floristic and faunistic resources in the buffer zone and its peripheral areas of Gevra OC project were studied and documented. Inventory published by Zoological Survey of India with respect to Korba district was consulted. Working plans of Katghora and Korba forest division were refereed.
2. The general character, habits and habitat of small cats found in the landscape were studied by using secondary information such as research papers, research notes, and available scientific literature.
3. Threat to conservation of small cats in the buffer zone was studied by interacting with people living in the buffer area and forest division records.

4.2 Floristic and Faunistic Resources

4.2.1 Floristic Resources

An inventory of plant species was carried in the Dipka area adjoining to Gevra in the year 2017-18 by Tropical Forest Research Institute (TFRI), Jabalpur. Apart from this, a team from State Forest Research & Training Institute, Raipur Chhattisgarh also carried out floristic and faunistic study in the Gevra OC project area and its adjoining areas. The vegetation comprised 53 species of trees, 06 shrubs, 14 herbs, 03 climbers and 09 grasses. A total of 85 species distributed in 68 genera and 31 families of higher plants were recorded from the said area.

The plant community is dominated by *Shorea robusta* with *Dyspyros melanoxylon* and, *Madhuca india* as co-dominants. On the basis of dominance, *Shorea robusta - Diospyros melanoxylon-Madhuca indica* community was found in the area. *Lagerstroemia parviflora, Boswalia serrata, Buchnania lanzan* and *Anogeissus pendula* were the common trees in the community, while *Butea monosperma, Ougenia dabergioides* and *Schleichera oleosa* were also found occasionally. Old teak plantations were also found in the buffer areas of Gevra OC project area. The forest community shows typical composition of Sal Forest in Kathgora and Korba Forest Divisions and mixed forest composition in Janjgir-Champa Forest Division.

The regeneration in the forest floor was not adequate. Saplings of 11 tree species ware found in the forest floor. The tree regeneration comprises *Shorea robusta, Butea monosperma, Diospyros melanonoxylon, Gardenia gummifera, Madhuca indica* and *Anogeisus latifolia*. Most of the area is infested with lantana camara, an invasive species dominating the shrub layer. though *Shorea robusta* dominates the majority of site on a scattered way and is the major over wood species but forest floor indicates very poor regeneration.

4.2.2 Faunistic Resources

Faunal survey was conducted by State Forest Research & Training Institute, Raipur, Chhattisgarh in the year 2019. This apart, faunal survey was also conducted by a team from Tropical Forest Research Institute, Jabalpur in the month of May and December 2017. Record of presence of wild animals was prepared based on direct signs as well as indirect signs such as fecal droppings, pellets, dung, scratch marks on tree trunks in the buffer areas. Working plan records of the Korba and Kathgora division were also consulted. Apart from these sources, a published inventory of wild animals of Korba district in the year 2018 by the Zoological Survey of India (ZSI) was also consulted. ZSI

did the field survey during the period July 2011 to December 2014.

"Faunal diversity of Korba District" published by Zoological Survey of India, based on survey done during July 2011 to December 2014, recorded a total of 550 species of fauna from the district of which invertebrates comprise 263 species, under 217 genera, 59 families, and 10 orders and all are recoded from insecta. Vertebrata comprises 287 species belonging to 206 genera, 92 families and 30 orders. It comprises 5 species of fishes, 10 species of Amphibia, 25 species of reptiles, 214 species of birds and 33 species of mammals with several threatened species from most of the groups. The faunal diversity of Korba district has been corroborated by the information collected from forest department, local people and different secondary sources over a time. A list of mammals/reptiles/birds/amphibia available in the buffer area has been presented in *Annexure 2*.

Being situated under the deccan Bio-region, the Buffer area holds population of leopard, Sloth bear, striped hyena, Indian Fox, Asiatic jackal, chital, barking deer, Hanuman langur (*Presbytis entellus*), Jungle Cat (*Felis chaus*), Rusty Spotted Cat (*Prionailurus rubiginosus*), Indian hare (*Lepus nigricollis*) and Little Indian field mouse (*Mus booduga*), *Elephas maximus* (Elephant) etc. are also generally observed in the study area.

The avifauna in the Gevra OC Project is rich. The survey team from SFRTI, Raipur recorded 213 birds belonging to 44 different species and 28 families. Most of the bird species found were endemic and resident. Few important bird species are Green Bee Eater, House Sparrow, Red Vented Bulbul, Sulfur bellied warbler, Indian Roller, Common Myna, Eurasian Coloured Dove, Jungle Babler, Little Swift, Ashy Prinia, Asian Pied Starling, Barn Swallow, Greenish Warbler, Little Cormorant, Great Egret, Laughing Dove, Little Egret, Plum Headed Parakeet, Eurasian Golden Oriole, Indian Silver Bill, Asian Open Bill Stork, Purple Sunbird, Bank Myna, Barn Owl, Brahminy Starling, Indian Robin, Jungle Prinia, Rose Ringed Parakeet, Scaly Breasted Munia, Common Kingfisher, Steppe Eagle, Jungle Owlet, Plain Prinia and White Throated kingfisher.

During field survey species like House lizard (*Hemidactylus brooki*), House gaeko (*Hemidactylus flaviviridis*) and Skink (*Eutropis carinata*), Common toad was observed in different locations of the study area. During public consultation it was reported that, some common species found in this region are *Enhydris enhydris* (Smooth water snake), *Ptyas mucosa Linnaeus* (Rat Snake), *Bungarus caeruelus* (Krait), *Python molurus* (Python), *Daboia russelii* (Russell's Viper) and *Varanus bengalensis* (Monitor Lizard).

Figure 3. SFRTI Team interaction with forest department and SECL officials.

Based on divisional records and collected data, the fact that frequent elephant movements and presence are seen in many parts of the Katghora and Korba forest division area, indicates that both the forest division areas provide a good habitat for elephants. Jungle Cat (*Felis chaus*) was also observed in different locations of the study area as well as found in crop fields and around human habitation. As per secondary information, the elusive Rusty Spotted Cats are also found in the landscape.

Figure 4. SFRTI Team interaction with local villagers about small cats.

In compliance to the condition stipulated in the approval obtained from MOEF for diversion of 94.293 ha revenue forest land on dated 09.02.2024 necessitates preparation of Management Plan for Small Cats with special reference to Jungle Cat (*Felis chaus*), and Rusty Spotted Cat (*Prionailurus rubiginosus*), along with financial provision.

5. GENERAL CHARACTER, HABITS AND HABITAT OF SMALL CATS

5.1 General Description

Cats are unique in many ways, the most obvious being their strong requirement for meat. They are obligate carnivores and hence are unable to survive without meat (Allen et al.1995, Morris 2002). Some crucial dietary requirements of amino acids and vitamins that other mammals can manufacture within their bodies can be available to cats only through meat (Morris 2002). This is crucial in understanding their ecology and also in instances when young cats need to be hand reared. Every aspect of their morphology is strongly selected for hunting and meat eating. Shortened muzzles with reduced dentition (cats have between 2830 teeth as opposed to 42 teeth in canids) lending a greater bite force, retractile claws (this protects claws since they are crucial in the act of killing), flexible wrists, supple spine, very defined jaw articulation with skull, binocular vision (the most well developed among carnivores), among others (Kitchener 1991, Sunquist and Sunquist 2002). Such extreme specialization towards the same function of killing has resulted in the 36 species of felids being very similar in appearance. So, the largest cat, the tiger, looks like an enlarged version of the smallest cat, the rusty spotted cat. This makes identification of similar sized cats confusing at times. Yet there are differences (apart from the very obvious difference in size among some species).

With 15 species of cats India is the richest anywhere in the cat world (Nowell and Jackson 1996). Of these 15, 11 are small to medium sized and occur across several habitats in the country (Sunquist and Sunquist 2002). Several species of cats occur together in a region and most species also occur outside protected areas. Some such as the jungle cat (*Felis chaus*), rusty spotted cat (*Prionailurus rubiginosus*), leopard cat (*Prionailurus bengalensis*), fishing cat (*Prionailurus viverrinus*), desert cat/Asiatic wild cat (*Felis silvestris ornata*) and perhaps even the caracal (*Caracal caracal*) are often found in crop fields and around human habitation and even breed in such habitat (Sunquist and Sunquist 2002).

While much attention is paid toward the conservation of the tiger in the state (Gopal et al. 2010), the small cats remain unknown to most. The distributions of some species such as the rusty spotted cat, fishing cat in the state are not clearly recorded. The jungle

cat is not uncommon and are widely distributed in India which is placed under Schedule II. All cats except for the jungle cat are placed under Schedule I of the Wildlife Protection Act (1972). The rusty spotted cat, though widely distributed within the country, is endemic to India and Sri Lanka (Nowell and Jackson 1996).

As a general rule cats living in open habitats (scrub, grassland, wetlands) have short tails, less than 50% of their head-body length, e.g. jungle cat, caracal and fishing cat, whereas forest dwelling cats have tails much longer than their total length e.g. clouded leopard, marbled cat (Pocock, 1939). The ones with intermediate tail lengths are perhaps not very specific to habitat structure e.g. leopard cat and rusty spotted cat. This is borne out from records of their distribution which does not indicate any specific requirement for habitat.

5.2 Identified Small Cats

Based on divisional records and data collection, the Jungle Cat (*Felis chaus*) and Rusty Spotted Cat (*Prionailurus rubiginosus*) presence are seen in many parts of the Katghora division forest area as well as found in crop fields and around human settlement areas. In compliance to the condition stipulated in the approval obtained for diversion of 94.293 ha revenue forest land on dated 09.02.2024 hereby prepared management plan for small cat special reference to identified small cats along with fund provision.

5.2.1 Jungle Cat (*Felis chaus*)

Jungle Cat (*Felis chaus*) belongs to order Carnivora and family Felidae. It is categorized as Least Concern under IUCN Red List. Jungle Cat is a medium sized cat, very agile in habit. Body size ranges from 79 to 103 cm in length. Body weight may vary from 5 to 9 kgs. It is adopted to various types of habitats, extended from high altitude mountains to coastal mangroves, from dense forested areas to arid zones, even often found to live alongside humans in rural and urban areas. Coat is reddish or grey to sandy brown in color, usually without any pattern except the black to brownish streaks on legs. It has light colored underparts. Muzzle and lower jaw are usually white. Tail is short; actually, one third of their total head and body length and usually ends near the hock, with few black rings towards the end with black tip. Slim and long face with front facing eyes. Closely set elongated ears with black tufted ear tips. Males are markedly larger than females.

Behavior: Jungle Cat feeds on insects, amphibians, reptiles, fishes, small birds, their eggs, and small rodents. Also observed to scavenge on kills of larger predators. Individuals who live close to villages often lift domestic animals such as chickens, ducks and geese. They are solitary wild cats but after having cubs are generally found in a clowder comprised of a male, female and their cubs. Cat remains active during the day and night and rests in borrows of other animals, under bushes, in caves, in thicket or in reeds and usually makes den in the same area. It hunts by stalking on the ground. It is also a good climber. It communicates through scent marking. Vocalization is usually prominent and marks the onset of breeding. Mating season varies across the distribution range. Generally, jungle cat mates in winter and gives birth in spring. Litter size varies from 3 to 6.

Figure 5. Jungle Cat (Felis chaus)

Habitat: The jungle cat is highly adaptable species and occupies varieties of habitats across their geographical spread. It is not always associated with wooded forests, as its name suggests, rather frequently observed in the areas of scrub, grassland, wetlands and dense vegetation. In India its habitat ranges from 3-5-meter-high coastal mangroves zones to 4000-meter-high mountainous areas. It is also commonly sighted in and around agricultural fields and village fringes. It is very often found to inhabit the space in and around human settlements. In Chhattisgarh it is evidently common in the forests, and rural areas.

Distribution: There are four sub-species of jungle cat in India. It is found across the country. The sub-species of jungle cat in Chhattisgarh is Felis chaus kutas. It is distributed across the state. It has been sighted in all protected areas as well as other forest areas including Korba forest division areas.

Conservation Threats: Jungle cat is highly threatened due to habitat loss across its distribution range. Additionally, in many places small jungle cat populations are living close to human settlements where they often feed on poultry birds. This particular behavior frequently involves them in conflict with humans and many a times in retaliation

villagers kill jungle cats by poisoning, trapping and clubbing. Other threats to jungle cats include hunting for meat, fir and use in traditional medicines, habitat fragmentation and loss of wild prey base. Despite all these threats, this fauna is yet to earn enough conservation attention.

5.2.2 Rusty Spotted Cat (*Prionailurus rubiginosus*)

Rusty Spotted Cat (*Prionailurus rubiginosus*) belongs to order Carnivora and family Felidae. It is categorized as Near Threatened (NR) under IUCN Red List. Rusty Spotted cats are the smallest wild cat in the world. They are found only in India, Nepal and Sri Lanka. The body size ranges from 50 to 78 cm. body weight may vary from 1 to 1.6 kilogram. Highly adaptable to different habitat types and their coat color changes accordingly, usually darker in forests, paler in arid and open habitats.

This cat has greyish fur with brownish tinge. Rusty colored spots on the flanks and ventral parts of the cat are distinctly visible. Underparts are white with larger dark spots. It has small rounded head with dark brownish streaks. Four streaks are seen on the forehead between the outward pointed ears. Two streaks at each side of the forehead just start above the eyes and run up to the back of the head and continue further. White lines are prominent along the inside edge of the eyes or around the eyes. Two such short dark to pale colored streaks extend behind the eyes and run short along the cheeks. Their dull body coloration helps them to stay hidden in the forest and very difficult to sight in their natural habitats.

Behavior: The cats are solitary, living alone in the forests. They feed on insects, frogs, reptiles, small birds, rodents, bats and even attack poultry animals. Highly adapted hunter and being an agile creature they are very good climbers; they use the opportunity to hide out in trees and hunt from above the ground. They predominantly use ground to hunt. Nocturnally active, in the day time they take rest inside the hollow logs, tree trunks or in thick shrub jungles. They also have been observed to use caves for resting in few parts of their distribution. They are generally visible after a shower when they emerge from its tree hideouts to feed. Very tolerant of human habitation.

Habitat: They are terrestrial with arboreal tendencies. Found to inhabit the areas from Northern Himalayan foothills, alluvial plains to southern dry rocky outcrops. Rusty Spotted cats are found in moist and dry deciduous forests, tropical thorn forests, scrub forests, grasslands, arid shrub lands, hill slopes, arid western semi deserts and agricultural lands.

Figure 6. Rusty Spotted Cat (Prionailurus rubiginosus)

Distribution: Distributed throughout southern and central India. In Chhattisgarh it was first time recorded in the year 2016 and confirmed presence has been reported from Gariyaband forest division, Korba forest Division, Udanti-Sitanadi Tiger Reserve and Achanakmar Tiger Reserve.

Conservation Threats: Large scale habitat destruction by deforestation, conversion of forest lands to agricultural fields and urban developments, industrial developments, and mining are the known threats to the species. Besides, their use in pet trade and fur trade is also a reason for the depletion of population of rusty spotted cats in Chhattisgarh. Additionally, there are issues of hybridization with domestic cats and conflict with humans because of lifting poultry from villages.

6. THREATS TO CONSERVATION OF SMALL CATS

6.1 Status of Jungle Cat and Rusty Spotted Cat under IUCN and CITES

The IUCN (International Union for Conservation of Nature) Red List places jungle cats in the Least Concern (LC) category. However, their population is shown to be declining in the state. The Rusty Spotted cats are shown under Near Threatened (NT) category of IUCN Red List. However, the population of Rusty Spotted Cats is also declining. Both the small cats are protected under Indian Wildlife (Protection) Act-1972 as well as under appendices I and II of the Convention on International Trade in Endangered Species (CITES).

6.2 Local Threats to Conservation

Both the Jungle Cat and Rusty Spotted Cat are prone to several threats due to rising anthropogenic pressures in the buffer areas and its adjoining landscape. They have been placed in Schedule I of Wildlife Protection Act-1972. Within human dominated forest and agricultural landscapes, degradation of forests, uncontrolled grazing, habitat loss,

mechanized farming practices in agriculture, use of rodent control measures increased the risk of survival of small cats residing in the landscape. Presence of feral dogs in the buffer zones and adjoining areas also pose threat to small cats that visit the village areas for their prey. This apart, lack of awareness has caused small wild cats becoming frequent targets of retaliatory killings or attack. Villagers attempt to eradicate jungle cats, believing them progeny of leopard because they have similarities in size, colourartion and marking as that of a leopard kittens.

6.3 Threats to Small Cats

Small cats are keystone species, providing crucial economic and ecosystem services such as pest and disease control, and their conservation is essential to underpin the integrity of big cat conservation efforts and maintain large natural ecosystems across India. While India's network of tiger reserves provides a safe refuge to many cat species, a substantial part of the distribution of small cats occurs outside the Protected Area (PA) network, making protection, restoration and connectivity of habitats at a landscape scale essential for their long-term conservation. These areas are subject to varying degrees of habitat degradation and fragmentation, and cats are threatened by poaching and human-wildlife conflict (HWC) – threats that are increasing in extent and frequency as ongoing development and land use changes extend the human-wild cat interface and increase the potential for local-level conflicts. Ongoing development impacts reduce and fragment habitat, increasing the interface between humans and wild cats. Increasing human populations and economic development that does not consider environmental needs are drivers of the threats to wild cats.

At the outset of the wildlife management plan preparation process for small cats, it was clear that there exist major information gaps concerning the distribution and abundance of small cats across the project landscapes, their life histories, ecological needs, and the nature of conservation issues and threats that may impact their populations. Consequently, a wide range of stakeholders were consulted in the landscapes during visits by the team to obtain a qualitative indication of the presence and key issues and threats facing small cats and their habitats. The threat analysis is largely based upon these consultations, supported where possible by literature review. Further information on threats will be collected during implementation through systematic data collection in order to inform conservation responses. The nature of the threats facing small cats and their habitats is therefore specific to each area. The main threats are described below.

Table 3. Estimated threat impact in the core and buffer area of Gevra Coalfield

S. No.	Threats	Impact levels
1.	Coal mining activities	High
2.	Unsustainable grazing	
3.	Degradation of wetland habitats	
4.	Human-wildlife conflict	Medium
5.	Free-ranging dog presence	
6.	Encroachment for agriculture, settlements	
7.	Habitat fragmentation by roads	
8.	Road kills	
9.	Unsustainable use of fuelwood and NTFPs	Low
10.	Illegal logging	
11.	Invasive alien species impacting natural habitats	
12.	Risks from pesticides, rodenticides etc in agriculture	
13.	Forest and grassland fires	

6.3.1 High Impact Level

i. Coal Mining Activities

Coal mining in the Gevra coalfield poses a significant threat to the population of small cats, such as jungle cats and rusty-spotted cats, primarily through habitat destruction, fragmentation, and pollution. The large-scale extraction of coal leads to the clearing of forests and natural vegetation, which serves as crucial habitat for small cats. These species rely on forest cover, grasslands, water sources, and prey abundance to thrive, all of which are severely disrupted by mining activities. Habitat fragmentation further isolates populations, reducing their genetic diversity and making them more vulnerable to diseases and inbreeding. Additionally, the pollution caused by mining operations, such as dust, toxic runoff, and noise, degrades the quality of the remaining habitats, affecting the prey base and increasing stress levels in wildlife.

ii. Unsustainable grazing

Around Gevara landscape, it was found that unproductive or unwanted cattle are being left near the forest areas by local villagers/communities. These cattle have become free-ranging and are causing a lot of problems in the buffer areas, especially by destructing agricultural fields and grassland, which is considered as a priority habitat for the small cats. Culturally, cattle are considered sacred, therefore the management of abandoned cattle requires sensitive approaches

such as collecting and caring for them in gaushalas.

iii. Degradation of wetland habitats

Wetlands support a diverse range of prey species, including fish, amphibians, and small mammals, which are essential to the diet of small cats. When wetlands are drained, polluted, or encroached upon by human activities such as agriculture and urbanization, the availability of prey and suitable habitats diminishes. This habitat loss forces small cats into smaller, fragmented areas, increasing competition for resources and making them more vulnerable to human-wildlife conflicts, disease, and inbreeding, ultimately threatening their survival.

6.3.2 Medium Impact Level

i. Human-Wildlife Conflict

Other than the destruction through mining activities, the altered buffer landscape also increases human-wildlife conflict, as small cats are forced to venture closer to human settlements in search of food (raiding/lifting chicken), which can lead to poaching or retaliatory killings. In some cases, small cats are also viewed as pests by farmers and may be killed to protect livestock or crops.

ii. Free-ranging dog presence

Free-ranging dog packs have been identified as a serious problem in localities in Katghora as they hunt down the small cats. Also, disease transmission can be exacerbated through the presence of carcasses of abandoned cattle, which may be visited by free-ranging dogs by day and by a variety of wild predators at night causing conflict with the small cats.

iii. Encroachment for agriculture, settlements

Small cats rely on a variety of ecosystems like grasslands, wetlands, and forests for hunting, breeding, and shelter. When humans clear land for agriculture or build settlements, these areas are destroyed or significantly altered, leading to habitat loss and a reduction in prey availability. Fragmentation of the landscape also isolates small cat populations, making it harder for them to find mates, disperse, or maintain genetic diversity. The encroachment often brings humans and domestic animals closer to these species, increasing the risk of conflicts and exposure to diseases transmitted from livestock.

iv. Threats due to construction of roads

The construction of roads poses a significant threat to small cat populations by fragmenting their natural habitats, which restricts their movement, hunting

grounds, and mating opportunities. Additionally, roads increase the risk of vehicle collisions, a major cause of wildlife mortality. Noise, pollution, and human disturbance from roads further degrade their habitats, leading to population declines and increased vulnerability to extinction.

6.3.3 Low Impact Level

i. Unsustainable use of fuelwood and NTFPs/ Illegal logging

Overharvesting of fuelwood and excess logging leads to deforestation and the depletion of forest cover, reducing the availability of shelter and hunting grounds for species cats. Additionally, the extraction of NTFPs, such as fruits, seeds, and medicinal plants, disturbs the ecological balance, affecting the prey base and overall biodiversity. These habitat alterations not only force small cats to venture into human-dominated areas, increasing human-wildlife conflicts, but also fragment their living spaces, making survival more difficult.

ii. Invasive alien species

These species often outcompete native prey, which small cats rely on for food, leading to reduced hunting success and starvation. Invasive plants can alter the vegetation structure, making habitats unsuitable for small cats to hide, hunt, or raise their young. Additionally, some IAS, like non-native predators or diseases, can directly harm small cats, further endangering their already vulnerable populations.

iii. Risks from pesticides, rodenticides

Nowadays, agricultural practices frequently involve the use of pesticides and chemicals, which can contaminate water sources and reduce biodiversity, further impacting the food chain as they target the natural prey base of the small cats.

iv. Forest and grassland fires

Fire poses a significant threat to small cat populations by destroying their natural habitats, reducing prey availability, and causing direct harm. Wildfires and human-induced burning can decimate these areas, forcing the cats to face injury and death.

7. MANAGEMENT PLAN FOR SMALL CATS

Several reasons for the decline of small cat population and methods for their conservation were practiced through detailed studies. However, the best method for the conservation of small cats is related directly to the maintenance of their habitat, allowing

their natural development and degree of protection. Both these phenomena (habitat development and habitat protection) are negatively related to anthropogenic factors like habitat fragmentation and destruction, man-animal conflict/ hunting, unavailability of sufficient water resources, dependence on forest resources, lack of awareness among locals about small cats, forest fire, etc. For remediating such unfavorable anthropogenic possibilities following management actions must be implemented

7.1 Habitat Improvement

There are four main elements of any animal habitat including cats. They are (1) Food, (2) Water, (3) Shelter and (4) Space. Cats being carnivorous, depends on animal tissues as food. So, availability of food is an important part of the habitat. Cats, being animals, need water to survive. However, the amount of water requirement is low. But the prey animals upon which cats rely for food like rodents, amphibians, birds require water more. Likewise, cats need shelter. Shelter protects animals from predators and weather. It also provides a place for animals to eat, sleep, hunt and raise their families. The last but most important component for cats is enough space to access food, water, mate and nest and have cover from predators.

7.2 Food Habits

The Jungle Cats and Rusty Spotted Cats are felids. Felids are purely carnivorous, relying on animal tissues and fat to sustain energy requirements. A review of the diet of small cats showed that it is composed of entirely animal tissues, with small mammals, especially rodents, forming the majority pray. About 50 to 70 percent of their total energy requirement is met by consuming rodents.

The jungle cat (*Felis chaus*) is a medium sized carnivore. Carnivores are placed at the apex of food chain and have a major role to play in structuring communities. Jungle cats eat a variety of prey, including rodents, birds and other animals. It primary prey usually weighing less than 1 kg includes rats, mice and gerbils, eggs of birds and insects. It can hunt birds, especially ground nesting birds, chicks and birds feeding on the ground. Jungle cat also eats frogs, lizards, small snakes, amphibians, which are taken as prey more opportunistically. Jungle cat generally stalks and ambush the pray. It thrives well with sparce vegetation too. Rusty Spotted Cat is also a carnivorous, relying on animals' tissue as its diet. Its main pray is reported to be small mammals such as rodents and birds. It also feeds upon hatchlings, reptiles, frogs/toads, and invertebrates like insects and even bats opportunistically, and occasionally poultry.

7.3 Habitat Management

The most critical aspect of wildlife conservation of any animal is habitat management. Conservation and management of small cats necessitates restoration and improvement of habitat from the point of the aforesaid four elements such as food, water, shelter and space. Indirectly speaking, conservation and management of cats needs conservation of rodents, amphibians, birds and insects primarily. For all these pray animals sufficient water bodies, plantations, trees cover and grass meadows should be developed for food, shelter and spaces for all these animals in the buffer areas.

7.3.1 Rodent Habitat Conservation

Rodent conservation is an important element required for small cat conservation. It is because rodents constitute 60 to 70 % of prey of small cats. Therefore, rodents occupy a significant place in the food chain of small cat. The presence of higher trophic level species such as small cats which provide sustenance to them, contribute to the stability and biodiversity of ecosystems. Rodents, particularly, mice consume various insects and weed seeds. This herbivore and insectivore behavior of rodents help regulate insect population and limit the spread of weeds. The rich diversity of rodent species in the buffer areas shall abundantly support to small cats' conservation. There are three rodent species which are found sufficiently in the buffer areas. They are Bandicota, Rattus and Mus. Apart from these three, there are other rodent species found in the habitat too. The list of rodents found in the landscape is provided in Mammal list in Table 05. As discussed in the aforesaid paragraph, small rodents are the main prey of small cats. A cat could catch 3 to 5 rodents per day with birds ranking second in ranks.

7.3.2 Amphibian Habitat Conservation

Apart from rodent conservation, amphibian habitat conservation is also an important element for small cat conservation programme. It because amphibians also a part of the prey of small cats. Amphibians are found in a variety of habitats such as fresh water ecosystems, forests, grass lands, and scrub forests. They are particularly sensitive to environmental changes and their skin is permeable allowing them to absorb water and oxygen directly through their skin. Amphibians could breathe on land and in water but they must live in moist environments. They require suitable aquatic and terrestrial habitats to support them. Their eggs are laid in water and the larvae develop there. Outside the breeding season adults and juveniles spend much of their time on land where, they need damp or humid conditions to prevent water loss.

Amphibians should always be near sources of water as they will shrivel up if left in the sun for a couple of weeks. Amphibians in winter generally enter mammal burrow or inside a compost heap. This behaviour is because of the fact that it is a place where the frog will be buffered against extreme cold. The best temperature for most amphibians is 24 degrees centigrade to 27 degree centigrade and humidity ranges from 85 % to 90 %. The ideal habitat for amphibians comprises ponds, strips of shallow water which dry during summer. This apart, muddy and rock crevices, deep burrows in the soil, or bushes and compost heaps are also suitable for becoming amphibian habitat. The muddy margins of water bodies provide suitable feeding conditions. Amphibians are plenty during rainy season as they require water to breed and lay eggs. Majority of amphibians are active during night.

Basic requirements for amphibian habitat are:

1. Suitable water bodies for egg-laying and development of larvae.
2. Shelter for excessive heat and dryness.
3. Suitable foraging areas and sufficiently large population of prey species such insects.
4. Suitable hibernation sites.

7.3.3 Avifaunal Habitat Conservation

The third prey of small cats are birds. The buffer areas have sufficient avian population. However, the habitat of avian populations needs further improvement. Bird habitat consists of three elements food, water and shelter. Birds eat seeds, fruits, insects and other small animals. Water bodies provide water, plants provide birds safe shelter or places to sleep, hide from predators and raise their young one. Plants and trees provide shade, warmth and a dry place during the rainy season. A miscellaneous forest along with sufficient water bodies are ideal for promoting avian population in buffer areas.

8. Objectives of Management and Plan Components

8.1 Objective of Management

The objective of having a wildlife management plan for small cats is to manage and conserve small cat species in its habitat. The said management plan aims at adopting an integrated conservation approach in line with the National Wildlife Action plan 2017-31. It envisages habitat development, enhanced protection, capacity building of front-line staffs, creating enabling conditions for strengthened management along with empowering local communities in buffer areas.

8.2 Management Plan and its Components

There are four elements of habitats for small cats. They are food, water, cover and space. Apart from this, the arrangement of food, water, cover and space in the habitat is also critical. The amount and distribution of these components affects the types of wildlife that can survive in an area. Therefore, looking at the habitat needs of two species of small cats found in said buffer areas and its adjoining forests, a management plan has been prepared for a period of 10 years. The said Wild Life Management Plan comprises seven components. Each component is an action programme with multiple activities. These seven components are as follows:

1. Identification and field survey of potential areas for development of small Cats Conservation Areas.
2. Strengthening institutional framework for conservation of small cats at circle level and Capacity Building of officers from project Management Unit (PMU) and Front-Line Staffs, Senior Research Fellows and community leaders
3. Habitat Development and Restoration
4. Protection of Small Cats Conservation Areas
5. Community Outreach Programme and Enhanced Community-Based Management for Wild Cats and its Habitat Conservation
6. Monitoring and Evaluation
7. Research and Development

8.3 Activities under each Component

Detailed activities prescribed under each component are presented below:

8.3.1 Identification and field survey of potential areas for development of small Cats Conservation Areas.

i. The earmarked areas for potential Small Cat Conservation areas to be marked on the field as well as a Vegetation Map (1:50,000).

ii. Field Survey of conservation areas for forest density, tree, shrub and grass composition, forest and land corridor for better integration of forest ecosystem elements.

iii. Selection of areas for plantation, silvi-pasture and creation of water bodies such as ponds, check-dams, stop-dam, small water collection bodies, and ploughing of land strip in revenue forests and protected forests for encouraging regeneration and meadow development, etc.

8.3.2 Strengthening institutional framework for conservation of small cats at circle level and Capacity Building of officers from project Management Unit (PMU) and Front-Line Staffs and community leaders

i. Institutional framework at circle and Divisional level and development of SOP for small cat conservation.
ii. Establishment of Project management Unit/ Monitoring cell at CCF Level at Bilaspur and setting of Nodal office at three Divisional Forest Offices.
iii. Capacity building of officers in-charge of PMU and nodal officers.
iv. Recruitment of full time Senior Research Fellow as per the guidelines for regular and continuous monitoring of conservation status.
v. Training of front- line staffs up to forest range officers shall be capacitated about implementation, management and monitoring of Small Cat population.
vi. Training of forest staff of the buffer areas and its adjoining forest ranges shall be trained for effective enforcement of Indian wildlife Protection Act, Indian forest Act and biodiversity Act.
vii. Training will be imparted to forest staffs with regard to use of GPS, cameras traps, analysis of outputs from survey, monitoring and camara traps.

8.3.3 Habitat Development and Restoration

(A list of suitable food/fodder/forage/grass species for habitat development and restoration has been provided in *Annexure 3*)

i. Preparation of detailed implementation Plan for Small cat conservation
ii. Cattle Proof Trench (CPT)/ Fencing of forest compartment identified under small cat conservation Area.
iii. Silvi-pasture development/ grassland development and Hydroseeding in degraded forest patches/ compost heaps.
iv. Removal of invasive species like Lantana, etc.
v. Plantation of selective species such fruit trees and fodder trees / crops and pod bearing trees. All available trees such as sal, mahua, tendu, harra and palash

should be retained. Species such as ber, kala siris, safed siris, char amla, kusum, ganga imli (*Pithecelobium dulce*) etc should be panted. Babool and bans should be planted in the cattle proof trench boundary.

vi. Construction of water bodies, treatment of micro catchment areas, and soil & Water conservation works in each compartment in Small Cat Conservation Areas

8.3.4 Protection of Small Cats Conservation Areas

i. Preparation of Circulars/guidelines regarding role of CCF (Territorial), Bilaspur and CCF (WL) Cum Director Tiger Reserve, Achanakmar Tiger Reserve.
ii. Preparation of Standard Operating Procedure (SOP) with respect to Small Cats
iii. Strengthening of Forest, Wildlife and Biodiversity Regulation and Protection
iv. Forest Fire prevention and management
v. Watch & ward of Potential Small Cat Conservation Areas based on camera trap images and other evidences.

8.3.5 Community Outreach Programme and Enhanced Community-Based Management for Wild Cats and its Habitat Conservation

i. Community engagement in conservation programme in all villages falling in Buffer areas.
ii. Awareness building among JFM Committees members /Gram Panchayat members /Women self-help Groups and Biodiversity Management Committees (BMC) members in the buffer areas.

8.3.6 Monitoring and Evaluation

i. Monitoring execution of management plan activities on an annual basis and their physical verification on the ground.
ii. Preparation of Annual Monitoring report.
iii. Evaluation of impact of management activities on conservation of small cats. There will be two evaluation exercises, first will be on completion of 5th year and the second will be on completion of 10th year.

8.3.7 Research & Development

i. Detailed study of life-history of small cats specific to the landscape.

ii. Assessment of rodent and amphibian population dynamics in small cat conservation areas.

iii. Population estimation of small cats on sixth year and tenth year of the management plan.

iv. Study of change of floristic and faunistic composition and abundance of the conservation areas.

v. Survey of cats invasively with the use of camera trapping and scats by using molecular technology.

vi. Initiation of small cats' recovery programme by breeding.

8.4 Project period and duration of implementation

The plan is proposed for a period of 10 years. However, some activities shall be implanted in the initial years only. Such activities are identification and field survey of small cats' conservation areas. Works such as habitat development shall be carried out till fifth year. Activities regarding protection of conservation areas, community outreach and monitoring & evaluation shall be distributed throughout the plan period. The Table 4 depicts plan period and duration of implantation of each components/activity.

Table 4. Plan Period and Duration of Implementation.

S. No.	Plan Components	Plan period in year	Implementation years
1	**Identification and field survey of potential areas for development of small Cats Conservation Areas.**	02	**1st & 2nd years**
2	**Strengthening institutional framework**	10	**1st to 10th years**
3	**Habitat Development and Restoration**		
	1.Silvi-pastuer/grassland development/hydroseeding/ Ploughing and grass slip planting	04	**2nd, 3rd, 4th and 5th years**
	2. Soil & Water Conservation / Construction of water bodies/Reclamation of streams/creation of Check dams, etc.	04	**2nd, 3rd, 4th and 5th years**
	3. Enrichment plantations of suitable and local fruit bearing and pod bearing trees for squirrels & birds	04	**2nd, 3rd, 4th and 5th years**

	4. Eradication of invasive species	02	**2nd, & 3rd years**
4	**Protection of Small Cats Conservation Areas** (Protection by fencing/fire protection/ protection by watch & ward / intelligence gathering with regard to sighting of small cats /prevention of poaching / patrolling by field staffs)	10	**1st to 10th years**
5	**Community Outreach Programme and Enhanced community-based management**	10	**1st to 10th years**
6	**Monitoring and Evaluation** (Baseline study in the 0 year and monitoring in every year; Evaluation at fifth and 10th year)	10	**1st to 10th years**
7	**Research & Development**	06	4th, 5th ,6th, 7th, 8th, 9th, & 10th years

9. The Budget

9.1 The Budget and Financial Cost

An indicative budget for Rs 2020.00 lakhs is proposed for various project activities to be undertaken based on mitigative and restorative measures for a period of 10 years. The proposed project monitoring unit will work out the detailed microplanning of the activities in the prescribed time periods. Katghora forest division, Korba forest division and Janjgir-Champa Forest division shall implement the project works in the project areas coming under their jurisdiction. The PMU shall monitor and evaluate the project works and report to Chief Wildlife Warden of the state. Research and Development (R&D) works with regard Wildlife Conservation with special focus on Small Cats Conservation shall be done by State Forest Research and Training Institute, Raipur or other established Research institutes. Financial cost of proposed activities under different plan components is presented in Table 5.

Table 5. Project Components and Financial Cost

S. No.	Project Components	Quantity of Works	Time period in yr	Financial Cost in Lakh
1	**Identification and field survey of potential areas for development of small Cats Conservation Areas.**	**58 compartment /6527 ha**	**02**	80.00
2	**Strengthening institutional framework**	**01 Circle office /03 Division**	**10**	80.00

		offices/ 01 Senior Research Fellow		
3	**Habitat Development and Restoration**			
	1.Silvi-pastuer/grassland development/hydroseeding/Ploughing and grass slip planting	1500 ha	04	200.00
	2. Soil & Water Conservation / Construction of water bodies/ Reclamation of streams/ creation of Check dams, etc.	60 No /6527 ha	04	600.00
	3. Enrichment plantations of suitable and local fruit bearing and pod bearing trees for squirrels & birds	1500 ha	04	500.00
	4. Eradication of invasive species	1500 ha	02	50.00
4	**Protection of Small Cats Conservation Areas** (Protection by fencing/fire protection/ protection by watch & ward / intelligence gathering with regard to sighting of small cats /prevention of poaching / patrolling by field staffs)	58 comt /6527 ha	10	200.00
5	**Community Outreach Programme and Enhanced community-based management**	180 villages in buffer areas and adjoining villages	10	150.00
6	**Monitoring and Evaluation** (Baseline study in the 0 year and monitoring in every year; Evaluation at fifth and 10th year)	Project works	10	60.00
7	**Research & Development**	Project works	06	100.00
Total				**2020.00**

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Annexure 1

Division & Compartment Wise Buffer Areas

SN	DIVISION	RANGE	BEAT	STATUS	OLD COMPT	NEW COMPT	AREA(HA)
1. Janjgir- Champa Forest division							
1	JANJGIR	BALODA	UDAYPUR	RF	69	62	336.2499818
2	JANJGIR	BALODA	UDAYPUR	PF	1697	63	76.56269392
3	JANJGIR	BALODA	UDAYPUR	PF	1696	64	95.70173779
4	JANJGIR	BALODA	BUDHNA	PF	1700	83	25.28121309
5	JANJGIR	BALODA	PANTORA	PF	1701	84	88.72816802
6	JANJGIR	BALODA	PANTORA	PF	1702	85	40.1007985
7	JANJGIR	BALODA	PANTORA	PF	1703	86	0.018503033
8	JANJGIR	BALODA	PANTORA	RF	84	87	36.4143198
9	JANJGIR	BALODA	BUDHNA	RF	82	79	147.9634129
10	JANJGIR	BALODA	BUDHNA	RF	83	80	263.5522878
11	JANJGIR	BALODA	BUDHNA	PF	1699	82	35.76941256
12	JANJGIR	BALODA	BUDHNA	PF	1698	81	125.7462614
13	JANJGIR	BALODA	VASHA BEAT	RF	68	68	222.8273363
14	JANJGIR	BALODA	VASHA BEAT	RF	67	67	114.2482386
						Total Area	1609.164
2. Katghora Forest Division							
1	KATGHORA	KATGHORA		OA	BASHANTPUR	OA781	51.98859921
2	KATGHORA	CHAITAMA		OA	MANGAMARA	OA551	0.931359752
3	KATGHORA	KATGHORA		OA	TIWARTA	OA776	277.3159705
4	KATGHORA	KATGHORA		OA	DIPKA	OA787	314.685825
5	KATGHORA	KATGHORA		OA	KASAIPALI	OA778	89.11328105
6	KATGHORA	KATGHORA		OA	DONGRI	OA780	35.66672863
7	KATGHORA	KATGHORA		OA	SINGHALI A	OA785	39.27557754
8	KATGHORA	CHAITAMA		OA	LITIYA KHAR	OA540	44.63543881
9	KATGHORA	CHAITAMA	MANIKPUR	PF	P1772	P72	102.289128
10	KATGHORA	KATGHORA		OA	DHELVADEEH B	OA790	205.8845746
11	KATGHORA	KATGHORA	KATGHORA	OA	P1819	OA765	29.94173053
12	KATGHORA	CHAITAMA	KATGHORA	OA	P1818	OA764	32.8435053
13	KATGHORA	KATGHORA		OA	KHORANGAPARA	OA779	65.6130096
14	KATGHORA	PALI	PUTA	PF	993	P158	17.24478849
15	KATGHORA	PALI		PF	994	P159	36.9616665
16	KATGHORA	PALI		OA	RATIJA	OA600	43.79413594
17	KATGHORA	PALI		OA	NONBIRRA	OA597	51.29943522
18	KATGHORA	PALI		OA	CHORHA	OA598	230.2638313
19	KATGHORA	PALI		OA	NEVSA	OA603	141.6426237
20	KATGHORA	KATGHORA		OA	SARAI SINGAR	OA774	23.7034731
21	KATGHORA	PALI		OA	UTARDA	OA602	299.6811945
22	KATGHORA	PALI		OA	RENKI	OA601	171.8980598
23	KATGHORA	PALI		OA	ANDIKCHHAR	OA599	529.17404
24	KATGHORA	KATGHORA	KATGHORA	PF	P1822	P532	192.6521557

SN	DIVISION	RANGE	BEAT	STATUS	OLD COMPT	NEW COMPT	AREA(HA)
25	KATGHORA	KATGHORA	CHORBHATTI	PF	P1821	P531	319.7895487
26	KATGHORA	KATGHORA		OA	SINDHALI B	OA777	22.22428223
27	KATGHORA	JATAGA		OA	BADAIMAR	OA783	12.13358775
28	KATGHORA	KATGHORA		OA	ABHAYPUR	OA784	88.00199302
29	KATGHORA	KATGHORA		OA	SINDHALI C	OA786	49.0859923
30	KATGHORA	KATGHORA		OA	DHELVADEEH C	OA788	44.94503726
31	KATGHORA	KATGHORA		OA	DHELVADEEH A	OA789	163.623797
32	KATGHORA	KATGHORA		OA	SIRIKIKHURD	OA775	38.9977895
33	KATGHORA	KATGHORA		OA	KATSIRA	OA773	35.08567038
34	KATGHORA	PALI		OA	BOEIR BHATA	OA604	44.80986484
35	KATGHORA	KATGHORA		PF	P1823	P533	407.1677505
						Total Area	4254.365
3. Korba Forest Division							
1	KORBA	KORBA			OA 2715	OA 1505	45.80336756
2	KORBA	KORBA	SANDEL		OA 2711	OA 1504	95.00077585
3	KORBA	KORBA	KORBA		P2201	P990	249.2986005
4	KORBA	BALCO	ROOMGARA		OA 2657	OA 1245	4.720350021
5	KORBA	KORBA	PANDRIPANI		P2204	P993	1.394972557
6	KORBA	KORBA	PANDRIPANI		P2205	P994	34.10959495
7	KORBA	KORBA	KORBA		P2200	P989	167.4334105
8	KORBA	KORBA			OA 2714	OA 1506	63.74525002
9	KORBA	BALCO	ROOMGARA		OA 2656	OA 1244	2.125653797
						Total Area	663.6319757
Total Buffer Areas under three Forest Divisions = 6527.161 ha							

Annexure 2

List of Mammals / Reptiles/Birds/Amphibia in the Buffer area.

SN	Common Name	Scientific Name	Family
Mammals			
1.	Jackal	Canis aurius	Canidae
2.	Jungle cat	Fellis chaus	Felidae
3.	Tiger	Panthera tigris	Felidae
4.	Panther	Panthera pardus	Felidae
5.	Stripped hyena	Hyaena hyaena	Hyaenidae
6.	Indian Ratel	Mellivora capeunsis	Mustelidae
7.	Indian Hare	Lepus nigricollis	Leporidae
8.	Indian Field Mouse	Mus booduga	Muridae
9.	Indian long-tailed Tree Mouse	Vandeleuria oleracea	Muridae
10.	House rat or Mouse	Mus musculus	Muridae
11.	Soft Furred Field Rat	Millardia meltada	Muridae
12.	Black Rat	Rattus rattus	Muridae
13.	Indian Mole Rat or Lesser Bandicoot Rat	Bandicota bengalensis	Muridae
14.	Indian Bush Rat	Golunda ellioti	Muridae
15.	Large Bandicoot Rat	Bandicota indica	Muridae
16.	House shrew or Chuchunder	Sancus murinus	Soricidae
17.	Common langur	Presbytis entellus	Cercopithecidae
18.	Monkey	Macaca mulatta	Cercopitheldae
19.	Barking Dear	Muntiacus muntyak	Carvidae
20.	Spotted Dear	Axix axis	Carvidae
21.	Sambhar	Cerus unicolor	Carvidae

SN	Common Name	Scientific Name	Family
22.	Mouse Deer	Tragulus meminna	Tragulidae
23.	Wild Boar	Sus scrofa	Suidae
24.	Indian fox	Vulpes bengalensis	Canidae
25.	Sloth bear	Melursus rsinus	Ursidae
26.	Elephant	Elephas maximus	Elephantidae
Reptiles			
1.	Krait	Bungarus caeruelus	Elapidae
2.	Garden lizard	Calotes versicolor	Agamidae
3.	Pit viper	Crotolus sp	Viperadae
4.	Russell's Viper	Daboia russelii	Viperidae
5.	Water snake	Enhydris enhydris	Homalopsidae
6.	Common skink	Eutropis carinata	Scincidae
7.	House Gecko	Hemidactylus flaviviridis	Gekkonidae
8.	King cobra	Ophiophagus hannah	Elapidae
9.	Rat Snake	Ptyas mucosa Linnaeus	Colubridae
10.	Python	Python molurus	Pythonidae
11.	Common frog	Rana temporaria	Ranidae
12.	Monitor lizard	Varanus bengalensis	Varanidae
Birds			
1	Ashy prinia	Prinia socialis	Cisticolidae
2	Asian Open Bill Stork	Anastomus oscitans	Cisticolidae
3	Asian Pied Starling	Sturnus contra	Sturnidae
4	Bank Myna	Acridotheres ginginianus	Sturnidae
5	Barn Owl	Tyto alba	Tytonidae
6	Common Swallow	Hirundo rustica	Hirundinidae

7	Black drongo	Dicrurus macrocercus	Dicruridae
8	Black kite	Milvus migrans	Accipitridae
9	Bramhiny Starling	Sturnia pagodarum	Sturnidae
10	Cattle egret	Bubulcus ibis	Ardeidae
11	Red Collored dove	Streptopelia tranquebarica	Columbidae
12	Common hoopoe	Upupa epops	Upupidae
13	Common Kingfisher	Alcedo atthisp	Cisticolidae
14	Common myna	Acridotheres tristis	Sturnidae
15	Common Tailor Bird	Orthotomus sutorius	Cisticolidae
16	Crested Serpent-eagle	Spilornis cheela	Accipitridae
17	Eurasian Collared dove	Streptopelia decaocto	Columbidae
18	Eurasian Golden Oriole	Oriolus oriolus	Oriolidae
19	Large Egret	Ardea alba	Ardeidae
20	Greater coucal	Centropus sinensis	Cuculidae
21	Green bee- eater	Merops orientalis	Meropidae
22	Greenish Warbler	Phylloscopus trochiloides	Phylloscopidae
23	House crow	Corvus splendens	Sturnidae
24	House Sparrow	Passer domesticus	Passeridae
25	Hawk Eagle	Nisaetus cirrrhatus	Accipitridae
26	Indian robin	Saxicoloides fulicata	Muscicapidae
27	Indian roller	Coracias benghalensis	Coraciidae
28	Indian silver bill	Euodice malabarica	Estrildidae
29	Indian Spotted Dove	Spilopelia chinensis	Columbidae
30	Indian Spotted eagle	Clanga hastata	Accipitridae
31	Jungle Babbler	Turdoides striata	Lieothrichidae
32	Jungle Owlet	Glaucidium radiatum	Strigidae
33	Jungle Prinia	Prinia sylvatica	Cistocolidae
34	Laughing dove	Streptopelia senegalensis	Columbidae
35	Lesser Pied Kingfisher	Ceryle rudis	Alcedinidae

36	Little Cormorant	Microcarbo niger	Phalacrocoracidae
37	Little Egret	Egretta garzetta	Ardeidae
38	Little swift	Apus affinis affinis	Apodidae
39	Common Indain Nightjar	Caprimulgus asiaticus	Caprimulgidae
40	Oriental magpie robin	Copsychus saularis	Muscicapidae
41	Paddy Field Pipit	Anthus rufulus	Motacillidae
42	Plain Prinia	Prinia inornata	Cisticolidae
43	Plum headed parakeet	Psittacula cyanocephala	Psittacidae
44	Purple Sunbird	Certhia asiaticus	Nectariniidae
45	Red vented bulbul	Pycnonotus cafer	Pycnonotidae
46	Rose ringed parakeet	Psittacula krameri	Psittaculidae
47	Scaly breasted munia	Lonchura punctulata	Estrildidae
48	Singing bush lark	Mirafra cantillans	Alaudidae
49	Alexandrine parakeet	Psittacula eupatria	Psittacidae
50	Spotted dove	Streptopelia chinensis	Columbidae
51	Steppe Eagle	Aquila nipalensis	Accipitridae
52	Sulfur bellied warbler	Phylloscopus griseolus	Phylloscopidae
53	Variable Wheatear	Oenanthe picata	Muscicapidae
54	White Rumped Munia	Lonchura striata	Estrildidae
55	White breasted Kingfisher	Halcyon smyrnensis	Alcedinidae
56	Yellow wattled lapwing	Vanellus malabaricus	Charadriidae
57	Pied Starling	Gracupica contra	Sturnidae
58	Small parakeet	Loriculus vernalis	Psittaculidae

Amphibians			
1.	Common Asian Toad	Duttaphrynus melanostictus	Bufonidae
2.	Narrow-Fouthed Frog	Microhyla ornata	Microhylidae
3.	Indian Panted Frog	Kaloula taprobanica	Microhylidae
4.	Indian Skipping Frog	Euphlyctis cyanophlyctis	Dicroglossidae
5.	Jerdon's bull frog and south Indian bullfrog	Hoplobatrachus crassus	Dicroglossidae
6.	Indian Bull Frog	Hoplobatrachus tigernus	Dicroglossidae
7.	Cricket Frog	Fejervarya limnocharis	Dicroglossidae
8.	Short – headed Burrowing Frog	Sphaerotheca breviceps	Dicroglossidae
9.	Roland's burrowing Frog	Sphaerotheca rolandar	Dicroglossidae
10.	Common Tree Frog	Polypedates maculatus	Rhacophoridae
11.	Common Toad	Bufo melanostictus	Bufonidae
12.	Common Frog	Rana temporaria	Ranidae

Note: The aforesaid account of 12 species of amphibians belonging to 10 genera under 6 families from Koba district, Chhattisgarh.

Annexure 3

List of Food/fodder/grass species recommended for planting in areas for habitat development/restoration

SN	Species name	Local name	Life-form	Method of propagation
1	Cassia auriculata	Matura tea tree	Tree	Planting
2	Cassia occidentalis	-	Shrub	Propagation by seed/transplanting
3	Cassia tora	Senna tora	Shrub	Propagation by seed/transplanting
4	Crotalaria albida	Narrow leaf rattlepod	Herb	Propagation by seed
6	Crotalaria juncea	Indian hemp	Shrub	Propagation by seed
7	Stylosanthis fructiosa	Shruby pensil flower	Shrub	Propagation by seed
8	Tephrosis pupurea	Wild indigo	Shrub	Propagation by seed
9	Cynodont dactylon	Dub ghash	Grass	Propagation by rhizome or seeds
10	Apluda mutica	Ghas		
11	Cmbopogan martini	Ginger grass or rosha grass	Grass	Propagation by slips
12	Dendrocalamus strictus	Katang bans	Grass	Propagation by rhizome or seeds
13	Crysopogan fulvus	ghas	Grass	Propagation by slips
14	Dicantium annulatum	Sheda grass	Grass	Propagation by seed
15	Albizia procera	Safed siris	Tree	Propagation by seed
16	Albizia lebbeck	Kala siris	Tree	Propagation by seed
16	Themeda quadrivalvis	Grader grass	Grass	Propagation by seed
17	Cenchrus pedicilatus	Deenanth grass	Grass	Propagation by seed

SN	Species name	Local name	Life-form	Method of propagation
18	Cenchrus americanus	Pearl millet	Grass	Propagation by seed
19	Ficus bengalensis	Barh tree	Tree	Propagation by seed
20	Pongemia pinnata	Karanj	Tree	Propagation by seed
21	Syzygium cumini	Jamun tree /java plum tree	Tree	Propagation by seed
22	Ficus religiosa	Pipal tree	Tree	Propagation by seed
23	Ficus racemosa	Fig tree	Tree	Propagation by seed
24	Bombax ceiba	Semal tree	Tree	Propagation by seed
25	Madhuca indica	Mahua tree	Tree	Propagation by seed
26	Ziziphus jujuba	Ber tree	Tree	Propagation by seed
27	Buchanania lanzan	Chironji / Char tree	tree	Propagation by seed
28	Pithecelobium dulce	Ganga imli	Tree	Propagation by seed

Prepared and Published by

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ANNEX - 6

17
26.04.2024

SOUTH EASTERN COALFIELDS LIMITED
(A Mini Ratna Company)
(A Govt of India Undertaking/ Subsidiary of Coal India Limited)
OFFICE OF THE GENERAL MANAGER
GEVRA AREA
P.O. GEVRA PROJECT, DIST.KORBA(CG)-495452
Email Id -gmgevra@gmail.com

Gram: Gevra Coal
Tel: 07815-276430(O) 07815-275030(O)07815-275432(R)
Fax: 07815-275032(R) 07815-275434

REGD OFFICE: SEEPAT ROAD, P.B.No.60,BILASPUR(CG)
CIN-U10102CT1985GOI003161

No. SECL/GM/GA/L&R/2023/75 Date: 19/04/2024

To,

The Nodal Officer (Envt./Forest)
SECL Gevra Area

Subject: 1.R&R Status report up to March 2024, Expenditure in 2023-24 & Financial Allocation for the year 2024-25.

Reference: SECL/GM/GA/Environment/2024/21 Dated 08/04/2024

Dear Sir,

With reference to the above subject, the desired information from this office is as mentioned below: -

4. R&R Status report up to March 31st March 2024 (Copy enclosed).
5. Expenditure in R&R head for the financial year 2023-24 is Rs. 127.15 Lakhs.
6. Financial allocation in R&R head for the year 2024-25: Proposed budget is Rs. 3600.00 Lakhs.

This is for your information please.

Enclosure: R&R Status report 31st March 2024.

Yours faithfully
19/04/24
Staff Officer(L&R)
SECL Gevra Area

Copy to:-
General Manager, Gevra Area for kind information.

South Eastern Coalfields Limited

Status Report of Rehabilitation and Resettlement

Land & Revenue Dpt, Gevra Area (as on 31/03/2024)

SL	Villages involved	Number of land owners	Rehabilitation Status						Resettlement Status					
			Entitled number of employments	Not entitled for employment/Rehabilitation Benefits	Employment given till date	Cash compensation in lieu of employment	Total Employments	Balance employment to be given	PAFS involved	Provided house plot at site	Cash Grant	Families not eligible for cash grant or house plot	Total Balance families to be Settled	Resettlement Sites
1A	Pondi	67	69	0	66	0	66	3	0	0	0	0	0	
2	Barell	294	343	0	308	0	308	35	131	131	0	0	0	Nehrunagar
3	Dhurena	145	147	0	141	0	141	6	40	40	0	0	0	Vijaynagar
4	Junadhi	326	348	0	315	0	315	33	149	149	0	0	0	Vijaynagar
5	Kusmunda	502	737	0	526	0	526	211	232	232	0	0	0	Vijaynagar
6	Birjhra	413	535	0	415	0	415	120	150	150	0	0	0	Vijaynagar
7	Ghatmunda	152	161	0	155	0	155	6	75	75	0	0	0	Ganganagar
8	Belliki	137	148	0	132	0	132	16	0	0	0	0	0	
9	Dipka	121	137	0	114	0	114	23	0	0	0	0	0	
Sub total		***2157***	***2825***	***0***	***2172***	***0***	***2172***	***453***	***777***	***777***	***0***	***0***	***0***	
1B	Pondi	1419*	179	1249	133	14	147	32	467	0	407	60	0	Not Required
10	Amgaon	1231*	296	964	202	17	219	77	491	73	243	170	5	Nehru Nagar
11	Bahanpath	1040*	122	924	79	12	91	31	357	0	202	155	0	Not Required
12	Bhatora	502*	159	362	106	23	129	30	424	0	202	35	187	Ganganagar
13	Rata	255	53	203	23	3	26	27	350	0	0	0	350	Birda
14	Bhilai Bazar	161	40	123	19	1	20	20	200	0	0	0	200	
15	Naraibodh	867	230	655	155	6	161	69	400	0	0	0	400	
Sub total		***5475***	***1079***	***4480***	***717***	***76***	***793***	***286***	***2689***	***73***	***1054***	***420***	***1142***	
Grand Total		**7632**	**3704**	**4480**	**2689**	**76**	**2965**	**739**	**3466**	**850**	**1054**	**420**	**1142**	

(1)For village Jhingatpur, only government land was acquired.
(2)For village Gevra & Mangaon, both villages were acquired by Gevra Area but employment wass dealt by Kusmunda Area.
(3)For village Belliki & Dipka, both villages were acquired by Gevra Area but R&R was dealt by Dipka Area.
(4)One Employment is provided for every two acres of acquired tenancy land.
(5)The number of land holders in village Pondi, Amgaon, Bahanpath, Bhatora has increased/decreased due to different orders from state authorities.

ANNEX - 7

कार्यालय वन मण्डलाधिकारी कटघोरा वनमण्डल कटघोरा, जिला - कोरबा (छ.ग.)

Phone/Fax No.: 07815-250157, mail : dfokatghora@gmail.com

क्रमांक / तक.अधि. / 2024 / 1942 कटघोरा, दिनांक 31/05/2024

प्रति,

महाप्रबंधक
एस.ई.सी.एल. गेवरा क्षेत्र
जिला कोरबा (छ.ग.)

विषय — Plantation of Sal Trees (Only) in 200 ha. for redevelopment of Sal forest in the region as per Environment Clearance with respect to SECL Gevra OCP.

संदर्भ :
1. आपका पत्र क्र. / एस.ई.सी.एल. / म.प्र. / गे.क्षे. / पर्यावरण / 2023 / 408 दिनांक 16.12.2023
2. वन परिक्षेत्र अधिकारी माली का पत्र क्र. / 902 दिनांक 10.05.2024
3. मुख्य वन संरक्षक बिलासपुर वृत्त, बिलासपुर का पत्र क्र. / तक. / 3640 दिनांक 28.05.2024

—— :000:: ——

उपरोक्त विषयांतर्गत लेख है, कि महाप्रबंधक एस.ई.सी.एल. गेवरा द्वारा गेवरा ओपन कास्ट परियोजना के पर्यावरण स्वीकृति के शर्त क्र. (xxiii) PP Shall plant additional 200 ha. of Sal trees (Only) and create a nursery of 10 ha to distribute the species freely in the region for redevelopment of Sal Forest in the region. के पालन हेतु 200.000 हे. साल प्लांटेशन का योजना वन परिक्षेत्र माली अंतर्गत कक्ष क्र. P147 में रकबा 97.600 हे. एवं OA599 में रकबा 57.600 हे. कुल रकबा 155.200 हे. क्षेत्र का चयन कर इस कार्यालय में प्रस्तुत किया है। साल वृक्षारोपण कार्य का हेतु राशि 62557562/- की आवश्यकता है।

अतः साल वृक्षारोपण प्लांटेशन हेतु राशि रू. 6,25,57,562/- (छः करोड़ पच्चीस लाख सत्तावन हजार पांच सौ बासठ रूपये मात्र) डिमांड ड्राफ्ट वनमंडलाधिकारी कटघोरा के नाम से तैयार कर अटैचमेन्ट इस कार्यालय में प्रस्तुत करें ताकि वृक्षारोपण कार्य समयावधि में प्रारंभ किया जा सके।

संलग्न : योजना की 01-01 प्रति।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा
कटघोरा, दिनांक 31/05/2024

पृ. क्रमांक / तक.अधि. / 2024 / 1943

प्रतिलिपि:-

1. उपवनमण्डलाधिकारी माली की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।
2. व्यय शाखा प्रभारी कटघोरा वनमंडल कटघोरा की ओर सूचनार्थ प्रेषित।

वनमंडलाधिकारी
कटघोरा वनमण्डल कटघोरा

SEEPAT ROAD
P.O.: SECL
BILASPUR

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

ID : 07815 275430(O)
: 7815 275632(R)
Fax : 07815 275634
email : gevramail@gmail.com

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

पोस्ट ऑफिस:गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

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

क्रमांक: एस.ई.सी.एल/जी.ए.जी/ई.पी./पर्यावरण/2024/ 429 दिनांक 26 /08/2024

To
The Divisional Forest Officer,
Katghora Division
Korba

Sub: Plantation of Sal trees (Only) in 200 Ha for redevelopement of Sal forest in the region as per Environment Clearence with respect to SECL Gevra OCP

REF : क्रमांक/वन. अधि. /2024/1942 रायपुर, दिनांक 31/05/2024

The following points were raised by SECL HQ Bilaspur after due discussion with the Sr. Advisor (Forest & Environment)

1. The viability of the Sal seed is seven days only and it is important to know the success rate of Sal seed germination at the nursery stage and what are the major changes adopted in the Sal Nursery Management.
2. The Sal seedling has the phenomena of Dying Back which is universal hence the sapling growth starts to prominence only after two years of dying back period.
3. What are the measures adopted by forest department for checking forest fires, unrestricted grazing, surface exposure and desiccation, compaction of soil is in the project is not clear.
4. What is the measure taken in the project to check the moisture and root competition at the peak growing season which is one of the limiting factors and is responsible for dying back and whippy Sal seedlings.
5. What is the actual area of invasive alien species occupied in the proposed plantation project and Sal regeneration areas.
6. The site suitability for artificial regeneration as well as the natural Sal regeneration areas must be verified at the field level by the undersigned along with the DFO and Area Nodal Officer before embarking on the project.
7. The site suitability for Sal regeneration areas and major adopted for regeneration is not clear in the project.
8. Statistical Analysis of growth in the Sal Artificial Regeneration Project and Sal Regeneration Area Project is not clear in the proposed project.
9. The Expected Outcomes from the plantation and the problem faced by the area selected for the project are not clear.
10. The liability accountability factor is not clear in the proposed project in case of low survival percentage in the proposed project.

Kindly requested to furnish the details on the above mentioned points.

Thank you.

Nodal Officer (Environment)
SECL Gevra Area

ANNEX – B

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीएकअंगइकाई/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा (छत्तीसगढ़)
पिन:495452

STD 07815 275430(O)
7815 275932(R)
Fax 07815 275434
e-mail : gevraenvt@gmail.com

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

क्रमांक एस.ई.सी.एल/एम.पी.बी./पर्यावरण/2024/ 149 (B) दिनांक 19/08/2024

VACHAN- PATRA 4
(94.293 HA. FOREST LAND)
(CONDITION NO. 7)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "Mined out forest area reclaimed by the User Agency, will be handed over back to the State Forest Department by 2038-39 after Final Mine closure activities (As per the Calender programme for excavation of coal in the approved 70 MTY PR of Gevra OCP)."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX-9

SEEPAT ROAD
P.O. SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइंडियालिमिटेडकीअनुषंगी) A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन 495452

STD 07815 275430(O)
7815 275432(R)
Fax 07815 275434
email: gevraenvr@gmail.com

पो0आ0 गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist.: Korba (C.G.)
Pin- 495452

क्रमांक/एस.ई.सी.एल/मप्र.जी.क्षे./पर्यावरण/2024/149 (E) दिनांक 19/08/2024

VACHAN- PATRA 5
(94.293 HA. FOREST LAND)
(CONDITION NO. 10)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"Compensatory levies to be realized from the User Agency under the project shall be transferred/ deposited, through e-challan, in to the account of CAMPA pertaining to the State concerned through e-portal (https://parivesh.nic.in/)."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEXURE 10

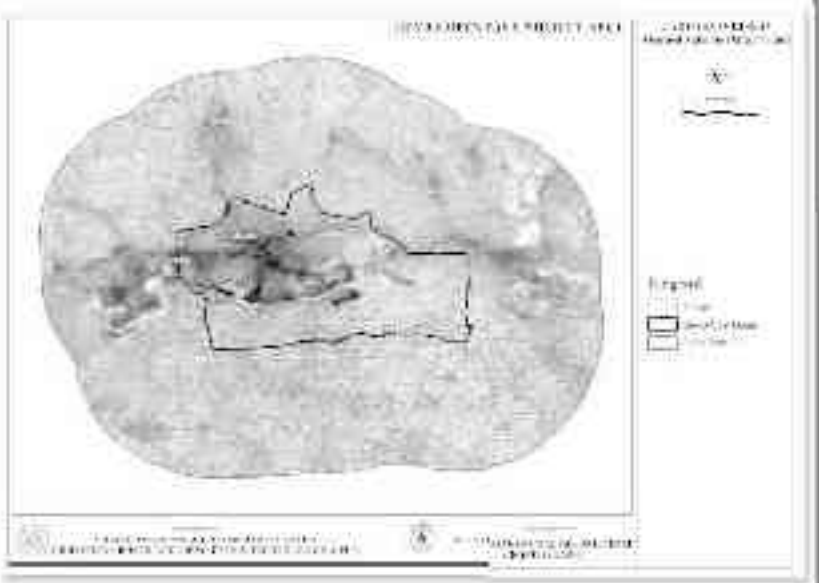
For Official use only

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

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

ACTION PLAN REPORT

SURFACE DRAINAGE PLAN WITH SURFACE WATER CONSERVATION PLAN FOR GEVRA EXPANSION PROJECT



Submitted by:

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

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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 boundary information provided to the Council the GIS area of the Gevra project area is estimated to be 4,731 Ha. the SECL Gevra lease area 70MTY has been informed to be 4781.798 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.

It is also to inform here that the GIS area is based on the Ortho Rectified Satellite Images only and no DGPS survey was carried out for this purposed by the Council. This GIS area could vary from the actual area under lease. The area differences may be due to standard map projections adopted (WGS84, UTM) in this study and the field measured area could be topographic area.

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.

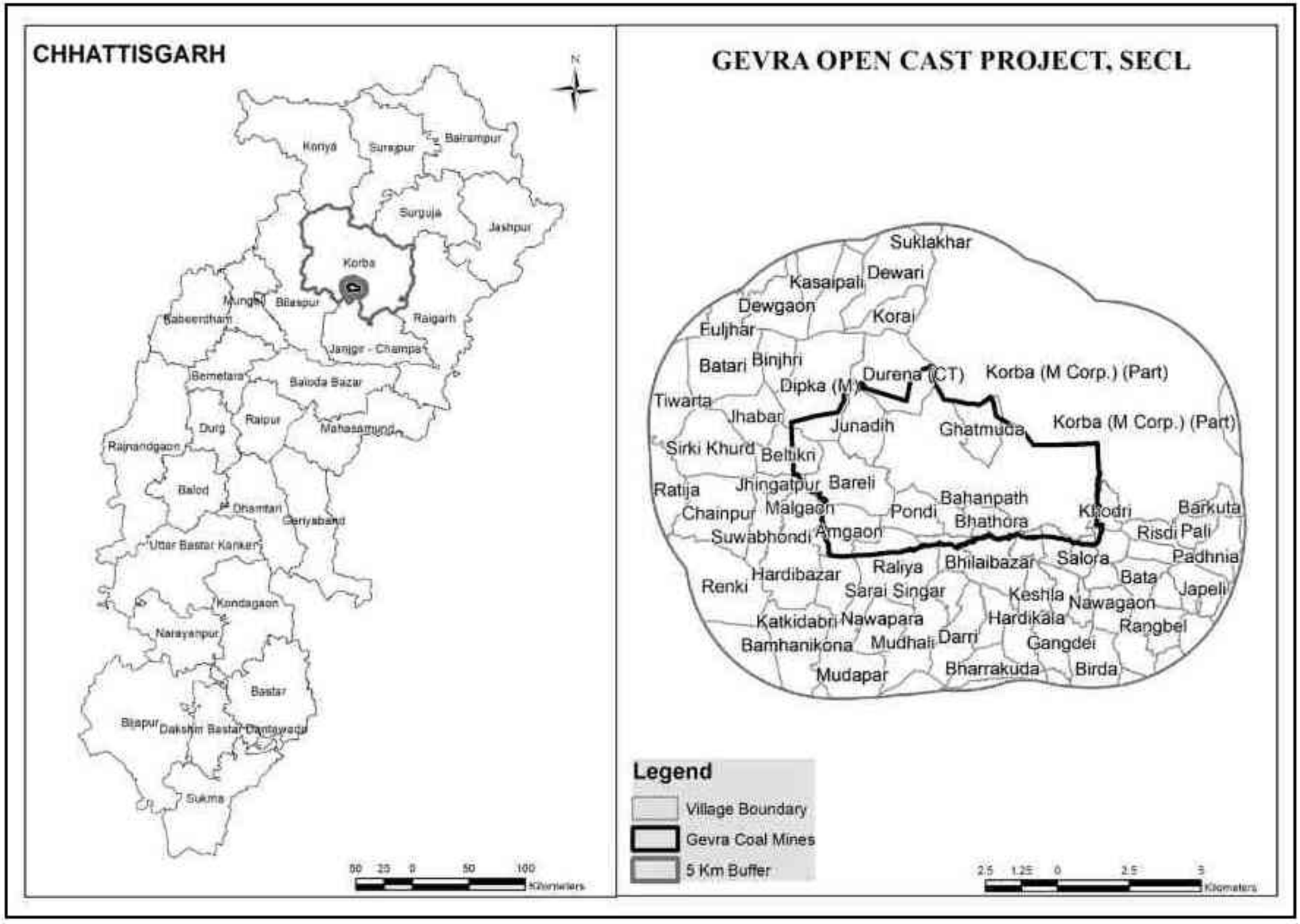

Figure 1-1 Regional Location of SECL Project Area

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/ 2018/259 dated 23/03/18 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 based on Universal Soil Loss Equation (USLE) and field observation.
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

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 an 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 has been 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. provided work order to the council.

1.4. Methodology Adopted

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

1.5. 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 238.279 Sq.Km (27,927 Ha.). The area of interest (27,927 Ha) falls in one RESOURCESAT-1, LISS-IV Mx scenes and three CARTOSAT-1 scenes. Figure 1-2 shows the SECL area with 5 Km. buffer and satellite data foot prints.

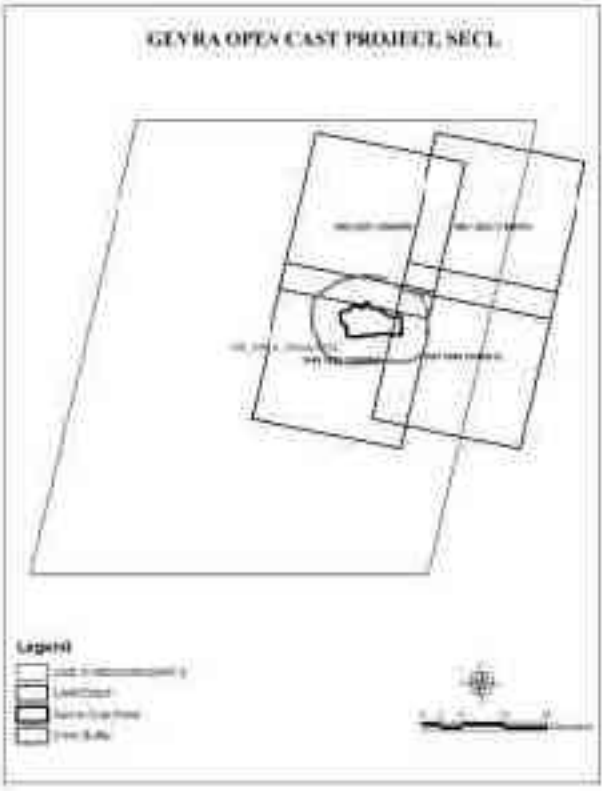

Figure 1-2 SECL Area location with Satellite Data Footprints

1.6. 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.

1.7. Snapshots of the SECL Area

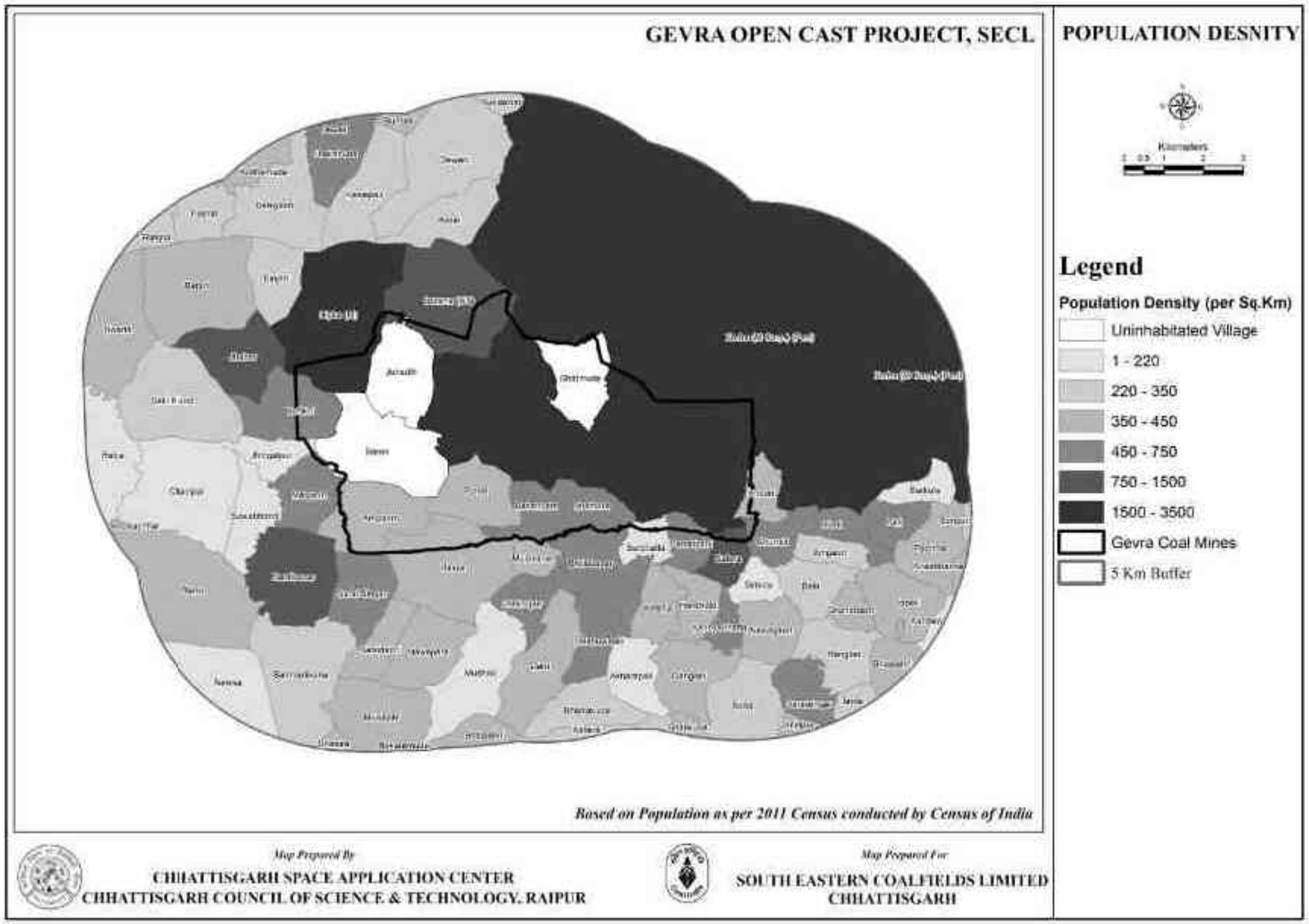

Figure 1-3 Population Density of villages around SECL project area

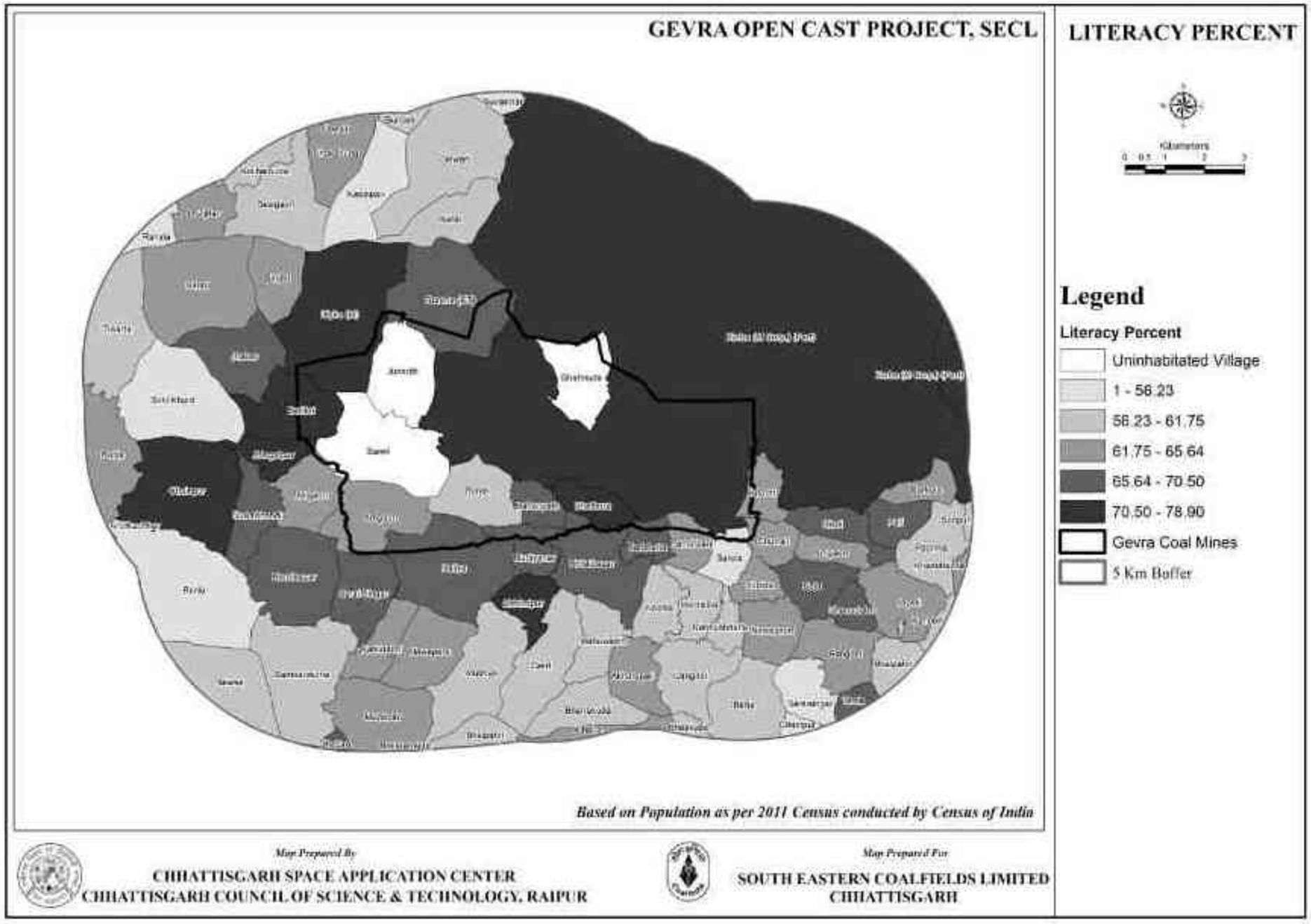

Figure 1-4 Literacy of villages around SE CL project area

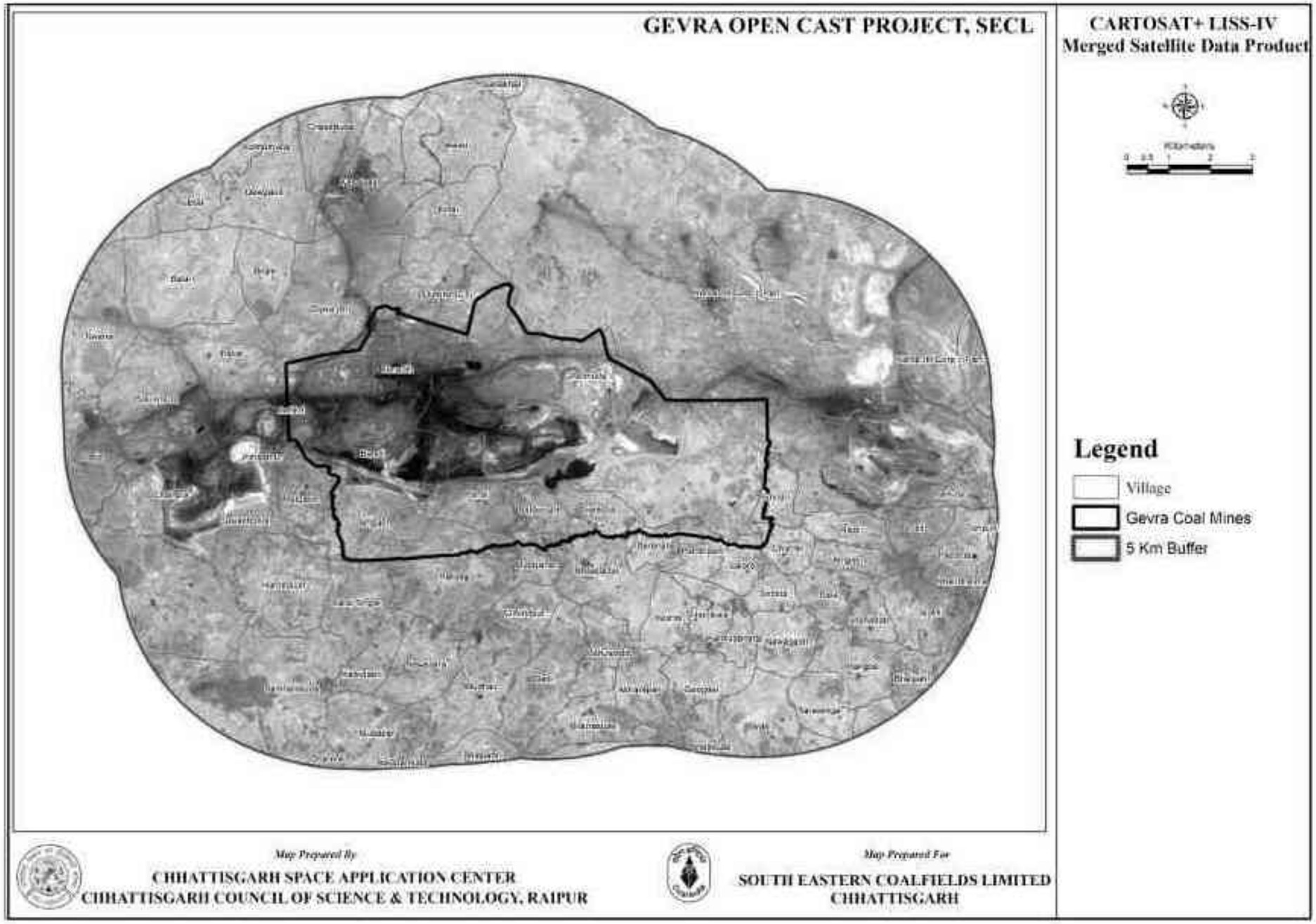

Figure 1-5 Gevra Project Area as viewed on CARTOSAT+ LISS-IV merged Satellite data Product

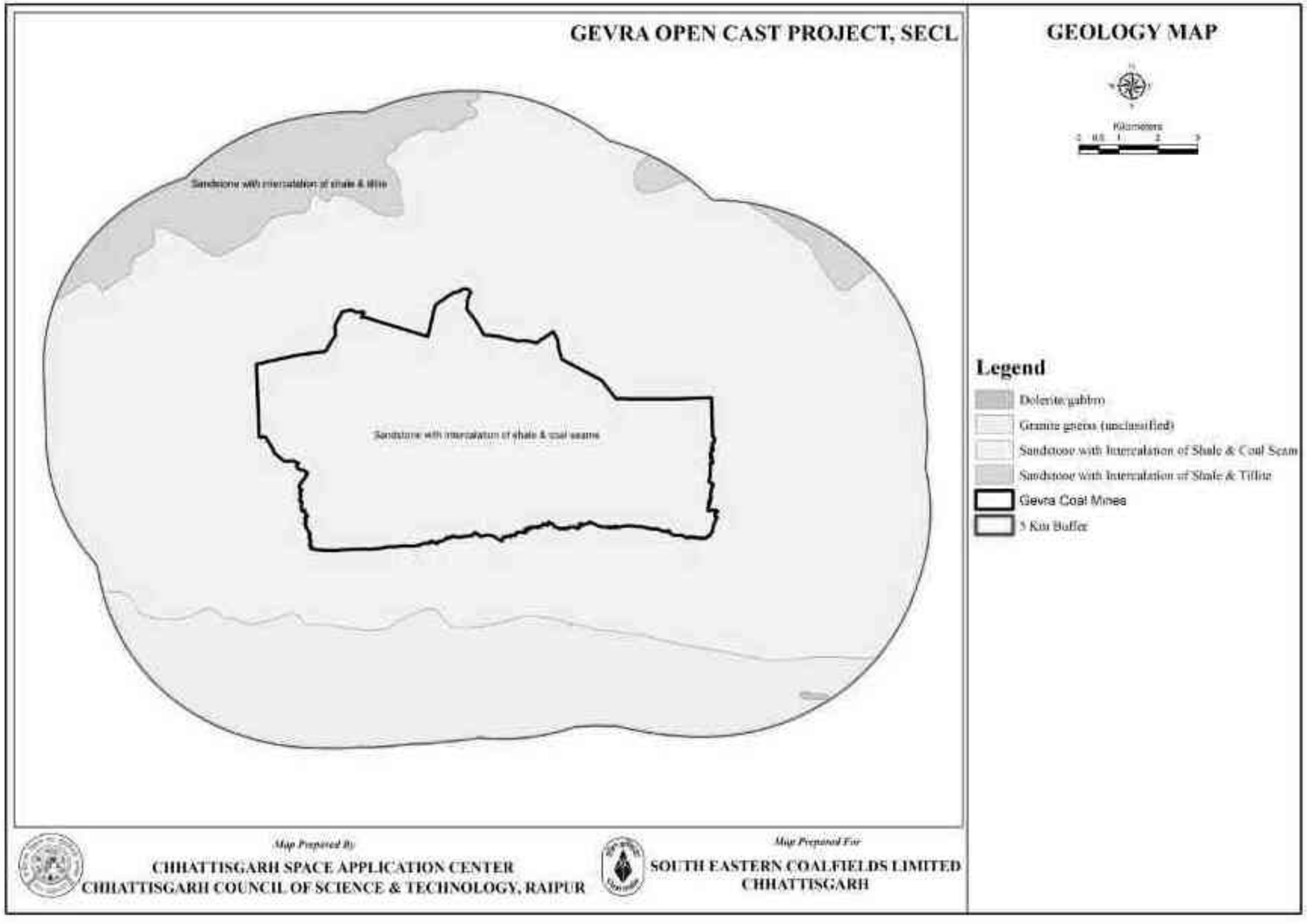

Figure 1-6 Geology of Gevra Project Area

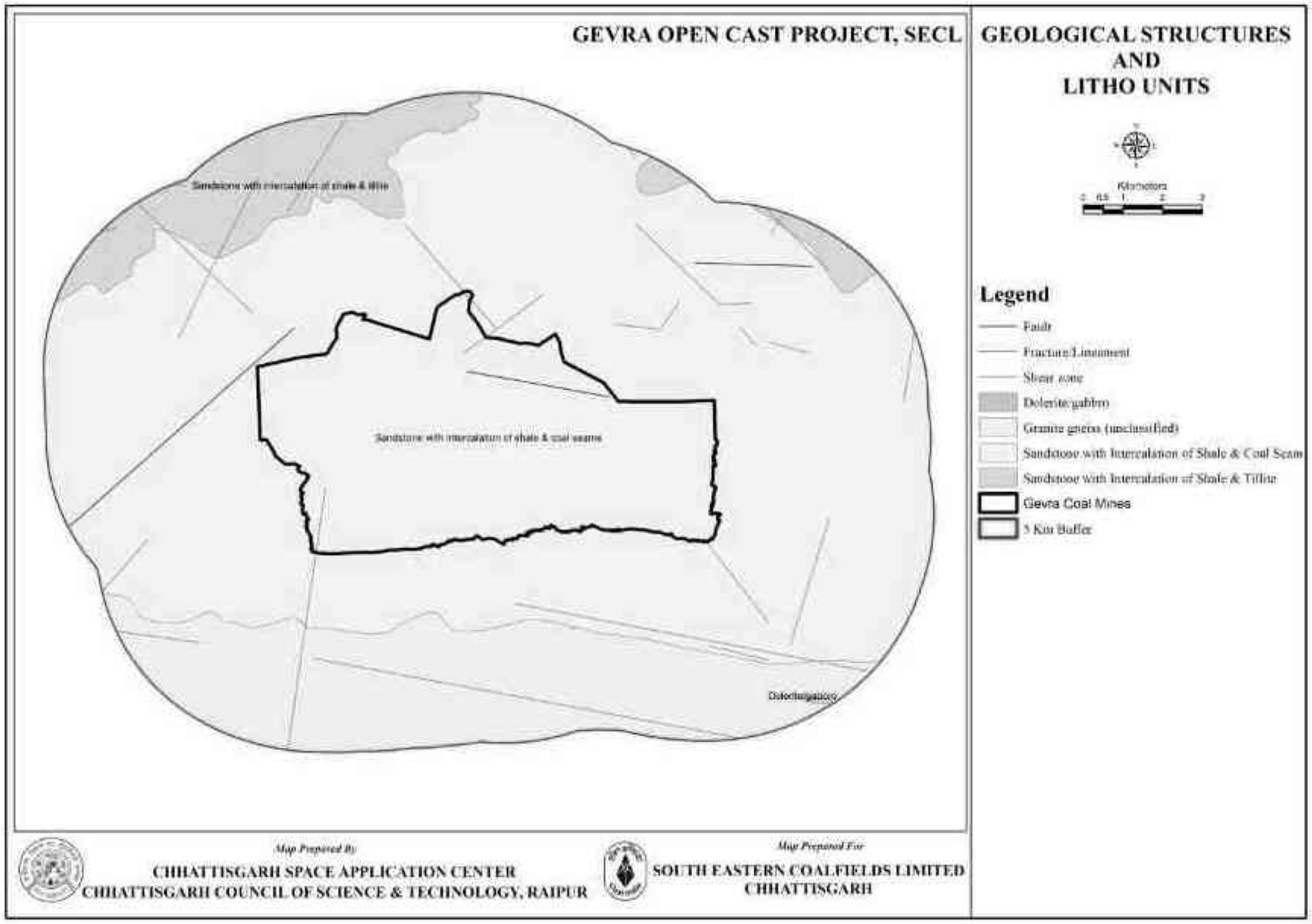

Figure 1-7 Geological Structures of Gevra Project Area

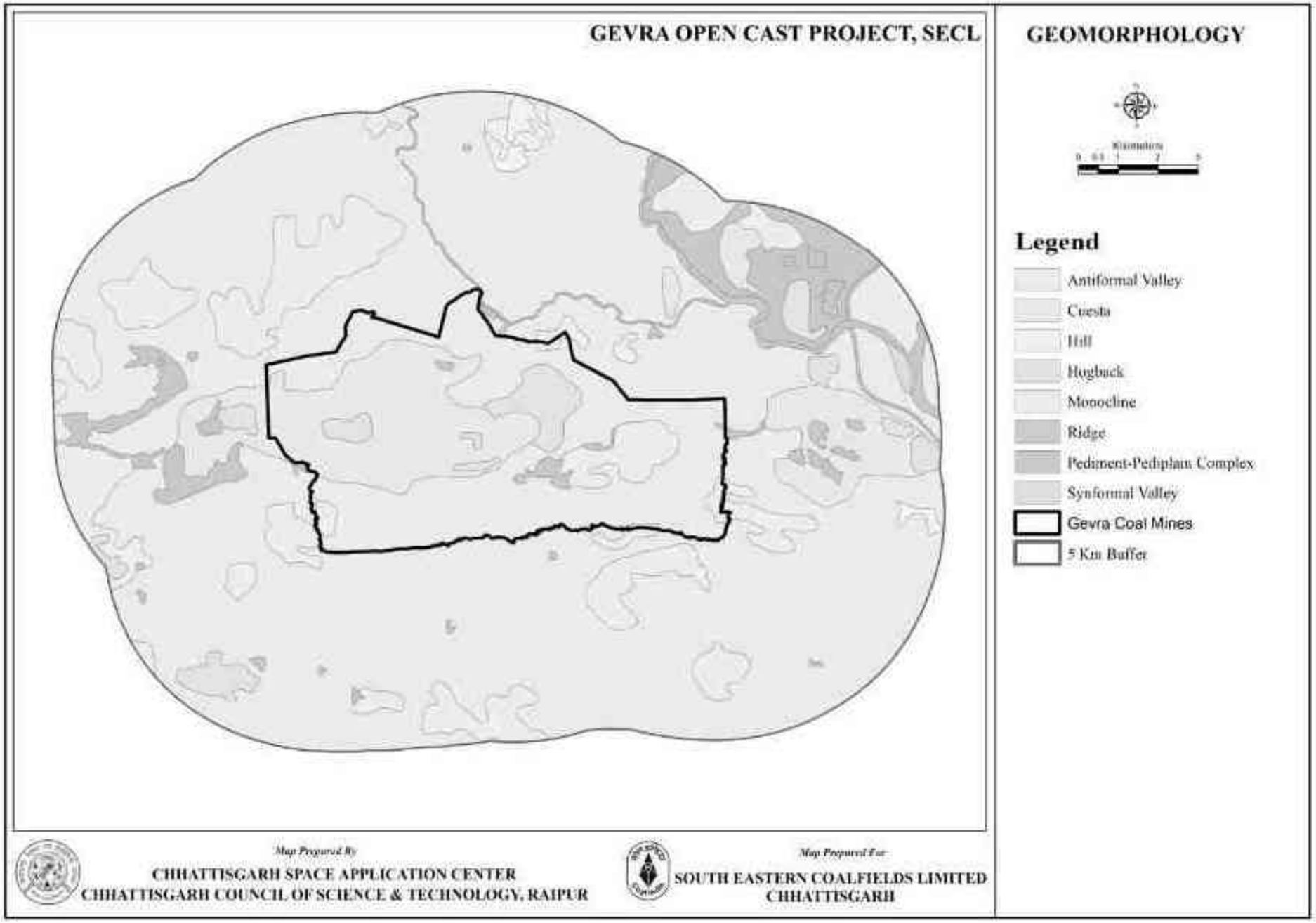

Figure 1-8 Geomorphology of Gevra Project Area (Based on Satellite data interpretation)

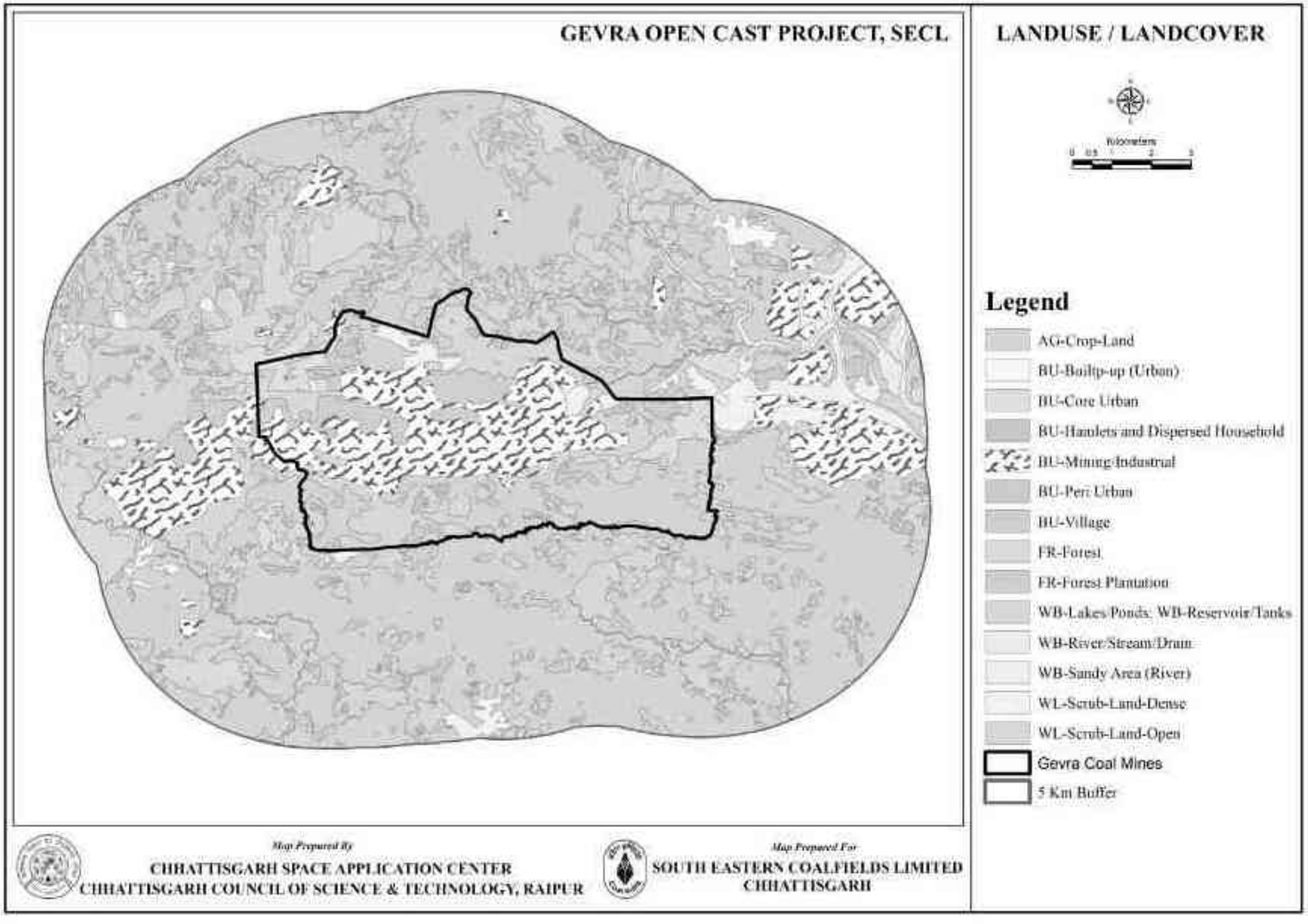

Figure 1-9 Existing Landuse of Gevra Project Area (Based on Satellite data interpretation)

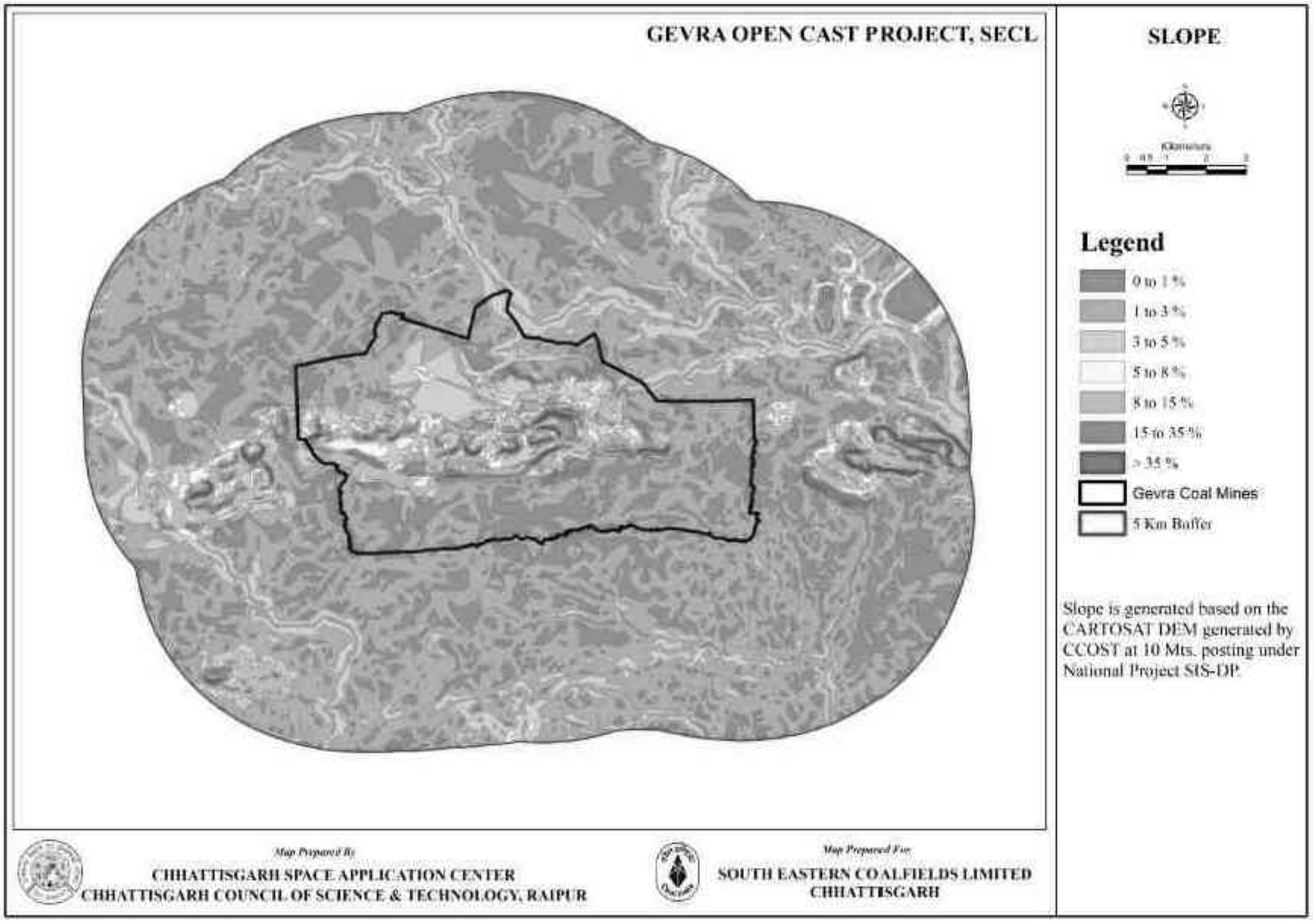

Figure 1-10 Slope of Gevra Project Area

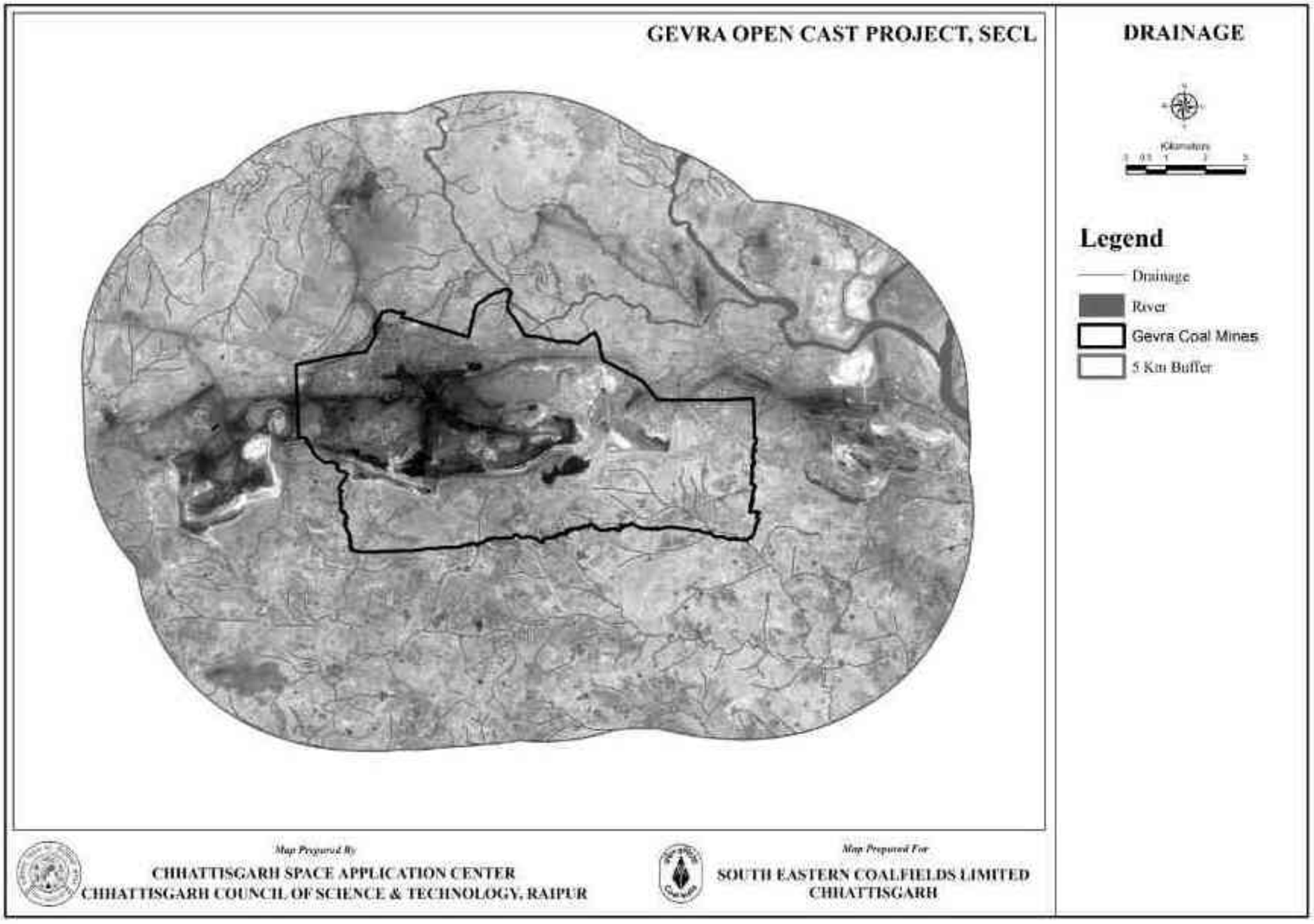

Figure 1-11 Drainage of Gevra Project Area

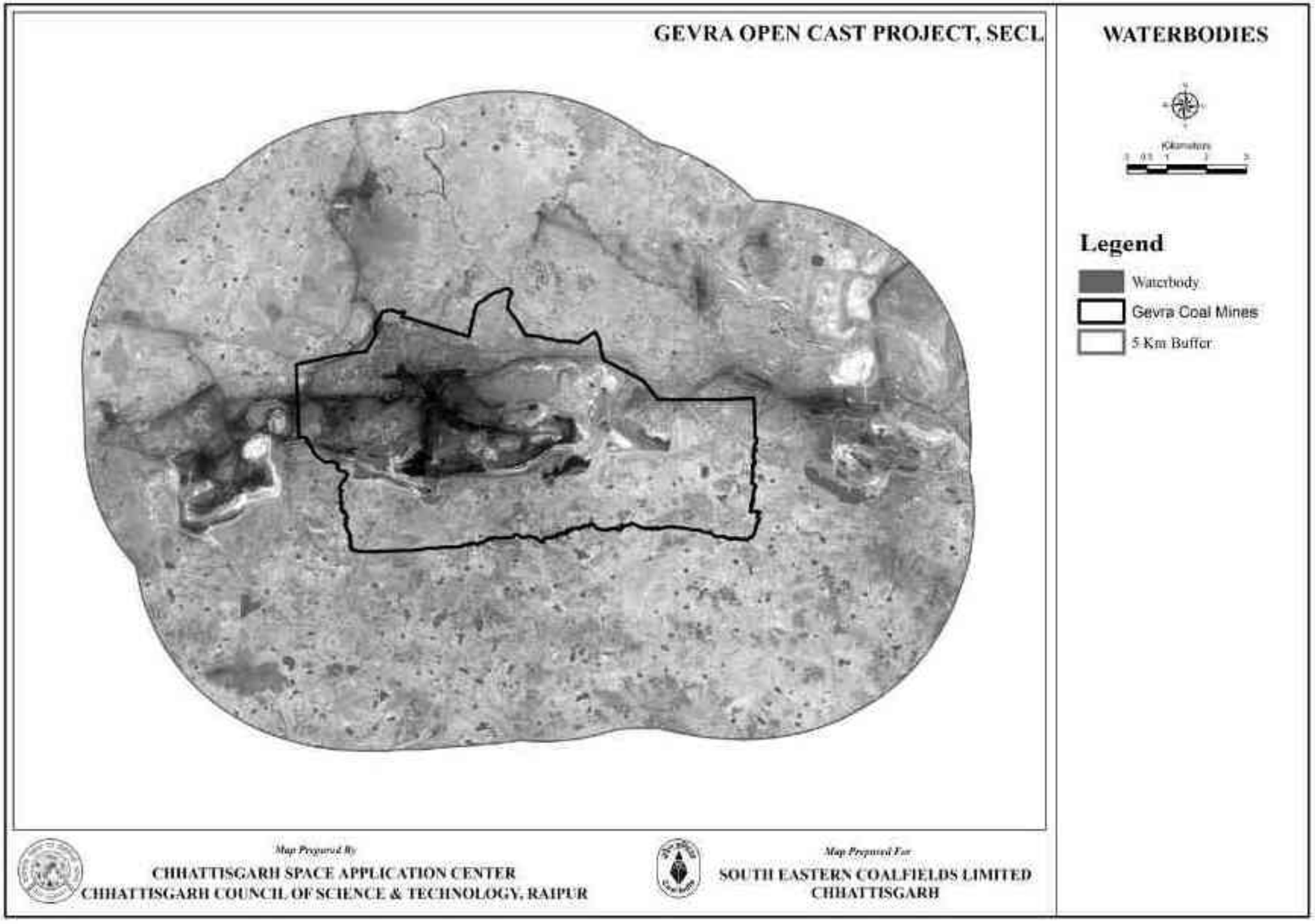

Figure 1-12 Waterbodies of Gevra Project Area

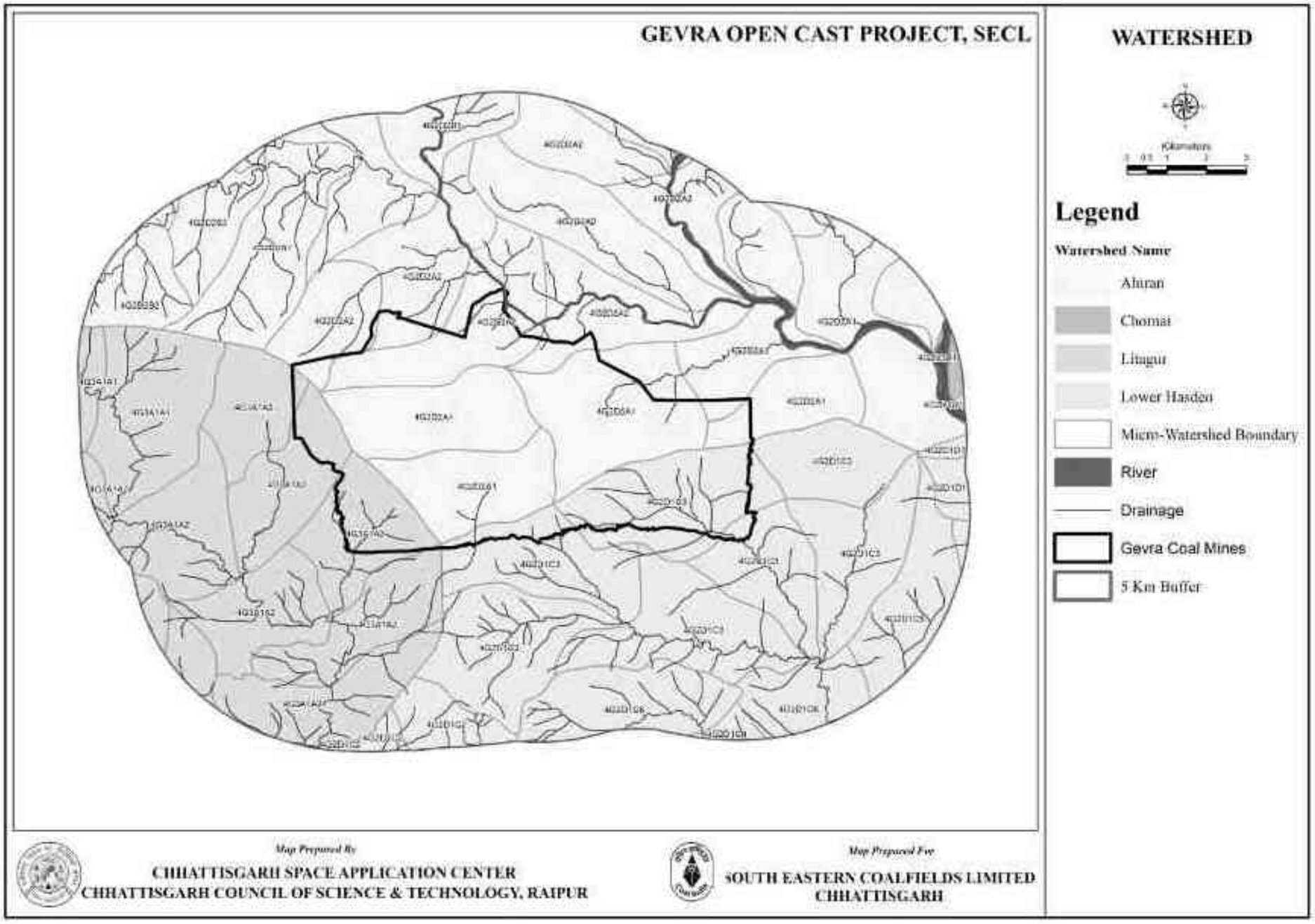

Figure 1-13 Watersheds of Gevra Project Area (Based on NBSSLUP Atlas)

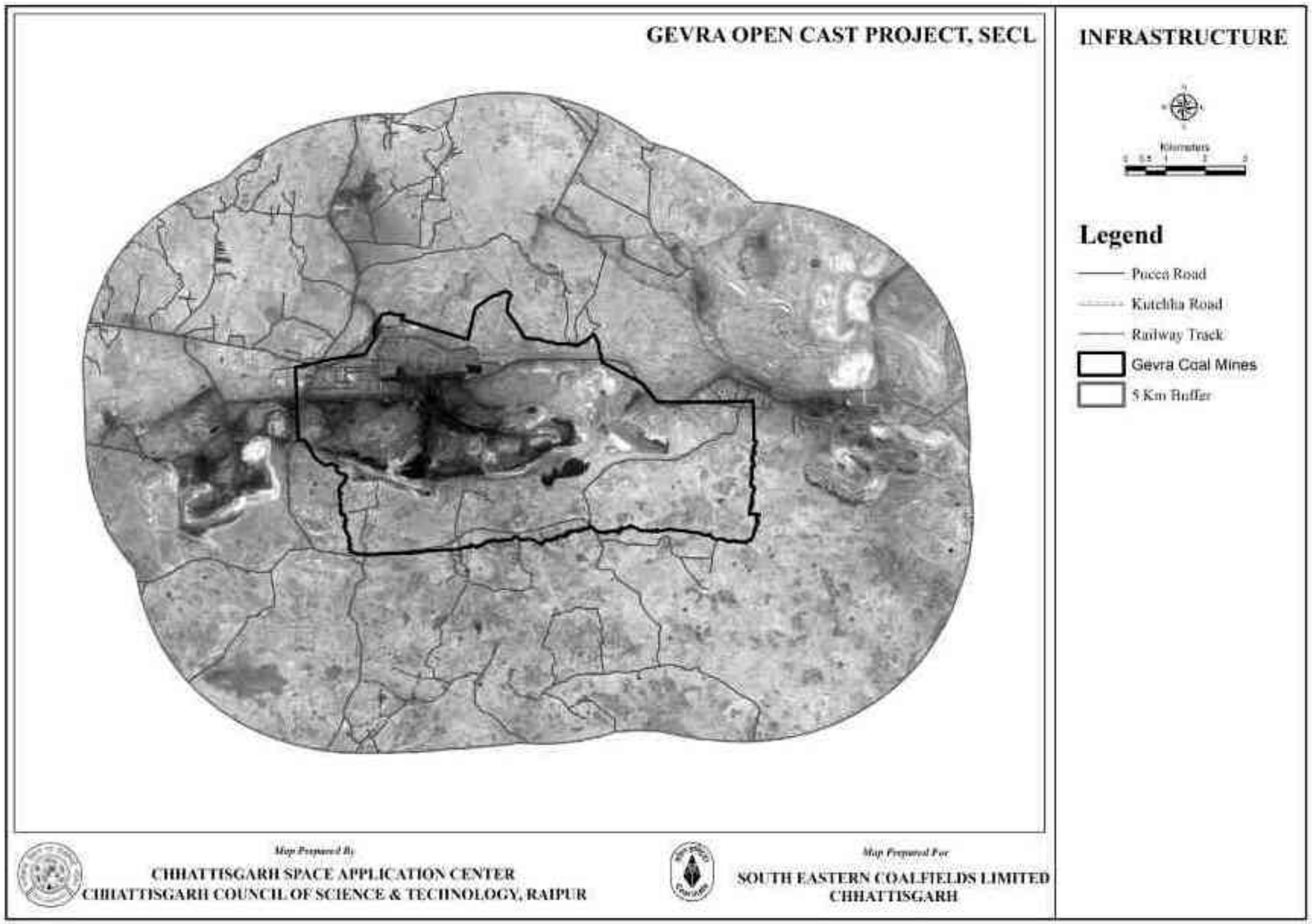

Figure 1-14 Transport Infrastructure of Gevra Project Area

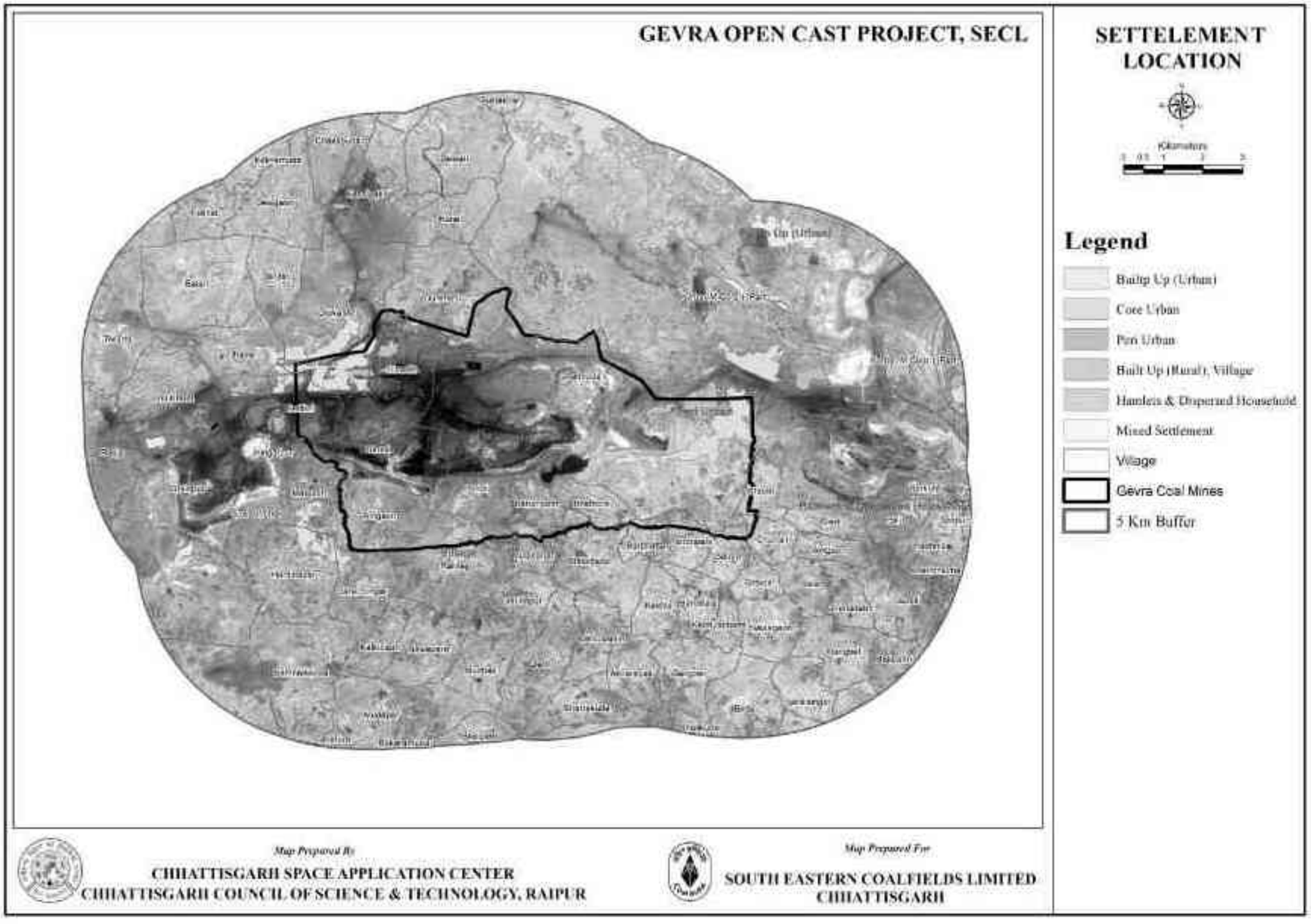

Figure 1-15 Settlement Locations around Gevra Project Area

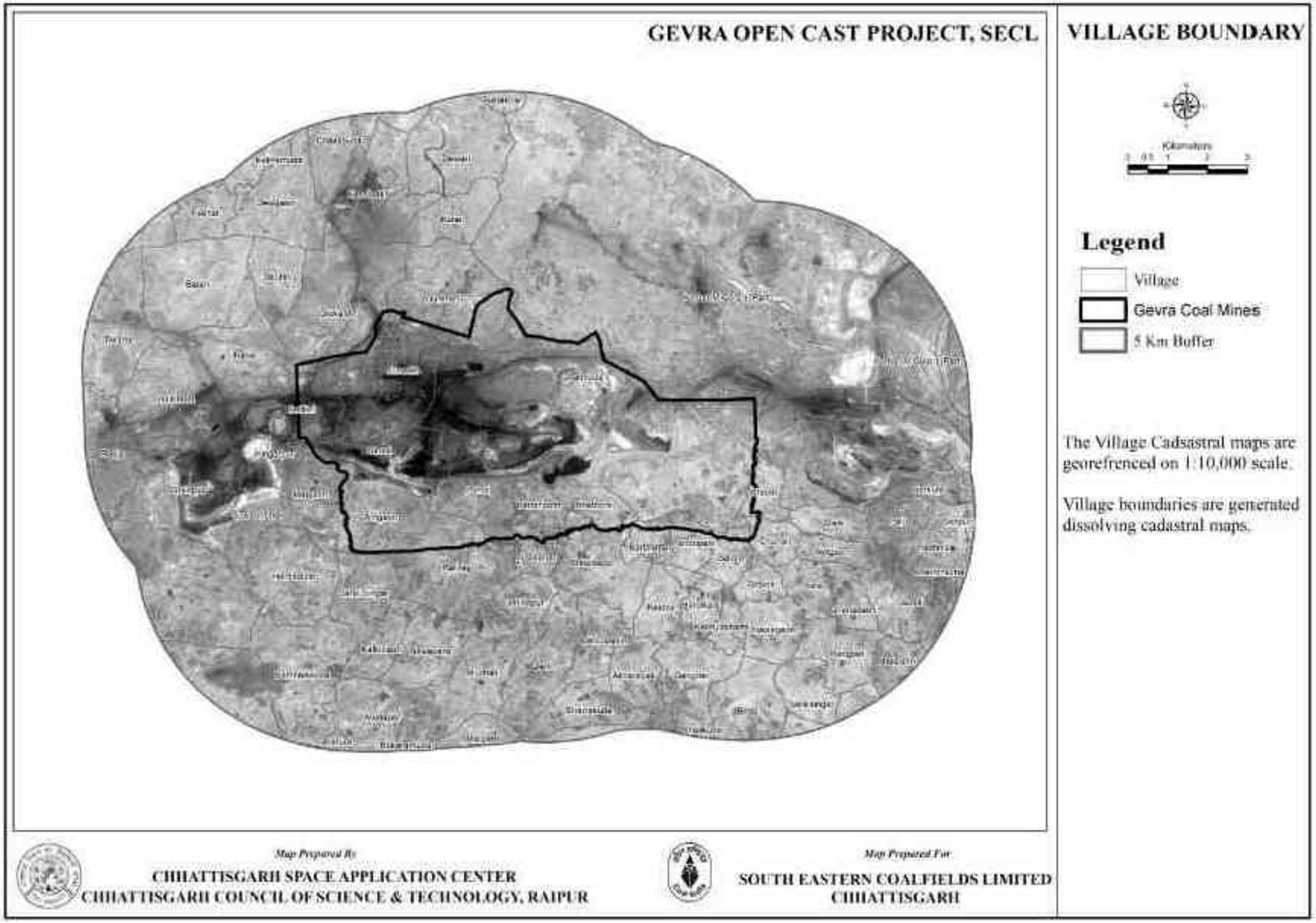

Figure 1-16 Village Boundaries within Gevra Project Area

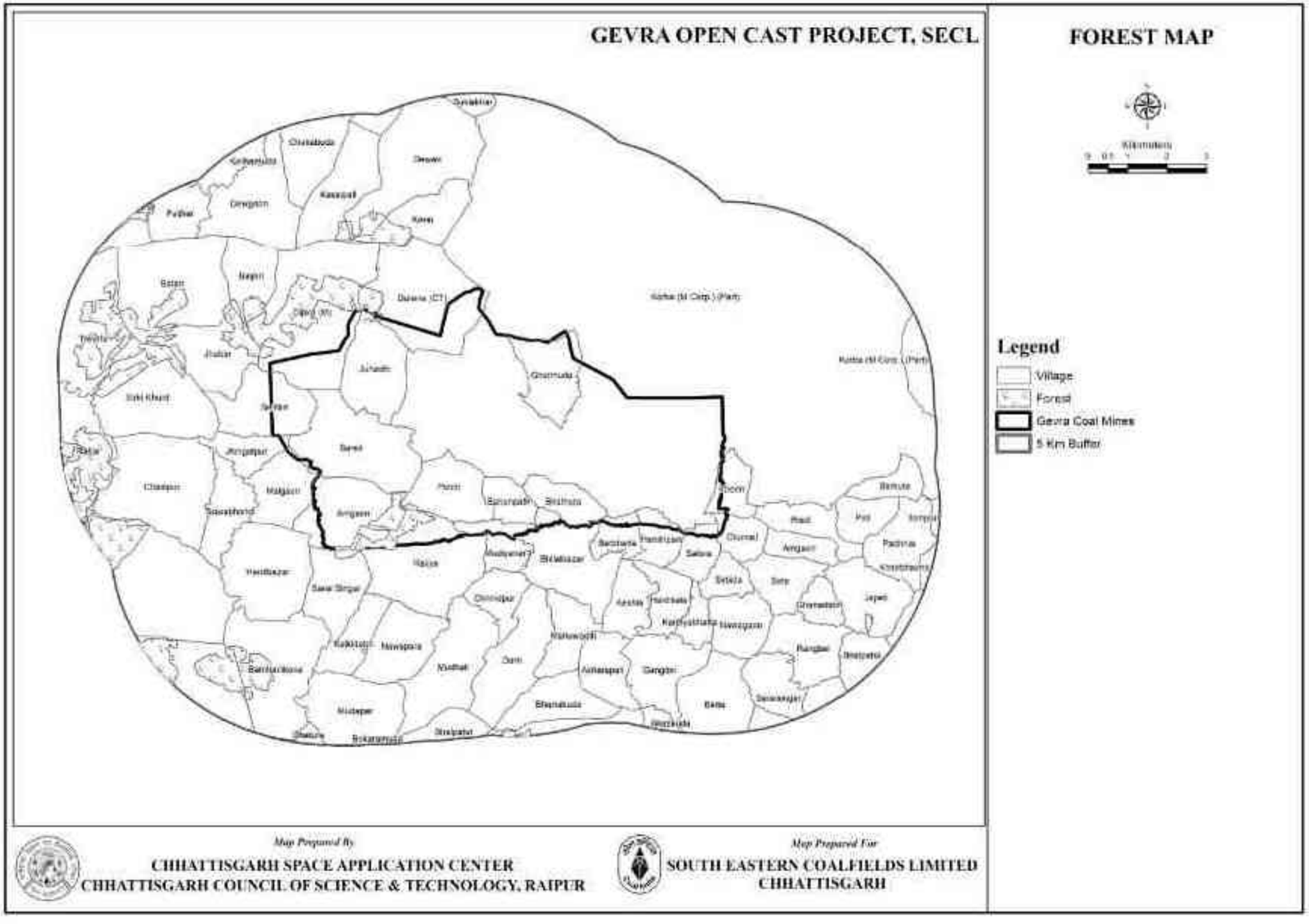

Figure 1-17 Forest Boundaries within Gevra Project Area

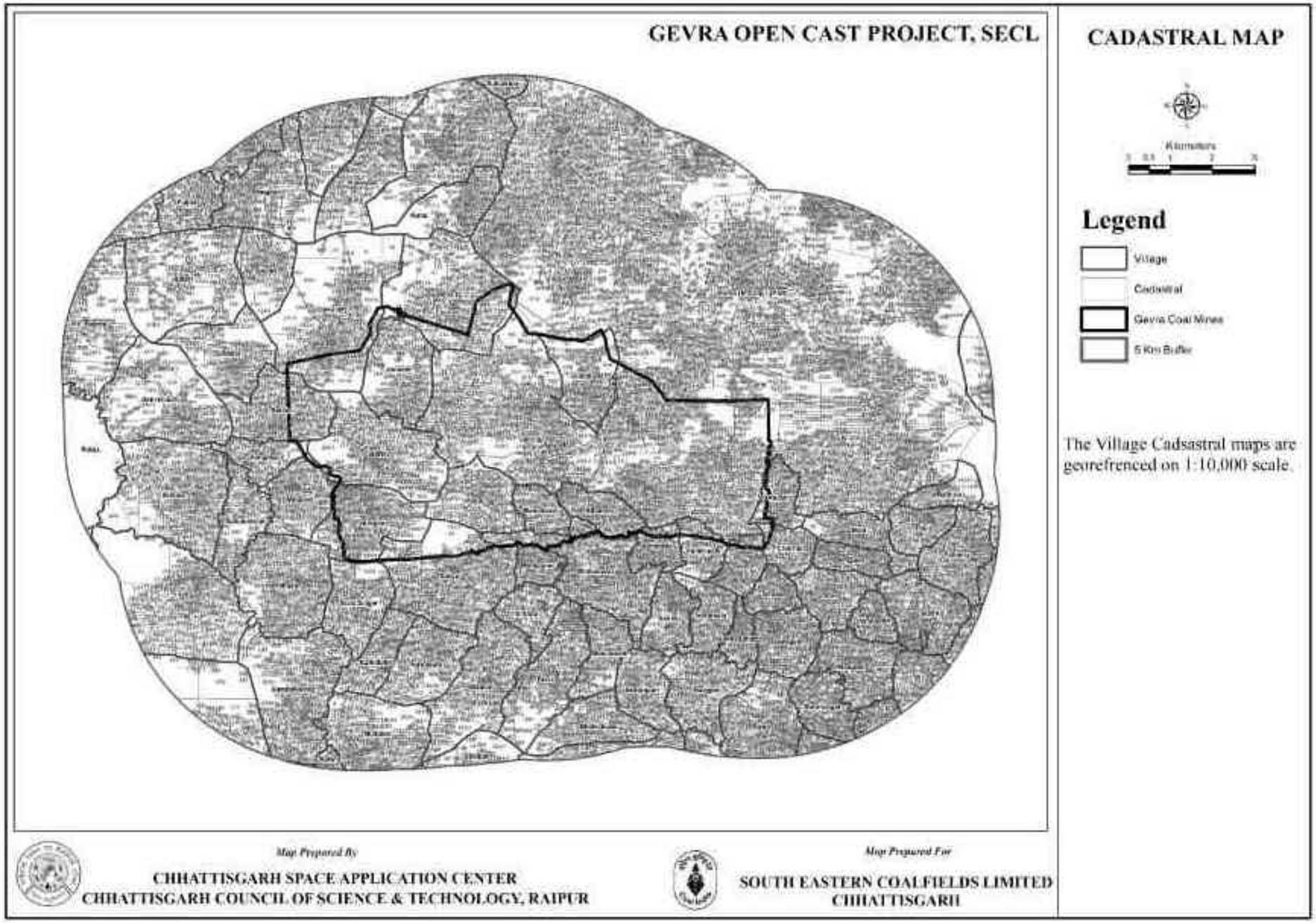

Figure 1-18 Cadastral Details (Transformed on 1:10,000 scale) within Gevra Project Area

2. Erosion Control Recommendations

2.1. 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;
- Mine Outlet drains are not mapable from the satellite data used. These Outlet drains also require vegetative bunds where ever erosion is seen on the ground.

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 2-1 Landuse Recommendations

EROSION CONTROL MEASURES (PROPOSED LANDUSE)	AREA (Ha.)
Area Proposed for Phase Wise Plantation	670.49
Gap Plantation	56.11
Intensive Plantation	9.46
Steep Slope Stability Measures/Carpeting	62.42

Table 2-2 Erosion Control Recommendations

Erosion Control Measures (Proposed Structures)	Number of Structures
Check Dam	7
Nala Bunds/Boulder Checks	11
Vegetative Bunds	13

2.2. Weightages assigned

The Weightages assigned to each thematic class used as input to execute Universal Soil Loss Equation are as under:

Table 2-3 Weightages assigned to each thematic class

Name of thematic map - Landuse layer		
Landuse Classes	C Factor Weightages	P Factor Weightages
AGCR (Crop Land)	0.34	0.4
BUMN (Mining/Industrial)	0.1	0.5
BURH (Hemlets And Dispersed House Hold)	0.2	0.5
BURU (Urban)	0.2	0.5
BURV (Village)	0.2	0.5
BUUC (Core Urban)	0.1	0.5
BUUP (Periurban)	0.2	0.5
BUUR (Builtup (Urban))	0.1	0.5
FRDE (Forest)	0.01	0.2
FRPL (Forest Plantation)	0.01	0.2
WBCN (Canal)	0	0.1
WBLP (Lake/Pond)	0	0.1
WBRS (River/Streem)	0	0.1
WBRT (Reservoir/Tanks)	0	0.1
WBSA (Sandy Area)	0.01	0.2
WLAD (Active Dump)	0.7	1
WLBR (Barren Rock)	0.2	0.6
WLDS (Dump Slope)	0.8	1
WLGU (Guilled/Ravenious)	0.4	1
WLOD (Old Dump)	0.44	1
WLSD (Scrub Land Dense)	0.2	0.4
WLSP (Scrub Land Open)	0.3	0.6
WLWL (WaterLogged)	0.01	0.1

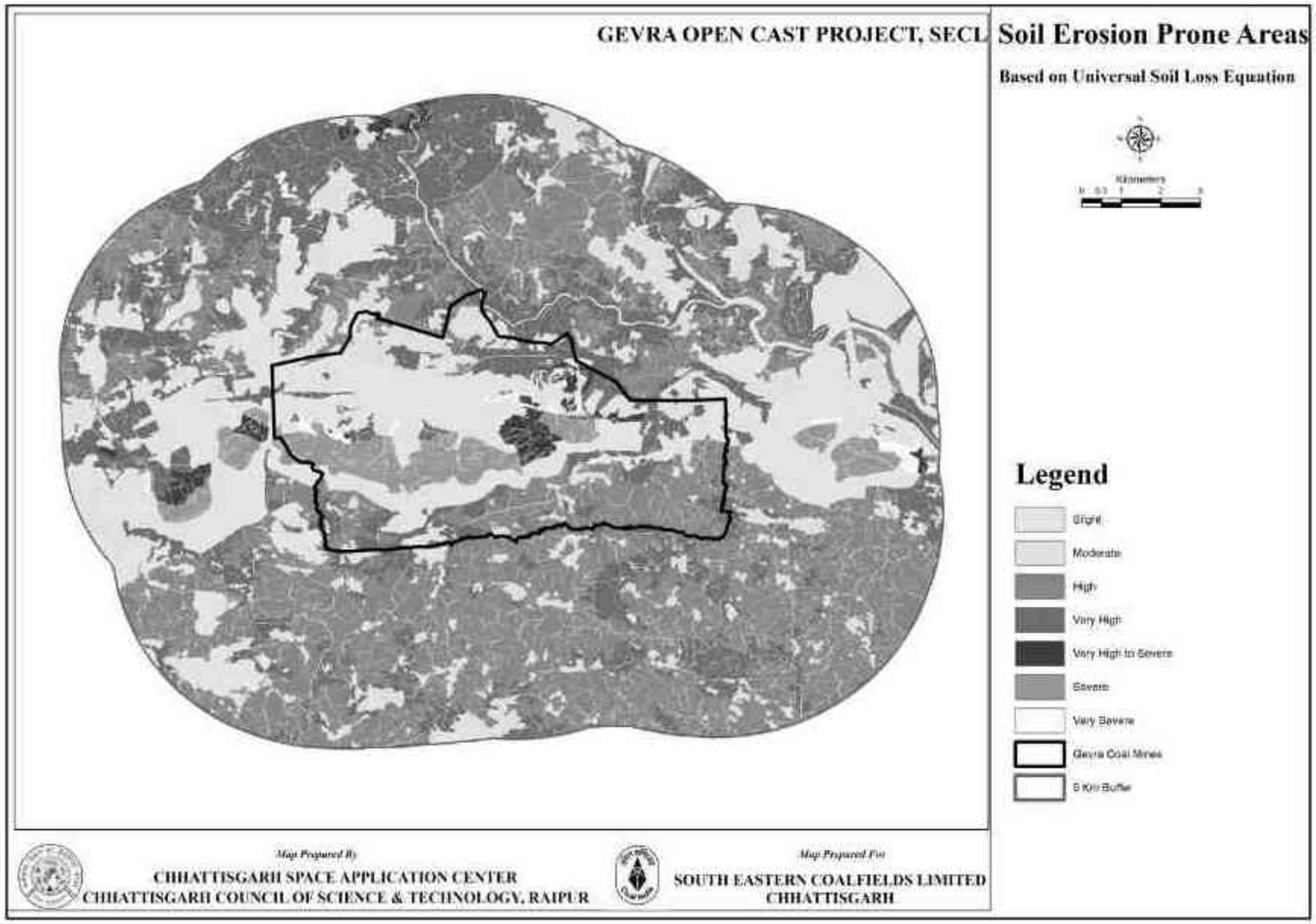

Figure 2-1 Erosion Potential areas within Gevra Project Area

2.3. Sub-Watershed Prioritization

Based on the Soil erosion intensity the sub-watersheds of the study area were assigned priority for erosion control measures. The sub-watersheds Prioritization map is as under:

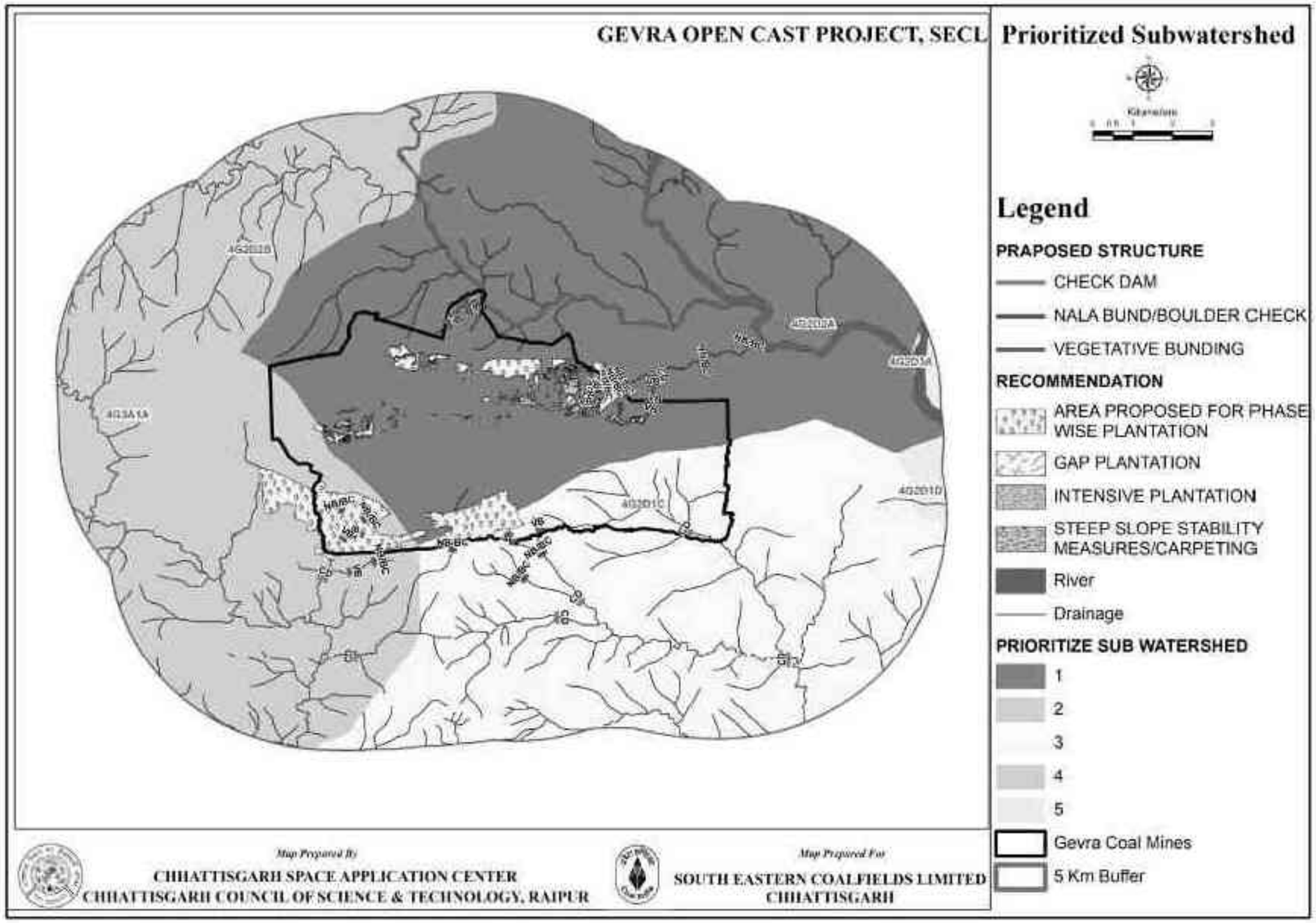

Figure 2-2 Prioritize Sub-watershed within Gevra Project Area

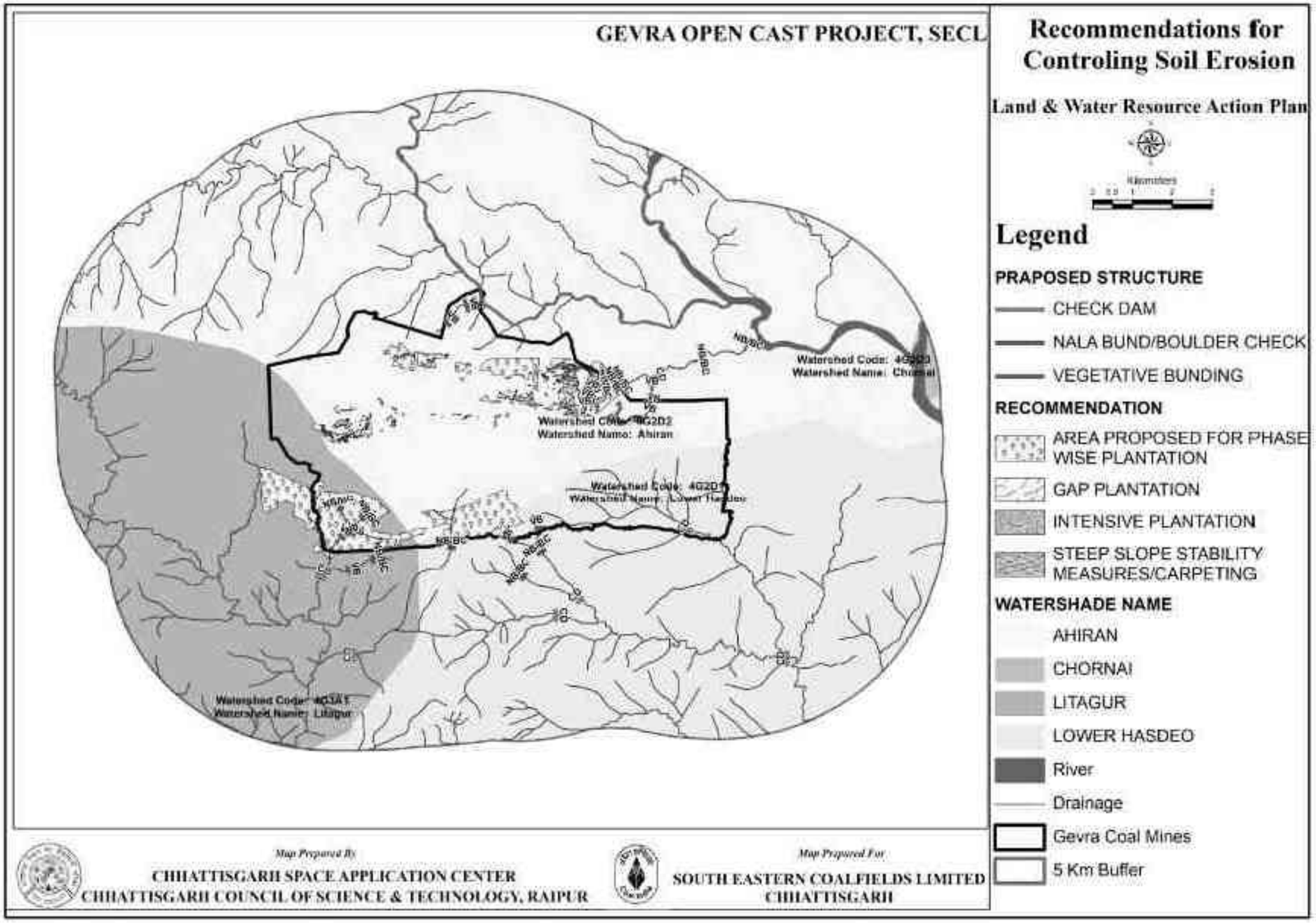

Figure 2-3 Action Plan for Surface Drainage including Surface Conservation Plan within Gevra Project Area

2.3.1. 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

2.4. 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.

2.4.1. 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.

2.4.2. 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).

2.4.3. 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.

2.4.4. 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.

2.4.5. Proposed Species for Plantation

It is very important to evolve 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.

Also species selection should be such that species found in the state should be preferred and Leguminous should be planted in conjunction with other species. The recommended planting material for the SECL area are as under:

Table 2-4 Recommended Species of Plants

Proposed Tree Species (Local/Common Name)	Botanical Name
Mahua (Seed)	*Madhuca longifolia*
Saja (Seed)	*Terminalia tomentosa*
Aam (seed, seedling transplantation)	*Mangifera indica*
Kumhi (Seed)	*Careya arborea*
Rohan (Seed)	*Soymida febrifuga*
Sidha (Seed)	*Lagerstroemia parviflora*
Neem (Seed)	*Azadirachta indica*
Karanj (seed)	*Pongamia pinnata*
Haldu (Seed)	*Adina cordifolia*
Bel (Seed)	*Aegle marmelos*
Maharukh (Seed)	*Ailanthus excelsa*
Chichwa (Seed)	*Albizzia odoratissima*
Asta (Seed)	*Bauhinia racemosa*
Kasai (Seed)	*Bridelia retusa*
Mainphal (Seed)	*Catunaregam spinosa*
Lasora (Seed)	*Cordia myxa*
Jamrashi (Seed)	*Elaeodendron glaucum*
Bhonrsal (Seed)	*Hymenodictyon excelsum*
Baranga (Seed)	*Kydia calycina*
Kari (Seed)	*Miliusa tomentosa*
Kusum (Seed)	*Schleichera oleosa*
Jamun (Seed	*Syzgium cumini*
Rohina (Seed)	*Soymida febrifuga*
Reetha	*Sapindus mukorossi*
Korkat	*Dillenia pentagyna*
Moyan	*Lannea coromandelica*
Bargad (Transplantation)	*Ficus benghalensis*
Pipal (Transplantation)	*Ficus religiosa*

Umar (Transplantation)	*Ficus racemosa*
Pakar (Transplantation)	*Ficus infectoria*
Imli (Seed) Leguminous	*Tamarindus indica*
Amaltas (Seed) Leguminous	*Cassia fistula*
Babool (Seed) Leguminous	*Acacia nilotica*
Kala siris (Seed) Leguminous	*Albizzia lebbeck*
Palas (Seed) Leguminous	*Butea monosperma*
Proposed Shrub Species (Local/Common Name)	**Botanical Name**
Chilhi (Seed)	*Casearia tomentosa*
Dikamali (Seed)	*Gardenia gummifera*
Adusa (Seed)	*Adhatoda vasica*
Akol (Seed)	*Alangium salvifolium*
Karonda (Seed)	*Carissa spinarum*
Baibirang (Seed)	*Embelia ribes*
Marodphali (Seed)	*Helecteresisora*
Dudhi (Seed, Transplantation)	*Holarrhena antidysentirica*
Chipti (Seed) Leguminous	*Desmodium pulchellum*
Chapar (Seed) Leguminous	*Moghania chapar*
Proposed Climbers and Lianas Species (Local/Common Name)	**Botanical Name**
Satawar (Seed, Tuber)	*Asparagus racemosus*–
Dangkanda (Seed, Tuber, Bulbil)	*Dioscorea bulbifera*
Baichandi (Tuber, Bulbil)	*Dioscorea hispida*
Gudmar (Cutting, Seed)	*Gymnema sylvestre*
Palasbel (Seed)	*Spatholobus roxburghii*
Malkangni (Seed)	*Celestrus peniculata*
Dhimarbel (Seed)	*Ichnocarpus frutescens*
Ramdaton (Seed)	*Smilax zeylanica*
Guruch (Cutting, Seed)	*Tinospora cordifolia*
Keoti (Seed)	*Vallaris heynei*
Keoti (Seed)	*Ventilago calyculata*
Mahul (Seed) Leguminous	*Bauhinia vahlii*
Bel Palas (Leguminous)	Butea roxburghii

Soil Stabilizer Grasses	**Botanical Name**
Vetiver grass	*Chrysopogon zizanioides*
Moonj grass	*Saccharum munja*
Stylish Hemata grass	*Stylosanthes Sp.*
Andropogon aciculatus	
Dicanthium (Bothriochloa) pertusa	
Saccharum spontaneum	
For water logged areas	**Botanical Name**
Bermuda grass also known as Vilfa stellate	*Cynodon dactylon*

2.4.5.1. Mechanism

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.

****

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

For

SECL GEVRA

PUBLISHED BY

STATE FOREST RESEARCH & TRAINING INSTITUTE
RAIPUR, CHHATTISGARH

PREFACE

This Project is a scientific and systematic study of real site-specific issues related to the conservation of wildlife and avifauna with the application of management concepts and skills. The assignment "Alternative Habitat Development Plan for Affected Avifauna and Wildlife Conservation Plan for affected wildlife species of OCP Gevra, Katghora, Chhattisgarh" had been given by the South Eastern Coalfield Limited (Coal India), 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, District Korba Chhattisgarh in favour of SECL, Chhattisgarh. 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 avifauna species to be affected by the felling of trees due to mining in the project area.

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.

As results of two seasonal studies, 480 individual species of avifauna were recorded from 56 different species were residing 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 habitat were studied and completely 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 stockholder and decision makers associated with the avian biodiversity and wildlife species of the OCP Gevra area. The final conclusion and the recommendations along with the conservation plan and budget proposal has also been prepared for the implementation of the project.

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

(S.S Bajaj IFS)
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Acknowledgement

The preparation of Wildlife Conservation Plan including Alternative Habitat Development Plan for Avifauna within the OCP Gevra lease area and its surrounding, involves the systematic and scientific process of identifying, predicting and evaluating the potential impacts on wildlife species, avifauna and its habitat. The Conservation Management Plan remains open for alteration to offer protection to the local birds, wildlife species and their habitat. It should be interpreted as a static desing but remains flexible and inputs from the concerned authorities.

Extensive field studies were undertaken within the whole mining area of OCP Gevra for the fulfillment of objectives and observations made during the course of seasonal field visits that form the foundation of a Conservation Management Plan for the betterment of 180 species of avifauna found in core and 300 avifauna species found in the buffer zone. The checklist of all species including habit and habitat along with their nesting pattern and the ecological issues, impacts and their mitigation measures are described in this avifauna and Wildlife Conservation plan for future needs.

I would like to thank Shri Mudit Kumar Singh IFS, PCCF & HoFF, Director, State Forest Research and Training Institute for his continuous support, valuable suggestion 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 and 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 Divisional Forest Officer, Katghora Forest Division, and his field staffs, General Manager SECL Gevra, Sub-area Manager OCP Gevra and Nodal Officer Envt. & Forest SECL Gevra and the officer's involed in the project for sparing valuable time and providing facilities for the research team.

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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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 Positing 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, wast 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 activites.

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 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 bird's area, and wildlife corridor of any in the proposed study area.
5. To study the presence and movement of animals and bird's 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 ha 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*), Sesham (*Dalbergia sisoo*), Saja (*Terminalia tomentosa*), Khamhar (*Gmelina arborea*), Mahuwa (*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*), Mahuwa (*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 then Mahua 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, through which a mining project occurs, 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
- Top soil management through the establishment of artificial avifauna Paradise (Pakshi Vihar)
- Development of Oxyzone cum Bird shelter among urban Population.
- 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 and (Nala) improving the existing ponds.
- The social awareness programs provide conservation education about birds and wild life.
- Artificial nest made up of local and light fine wood materials.
- Rehabilitation of existing ecosystem improvement.
- Best practices from forest department should be implemented for the prevention of forest fire.
- 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

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 Mer-cury, 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 in: 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 (*Anwar 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 given assisgment 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 5.0 ^{0}C to 44.7 ^{0}C. The average rainfall as per rain gauge station at Katghora for 1954 to 2014 is 1490.4 mm.

Physiography

Table No 1.2: Physiogaraphy 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.)
				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 & 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

- 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

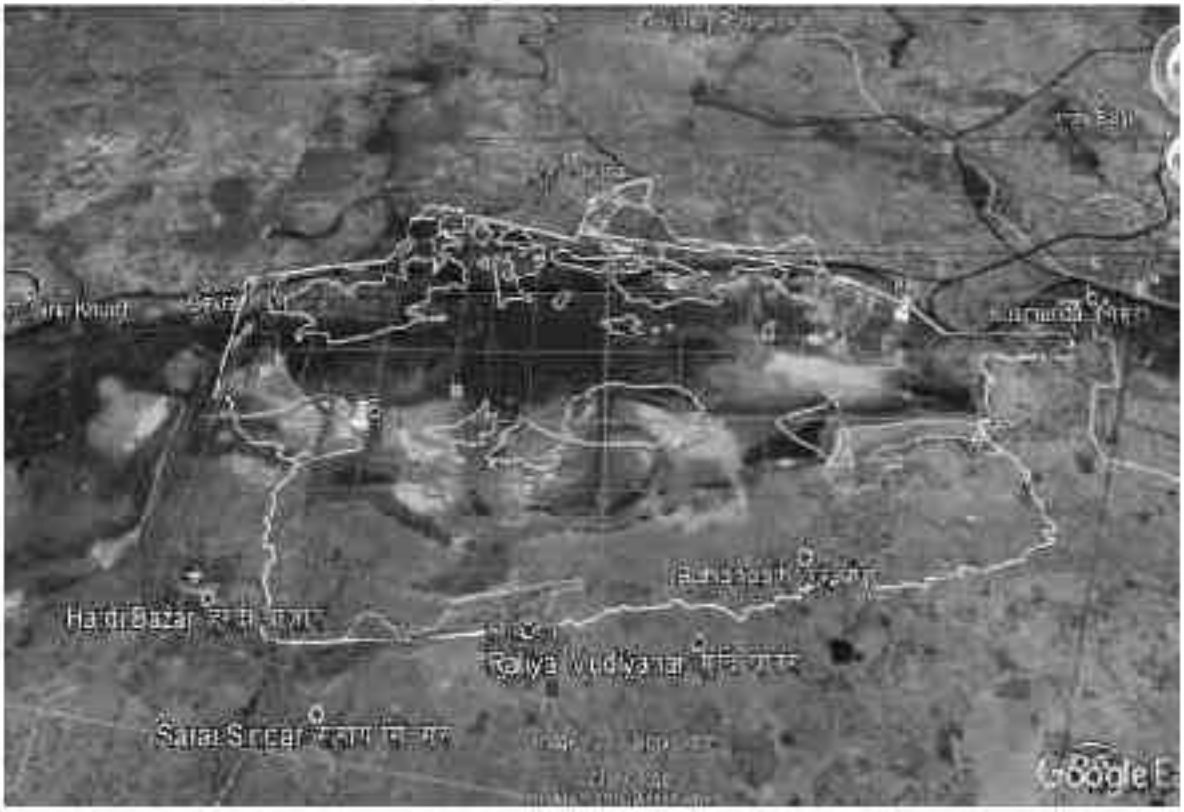


Fig 1.2: Google map of Showing Mine boundary and Surrounding area of OCP Gevra

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

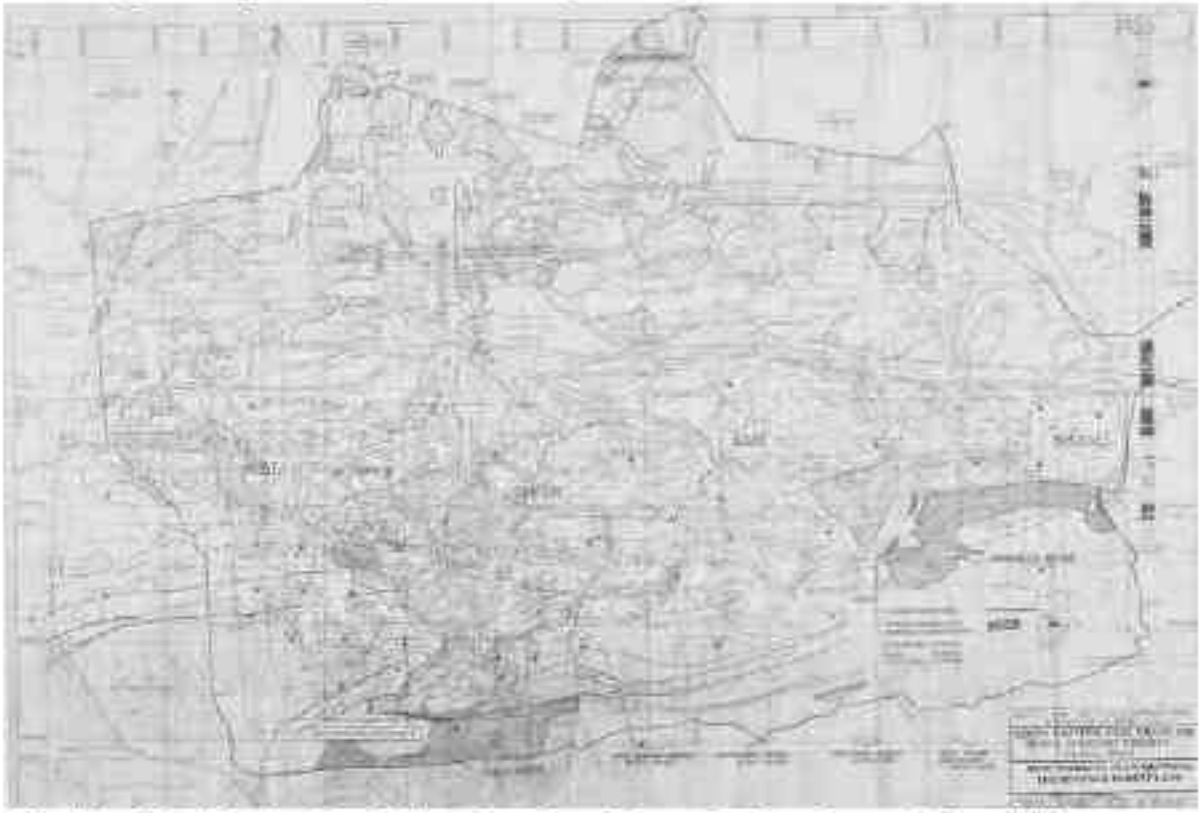


Fig 1.4 : Map Showing Dark Green Patches of Forest Land to be acquired and light green Forest Patches already acquired in OCP Gevra

1.6 IMPACT ON LAND USE

- **Forest land**

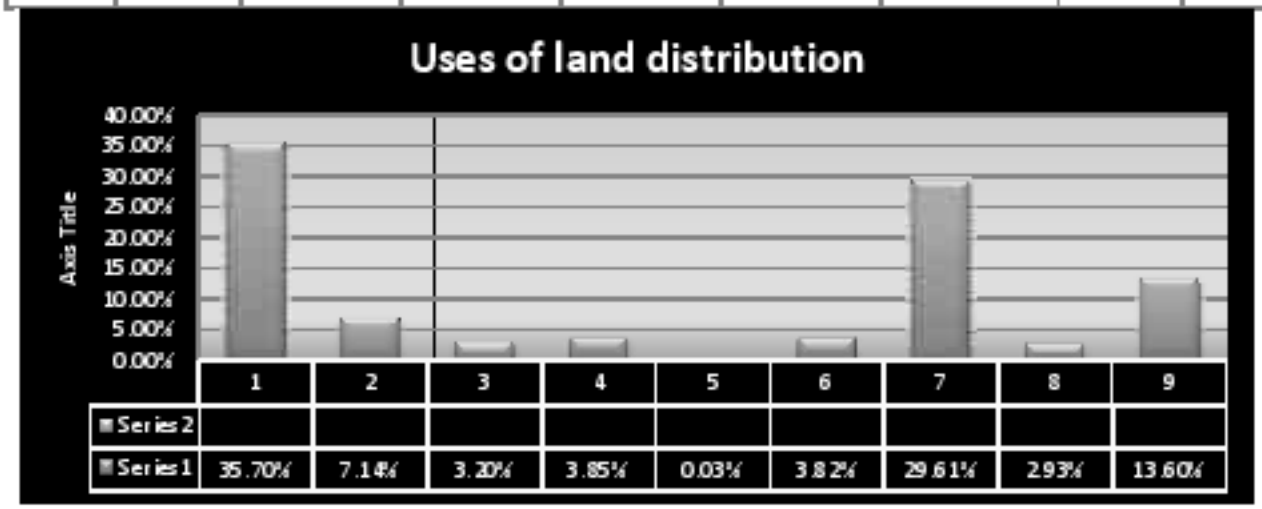
There are about **1016.412** hectare area of land needed from forest for the 45 MTY unit of Gevra OCP Project, out of which 112.385 hectare forest land has to be required from the forest and rest 904.027 hectare land has already been diverted earlier from Forest for Gevra OCP Project. Out of 112.385 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 behavioral 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 bird's 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's (*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 behavior 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, Reptiles) of OCP Gevra, Gevra area (Core and Buffer zone).
2. To estimate species diversity and population dynamics of avifauna in the OCP Gevra, Gevra area (Core and Buffer zone).
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 bird's area, and wildlife corridor of any in the proposed study area.
5. To study the presence and movement of animals and bird's 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 Dept.) 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*).

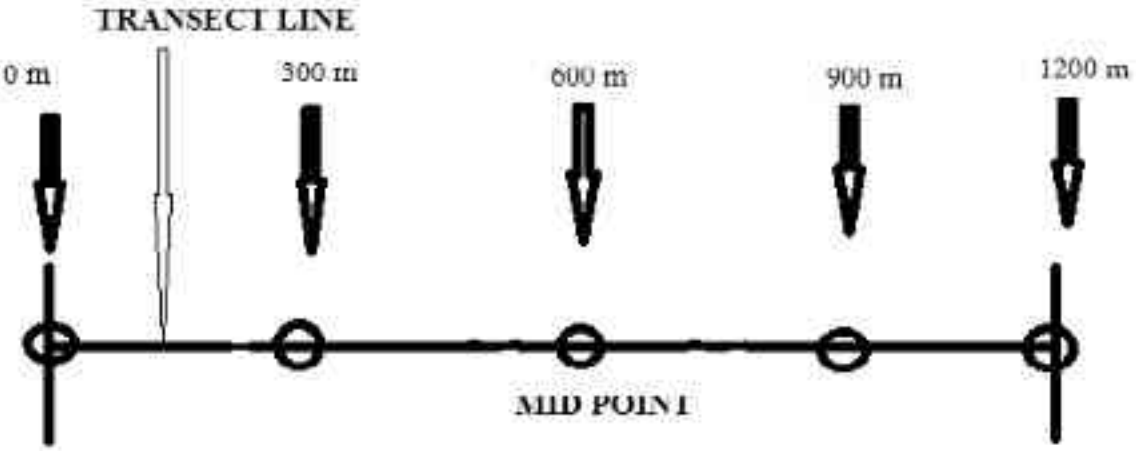


Fig 4.1: Line Transect Methodology

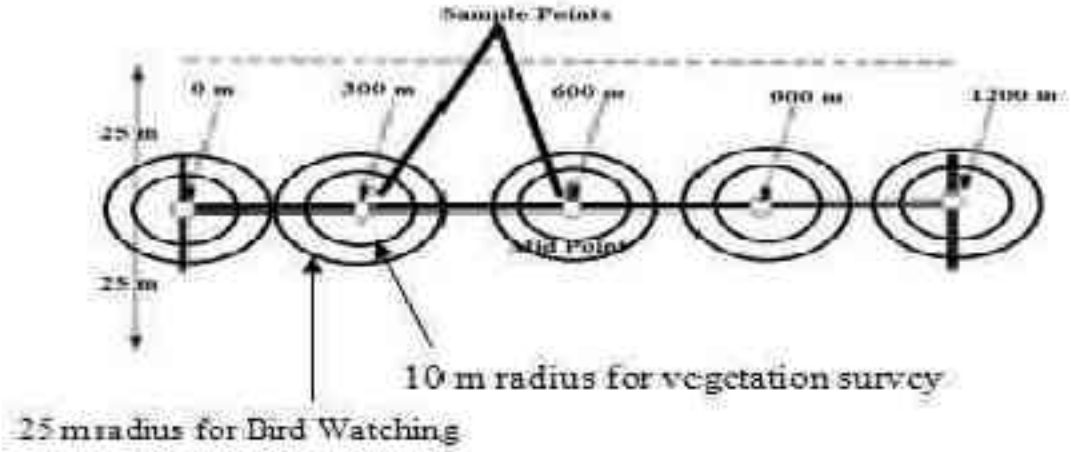


Fig 4.2: Detail survey methodology of Line Transect Methodology

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

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 N0. 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		Time (hrs.)	Land-cover (100 m radius)	Vegetation (3 dominant species)			Vegetation composition				Human structure (500m radius)
	Lat.	Long.		B / A / G / W / S	Tree spp.	Parameters	Observation 1 / 2 / 3/ 4/ 5	Grass	Herb	Shrub	Regeneration	S/H/R/E/W/P

* 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

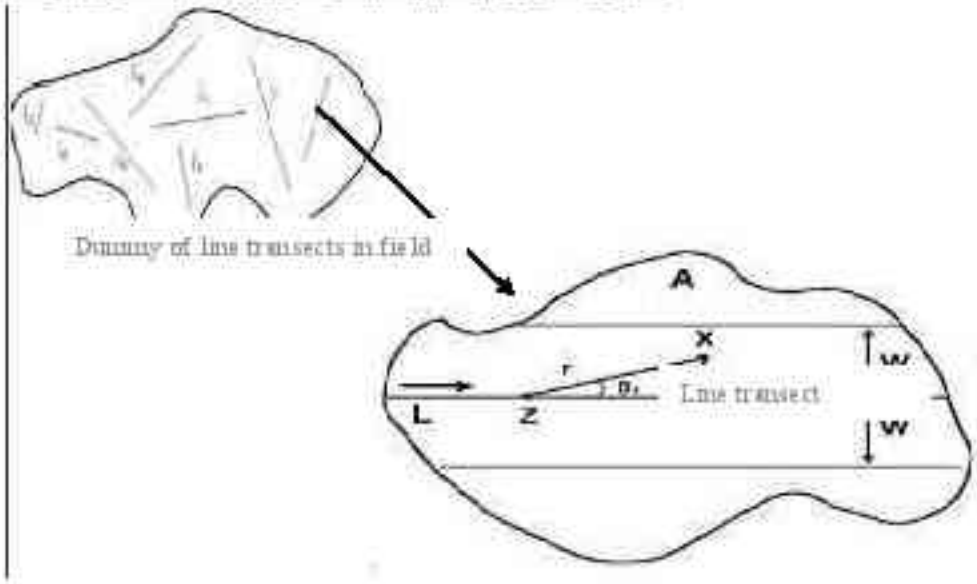
Table No 4.3: Datasheet for wildlife study on transect line

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), $\mathbf{r_i}$ = sighting distance (flushing distance), $\mathbf{\theta_i}$ (theta) = sighting angle, $\mathbf{y_i}$ = 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) = Pr {object observed | 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

avifauna species belong to 32 deferent 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

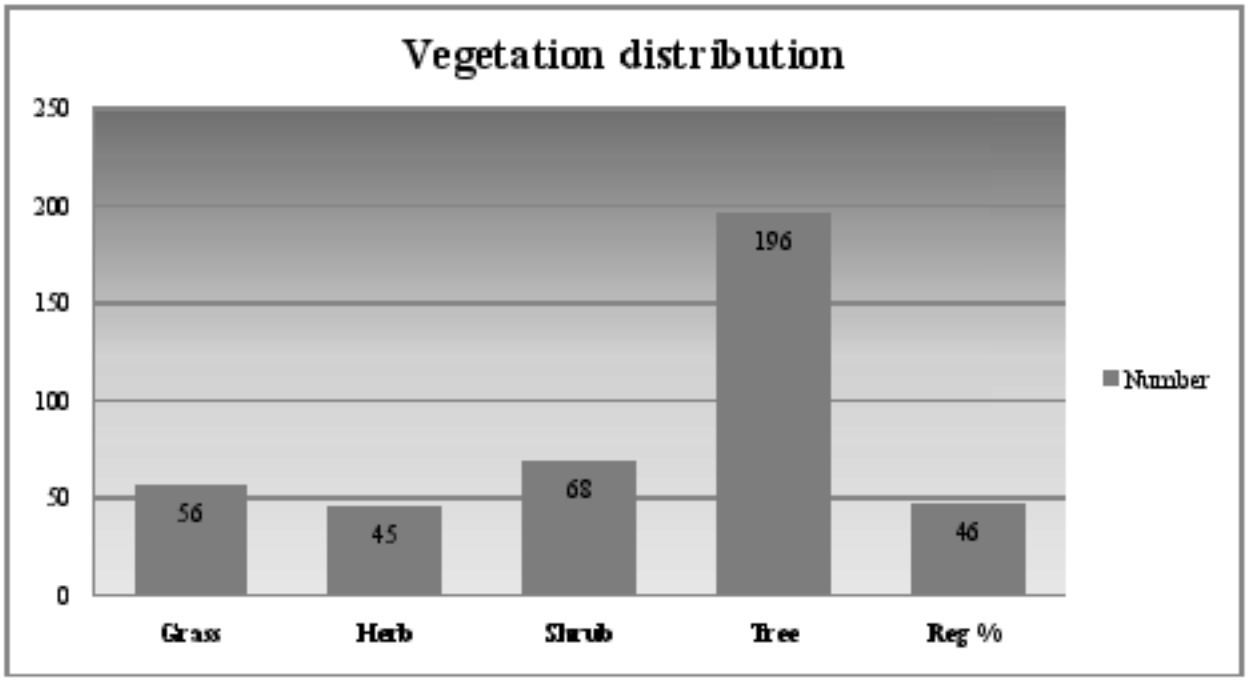
5.4 STUDY OF FLORAL DIVERSITY

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

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, Mahuwa, Char, Tendu, Sal, Neem, Kusum, Pipal etc. Girth class structure available tree species

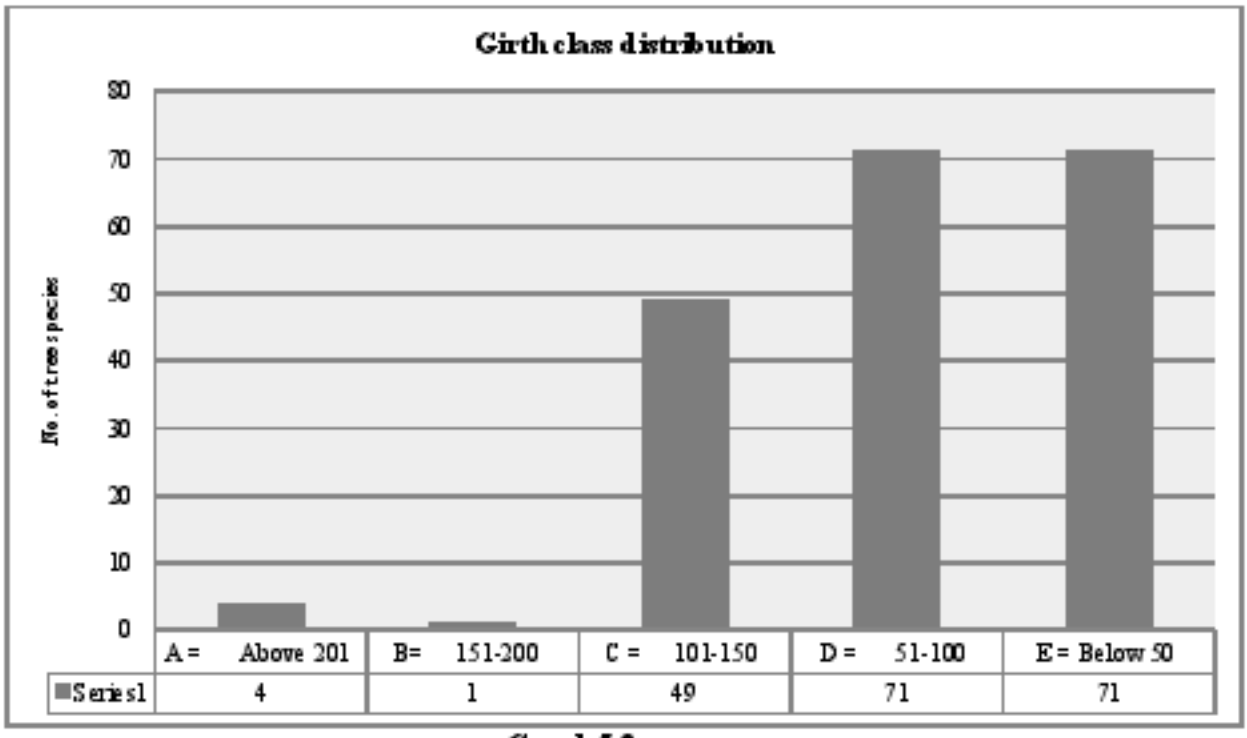
categorized under five classes i.e. A,B,C,D, and E respectively observed and analyzed, the diversity of tree species there are 66 individual tree belongs to 11 species in core area, where as 130 individual tree belongs to 11 species in the buffer area have been recorded. (Refer to table / Graph no 5.2)

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.	Sesham				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	Malua			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

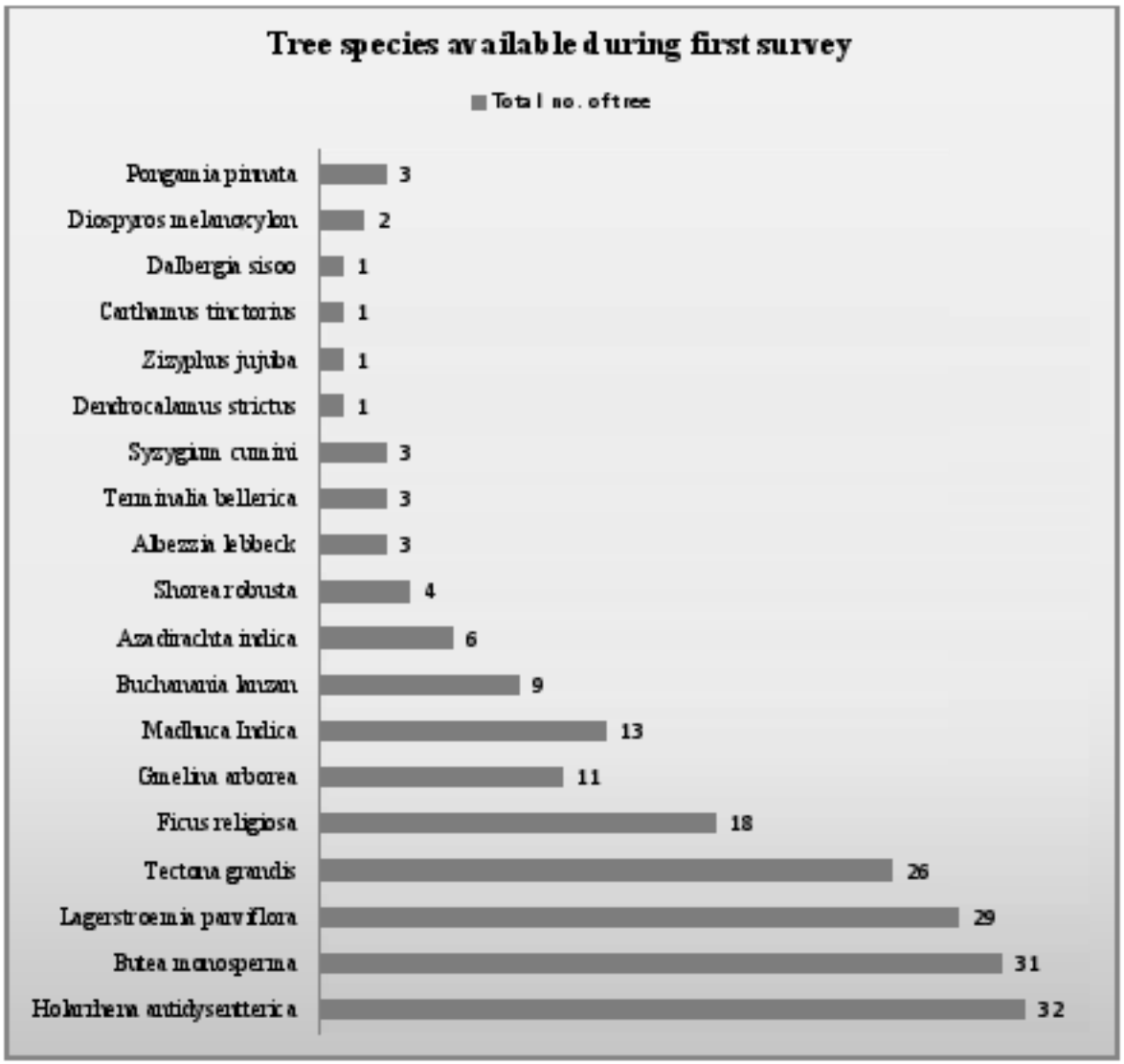


Graph 5.2 :
Girth class structure of available tree species on core and buffer zone

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	*Holarrhena antidysenttenica*				30	2	32
2	Senha	*Butea monosperma*			13	11	7	31
3	Palash	*Lagerstroemia parviflora*	2			4	23	29
4	Sal	*Tectona grandis*		1	21	4		26
5	Teak	*Ficus religiosa*				3	15	18
6	*Khamhar*	*Gmelina arborea*			10		1	11
7	Mahua	*Madhuca Indica*			3	2	8	13
8	Char	*Buchanania lanzan*				6	3	9
9	Neem	*Azadirachta indica*				3	3	6
10	Tendu	*Shorea robusta*			1		3	4
11	*Kala semu*	*Albezzia lebbeck*				3		3
12	*Baheda*	*Terminalia bellerica*	1		1			2
13	*Jamun*	*Syzygium cumini*				2		2
14	*Bamboo*	*Dendrocalamus strictus*					1	1

15	*Ber*	*Zizyphus jujuba*				1		1
16	Kusum	*Carthamus tinctorius*	1					1
17	Peepal	*Ficus religiosa*					1	1
18	*Sesham*	*Dalbergia sisoo*				1	1	2
19	*Karanj*	*Pongamia pinnata*				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 sallow, 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
Listing of reported Birds 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

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
Listing of reported Birds 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

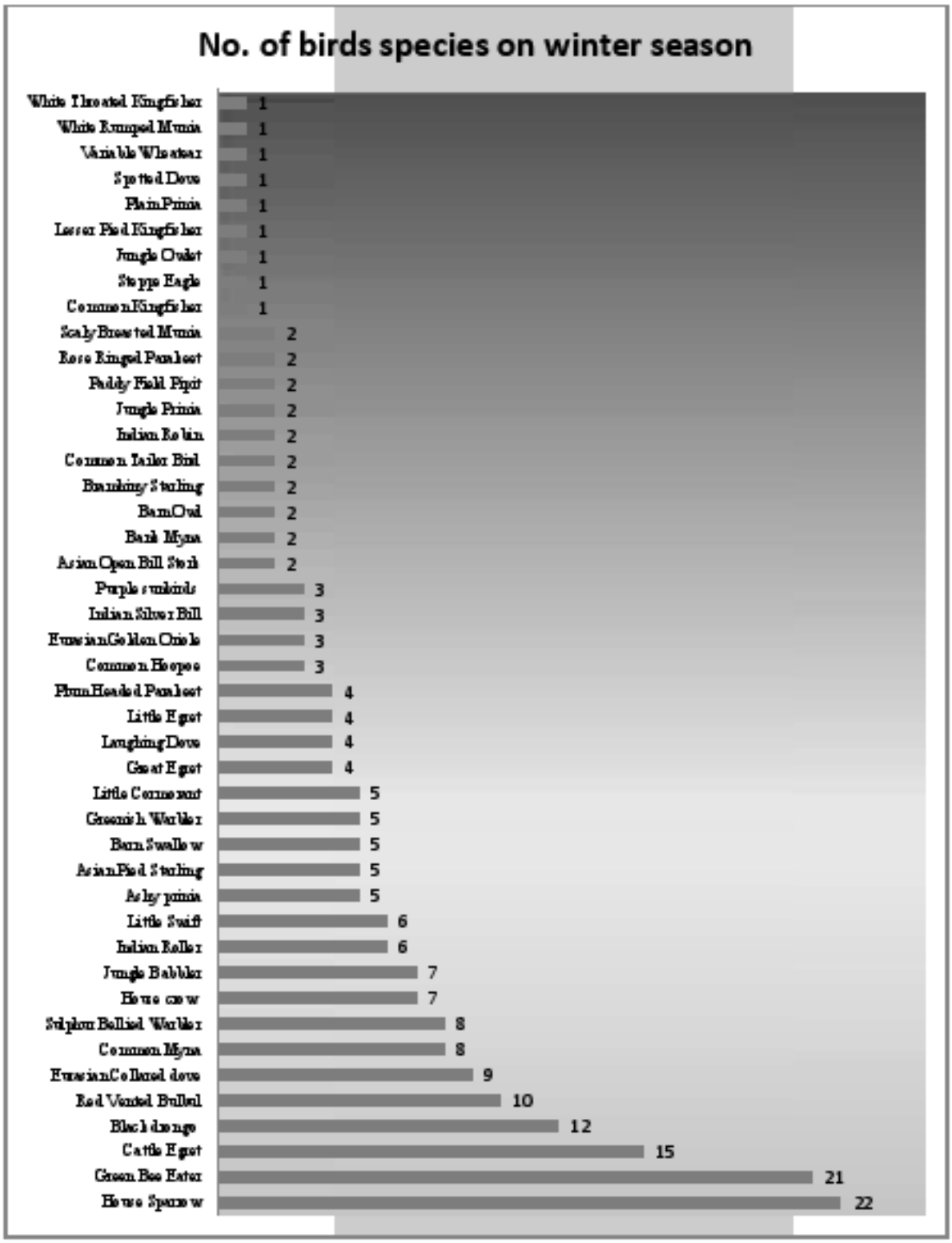
27	Little cormorant	2
28	Common Hoopoe	1
29	Indian Robin	1
30	Jungle owlet	1
31	Laughing dove	1
32	Little swift	1
33	Paddyfield pipit	1
34	Rose ringed parakeet	1
35	White throated Kingfisher	1

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.

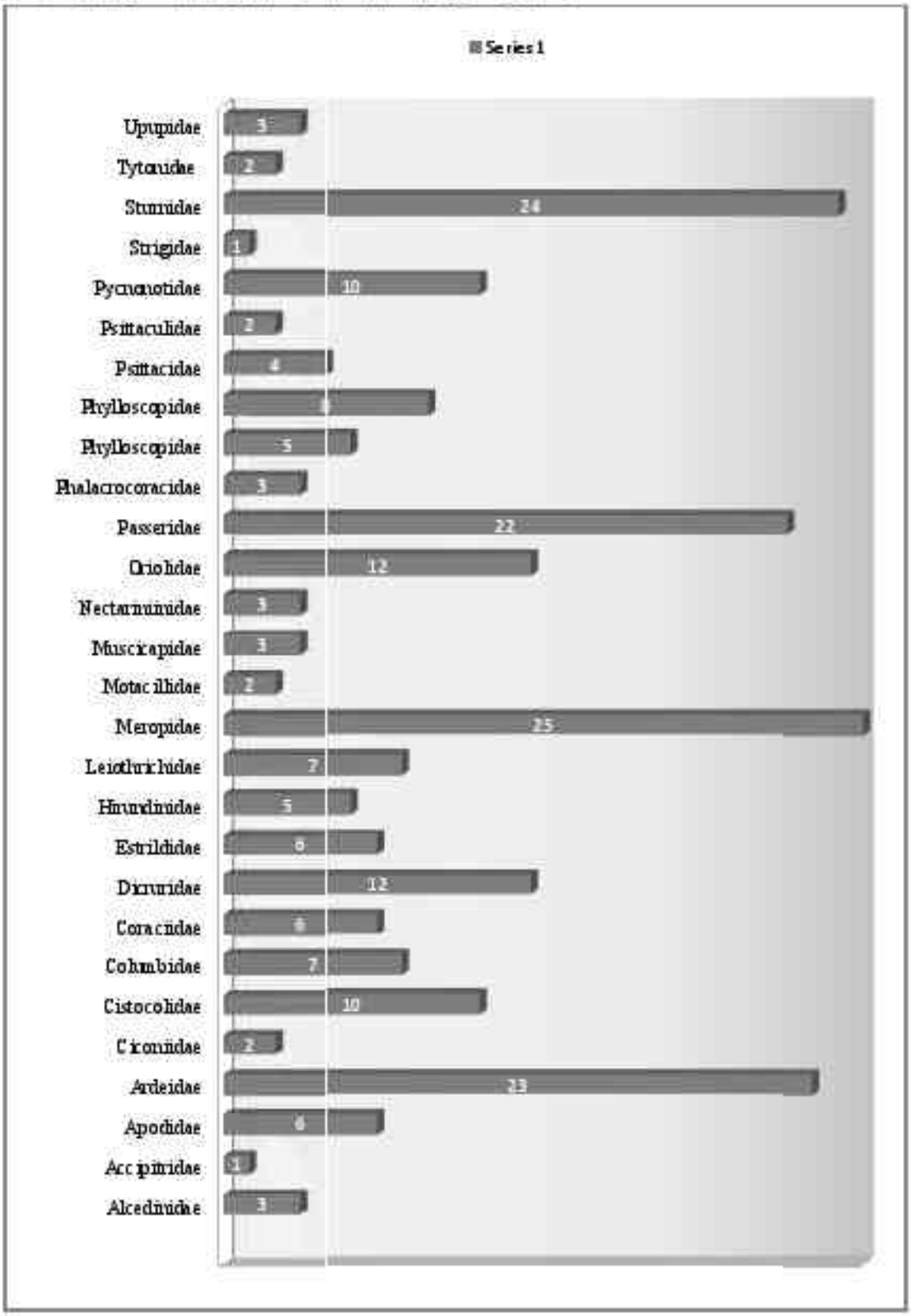
Table 5.7
Listing of Birds species during winter seasons

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

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



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

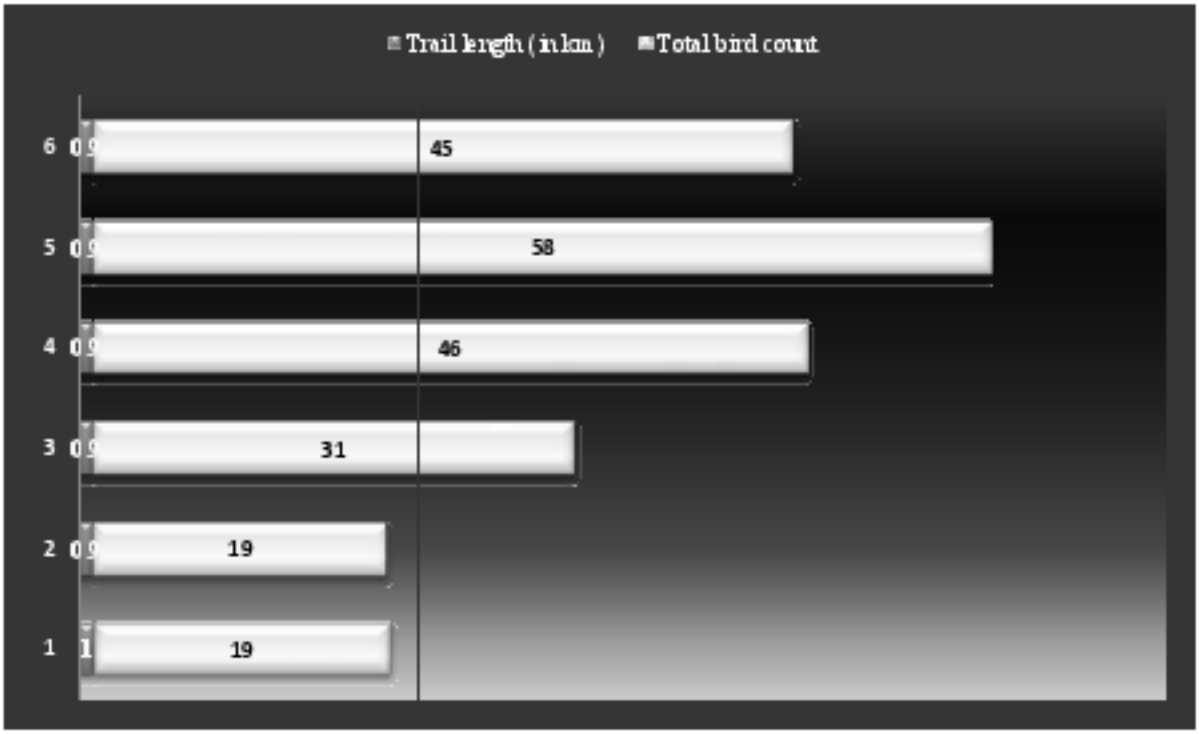


Graph 5.5 :
Family wise distribution of avifauna species

Table 5.8

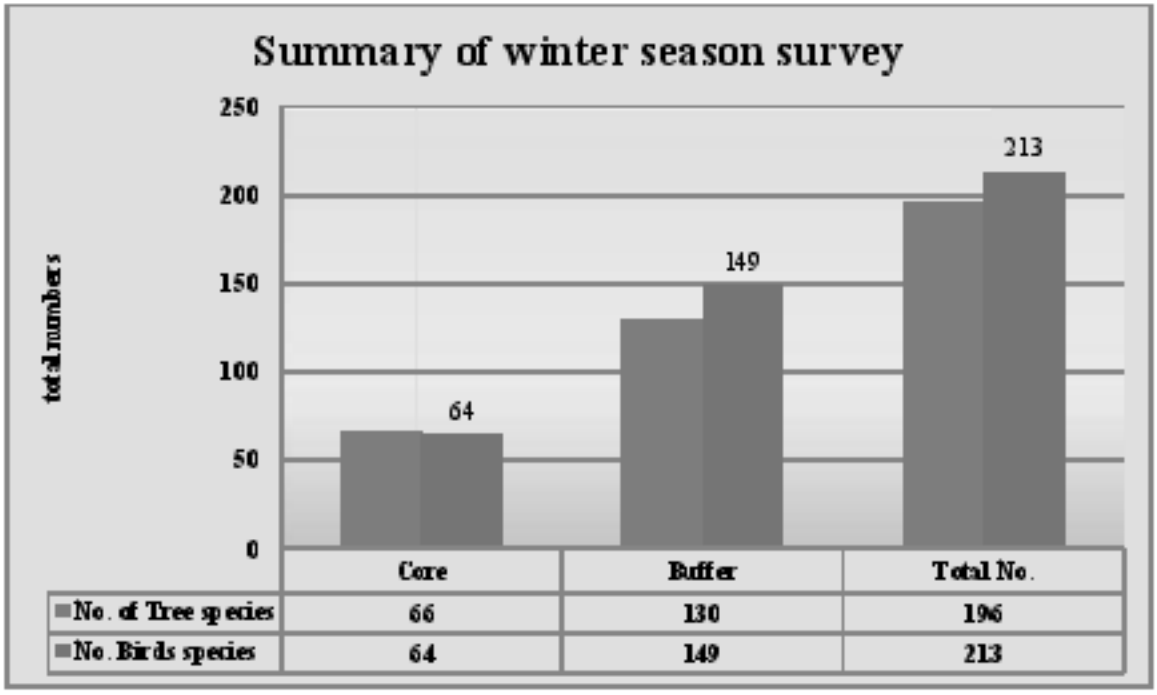
Individual bird sighted in the transect lines

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

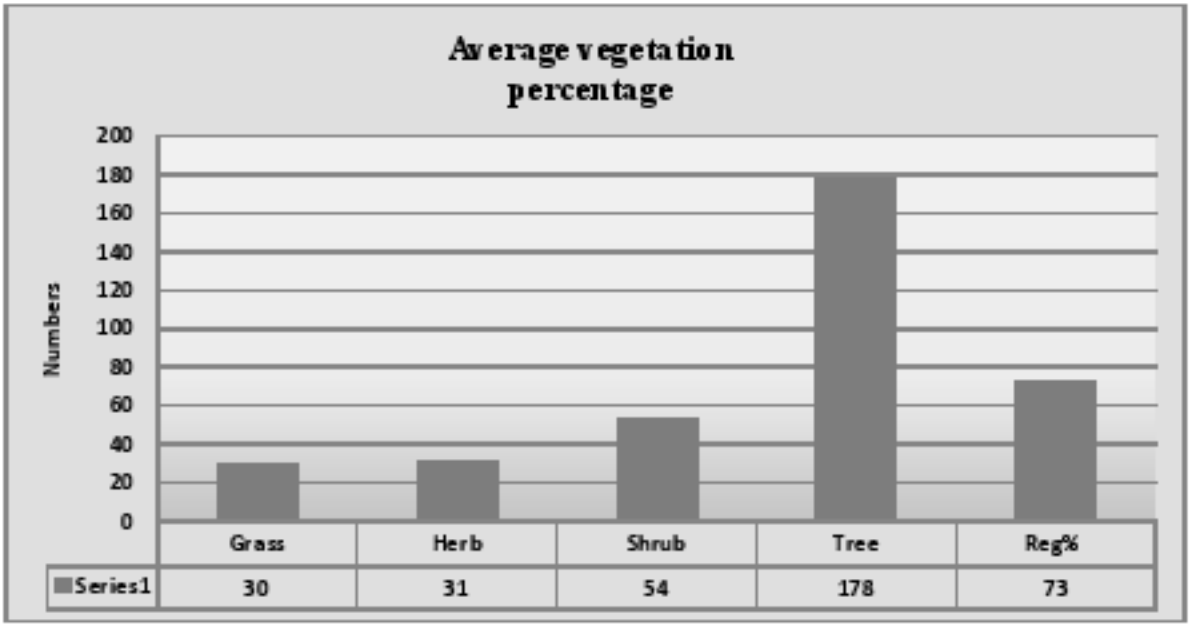
5.6 SUMMER SEASONAL SURVEY

- **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.1)

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 %**	**1216 %**



Graph No. 5.8: Average vegetation percentage of OCP Gevra

Girth Class structure of availab le tree species

The core zone of mining area proposed for excavation are mainly surrounded by the Sal, Saja, Mahuwa, 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	Mahuwa				4	4	8
4	Char					6	6
5	Senha					3	3
6	Teak					2	3
7	Tendu					3	3
8	Palash				3		3

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

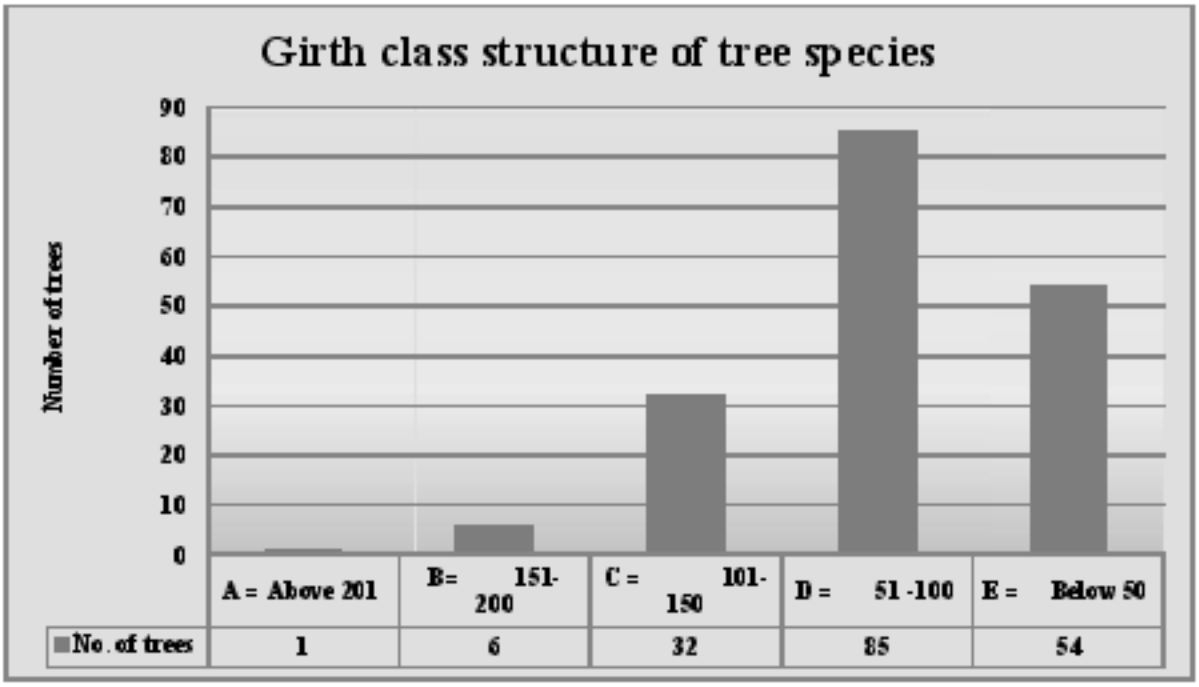
S.NO.	Local Name	A = Above 201	B= 151-200	C = 101-150	D = 51 -100	E = Below 50	Total No. of species
1.	Sal			12	22		34
2.	Saja				14		14
3.	Char				3	10	13
4.	Koriya					10	10
5.	Senha					8	8
6.	Kekat				5		5
7.	Maluwa		2		3		5
8.	Palash		2			3	5
9.	Tendu				3		3
						Total No. of Tree Species	97

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

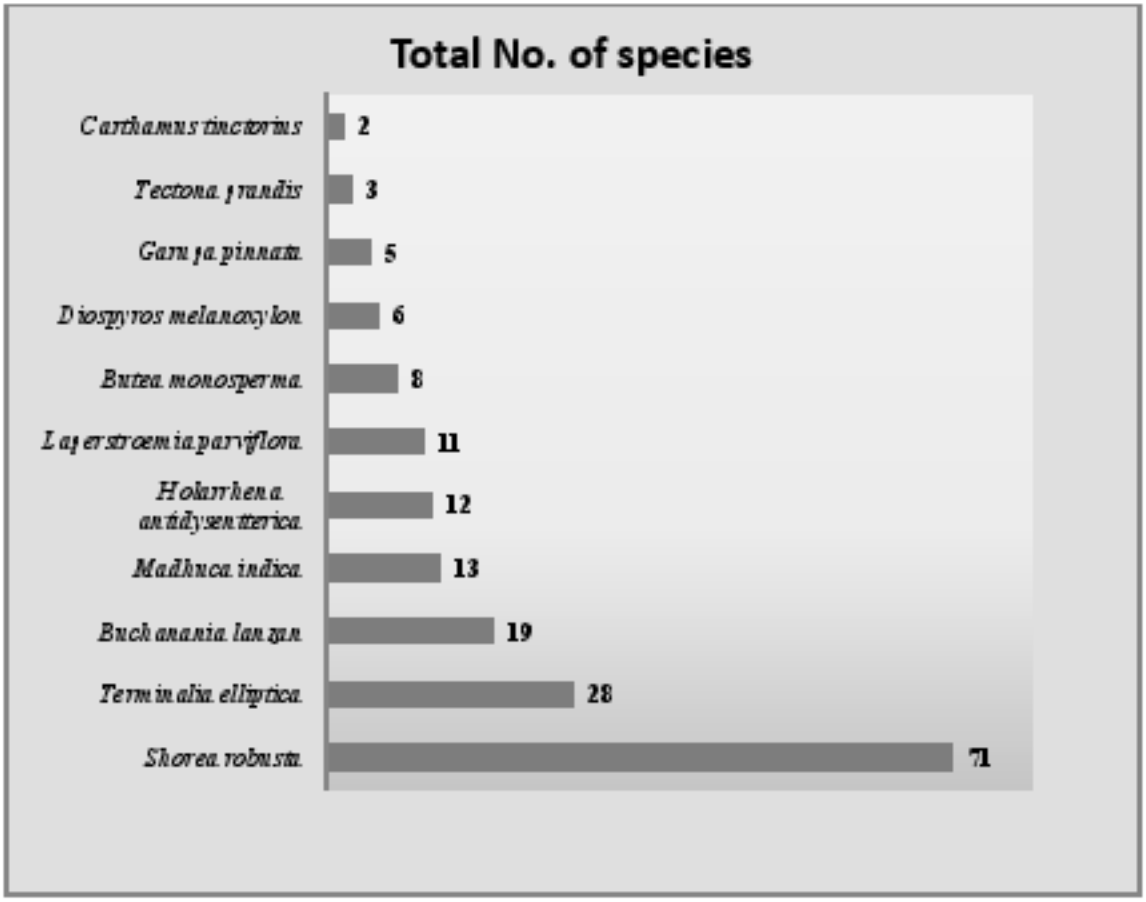
S.NO.	Local Name	Botanical name	A = Above 201	B= 151-200	C = 101-150	D = 51 -100	E = Below 50	Total No. of species
1	Char	*Buchanania lanzan*				3	16	19
2	Kekat	*Garuga pinnata*				5		5
3	Koriya	*Holarrhena antidysentterica*					12	12
4	Kusum	*Carthamus tinctorius*		2				2
5	Maluwa	*Madhuca indica*	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

11	Tendu	*Diospyros melanoxylon*	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

Dove, Black Drongo, Singing bus-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 hoop	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 bus lark	6
8	Yellow vented lapwing	6
9	Green bee-eater	5
10	Indian silver bill	5
11	Parakeet	5
12	Spotted dove	4
13	Ashy prinia	3
14	Eurasian Collared dove	3
15	Little swift	3
16	Nightzar	3
17	Cattle egret	2

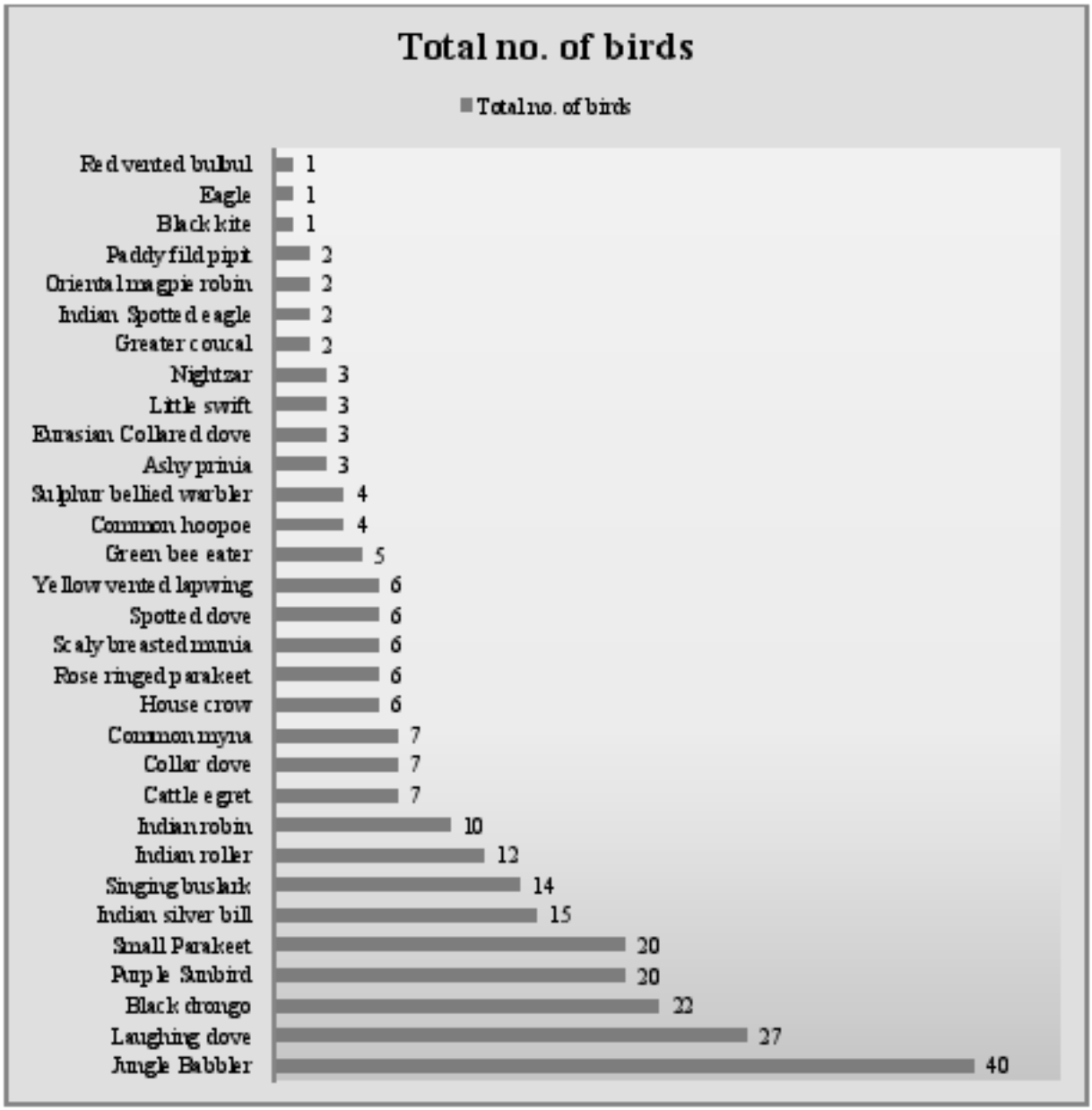
18	Common myna	2
19	Greater Caucal	2
20	Indian magpie robin	2
21	Indian Robin	2
22	Paddy field pipit	2
23	Rose ringed parakeet	2
24	Black kite	1
25	Common hoopoe	1
26	Eagle	1
27	House crow	1
28	Scaly breasted munia	1
29	Small parakeet	1

Table No. 5.15

listing of overall birds species during summer seasons

Sno.	Local name	Scientific Name	Family	Total no. of birds
1	Ashy prinia	*Prinia socialis*	Cisticolidae	3
2	Black drongo	*Dicrurus macrocercus*	Dicruridae	22
3	Black kite	*Milvus migrans*	Accipitridae	1
4	Cattle egret	*Bubulcus ibis*	Ardeidae	7
5	Collar dove	*Streptopelia decaocto*	*Columbidae*	7
6	Common hoopoe	*Upupa epops*	*Upupidae*	4
7	Common myna	*Acridotheres tristis*	*Sturnidae*	7
8	Eagle	*Aquila nipalensis*	Accipitridae	1
9	Eurasian Collared dove	*Streptopelia decaocto*	*Columbidae*	3
10	Greater coucal	*Centropus sinensis*	*Cuculidae*	2
11	Green bee eater	*Merops orientalis*	Meropidae	5
12	House crow	*Corvus splendens splendens Viellot*	*Sturnidae*	6
13	Indian robin	*Copsychus fulicatus*	Muscicapidae	10
14	Indian roller	*Coracias benghalensis*	Coraciidae	12
15	Indian silver bill	*Lonchura malabarica*	*Estrildidae*	15
16	Indian Spotted eagle	*Clanga hastata*	Accipitridae	2
17	Jungle Babbler	*Turdoides striata*	*Lieothrichidae*	40
18	Laughing dove	*Streptopelia senegalensis*	Columbidae	27
19	Little swift	*Apus affinis*	*Apodidae*	3
20	Nightjar	*Caprimulgus europaeus*	*Caprimulgidae*	3
21	Oriental magpie robin	*Copsychus saularis*	*Muscicapidae*	2
22	Paddy field pipit	*Anthus rufulus*	*Motacillidae*	2
23	Purple Sunbird	*Cinnyris asiaticus*	Nectariniidae	20
24	Red vented bulbul	*Pycnonotus cafer*	Pycnonotidae	1

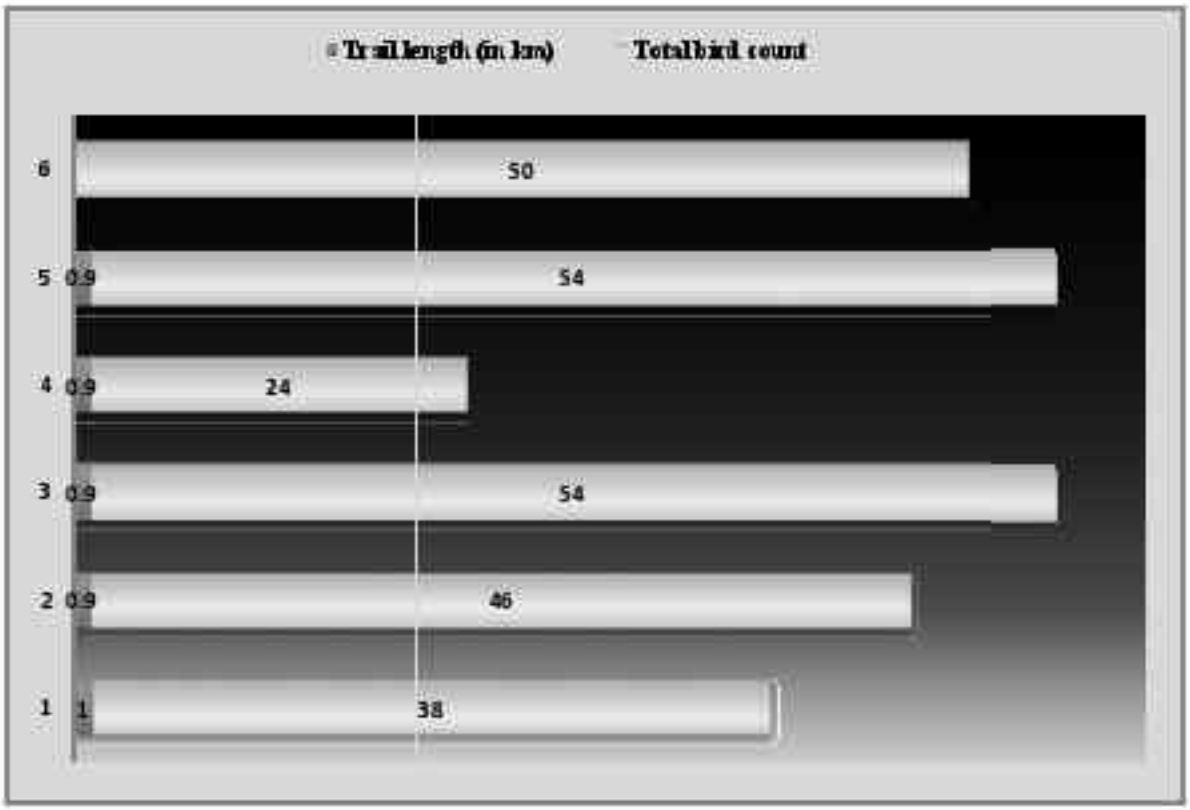
25	Rose ringed parakeet	*Psittacula krameri*	Psittaculidae	6
26	Scaly breasted munia	*Lonchura punctulata*	*Estrildidae*	6
27	Singing bus lark	*Mirafra cantillans*	*Alaudidae*	14
28	Small Parakeet			20
29	Spotted dove	*Streptopelia chinensis*	Columbidae	6
30	Sulphur bellied warbler	*Phylloscopus griseolus*	Phylloscopidae	4
31	Yellow vented lapwing	*Vanellus indicus*	*Charadriidae*	6



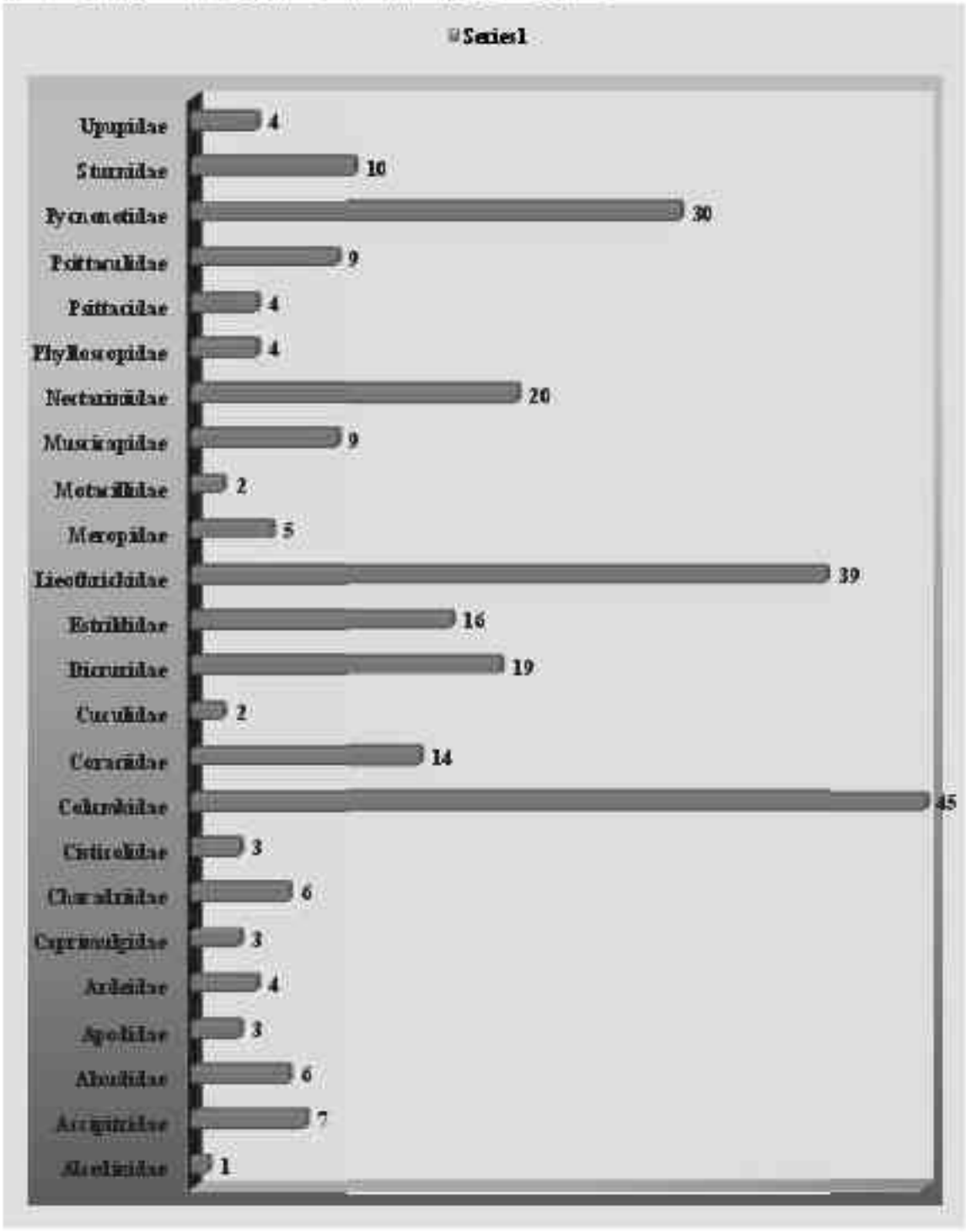
Graph No. 5.11: Summary of bird species during summer season

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**



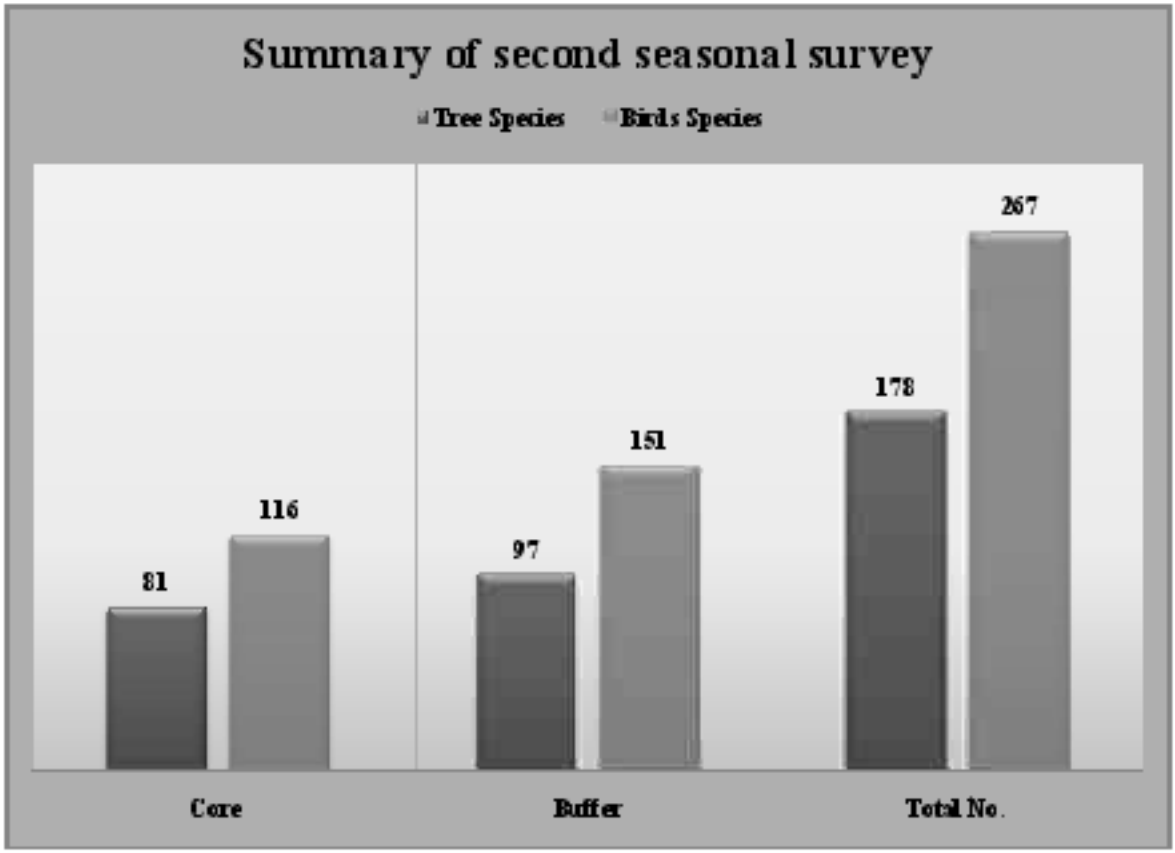
Graph No. 5.12 : Individual bird sighted in the transect lines



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	Zoological Name	Common Name	Family	IUCN Red List Status
1	*Calotes versicolor*	Garden Lizard	Agamidae	LC
2	*Enhydris enhydris*	Smooth Water Snake	Homalopsidae	LC
3	*Natrix piscator*	Olive keel back snake	Natricidae	LC
4	*Bungarus caeruelus*	Common Krait	*Elapidae*	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	Zoological Name	Common Name	Wildlife (Protection) Act	IUCN Status
1.	*Funambulus pennanti*	5 Strip Palm squirrel	Sciuridae	LC
2.	*Rousettus leschenaulti*	Indian Fulvous - Bat	Pteropodidae	LC
3.	Presbytis entellus	Indian Langur / Gray Langur	Cercopithecidae	LC
4.	*Canis aureus*	Jackal	Canidae	LC
5.	*Vulpes bengalensis*	Indian Fox	Canidae	LC
6.	*Sus scrofa*	Wild Pig	Suidae	LC

CHAPTER 6

RESULT & DISCUSSION

6.1 STUDY OF FLORAL DIVERSITY :-

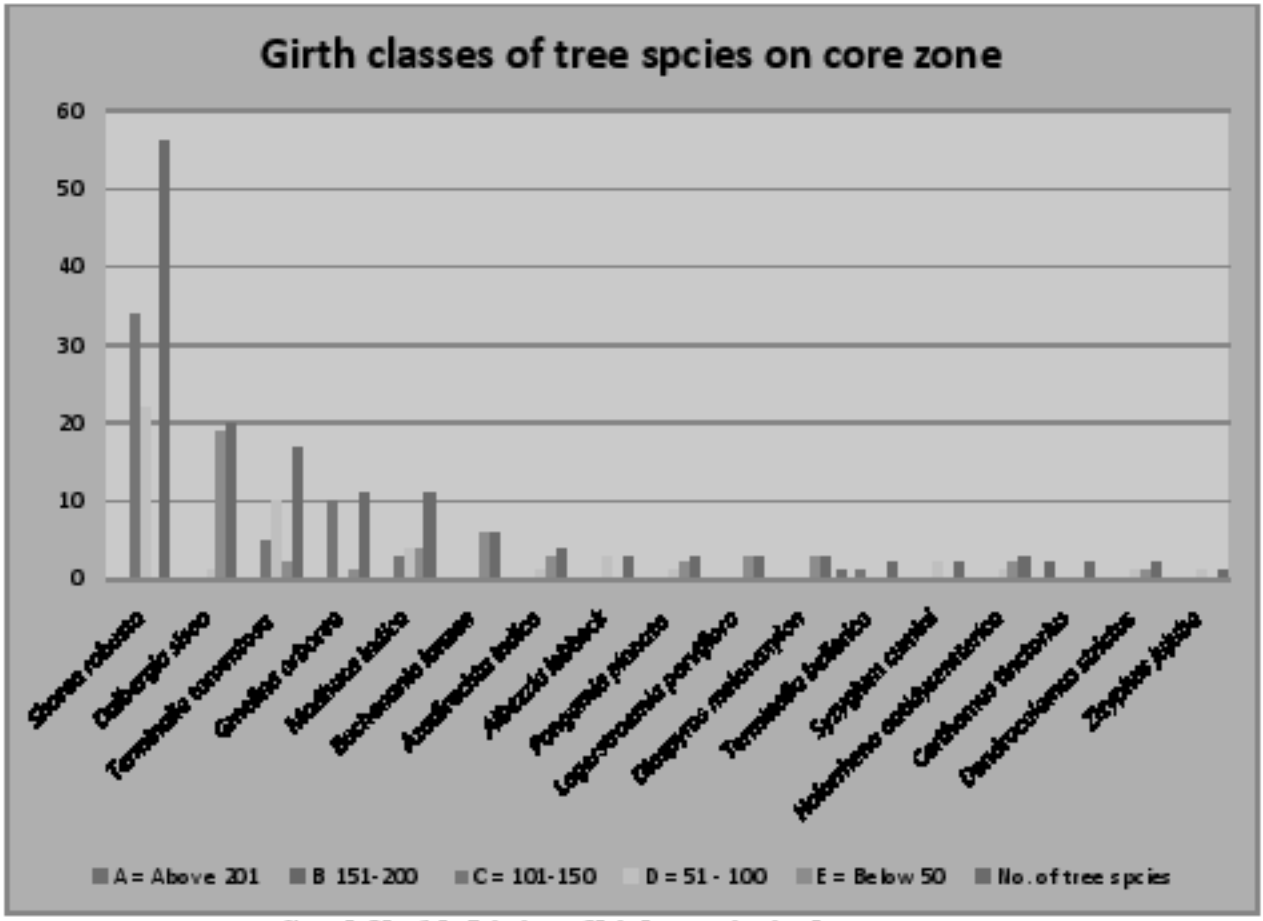
On the basis of the field survey the data had been observed and analyzed as, The core zone of mining area proposed for excavation are mainly surrounded by the a large numbers of floral and faunal diversity. The line transect method was used as the habitat of the study area. A total 12 Transect were laid, 6 in core area and another six transect within the buffer area covered most of the study sites. On the basis observation and analysis as per recorded datasheets, overall no. of vegetation habitat of individual tree species are 374 where as 196 tree species has 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 core zone of proposed mining area for excavation are mainly surrounded by the mainly 17 different types of Species i.e. Sal (*Shorea robusta*), Sesham (*Dalbergia sissoo*),Saja (*Terminalia tomentosa*), Khamhar (*Gmelina arborea*),Mahuwa (*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 with 13 different types of species surrounded with Koriya, Senha, Sal, Palash, Char, Saja, Mahuwa, 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 :
Listing 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	*Shorea robusta*			34	22		56
2	Sesham	*Dalbergia sissoo*				1	19	20
3	Saja	*Terminalia tomentosa*			4	10	1	15
4	Khamhar	*Gmelina*			10		1	11

		arborea						
5	Mahuwa	*Madhuca Indica*			3	4	5	12
6	Char	*Buchanania lanzan*					6	6
7	Neem	*Azadirachta indica*				1	3	4
8	Kala senus	*Albezzia lebbeck*				3		3
9	Karanj	*Pongamia pinnata*				1	2	3
10	Senha	*Lagerstroemia parviflora*					3	3
11	Tendu	*Diospyros melanoxylon*					3	3
12	Baheda	*Terminalia bellerica*	1		1			2
13	Jamun	*Syzygium cumini*				2		2
14	Koniya	*Holarrhena antidysentterica*				1	2	3
15	Kusum	*Carthamus tinctorius*		2				2
16	Bamboo	*Dendrocalamus strictus*				1	1	2
17	Ber	Zizyphus jujuba				1		1

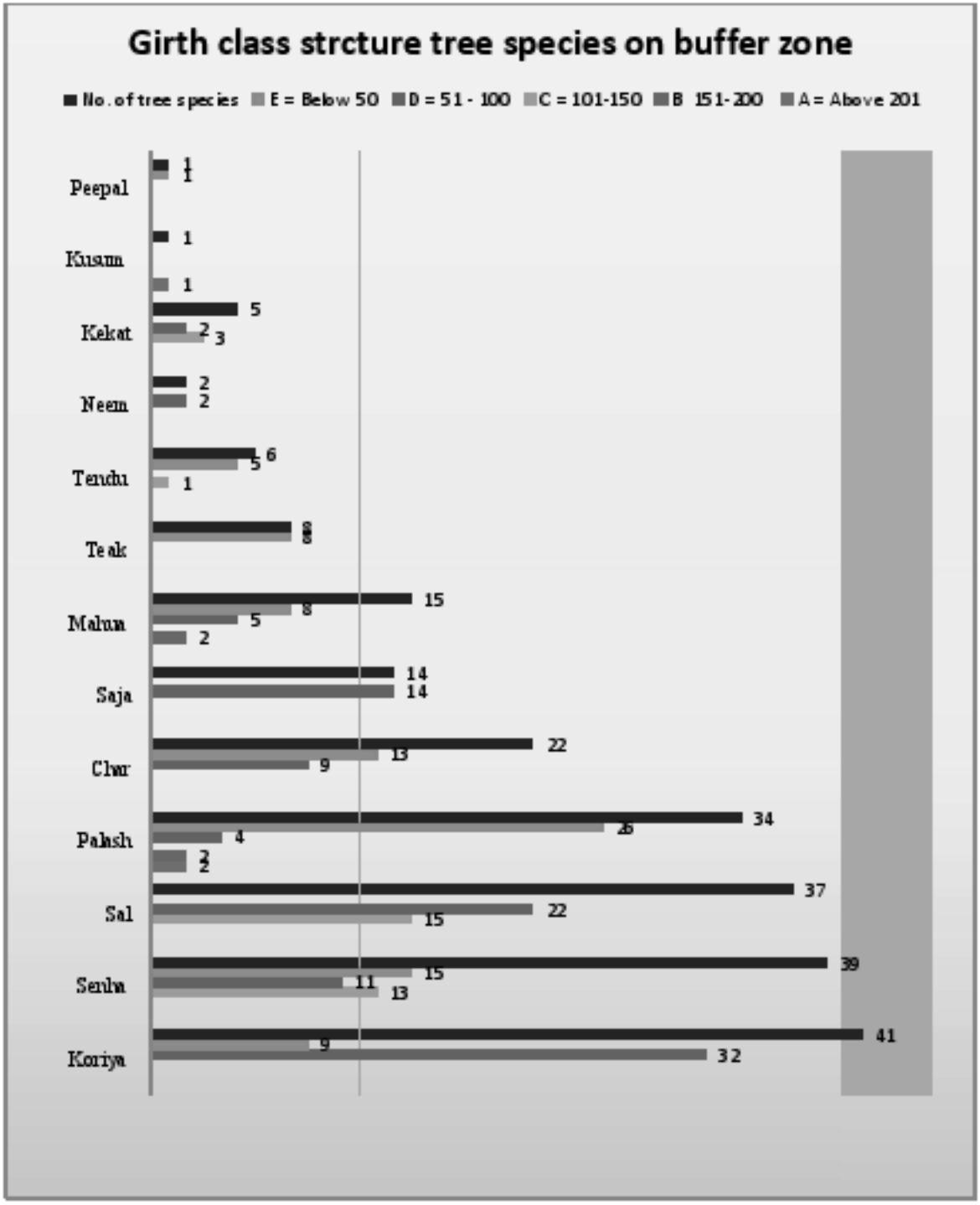


Graph No.6.1: Listing of birds species in the core zone

Table No. 6.2 :
Listing of tree species surrounding 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	*Holarrhena antidysenterica*				32	9	*41*
2	Senha	*Lagerstroemia parviflora*			13	11	15	*39*
3	Sal	*Shorea robusta*			15	22		*37*
4	Palash	*Butea monosperma*	2	2		4	26	*34*
5	Char	*Buchanania lanzan*				9	13	*22*
6	Saja	*Terminalia elliptica*				14		*14*
7	Mahua	*Madhuca Indica*		2		5	8	*15*
8	Teak	*Tectona grandis*					8	*8*
9	Tendu	*Diospyros melanoxylon*			1		5	*6*
10	Neem	*Azadirachta indica*				2		*2*
11	Kekat	*Garuga pinnata*			3	2		*5*
12	Kusum	*Carthamus*	1					*1*

		tinctorius		
13	Peepal	*Ficus religiosa*	1	1



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

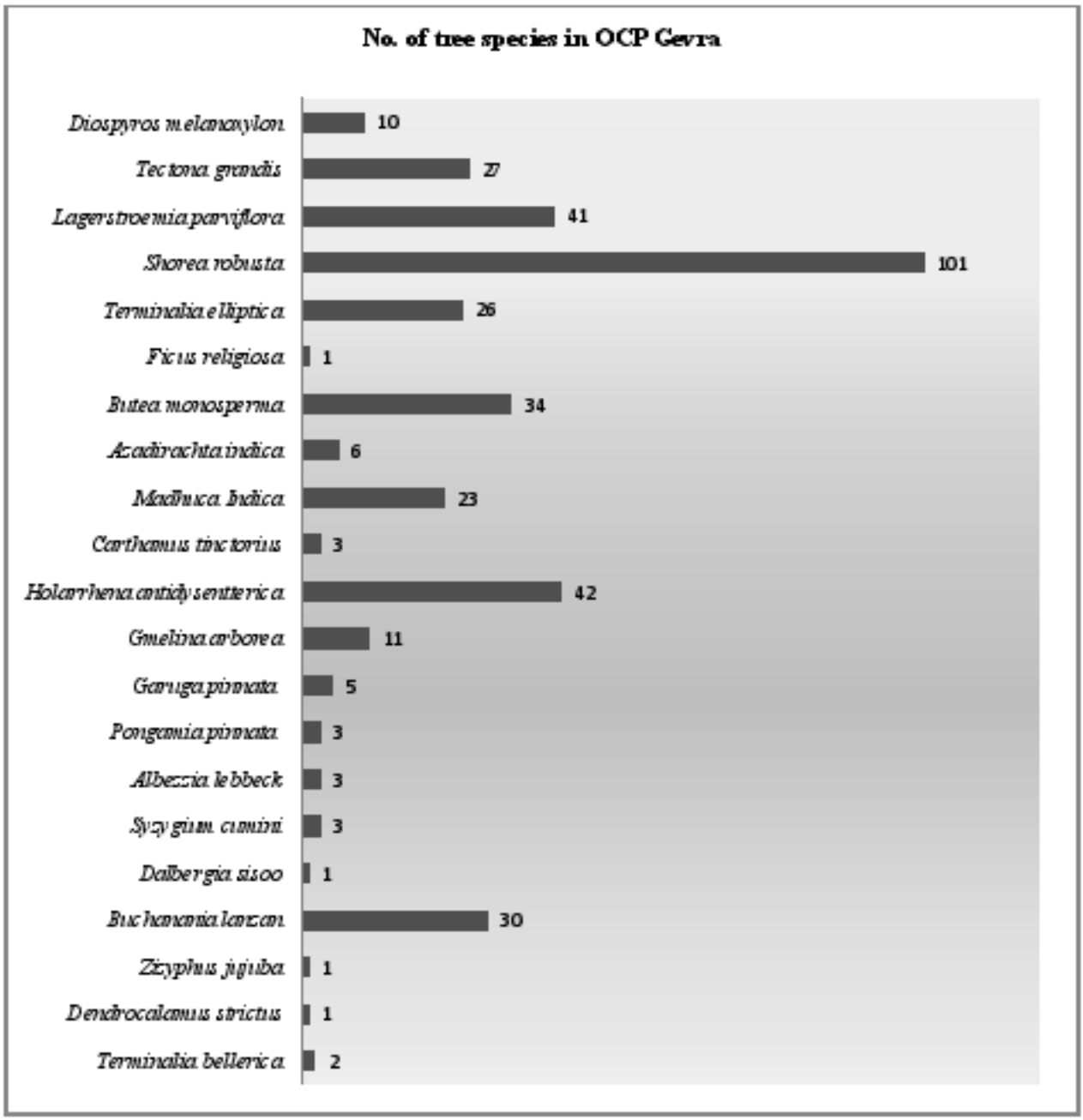
Floral diversity of study site:

Floral diversity of study sites surrounded by 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*), Kekad (*Garuga pinnata*), Kaju (*Anacrdium occidentalis*) Kachnar (*Bauhinia variegata)* Khair *(Senegalia catechu)* Baheda (*Terminalia bellerica*) Jamun (*Syzygium cumini*) Amaltas (*Cassia fistula*) Teak (*Tectona grandis*), Amaltash *(Cassia fistula)* Teak (*Tectona grandis*), Bhelwa (*Semecarpus anacardiam*), Harra (*Terminalia chebula*) and etc. Sal (*Shorea robusta*), Senha (*Lagerstoemia parviflora*), Mango (*Mangifera indica*), Koriya (*Pinus koraiensi*), Plash (*Butea monosperma*), Baheda (*Terminalia bellerica*), and Harra (*Terminalia chebula*), etc. and 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.01.

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

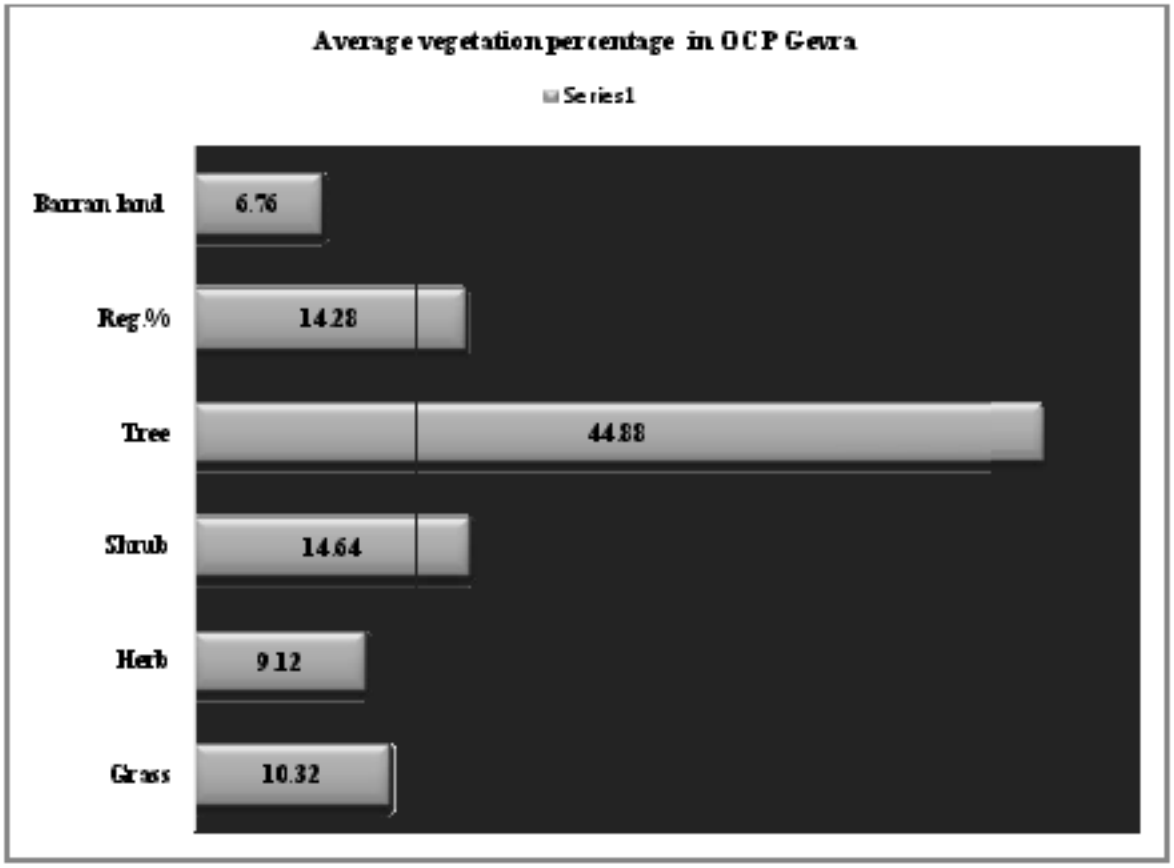
S.no.	Local name	Botanical name	Winter	Summer	No. of tree species
1	Baheda	*Terminalia bellerica*	2	0	2
2	Bamboo	*Dendrocalamus strictus*	1	0	1
3	Ber	*Zizyphus jujuba*	1	0	1
4	Char	*Buchanania lanzan*	9	21	30
5	Cisso	Dalbergia sisoo	1	0	1
6	Jamun	*Syzygium cumini*	3	0	3
7	Kala semus	*Albezzia lebbeck*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

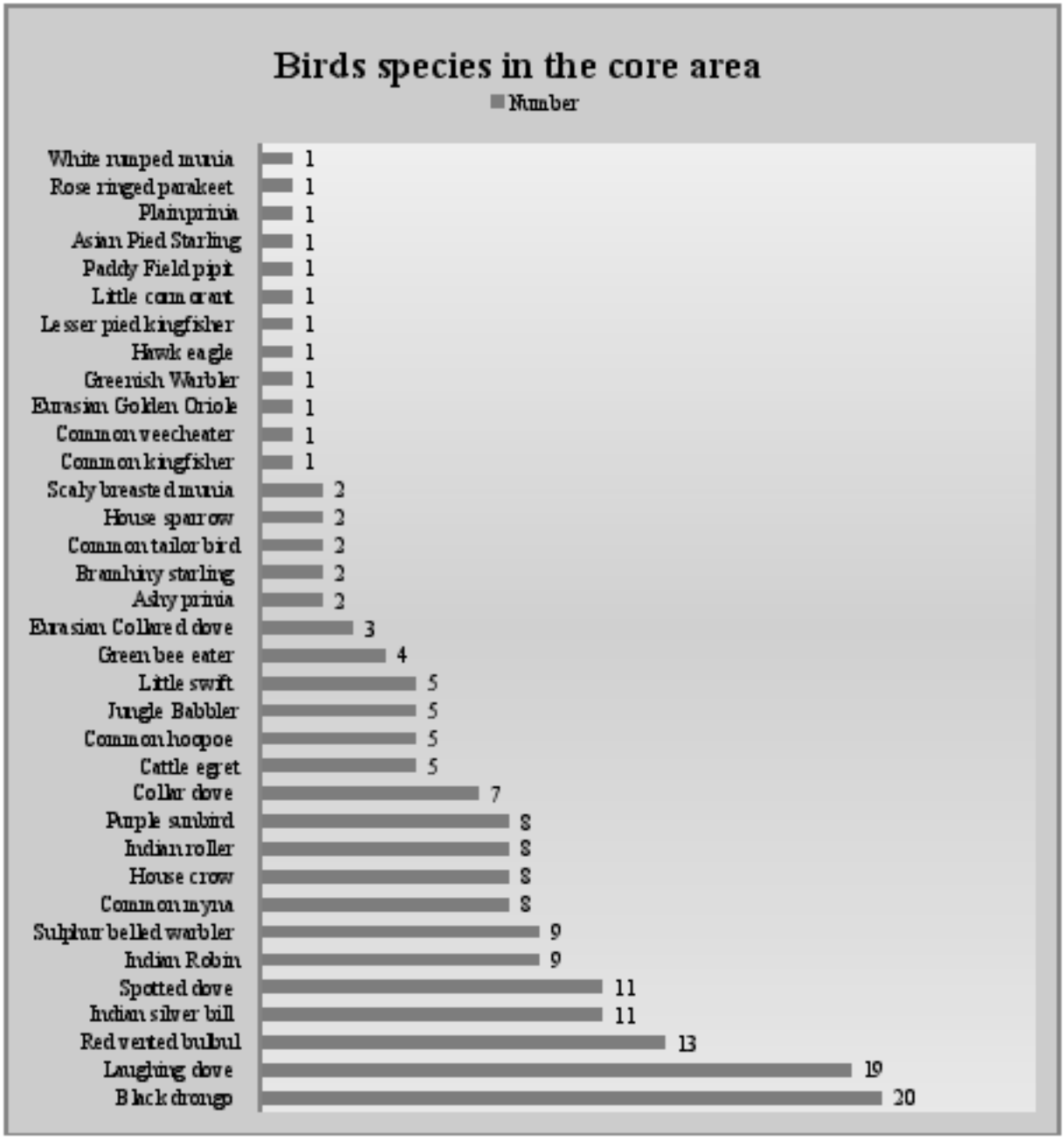
6.2 STUDY OF FAUNAL DIVERSITY ON OCP GEVRA

The line transect method was used as the habitat of the study area. A total 12 Transect were laid 6 in the core area and another 6 within buffer area that covered most of the study sites. The seasonal survey was observed and analysis separated with core and buffer zone respectively. On the basis of seasonal survey there are 180 individual birds belongs to 35 species has been recorded in the core area, where as 300 individual birds belongs to 44 different species has been observed within the buffer zone. It has totally individual 480 birds belongs to 56 various species belongs to 32 there was dominate families in the study area was *Columbidae, Leiothrichidae, Pycnonotidae, Sturnidae* family of avian population has been observed within the seasonal study of core and buffer zone of OCP Gevra.

Table No. 6.5:
Listing of birds species in Core zone

S No.	Species	Scientific Name	Family	Number
1	Black drongo	*Dicrurus macrocercus*	Dicruridae	20
2	Laughing dove	*Streptopelia senegalensis*	Columbidae	19
3	Red vented bulbul	*Pycnonotus cafer*	Pycnonotidae	13
4	Indian silver bill	*Lonchura malabarica*	*Estrildidae*	11
5	Spotted dove	*Streptopelia chinensis*	Columbidae	11
6	Indian Robin	*Copsychus fulicatus*	Muscicapidae	9
7	Sulphur billed warbler	*Phylloscopus griseolus*	Phylloscopidae	9
8	Common myna	*Acridotheres tristis*	*Sturnidae*	8
9	House crow	*Corvus splendens splendens Viellot*	*Sturnidae*	8
10	Indian roller	*Coracias benghalensis*	Coraciidae	8
11	Purple sunbird	*Cinnyris asiaticus*	Nectariniidae	8
12	Collar dove	*Streptopelia decaocto*	*Columbidae*	7
13	Cattle egret	*Bubulcus ibis*	Ardeidae	5
14	Common hoopoe	*Upupa epops*	Upupidae	5
15	Jungle Babbler	*Turdoides striata*	*Lieothrichidae*	5
16	Little swift	*Apus affinis*	*Apodidae*	5
17	Green bee-eater	*Merops orientalis*	Meropidae	4
18	Eurasian Collared dove	*Streptopelia decaocto*	*Columbidae*	3
19	Ashy prinia	*Prinia socialis*	Cisticolidae	2
20	Brahminy starling	*Sturnia pagodarum*	Sturnidae	2
21	Common tailor bird	*Orthotomus sutorius*	Cisticolidae	2
22	House sparrow	*Passer domesticus*	Passeridae	2
23	Scaly breasted munia	*Lonchura punctulata*	*Estrildidae*	2
24	Common kingfisher	*Alcedo atthisp*	*Alcedinidae*	1
25	Variable Wheatear	Oenanthe picata	*Saxicolini*	1
26	Eurasian Golden Oriole	Oriolus oriolus	*Oriolidae*	1
27	Greenish Warbler	*Phylloscopus trochiloides*	*Phylloscopidae*	1
28	Hawk eagle	*Nisaetus cirrhatus*	*Accipitridae*	1
29	Lesser pied kingfisher	*Ceryle rudis*	*Alcedinidae*	1

30	Little cormorant	*Microcarbo niger*	*Phalacrocoracidae*	1
31	Paddy Field pipit	*Anthus rufulus*	*Motacillidae*	1
32	Asian Pied Starling	*Gracupica contra*	Sturnidae	1
33	Plain prinia	*Prinia inornata*	Cisticolidae	1
34	Rose ringed parakeet	*Psittacula krameri*	Psittaculidae	1
35	White rumped munia	*Lonchura striata*	Estrildidae	1

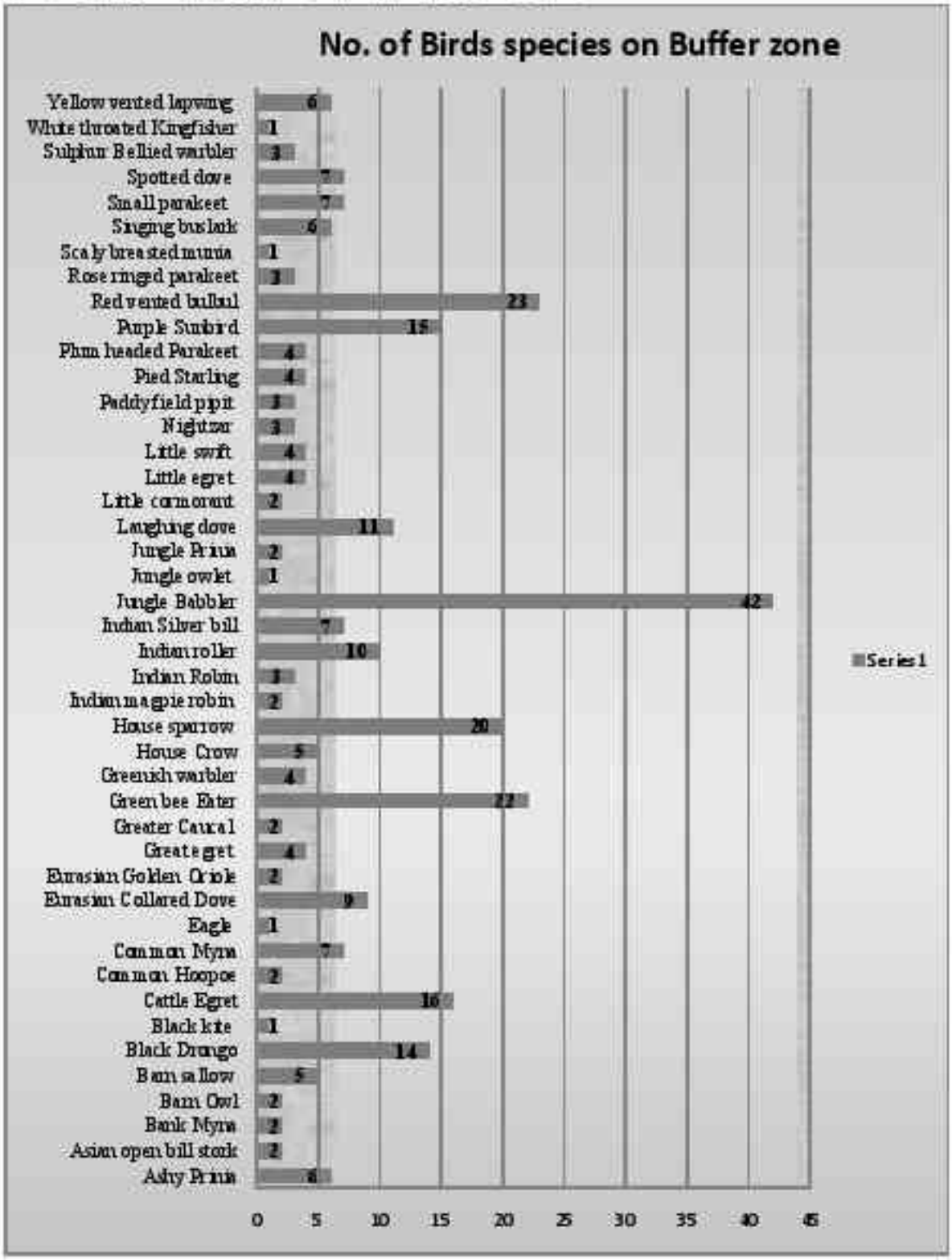


Graph No. 6.5 No. of birds in core zone

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

S.No.	Species	Scientific Name	Family	Number
1	Ashy Prinia	*Prinia socialis*	Cisticolidae	6
2	Asian open bill stork	*Anastomus oscitans*	Ciconiidae	2
3	Bank Myna	*Acridotheres ginginianus*	Sturnidae	2
4	Barn Owl	*Tyto alba*	Tytonidae	2
5	Barn sallow	*Hirundo rustica*	Hirundinidae	5
6	Black Drongo	*Dicrurus macrocercus*	Dicruridae	14
7	Black kite	*Milvus migrans*	Accipitridae	1
8	Cattle Egret	*Bubulcus ibis*	Ardeidae	16
9	Common Hoopoe	*Upupa epops*	Upupidae	2
10	Common Myna	*Acridotheres tristis*	Sturnidae	7
11	Eagle	*Aquila nipalensis*	Accipitridae	1
12	Eurasian Collared Dove	*Streptopelia decaocto*	Columbidae	9
13	Eurasian Golden Oriole	*Oriolus oriolus*	Oriolidae	2
14	Great egret	*Ardea alba*	Ardeidae	4
15	Greater Caucal	*Centropus sinensis*	Cuculidae	2
16	Green bee Eater	*Merops orientalis*	Meropidae	22
17	Greenish warbler	*Phylloscopus trochiloides*	Phylloscopidae	4
18	House Crow	*Corvus splendens splendens Viellot*	Sturnidae	5
19	House sparrow	*Passer domesticus*	Passeridae	20
20	Oriental magpie robin	*Copsychus saularis*	Muscicapidae	2
21	Indian Robin	*Copsychus fulicatus*	Muscicapidae	3
22	Indian roller	*Coracias benghalensis*	Coraciidae	10
23	Indian Silver bill	*Lonchura malabarica*	Estrildidae	7
24	Jungle Babbler	*Turdoides striata*	Lieotrichidae	42
25	Jungle owlet	*Glaucidium radiatum*	Strigidae	1
26	Jungle Prinia	*Prinia sylvatica*	Cistocolidae	2
27	Laughing dove	*Streptopelia senegalensis*	Columbidae	11
28	Little cormorant	*Microcarbo niger*	Phalacrocoracidae	2
29	Little egret	*Egretta garzetta*	Ardeidae	4
30	Little swift	*Apus affinis*	Apodidae	4
31	Nightjar	*Caprimulgus europaeus*	Caprimulgidae	3

32	Paddy field pipit	*Anthus rufulus*	Motacillidae	3
33	Pied Starling	*Gracupica contra*	Sturnidae	4
34	Plum headed Parakeet	*Psittacula cyanocephala*	Psittacidae	4
35	Purple Sunbird	*Cinnyris asiaticus*	Nectariniidae	15
36	Red vented bulbul	*Pycnonotus cafer*	Pycnonotidae	23
37	Rose ringed parakeet	*Psittacula krameri*	Psittaculidae	3
38	Scaly breasted munia	*Lonchura punctulata*	Estrildidae	1
39	Singing bus lark	*Mirafra cantillans*	Alaudidae	6
40	Small parakeet	*Loriculus vernalis*	Psittaculidae	7
41	Spotted dove	*Streptopelia chinensis*	Columbidae	7
42	Sulfur Bellied warbler	*Phylloscopus griseolus*	Phylloscopidae	3
43	White throated Kingfisher	*Halcyon smyrnensis*	Alcedinidae	1
44	Yellow vented lapwing	*Vanellus indicus*	Charadriidae	6



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

Table No. 6.7:
Listing 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	*Prinia socialis*	5	3	8	LC	Presence
2	Asian Open Bill Stork	*Anastomus oscitans*	2	0	2	LC	Presence
3	Asian Pied Starling	*Sturnus contra*	1	4	5	LC	Presence
4	Bank Myna	*Acridotheres ginginianus*	2	0	2	LC	Presence
5	Barn Owl	*Tyto alba*	2	0	2	LC	Presence
6	Common Swallow	*Hirundo rustica*	5	0	5	LC	Presence
7	Black drongo	*Dicrurus macrocercus*	12	19	31	LC	Presence
8	Black kite	*Milvus migrans*	0	1	1	LC	Presence
9	Brahminy Starling	*Sturnia pagodarum*	2	0	2	LC	Presence
10	Cattle egret	*Bubulcus ibis*	15	4	19	LC	Presence
11	Red Collored dove	*Streptopelia tranquebarica*	0	7	7	LC	Presence
12	Common hoopoe	*Upupa epops*	3	4	7	LC	Presence
13	Common Kingfisher	*Alcedo atthisp*	1	0	1	LC	Presence
14	Common myna	*Acridotheres tristis*	8	4	12	LC	Presence
15	Common Tailor Bird	*Orthotomus sutorius*	2	0	2	LC	Presence
16	Crested Serpent-eagle	*Spilornis cheela*	0	1	1	LC	Presence
17	Eurasian Collared dove	*Streptopelia decaocto*	0	3	3	LC	Presence
18	Eurasian Golden Oriole	*Oriolus oriolus*	12	0	12	LC	Presence
19	Large Egret	*Ardea alba*	4	0	4	LC	Presence
20	Greater coucal	*Centropus sinensis*	0	2	2	LC	Presence
21	Green bee-eater	*Merops orientalis*	25	5	30	LC	Presence
22	Greenish Warbler	*Phylloscopus trochiloides*	5	0	5	LC	Absence
23	House crow	*Corvus splendens*	7	6	13	LC	Presence
24	House Sparrow	*Passer domesticus*	22	0	22	LC	Presence
25	Hawk Eagle	*Nisaetus cirrhatus*	0	2	2	LC	Presence

26	Indian robin	*Saxicoloides fulicata*	2	7	9	LC	Presence
27	Indian roller	*Coracias benghalensis*	6	14	20	LC	Presence
28	Indian silver bill	*Euodice malabarica*	3	15	18	LC	Absence
29	Indian Spotted Dove	*Spilopelia chinensis*	3	0	3	LC	Presence
30	Indian Spotted eagle	*Clanga hastata*	7	39	46	VU	Absence
31	Jungle Babbler	*Turdoides striata*	1	0	1	LC	Presence
32	Jungle Owlet	*Glaucidium radiatum*	2	0	2	LC	Presence
33	Jungle Prinia	*Prinia sylvatica*	3	26	29	LC	Presence
34	Laughing dove	*Streptopelia senegalensis*	1	0	1	LC	Presence
35	Lesser Pied Kingfisher	*Ceryle rudis*	3	0	3	LC	Presence
36	Little Cormorant	*Microcarbo niger*	4	0	4	LC	Presence
37	Little Egret	*Egretta garzetta*	6	3	9	LC	Presence
38	Little swift	*Apus affinis affinis*	0	3	3	LC	Presence
39	Common Indain Nightjar	*Caprimulgus asiaticus*	2	2	4	LC	Presence
40	Oriental magpie robin	*Copsychus saularis*	0	6	6	LC	Presence
41	Paddy Field Pipit	*Anthus rufulus*	1	0	1	LC	Presence
42	Plain Prinia	*Prinia inornata*	3	1	4	LC	Presence
43	Plum headed parakeet	*Psittacula cyanocephala*	4	20	24	LC	Presence
44	Purple Sunbird	*Certhia asiaticus*	10	30	40	LC	Presence
45	Red vented bulbul	*Pycnonotus cafer*	2	2	4	LC	Presence
46	Rose ringed parakeet	*Psittacula krameri*	2	1	3	LC	Presence
47	Scaly breasted munia	*Lonchura punctulata*	0	6	6	LC	Presence
48	Singing bush lark	*Mirafra cantillans*	0	1	1	LC	Presence
49	Alexandrine parakeet	*Psittacula eupatria*	1	9	10	LC	Presence
50	Spotted dove	*Streptopelia chinensis*	0	5	5	LC	Presence

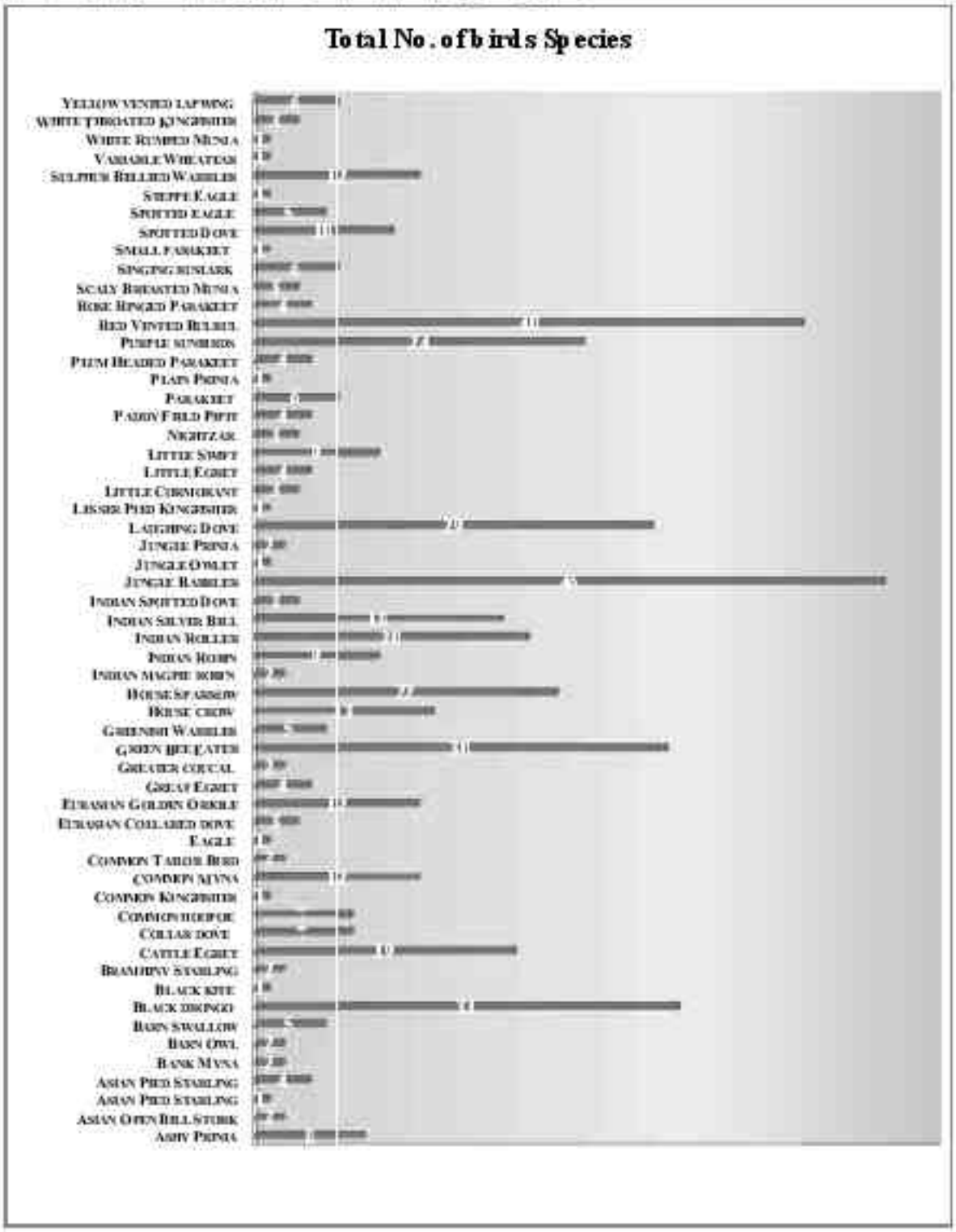
51	Steppe Eagle	*Aquilanipalensis*	1	0	1	EN	Absence
52	Sulfur bellied warbler	*Phylloscopus griseolus*	8	4	12	LC	Absence
53	Variable Wheatear	*Oenanthe picata*	1	0	1	LC	Absence
54	White Rumped Munia	*Lonchura striata*	1	0	1	LC	Presence
55	White breasted Kingfisher	*Halcyon smyrnensis*	1	2	3	LC	Presence
56	Yellow wattled lapwing	*Vanellus malabaricus*	0	6	6	LC	Presence

IUCN status Where as

EW= Extinct in the wild **EN= Endangered** **CR= Critical endangered**

VU= Vulnerable **NT = Near Threatened** **LC= Least concern**

DD= Data deficient



Graph 6.7: Overall birds species observed in OCP Gevra

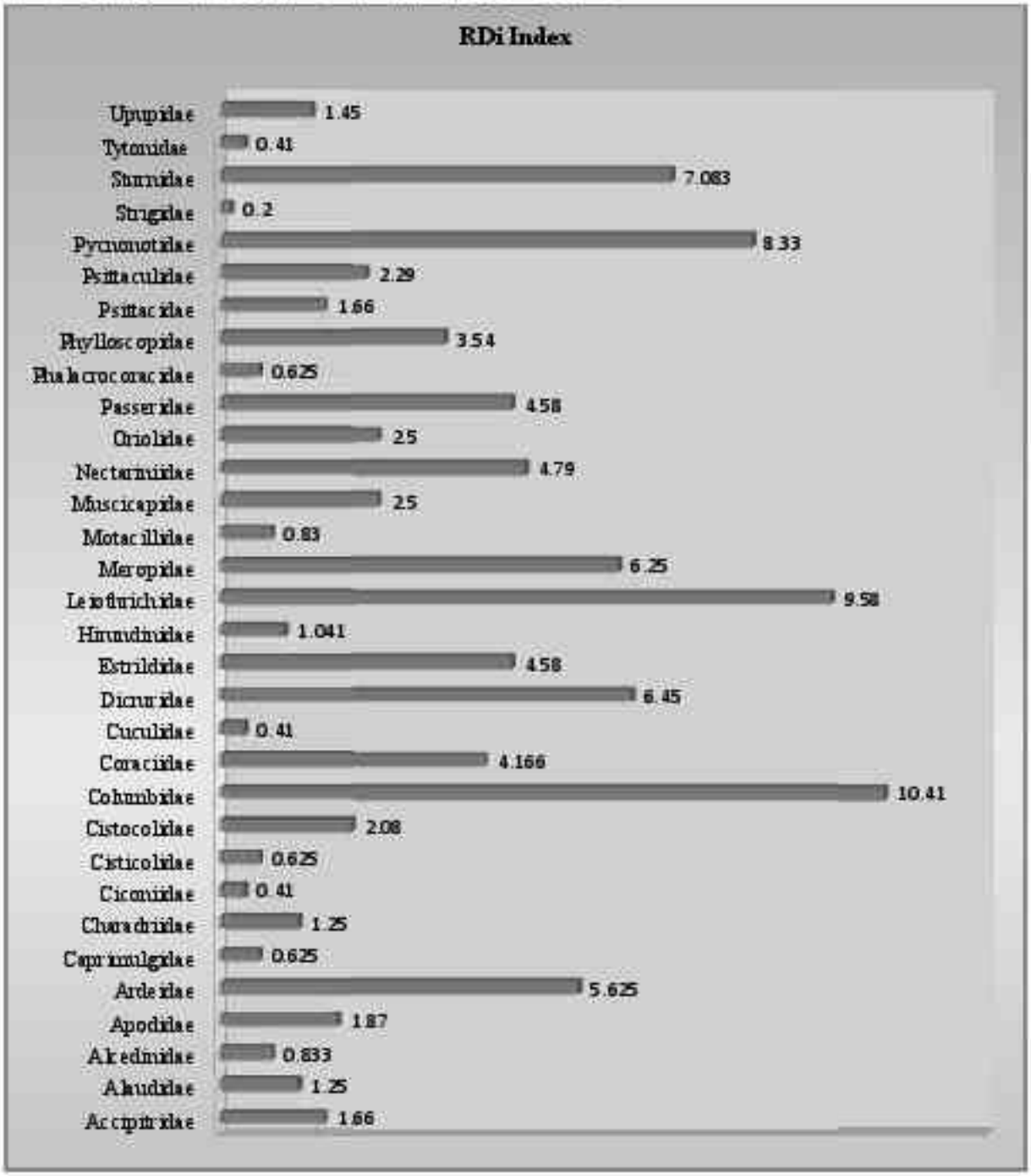
The International Union for Conservation of Nature (IUCN) status was also used to compare the local status with global status. The relative diversity (RDi) families was calculated using the formula (Torre-cuadros et al., 2007)

$$RDi = \frac{\text{Number of birds species in a family}}{\text{Total Number of species}} \times 100$$

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

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

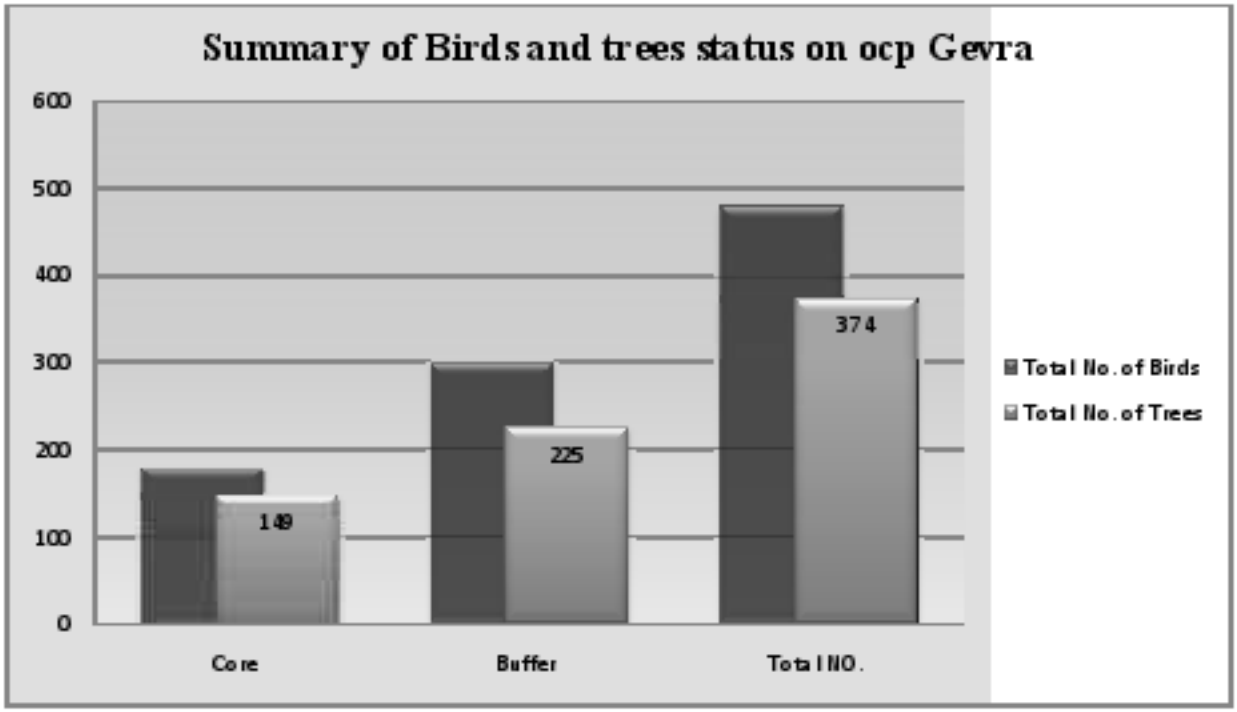
The relative diversity index of families of OCP Gevra			
S. No.	**Name of family**	**No of the Birds species**	**RDi Index**
1	Accipitridae	8	1.66
2	Alaudidae	6	1.25
3	Alcedinidae	4	0.833
4	Apodidae	9	1.87
5	Ardeidae	27	5.625
6	Caprimulgidae	3	0.625
7	Charadriidae	6	1.25
8	Ciconiidae	2	0.41
9	Cisticolidae	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 discussed about MoEF Environmental clearance, National rehabilitation and resettlement policy 2007, Impacts and mitigation measures of mining on environmental factors such as air, water, noise, land, vegetation, wildlife and birds. Apart from that detailed discussion on bird's 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 live in communities that depend on each other. Survival of these species can depend on soil conditions, local climate, altitude, and other features of the local habitat. Mining causes direct and indirect damage to wildlife.

The discussion also includes the field survey methodology, collected data observation and their analysis, status of avifauna in core and buffer zone, alternative habitat and artificial nesting pattern of avifauna. The biggest environmental challenge facing the coal industry is the issue of greenhouse gases and acid rain. 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.

Proposed Forest land of OCP Gevra, 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 then surrounded by agriculture land and tenancy land, at the one side of forest land state highway also present and that also falls under the mining zone and proposed 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 belong to 32 families has been reported. It has been found that there are certain species of birds in the study area that have been classified under different threat categories by the IUCN status were placed in the *Clanga hastate* Vulnerable (VU), and *Aquila nipalensis* Endangered (EN) of categorised. All the remaining species (n= 54) are placed in the least concern category. (Refers to table no 6.7)

Apart from the above survey technique, the study of Zoological survey of India (ZSI) of "*Faunal diversity of Korba district*" has been also done. From 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, Sulphur bellied warbler* and *Variable Wheatear*. During field survey, it was observed that most of the bird nests were found in Sal species followed by Char then Mahua and Saja. This study will be helpful for 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.

It was observed that the bird's diversity of Core area which is lesser than Buffer area found in study site. It was also observed that some major disturbances produced by sound in the core area which affect bird diversity due to large amount of noise pollution mainly occurred by blasting, vehicle moment and anthropogenic pressure. The other disturbance is occurred by air pollution of the mining dusts, habitat degradation due to tree felling and ground digging. The above problems were occurred by noise and air pollution which are directly related to mining activities and decreasing of forests which destroys the habitat of avifauna. Buffer area was well established with agriculture land and forestland, which may provide suitable habitat for birds, and they may settle down there (*Vishwakarma, et. al 2018).*The above discussion, the impact of noise, air and land disturbance of study site affecting the diversity of bird population.

It was also observed that the overall vegetation cover percentage and avifauna population were mostly present in the buffer areas comparison to core area population. This observation shows that the avifaunal population presence in vegetative cover areas are more than the less vegetative covers populations. The direct impacts on the living organisms of the mining area which may ranges from 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 acceptable 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 at 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 less for *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 first 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 proposed in the buffer zone for the conservation of avifauna. For better conservation measures artificial nesting trail proposed for avifauna as per their habit, habitat, and behaviour and nesting pattern. The artificial nesting pattern and their designs are figured out in the chapter 8.

The current status of avifauna as per their nesting pattern are categorized in eight part 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. This 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 comparison to winter season and summer seasons. 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 found 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 water spraying (particularly during the dry season) on haul roads, transfer points of conveyers arid 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 trucks, which will be used 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 not any surface water body

in 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 cove 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 Wild life:

- 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

RECOMMNDATION & 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 needed to develop in the buffer boundaries to assure the water availability throughout the year. The existing ponds, river, dam and canals water resrouces recharge should be maintain
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 and light fine wood materials, Nest will be prepared with the help of active JFM Committee and local forest staff and placement of artificial nest in the buffer area for affected avifauna of core zone.
10. Preparation of artificial bird's 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 in 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 from forest department should be implemented for the prevention of forest fire. Awareness program against forest fire should also be run in adjoining villages.
13. **Monitoring and Evaluation:** Plantation and conservation efforts should be monitor 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 also. This plantation will be done at selected places only and only local species will be used in the plantation. 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.	*Wrightia tinctoria*
2.	Lantana	Sh.	*Lantana camara*
3.	Kaner	Sh.	*Nerium odoratum*
4.	Bhatkateya	H	*Solanum trilobatum*
5.	Chhind	Sh	*Phoenix acaulis*
6.	Kathjamun	Sh.	*Eugenia heyneana*
7.	Chhoti Lajwanti	H	*Hemigraphis indica*
8.	Katma, Amti	Sh.	*Antidesma ghaesembilla*
9.	Khirni	Sh.	*Mimusops hexandra*
10.	Charota	H	*Cassia tora*
11.	Phetoa	Sh.	*Gardenia turgida*
12.	Marodphal	Sh.	*Helicteres isora*
13.	Gokhuru (bada)	H	*Acanthospermum hirsutum*

Table No. 8.3:

Bamboo and grasses

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

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 we had surveyed the avifauna species of mining site and categorized them 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

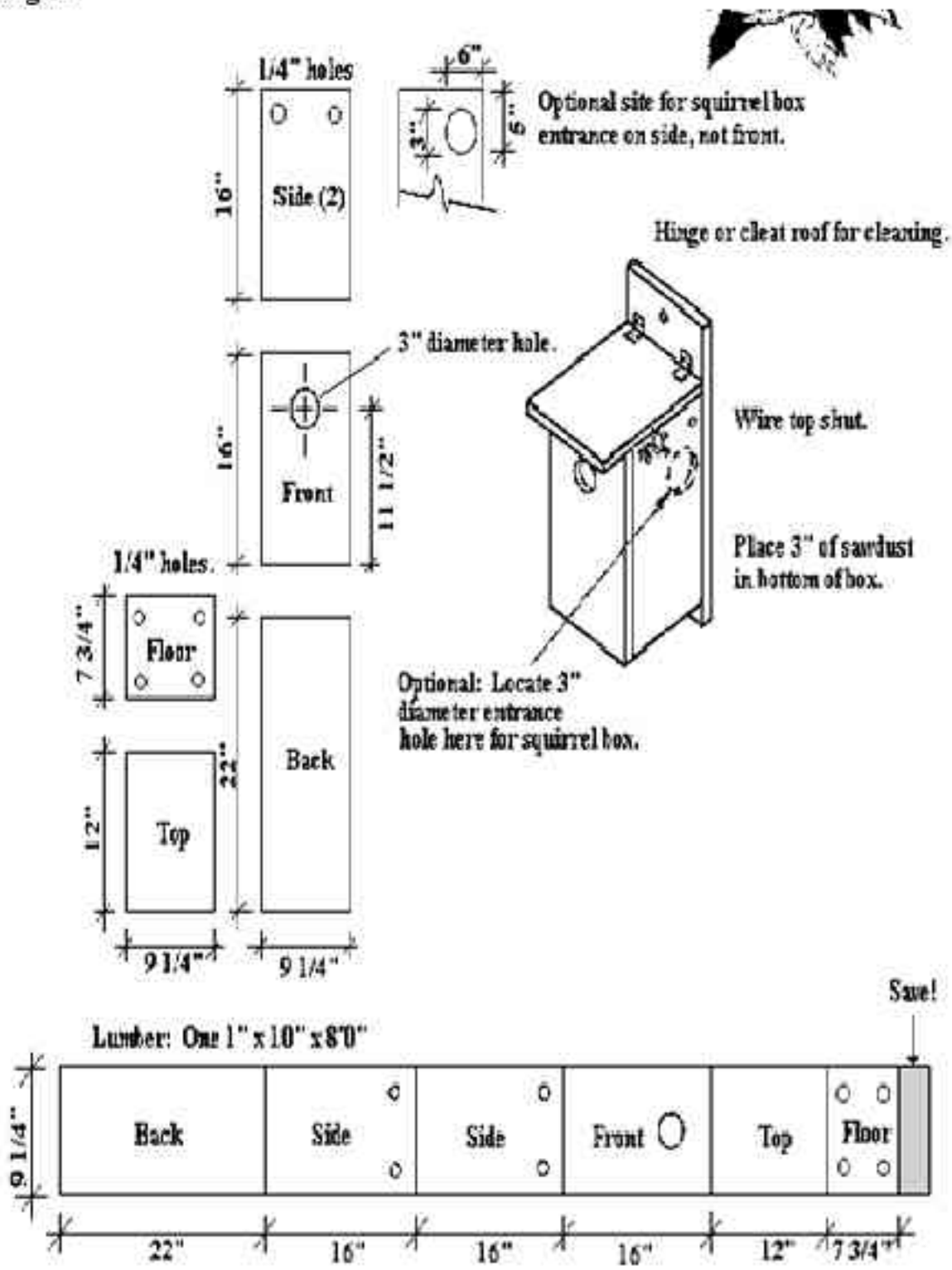


Fig 8.2.1 Ideal nest design for Doves, Parakeets, and Orioles

Design II

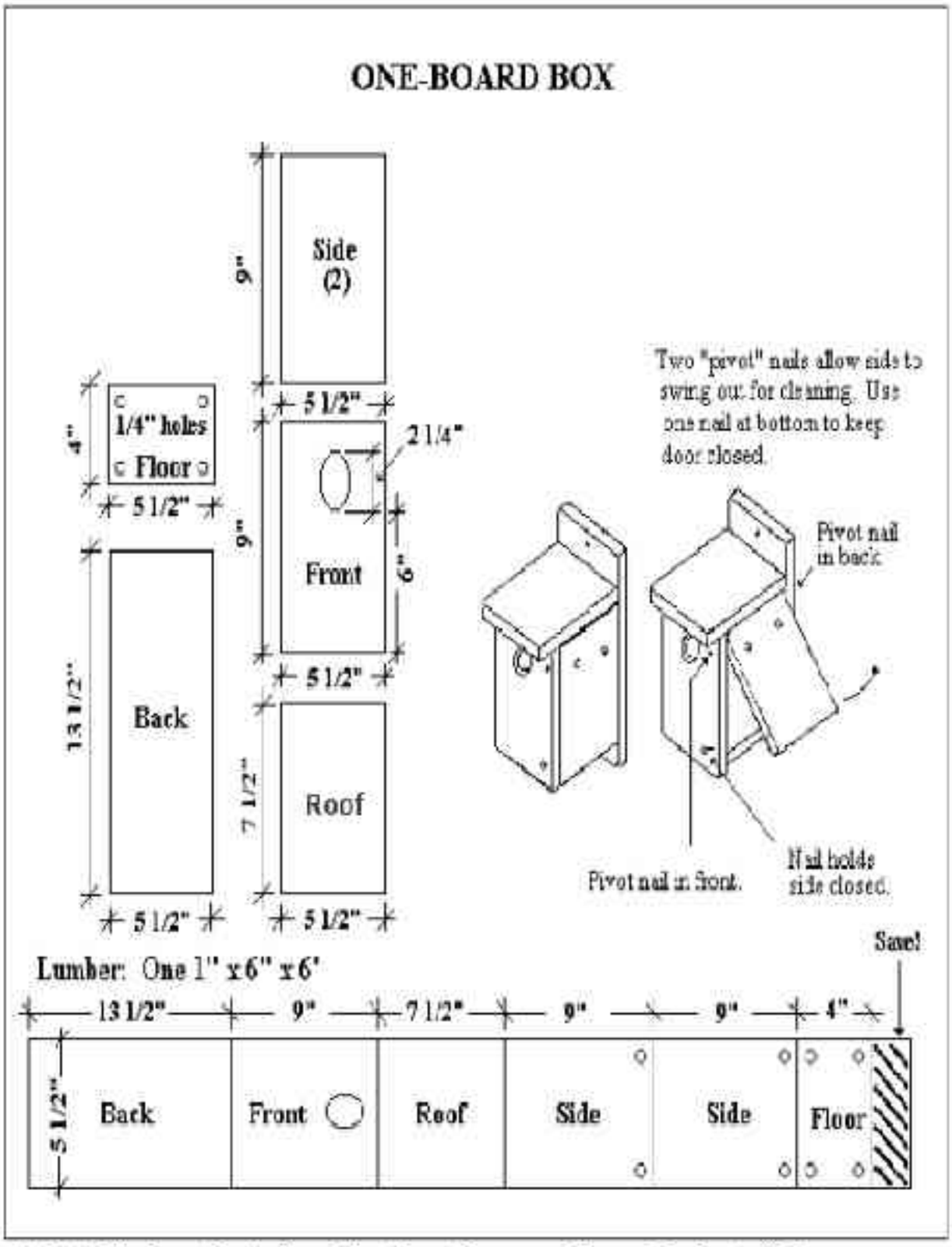


Fig 8.2.2 Ideal nest design for yellow throated sparrow, Mynas, Parakeets, Indian Rollers etc

Design III

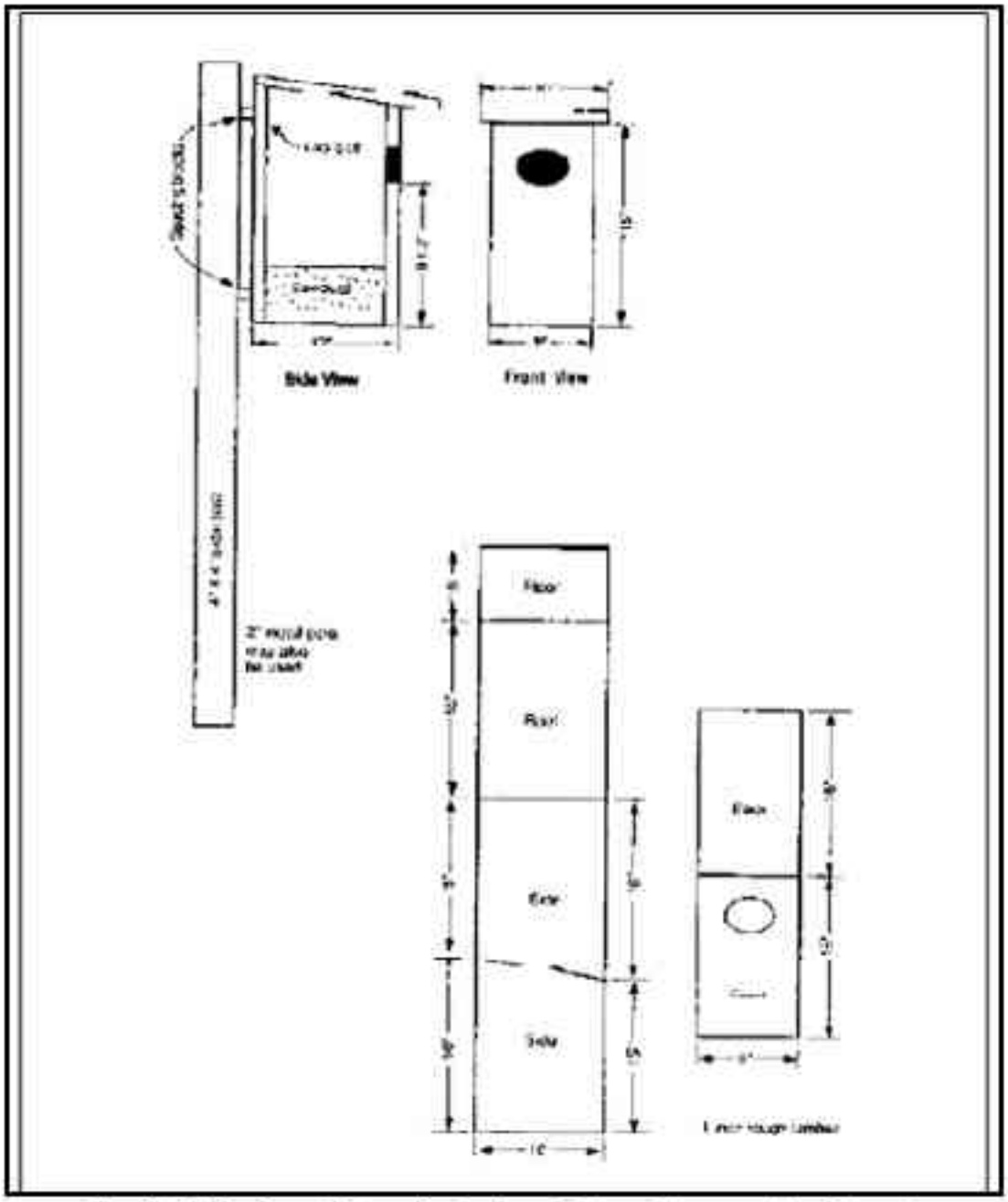


Fig. 8.2.3 Ideal nest design for shrikes, Indian robin, magpie robin, etc

Design IV

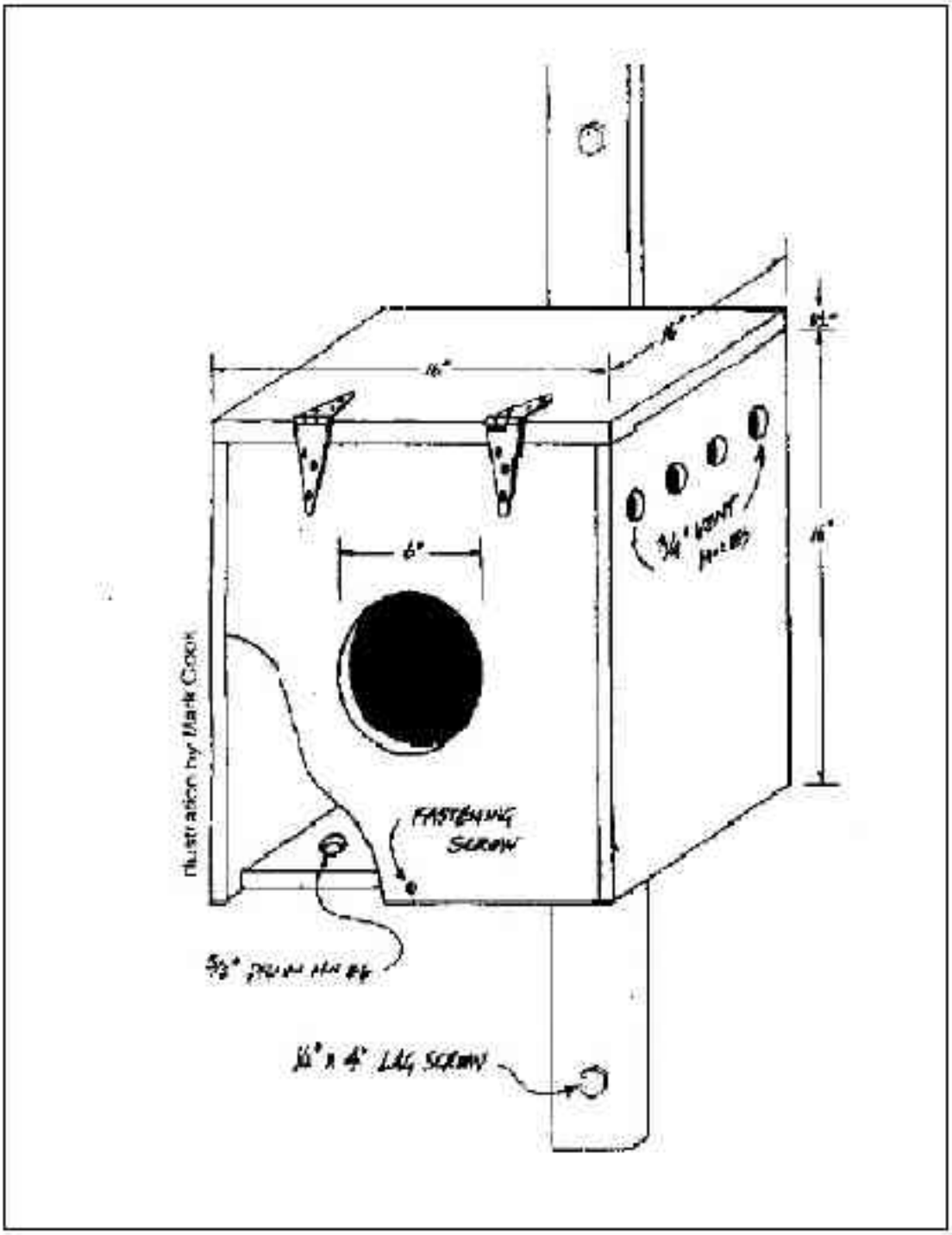


Fig 8.2.4 Ideal nest design for Owl and Owlets

Design V

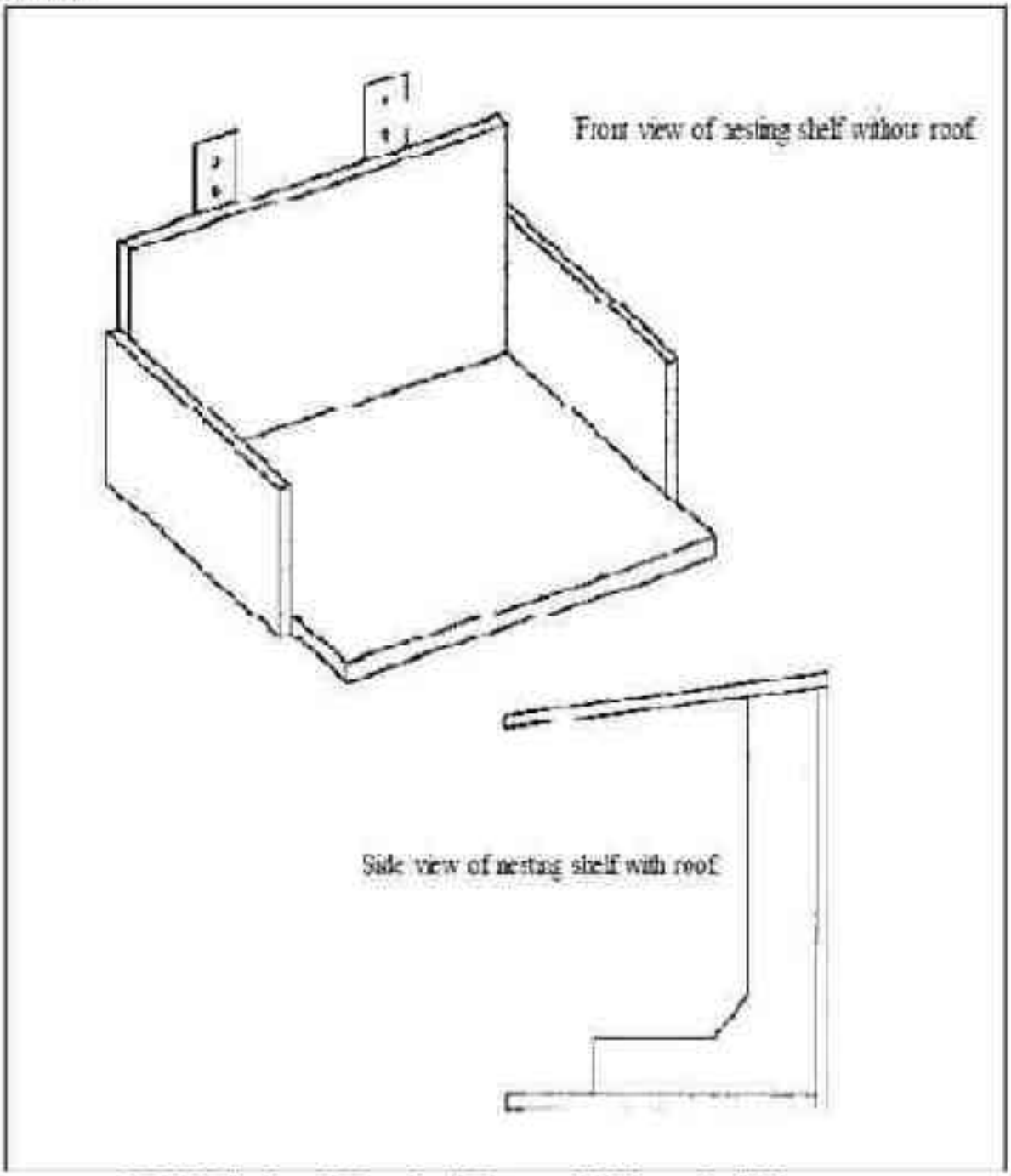


Fig 8.2.5 Ideal nest design for Platform and Twig nesting birds

Design VI

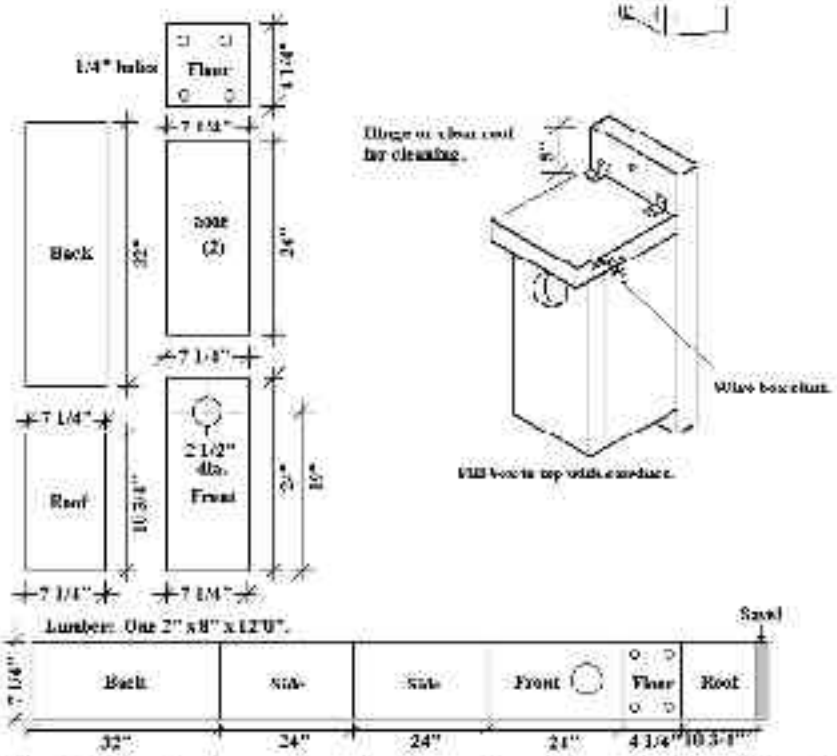


Fig 8.2.6 Ideal Nest design for Excavators having yellow tail and red patch on the back of head and neck

Design VII

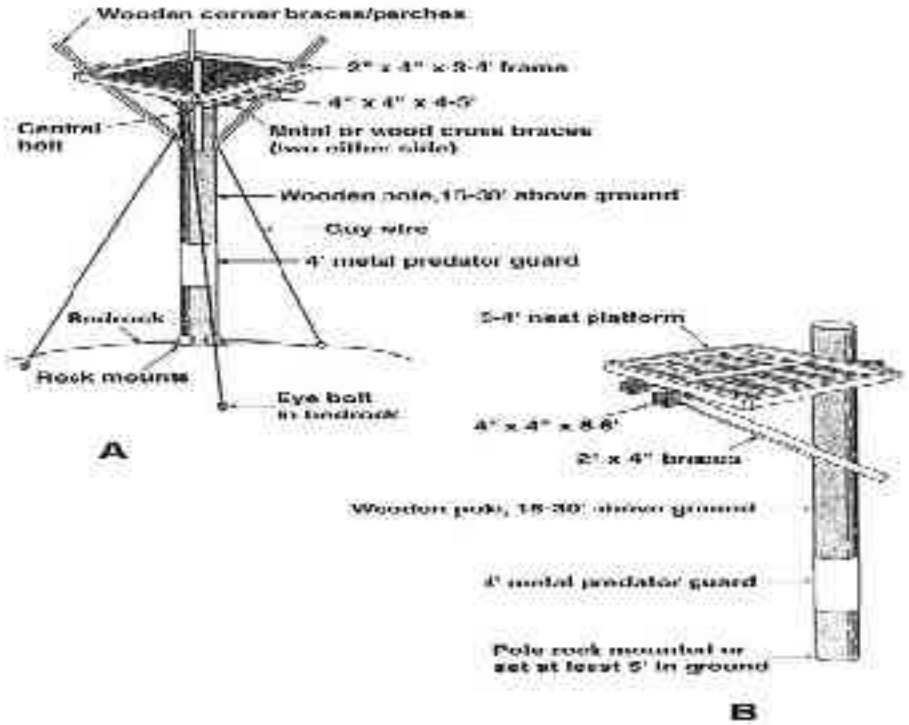


Fig 8.2.7 Ideal nest design for Raptors

Design VIII

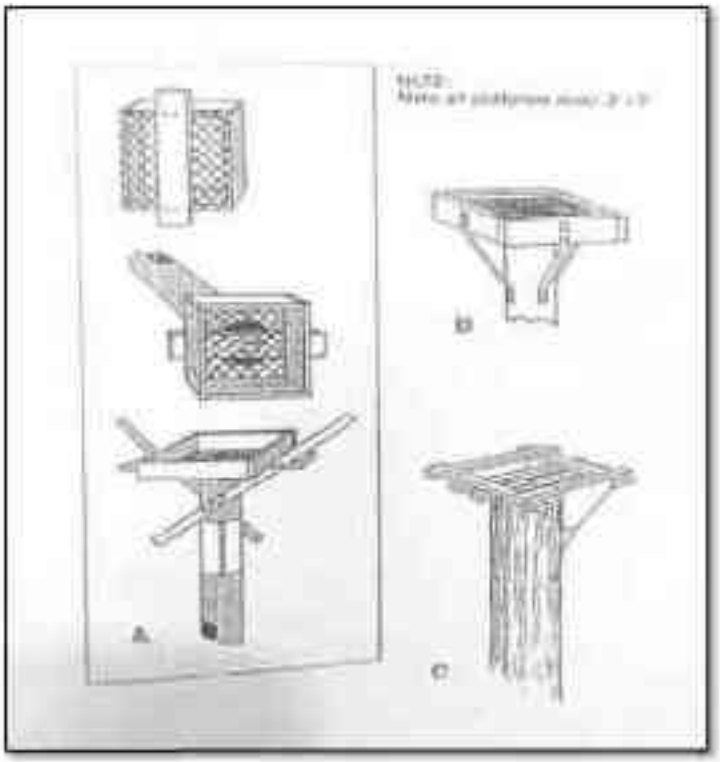


Fig 8.2.8 Ideal nest design for Raptors

Design IX

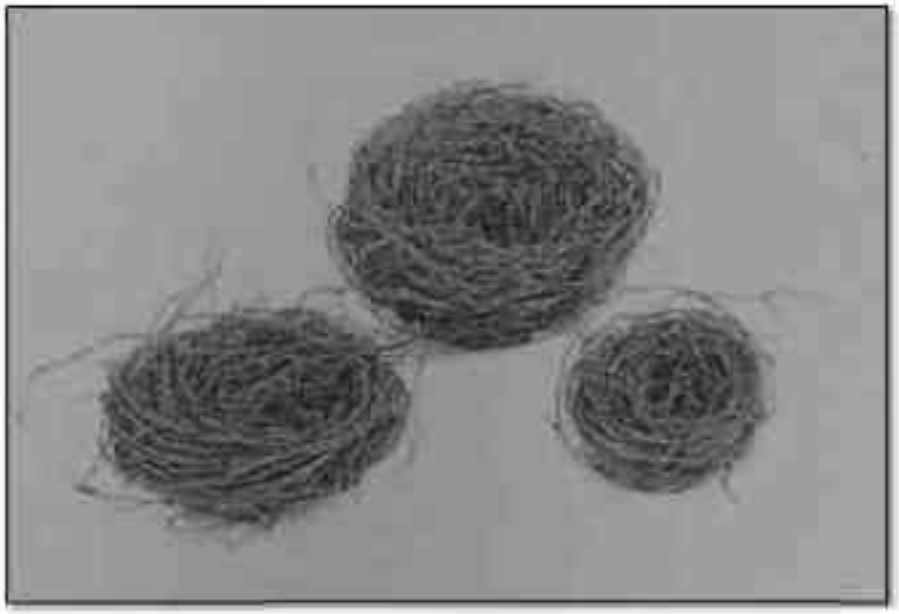


Fig 8.2.9 Ideal nest design for Grassland birds and Cup nesting birds

Fig. 8.3 BIRD FEEDER

Construction of Bamboo Based Bird feeder

8.7 CONSERVATION PLAN FOR ELEPHANT

Elephants are major agents of change and are often indicated as those large herbivores possessing the ability of changing entire ecosystems in terms of vegetation structure and composition, thereby affecting a whole series of other ecosystem components as well. The exclusive role of elephants as agents of change could thus far not be completely isolated from the multitude of factors involved in ecosystem dynamics.

Globally, wild elephants are present in 50 countries, 13 of which are in Asia and 37 in Africa. At present the number of wild Asian elephants (*Elephas maximus*) is between 35,000 and 50,000 (*www.elephantcare.org*), while the number in captivity is around 16,000. The trend in almost all Asian range states has been a drastic decline in wild elephant numbers, due to a range of anthropogenic factors related to increasing human population, loss and degradation of forest habitat, fragmentation of breeding populations and increasing human-elephant conflict (HEC).

The Asian elephant is categorized as an 'endangered' species in the Red List of the World Conservation Union (*www.iucnredlist.org*) and is classified with the Convention for International Trade of Endangered Species (*www.cites.org*). They have declined from over 5 million animals located throughout the continent 100 years ago, to the current number confined to fragmented habitats in sub-Saharan regions. Whereas poaching for ivory and meat was a major reason for the decline in the past, loss of habitat is the biggest threat to their continued survival at present. Paradoxically, though, elephant numbers are increasing in some countries and may need to be controlled in order to prevent degradation of their habitats.

India holds by far the largest number of wild Asian elephants, estimated at about 26,000 to 28,000 or nearly 60% of the population of the species *(Bist 2002)*.

Elephas maximus is placed in Schedule I and Part I of Indian Wildlife Protection Act (1972) conferring it the highest level of protection. Wild elephants are presently distributed over an area of about 109,500 km^2 (*Santiapillai and Sukumar, 2006*); this is approximately 3% of India's geographical area. Adjacent to some of these areas, a segment of the elephant population killed an average of 350 people annually over the last five years (2005-2006 to 2009-2010) (Project Elephant), and damaged an average of 330 km^2 of crops every year for the last three years (2007-2008 to 2009-2010) (Project Elephant).

Northern Chhattisgarh in Central India has been home of Asian elephants since historical times. However, in the early part of the 20th century they became locally extinct (*Singh, 2002*). In 1988 elephants migrated from the prime elephant habitat of Jharkhand into Chhattisgarh and caused extensive damage to life and property. Since then, HEC cases have been increasing due to straying of migratory elephants in the state (*Singh, 2002*). The number of wild elephants in the year 2007-08 in the state estimated to be 122 (*MoEF, 2008*). Major reason for prolonged stay of elephants in the state could be better forest cover (44 %), heavy mining, habitat degradation and deforestation in the states of Jharkhand and Orissa (*Singh, 2002; Earth Matters Foundation, 2008*). Even the state of Chhattisgarh is primarily inhabited by tribal communities dependent largely on agriculture and minor forest produce. Increasing human pressure on forested areas is resulting in increased incidences of human-elephant conflicts. This necessitated a detailed assessment of habitat suitability and dispersal corridor for elephants in the area.

Records of the Elephant's movement in Raigarh District.

During 19th century and earlier elephants were, recorded only from the northern part (Raigarh district) of the state but for unknown reasons the species left the area in the beginning of the 20th century. During this time the species was

recorded from Raigarh District. However, the species re-entered the area of Chhattisgarh state, in 1980s, around the year 1986. The elephants then entered the area of Raigarh district, from Orissa state. In the beginning their entry was occasional, coming and going in to and out of the area. However, in later years their entry as well as their residence time, within the area of the state, has increased.

At present, the study area of OCP Gevra under Katghora Forest Divison has been observed the elephant movement.

1. ***Important points in the conservation of elephants**: Following are some key points in the conservation of elephants:*

- *Require 150-250 kg of plant food every day, with preference for grasses.*
- *Evolved to a large size, with black color. The black color absorbs more heat.*
- *Lack sweat gland to dissipate the body heat, hence, require a shade in sunny days, or require frequent cooling through wallowing or spreading water over the body.*
- *Have very poor visibility particularly during night. Their eyes do not shine in the night, because of reduced number of cones, unlike the canines like tiger, leopard and even bovid like the cow.*
- *A good source of water is required also for drinking.*
- *Frequent dusting of the body or mud cover over the body is required to protect the body from the biting insects.*
- *Change in cropping pattern by introducing crops disliked by elephant or the plant which act as elephant repellent (e.g. Patchouli, (Pachouli) Helianthus annus (Sunflower) Capsicum annum (Chilli) Sesamum indicum (Til) and Citrus should be promoted.*

2. ***HABITAT***

Elephants are generalists, but use mainly scrub forest. They can be found in the jungle, but generally on the edge where open, grassy areas are accessible. They prefer areas that combine grass, low woody plants, and forest. Elephants rarely forage in one area for more than a few days in a row. In general, food, water and shade are the three basic resources that can be expected to influence the movement of the elephant *(Sukumar et al, 2003).* Their Home range ranges from 30-600 km2.

3. ***FOOD***

Elephants eat a wide variety of species of vegetation. They are herbivore, folivore and lignivore. More than 100-130 different species of plants may be eaten They prefer grasses, but they also consume bark, roots, leaves, wood, stems and leaves of trees, vines, shrubs, tubers, bamboo and barn, An average day's intake is 150-200kg of wet vegetation. The proportions of the different plant types in their diet vary depending upon the habitat and season. Annual diet has been found to be dominated by grass. Maximum straying distance covered by the raiding elephant has been recorded up to 5.5km

4. **Time-activity budget of elephants.**

Generally they are active almost throughout the day during rainy and winter months, but during summer months they are active only in the morning and evening hours. They become active well before dawn and start their morning activities in the vicinity of the area where they spent night. Evening hour is the time for drinking and bathing especially during summers. In summer season percentage of movement is more due to lack of fodder species and shrinkage of natural water sources.

5. FOOD PLANTS

Following is a list of plants reported as food by different workers. However, only the names of plants, local to the area, have been taken and the local names have been changed. Part of the plant eaten may be different for the different species.

SN	Local Name	Botanical Name
1.	Khair	*Acacia catechu*
2.	Babool	*Acacia nilotica*
3.	Bel	*Aegle marmelos*
4.	Kala siris	*Albizzia lebbek*
5.	Bans	*Bambusa arundinacea*
6.	Safed siris	*Albizzia procera*
7.	Kachnar	*Bauhinia variegata*
8.	Mahul	*Bauhinia vahlii*
9.	Khatua	*Bauhinia malabarica*
10.	Semal	*Bombax ceiba*
11.	Ghas	*Brachiania sp.*
12.	Kasai	*Bridelia retusa*
13.	Kumhi	*Careya arborea*
14.	Lassora	*Cordia myxa*
15.	Ghas	*Cymbopogon flexuosus*
16.	Grass	*Cynodon dactylon Doob*
17.	Shisham	*Dalbergia sissoo*
18.	Bans/ Bamboo	*Dendrocalamus strictus*
19.	Urai/Khus	*Desmostachya bipinnata*
20.	Ghas	*Eleusine sp.*
21.	Amla	*Emblica officinalis*
22.	Nilgiri	*Eucalyptus spp*
23.	Bagai Ghas	*Eulaliopsis binata*
24.	Kaith	*Feronia elephantum*
25.	Bargad/Bar	*Ficus bengalensis*
26.	Dumar/Gular	*Ficus glomerata*
27.	Pipal	*Ficus religiosa*
28.	Duranga-hesa	*Ficus rumphii*
29.	Pakar	*Ficus infectoria*
30.	Kandai	*Flacourtia indica*
31.	Kekad	*Garuga pinnata*
32.	Dhaman	*Grewia elastica*
33.	Ainthi	*Helicteresisora*

34.	Korea	*Holarrhena antidysenterica*
35.	Karmata	*Ipomoea spp.*
36.	Ulu	*Imperata arundinacea*
37.	Baranga/Pula	*Kydia calycina*
38.	Senha/Sidha	*Lagerstroemia parviflora*
39.	Kaith	*Limonia acidissima*
40.	Sinduri/Rohini	*Mallotus philippinensis*
41.	Lajwanti	*Mimosa pudica*
42.	Mudhi	*Mitragyna parvifolia*
43.	Banana	*Musa paradisiaca*
44.	Bichhloo	*Neyraudia arundinacea*
45.	Dhan	*Oryza sativa*
46.	Tinsa	*Ougeinia oojeinensis*
47.	Buta Chhind	*Phoenix humilis*
48.	Jangal Jalebi	*Pithecellobium dulce*
49.	Mainphal	*Randia dumetorium*
50.	Kandi-khar	*Saccharum munja*
51.	Ganna	*Saccharum officinarum*
52.	Kans	*Saccharum spontaneum*
53.	Sisal	*Sansevieria sp.*
54.	Kosam/Kusum	*Schleichera oleosa*
55.	Sarai/Sal	*Shorea robusta*
56.	Jamun	*Syzygium cumini*
57.	Amli / Imli	*Tamarindus indica*
58.	Saja	*Terminalia tomentosa*
59.	Sagaun / Teak	*Tectona grandis*
60.	Giloe / Gurch	*Tinospora cordifolia*
61.	Hathi ghas / Pirlu	*Thysanolaena agrostis*
62.	Bhander	*Zizyphus mauritiana*
63.	Ghont	*Zizyphus xylopyra*

The most commonly consumed species belong to family *Poaceae* **and** *Fabaceae* **(17.65%) followed by Moraceae (14.71%). Elephants extensively feed on** *Artocarpus heterophyllus, Syzygium cumini, Acacia nilotica, A. catechu, Dalbergia sissoo, Zizyphus mauritiana, Aegle marmelos* **and** *Ficus* **species, besides various grasses and shrubs** *(Bhagat et al, 2017). Saccharum spontaneum, Thysanolaena maxima* **and fruit parts of** *Dillenia indica*, **are some of the other species recorded to be preferred by elephants. Some other food plants have been reported by the villagers of elephant moving areas of Chhattisgarh state. The list includes:**

Musa paradisica	Kela	All the parts are edible.
Oryza sativa	rice	Eat very cleverly the fruiting part, only, in the barn yard they dismantle the heap of gathered rice.
Saccharum officinarum	Ganna	One of the most preferred food item.
Dendrocalamus strictus	Bamboo	All the parts are edible.
Ficus benghalensis	Bargad	Leaves and barks were eaten mostly.
Ficus religiosa	peepal	Leaves and barks were eaten mostly.
Artocarpus heterophyllus	Kathal	Fruits, leaves and barks were eaten mostly.
Miliusa velutina	Bhilwa	Leaves and barks were eaten mostly.
Pterocarpus marsupium	Bija	Barks were eaten mostly.
Zea mays	Makka	Whole plant's parts are eaten.
Phoenix sylvestris	Chhind	Rhizomes are edible.
Phoenix acaulis	Buta chhind	Rhizomes are edible.
Buchanania lanzan	Char	The saplings are up-rooted; the root is thrashed clean of soil and is then eaten.
Goruga pinnata	Kekad	Barks were eaten mostly.
Carica papya	Papita	Whole plant's parts are eaten.

Some of the elephants develop fascination for country made alcoholic drinks called "*Handia*".

6. THREATS

The pre-eminent threats to the Asian elephant today are habitat loss, degradation, agriculture and farming, grazing, mining, human interference, trade, pollution, hunting for ivory, insurgency, corridor loss, anthropogenic pressures on the habitat, man-elephant conflict, forest fires, illegal captures of live animals etc. Poisoning and disease are some other threats to the animal.

7. SOLUTION

Habitat destruction by man has threatened the survival of the Asian Elephant Therefore; maintenance of the habitat is the first requirement in the conservation of the elephants. If proper habitat is absent or is below the desirable standard, then it may be developed. Elephants require, simultaneously, two types of habitats:

a. Dense forest with tall trees and

b. Scrub jungle and grasslands dense forest is required as refuge and protection from intense sun rays.

While scrub and grasslands are required as a better feeding area. Tall trees are not a good source of food because their foliage and tender twigs are beyond the reach of elephant's trunk. It is only the fallen fruit and bark of such trees which can be eaten. It is generally difficult to peel off the bark from trees. In a scrub or grassland, it is easy to feed. The food item may be foliage, tender shoot, entire plant or even the root; all are within their easy reach. With respect to the area, there are two options for the conservation of the elephants:

- Restrict the elephants in a defined area
- ***Develop a corridor for long, may be interstate, migration route.***

Development of a corridor far beyond the OCP Chhal Dhramjaigah mining lease area will be the best choice for the conservation of the species. The corridor, to be developed, must have both the dense forest with tall trees as well as shrubby areas. Now it depends upon the condition of the area to decide that the shrubby areas should be forming outer fringe to the tall tree area or should be in the middle or should be in patches in between the tall trees. The corridor belt should be of sufficient width and should be planned either away from the village settlements or the isolated houses near to their path should be shifted. Elephants require 150-200kg of food per head, per day. Habitat planning should include provisions to yield sufficient food. It is important now to decide about the plant species. The food plants should be of more liking type to the elephants. To keep the food plants within easy reach of the elephants, regular planting of new plants or pruning to stimulate coppicing, should be made. Some of the food plant species suggested to be planted in the area are:

Dendrocalamus strictus, (**Bans**) *D. Rhedhii* (**Bans**), *Bambusa arundinacea* (**Bans**), *Ficus benghalensis* (**Bargad**), *F. religiosa* (**peepal**), *F. glomerata* (**Gular**), *F. rumphii* (**Jangali Bargad**), *F. infectoria* (**Pakar**), *Artocarpus heterophyllus* (**Kathal**), *Semecarpus anacardium* (**Bhelwa**), *Pterocarpus marsupium* (**Bija**), *Phoenix sylvestris* (**Chhind**), *Phoenix acaulis* (**Buta chhind**), *Buchanania lanzan* (**Char**), *Feronia elephantum* (**Kaith**), *Goruga pinnata* (**Kekat**), *Thysanolaena agrostis* (**Hathi ghas**), *Cymbopogon flexuosus* (**ghas**), *Themeda quadrivalvis* (**Ghas**), *Iseilema laxum* (**Ghas**), *Bothriochloa pertusa* (**Ghas**), *Apluda mutica* (**Ghas**) **etc. Bamboos** (*Dendrocalamus strictus, Bambusa arundinacea*) **are one group of fast growing plants which can form a good proportion of diet to the elephants. Another bamboo species** *Dendrocalamus rhedii* **will be an exotic species to the area but is common in Western Ghats. It has a thin stem. Elephants have special liking for the bamboo plant and it is easy to grow the plant in sufficient quantity in short time. However, it is not a species which can create any problem. The villagers in OCP Chhal area have informed that the elephants have special liking for** *Buchanania lanzan*. **The saplings of the plant are uprooted and the root thrashed clean and eaten. With the vegetation it is essential to develop perennial sources of water with some salt ponds, within the conservation area.**

ELEPHANT CORRIDOR

There is a need to establish an elephant reserve, combining the Tamor-Pingla and Semarsoot wildlife sanctuaries in Sarguja district and Badalkhol wildlife sanctuary in Jashpur district. Corridor will be developed to join these three wildlife sanctuaries.

SOME SUGGESTIONS TO ESCAPE ELEPHANT DAMAGE

Methods adopted to escape elephant damage may be categorized as

1. Active and Passive methods

- *Noise-making like shouting, drum beating, bursting fire crackers, firing gun shots into the air (by forest officials only),*
- *Using elephant torch light*
- *Pelting stones and lighted fuel-woods.*
- *Loudspeaker broadcasting of tiger roaring sound However, the major drawback of using all these methods is that these may provoke the raiding elephants increasing the possibility of more damage to the crops and other properties as well as higher risk to the farmer's life. Further, if the active methods fail to be effective, singly, then combined effort should be made.*

2. Passive methods

- *Change in cropping pattern by introducing some elephant repellent alternative cash crops (e.g. Patchouli, Helianthus annus, Capsicum annum and Citrus).*
- *Digging trenches around village area.*
- *Planting sisal (Agave Americana) around village boundary.*
- *Solar fencing.*
- *Improvement of water sources.*
- *Raise/improve fodder resources.*
- *Fencing houses with GI wires.*

Elephants avoid shining objects. GI wires are cheapest, shining objects to distract the elephants. Barbed wire fencing is gradually proving ineffective in preventing the movement of elephants. In the buffer zone of the presently applied mining lease area also the elephant have broken barbed wire fencing and entered a nursery. Crops of elephant liking should be avoided, as far as possible. Some of the crops, listed above, should be used to replace the more traditional crops like the sugarcane and rice. In Karnataka elephant proof trenches are being dig around the village area, but I have observed in Raigarh district in Chhattisgarh state that the

elephants can move down and up in trenches of good depth. Sisal has been found to be good to prevent the elephants to cross the sisal planted area. The plant yields a good quality fiber. Electric fencing has also been suggested as one of the methods but in Assam it has been found to be a failure as the elephant have discovered techniques to break such fences, safely. In areas like kamakshya nagar in Dhenkanal division in Orissa improvement of fodder resources in the forest has shown promising result of restricting the elephants more in the forest area. Passive methods are always better to avoid man-elephant conflicts. More important are the selection of plants as alternative crop as well as plants to check the entry of elephants in to the settlement areas. A good amount of researches and suggestions on the conservation and reducing its conflicts with human being is going on, resulting in suggestions coming frequently on these aspects. With the above, some more, methods are being suggested for affected region:

- ***Two doors in a house**: Most of the houses in villages have only one door or exit. In case the elephant enters the house through the door, the occupants can escape through another door.*
- ***Timely information**: Timely information to the helping person about the approach of elephants can reduce the conflicts as well as loss of human life. For this a network should be formed with the villages and the forest officers.*
- ***Elephant torch**: The elephant torch should be provided to each of the vulnerable villages. Presently the torch is only with the forest officer, one torch for several villages.*

Some more suggestions to avoid conflicts:

- *Do not make crowd near elephant.*
- *Maintain at least 300 meter distance from the elephant.*
- *Do not wear red, white or colorful clothes.*
- *Day time is their resting time; do not disturb them during day time.*

- *Do not injure them neither they become more violent.*
- *Do not allow children, ladies and aged persons to go near the elephants.*
- *Do not prepare liquor or "handia" (country liquor) in the elephant movement area, because elephants like it and can smell it from distance. Do not go near theelephant after taking alcoholic drink.*
- *Elephants have good smelling power so keep in mind the direction of the wind.*
- *Elephant can run at a speed of 30-40km per hour, so do not run straight insteadmake zig-zag running.*
- *While running throw towel, handkerchief, cap or any other cloth so that theywill get attracted to that and will get engaged with that.*
- *In a hilly terrain run towards the slope.*
- *While running away from an elephant do not hide behind a tree nor climb up a tree in the evening.*
- *To prevent the entry of elephants in a village burn wood and "Masal". Collect in a group and make noise by beating drum, tin etc. Try to drive them towards non in habituated area.*
- *Make the payment for compensation of elephant loss, early.*
- *Inform loss of human life or property, within 24 hours to the Patwari or the nearest forest employee.*

Steps taken in Africa, to escape elephant damage

- *Elephant area is fenced with ropes. Fencing ropes are smeared with a mixture of chilli + tobacco powder in engine oil. Disagreeable smell of the mixture helps to some extent, to ward off the elephants*
- *Honey bee combs are promoted on the elephant corridor boundary. Honey beesward off the elephants.*
- *Electronic tracking devices are attached to the elephants to track their movements. This helps in timely information to the villagers.*

CHAPTER 9

PROPOSED BUDGET FOR RECOMMENDED ACTION PLAN

9.1 Wildlife Conservation Plan including alternative habitat development and management plan for Affected Avi-Fauna of OCP Gevra

S.	Activities	Site specific activity	Area / No. of Plants	Amount in Rs.	Duration in Years	Remark	Nodal agency
1.	Habitat improvement	Rehabilitation of existing ecosystem improvement (refers to A)	20 Hectare	5,35,750	5	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	5	Big tree Plantation in The Schools and Aganbadi first year for plantation and next 5 years for maindenance.	Forest department
		Road site plantation (refers to C)	7 Km	99,19,259	5	Habitat improvement by plantation between the Punsa – Banki road, first year for plantation and next 4 years for maindenance.	Forest department
		Development of grasslands (refers to H)	5 Hectare	39,27,000	5	Establishment of grassland on Bhalpahri, Mulhali 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	Placement and monitoring of three years Monitoring and Evaluation	Forest department
2.	Biodiversity Improvement	Establishment of artificial avifauna habitat and fruit bearing tree species plantation(Pakdhi vihar) on dumping sites	Minimum 3 sites	1,65,00,000	5	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	5	Development of Birds shelter cum Oxysone at the Naraibadh-Mangsen road (Forest revenue land)	Forest department
		Plantation of Multipurpose tree species (MTS/Agroforestry Model) on agricultural land	L.S.	15,00,000	10	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	5	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	5	Plantation activity nearby Dumna, Bhalpalni and Mudhali canal first year for plantation and next 5 years for maintenance.	Forest department
		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	Treatment work on Soil and Moisture conservation (SMC) Ronki reserve forest compartment no. 401, for 3years	Forest department
		Plantation and Pond Renovation (refers to E)	850	30,92,450	3	Plantation on local ponds bunds and needed renovation work (Deeping Cleaning etc) activity has been proposed nearby local ponds fist year for plantation and next six years for maintenance.	Forest department
		River bank restoration work at Leelaghar river	2 Hac.	10,00,000	5	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	3	-	Forest department
4.	Training & workshop	Creation of social awareness program and Empowering Local villagers , JFMC for conservation of avifauna	L.S.	6,00,000	5	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.	15,00,000	5	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	10	Monitoring & evaluation of all proposed activity for next five year.	Forest department / SFRII
			Total (A)	5,53,52,517			

6.	Human Elephant Conflict Management	1. A. Wages/ Honorarium of Hathi Tracking team (5 Person @ Rs. 9800 per month)	*Duration - For 10 Year / Amount (Rs in Lakh)*												1. Human Elephant conflict management related all activities will be carried out in the selected range as well as	Forest Dept
			Norms	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total		
				5.88	5.88	5.88	5.88	5.88	0	0	0	0	0	29,40,000		
		1 B. Hiring of Vehicle	LS	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	14,00,000		

		1.C. Uniform, Shoes, Blanket, tracking Equipment, Night vision Camera & Binoculars	LS	4.00	0	0	0	0	0	0	0	0	0	4,00,000	compartment of concern Forest Division. 2. Awareness & education program should be conducted for affected area in buffer zone in OCP Gevra.	
		1.D. Protective Equipment, Flare gun	LS	4.00	0	0	0	0	0	0	0	0	0	4,00,000		
		2. Early Warning System	LS	5.00	0	0	0	0	0	0	0	0	0	5,00,000		
		3. Hathi Mitra Dal	LS	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	30,00,000		
		4. Hiring of Veterinaries Service	LS	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	5,00,000		
		5. Rewards	LS	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2,00,000		
		6. Hiring of Legal Experts/ Advocate	LS	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2,00,000		
		7. Purchase of public awareness material	LS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10,00,000		
		8. Establishment of Transit First Aid Centre	LS	10.00	5.00	0	0	0	0	0	0	0	0	15,00,000		
		9. Awareness and education program	LS	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	15,00,000		
													Total (B)	1,35,40,000		
													Grand total (A+B)	6,88,92,517		
Total In Words- -SIX CRORES EIGHTY EIGHT LAKHS NINTY TWO THOUSAND FIVE HUNDREDS EVENTEEN RUPEES ONLY																

Note:

- The Budget is proposed on 2019 recent rate of Rs. 300/man days. The costs should be revised depending upon the increase in wage.
- 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.
- *Regarding any doubt, Implementing agency should get the clarification from PCCF (W.L.) cum Chief Wildlife Warden C.G. and project elephant guideline issued by MoEF&CC*
- *The implementing agency should follow the guideline issued by project elephant and MoEF&CC*

❖

❖ *9.2 Site Specific action Plan for Development of Conservation and Management Plan for OCP Genva.*

A. RDF Activity @ 29,422 Rs. and RDBF @ 18884 R.S / 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	Dinlollbantha	Revenue Forest land	Near Leelagar river	N 22° 1 6'' 43 18' E 82° 34'' 2 6 26'	10 Hectare	RDF Activity	Mix Forest	2,94,220
2.	Katghora	Pali	Ranki	Comp. No. 401	In front of ranki pond area	N 22°1 8'' 1 5 1 6' E 82°30'11.74'	5 Hectare	RDBF activity	Bamboo plantation	94,420
3.	Katghora	Pali	Mulapar	Revenue forest land	Near the durga mandir Mulapar	N 22°1 6'' 31.71' E 82°33'4 7 19'	5 Hectare	RDF Activity	Ficus tree species & Fruit bearing Tree species	1,47,110
									Total Amount (A)	5,35,750

B. Activity on School 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	Ranki	Revenue land	Govt. Primary School, Bhadrapara, Ranki	N 22° 18'' 41.41' E 82° 30'' 47.74'	50 plants	Plantation	Mango, Gauva species	1,25,000
2.	Katghora	Pali	Ranki	Revenue land	Govt. Boys Hostel, Ranki	N 22° 18'' 18.45' E 82° 32'' 05.47	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' 20.42' 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' 20.42' 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, Pentaforme etc.	1,25,000
6.	Katghora	Pali	Dumena, Behind Shakti Nagar colony	Revenue land	Govt. Primary School, Dumena	N 22° 18' 17.04' E 82° 33' 21.60'	50 plants	Plantation	Fruit bearing Tree species	1,25,000
7.	Katghora	Pali	Raliya	Revenue land	Model AanganBadi, Mudhali	N 22° 16' 43.18' E 82° 34' 24.24'	40 plants	Plantation	Fruit bearing Tree species	1,00,000
8.	Katghora	Pali	Khamariidih, 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	Dumena, Behind Shakti Nagar colony	Revenue land	Panchayat Bhawan, Dumena	N 22° 18' 17.04' E 82° 33' 21.60'	50 plants	Plantation	Fruit bearing Tree species	1,25,000
10.	Katghora	Pali	Ranki	Revenue land	Tehsil Office, Ranki, Handi bazaar,	N 22° 18' 15.63' E 82° 32' 05.08'	50 plants	Plantation	Shady & Fruit bearing Tree species	1,25,000
11.	Katghora	Pali	Ranki	Revenue land	Dussehra ground, Ranki	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

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C. Activity on road side 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	Pumena – Banki Road	Revenue land	Pumena – 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 – Mulahali	Revenue land	Raliya to Mulahli main road	N 22° 18' 24.53' 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' 74.74' E 82° 32' 50.17'	2 Hectare	River side Plantation	*Terminalia Arjuna* & Neem Fruit bearing Tree species	3,97,592
3.	Katghora	Pali	Dindolbharth a	Revenue land	Lilagar River	N 22° 17' 38.74' E 82° 33' 04.23'	2 Hectare	River side Plantation	*Terminalia Arjuna* & bargad Fruit bearing Tree species	3,97,592
3.	Katghora	Pali	Pumna – Banki Road	Revenue land	Kolar River	N 22° 22' 45.18' E 82° 34' 47.71'	2 Hectare	River side Plantation	*Terminalia Arjuna, kahua, katha* & 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	*Terminalia Arjuna* & 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	Dumna, Near Sub Station.	Revenue land	Dumna Nala	N 22° 22' 17.01' E 82° 34' 34.52'	1 Hectare	River side Plantation	*Terminalia Arjuna* & Fruit bearing Tree species	1,98,796
									Total amount (D)	19,87,960

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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	Dharamkhandha, Mulapar	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	Ronhi (Near Railway crossing)	Revenue land	Pond 3, Ronhi	N 22° 18' 18.12' E 82° 30' 40.18'	30 plant / pond periphery = 300 mtr (approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2, 70,910
4.	Katghora	Pali	Ronhi (Main Road Ronhi)	Revenue land	Pond 4, Ronhi	N 22° 18' 23.44' E 82° 30' 46.98'	45 plant / pond periphery = 700 mtr (approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2, 81,365
5.	Katghora	Pali	Ronhi (Near Dumanpara, Ronhi)	Revenue land	Pond 5, Ronhi	N 22° 18' 38.06' E 82° 30' 50.88'	30 plant / pond periphery = 300 mtr (approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2, 70,910
6.	Katghora	Pali	Dindolbhandha	Revenue land	Pond 1	N 22° 18' 20.52' E 82° 34' 46.56'	30 plant / pond periphery = 500 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2, 70,910
7.	Katghora	Pali	Dodhipara	Revenue land	Pond 2	N 22° 17' 45.78' E 82° 34' 29.79'	30 plant / pond periphery = 500 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2, 70,910
8.	Katghora	Pali	Dodhipara	Revenue land	Pond 3	N 22° 17' 09.10' E 82° 34' 17.37'	40 plant / pond periphery = 500 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2, 77,880
9.	Katghora	Pali	Dodhipara	Revenue land	Pond 4	N 22° 16' 58.96' E 82° 34' 18.34'	40 plant / 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"	50 plant / pond periphery = 800mtr(approx)	Pond bund Plantation, pond	Ficus tree species & Fruit bearing Tree species	2, 84,850

						43.47		Renovation.		
11.	Katghora	Pali	Durena, Behind Shakti Nagar colony	Revenue land	Pond 1, Durena	N 22° 21'' 47.47 E 82° 34'' 45.92'	50 plant / pond periphery = 800 mtr(approx)	Pond bund Plantation, pond Renovation.	Ficus tree species & Fruit bearing Tree species	2,84,850
12.	Katghora	Pali	Chalabula, Chaladhamna	Revenue land	Pond 2, Chaladhamna	N 22° 22'' 38.57 E 82° 34'' 08.46'	40 plant / 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	Ronhi (Near Dumangara, Ronhi)	Comp. No. 601	Stop Dam, Ronhi	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	Ronhi (Near Dumangara, Ronhi)	Comp. No. 601	Treatment work on Plantation site	N 22° 18'' 53.08' E 82° 30'' 31.28'	10 Hectare	Soil and Moisture conservation (SMC)	-	30,250
4.	Katghora	Pali	Dimlolbhantha	Revenue Forest land	Near Leelagar river	N 22° 16'' 43.18' E 82° 34'' 24.24'	10 Hectare	Soil and Moisture conservation (SMC)	-	30,250
5.	Katghora	Pali	Ronhi	Comp. No. 601	In front of ronhi pond area	N 22°18'' 15.16' E 82°30''11.74'	5 Hectare	Soil and Moisture conservation (SMC)	-	15,125
6.	Katghora	Pali	Mulapar	Revenue forest land	Near the durga mandir Mulapar	N 22°16'' 31.71' E 82°33''47.19'	5 Hectare	Soil and Moisture conservation (SMC)	-	15,125
									Tota l amount (F)	10,90,750

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G. Sites 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	Ranki	Comp. No. 601	Nearby Pond, Ranki	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	Bhalpahri, 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	Grass land 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	Naraibaodh - Mangaon road	Revenue forest land	Development of Birds shelter cum Oxyzone at the Naraibaodh - Mangaon road (Forest revenue land)	22°20'03.82"N 82°37'33.00"E	20 Hectare	Oxy-zone cum birds shelter	76,24,340

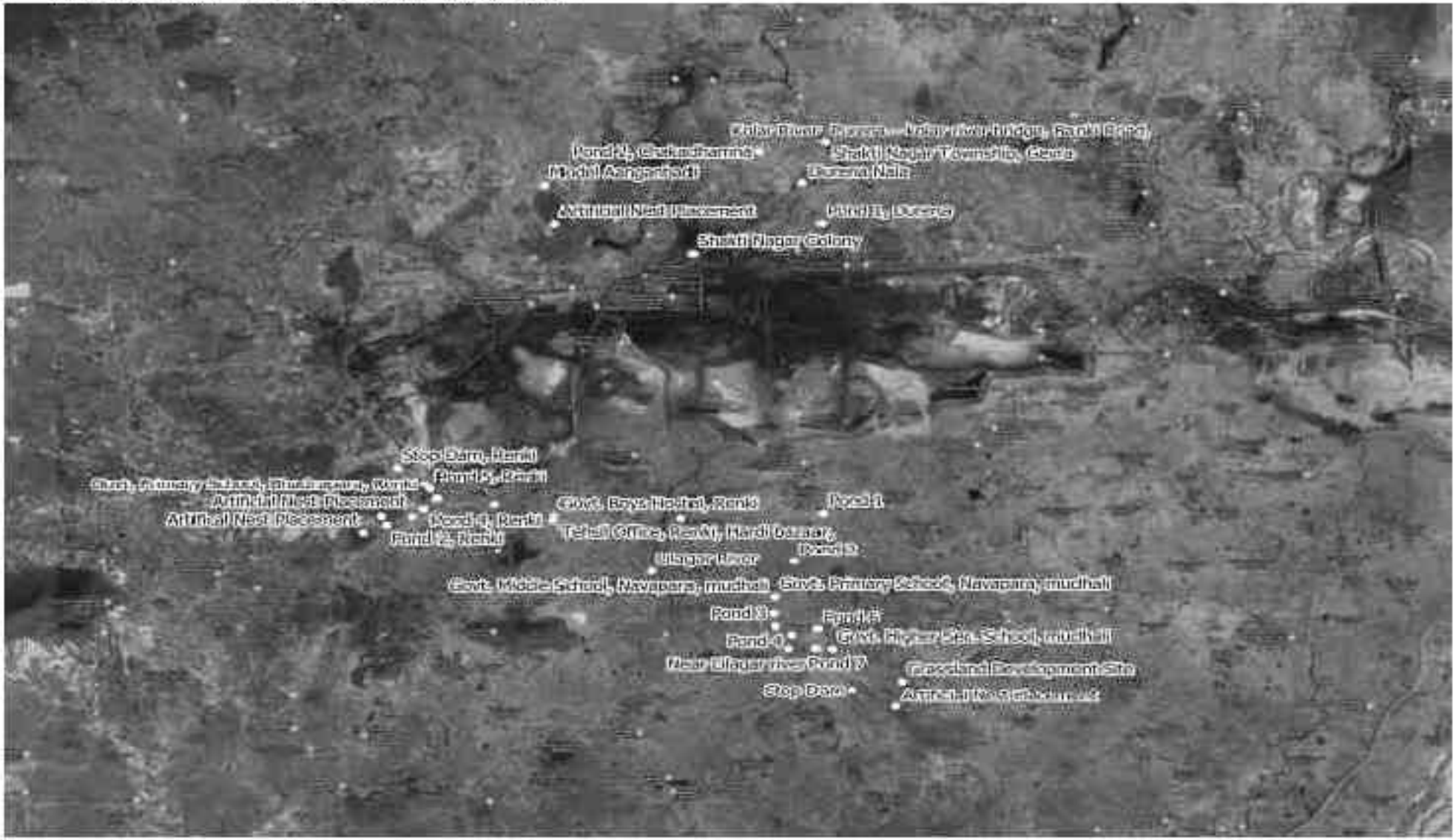

Fig. 8.4 Sit specific action plan for COP Gevra

CHAPTER 10
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ANNEXURE – I
OCP GEVRA
BIRD SURVEY DATASHEETS (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°18'36.52	82°33'57.34	*5:55am*	Nil	-	-	-	-	-
300m	22°18'33.53	82°33'47.13	*6:09am*	Red vented bulbul	1	-	-	-	Chirping
				House sparrow	2	-	-	-	Chirping
600m	22°18'29.52	82°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°	60°	Perching
900m	22°18'25.69	82°33'29.70	*6:29am*	Red vented bulbul	1	-	-	-	Flying
				Spotted dove	1	19m	320°	70°	Perching
				Sulphur belled warbler	3	-	-	-	Flying
				House crow	3	-	-	-	Flying
				Eurasian golden oriole	1	17m	320°	70°	Perching

OCP GEVRA
BIRD SURVEY DATASHEETS (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 DATASHEETS (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
				Brahminy 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 DATASHEETS (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 sallow	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 DATASHEETS (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°	10°	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°	10°	Perching
				Pied Starling	2	24 m	108°	10°	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.	Num.	Parameters		Observation 1 / 2 / 3/ 4/ 5	Grass %	Herb %	Shrub %	Regeneration %	S/H/R/E/W/P
							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						
300 m	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						
600 m	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						
900 m	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	*6:40am*	*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	*6:55am*	*B*	-	-	-		-	*2*	-	-	-	P,S,H
600m	22°18'20.01	82°33'17.38	*7:10am*	*B,A*	-	-	-	-	-	*1*	-	-	-	P,S,H
900m	22°18'11.67	82°33'18.40	*7:25am*	*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	Seshum	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						
300 m	22°20'05.21	82°37'31.78	7:35a.m.	W	Mahua	2	4	80	4	5	4	3	3	P
					Palash	10	7	35						
					Char	3	4	80						
600 m	22°20'07.39	82°37'34.24	7:50a.m.	W	Peepal	1	5	35	4	7	6	15	3	P
					Mahua	6	6	40						
					Char	3	3	25						
900 m	22°20'11.02	82°37'37.56	8:10a.m.	W	Semla	6	6	30	4	15	8	10	9	P,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*	Kariya	*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
					Kariya	*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
					Kariya	*2*	*5*	*45*						
					Palash	*1*	*6*	*55*						
900m	22°18'09.49	82°33'50.24	*5:20 pm*	*A*	Kariya	*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
Datasheet for Bird status survey

Date: 27.03.2019 **Cell-ID: G01** **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°18'36.21	82°33'57.48	5:10Pm	Cattle egret	3	-	-	-	Flying
				Black drongo	6				Flying
				Indian roller	1	-	-	-	Chirping
300m	22°18'34.83	82°33'49.10	5:17pm	Red vented bulbul	1	-	-	-	Chirping
				Common hoop	2	18m	330°	60°	Perching
				Laughing dove	04	-	-	-	Chirping
600m	22°18'30.66	82°33'38.46	5:27pm	Purple sunbird	1	-	-	-	Chirping
				House crow	2	-	-	-	Chirping
				Indian roller	1	-	-	-	Chirping
				Black drongo	3	-	-	-	Flying
900m	22°18'27.03	82°33'30.00	5:39pm	Indian silver bill	4	-	-	-	Flying
				Spotted dove	2	19m	320°	70°	Perching
				Red vented bulbul	3	-	-	-	Flying

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

OCP Gevra
Datasheet for Bird status survey

Date: 28.03.2019 **Cell-ID: G02** **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°14'39.12	82°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°14'05.92	82°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

				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

				Laughing dove	8				Chirping
300m	22°18'08.68	82°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°18'10.38	82°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°18'09.76	82°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°18'30.75	82°33'14.35	*4:40 pm*	Jungle Babbler	2	30m	240°	260°	Flying
				Indian roller	1	-	-	-	Flying
				Common Hoopoe	1	-	-	-	Flying

300m	22°18'26.14	82°34'06.14	*4:50 pm*	Common myna	1	-	-	-	Flying
				Indian Robin	2	-	-	-	Flying
				Black drongo	4	-	-	-	Flying
600m	22°18'22.43	82°33'37.01	*5:05 pm*	Indian roller	1	-	-	-	Flying
				Indian robin	2	-	-	-	Flying
				Black drongo	2	-	-	-	Flying
900m	22°18'19.00	82°33'48.17	*5:20 pm*	Silver bill	1	18 m	102°	270°	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°16'30.60	82°33'55.53	*7:45am*	Spotted dove	1	-	-	-	Chirping
				Red vented bulbul	2	-	-	-	Chirping
				Cattle egret	2	-	-	-	Flying
				Ashyprinia	3	-	-	-	Flying
				Black drongo	2	-	-	-	Flying
				Yellow vented lapwing	6	-	-	-	Flying
				Jungle babbler	6	-	-	-	Chirping
				Eagle	1	-	-	-	Perching
300m	22°16'34.09	82°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°16'34.42	82°34'11.78		Greater Caucal	1	24y	215°	245°	Perching

			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 bushchik	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

				Indian Roller	1	-	-	-	Flying
				Black drongo	3	-	-	-	Chirping
				Purple sunbird	3	28Y	175°	210°	Perching
				Singing bushlrik	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.	Num.	Parameters		Observation 1 / 2 / 3 / 4 / 5	Grass %	Herb %	Shrub %	Regeneration%	S/H/R/E/W/P
							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
300 m.	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						
600 m.	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
900 m.	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						

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	Semha	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	Mahuwa	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	Mahuwa	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	Semla	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)						
0m	22°18'03.58	82°30'15.12	7:40 Am	B	-	-	-	-	-	-	-	-	-	-
300m	22°18'08.68	82°30'08.32	7:48 Am	B	Knsnm	2	7	165	4	2	3	4	5	R
600m	22°18'10.38	82°29'59.37	8:00Am	B	-	-	-	-	-	-	-	-	-	-
900m	22°18'09.76	82°29'51.61	8:13 Am	B	-	-	-	-	-	-	-	-	-	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 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	7:45a m.	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	7:55a m.	W	Palash	2	7	165	1, 4	2	3	4	3	R
					Koriya									
					Senha									
600m	22°16'34.42	82°34'11.78	8:12A m.	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	8:20a m.	W	Sal	6	12	95	1,4	2%	3%	4%	4%	-
					Char	3	5	55						
					Sgia.	2	6	85						
300m	22°18'03.37	82°30'04.43	8:29a m.	W	Mahuwa	2	7	165	1,4	1	3%	4%	3%	p
					Sgia.	2	4	75						
					Char	2	3	40						
600m	22°18'00.26	82°30'13.45	8:40A m.	W	Sal	12	7	141	1,4	-	-	-	2	-
					Mahuwa	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	Zoological Name	Common Name	Wildlife (Protection) Act	IUCN Status
1	*Bubulcus ibis*	Cattle egret	Schedule-IV, Section,11	LC
2	*Ardeola grayii*	Indian pond heron	Schedule-IV, Section,11	LC
3	*Milvus migrans*	Black kite	Schedule-IV, Section,11	LC
4	*Streptopelia chinensis*	Spotted Dove	Schedule-IV, Section,11	LC
5	*Alcedo atthis*	Common kingfisher	Schedule-IV, Section,11	LC
6	*Halcyon smyrensis*	White-Throated kingfisher	Schedule-IV, Section,11	LC
7	*Merops orientalis*	Green bee-eater	Schedule-IV, Section,11	LC
8	*Acridotheres tristis*	Common Myna	Schedule-IV, Section,11	LC
9	*Sturnus contra*	Asian pied starling	Schedule-IV, Section,11	LC
10	*Venellus indicus*	Red-wattled lapwing	Schedule-IV, Section,11	LC
11	*Psittakula krameri*	Rose ringed parakeet	Schedule-IV, Section,11	LC
12	*Pycnonotus cafer*	Red-vented bulbul	Schedule-IV, Section,11	LC
13	*Coracias benghalensis*	Indian roller	Schedule-IV, Section,11	LC
14	*Turdoides caudatus*	Common Babbler	Schedule-IV, Section,11	LC
15	*Centropus sinensis*	Crow pheasant	Schedule-IV, Section,11	LC
16	*Dicrurus adsimilis*	Black Drango	Schedule-IV, Section,11	LC
17	*Apus affinis*	House Swift	Schedule-IV, Section ,11	LC
18	*Corvus splendens*	House Crow	Schedule-V, Section,11	LC
19	*Egretta alba*	Larger egret	Schedule-IV, Section,11	LC
20	*Haliastur Indus*	Braluminy kite	Schedule-IV, Section,11	LC
21	*Dinopium benghalensis*	Common woodpecker	Schedule-IV, Section,11	LC
22	*Upupa epops*	Common hoopoe	Schedule-IV, Section,11	LC
23	*Dendrocitta vagabond*	Rufous treepie	Schedule-IV, Section,11	LC
24	*Charadrius dubius*	Little ringed Plover	Schedule-IV, Section,11	LC
25	*Corvus macrorhynchos*	Jungle crow	Schedule-IV, Section,1	LC
26	*Ploceus philippinus*	Baya weaver	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	*Prinia socialis*	LC	Presence
2	Asian Open Bill Stork	*Anastomus oscitans*	LC	Presence
3	Asian Pied Starling	*Sturnus contra*	LC	Presence
4	Bank Myna	*Acridotheres ginginianus*	LC	Presence
5	Barn Owl	*Tyto alba*	LC	Presence
6	Common Swallow	*Hirundo rustica*	LC	Presence
7	Black Drongo	*Dicrurus macrocercus*	LC	Presence
8	Black Kite	*Milvus migrans*	LC	Presence
9	Bramhiny Starling	*Sturnia pagodarum*	LC	Presence
10	Cattle Egret	*Bubulcus ibis*	LC	Presence
11	Red Collored Dove	*Streptopelia tranquebarica*	LC	Presence
12	Common Hoopoe	*Upupa epops*	LC	Presence
13	Common Kingfisher	*Alcedo atthisp*	LC	Presence
14	Common Myna	*Acridotheres tristis*	LC	Presence
15	Common Tailor Bird	*Orthotomus sutorius*	LC	Presence
16	Crested Serpent-eagle	*Spilornis cheela*	LC	Presence
17	Eurasian Collared dove	*Streptopelia decaocto*	LC	Presence
18	Eurasian Golden Oriole	*Oriolus oriolus*	LC	Presence
19	Large Egret	*Ardea alba*	LC	Presence
20	Greater coucal	*Centropus sinensis*	LC	Presence
21	Green bee-eater	*Merops orientalis*	LC	Presence
22	Greenish Warbler	*Phylloscopus trochiloides*	LC	Absence
23	House Crow	*Corvus splendens*	LC	Presence
24	House Sparrow	*Passer domesticus*	LC	Presence
25	Hawk Eagle	*Nisaetus cirrhatus*	LC	Presence
26	Indian Robin	*Saxicoloides fulicata*	LC	Presence
27	Indian Roller	*Coracias benghalensis*	LC	Presence
28	Indian Silver Bill	*Euodice malabarica*	LC	Absence
29	Indian Spotted Dove	*Spilopelia chinensis*	LC	Presence
30	Indian Spotted eagle	*Clanga hastata*	VU	Absence
31	Jungle Babbler	*Turdoides striata*	LC	Presence
32	Jungle Owlet	*Glaucidium radiatum*	LC	Presence
33	Jungle Prinia	*Prinia sylvatica*	LC	Presence
34	Laughing Dove	*Streptopelia senegalensis*	LC	Presence
35	Lesser Pied Kingfisher	*Ceryle rudis*	LC	Presence
36	Little Cormorant	*Microcarbo niger*	LC	Presence
37	Little Egret	*Egretta garzetta*	LC	Presence
38	Little Swift	*Apus affinis affinis*	LC	Presence
39	Oriented Magpie Robin	*Copsychus saularis*	LC	Presence

40	**Common Indain Nightjar**	*Caprimulgus asiaticus*	**LC**	**Presence**
41	**Paddy Field Pipit**	*Anthus rufulus*	**LC**	**Presence**
42	**Plain Prinia**	*Prinia inornata*	**LC**	**Presence**
43	**Plum Headed Parakeet**	*Psittacula cyanocephala*	**LC**	**Presence**
44	**Purple Sunbird**	*Certhia asiaticus*	**LC**	**Presence**
45	**Red Vented Bulbul**	*Pycnonotus cafer*	**LC**	**Presence**
46	**Rose Ringed Parakeet**	*Psittacula krameri*	**LC**	**Presence**
47	**Scaly Breasted Munia**	*Lonchura punctulata*	**LC**	**Presence**
48	**Singing bush lark**	*Mirafra cantillans*	**LC**	**Presence**
49	**Alexandrine Parakeet**	*Psittacula eupatria*	**LC**	**Presence**
50	**Spotted Dove**	*Streptopelia chinensis*	**LC**	**Presence**
51	**Steppe Eagle**	*Aquila nipalensis*	**EN**	**Absence**
52	**Sulfur Bellied Warbler**	*Phylloscopus griseolus*	**LC**	**Absence**
53	**Variable Wheatear**	*Oenanthe picata*	**LC**	**Absence**
54	**White Rumped Munia**	*Lonchura striata*	**LC**	**Presence**
55	**White Breasted Kingfisher**	*Halcyon smyrnensis*	**LC**	**Presence**
56	**Yellow Wattled lapwing**	*Vanellus malabaricus*	**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) Paddyfield 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	Zoological Name	Common Name	Wildlife (Protection) Act	IUCN Red List Status
1	*Calotes versicolor*	Garden Lizard	Schedule – IV, Section,12	LC
2	*Enhydris enhydris*	Smooth Water Snake	Schedule – IV, Section,12	LC
3	*Natrix piscator*	Olive keel back snake	Schedule – IV, Section,12	LC
4	*Bungarus caeruelus*	Common Krait	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. Behavior very alert, active and aggressive. On threatening rise its forebody and stretch it in fake hood manner. Gives painful bite by deep wounds.

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 lay 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	Zoological Name	Common Name	Wildlife (Protection) Act	IUCN Status
1	*Funambulus pennanti*	5 Strip Palm squirrel	Schedule-V, Section 3	DD
2	*Rousettus leschenaulti*	Indian Fulvous - Bat	Schedule-V, Section 3	LC
3	*Mus booduga*	Indian Field Mouse	Schedule-V, Section, 5	LC
4	*Mus rattus rattus*	Common House Rat	Schedule-V, Section, 6	LC
5	*Bandicoota bengalensis*	Bandicoot Rat	Schedule-V, Section, 6	LC
6	*Herpestes edwardsi*	Indian Grey mongoose	Schedule-IV, Section, 6A	LC
7	*Presbytis entellus*	Common Languor	Schedule-II, Part-I, Section 1-A	LC
8	*Macaca mulatta*	Rhesus Macaque	Schedule -II, Part-I, Section 17-A	LC
9	*Canis aureus*	Jackal	Schedule-II, Part –II, Section 2-B	LC
10	*Vulpes bengalensis*	Indian Fox	Schedule-II, Part-II, section, I-B	LC
11	*Sus scrofa*	Wild Pig	Schedule-III, Section, 19	LC
12	*Lepus nigricollis*	Black napped Hare	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.

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 ricefields 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. 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 Mangoose**
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 km^2 (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 al ternate with farm land. They are also commonly sighted in coastal herb com munities. Hilly areas, particularly the depressions at the base of hills, are preferred habitats for *Lepus nigricollis*.

Physicnal 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 sea son, male *Lepus nigricollis* become aggressive, spar ring with other males using thear 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.

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

Mohariya Muda/ Ganga Nagar Post mining Reclaimed Site

Anand Vatika

Mudapar Revenue forest area

DUMP MANAGEMENT

Raliya Revenue Forest Land

Naraibodh Revenue Forest Land

dump management sites of OCP Gevra

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Published in July 2019

Front Cover:
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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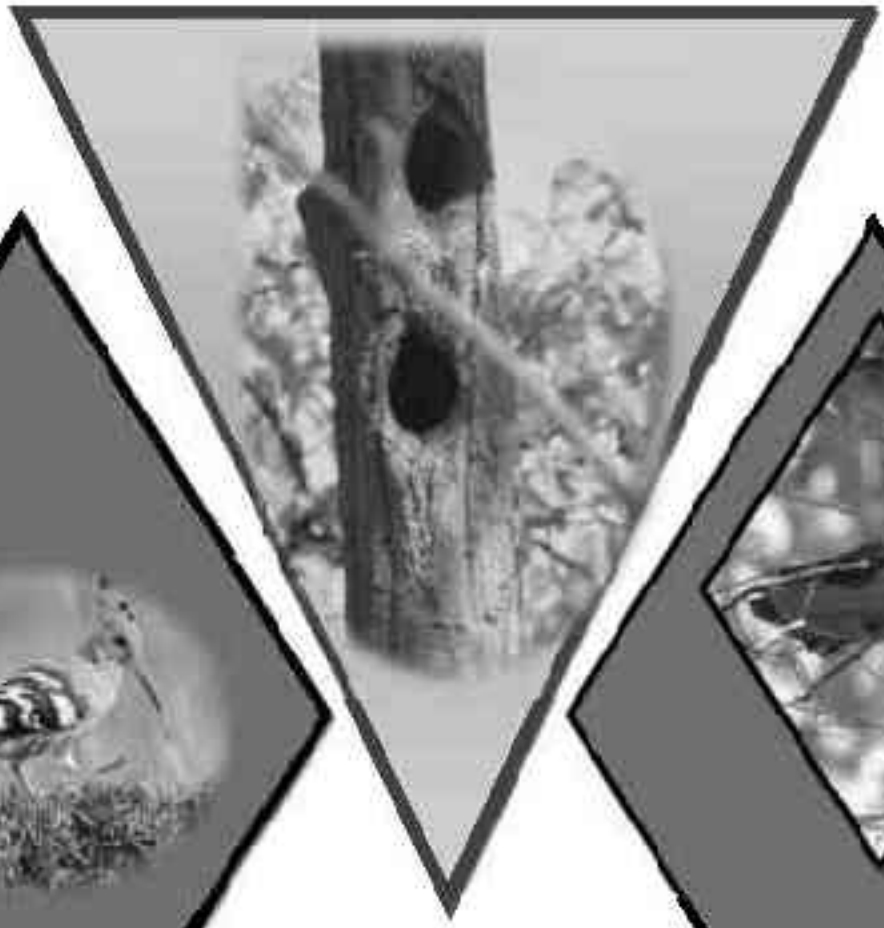
जब सुरक्षित होंगे पक्षी सारे,

तब सुरक्षित होगा भविष्य हमारा।।



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SOIL CONSERVATION PLAN

GEVRA OPEN CAST MINE

SOUTH EASTERN COALFIELDS LIMITED

INTRODUCTION

Location & Accessibility

The Gevra OCM is an existing mega opencast project of South Eastern Coalfields Limited (SECL) with present EC capacity of 70 MTPA. The Block is located in the South Central Part of Korba Coalfield in Korba District of Chhattisgarh. The Gevra Mining block having an area of 20.37Sq.Km is bounded by latitudes 22°18'00" to 22°21'42" N and longitudes 82°32'00" to 82°39'30" E. It is included in the survey of India Toposheet No. 64 J/ 11. The location map of the area is as shown.

The block is well connected by rail and road. Gevra Road and Korba Railway Station on Champa-Gevra Road branch line of S.E. Railway are at a distance of 10 km and 16 km respectively. Railway siding has been extended up to and beyond Gevra OCP and coal is being transported from the pit head CHP through rail/MGR to the various consumers. SECL HQ Bilaspur is at a distance of about 90 km by road.

Salient Features of the Project

The existing capacity of the project is 70 MTY. Mining of Coal from Gevra OCP is done by Open Cast method. It is characterized by the presence of four open- castable seams (Composite seam D, E&F Seam, UK Seam, LK Seam) with dip angles of 2º-6º. Seam thickness ranges from 1.10 m to 45.23m. The thickest seam is Lower Kusmunda (19.28m to 45.23 m). The Maximum width along strike is 9.1 KM and Maximum length along dip is 3.29 KM. The present maximum depth of the quarry is 203 m. The mineable reserve is 892.376 MT (as on 01.04.2024) with an average stripping ratio of 1.31. The total quarry has been divided into three sections i.e Western Section, Central Section & Eastern Section. It is proposed to mine all the three identified sections simultaneously. However, mining operations will be staggered between the sections.

The total Mine Lease area of the project is 4781.798 Ha. The total Forest Land involved is **1110.705 Ha.** out of which **1016.412** Ha. has already been diverted for nonforest purpose after receiving the Stage II Forest Clearance. The remaining **94.293 Ha.** of Revenues Forest land has obtained Stage I approval dated 09.02.2024.

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 Laxman Nala 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 48ºCin May and drops to a minimum of 7ºC in December. The annual rainfall for 2024 is 1923 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 Laxman nallah 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 Lilager Nadi and Gangadel nallah 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 multi aquifer 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 inter granular 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.

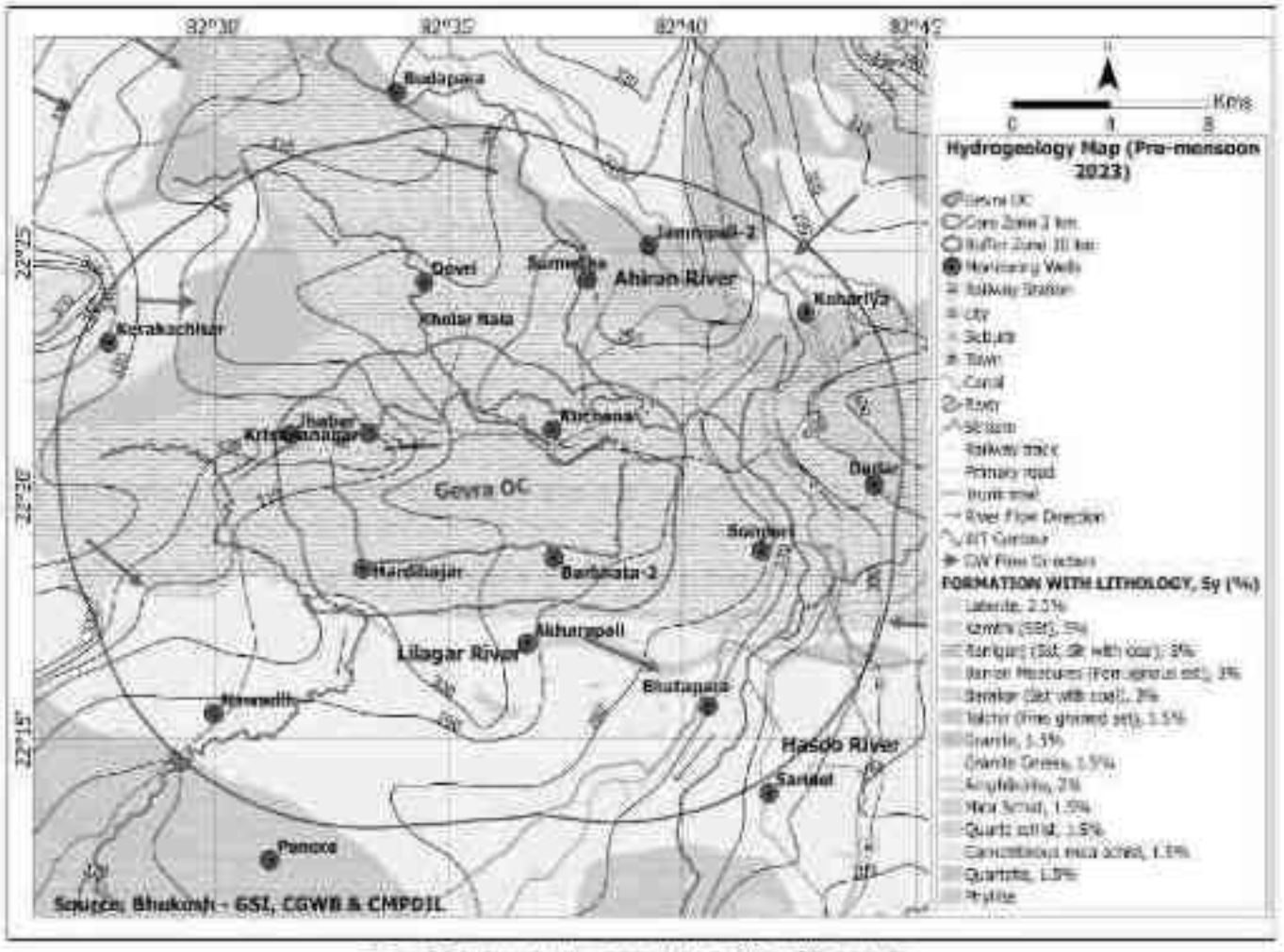


Figure 2.7: Hydrogeology map (pre monsoon) of Gevra OC study area

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 over burden material consists of alluvial, topsoil, 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 SOIL EROSION

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 has been 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 Gevra OC Expansion (35.0-70.0Mty) comprises of rich humus with minerals and nutrients. Proper handling and management are necessary for future vegetation growth in the mine reclaimed area. The thickness of the topsoil 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, top dressing 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 re-vegetation.

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 re-vegetating 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 bio-solids, 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

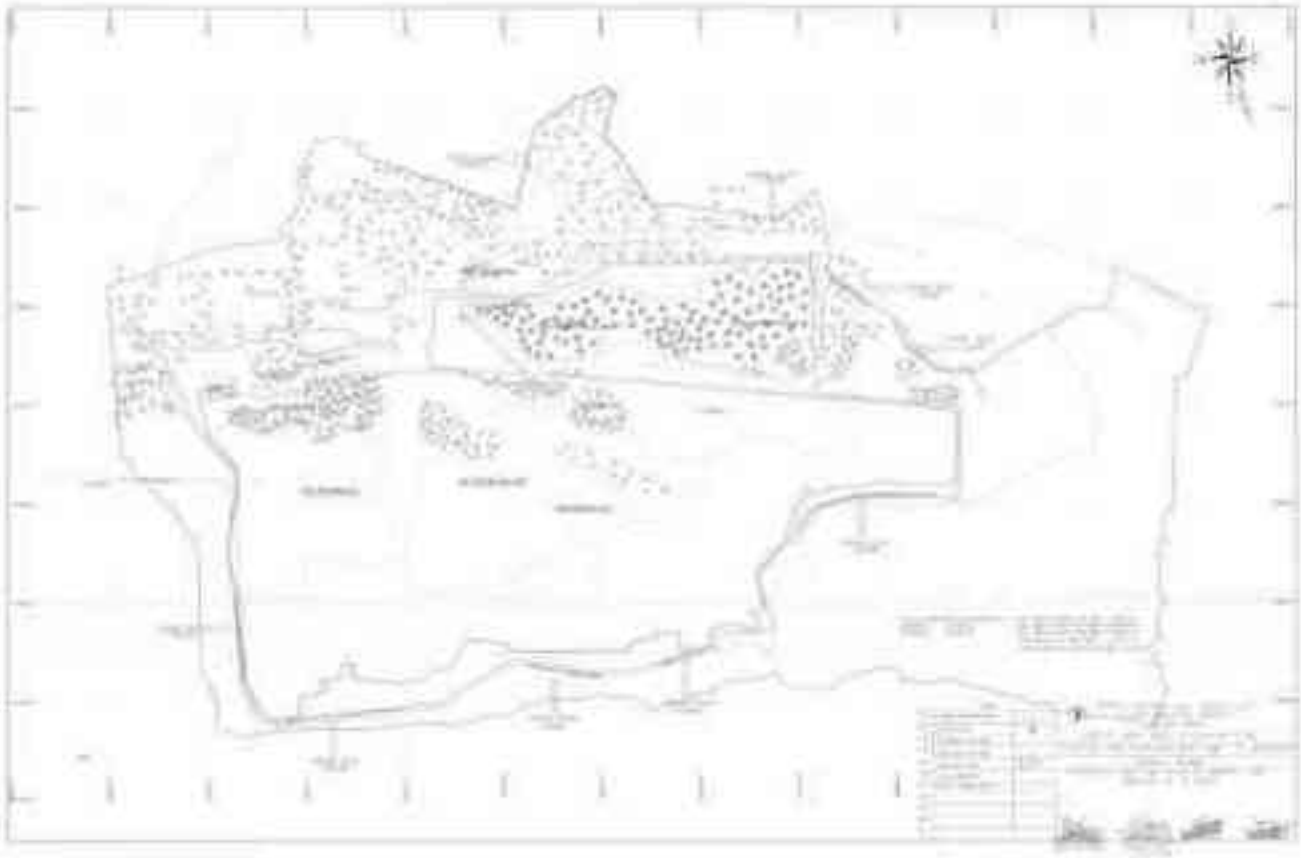
- Before spreading topsoil, establish erosion and sedimentation control structures such as diversions, berms, dikes, waterways and sediment basins.
- Adjust grades and elevations for receipt of topsoil.
- Roughening - Immediately prior to spreading the topsoil, loosen the sub-grade to ensure bonding 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

VENUE 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 chanelling 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

Year	Contour Trench (per trench)	Check Dams (per CUM)	Bunds with stone boulders (per CUM)
2024	5000	1000	1000
2022	11845	11845	11845
2021	7200	7500	7500
2018	300	20	20

Structure	Location	Dimension
Retaining wall with Drain	Along P3 Q3 belt near W1 TRS	182m X 5m ht. 1.2mX0.9m RCC Drain
	Along J3 belt	240mX 5m ht. 300mX 2m
	Near Junadih Siding	2050m X 2m ht. 1.2m X 0.9m drain
	External Dump no. 6 & 7	650m X 1m ht. Top width 200mm
Gabion wall	From weigh bridge W5 to LK seam coal face side	1200m length, 3 stage, 3m height
	Along toe of dump no. 4 near E2/ E1 TRS	342m, 3 stage, 3m height

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°

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
MC_1	0	0	0	0	0	77.3	0	193250	193250
MC_2	0	0	0	0	0	77.3	0	193250	193250
MC_3	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; topsoil 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 28º.

(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. Cr)
1.	Garland Drains	1.00
2.	Arboriculture/plantation in industrial area	0.10
3	Barbed fencing/boundary walls/Toe walls/Gabion structures for the project	1.50
4	Land Reclamation / Restoration	133.39
5	Green Belt in and around the Mine	8.00
	Total	**143.99**

* Subsequent additional provision will be made as and when required.

MINE CLOSURE PLAN(PHASE I& 2)-

The Mine closure plan for Gevra OC 70 Mty was part of the Project report & is deemed approved along with the Project report. All MCP activities for this Mining plan will be as per mentioned in the PR.

A-REVISED ABONDONED COST & FINANCIAL ASSURANCE (As per the new Guidelines & Latest WPI)

TABLE-2: Progressive & Final cost distribution table in an OC mine as per New Mine Closure Guidelines issued by MoC on 16/12/2019

S. No.	Activity	Progressive	Final
A	**Dismantling of Structure**	**0**	**8.50**
	Service building		
	Residential Building		
	Industrial Structure		
B	**Safety & Security**	**6.50**	**3.20**
	Random rubble masonry/concrete wall		
	Toe wall around dump/Gabion wall		
	Barbered wire fencing		
	Fencing/boundary wall, fencing around water body		
	Garland drains		

S. No.	Activity	Progressive	Final
C	**OB Dump Reclamation**		
I	**Technical Reclamation**	**60.50**	**60.50**
	Re-handling of OB		
	Levelling by Dozer		
	Grading		
	Levelling and grading of high wall slopes & OB Dump		
II	**Biological Reclamation & Plantation**		
	Top soil Management	**15.00**	**11.70**
	Grassing of OB dump		
	Plantation around virgin Area , safety zone , green belt, over external Dump and internal reclaimed area		
	Plantation post care (including manpower)		
	Plantation over cleared area obtained after dismantling		
D	Landscaping of the open space in leasehold area for improving its aesthetic. Drain, Pipe lines, Peripheral road, gates, View points, cemented steps on bank	**4.00**	**5.50**
	Development of Agriculture land		
E	**Environment mitigation & management**	**12.00**	**1.50**
	Air Quality (Water tanker , Sprinkler & other Control measures)		
	Water Quality (ETP & STP etc operating cost)		
	Manpower Cost and supervision		
F	**Post Closure Monitoring**	**0.00**	**3.20**
	Air Quality		
	Water Quality		
	Power Cost		

S. No.	Activity	Progressive	Final
	Manpower Cost and supervision		
G	Entrepreneurship Development (Vocational/skill development training for sustainable income of affected people)	**1.00**	**0.50**
H	Miscellaneous & Other measures like Golden Handshake, one time financial grant, alternative jobs, other services etc.	**1.00**	**5.40**
	Total	**100.00**	**100.00**

22.3 Financial Assurance

A- Financial Assurance

Revised Mine Closure Cost based on latest WPI and adjustment of amount already deposited in the escrow account, as per the direction of CCO office

The amount that has to be deposited in Escrow account acts as a security against the mine activities to be carried out for the closure of the mine is based on the project area.

As per para 2.6 (**Escrow Account Calculation**) of MOC guideline no. F. No. 34011/28/2019-CPAM, Ministry of Coal dt 16th December 2019 & 29th May 2020, in case of the mine where escrow account is already open, the annual closure cost is to be computed considering the total project area at the above mentioned rates minus the amount already deposited and dividing the same by the balance life of the mine in years and annual cost as arrived should be compounded @5% annually.

The total Land Area envisaged in the project (Phase I & 2) is 4781.798 Ha

As per the latest guidelines of MOC, the amount to be deposited in Escrow account is evaluated as per detailed below:

TABLE-3: EVALUATION OF REVISED MINE CLOSURE AMOUNT- PHASE I

A	BASE RATE/HA IN LAKH RS AS ON 1st APR 2019	9
B	WPI AS ON 01.04.2019	121.1
C	MCP LAND IN HA	4781.798
D	WPI AS ON MAR 2022*	148.9
E	ESCALATION FACTOR (D/B)	1.2295623
F	RATE/HA IN LAKH Rs (E * A)	11.066
G	CORPUS IN LAKH Rs (F * C)	52915.669
H	Balance life in years as on 01.04.2022	16
I	Amount Deposited till 31.03.2022-lakh Rs	17517.11
J	Final corpus amount in lakh Rs (G-I)	35398.559
K	First Year amount in lakh Rs(J/H)	2212.4099
L	Total amount to be deposited in balance years in **Lakh Rs.**	**52340.070**
	⊓ WPI of Apr 2022 & May 2022 are provisional	

Table-4: Fund deposit & Reimbursement Schedule from 2022 onwards

Year	**Year No**	**Fund Schedule in Lakh Rs**	**Fund to be Reimbursed (Maximum) in lakh Rs**
EXISTING MCP DEPOSIT SCHEDULE UPTO 2021-22			
2020-21		1792.630	
2021-22		1882.260	
REVISED MCP DEPOSIT SCHEDULE W.E.F 2022-23			
2022-23	1	2212.410	
2023-24	2	2323.030	
2024-25	3	2439.182	
Progressive	**Phase-1**	**6974.622**	50% of balance amount at the end of Phase-1

2025-26	4	2561.141	
2026-27	5	2689.198	
2027-28	6	2823.658	
2028-29	7	2964.841	
2029-30	8	3113.083	
Progressive	**Phase-II**	**14161.921**	
2030-31	9	3268.737	
2031-32	10	3432.174	
2032-33	11	3603.783	
2033-34	12	3783.972	
2034-35	13	3973.170	
Progressive	**Phase-III**	**18061.836**	
2035-36	14	4171.829	
2036-37	15	4380.420	
2037-38	16	4599.441	
MC1	17		
MC2	18		
MC3	19		
Final Phase		13152	100% of balance amount at the end of final Phase
GRAND TOTAL		52340	

Table-5: COST ESTIMATE FOR PROFRESSIVE & FINAL CLOSURE ACTIVITIES

COST OF ACTIVITIES TO BE TAKEN UP FOR PROGRESSIVE CLOSURE OF MINE			
Head	PARAMETERS	Unit	Amount "Rs. Cr"
Progressive closure	Water quality management	LS	9.06
	Air quality management	LS	16.31
	*Waste Management	LS	7.25

	Barbed wire fencing	LS	1.96
	Barbed wire fencing around the Pit	LS	1.96
	Filling of Void - Rehandling of Crown Dump	LS	18.27
	Top Soil management	LS	22.65
	Technical l Reclamation of Mined out of land and OB Dump	LS	155.31
	Biological Reclamation of Mined out of land and OB Dump , Plantation over virgin area including green belt	LS	20.39
	Manpower Cost and supervision	LS	18.20
	Toe Wall around the dump	LS	2.94
	Garland drain	LS	3.62
	Garland Drain around the dump	LS	2.42
	Any other Activity	LS	3.02
Dismantaling of Infrastructure & Disposal/ rehabilitation of Mining machinery	Dismantling of workshop	LS	18.82
	Rehabilitation of the dismantled Facilities	LS	
	Dismantling of pumps and Pipes/ other facilities	LS	
	Dismantling of stowing bunker, provisioning of pumps for bore well pumping arrangement	LS	
	Dismantling of UG equipment	LS	
	Rearranging water pipeline to dump top park/ Agricultural land	LS	
	Dismantling of Power lines	LS	
Safety and security	Barbed wire fencing	LS	1.96
	Barbed wire fencing around the Pit	LS	1.06
	Barbed wire fencing with masonry pillars	LS	0.35
	Concrete wall with Masonry pillars around the pit	LS	
	Securing air shaft and installation of bore well	LS	

	pump		
	Securing of Incline	LS	
	Concrete wall fencing around the water body	LS	8.72
	Boundary wall around the water body		
	Stabilisation! viz benching, pitching etc) of side walls of the water body		
	Toe Wall around the dump	LS	3.38
	Garland drain	LS	4.87
	Garland Drain around the dump		
	MISC SAFETY WORKS	LS	2.40
Technical and Biological Reclamation of Mined out of land and OB Dump	Drainage Channel from main Ob dump	LS	4.85
	Filling of Void	LS	66.97
	Top Soil management	LS	10.36
	OB Rehandling for backfilling	LS	66.97
	Terracing, blanketing with soil and vegetation of External OB Dump	LS	7.77
	Peripheral road, gates, view point, cemented steps on bank	LS	4.24
	Expenditure on development of Agricultural land	LS	1.22
	Landscaping and Plantation	LS	9.60
Post Closure management and supervision	Power Cost	LS	1.04
	Post Mining Water quality management	LS	2.08
	Post Mining Air quality management	LS	4.16
	Subsidence monitoring for 5 years	LS	0.00
	Waste Management	LS	2.08
	Manpower Cost and supervision	LS	1.04
Others	Entrepreneurship development (vocational/skill development training for sustainable income of affected people	LS	4.13
	Golden Handshake / Retrenchment benefits to 100 employees of OC	LS	11.96

	Golden Handshake / Retrenchment benefits to 200 employees of UG	LS	
	Onetime financial grant to societies/ institutions/organisations which is dependent upon the project:	LS	
	Provide jobs in other mines of the company	LS	
	Continuation of other services like running of schools etc.	LS	
Total	COST FOR THE ENTIRE LIFE (Prog & Final)		523.40
Total	TOTAL ANNUAL COST		32.71
Total	PROGRESSIVE COST FOR THE ENTIRE LIFE		302.01
Total	ANNUAL PROGRESSIVE COST		18.88

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:

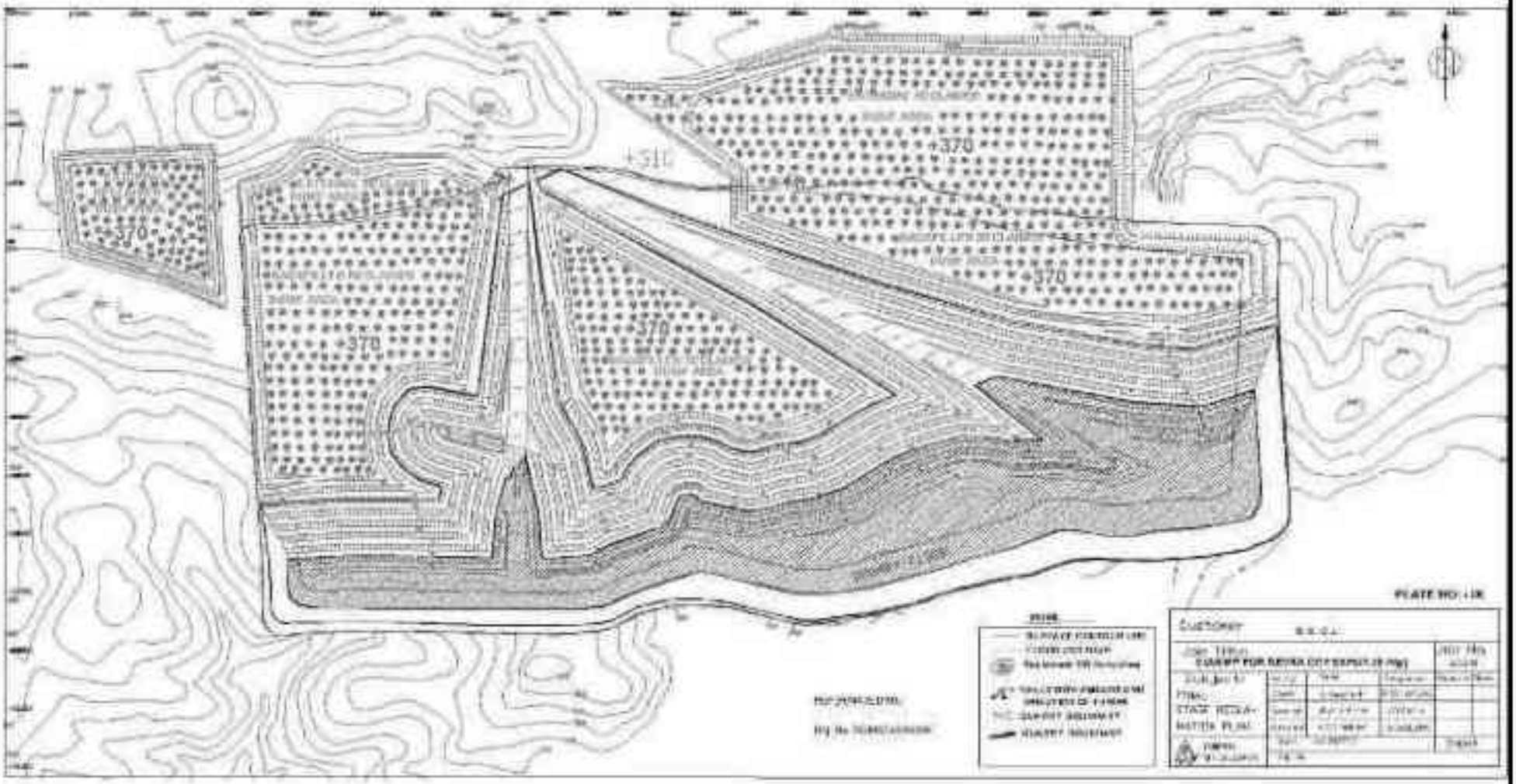
Sl. No.	Activities	Time Frame	Half Yearly					
			1	2	3	4	5	6
1.	Preparation of Survey & Disposal Report	One month						
2.	Slope Stability study for high walls and internal backfilled dumps	One month						
3.	Disposal of P&M including HEMM, CHP, W/S, Siding	2 and half years						
4.	Backfilling of mined 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 2nd year						
12	Sealing of mine entries for UG mine	from 2nd 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

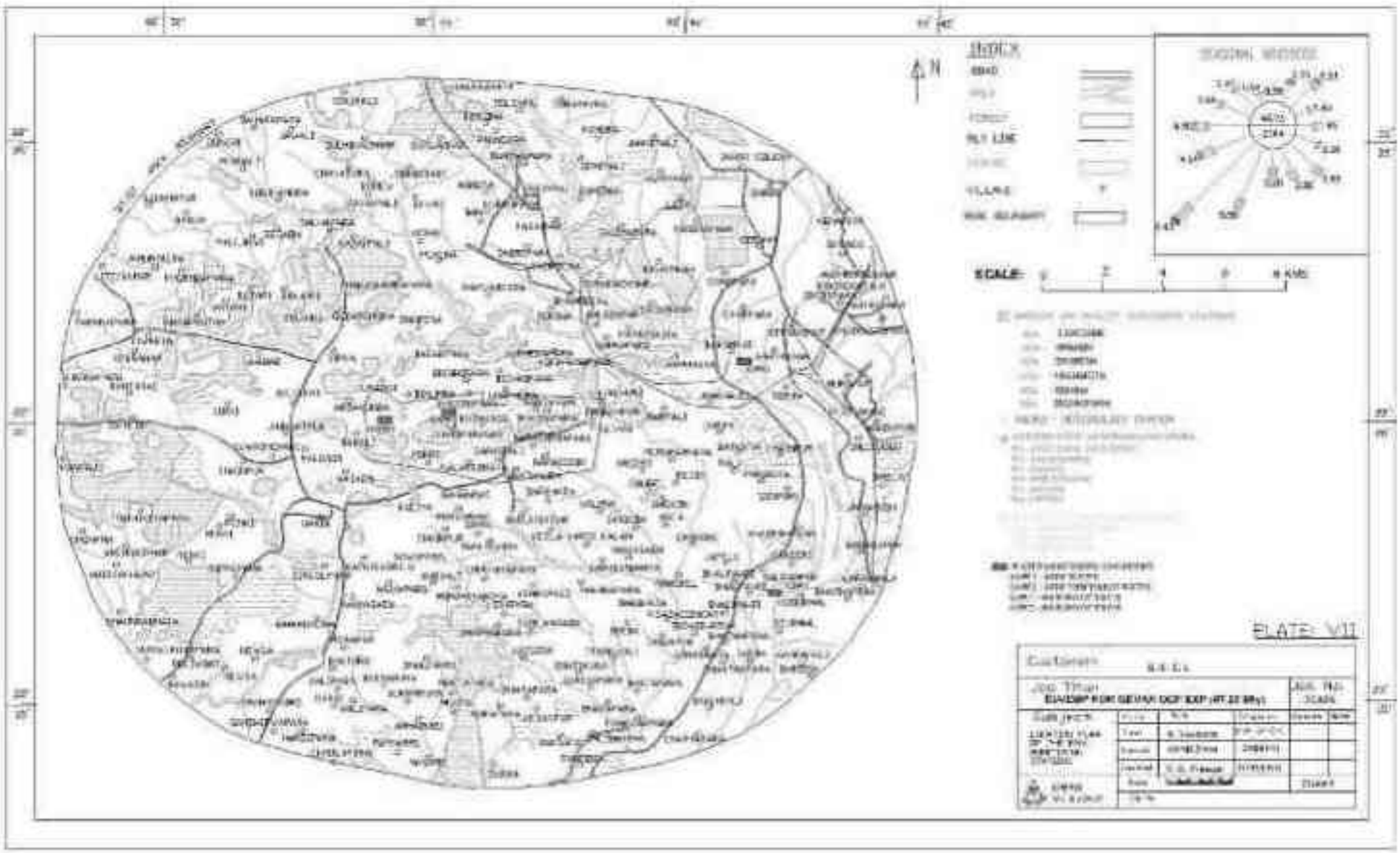
The Progressive Mine Closure Plan for Gevra OCP has been approved in the 218th meeting of SECL Board held on 28.11.2013.Accordingly, Escrow Account No: 423803800000294 is opened in Union Bank of India, Bilaspur and Annual Deposits as per the approved MCP have been made in the above account regularly since 2010-11 and the balance amount as on 31.03.2023 is Rs.1346459196/-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 has been received in respect of Gevra OCP for the activities undertaken from 2010-11 to 2014-15. A total amount of Rs. 514721000/- was recommended for release by Coal Controller on 17.08.2017.

For the period from 2015-16 to 2019-20, an amount of Rs. 577323000/-has been reimbursed under Progressive Mine Closure.

APPENDIX



FINAL STAGE RECLAMATION PLAN



LOCATION PLAN OF ENVIRONMENTAL MONITORING STATIONS

Annex X-12

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.)	Area/ Ha.	Location
	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	9	
1986	236000	0	0	0	236000	0	0	74.3	1. MGR Line 2. Bauxite 3. Inside Colony 4. Gevra-Kusmunda Road 5. Dispensary complex etc.
1987	245750	0	46000	46000	291750	0	0	82.95	1. Ext. OB Dump No. 2 near WGR 3. Around Magazine 4 Colony Road 5 Land colony
1988	419500	0	0	0	419500	0	0	93.22	1. Near B&M workshop & Dy GM Office 2. Near CHP 3. Road side at Gevra 4. Road side at VIL/CKTI 5. Gevra- Kusmunda Road 6. Barra village 7. Near Magazine 8. Colony
1989	454000	0	0	0	454000	0	0	100.88	1. Gevra Kusmunda Road 2. Near Barra Village 3. Near CHP 4. Gevra Colony 5. Near CHP Project 6. SILO Road 7. Vacant space in colony 8. Near Magazine
1990	372883	0	0	0	372883		0	82.86	1. Near Magazine Gumashtagar 2. Lampara plot 3. Old Dipka Barrier (Planted by Dipka project) 4. Dipka mod 5. Vijaynagar village 6. Near Conveyor Belt (CHP) 7. Near Hospital 8. Roadside 9. Bauxite 10. Old Barrier (Planted by Dipka project at Dipka end) 11. Bauxite old Barrier (Planted by Dipka project at Dipka end) 12. Conveyor Belt - Lafigarh 13. Mine boundary near Barra 14. Inside Colony
1991	360000	0	0	0	360000	0	0	80	1. Dipka Bhata Village (A) 2. Dipka Bhata Village (B) 3. Heliport side 4. B Type quarters 5. Sidra nagar (Planted by Dipka project at Dipka end) 6. DKWS 7.

									Guest House & CFT 9. Dipka Full Road (Planted by Dipka project) 10. Kusmunda Gevra Road
1992	64900	0	0	0	64900	0	0	14.42	1. Gevra Township 2. Railway Siding 3. Gevra Main 4. Near Kanti Pandi Dhaka Village
1993	87230	0	26970	26970	114200	0	0	27	1. Bhakti Nagar Colony 2. Dipka project colony (Planted by Dipka project at Dipka unit) 3. Dipka Ext. Dump no. 1 (Planted by Dipka project at Dipka unit) 4. SECH Colony 5. CGWS 6. Dipka MTK office (Planted by Dipka project at Dipka unit) 7. Gevra Ext. Dump no. II 8. Gevra Railway siding 9. Kusmunda Barrier Portion
1994	0	0	0	0	0	0	0	0	
1995	77000	0	0	0	77000	0	0	17.11	1. Gevra Kusmunda Road 2. Infront of Old GUM Office
1996	68000	0	64000	64000	132000	0	0	29.33	1. Dipka Dump no. 3 (Planted by Dipka project at Dipka unit) 2. Seltibri Dump (Planted by Dipka project at Dipka unit) 3. CISF Office 4. Boundry wall at Dipka (Planted by Dipka project at Dipka unit) 5. Dipka Border line (Planted by Dipka project at Dipka unit) 6. Magazine side
1997	50000	17500	105500	123000	173000	0	0	38.44	1. Dump no. 2 (Planted by Dipka project at Dipka unit) 2. Near Magazine 3. External Dump no. 2,3 & 4 4. External Dump no. 5 5. External no.1
1998	42000	52150	31850	84000	126000	0	15000	31.6	1. Internal Dump no.3 (Amalgamated) 2. Internal Dump no.1 3. External Dump no. 3.1 & 4.1 4. Khuradih Road 5. Dump slope 6. Near water tank of Gevra project 7. Magazine side
1999	11950	0	65000	65000	76950	3150	18000	10.23	1. External Dump no.2.3 & 4.2. Near Bisinal Gevra 2. External Dump no.3 (Planted by Dipka project at Dipka unit) 3. Near Siding sand (Commercial)

2000	0	0	130000	130000	130000	0	15000	32.5	1.External Dump no 2,3 & 4 2. External Dump no 7 3. External Dump 4. Proposed to Dump project at Diplakalli
2001	0	0	66000	66000	66000	0	13000	16.5	1. External OB Dump No. 2,3&4 (Top) 2. External OB Dump No. 2,3&4 (Slope)
2002	10000	0	30000	30000	40000	500	4000	16	1. External Dump No 6 2. Back Filling 3. Dump No 6 (Slope)
2003	30000	81000	20000	101000	131000	1270	15000	35	1. Old Dinka Dump No. 3 2. Pasand Nagar 3. Gandhi Nagar 4. Dump No. 1&2
2004	22000	5500	78500	84000	106000	3583	36000	32	1.North side of Dump No 2,3&4 Near Bus 2. In side Shakti nagar colony 3. Inside Centeral work shop 4. Shakti nagar Gate to DRTP Ground side green belt strengthening 5. Dinka barrier to Geeta Water flow Gate side green belt strengthening 6. Kumanda road side green belt 7. Dump No 5 & south side Slope of Dump No. 2,3&4 8. North side Slope of Dump No 2,3&4 10 Old Internal Dump 11 Rest Portion) Top Inst Green belt 11 Dump No. 1 Slope (External Face Section)
2005	76000	0	39500	39500	115500	4800.33	39500	38	1.Dump No.4 Dinka Unit 2. Dump No 2,3&4 North Slope (west side of Helipad) Along kumanda Road (North side of 2,3&4 No Dump (2KM X 30 m) 4. Center Park with in MGB 5. Along Main Road both sides (From CRPF to Dinka Division at one bus) 6. Dump No 1,3& 4 western side Dump 7. Back side of Shakti Nagar Colony
2000	41500	0	0	0	41500	2000	0		
2006	75000	40000	5000	45000	120000	4500	45000	48	
2007	50000	0		0	50000	0	0	20	1. Hydro Seeding of grasses On RP Dump No 5 & 6
2008	5000	0	20000	20000	25000	0	0	15	1. Near Magazine 2. Near DRTP 3. Kumanda road 1

								in between MGR& railway Line 4. Dipke Barrier to Harda Bazar road side (Near 3 no. Dump of Dipke Unit)
2009	32500	0	30000	30000	62,500	0	20000	21	1. Near Magazine 2. kumamda road (in between MGR& Railway Line) 3. Dipke barrier to Harda Bazar road side (Near 3 No. Dumps of Dipke Unit) 4. Dump NO. 3 (External Works Unit) 5. South side Slope of No. Dump No 3 (Dipke Unit)
2010	2500	36500		36500	39,000	0	0	25	1. Dump No. 3 (External) 2. South East side Slope of Internal Dump No 3 3. Around DTTP CHP,Feeder Breaker, TA office (Urja Nagar) CTI
2011	0	27500	0	27500	27,500	0	12500	16	1.Dump No 3 (External) 2. South East side Slope of internal Dump No 3 3. On Plain Area Near Dipke Railway Track
2012	10000	20000	0	20000	30000	0	3125	12	1. Dump No. 6&7 (Internal) 2. On Plain area Behind Urja Nagar C-Type Quarter
2013	5000	0	35000	35000	40000	0	5000	14	1. On External Dump No.6&7 (Top& Slope) 2.On Plain area GOLF Ground (Near Silo)
2014	0	0	20000	20000	20000	0	0	10	1. External OB Dump No 6&7 2. Side Slope of External OB Dump No 6&7.
2015	0	0	80000	80000	80000	0	10000	26	1. On External Dump No 6&7 (Top& Slope)
2016	0	0	50000	50000	50000	0	0	20	1. On External Dump No 6&7 (Top& Slope)
2017	0	0	100000	100000	100000	0	5000	30	1. On External Dump No 6&7 (Top & Slope)
2018	6500	0	60000	60000	66500	0	0	0	1. On External Dump 6&7 (Top) 2. on Road side (New Coal transport Road)
2019	82750	0	0	0	82750	0	0	31.1	1. Near Gevra Nagar 2. Plain Area in Between External Dump No 6&7 and Laxmna Both Side
2021	31998	52500	0	52500	84498	0	18750	27.79 9	1. Avial Nagar (Magazine Plot). 2. Avial Nagar (Road Side)
2022	48450	0	0	0	48450	0	29613	19.38	1. Bhatora Basahai 2. Magazine side
2023	19415	0	0	0	19415	0	0	7.768	1. Near Bhatori Nalah Pond

2024		113184	0	113196	113194	0	107009	41.112	1. Dump slope Int dump no. 1 2. Dump slope Int Dump no. 5 & 6 3.Barren slope view point Int dump no 4
Total	3017826	445844	1193320	1549164	1566990	19803.33	411488	1226.606	
Planted area (Ha)	689.465	169.941	367.2	537.141	1226.606				

GAP PLANTATION DETAILS			
Year of Gap plantation	Area in Ha.	No. of saplings Planted	Location
2020-21	17	55950	Manguon Dump. (Laxman Project)
2021-22	2	5000	Shramil Chouk to Dipka Chouk
2022-23	23.69	82915	External Dump 6&7 (slope)
2023-24	43.405	106577	Awad Nagar Behind Kabaristhan, Between NTPC & private rail track, Behind Magazine & Infront of Railway Colony Shakti Nagar
2024-25	35.6963 8.771	89234 30699	Back side of Golf Course & Dhurena Backside Int dump no.1

Manager (Envt)
S.E.C.L. Gevra Area

कार्यालय कलेक्टर (भू–अभिलेख शाखा) जिला कोरबा,छ0ग0

//संशोधित अनापत्ति प्रमाण पत्र//

क/612/भू.अ/वन अधि/2023 कोरबा दिनांक 05/05/2023

प्रति,

महाप्रबंधक
एसईसीएल गेवरा क्षेत्र
जिला कोरबा

विषय :– **कोरबा जिले में कटघोरा वन मण्डल के अंतर्गत एसईसीएल गेवरा खुली खदान के लिए (गेवरा 81.380 हे. व खोडरी 12.913 हे. कुल रकबा रकबा 94.293 हे0) गैर वानिकी प्रयोजन हेतु वन संरक्षण अधिनियम 1980 के अंतर्गत संशोधित प्रमाण पत्र जारी करने बाबत्।**

संदर्भ :– आपका पत्र कनंक/एसईसीएल/मप्र/गेवे/पर्यावरण/2023/45 दिनांक 13.04.23।

——000——

विषयांतर्गत जिला कोरबा, वनमण्डल कटघोरा अंतर्गत कटघोरा, अंतर्गत एसईसीएल कुसमुण्डा क्षेत्र को आवंटनयोग्य पट्टा क्रमांक/519/वन/सअभू.अ/2016 कोरबा दिनांक 17.02.2016 के द्वारा कुसमुण्डा खुली खदान परियोजना हेतु कुल रकबा 142.257 हेक्टेयर वन भूमि पर गैर वानिकी प्रयोजन बाबत् वन संरक्षण अधिनियम 1980 एवं अनुसूचित जाति एवं अन्य परम्परागत वन निवासी (वन अधिकारों की मान्यता) अधिनियम 2006 के तहत प्रमाण पत्र जारी किये गये है। महाप्रबंधक एसईसीएल गेवरा क्षेत्र एवं एसईसीएल कुसमुण्डा क्षेत्र के द्वारा उक्त परियोजना का विभाजन कर दो अलग अलग कर संशोधित प्रमाण पत्र हेतु लेख किया है।

संदर्भित पत्र मे लेखानुसार महाप्रबंधक एसईसीएल गेवरा क्षेत्र के द्वारा संशोधित प्रमाण पत्र हेतु प्रभावित ग्राम के वनभूमि बाबत् अभिमत सहित प्रतिवेदन अनुविभागीय अधिकारी (रा0) कटघोरा से प्राप्त। प्राप्त प्रतिवेदन अनुसार प्रभावित वन भूमि का विवरण निम्नानुसार है।

क्र	वनमण्डल	तहसील	ग्राम का नाम	गेवरा OC हेतु प्रभावित वन भूमि खसरा नंबर	प्रभावित रकबा (हेक्टे में)	टीप
1	कटघोरा	दीपका	गेवरा	153	76.07	
2	कटघोरा	दीपका	गेवरा	277	24.26	
3	कटघोरा	दीपका	गेवरा	481	2.20	
4	कटघोरा	दीपका	गेवरा	579	0.16	
5	कटघोरा	दीपका	गेवरा	585	2.65	
6	कटघोरा	दीपका	गेवरा	867	11.64	
7	कटघोरा	दीपका	गेवरा	959	15.05	
8	कटघोरा	दीपका	गेवरा	1182	68.81	
9	कटघोरा	दीपका	गेवरा	1241	0.25	
	योग				**201.09 (81.380 हे.)**	

10	कटघोरा	दीपका	खोहरी	40	6.87
11	कटघोरा	दीपका	खोहरी	242/1	25.14
12	कटघोरा	दीपका	खोहरी	242/3	0.10
		योग			31.91 (12.913 हे.)
		महायोग			233.00 (94.293)

उक्त परियोजना से प्रभावित राजस्व वनभूमि में किसी भी हितग्राही का वन अधिकार पत्रक प्रभावित नहीं हो रहा है एवं न ही पत्रक जारी हेतु शेष है। प्रस्तावित स्थल में विशेष पिछड़ी जनजाति वर्ग के व्यक्ति निवासरत् नहीं है एवं प्रभावित नहीं हो रहे है तथा शासन द्वारा संचालित सुविधाएँ जैसे आंगनबाड़ी भवन, पंचायत भवन, पाठशाला, अस्पताल, प्राथमिक स्वास्थ्य केन्द्र आदि प्रभावित नहीं हो रहा है।

अतः वनमण्डल कटघोरा अनुभाग कटघोरा वाहरीत भैसमा दीपका के अंतर्गत मेसर्स महाप्रबंधक एसईसीएल गेवरा क्षेत्र जिला कोरबा का गेवरा खुली खदान में प्रभावित राजस्व वनभूमि कुल रकबा 94.293 हे0 का गैर वानिकी कार्य किए जाने बाबत् वन संरक्षण अधिनियम 1980 के प्रावधान/विधि अनुसार कार्य किए जाने हेतु अनुमति यदि सक्षम विभाग द्वारा प्रदान की जाती है, तो इस कार्यालय के निम्न शर्तो के अधीन कोई आपत्ति नहीं है–

1. यह अनापत्ति प्रमाण पत्र मात्र उपरोक्त उल्लेखित वन भूमि पर मेसर्स महाप्रबंधक एसईसीएल गेवरा क्षेत्र जिला कोरबा के वनमण्डल कटघोरा के अनुभाग कटघोरा अंतर्गत ग्राम गेवरा एवं खोहरी में गेवरा खुली खदान परियोजना में आने वाले वनभूमि पर वन संरक्षण अधिनियम 1980 अत्यावर्तन प्रस्ताव तैयार करने हेतु दी जा रही है।
2. वन संरक्षण अधिनियम 1980 लागू होने पर संबंधित विभाग से अनुमति लिया जाना अनिवार्य होगा।
3. यह अनापत्ति प्रमाण पत्र परियोजना मेसर्स महाप्रबंधक एसईसीएल गेवरा क्षेत्र जिला कोरबा को गेवरा खुली खदान परियोजना के कार्य हेतु दिया जा रहा है इसके अतिरिक्त अन्य प्रयोजन के लिए उपयोग नहीं किया जा सकता।
4. वृक्षों को काटे जाने की अनुमति सक्षम न्यायालय/विभाग से लिया जाना होगा।
5. यह अनुमति के द्वारा विभाग के स्वामित्व का हस्तांतरण नहीं किया जा रहा है।

कलेक्टर
कोरबा (छत्तीसगढ़)

क्र. क्र.10/623 /कृअ/वन अधि./2023 कोरबा दिनांक : 05/06/2023

प्रतिलिपि

1. सचिव, छत्तीसगढ़ शासन, राजस्व एवं आपदा प्रबंधन विभाग, कार्यालय, महानदी भवन नया रायपुर की ओर सादर सूचनार्थ।
2. अनन्डलाधिकारी कटघोरा की ओर सूचनार्थ।
3. अनुविभागीय अधिकारी (रा.) कटघोरा को ओर सूचनार्थ।

कलेक्टर
कोरबा (छत्तीसगढ़)

FROM.II

(For project other than linear projects)

Government of Chhattisgarh

Office of the District

Collector korba (CG)

.....

No. 737 Dated 20/06/2023

To WHOWSOEVER IT MAYCONCERN

In compliance of the Ministry of Environment and Forests (MoEF), Government of India's letter No. 11-9/98-FC(pt.) dated 3rd August 2009 wherein the MoEF issued guidelines on submission of evidences for having initiated and completed the process of settlement of rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 ('FRA', for short) on the forest land proposed to be diverted for non-forest purposes, it is certified that **94.293 hectare** of forest land proposed to be diverted in favur of **SECL, GEVERA AREA, DIST-KORBA (C.G)** for **construction of GEVERA OPENCAST MINE** in **korba** district falls within jurisdiction of **Gevra, Khodri** villages in **Dipka** tehsils.

It is further certified that :

(a) The complete process for identification and settlement of rights under the FRA has been carried out for the entire **94.293 hectares** of forest area proposed for diversion. A copy of records of all consultations and meetings of the Forest Rights Committee(s), Gram Sabha(s), Sub-Division Level Committee(s) and the District Level Committee are enclosed;

(b) The proposal for such diversion (with full details of the project and its implications, in vernacular/ local language) have been placed before each concerned Gram Sabha of forest dwellers, who are eligible under the FRA;

(c) The each of concerned Gram Sabha(s), has certified that all formalities/ processes under the FRA have been carried out, and that they have given their consent to the proposed diversion and the compensation and ameliorative measures, if any, having understood the purpose and details of proposed diversion. A copy of certificate issued by the gram sabha of **Gevra and Khodri** villages is enclosed;

(d) The discussion and decisions on such proposals had taken pace only when there was a quorum of minimum 50% of the members of Gram Sabha present;

(e) The diversion of forest land for facilities managed by the Government as required under section 3(2) of the FRA have been completed and the Gram sabhas have given their consent to it;

(f) The rights of Primitive Tribal Groups and Pre-Agricultural Communities, where applicable have been specifically safeguarded as per section 3(1)(c) of the FRA.

Encls :As above.

(Sanjeev Kumar Jha)
Collector
Korba (Chhattisgarh)

1) General Manager, Gevra Area Dist korba for information and necessary action.
2) The Deputy Conservator Of forest division Katghora Dist. Korba for information and necessary action.

Collector
Korba (Chhattisgarh)


Shot on OnePlus

ANNEX-14

साउथ ईस्टर्न कोलफील्ड्स लिमिटेड
(एक मिनिरत्न कम्पनी)
कार्यालय महाप्रबंधक गेवरा क्षेत्र
पो आ –गेवरा प्रोजेक्ट जिला – कोरबा
पिन –495452फोन 07815-275438
फैक्स 07815-275434

South Eastern Coalfields Limited
(A Mini Ratna Company)
Office of the General Manager Gevra Area, PO – Gevra Project, District - Korba(C.G.) Pin – 495452 *Phone* 07815 - 275438*Fax* 07815 -275434
mail.socgevra@gmail.com,

Letter Number: SECL/GA/GM(C)/LOA/TA/24/ 106 Date 08.05.2024

BY SPEED POST

To,

M/S ANAND ENTERPRISES
MIG-I/68, RSS NAGAR
KORBA CG- 495678

E -mail:- pramodkuamarsharma@gmail.com
PAN - AVGPS2289E
GSTIN - 22AVGPS2289E1ZJ
Contact No: Mob- 9425539141

विषय/Subject : **Letter of Acceptance (LOA) for the work of "Desiltation of ponds for Mauwadi, hardibazar, Gobaghora & dadarpara Village at Gevra Area (4th Phase)."**

सन्दर्भ/Reference :
I. **NIT No. : SECL/GA/GM(C)/ETN/23-24/147, dtd.: 03/02/2024**
II. **Tender Id : 2024_SECL_300339_1**
III. **Bid Id :1025663**

Dear Sir,

With reference to above, this is to communicate the approval of the Competent Authority for award of the subject work to you for an amount of **₹ 1,03,10,039.81 (Rupees One Crore three Lakh ten Thousand thirty nine And Paise eighty one)** only inclusive of Goods and Service Tax (GST) with following bifurcation:

Sl. No.	Description	Amount. (₹)
(i)	**Quoted Offer without Goods and Services Tax (GST) component [Cost To Company(CTC) being a case of ' Input Tax Credit (ITC) Not Available]**	87,37,321.87
(ii)	**Goods and Service Tax @18% on Quoted Offer**	15,72,717.94
(iii)	**Total Award Value including Goods and Service Tax (GST) [(i) + (ii)]/Total Contract Price**	1,03,10,039.81
(Rupees One Crore three Lakh ten Thousand thirty nine And Paise eighty one)Only		

This Letter of Acceptance (LOA is subject to the following terms and conditions:

1. **PERFORMANCE SECURITY DEPOSIT (PSD):**

(a) An amount of **₹ 2,44,500.00 (Rupees two lakh forty four Thousand five Hundred)** only deposited ONLINE through AXIS Aggregator Bank Net banking **(Bank Number/UTR No.153929783** ,is being adjusted as a part of Performance Security Deposit (PSD).

Further you have to deposit a sum of **₹ 2,71,002.00 (Rupees two Lakh sevnty one Thousand Two)** only against balance amount of PSD to make the total Performance

8/5/24

Security Deposit (PSD) as 5% of the contract value [i.e. ₹ 1,03,10,038.81 (Rupees One Crore three Lakh ten Thousand thirty nine And Paise eighty one) only)], within 21 (Twenty-One) days of issuance of LOA, as per Clause No.4 (Security Deposit) of General Terms & Conditions of Contract. The **'Additional Performance Security (APS)' Deposit** is ₹ 63,09,595.00 (sixty three lakh nine Thousand five Hundred ninety five) Only.

(b) Performance Security Deposit (PSD) as mentioned at (a) above may be deposited in any of the form given below:

- Demand Draft drawn in favour of **South Eastern Coalfields Limited, Gevra Area** on any Scheduled Bank payable at its Branch at **Gevra (C.G.).**
- Govt. Securities or FDR duly pledged in favour of **South Eastern Coalfields Limited Gevra Area.**
- Bank Guarantee in **SFMS (Structured Financial Messaging System)** mode from any Scheduled Bank in the prescribed format as given at **Annexure-V** of bid document. The BG issued from outstation Bank should be operative at its local Branch at **Bilaspur (C.G.)** or at their branch at **Kolkata** (if the issuing bank does not have any branch at **Bilaspur**).
- The Bank Guarantee (BG) issued by the issuing Bank on behalf of contractor in favour of "South Eastern Coalfields Limited" shall be in paper form as well as issued under **"Structured Financial Messaging System (SFMS)"**.The details of Beneficiary Bank for issue of BG under SFMS Platform have been mentioned under Cl. No.4 of General Terms & Conditions of Bid Document. Performance Security Deposit (PSD) submitted in the form of BG shall be valid for a period of **one year or 90 days beyond the period of Contract/extended Contract period (if any), whichever is more.**

  Failure to comply with the requirement as above shall constitute sufficient ground for cancellation of the award of work and forfeiture of EMD. Additionally, you will not be allowed to participate in the re-tendering process and you also be debarred from participating in future tenders in SECL for a minimum period of **12 (Twelve)** months.

(c) That all Running on Account bills shall be paid at 95 % (ninety five percent) of the executed work value. The balance **5 % (Five Percent)** shall be treated as Retention Money and will be second part of Security Deposit.

2. GOODS & SERVICE TAX :

(i) **Applicable**

(ii) **Input Tax Credit is Not Available to SECL.**

(iii) In the event of recovery of any claim towards LD Charges, Penalty, fee, fine or any other charges from the contractor, the same will be recovered along with the applicable GST and the amount shall be adjusted with the payment to be made to the contractor against their bill/invoice or any other dues.

3. PERIOD OF COMPLETION:

That the work should be completed within a period of **150 (one hundred fifty days)** from the date of commencement which shall be reckoned from the **10th day of issue of this LOA or from 7th day of handing over of the site,** whichever is later.

4. PRICE VARIATION CLAUSE :

Price Variation Clause [Cl.No.2] of Additional Terms and Conditions of Contract is **NOT APPLICABLE** for this contract.

5. ELECTRICITY:

You will arrange necessary electricity at your own cost for the work and your own establishment. However, if available and feasible the company may arrange electricity at one point near the work site and necessary recovery of cost of energy consumed will be made at rates prescribed by the company from time to time. Energy meter for this purpose shall be provided by you.

6. WATER:

You will arrange necessary water for the work and your own establishment and nothing extra will be paid for the same. Such water used by you shall be fit for construction purposes. However, if available and feasible the company may arrange water, on your written request, to the extent possible, at one point near the work site for which recovery **@ 1%(One Percent)** of the contract value of work done will be made from your bills. You will make your own arrangement of water connection and laying of pipe lines from main source of supply. Department do not guarantee to

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maintain uninterrupted supply of water. No claim of damage or refund of water charges will be entertained on account of such break down.

7. **EMPLOYMENT OF LABOUR :**

(a) That you have to make payment to the labours engaged by you for this work as per Minimum Wages fixed by Central/State Govt.(higher) as per Minimum Wages R&A Act,1970 or ~~minimum wages recommended by High Power Committee of CIL(for labours engaged in mining activities)~~, as applicable.

(b) The payment to the contractor's labourers has to be made through Bank only and necessary payment certificate shall be obtained from the authorized representative of the department.

(c) That the payment of Provident Fund for the workmen employed by you for the work as per the Laws prevailing under provision of CMPF/EPF and allied scheme valid from time to time shall be your responsibility. You will also submit statutory returns.

(d) That you have to comply with statutory requirements of various acts including Child Labour (Prohibition & Regulation) Act, 1986 as mended from time to time and all rules, regulations and schemes framed there under from time to time in addition to other applicable labour laws. If it is reported and proved that child labour is engaged by you, then you will be penalized 10% of the contract value and will be blacklisted.

(e) That you have to follow other guidelines as incorporated at Clause No.13 of General Terms & Conditions of NIT covered under Additional Responsibilities of the Contractor(s).

(f) Bonus is to be paid to the contract workers engaged by the Contractor as per the provisions of Payment of Bonus Act, 1965.

(g) The contractors shall register themselves on the Contract Labour Payment Management Portal (CLPMP) of CIL within 30 days of issue of work order and will have to enter and update periodically the following details in the portal :
(i). Work Order details
(ii). Contractor workers details and Wages payment details in respect of each Work Order.

(h) **Coal Mines Pension (Amendment) Scheme, 2018**

(A) In consideration of changes in statutory provisions, CMPF (Coal Mine Provident Fund) /EPF (Employee Provident Fund) Contribution is to be deducted **@12% (Twelve Percent)** as both Employer & Employee Share. Hence, Employers (SECL in present case) share of CMPF/EPF Contribution **@12% (Twelve Percent)** has been loaded as input in minimum wage while formulating the proposal/estimate. Hence, the contractor shall pay the employer's share i.e. **12% (Twelve Percent)** towards CMPF/EPF contribution to the labour who have been engaged in the work. No reimbursement shall be made to the contractor on this account.

(i) **(B)** In consideration of changes in statutory provisions, CMPS (Coal Mine Pension Scheme) Contribution is to be deducted **@7% (Seven Percent)** as both Employer & Employee Share. Hence, Employers (SECL in present case) share of CMPS Contribution **@7% (Seven Percent)** has been loaded as input in minimum wage while formulating the proposal/estimate. Hence, the contractor shall pay the employer's share i.e. **7% (Seven Percent)** towards CMPS contribution to the labour who have been engaged in the work. No reimbursement shall be made to the contractor on this account. **Attendance of Contractors' Workers through Bio-metric Attendance System :**
The attendance of all the employees/workers engaged by Contractors' is to be marked through Biometric Attendance System only.

8. **ALR & AHR ITEMS:** Not Applicable

9. **INSURANCE POLICY:**

That you have to take necessary insurance for the full contract period for **(i)Workmen's Compensation Policy as per clause No. 13 (iv) of additional responsibilities of the contractor(s) (ii) Group personal accident insurance policy & (iii)Contractors All Risk (CAR) Policy, in the joint name of South Eastern Coalfields Limited and the Contractor** as per Clause No.13 (xviii) of

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General Terms & Conditions of NIT. The Policies and certificates for insurance shall be delivered by you to the Engineer-in-Charge for his approval before commencement of the work.

10. **SAFETY MEASURES:**
That the Precautions shall be exercised at all times by you for the protection of persons (including employees) and property. The safety required or recommended by all applicable laws, codes, statutes and regulations shall be observed by you. In case of accident, you will be responsible for compliance with all the requirements imposed by the Workmen's Compensation Act or any other similar laws enforce and indemnify the Company against any claim on this account.

11. **WORKER'S WELFARE CESS:** That an Amount of **1% (one percent)** of the work value payable to you will be deducted from all Bills towards the worker's welfare under "The Building and Other Construction Worker's Welfare Cess Act,1996" and "The Building and Other Construction Worker's Welfare Cess Rules,1998" **(as applicable in the State)**.

12. That all other terms and conditions as given in the tender document shall also be binding on you.

13. That matters relating to any dispute or differences arising out of this work order and subsequent contract agreement entered, based on this tender and work order shall be subject to the jurisdiction of **District Court, Korba (CG)** only.

14. That as per Clause No.6 under General Terms & Conditions of Contract, you have to submit a detailed time and progress chart prepared based on Bar Chart/ PERT-CPM techniques on the basis of construction schedule in consultation with the Engineer-in-Charge showing the order in which the work is proposed to be carried out within the time specified in the LOA/Work Order.

15. That as per Clause No.1 (vii) of General Terms & Conditions of Contract, the Engineer-in-Charge for this work will be **Chief manager (Civil)/TA, Gevra Area.**

16. That the Paying Authority for this work will be the **Area Financial Manager", SECL, Gevra Area.**

17. That you have to submit the following documents and to attend this office for signing the agreement within **21 (Twenty-One)** days of issue of this LOA/Work Order:

    i. An amount of **₹ 2,71,002.00 (Rupees two Lakh sevnty one Thousand Two)** only towards Performance Security Deposit **(PSD)***(as per Cl. No.1 (a) of LOA)*.
    ii. An amount of **₹ 63,09,595.00 (sixty three lakh nine Thousand five Hundred ninety five)** only towards Additional Performance Security Deposit **(APSD)***(as per Cl. No. 8 of LOA)*.
    iii. Non Judicial Stamp Paper of **Rs.100.00 (One Hundred)**
    iv. Site handover and takeover certificate, jointly signed by Engineer-in-Charge and the Contractor
    v. Labour License as per Contract Labour (Regulation & Abolition) Act, 1970.
    vi. Insurance Certificates as per Clause No.13(iv), 13(xxvi) &13 (xviii) of General Terms & Conditions of NIT.
    vii. CMPF/EPF Registration certificate
    viii. Detail Time and Progress Chart, jointly signed by Engineer-in-Charge and the Contractor.
    ix. Mandate Form duly signed by you and the Bank Officials for e-Payment as per Clause No. 24.1 of Instruction to Bidder of NIT.
    x. List of Technical & Supervisory Personnel to be deployed for Execution of the work.

18. **Time bound completion of work along with quality assurance to be ensured strictly. All statutory payments including Minimum Wages, Bonus and PF to be ensured as per rule/regulations.**

Note-:The date of uploading of this LOA/Work Order on e-Procurement Portal (https://coalindiatenders.nic.in) shall be treated as the date of receipt of this LOA/ Work Order by you.

For further instructions, please contact **Chief manager (Civil)/TA, Gevra Area.**

8/5/24

Failure to comply clause 17 within 21 days will lead to termination of contract, forfeiture of EMD, additionally the company shall ban such defaulting contractor from participating in future tenders in concerned Subsidiary/CIL HQ for a period of minimum 1 (one) year from the date of issue of such letter*. In case of JV/Partnership firm, the banning shall also be applicable to all individual partners of JV/Partnership firm.

Yours faithfully

Encl: BOQ

General Manager (Civil)
Gevra Area

Copy to:

1. ALC, Torwa Naka, Bilaspur, Chhattisgarh, PIN-495006.
2. AFM/GAvide BC No.GA/24-25/OCW/TA/94/24 08/05/2024 For ₹ **1,03,10,040.00 Input Tax Credit (ITC) is Not Available to SECL for this work.**
3. Chief manager (Civil)/TA, Gevra Area,with an advice to immediately handover the site to the Contractor with intimation to this Office.
4. APM, GA with requestto kindly arrange the distribute to member of welfare committee and issuance of LPC of previous month latest by 10th of next month after proper verification and confirmation of records and to send a copy of the LPC to this office. LPC should be issued every month for which documents should be sought from contractor. LPC should bear the dated signature of issuing Officer & Contractor with seal.
5. Dy.Manager(CD/CSR),GA
6. O.S.(Civil)
7. Work file

[redacted] [redacted] [redacted] ercentage BoQ

Tender Inviting Authority: Staff Officer (Civil) SECL, Gevra Area					
Name of Work, Works and Services	Desilitation of ponds for Marwari, tanitbasar, Gobarghora & dadarpara Village at Gevra Area(4th Phase)			NIT NO. SECL/GAM/M/CIVIL/23-24/147 Dated 03.02.2024	
Category of Services (To Be Selected by Department)		Category of Bidder(To Be Selected by Bidder)	To Be Entered by Department		
ITC Not Available	Works Contract	Bidder's Status (Mandatory)	Rate of GST (in %)	GST to be Paid By Bidder (in Rs.)	GST to be Paid By CIL/Subsidiary (in Rs.)
Name of the Bidder/ Bidding Firm /	M/s Anand Enterprises	GST Registered Bidder under regular scheme	18.00	1572717.84	0.00

PRICE SCHEDULE

(This BOQ template must not be modified/ replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER	TEXT #	NUMBER #	TEXT #	NUMBER	NUMBER #	TEXT #
Sl. No	Item Description	Quantity	Units	Estimated Rate in Rs. P	TOTAL AMOUNT in Rs. P	TOTAL AMOUNT in Words
1	2	3	4	5	6	7
1	Item Description/ Heading					
1.01	Earth work in excavation by mechanical means (hydraulic excavator) manual means over areas (including 30 cm in depth, 1.5 m in width at any or 30 cm in depth, 1.5 m in width at any or 30 cm and all the dug/piled earth to be dressed and neatly dressed. All lifts of soil (like spillage / OB mulch, slush earth etc.) Carriage of material by means of mechanical means (by tippers) Lead for lead of 3.00 KM	133600.00	Cum	118.83	15831854.00	INR One Crore Fifty Six Lakh Thirty One Thousand Eight Hundred & Fifty Four Only
1.02	Extra rates for quantities of works executed 1.5 m or under water and/or liquid mud, including pumping out extra water as required.	80160.00	metre depth	23.37	1873671.92	INR Nine Lakh Thirty Eight Thousand &Seventy One and
2	Total Impact of GST for the purpose of CTC	1.000	Nos	1572717.84	1572717.84	INR Fifteen Lakh Seventy Two
Total in Figures					10310039.81	INR One Crore Eighty One Lakh
Quoted Rate in Figures			Less (-)	47.27%	10310039.81	INR One Crore Three Lakh Ten Thousand &Thirty
Quoted Rate in Words		INR One Crore Three Lakh Ten Thousand &Thirty Nine and Paise Eighty One Only				

8/5/24

General Manager(Civil)
Gevra Area

ANNEX - 15

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइंडियालिमिटेडकीअनुषंगी A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

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

पो.आ.:गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist : Korba (C.G.)
Pin: 495452

जिला: कोरबा(छत्तीसगढ़)
पिन:495452

क्रमांक एस.ई.सी.एल/एस.ग.गे.क्षे./ पर्यावरण/2024/ 149 (F) दिनांक 19/08/2024

VACHAN- PATRA 6
(94.293 HA. FOREST LAND)
(CONDITION NO.16)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The cost of felling of trees shall be deposited by the User Agency with the State Forest Department."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

1

ANNEX-16

SEEPAT ROAD
P.O.- SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
कोलइंडियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन 495452

STD 07815 255410(O)
7815 255032(R)
Fax 07815 275434
email gevramine@gmail.com

पी0ओ0-गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist.: Korba (C.G.)
Pin 495452

क्रमांक/एस.ई.सी.एल/जी.ए.गे.क्षे./ पर्यावरण/2024/ 149 (G) दिनांक 19/08/2024

VACHAN- PATRA 7
(94.293 HA. FOREST LAND)
(CONDITION NO.17)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"Trees shall be felled in phased manner as per the requirement in the approved Mining Plan with prior permission of concerned DFO."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX - 17

SEEPAT ROAD
P.O : SECL
DIST.BILASPUR

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

STD 07815 275430(O)
7815 278032(R)
Fax 07815 275434
email gevraenvt@gmail.com

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

जिला: कोरबा(छत्तीसगढ़)
पिन:495452

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

क्रमांकः एस ई सी एल/जी क्षे / पर्यावरण/2024/ 149 (A) दिनांक 19/08/2024

VACHAN- PATRA 8
(94.293 HA. FOREST LAND)
(CONDITION NO.18)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"Afforestation of the non mineralized virgin forest land within the mining area shall be taken up at project cost."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX - 12

SEEPAT ROAD
P.O.: SECL
BILASPUR

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

STD 07815 275430(O)
7815 279152(R)
Fax 07815 275434
email: gevraarea@gmail.com

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

जिला कोरबा (छत्तीसगढ़)
पिन:495452

पी.ओ.गेवरप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist: Korba (C.G.)
Pin: 495452

क्रमांक:एस ई सी एल/गेवरा क्षे./पर्यावरण/2024/ 147 (I) दिनांक 19/08/2024

VACHAN- PATRA 9
(94.293 HA. FOREST LAND)
(CONDITION NO.19)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "The user agency shall explore the possibility of translocation of maximum number of trees identified to be felled and shall ensure that any tree felling shall be done only when it is unavoidable and that too under strict supervision of the State Forest Department."

19/8/24

S K Mohanty
General Manager
SECL Gevra Area

Annex-19

SEEPAT ROAD
P.O : SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीएकअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन:495452

STD :07815 275453(O)
: 7815 279052(R)
Fax :07815 275434
e-mail :gevraecell@gmail.com

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

क्रमांक/एस.ई.सी.एल/जी.क्षे./पर्यावरण/2024/ 149 (5)

दिनांक 19/08/2024

VACHAN- PATRA 10
(94.293 HA. FOREST LAND)
(CONDITION NO.20)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The additional cost of implementation of the provisions of the Wildlife Management Plan for Small Cats shall be deposited into the account of CAMPA of the State. However previously the Wildlife Conservation Plan including alternative habitat development plan for affected avifauna & Human Elephant Conflict Management was prepared through State Forest Research & Training Institute (SFRTI), Raipur. An amount of Rs. 100892517/- was deposited in CAMPA (after generating Challan through MoEFCC site) vide UTR No. SBINR52022053186641010 on dt: 31.05.2022."

19/8/24

S K Mohanty
General Manager
SECL, Gevra Area

ANNEX- 21

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
South Eastern Coalfields Limited
(कोलइंडियालिमिटेडकीअनुषंगी/A subsidiary of Coal India
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

STD :07815 275430(O)
:7815 275432(R)
Fax :07815 275434
email :gevraenvt@gmail.com

पोऑफिस-गेवराप्रोजेक्ट
जिला: कोरबा(छत्तीसगढ़)
पिन:495452

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

क्रमांक/एस.ई.सी.एल/पत्र/गे.क्षे./ पर्यावरण/2022/273 दिनांक 05/11/2022

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

SECL Gevra Area Dist. Korba (C.G.) declares and agrees that "The user agency will ensure that the layout plan of the proposal will not be changed without the prior approval of the Central Government."

S K Mohanty
General Manager
SECL Gevra Area

ANNEX – 2

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन:495452

STD : 07815 275490(O)
: 7815 275832(R)
Fax : 07815 275424
email : gevramsc@gmail.com

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

क्रमांक/एस.ई.सी.एल/अप्र/गे.क्षे./पर्यावरण/2024/ 149 (K) दिनांक 19/08/2024

VACHAN- PATRA 11
(94.293 HA. FOREST LAND)
(CONDITION NO.24)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "Plants which are having lowest translocation factor shall be preferred under afforestation on the OB dumps and fruit trees to be avoided in planting during biological stabilization of OB dumps."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX-23

साउथ ईस्टर्न कोलफील्डस लिमिटेड
(एक मिनिरत्न कम्पनी)
कार्यालय, महाप्रबंधक गेवरक्षेत्र
पो आ –गेवरा प्रोजेक्ट जिला –कोरबा
पिन –495452पी.
फैक्स: 07815-275434

South Eastern Coalfields Limited
(A Mini Ratna Company)
Office of the General Manager Gevra Area, PO – Gevra Project, District - Korba(C.G.) Pin – 495452 *Phone* : 07815 - 275438 *Fax* : 07815 -275434
mail: secgevra@gmail.com.

Letter Number: SECL/GA/GM(C)/LOA/GVR/22/ 746 Date: 15.9.22

BY SPEED POST

To

NARENDRA KUMAR SINGH,
Plot No. 28, behind Govt. Girls High School , T.P.Nagar, Korba (CG)

e-mail:- kumarsinghnarendra67@gmail.com
PAN - AVGPS2030M
GSTIN - 22AVGPS2030M1ZN
Contact No: Mob- 9425532817

विषय/Subject : **Letter of Acceptance (LOA) for the work of "Iron fencing with Concertina coil around the mine boundary at Gevra Project."**

सन्दर्भ/Reference :
I. **NIT No. : SECL/GA/GM(C)/ETN/22-23/35, DT 25/05/2022**
II. **Tender Id : 2022_SECL_244943_1**
III. **Bid Id :825056**

Dear Sir,

With reference to above, this is to communicate the approval of the Competent Authority for award of the subject work to you for an amount of **₹ 1,34,77,901.00 (Rupees one crore thirty four lakh seventy seven thousand nine hundred one)** only inclusive of Goods and Service Tax (GST) with following bifurcation:

Sl. No.	Description	Amount. (₹)
(i)	**Quoted Offer without Goods and Services Tax (GST) component [Cost To Company(CTC) being a case of "Input Tax Credit (ITC) Available]**	**1,14,21,950.00**
(ii)	Goods and Service Tax **@18% on Quoted Offer**	**20,55,951.00**
(iii)	**Total Award Value including Goods and Service Tax (GST) [(i) + (ii)]/Total Contract Price**	**1,34,77,901.00**
(Rupees one crore thirty four lakh seventy seven thousand nine hundred one)		

This Letter of Acceptance (LOA is subject to the following terms and conditions.

1. **PERFORMANCE SECURITY DEPOSIT (PSD):**

(a) An amount of **₹ 2,36,100.00 (Rupees two lakh thirty six thousand one hundred)** only deposited ONLINE through AXIS Aggregator Bank Net banking **(Bank Number/UTR No. 107880150 & ePRN No. 253035825056),** is being adjusted as a part of Performance Security Deposit (PSD).

[illegible] ₹ 1,34,77,901.0d (Rupees one crore thirty four lakh seventy seven thousand nine hundred one) only] within 21 (Twenty-One) days of issuance of LOA as per Clause No 4 (Security Deposit of General Terms & Conditions of Contract)

(b) Performance Security Deposit (PSD) as mentioned at (a) above may be deposited in any of the form given below

- Demand Draft drawn in favour of **South Eastern Coalfields Limited, Gevra Area** on any Scheduled Bank payable at its Branch at **Gevra (C.G.)**.
- Govt. Securities or FDR duly pledged in favour of **South Eastern Coalfields Limited Gevra Area.**
- Bank Guarantee in **SFMS (Structured Financial Messaging System)** mode from any Scheduled Bank in the prescribed format as given at **Annexure-V** of bid document. The BG issued from outstation Bank should be operative at its local Branch at **Bilaspur (C.G.)** or at their branch at **Kolkata (if the issuing bank does not have any branch at Bilaspur)**
- The Bank Guarantee (BG) issued by the issuing Bank on behalf of contractor in favour of "South Eastern Coalfields Limited" shall be in paper form as well as issued under **"Structured Financial Messaging System (SFMS)"**.The details of Beneficiary Bank for issue of BG under SFMS Platform have been mentioned under Cl. No.4 of General Terms & Conditions of Bid Document. Performance Security Deposit (PSD) submitted in the form of BG shall be valid for a period of **one year or 90 days beyond the period of Contract/extended Contract period (if any), whichever is more.**

  Failure to comply with the requirement as above shall constitute sufficient ground for cancellation of the award of work and forfeiture of EMD. Additionally, you will not be allowed to participate in the re-tendering process and you also be debarred from participating in future tenders in SECL for a minimum period of **12 (Twelve)** months.

(c)That all Running on Account bills shall be paid at 95 % (ninety five percent) of the executed work value. The balance **5 % (Five Percent)** shall be treated as Retention Money and will be second part of Security Deposit.

2. **GOODS & SERVICE TAX :**

(i) **Applicable.**
(ii) **Input Tax Credit is Available to SECL.**
(iii) In the event of recovery of any claim towards LD Charges, Penalty, fee, fine or any other charges from the contractor, the same will be recovered along with the applicable GST and the amount shall be adjusted with the payment to be made to the contractor against their bill/invoice or any other dues.

3. **PERIOD OF COMPLETION:**

That the work should be completed within a period of **180 (One hundred eighty days)** from the date of commencement which shall be reckoned from the **10th day of issue of this LOA or from 7th day of handing over of the site,** whichever is later.

4. **PRICE VARIATION CLAUSE :**

Price Variation Clause [Cl No.2] of Additional Terms and Conditions of Contract is **Not APPLICABLE** for this contract.

5. **ELECTRICITY:**
You will arrange necessary electricity at your own cost for the work and your own establishment. However, if available and feasible the company may arrange electricity at one point near the work.

6. **WATER:**

You will arrange necessary water for the work and your own establishment and nothing extra will be paid for the same. Such water used by you shall be fit for construction purposes. However if available and feasible the company may arrange water, on your written request, to the extent possible, at one point near the work site for which recovery @ **1%(One Percent)**of the contract value of work done will be made from your bills. You will make your own arrangement of water connection and laying of pipe lines from main source of supply. Department do not guarantee to maintain uninterrupted supply of water. No claim of damage or refund of water charges will be entertained on account of such break down.

7. **EMPLOYMENT OF LABOUR :**

(a) That you have to make payment to the labours engaged by you for this work as per Minimum Wages fixed by Central/State Govt.(higher) as per Minimum Wages R&A Act 1970or minimum wages recommended by High Power Committee of CIL(for labours engaged in mining activities), as applicable.

(b) The payment to the contractor's labourers has to be made through Bank only and necessary payment certificate shall be obtained from the authorized representative of the department.

(c) That the payment of Provident Fund for the workmen employed by you for the work as per the Laws prevailing under provision of CMPF/EPF and allied scheme valid from time to time shall be your responsibility. You will also submit statutory returns.

(d) That you have to comply with statutory requirements of various acts including Child Labour (Prohibition & Regulation) Act, 1986 as mended from time to time and all rules, regulations and schemes framed there under from time to time in addition to other applicable labour laws. If it is reported and proved that child labour is engaged by you, then you will be penalized 10% of the contract value and will be blacklisted.

(e) That you have to follow other guidelines as incorporated at Clause No.13 of General Terms & Conditions of NIT covered under Additional Responsibilities of the Contractor(s).

(f) Bonus is to be paid to the contract workers engaged by the Contractor as per the provisions of Payment of Bonus Act, 1965.

(g) The contractors shall register themselves on the Contract Labour Payment Management Portal (CLPMP) of CIL within 30 days of issue of work order and will have to enter and update periodically the following details in the portal :
(i). Work Order details
(ii). Contractor workers details and Wages payment details in respect of each Work Order.

(h) **Coal Mines Pension (Amendment) Scheme, 2018**

(A) In consideration of changes in statutory provisions, CMPF (Coal Mine Provident Fund) /EPF (Employee Provident Fund) Contribution is to be deducted **@12% (Twelve Percent)** as both Employer & Employee Share. Hence, Employers (SECL in present case) share of CMPF/EPF Contribution **@12% (Twelve Percent)** has been loaded as input in minimum wage while formulating the proposal/estimate. Hence, the contractor shall pay the employer's share i.e. **12% (Twelve Percent)** towards CMPF/EPF contribution to the labour who have been engaged in the work. No reimbursement shall be made to the contractor on this account.

(B) In consideration of changes in statutory provisions, CMPS (Coal Mine Pension Scheme) Contribution is to be deducted **@7% (Seven Percent)** as both Employer & Employee Share. Hence, Employers (SECL in present case) share of CMPS Contribution **@7% (Seven Percent)** has been loaded as input in minimum wage while formulating the proposal/estimate. Hence, the contractor shall pay the employer's share i.e. **7% (Seven Percent)** towards CMPS contribution to

Attendance of Contractors' Workers through Bio-metric Attendance System:

The attendance of all the employees/workers engaged by Contractors' is to be marked through Biometric Attendance System only.

8. **ALR & AHR ITEMS:**

That in accordance to the provisions under Clause No.5.6 of 'Conditions of Contract' of the NIT document, the rate quoted by you for the following items will be treated as **Abnormally Low Rate (ALR) and Abnormally High Rate (AHR) Items** for the work as per BOQ (Bill of Quantity) in tender.

ALR ITEMS: **1.01 to 1.06**

AHR ITEMS: **NIL**

That **'Additional Performance Security (APS)' Deposit** is ₹ **NIL (Rupees NIL)**, as per letter No. स.ख.(वित्त) / एसईसीएल / बीएसपी / 2021-22 / H/152 DT 04.02.2022, issued by GM(C/HOD, having salient features with provision of no Earnest Money Deposit (EMD), 3% Performance Security Deposit (PSD) and no Additional Performance Security (APS).

9. **INSURANCE POLICY**

That you have to take necessary insurance for the full contract period for **(i).Workmen Compensation & (ii).Contractors All Risk (CAR) Policy, in the joint name of South Eastern Coalfields Limited and the Contractor** as per Clause No.13 (xvii) of General Terms & Conditions of NIT. The Policies and certificates for insurance shall be delivered by you to the Engineer-in-Charge for his approval before commencement of the work.

10. **SAFETY MEASURES:**

That the Precautions shall be exercised at all times by you for the protection of persons (including employees) and property. The safety required or recommended by all applicable laws, codes, statutes and regulations shall be observed by you. In case of accident, you will be responsible for compliance with all the requirements imposed by the Workmen's Compensation Act or any other similar laws enforce and indemnify the Company against any claim on this account.

11. **WORKER'S WELFARE CESS:**

That an Amount of **1% (one percent)** of the work value payable to you will be deducted from all Bills towards the worker's welfare under "The Building and Other Construction Worker's Welfare Cess Act,1996" and "The Building and Other Construction Worker's Welfare Cess Rules,1998" **(as applicable in the State).**

12. That all other terms and conditions as given in the tender document shall also be binding on you.

13. That matters relating to any dispute or differences arising out of this work order and subsequent contract agreement entered, based on this tender and work order shall be subject to the jurisdiction of **District Court, Korba (CG)** only.

14. That as per Clause No.6 under General Terms & Conditions of Contract, you have to submit a detailed time and progress chart prepared based on Bar Chart/ PERT-CPM techniques on the basis of

15. That as per Clause No.1 (vii) of General Terms & Conditions of Contract, the Engineer-in-Charge for this work will be **Dy General Manager (Civil), Gevra Project, Gevra Area.**

16. That the Paying Authority for this work will be the **Area Financial Manager", SECL, Gevra Area.**

17. That you have to submit the following documents and to attend this office for signing the agreement within **21 (Twenty-One)** days of issue of this LOA/Work Order.

    i. An amount of **₹ 1,58,237.00 (Rupees one lakh sixty eight thousand two hundred thirty seven)** only towards Performance Security Deposit **(PSD)***[as per Cl. No. 1 (a) of LOA]*.
    ii. An amount of **₹ NIL (Rupees NIL)** only towards Additional Performance Security Deposit **(APSD)***[as per Cl. No. 8 of LOA]*.
    iii. Non Judicial Stamp Paper of **Rs.100.00 (One Hundred)**
    iv. Site handover and takeover certificate, jointly signed by Engineer-in-Charge and the Contractor.
    v. Labour License as per Contract Labour (Regulation & Abolition) Act, 1970.
    vi. Insurance Certificates as per Clause No.13 (xvii) of General Terms & Conditions of NIT.
    vii. CMPF/EPF Registration certificate.
    viii. Detail Time and Progress Chart, jointly signed by Engineer-in-Charge and the Contractor.
    ix. Mandate Form duly signed by you and the Bank Officials for e-Payment as per Clause No. 24.1 of Instruction to Bidder of NIT.
    x. List of Technical & Supervisory Personnel to be deployed for Execution of the work.

18. **Time bound completion of work along with quality assurance to be ensured strictly. All statutory payments including Minimum Wages, Bonus and PF to be ensured as per rule/regulations.**

Note-: The date of uploading of this LOA/Work Order on e-Procurement Portal (https://coalindiatenders.nic.in) shall be treated as the date of receipt of this LOA/ Work Order by you.

For further instructions, please contact **Dy General Manager (Civil), Gevra Project, Gevra Area.**

Failure to comply clause 17 within 21 days will lead to termination of contract, forfeiture of EMD, additionally the company shall ban such defaulting contractor from participating in future tenders in concerned Subsidiary/CIL HQ for a period of minimum 1 (one) year from the date of issue of such letter*". In case of JV/Partnership firm, the banning shall also be applicable to all individual partners of JV/Partnership firm.

Encl: BOQ

Yours faithfully

14/9

General Manager (Civil)
Gevra Area

Copy to:

1. **ALC**, Torwa Naka, Bilaspur, Chhattisgarh, PIN-495006
2. AFM/GA vide BC No. GA/22-23/DCW/GP/16/56 DT **09.9.2022** For **₹ 40,00,000.00 Input Tax Credit (ITC) is Available to SECL for this work.**
3. **Dy General Manager** (Civil) Gevra Project with an advice to immediately handover the site to the Contractor with intimation to this Office.
4. AFM,GA/ Chief Manager (P),GVR with a request to kindly arrange for issuance of LPC of previous month latest by 10th of next month after proper verification and confirmation of records and to send a copy of the LPC to this office. LPC should be issued every month for which documents should be sought from contractor. LPC should bear the dated signature of issuing Officer & Contractor with seal.
5. Work file

Name of the Work :	Iron fencing with Concertina coil around the mine boundary at Gevra Project	NIT No. SECL/GA/GM(C.E)/N/22-23/05 dt 25/05/2022

Category of Services (To Be Selected by Department)		Category of Bidder (M...)			
ITC Available	Works Contract	Bidder's Status (Mandatory)	Total GST (in Rs.)	GST to be Paid By Bidder (in Rs.)	GST to be Paid By CIL/Subsidiary (in Rs.)
Name of the Bidder/ Bidding	NARENDRA KUMAR SINGH	GST Registered Bidder	2055951.00	2055951.00	0.00

PRICE SCHEDULE

NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	RATE in Figures (in Rs. P)	AMOUNT in Rs. P	AMOUNT in Words
1	2	3	4	6	7	8
1	Item Description/ Heading					
1.01	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 20 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kinds of soil.	182.50	Cum	120.00	21900.00	INR Twenty One Thousand Nine Hundred Only
1.02	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand (zone-III) : 6 graded stone Aggregate 40 mm nominal size).	182.50	Cum	3000.00	547500.00	INR Five Lakh Forty Seven Thousand Five Hundred Only
1.03	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	151700.00	Kg	64.00	9708800.00	INR Ninety Seven Lakh Eight Thousand Eight Hundred Only

	(cont'd) tape (R.B.T.) of 600 mm dia (2 metre operative length) (Total length 30 m), having 30 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'T' shaped abded 3 4m or 5.30 m apart and with 6 nos coctal R.B.T. reinforced barbed wire, shoulder with G.I. staples and G.I. clips to retain horizontal, including necessary bolts of G.I. barbed wire tied to angle iron all complete as per direction of Engineer-in-charge. with reinforced barbed tape(R.B.T.) / Spring core (2.5mm dia GI wire of high tensile strength of 265 kg/ sq mm with tape (0.52 mm thick) and weight 43 +3% gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)					
1.06	Painting with aluminium paint of approved brand and manufacture to give an even shade Two or more coats on new work	6750.00	Sqm	65.00	438750.00	INR Four Lakh Thirty Eight Thousand Seven
* 06	Providing and fixing bolts including nuts and washers complete.	1500.00	Kg	70.00	105000.00	INR One Lakh Five Thousand Only
	Total work value in figure		Rs		11421950.00	INR One Crore Fourteen Lakh Twenty One Thousand Nine Hundred & Fifty Only
	GST applicable CGST+SGST (ITC AVAILABLE)		Rs		2055951.00	
	Total awarded value in figure		Rs		13477901.00	
	Total awarded value in word	**INR One Crore Thirty Four Lakh Seventy Seven Thousand Nine Hundred & One Only**				

General Manager (Civil)
SECL, Gevra Area

ANNEX - 2

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइंडियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन:495453

STD : 07815(275436(O)
7815 275913(R)
Fax : 07815 275454
email: gevraarea@gmail.com

पोआफिस:गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र.वे.क्षे./ पर्यावरण/2024/ 129 (L) दिनांक 19/08/2024

VACHAN- PATRA 12
(94.293 HA. FOREST LAND)
(CONDITION NO.26)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The angle of repose in OB dumps shall be maintained to ensure stability and safety."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

1

ANNEX-21

SEEPAT ROAD
P.O : SECL
BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा (छत्तीसगढ़)
पिन 495452

STD 07815 275430(O)
: 7815 275052(R)
Fax : 07815 275434
email : gevraeov@gmail.com

पो.आफि:गेवरा प्रोजेक्ट
P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495452

क्रमांक/एस ई.सी.एल.एच/गे.क्षे./पर्यावरण/2024/149(M) दिनांक 19/08/2024

VACHAN- PATRA 13
(94.293 HA. FOREST LAND)
(CONDITION NO. 27)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"Vetiver grass shall be planted at the lower reaches of the dump to bind the soil and prevent soil erosion giving better stability to the dump."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

SOUTH EASTERN COALFIELDS LIMITED
GEVRA AREA
STATUS OF TECHNICAL & BIOLOGICAL LAND RECLAMATION DETAILS OF GEVRA PROJECT AS ON 01.07.2024

Name of Area	Name of Unit	Approved EC Capacity (MTY)	TECHNICAL & BIOLOGICAL RECLAMATION: INTERNAL DUMP / BACKFILLED AREA DETAILS (in Hect.)								EXTERNAL OB DUMPS DETAILS (in Hect.)					Total Reclaimed area	
			Total Crediable area of the project as per approved EMP(70MTY) (Hect.)	Void be left at the closure of the project as per approved EMP(70MTY) (Hect.)	Total Area excavated as on 01.07.2024 (Hect.)	Promise area not required to be Backfilled (Hect.)	Total area technically reclaimed /backfilled as on 01.07.2024 (Hect.) OB/Dump	Balance area to be Technically reclaimed/ backfilled as on 01.07.2024 (Hect)	Area already biological reclaimed as on 01.07.2024 (Hect.)	Balance area to be Biologically reclaimed as on 01.07.2024 (Hect)	Total area of External OB dump as on 01.07.2024 (Hect.)	Area of Ext. OB dump technically reclaimed OE as on 01.07.2024	Balance area ext. OB dump to be technically reclaimed as on 01.07.2024	Area already biologically reclaimed as on 01.07.2024	Balance area to be biologically reclaimed as on 01.07.2024	Total Technically reclaimed as on 01.07.2024	Total Biologically reclaimed as on 01.07.2024
A	B	C	D	E	F	G=E-D	H	I=F-H	J	K=F-H	L	M	N=L-M	O	P=L-O	I+M	J+O
Gevra area	Gevra OCP	70.00MTY	2007.250	699.250	1822.593	599.787	977.100	266.765	137.600	1096.208	374.331	374.331	0.000	367.250	7.131	1351.431	504.850

NOTE: F= 1816.663+5.930 =1822.593
H= 968.605 + 8.495 = 977.100
J= 137.600+0.00= 137.600

GENERAL MANAGER
GEVRA PROJECT

DY.GM/COLLERY MANAGER
GEVRA PROJECT

ENVIRONMENT OFFICER
GEVRA PROJECT

DY.MANAGER(SURVEY)
GEVRA PROJECT

NODAL OFFICER (ENV/FOREST)
GEVRA AREA

AREA SURVEY OFFICER
GEVRA AREA

GENERAL MANAGER
GEVRA AREA

ANNEX-26

ANNEX - 27

सत्यमेव जयते

File No.: J-11015/85/2010-IA-II(M)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division
***

NOTARY
Chandrakanta Rathore
Tehsil Kanbilaspur
Dist. Gr.15
Kanbilaspur
11/15-1046
GOVT. OF CHHATTISGARH

Dated 05/03/2024

To,

Shri Swarup Kumar Mohanty
M/s SOUTH EASTERN COALFIELDS LTD
Post Box No. 60 Seepat Road Bilaspur Chhattisgarh , BILASPUR, CHHATTISGARH, SECL HQ, 495005
seclforest@rediffmail.com

Subject: **Expansion of Gevra Opencast Coal Mine from 52.5 to 70 MTPA with increase in ML area from 4184.486 to 4781.798 ha of M/s South Eastern Coalfields Limited located in Tehsil- Katghora, District- Korba (Chhattisgarh) - For Environmental Clearance-reg.-regarding**

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number **IA/CG/CMIN/443111/2023** dated 16/01/2024 for grant of prior Environmental Clearance (EC) to the project under the provision of the EIA Notification 2006 and as amended thereof.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC23A001CG5112038N
(ii) File No.	J-11015/85/2010-IA-II(M)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vi) Sector	Coal Mining
(vii) Name of Project	Gevra Opencast Expansion Coal Mines
(ix) Location of Project (District, State)	KORBA, CHHATTISGARH
(x) Issuing Authority	MoEF&CC
(xii) Applicability of General Conditions	No

3. The proposal is for Environmental Clearance for Expansion of Gevra Opencast Coal Mine from 52.5 to 70 MTPA with increase in ML area from 4184.486 to 4781.798 ha of M/s South Eastern Coalfields Limited located in Tehsil Katghora, District Korba (Chhattisgarh).

4. The project/ activity is covered under category "A" of item 1(a) 'Mining of Minerals' the schedule of the EIA

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Notification 2006 as the mining lease area is more than 500 Ha.

5. Above proposal for EC was considered by the EAC in its 6th meeting, held on 17th Jan 2024. Project Proponent alongwith QCI/NABET EIA consultant made the detailed presentation and interalia apprised following to the committee:

(i) The project area is covered under Survey of India Topo Sheet No. 64 J /11, Scale- 1:50000) and is bounded by the geographical coordinates ranging from 22018'00" to 22021'42" N and 82032'00" to 82039' 30" E.

(ii) ToR for 49 to 70 MTPA for mining of coal in leasehold area of 4781.798 Ha. (increase in leasehold area from 4184.486 Ha to 4781.798 Ha) was granted on 07.03.2022 and amended ToR for 52.5 to 70 MTPA granted on dated 09.01.2023.

(iii) Public hearing for the project of 70 MTPA capacity in an area of 4781.798 ha was conducted on 06/06/2023 in the premises of SECL Gevra OCP, Urja Nagar. Major issues raised in the public hearing include compensation, Rehabilitation & resettlement, Facilities at R&R sites, pollution control etc. Appropriate action to address the issues raised in the Public Hearing has already been taken/are being taken & a budgetary provision of Rs 15.15 Crore has been made.

(iv) No National Parks, Wildlife Sanctuaries and Eco-Sensitive Zones have been reported with 10 km boundary of the project. Schedule I species do not exist in the study area. However, Wildlife conservation plan has been made through State Forest Research & Training Institute Raipur. The Wildlife conservation plan will be implemented through State Forest Department. An amount of Rs. 10.09 Cr has been deposited in CAMPA on dated 31.05.2022 for its implementation.

(v) Total Mine lease areas per block allotment is 4781.798 Ha. Project Report along with Mine closure plan for 35 to 70.00 MTPA got approved by CIL Board on 05th March 2016 in its 325th meeting. Revised Mine Plan 52.5 to 70 MTPA along with Mine Closure Plan has been approved in the 197th meeting of the Committee of Functional Directors of South Eastern Coalfields Limited held on 25.10.2023. Coal linkage of the project is proposed for NTPC and Various thermal power plants.

(vi) Instant Expansion proposal of Gevra Opencast Coal Mine from 52.5 to 70 MTPA with increase in ML area from 4184.486 to 4781.798 ha. Additional land required for expansion- 597.312 ha (Agricultural land- 447.08 ha, Govt. land- 55.939 ha and Forest land-94.293 ha). 75% of additional land required is agricultural land. Post mining land use will envisage to bring the land back to its original land use to the maximum extent possible. Total forest land in 4781.798 Ha of ML area is 1110.705 Ha. Stage II FC for 1016.412 Ha of forest land has been obtained. Stage-I FC for balanced forest land (94.293 Ha) was considered in FAC meeting held on 17.01.2024 and Stage-I FC was obtained on 9.02.2024. The land use details of the Mine are as under:

Pre-mining Land Usage: Sr. No.	Land Use	Total (Ha.)
1	Agricultural land	2967.651
2	Forest land	1110.705
3	Waste Land	0
4	Grazing Land	32.879
5	Surface Water Bodies	16.58
6	Settlements	0
7	Others (Specify) Govt. Land	653.983
	TOTAL	4781.798

Post Mining:

Sr. No.	Land Use	Land Use (Ha.)				
		Plantation	Water Body	Public Use	Undisturbed	Total
1	External OB Dump	480				480
2	Excavation	1282.85	1347.5			2630.35

5 M[illegible] 2024

3	Top soil Storage (05ha included in excavation)	5				5
4	Roads			6		6
5	Built-up area (Colony/office/R&R site Infrastructure,)			1243.062		1243.062
6	Green Belt	417.386				417.386
7	Undisturbed area					
Total	Total Area	2185.236	1347.5	1249.062	0	4781.798

Post-Mining Land Use:

Sr. No.	Pattern of utilization	Area (ha)
1	Reclaimed External and Internal dumps	1762.18
2	Green belt	5.67
3	Final void /Water body	1347.5
4	Built up area (Infrastructure, colony, roads, R & R site)	1249.062
5	Safety zone: Undisturbed area	417.386
	Total	4781.798

GOVT. OF CHHATTISGARH NOTARY Chandrakanta Rathore Tah. Hardibazar RN.C.G.115 Hardibazar 7/11/5/10/16

(vii) Total Geological reserve as per approved PR 70MTPA (As on 01.04.2014) is 1940.98 MT. Total mineable reserve within 4781.798 Ha (as on 01.04.2023) is 951.481 MT. No of seams: 18, Thickness of seams to be worked on: 0.70 m to 70.34 m. Grade of coal: G10 grade. Stripping ratio (mineral in tonnes to overburden in cum): 0.617 tonne per cum (1:1.62). Average gradient: 1 in 6 to 1 in 12. Maximum thickness of seams: 70.34 m. Ultimate working depth: 340 m. Transportation from face to In-pit conveyor belt is by Trucks (inside mine only). In pit conveyor belt to Silo by belt conveyor and Silos to consumers by Rail. Life of mine will be 16 years starting from FY 2022-23.

(viii) The total cost of the project is Rs. 11816.40 Crores. Cost of production is Rs. 566.02 /- per tonne. 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. 2.00 per tonne of coal production of previous year, whichever is higher. R&R cost is Rs. 564.44 crores. Environment Management Cost is Rs. 205 crores (Capital) and Rs 55.51 Cr (Revenue Cost).

(ix) Benefit: 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. Employment to 4391 persons will be provided from the project.

6. Proposal was considered by the EAC in its 6th meeting held on 18.01.2024. EAC after detailed presentation, deliberated on Public hearing issues with budgetary provision, mine lease details, action taken by the PP on Korba action plan, baseline environment, pending court cases, R&R plan. The Committee also deliberated on the compliance of previous EC conditions. Also, the Committee is of the view that PP has obtained CGWA permission for 8334 m3 and is valid till 3.12.2024 but PP in future PP shall take proactive steps for its renewal. Further, the water requirement for the project was mentioned as 16688 m3/day including 13087 m3/day for which CGWA approval is required. Therefore, the PP shall obtain the permission for the same or restrict the water utilization to 8334 m3/day. Detailed observations of the EAC are given in the proceedings of the committee available on the parivesh portal. Based on the discussions & deliberations held, EAC has recommended the Environmental Clearance for expansion of Gevra Opencast Coal Mine from 52.5 to 70 MTPA with increase in ML area from 4184.486 to 4781.798 ha (subject to FC approval) of M/s South Eastern Coalfields Limited located in Tehsil- Katghora, District- Korba (Chhattisgarh) with the certain specific conditions and standard EC conditions (Annexure-I) under the provisions of EIA Notification, 2006 and its amendments.

7. The MoEF&CC has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the EAC hereby accords Environmental Clearance to M/s South Eastern Coalfields Limited for expansion of Gevra Opencast Coal Mine from 52.5 to 70 MTPA with increase in ML area from 4184.486 to 4781.798 ha (subject to submission of Stage I FC approval) located in Tehsil- Katghora, District- Korba (Chhattisgarh) with the specific conditions and standard EC conditions (Refer: Annexure-I) under the provisions of EIA Notification, 2006 and its amendments. This EC supersede the earlier granted ECs.

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8. 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 prosection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

9. The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

10. The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of EIA/EMP report and this EC as Annexure 2.

11. 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.

12. 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 & others.

13. The concerned State Government shall ensure no mining operations to commence till the entire compensation for illegal mining, if any, is paid by the project proponent through their respective Department of Mining & Geology, in strict compliance of the judgment of Hon'ble Supreme Court. This environmental clearance shall not be operational till such time the project proponent complies with the above said judgment of Hon'ble Supreme Court, as applicable, and other statutory requirements.

14. General Instructions:

(i) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC website where it is displayed.

(ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.

(iii) The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.

(iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

(v) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(vi) The Regional Office of this MoEF&CC 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 /

NOTARY CHHATTISGARH

5 MAR 2024

information/monitoring reports.

15. This issue with an approval of the Competent Authority.

NOTARY Chandrahanta Rathore Tah. Hardibazar RM.C.G/15 Hardibazar 11/15/10/16 GOVT. OF CHHATTISGARH

Copy To

1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
2. Deputy Director General of Forests (C),Ministry of Environment, Forest and Climate Change,Integrated Regional Office, Ground Floor, Aranya Bhawan, North Block, Sector- 19,, Naya Raipur, Atal Nagar, Chhattisgarh – 492002
3. The Chairman, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi
4. The Regional Director, Central Ground Water Board, Central Ground Water Board, North Central Chhattisgarh Region, Reena Apartment, 2nd Floor, NH 43, Dhamtari Road, Panchpedi Naka,Raipur- 492001, Chattisgarh
5. The Chairman, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Atal Nagar Dist- Raipur(C.G.)492002.
6. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Atal Nagar Dist- Raipur(C.G.)492002
7. The District Collector, Korba, Government of (Jharkhand)
8. PARIVESH Portal

Annexure 1

Specific EC Conditions for (Mining Of Minerals)

1. Specific Conditions:

S. No	EC Conditions
1.1	*PP to comply the outcome of the court case number 834/2021 pending before Hon'ble Supreme Court and case number 121/2007 pending before Judicial Magistrate Katghora and any other court cases.*
1.2	*PP shall submit the proposal for next expansion only after the compliance of all its Existing EC conditions.*
1.3	*PP shall implement the protective measure proposed in EMP in a time bound manner. The budget earmarked for the same is Rs 205 crores (Capital) and Rs 55.51 crores(recurring) and should be kept in separate account and audited annually. The implantation status along with amount spent with documentary proof shall be submitted to concerned Regional Office for the activities carried out during the previous year.*
1.4	*Mining shall be carried out only by Surface Miners for the project. Presently 04nos. Silos (1&2, 3&4-Capacity-25MTPA) with rapid load out System (20 MTPA) for transportation of Coal through rail are in operation. As proposed PP shall complete mechanized system for additional 30 MTPA (Silo 5 & 6) capacity of coal handling before Oct 2024 and status report be intimated to RO MoEF &CC.*
1.5	*PP shall conduct feasibility studies for assessment of voids for backfilling of ash and mixing of ash*

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S. No	EC Conditions
	with overburden, taking up backfilling Ash and OB mixing activities during operations as well as post closure of mines in line with fly utilization notification 2021.The study being conducted by NIT Rourkela for 7 mines of SECL including Gevra shall be completed and report shall be submitted to RO MoEF&CC. The percentage of voids should be reduced to not more than 30% of the total area.
1.6	*Digital processing of the entire lease shall be through remote sensing techniques should be done regularly once in 3 years for monitoring land use pattern and report submitted to MOEF and its Regional Office at Raipur.*
1.7	*The project proponent shall obtain the necessary permission from the Central Ground Water Authority for ground water abstraction. No groundwater shall be used for mining operations without valid CGWA NOC. Also the project proponent shall obtain the necessary permission from the state/irrigation department for the use of surface water from river/nallha. Further, the water consumption should be restricted to the level for which permission has been obtained from CGWA/ Irrigation department as the case may be.*
1.8	*Environmental laboratory should be established with adequate numbers and type of pollution monitoring and analysis equipment in consultation with the state Pollution Control Board. Internal Environment Management division shall be strengthened and details submitted to IRO.*
1.9	*No mining operations shall be undertaken in Forest land, until forestry clearance has been obtained under the provisions of FC Act, 1980.*
1.10	*OB shall be stacked at the earmarked external OB dumpsite of 480 ha within ML area for the opencast operations of a maximum height of 90m consisting of 3 benches of 30m each. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of existing reclaimed dumpsites including slope stability shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional office located at Raipur on a yearly basis.*
1.11	*An afforestation plan covering an area not less than 2185.236 ha shall be implemented, which includes backfilled area (1287.85 ha) and ext. OB dump (480 ha), along ML boundary, green belt along roads, infrastructure (1249.062 ha), safety zone (417.386 ha), undisturbed/vacant land by planting native species in consultation with the local DFO. The density of the trees shall be around 2500 plants per ha. PP should annually submit the audited statement of expenditure along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC and on PARIVESH Portal as the case may be for the activities carried out during previous year.*
1.12	*Backfilling shall start by the 1st year of expansion operations. Of the total 2635.35 ha of the quarry area, an area of 1287.85 ha of excavated area shall be reclaimed with plantation/afforestation by planting native plant species in consultation with the local DFO. The density of the trees shall be around 2500 plants per ha. The balance 1347.50 ha of de coaled the void left for further expansion on the dipside shall be converted into a water reservoir, shall be gently sloped and the upper benches of the reservoir shall be stabilised with plantation and the periphery of the reservoir*
	ETP shall also be provided for treatment of effluents from workshop (1305 m3/d) and an STP shall

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S. No	EC Conditions
	be provided for treating wastewater (2881 m3/d) from the township with all dwelling units and the treated effluents shall be used for green belt development. An estimated 13087 m3/d (97.85 %) of the total 13375 m3/d of wastewater (mine pumped out water) generated from the mine would be treated and recycled for mine operations and the balance 3168 m3/d of wastewater (Excess mine water - waste water from DETP) shall be treated to prescribed standards before discharge into the surface waters/agricultural use.
1.14	*Besides carrying out regular periodic health check up of their workers, 10% 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. Further, PP shall engage an agency such as NIOH, Ahmedabad to review the status of implementation of occupational health plan and suggest corrective measures.*
1.15	***PP shall implement the action plan submitted for addressing the issues raised during Public Hearing. The budget earmarked for the same is Rs. 15.15 Cr (Annexure 2). The budget earmarked for the same shall be kept in a separate account and audited annually. In addition to this PP shall provide mobile medical units and ambulance facility for locals, provide the modern science lab to near schools and sports facility too. The Committee is of the view that skill development programme should be linked with the employment potential and a record of the same shall be maintained regarding to ascertain whether the skill development plan is effective enough or not to enable the local persons to get employment after the training, in case if it is required that skill program needs to be changed as per present & future requirement than PP shall do so. PP shall submit the activities carried out and amount spent along with documentary proof to concerned Regional Office for the activities carried out during the previous year.***
1.16	***Establishment of smart classes shall be completed within a period of one year after grant of EC.***
1.17	***PP shall prepare and implement a plan in a period of one year that how the existing water requirement for the project can be reduced further and how the excess water collected by various means including rainwater harvesting measure can be treated and supplied for the public use. The work of development of ECO Park at Gevra Area shall be completed within a period of one year. PP shall ensure to increase the water supply including availability of drinking water in the nearby area and water ATM can be setup at public places.***
1.18	***PP shall continue to provide proper medical facilities as proposed during the meeting, to the local people residing in the close vicinity of the project area and also to the project affected peoples. PP shall keep the provision for providing financial assistance for the critical illness such as cancer, kidney/liver failure etc. on cases to case basis. PP shall ensure to provide ambulance facilities for the general public particularly in the remote areas and a helpline in this regard may also be created.***
1.19	*A detailed Plan for CSR with specific budgetary allocation (capital and revenue) for various skill development and alternate livelihood programmes and schemes and implemented through establishment of cooperatives and SHGs shall be implemented. CSR activities shall not overlap for the villages falling in the study area of the coal mine projects located in the study area. The fund for CSR shall be provided as per companies act & CSR policy of the company. "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. 2.00 per tonne of coal production of previous year whichever is higher". PP shall expedite the implementation part for the ongoing and proposed activities. Establishment of smart classes shall be completed within a period of one year after grant of EC.*

NOTARY Chandrakanta Rajbhar Ten. Hathitasar Raj.C.G/15 Hathitasar 1/15/10/16 GOVT. OF CHHATTISGARH

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S. No	EC Conditions
1.20	*Tribal Development Plan for the tribals shall be prepared as part of CSR. A detailed pre-project survey shall be carried on the socio economic status of the local communities living in the villages near the project area before start of the mining operation based on a scientific methodology based on UND Human Development Index and monitoring the impact of project on the socio-economic and human development of the local communities, which shall be used as a base-line data for monitoring the progress of the status of human and socio-economic development in the area during and after the project life which is reflected in their Annual Report of the company and is also furnished as part of the Monitoring Report submitted to MOEF.*
1.21	*R&R shall be not less than the norms prescribed in National R&R Policy 2007/State R&R Policy/CIL Policy whichever is higher. R&R for a cost of not less than Rs. 564.44 crores for the PAFs shall be completed within an agreed time schedule.*
1.22	*The maximum production from the mine at any given time shall not exceed the limit as prescribed in the EC.*
1.23	*PP shall submit action plan for using and developing Renewable Energy for its consumption in its utilities/machinery/equipment's instead of using electricity from Grid/generated from Thermal Power Plants.*
1.24	*PP shall conduct physical and strength analysis within a period of two years and accordingly propose to install Sand Segregation Plant.*
1.25	*PP shall obtain 5-star rating in terms of Environment Compliance from Ministry of Coal as per rating system implemented by Ministry of Coal.*
1.26	*In addition to the existing CAAQMS, PP shall install the two additional CAAQMS out of which one should be in downwind direction. Further, the location of all the CAAQMS existing as well as proposed shall be in consultation with CPCB/SPCB.*
1.27	*PP shall display data of CAAQMS by online information/Display system at gate of Gevra OCP and link with company website and with Chhattisgarh Environment Conservation Board.*
1.28	*Haul road from mine operation site till conveyor system shall be provided with fog cannons and water sprinklers to reduce fugitive dust.*
1.29	*PP shall submit carrying capacity of the area from reputed institutes for its proposed production of 70 MTPA from Gevra on a regular interval of 3 years & submit status report to IRO MoEF&CC.*
1.30	*The embankment constructed along the river boundary shall be of suitable dimensions and critical patches shall be strengthened by stone pitching on the river front side and stabilized with plantation areas to withstand the peak water flow and prevent mine inundation.*
	There shall be no overflow of OB into the river Hasdeo and Ahiran river and Khaltar nallh and other first order stream-lets and into the agricultural fields and massive plantation of native species shall be taken up in the area between the river and the project.

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S. No	EC Conditions
1.32	*An estimated 2606.92 Mm3 of OB will be generated during the entire life of the mine. Out of which 219.56 Mm3 of OB will be dumped in seven external OB Dump in an earmarked area covering 480 ha of land 2387.36 Mm3 of OB will be dumped eight internal OB dump in embankment covering an area of 1287.85 ha. The maximum height of external OB dump for hard OB will not exceed 90 m with 3 tier and that for soft OB shall not exceed 60 m. The maximum slope of the dump shall not exceed 28 degrees. Monitoring and management of reclaimed dump sites shall continue till the vegetation becomes self- sustaining and compliance status shall be submitted to MOEF and its Regional Office on yearly basis. Further, PP shall carry out slop stability analysis of the dumps from a recognized institute (IITs/NITs etc.) and implement its recommendations.*
1.33	***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.***
1.34	***The predominant Sal species in the forest area shall be protected, and in case of coal mining operations inevitable therein, compensatory forestation of these species shall be carried out in consultation with State Forest Department.***
1.35	***The project proponent shall obtain Consent to Establish/Operate from the State Pollution Control Boards for the proposed capacity of 70 MTPA prior to commencement.***
1.36	***PP shall ensure to submit the compliance report to Regional Office in a timely manner and in case of any non-compliance identified so far/in future in the CCR then the same shall be complied on priority and action taken report in this regard shall be submitted to conceened RO.***
1.37	***PP shall complete all the mitigation measures for reduction of air pollution proposed during EAC meeting within one year.***
1.38	***Third party monitoring by reputed instituted for air quality shall be carried out at identified locations, both ambient and the process area, to arrive at impact of the proposed expansion at regular interval of 3 years.***
1.39	***Project proponent shall plant 200000 nos. of native trees with broad leaves along the transportation route in three years to prevent the effect of air pollution. After completion of tree plantation, number of trees shall be duly endorsed from District Forest Officer.***
1.40	***PP shall carry out monthly water monitoring quality of Hasdeo and Ahiran River and conduct Bio-assay test half yearly and further monitoring Ground water level***
1.41	***PP should conduct epidemiology study to (analysis of the distribution, patterns and determinants of health and disease conditions in defined populations).***
1.42	*PP shall plant additional 200 ha of Sal trees (only) and create a nursery of 10 ha to distribute the species freely in the region for redevelopment of Sal forest in the region.*
1.43	*Permanent Health care facilities of Hospital should be established within 5 km of project boundary for the local people.*
1.44	*PP shall pay to farmers of agricultural land if there is any loss due to pollution found by concerned District Commissioner as per extent rules or norms.*

NOTARY Chandrakanta Rathore Tah. Hardibazar RN.C.GJ/15 Hardibazar M/15/10/15 GOVT. CHH

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S. No	EC Conditions
1.45	*Domestic water shall be provided to the residents/villages which are coming under the zone of influence of the project due to ground water extraction.*
1.46	*10 nos of Water Harvesting Pond with adequate area and depth shall be development within 5 km of project area.*
1.47	*Adequate facility of drinking water, plantation and other social amenities should be provided to established R&R villages.*
1.48	*Recommendation made in the carrying capacity study shall be implemented for the protection of environment.*
1.49	*Recommendation made for social impact assessment study shall be implemented.*
1.50	*PP shall comply with the direction of Hon'ble Courts and decision of Collector Office or Dept of Geology Mines, Raipur with respect to pending court cases and other issues.*
1.51	*The project proponent shall take all precautionary measures to ensure riverine / riparian ecosystem in and around the coal mine up to a distance of 5 km. A rivarine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation/ water resource department in the State Government.*
1.52	*PP shall implement the recommendation made during the site visit of sub-committee on 5/10/2021.*
1.53	*Work of establishment of the Sal Nursery of 10 Ha area shall be completed by March 2024.*
1.54	*Digital display board shall be installed before April 2024.*
1.55	*The recommendation made by sub-committee during the site visit on 5/10/2021 shall be implemented. Further, Solar Roof top work shall be completed by May, 2024.*
1.56	*PP shall install CCTV camera in all entry and exist points of the mines from where tippers are moved, around coal handling plant, silos, railway siding. The Committee is of the view that PP shall ensure to have transportation route away from the habitation.*
1.57	*PP shall ensure that in case of any injury/accident the workers should be provided proper compensation and treatment and they should be insured as per existing laws as applicable to the project.*
1.58	*The peripheral fencing work shall be continued as per mine progression.*
1.59	*PP shall ensure that plastic waste generated from the mines shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016. In pursuant to Ministry's OM dated 18/07/2022 PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic(SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report inclusive with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.*

NOTARY GOVT. OF CHHATTISGARH Ashutosh Rajhans Raipur Advocate Regd. No. C/213/2015

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S. No	EC Conditions
1.60	*Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India &Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC.*
1.61	***Third party audit of plantations carried out should be got done through a reputed forestry institution of MoEFCC (eg. ICFRE) and report submitted to IRO.***

Standard EC Conditions for (Mining of minerals)

1. Statutory Compliance

S. No	EC Conditions
1.1	**The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.**
1.2	**The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.**
1.3	**The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. TThe implementation report shall be furnished along with the six-monthly compliance report (in case of the presence of schedule-I species in the study area).**
1.4	**The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee prior to start/commencement of mining operations/production**
1.5	**The project proponent shall obtain the necessary permission from the Central Ground Water Authority**
1.6	**Solid/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016/Hazardous & Other Waste Management Rules, 2016.**
1.7	Permission of power supply to be taken from the concerned authority for meeting power demand of the project site.
1.8	The maximum production or peak production at any given time shall not exceed the limit as prescribed in the EC.
1.9	Validity of Environment Clearance is as per life of the mine mentioned in EC letter or 30 years as per EIA Notification, 2006 and its amendments therein

NOTED BY
Chandrakanta Pradhan
Chief Conservator of Forests
RNC & RP
Hariharpur
Sambalpur
GOVT. OF CHHATTISGARH

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S. No	EC Conditions
1.10	All the conditions stipulated in previous Environment Clearance conditions should be strictly complied within certain timeline

2. Air Quality Monitoring And Mitigation Measure

S. No	EC Conditions
2.1	Continuous ambient air quality monitoring stations as prescribed in the statue be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, SO2 and NOx. 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. The new CAAQMS should be installed with expansion.
2.2	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 25th September, 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.
2.3	Transportation of coal, to the extent, if permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water/mist sprinkling/rain gun/ Fog cannon etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM2.5) 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.
2.4	The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring 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.
2.5	PP to install solar lights along the road used for transportation of coal to avoid the accidents at night and also seek its maintenance.
2.6	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.
2.7	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.
2.8	Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating dust parameters.

NOTARY
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S. No	EC Conditions
2.9	Adequate measures on EMP should be analyzed on annual basis to assess the trend of air pollution data from continuous monitoring station and quarterly report shall be generated and submitted with 6 monthly compliance reports to RO, MoEF&CC.
2.10	Effective safeguard measures for prevention of dust generation and subsequent suppression like regular water sprinkling shall be carried out in areas prone to air pollution. The Fugitive dust emission from all sources shall be regularly controlled by installation of required equipment's. It should be ensured that air pollution level confirm to the standards prescribed by the MOEFCC/CPCB
2.11	Adequate number of Fog canon (mist sprayer) shall be installed to reduce the impact of air pollution at dust generating sources with time bound action plan.
2.12	PP should Install Wind breaker/shield arrangement along the railway siding for reducing the dust propagation in upwind direction.
2.13	Post environmental closure third party monitoring by reputed instituted in air quality, water, land & soil etc shall be carried out and analysed with EMP measures at regular interval. A suitable recommendation in this regard, shall be furnished to IRO, MoEF&CC for compliance. The data used for analysis shall be obtained from continuos AQMS, site specific water regime. Also third party shall analyses the implementation of river diversion, meeting to the requirement of project report.
2.14	Comparison of average monthly temperature of pre and post mine operation after obtaining EC shall be elaborated for post three years and a record to be maintain at regular interval.

3. Water Quality Monitoring And Mitigation Measures

S. No	EC Conditions
3.1	The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25th September, 2000 and as amended from time to time by the Central Pollution Control Board.
3.2	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.II (M) dated 27th May, 2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
3.3	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 MOEFCC/RO.
3.4	Monitoring of water quality upstream and downstream of river including pons, lakes, tanks 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.

NOTARY Chandrakanta Tandi Haridbazar RN-613/15 Haridbazar 11/12/2016 GOVT. OF CHHATTISGARH

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S. No	EC Conditions
3.5	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.
3.6	Catch and/or garland drains and siltation ponds in adequate numbers and 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 utilised for dust suppression and green belt development and other industrial use. 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.
3.7	Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
3.8	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 standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP /STP needs to be provided.
3.9	The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
3.10	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/GoI 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 or any other authority as prescribed by the law.
3.11	The project proponent shall take all precautionary measures to ensure riverine/riparian ecosystem in and around the coal mine up to a distance of 5 km. A rivarine/riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.
3.12	Quality of polluted water generated from the operations which include COD and acid mine drainage and metal contamination shall be monitored along with TDS, DO, TSS. The monitored data shall be uploaded on the website of the company as well as displayed at the site in public domain.
	Domestic water shall be providing to the residents/villages which are coming under the zone of influence of the project due to ground water extraction and mining operation by installing adequate number of RO plants with proper supply line and Taps within 2 years
	Necessary technologies for sewage treatment shall be implemented. Construction of Sewage

NOTARY Chandrakanta Rathore Distt. Sitapur R.N.C.G./15 Hardibazar M.P. GOVT. OF CHHATTISGARH

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S. No	EC Conditions
	Treatment Plant with latest technology should be completed within 2 years and treated water shall be reused for plantation. CTE and CTO of STP shall be obtained as per the norms.

4. Noise And Vibration Monitoring And Prevention

S. No	EC Conditions
4.1	Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 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.
4.2	Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
4.3	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.

5. Mining Plan

S. No	EC Conditions
5.1	5- Star Rating is mandatory to obtaine certification as per guidelines of Ministry of Coal
5.2	Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
5.3	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).
5.4	No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980.
5.5	Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.
5.6	PP shall adopt mining method by preferably using surface miners for the project and silo loading through in-pit conveyor should be adopted
5.7	Transportation of coal till Railway Siding shall be developed to avoid transportation through Road

6. Land Reclamation

NOTARY Chandrakanta Rathore Tah. Hardibazar RN. C-35/15 Hardibazar M.P. GOVT. OF CHHATTISGARH

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S. No	EC Conditions
6.1	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 or as notified by Ministry of Environment, Forest and Climate Change(MOEFCC) from time to time shall be submitted to MOEFCC/Regional Office (RO).
6.2	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 diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
6.3	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 MOEFCC/RO.
6.4	Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (8) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
6.5	Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. 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.
6.6	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.
6.7	Top soil should be stored separately at marked area and necessary vegetation shall be maintained to avoid any entrainment of dust
6.8	Progressive backfilling of mine and progressive reclamation of OB dump shall be done
6.9	Active OB Dump should not be kept barren/open and should be covered by temporary grass to avoid air born of particles
6.10	PP shall explore the possibilities of utilization of OB material for different purposes (in

NOTARY Chandrakanta Rajbore Tah. Saraipali Dist. Mahasamund (C.G.) 18 Hardibazar 11/18/10/16 GOVT. OF CHHATTISGARH

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S. No	EC Conditions
	construction of roads/ manufacture of artificial sand, aggregates/ use for farmers etc.)
6.11	All approach roads to mine and all other roads which are in regular use should be black topped. The maintenance of road shall be done by PP in collaboration with state government
6.12	Hon'ble Supreme Court in an Writ Petition(s) Civil No. 114/2014, Common Cause vs Union of India & Ors vide its judgement dated 8th January, 2020 has directed the Union of India to impose a condition in the mining lease and a similar condition in the environmental clearance and the mining plan to the effect that the mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. Compliance of this condition after the mining activity is over at the cost of the mining lease holders/Project Proponent". The implementation report of the above said condition shall be sent to the Regional Office of the MoEF&CC

7. Green Belt

S. No	EC Conditions
7.1	The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic 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.
7.2	Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads. And Plantation should also be carried out in nearby area with consent of forest department and gram panchayat within 10 km radius with its proper maintenance

8. Public Hearing And Human Health Issues

S. No	EC Conditions
8.1	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 & it's RO on six-monthly basis.
8.2	The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel 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 personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.
	All personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.

NOTARY GOVT. OF CHHATTISGARH

06 MAR 2024

S. No	EC Conditions
8.4	Implementation of the time bound 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 time bound 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.
8.5	The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (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'.
8.6	PP to conduct need based assessment survey of the area to for in order to decide the activities to be carried under the CSR and to provide detail of the activity carried out with adequate budgetary provision and time bound action plan.
8.7	PP should conduct epidemiology study to (analysis of the distribution, patterns and determinants of health and disease conditions in defined populations).
8.8	Permanent Health care facilities of Hospital should be established within 5 km of project boundary for the local people.
8.9	PP must ensure an emergency action plan during pandemic in order to provide assistance to the nearby villages located within the 10 km radius buffer zone (If required)
8.10	PP is asked to also identify the rural areas for installation of solar light with its maintenance within the study area of 10 km radius buffer zone within one year
8.11	PP to take measure for installation of Renewable Energy sources in nearby area falling within 10 km radius
8.12	The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day light/night hours
8.13	Adequate facility of drinking water, plantation and other social amenities should be provided to established R&R villages.
8.14	Persons of nearby villages shall be given training on livelihood and skill development to make them employable with its proper records.
8.15	Compensation of the land acquired for the project shall be settled as per the R&R Policy within fixed timeline

9. Corporate Environment Responsibility

NOTARY Chandrakalita Rathore Tah. Hardibazar RN.C.Q./15 Hardibazar /1/15/10/16 GOVT. OF CHHATTISGARH

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S. No	EC Conditions
9.1	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental 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/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders.
9.2	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
9.3	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company 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 implemennition of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
9.4	Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.
9.5	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground. A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis. Any non- compliance or infringement should be reported to the concerned authority

10. Miscellaneous

S. No	EC Conditions
10.1	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
10.2	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
10.3	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
10.4	The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.

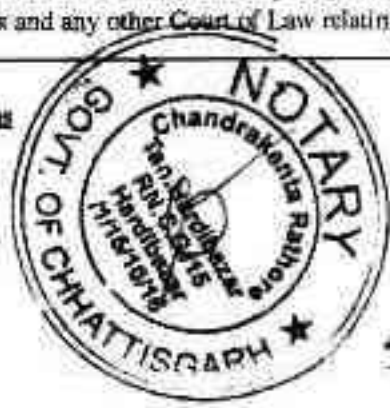
NOTARY Chandrakanta Raut Tah. Hardibazar Dist. C.G./15 Hardibazar 11/18/19/15 GOVT. OF CHHATTISGARH

- 5 MAR 2024

S. No	EC Conditions
10.5	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
10.6	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
10.7	The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.
10.8	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
10.9	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
10.10	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.
10.11	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
10.12	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
10.13	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
10.14	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.
10.15	The above conditions shall 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, Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 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.

Additional EC Conditions

N/A



- 5 ...R 2024

Annexure 2

Budgetary provision for Public Hearing concern and EMP (Capital /Revenue)

(A) Public Hearing concerns in lieu of Corporate Environment Responsibility (CER) is as below:

S. N.	Particular	Location (Name of School/Village/Area)	Year -1(In Lakhs	Year -2 (In Lakhs	Total (in Lakhs)
1	Infrastructure for creation for Drinking Water Supply	Dhurena, Batari, Madwadhora, Chhindpur.	15.00	15.00	30.00
2	Sanitation	Vijay Nagar, Ganga Nagar, Nehru Nagar, Birda.	12.00	15.00	27.00
3	Education	Dhurena, Ranjna, Tiwarta, Chhindpur, Kumunda.	30.00	30.00	60.00
4	Skill Development	Korba District	25.00	25.00	50.00
5	Roads	Vijay Nagar, Ganga Nagar, Nehru Nagar, Kuchena, Birda.	300.00	300.00	600.00
6	Cross drains	Vijay Nagar, Ganga Nagar, Nehru Nagar, Kuchena.	30.00	40.00	70.00
7	Electrification including solar power	Dhurena, Batari, Dewari, Chhindpur, Tiwarta	10.00	10.00	20.00
8	Solid waste management facilities	Dhurena, Batari, Dewari, Chhindpur, Tiwarta	15.00	15.00	30.00
9	Scientific support and awareness to local farmers to increase yield of crop and fodder	Gevra Basti, Khodri, Salora, Pandripani, Barbhata	10.00	10.00	20.00
10	Rain water Harvesting	Gevra Basti, Khodri, Salora, Pandripani, Barbhata	50.00	50.00	100.00

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11	Soil moisture conservation works	Kasaipali, Dewari, Kolihamuda, Korai, Dewgaon	50.00	50.00	100.00
12	Avenue plantation	Ganga Nagar, Dhurena	100.00	100.00	200.00
13	Plantation in community areas	Kasaipali, Dihupara	108.00		108.00
14	Infrastructure	Dhurena, Batari, Dewari, Korai	20.00	20.00	40.00
15	Health Camps	Ralia, Bhilai Bazar, Naraibodh	10.00	10.00	20.00
16	Art, Culture & Sports	Vijay Nagar, Bhilai Bazar, Dhurena, Naraibodh	10.00	10.00	20.00
17	Livelihood	Vijay Nagar, Bhilai Bazar, Dhurena, Naraibodh	05.00	05.00	10.00
18	Agriculture Programme	Chhindpur, Tiwarta, Dewari, Korai	05.00	05.00	10.00
		Total	805	50	1515

The total cost of the project is Rs. 11816.40 Crores. Cost of production is Rs. 566.02 /- per tonne, 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. 2.00 per tonne of coal production of previous year, whichever is higher, R&R cost is Rs. 564.44 crores.

(B) EMP Budget: Environment Management Cost is Rs. 205 crores (Capital) and Rs 55.51 Cr (Revenue Cost). The details are as follows:

Capital Cost:

1	**Air pollution control measures**	**Amount (in cr)**
a	Dust suppression arrangements	4.42
b	Water sprinkling arrangement along approach road	4.00
c	Green belt in & around the mine	1.00
d	Arboriculture/plantation in industrial area	0.10
e	CAAQMS and Piezometers Cost	5.10
f	Horticulture and land development	0.83
	Sub-Total	15.45
	Water Pollution Control Measures	**Amount (in cr)**
a	Effluent treatment plant (ETP)	10.00
b	Sewerage treatment Plant (STP)	5.00
c	Settling tank for mine water disposal	2.00

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d	Garland drains	1.00
e	Other development measures in industrial site viz. drains, tree	7.59
f	Other development measures in colony viz. drains, tree	0.51
g	Water drains in township	0.21
h	Sewage disposal arrangement in colony	1.07
i	Water Treatment Plant	7.40
j	Rain Water Harvesting	0.24
	Sub-Total (2)	35.02
3.	**Other Environmental Control Measures**	**Amount (in cr)**
a	Barbed fencing for the project	1.50
b	HEMM for Reclamation	133.39
c	Housing personnel	3.82
d	Flora and fauna study	0.30
e	Cost of EMP preparation	0.50
	Sub-Total (3)	139.51
	GRAND TOTAL	189.98
4	Additional Capital Expenditure (proposed in EMP of 52.5 to 70 MTPA)	**Amount (in cr)**
a	Green belt between residential area and mine (2 km)	7.0
b	Tyre washing arrangement (additional 2 no.)	1.0
c	Sprinkler system with mist spray in CHP/Transfer points and enclosure system for coal unloading facility	1.0
d	Additional Rainwater harvesting measures	0.5
e	Noise protection personal equipment like ear muff/plug and other measures like Acoustic Panel Technology Noise barrier, etc	1.0
f	Integrated Continuous effluent monitoring system with real time tracking and server linkage	2.02
g	Miscellaneous Environmental Control measures as per EC conditions/Issues raised during Public hearing	2.5
	Sub-Total (4)	15.02
	Total Capital Cost	**205.0 crores**

Revenue Cost:

1	**Revenue Expenditure Related To Environment (As Per Approved Pr-70 MTPA)**	**Amount (in Cr)**
a	Environment Audit @ 0.60 lakhs/annum	0.006
b	Environment monitoring @10.00 lakhs/annum	0.10
c	Mine closure cost* (*Revised first year mine closure cost- 22.12 crores)	18.65
d	Monitoring of CSR and RR Plan	0.02
e	Monitoring of land use through satellite surveillance	0.02
	Sub-Total (1)	**18.97**
2	**Additional Revenue Expenditure (Proposed In EMP of 45 To 49 MTPA)**	
a	Mist Blower (Fog Cannon) cum road Fogger	0.60
b	Mechanized Sweeping machine	0.50
c	Mobile Water Sprinkler	0.45
d	Periodic Health Checkup	0.50

GOVT. OF CHHATTISGARH

5 MAR

	Sub-Total(2)	**2.05**
3	**Additional Revenue Expenditure (proposed in EMP of 52.5 to 70 MTPA)**	**Amount (in Cr)**
a	Fog Cannon (Additional -8 no.) @0.6 cr/unit	**4.8**
b	Mechanized Sweeping Machine (Additional 2 no.) @0.5 cr/unit	**1.0**
c	Green belt around the mine boundary (14 km) @8 lakh/ha	**1.12**
d	Grass bedding over slope with support measures per year (60 ha @10 lakh/ha)	**6.0**
e	Soil and Moisture Conservation of top soil @Rs 3500/ha	**1.0**
f	Grassland creation over reclaimed OB dumps per year (6 ha @8 lakh/ha)	**0.48**
g	Wildlife Conservation Plan implementation	**10.09**
h	Groundwater recharge and monitoring per year (lump sum)	**1.0**
i	Environment Monitoring per year	**3.0**
j	Third party audit of compliance of various clearances at suitable interval	**1.0**
k	Specialized studies like slope stability, fly ash related studies, topsoil management, Just transition, development of eco park, floating solar park, ecological restoration, OB to sand or similar from scientific institution of repute per year	**5.0**
	Sub-Total(3)	**34.49**
	Total Revenue cost	**55.51 crores**

प्रमाणित किया जाता है कि यह शपथकर्ता के द्वारा शपथपत्र को पढ़कर सुनाकर समझाकर सही लिखा पाकर गवाह विता त्रिवासी के समक्ष अपना हस्ताक्षर / अंगुठा लगाकर सत्यापित किया

NOTARY Chandrakanta Rathore Tah. Pendra Road Dist. Gaurela-Pendra-Marwahi (C.G.) RR.C.G/18 Handibazar /1/154/0/18 GOVT. OF CHHATTISGARH

चन्द्रकान्ता राठौर
नोटरी
हल्दीबाजार,कोरबा(छ.ग.)

- 5 MAR 2024

Signed by
Amit Vashishtha
Date: 05-03-2024 11:25:
Reason: Verified and

ANNEX-28

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी)(A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला कोरबा (छत्तीसगढ़)
पिन 495452

STD :07815 273430(O)
:7815 275032(R)
Fax 07815 275434
email :gevraarea@gmail.com

पो.ऑ.-गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Dist.: Korba (C.G.)
Pin 495450

क्रमांकः एस.ई.सी.एल./एसएच/गे.क्षे./ पर्यावरण/2024 / 149 (N) दिनांक 19/08/2024

VACHAN- PATRA 14
(94.293 HA. FOREST LAND)
(CONDITION NO. 34)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The layout plan of the mining plan/ proposal shall not be changed without the prior approval of the Central Government and the forest land shall not be used for any purpose other than that specified in the proposal."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX-29

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डलिमिटेड
South Eastern Coalfields Limited
(भारतकोकिंगकोललिमिटेडकीएकसहायककंपनी/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला. कोरबा(छत्तीसगढ़)
पिन 495453

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: 7815 275032(R)
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Dist. Korba (C.G.)
Pin 495457

क्रमांक एस.ई.सी.एल/मप्र.गे.क्षे./पर्यावरण/2024/149(c) दिनांक 19/08/2024

VACHAN- PATRA 15
(94.293 HA. FOREST LAND)
(CONDITION NO. 35)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person without prior approval of the Central Government."

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX - 30

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्ड्सलिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीA subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा (छत्तीसगढ़)
पिन 495452

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पो.आ.: गेवरा प्रोजेक्ट
P.O.: GEVRA PROJECT
Dist.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र/गे.क्षे./पर्यावरण/2024/149(12) दिनांक 19/08/2024

VACHAN- PATRA 16
(94.293 HA. FOREST LAND)
(CONDITION NO. 36)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that
"No damage to the flora and fauna of the adjoining area shall be caused."

19/8/24

S K Mohanty
General Manager
SECL Gevra Area

ANNEX-31

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइण्डियालिमिटेडकीअनुषंगी: A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
पिन 495452

STD 07815 253430(O)
: 7815 275022(R)
Fax 07815 275434
email: gevragmsecl@gmail.com

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

क्रमांक:G/एस.ई.सी.एल/एम.ओ/गे.क्षे./पर्यावरण/2024/ 1217(R) दिनांक 19/08/2024

VACHAN- PATRA 17
(94.293 HA. FOREST LAND)
(CONDITION NO.37)

SECL Gevra OCP, Dist.. Korba (C.G.) declares and agrees that
"Any other condition that the concerned Regional Office of this Ministry may stipulate with the approval of competent authority in the interest of conservation, protection and development of forests & wildlife".

19/8/24
S K Mohanty
General Manager
SECL Gevra Area

ANNEX - 32

SEEPAT ROAD
P.O.: SECL
BILASPUR

साउथईस्टर्नकोलफिल्डस्लिमिटेड
South Eastern Coalfields Limited
(कोलइंडियाकाएकअंग/A subsidiary of Coal India Ltd.)
CIN U10102CT1985GOI003161
Website : www.secl-cil.in
कार्यालय: महाप्रबंधक, गेवरा क्षेत्र
OFFICE OF THE GENERAL MANAGER
GEVRA AREA

जिला: कोरबा(छत्तीसगढ़)
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पोस्ट: गेवराप्रोजेक्ट
P.O. : GEVRA PROJECT
Distt.: Korba (C.G.)
Pin: 495452

क्रमांक/एस.ई.सी.एल/मप्र.गे.क्षे./पर्यावरण/2024/ 1491(R) दिनांक 19/08/2024

VACHAN- PATRA 18
(94.293 HA. FOREST LAND)
(CONDITION NO.38)

SECL Gevra OCP, Dist. Korba (C.G.) declares and agrees that "The user agency shall comply with all 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".

19/8/24
S K Mohanty
General Manager
SECL Gevra Area